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NAVFAC
Naval Facilities Engineering Command

Groundwater Sample Results, Level 2 Laboratory Report, Level 4 Laboratory Report, Electronic Data Deliverable, Data Validation Report, Sample Location Report, SDG 2001472

MCAS
Tustin, CA
April 2021

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

July 28, 2020

Vista Work Order No. 2001472

Ms. Kimberly Shiroodi
KMEA
2423 Hoover Avenue
National City, CA 91950

Dear Ms. Shiroodi,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on July 14, 2020 under your Project Name 'MCAS El Toro and Tustin, PFAS'.

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

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

Sincerely,

Martha Maier
Laboratory Director

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

Vista Work Order No. 2001472
Case Narrative

Sample Condition on Receipt:

One blank water sample and four groundwater samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

PFAS Isotope Dilution/LC-MSMS Method Compliant with Table B-15 of QSM 5.3 (Aqueous)

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

Laboratory ID	Sample Name
2001472-02	TW23S-20200710
2001472-03	TW24S-20200710
2001472-04	TW15D-20200710
2001472-05	TW16D-20200710

Sample "TW16D-20200710" was very high in particulates: the solids made up approximately one-half of the sample. Following standard procedure, the solids were rinsed in methanol and the rinses were included in the extraction.

The samples were extracted and analyzed for a selected list of PFAS using Isotope Dilution and LC-MS/MS compliant with Table B-15 of QSM 5.3. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

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

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2001472-01	EB08-20200710	10-Jul-20 11:00	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-02	TW23S-20200710	10-Jul-20 09:00	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-03	TW24S-20200710	10-Jul-20 10:30	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-04	TW15D-20200710	10-Jul-20 08:25	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-05	TW16D-20200710	10-Jul-20 10:30	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Aqueous

Laboratory Data

Lab Sample: B0G0090-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFHxA	307-24-4	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
HFPO-DA	13252-13-6	ND	0.00241	0.00300	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFHpA	375-85-9	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
ADONA	919005-14-4	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFHxS	355-46-4	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFOA	335-67-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFNA	375-95-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFOS	1763-23-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
9Cl-PF3ONS	756426-58-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFDA	335-76-2	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
MeFOSAA	2355-31-9	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
EtFOSAA	2991-50-6	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFUnA	2058-94-8	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
11Cl-PF3OUdS	763051-92-9	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFDoA	307-55-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFTrDA	72629-94-8	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFTeDA	376-06-7	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	92.9	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C3-HFPO-DA	IS	75.6	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFHxA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C4-PFHpA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C3-PFHxS	IS	102	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C5-PFNA	IS	94.3	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFOA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C8-PFOS	IS	91.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFDA	IS	84.5	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
d3-MeFOSAA	IS	80.2	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFUnA	IS	77.3	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
d5-EtFOSAA	IS	81.3	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFDoA	IS	80.0	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFTeDA	IS	76.4	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1

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

Results reported to the DL.

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

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	KMEA	Lab Sample:	B0G0090-BS1/B0G0090-BSD1
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0G0090
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	19-Jul-20
		Column:	BEH C18

Analyte	CAS Number	LCS (ug/L)	LCS Spike	LCS % Rec	LCS Quals	LCSD (ug/L)	LCSD Spike	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	375-73-5	0.0413	0.0400	103		0.0386	0.0400	96.5	6.84		72-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFHxA	307-24-4	0.0411	0.0400	103		0.0395	0.0400	98.7	3.97		72-129	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
HFPO-DA	13252-13-6	0.0388	0.0400	96.9		0.0379	0.0400	94.8	2.25		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFHpA	375-85-9	0.0392	0.0400	98.0		0.0390	0.0400	97.6	0.406		72-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
ADONA	919005-14-4	0.0401	0.0400	100		0.0375	0.0400	93.8	6.63		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFHxS	355-46-4	0.0410	0.0400	103		0.0377	0.0400	94.4	8.33		68-131	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFOA	335-67-1	0.0381	0.0400	95.3		0.0380	0.0400	94.9	0.339		71-133	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFNA	375-95-1	0.0385	0.0400	96.2		0.0370	0.0400	92.6	3.81		69-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFOS	1763-23-1	0.0417	0.0400	104		0.0357	0.0400	89.2	15.6		65-140	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
9Cl-PF3ONS	756426-58-1	0.0383	0.0400	95.7		0.0349	0.0400	87.2	9.39		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFDA	335-76-2	0.0419	0.0400	105		0.0404	0.0400	101	3.59		71-129	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
MeFOSAA	2355-31-9	0.0408	0.0400	102		0.0383	0.0400	95.8	6.41		65-136	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
EtFOSAA	2991-50-6	0.0473	0.0400	118		0.0381	0.0400	95.2	21.5		61-135	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFUnA	2058-94-8	0.0379	0.0400	94.7		0.0388	0.0400	97.1	2.52		69-133	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
11Cl-PF3OUdS	763051-92-9	0.0402	0.0400	100		0.0382	0.0400	95.4	5.22		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFDoA	307-55-1	0.0394	0.0400	98.5		0.0376	0.0400	93.9	4.77		72-134	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFTrDA	72629-94-8	0.0412	0.0400	103		0.0407	0.0400	102	1.23		65-144	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFTeDA	376-06-7	0.0409	0.0400	102		0.0377	0.0400	94.3	8.06		71-132	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C3-PFBS	IS	87.5		92.6		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C3-HFPO-DA	IS	79.2		83.4		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFHxA	IS	80.7		82.1		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C4-PFHpA	IS	83.4		89.0		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C3-PFHxS	IS	93.0		104		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C5-PFNA	IS	91.4		93.8		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFOA	IS	86.5		89.8		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C8-PFOS	IS	83.3		93.2		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFDA	IS	84.0		84.1		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
d3-MeFOSAA	IS	70.9		74.0		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFUnA	IS	73.0		76.5		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
d5-EtFOSAA	IS	65.6		78.9		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFDoA	IS	69.4		76.4		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	KMEA	Lab Sample:	B0G0090-BS1/B0G0090-BSD1	Date Extracted:	19-Jul-20
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0G0090	Column:	BEH C18
Matrix:	Aqueous	Samp Size:	0.250/0.250 L		

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFTeDA	IS	71.5		77.9		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1

Sample ID: EB08-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Blank Water
Date Collected: 10-Jul-20 11:00

Laboratory Data

Lab Sample: 2001472-01
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFHxA	307-24-4	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
HFPO-DA	13252-13-6	ND	0.00247	0.00307	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFHpA	375-85-9	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
ADONA	919005-14-4	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFHxS	355-46-4	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFOA	335-67-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFNA	375-95-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFOS	1763-23-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
9Cl-PF3ONS	756426-58-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFDA	335-76-2	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
MeFOSAA	2355-31-9	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
EtFOSAA	2991-50-6	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFUnA	2058-94-8	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
11Cl-PF3OUdS	763051-92-9	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFDoA	307-55-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFTrDA	72629-94-8	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFTeDA	376-06-7	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	90.3	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C3-HFPO-DA	IS	74.2	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFHxA	IS	84.5	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C4-PFHpA	IS	85.2	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C3-PFHxS	IS	92.4	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C5-PFNA	IS	94.1	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFOA	IS	88.7	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C8-PFOS	IS	92.5	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFDA	IS	86.0	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
d3-MeFOSAA	IS	74.7	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFUnA	IS	79.8	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
d5-EtFOSAA	IS	82.2	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFDoA	IS	80.8	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFTeDA	IS	75.0	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1

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

Results reported to the DL.

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

Vista Analytical Laboratory

Sample ID: TW23S-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 09:00

Laboratory Data

Lab Sample: 2001472-02
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.26	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFHxA	307-24-4	4.86	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
HFPO-DA	13252-13-6	ND	0.00249	0.00310	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFHpA	375-85-9	1.08	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
ADONA	919005-14-4	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFHxS	355-46-4	5.48	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
PFOA	335-67-1	18.2	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
PFNA	375-95-1	0.0151	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFOS	1763-23-1	2.98	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
9Cl-PF3ONS	756426-58-1	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFDA	335-76-2	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
MeFOSAA	2355-31-9	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
EtFOSAA	2991-50-6	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFUnA	2058-94-8	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
11Cl-PF3OUdS	763051-92-9	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFDoA	307-55-1	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFTrDA	72629-94-8	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFTeDA	376-06-7	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	80.7	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C3-HFPO-DA	IS	82.5	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFHxA	IS	100	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C4-PFHpA	IS	75.2	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C3-PFHxS	IS	80.0	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C5-PFNA	IS	88.5	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFOA	IS	104	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C8-PFOS	IS	59.0	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C2-PFDA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
d3-MeFOSAA	IS	80.9	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFUnA	IS	78.0	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
d5-EtFOSAA	IS	97.2	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFDoA	IS	81.0	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFTeDA	IS	65.5	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1

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

Results reported to the DL.

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

Sample ID: TW24S-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 10:30

Laboratory Data

Lab Sample: 2001472-03
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.29	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFHxA	307-24-4	5.29	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
HFPO-DA	13252-13-6	ND	0.00239	0.00298	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFHpA	375-85-9	0.949	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
ADONA	919005-14-4	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFHxS	355-46-4	4.98	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
PFOA	335-67-1	15.3	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
PFNA	375-95-1	0.0186	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFOS	1763-23-1	1.99	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFDA	335-76-2	0.00212	0.00136	0.00198	0.00397	J	B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
MeFOSAA	2355-31-9	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
EtFOSAA	2991-50-6	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFUnA	2058-94-8	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFDoA	307-55-1	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFTrDA	72629-94-8	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFTeDA	376-06-7	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	76.6	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C3-HFPO-DA	IS	80.2	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFHxA	IS	75.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C4-PFHpA	IS	76.3	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C3-PFHxS	IS	81.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C5-PFNA	IS	84.1	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFOA	IS	96.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C8-PFOS	IS	66.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C2-PFDA	IS	83.2	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
d3-MeFOSAA	IS	75.4	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFUnA	IS	69.6	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
d5-EtFOSAA	IS	76.8	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFDoA	IS	63.9	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFTeDA	IS	36.1	50 - 150	H	B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1

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

Results reported to the DL.

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

Sample ID: TW15D-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 08:25

Laboratory Data

Lab Sample: 2001472-04
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFHxA	307-24-4	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
HFPO-DA	13252-13-6	ND	0.00212	0.00264	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFHpA	375-85-9	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
ADONA	919005-14-4	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFHxS	355-46-4	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFOA	335-67-1	0.00266	0.00120	0.00176	0.00352	J	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFNA	375-95-1	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFOS	1763-23-1	0.00226	0.00120	0.00176	0.00352	J	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
9Cl-PF3ONS	756426-58-1	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFDA	335-76-2	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
MeFOSAA	2355-31-9	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
EtFOSAA	2991-50-6	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFUnA	2058-94-8	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
11Cl-PF3OUdS	763051-92-9	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFDoA	307-55-1	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFTrDA	72629-94-8	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFTeDA	376-06-7	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	83.2	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C3-HFPO-DA	IS	84.7	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFHxA	IS	86.9	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C4-PFHpA	IS	90.9	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C3-PFHxS	IS	87.1	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C5-PFNA	IS	88.3	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFOA	IS	91.8	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C8-PFOS	IS	85.4	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFDA	IS	80.8	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
d3-MeFOSAA	IS	65.5	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFUnA	IS	72.5	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
d5-EtFOSAA	IS	72.3	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFDoA	IS	46.9	50 - 150	H	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFTeDA	IS	6.90	50 - 150	H	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1

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

Results reported to the DL.

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

Sample ID: TW16D-20200710 **PFAS Isotope Dilution Table B-15**

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 10:30

Laboratory Data

Lab Sample: 2001472-05
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFHxA	307-24-4	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
HFPO-DA	13252-13-6	ND	0.00172	0.00214	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFHpA	375-85-9	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
ADONA	919005-14-4	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFHxS	355-46-4	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFOA	335-67-1	0.00114	0.000976	0.00142	0.00285	J	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFNA	375-95-1	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFOS	1763-23-1	0.00271	0.000976	0.00142	0.00285	J	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
9Cl-PF3ONS	756426-58-1	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFDA	335-76-2	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
MeFOSAA	2355-31-9	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
EtFOSAA	2991-50-6	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFUnA	2058-94-8	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
11Cl-PF3OUdS	763051-92-9	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFDoA	307-55-1	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFTrDA	72629-94-8	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFTeDA	376-06-7	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	64.5	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C3-HFPO-DA	IS	66.1	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFHxA	IS	66.2	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C4-PFHpA	IS	64.2	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C3-PFHxS	IS	74.0	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C5-PFNA	IS	70.7	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFOA	IS	70.0	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C8-PFOS	IS	62.3	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFDA	IS	61.5	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
d3-MeFOSAA	IS	49.9	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFUnA	IS	44.2	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
d5-EtFOSAA	IS	46.5	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFDoA	IS	28.8	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFTeDA	IS	5.50	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1

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

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA 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
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-23
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Vermont Department of Health	VT-4042
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

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

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

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

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

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

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

Vista Analytical

1104 Windfield Way
El Dorado Hills, CA 95762
TEL: 916-673-1520

2001472
0.4°C

Vista PM: Jade White-Dobbs

CHAIN OF CUSTODY RECORD

DATE: 7/10/2020

PAGE: 1 OF 1

LABORATORY CLIENT: KMEA	CLIENT PROJECT NAME / NUMBER: MCAS El Toro and Tustin, PFAS	P.O. NO.: TO 008 Mod 4
ADDRESS: 9210 Sky Park Court, Suite 220	PROJECT CONTACT: Kimberly Shiroodi / Brian Johnson	CONTRACT NO.: N62473-16-D-2405
CITY: San Diego, CA 92123	SAMPLER(S): (SIGNATURE) Uly Ruiter	LAB USE ONLY
TEL: (619) 399-5900 / E-Mail: kimberly.shiroodi@woodplc.com / E-MAIL: brian.johnson@woodplc.com		

TURNAROUND TIME

☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 10 DAYS ☒ Standard

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS

GW Samples potentially contain elevated levels of PFAS.
* filter as needed

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	QC Level	PFAS by LC/MS-MS
	EB08-20200710	7/10/20	11:00	BW	2		X
	TW23S-20200710		9:00	GW	4*	IV	X
	TW24S-20200710		10:30	"	4*	IV	X
	TW15D-20200710		8:25	"	4*	IV	X
	TW16D-20200710	V	10:30	"	6*	IV	X

7-10-20

Relinquished by: (Signature) Uly Ruiter	Received by: (Signature) / Carrier Tracking Number FedEx	Date: 7/13/20	Time: 12:00
Relinquished by: (Signature) FedEx	Received by: (Signature) Kay A	Date: 07/14/20	Time: 08:11
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2001472 TAT Std

Samples Arrival:	**Date/Time** 07/14/20 09:11		**Initials:** KA		**Location:** WR-2 **Shelf/Rack:** NA		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None
Temp °C: 0.4 (uncorrected) / **Temp °C:** 0.4 (corrected)			**Probe used:** (Y) / N		**Thermometer ID:** DT-3		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill ✓ Trk #	✓		
Shipping Documentation Present?	✓		
Shipping Container: (Vista) Client (Retain) Return Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 07/14/20 1216	**Initials:** KS	**Location:** R-13 | WR-2 **Shelf/Rack:** A-2 | B-4	
COC Anomaly/Sample Acceptance Form completed?			✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2001472

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2001472-01	A EB08-20200710	☑		10-Jul-20 11:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-01	B EB08-20200710	☑		10-Jul-20 11:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	A TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	B TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	C TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	D TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	A TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	B TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	C TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	D TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	A TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	B TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	C TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	D TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	A TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	B TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	C TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	D TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	E TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	F TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		
Preservation Documented: Na2S2O3 Trizma None Other		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

Comments:

* Samples contain particulate

Verifed by/Date: KS 07/14/20

July 28, 2020

Vista Work Order No. 2001472

Ms. Kimberly Shiroodi
KMEA
2423 Hoover Avenue
National City, CA 91950

Dear Ms. Shiroodi,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on July 14, 2020 under your Project Name 'MCAS El Toro and Tustin, PFAS'.

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

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

Sincerely,

Martha Maier
Laboratory Director

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

Vista Work Order No. 2001472
Case Narrative

Sample Condition on Receipt:

One blank water sample and four groundwater samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

Analytical Notes:

PFAS Isotope Dilution/LC-MSMS Method Compliant with Table B-15 of QSM 5.3 (Aqueous)

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

Laboratory ID	Sample Name
2001472-02	TW23S-20200710
2001472-03	TW24S-20200710
2001472-04	TW15D-20200710
2001472-05	TW16D-20200710

Sample "TW16D-20200710" was very high in particulates: the solids made up approximately one-half of the sample. Following standard procedure, the solids were rinsed in methanol and the rinses were included in the extraction.

The samples were extracted and analyzed for a selected list of PFAS using Isotope Dilution and LC-MS/MS compliant with Table B-15 of QSM 5.3. The results for PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA include both linear and branched isomers. Results for all other analytes include the linear isomers only.

Holding Times

The samples were extracted and analyzed within the hold times.

Quality Control

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

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

The labeled standard recoveries outside the acceptance criteria are flagged with an "H" qualifier.

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Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2001472-01	EB08-20200710	10-Jul-20 11:00	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-02	TW23S-20200710	10-Jul-20 09:00	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-03	TW24S-20200710	10-Jul-20 10:30	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-04	TW15D-20200710	10-Jul-20 08:25	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2001472-05	TW16D-20200710	10-Jul-20 10:30	14-Jul-20 09:11	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Aqueous

Laboratory Data

Lab Sample: B0G0090-BLK1
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFHxA	307-24-4	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
HFPO-DA	13252-13-6	ND	0.00241	0.00300	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFHpA	375-85-9	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
ADONA	919005-14-4	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFHxS	355-46-4	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFOA	335-67-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFNA	375-95-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFOS	1763-23-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
9Cl-PF3ONS	756426-58-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFDA	335-76-2	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
MeFOSAA	2355-31-9	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
EtFOSAA	2991-50-6	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFUnA	2058-94-8	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
11Cl-PF3OUdS	763051-92-9	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFDoA	307-55-1	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFTrDA	72629-94-8	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
PFTeDA	376-06-7	ND	0.00137	0.00200	0.00400		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	92.9	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C3-HFPO-DA	IS	75.6	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFHxA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C4-PFHpA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C3-PFHxS	IS	102	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C5-PFNA	IS	94.3	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFOA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C8-PFOS	IS	91.1	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFDA	IS	84.5	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
d3-MeFOSAA	IS	80.2	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFUnA	IS	77.3	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
d5-EtFOSAA	IS	81.3	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFDoA	IS	80.0	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1
13C2-PFTeDA	IS	76.4	50 - 150		B0G0090	19-Jul-20	0.250 L	21-Jul-20 20:22	1

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

Results reported to the DL.

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

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	KMEA	Lab Sample:	B0G0090-BS1/B0G0090-BSD1
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0G0090
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	19-Jul-20
		Column:	BEH C18

Analyte	CAS Number	LCS (ug/L)	LCS Spike	LCS % Rec	LCS Quals	LCSD (ug/L)	LCSD Spike	LCSD % Rec	RPD	LCSD Quals	%Rec Limits	RPD Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
PFBS	375-73-5	0.0413	0.0400	103		0.0386	0.0400	96.5	6.84		72-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFHxA	307-24-4	0.0411	0.0400	103		0.0395	0.0400	98.7	3.97		72-129	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
HFPO-DA	13252-13-6	0.0388	0.0400	96.9		0.0379	0.0400	94.8	2.25		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFHpA	375-85-9	0.0392	0.0400	98.0		0.0390	0.0400	97.6	0.406		72-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
ADONA	919005-14-4	0.0401	0.0400	100		0.0375	0.0400	93.8	6.63		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFHxS	355-46-4	0.0410	0.0400	103		0.0377	0.0400	94.4	8.33		68-131	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFOA	335-67-1	0.0381	0.0400	95.3		0.0380	0.0400	94.9	0.339		71-133	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFNA	375-95-1	0.0385	0.0400	96.2		0.0370	0.0400	92.6	3.81		69-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFOS	1763-23-1	0.0417	0.0400	104		0.0357	0.0400	89.2	15.6		65-140	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
9Cl-PF3ONS	756426-58-1	0.0383	0.0400	95.7		0.0349	0.0400	87.2	9.39		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFDA	335-76-2	0.0419	0.0400	105		0.0404	0.0400	101	3.59		71-129	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
MeFOSAA	2355-31-9	0.0408	0.0400	102		0.0383	0.0400	95.8	6.41		65-136	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
EtFOSAA	2991-50-6	0.0473	0.0400	118		0.0381	0.0400	95.2	21.5		61-135	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFUnA	2058-94-8	0.0379	0.0400	94.7		0.0388	0.0400	97.1	2.52		69-133	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
11Cl-PF3OUdS	763051-92-9	0.0402	0.0400	100		0.0382	0.0400	95.4	5.22		70-130	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFDoA	307-55-1	0.0394	0.0400	98.5		0.0376	0.0400	93.9	4.77		72-134	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFTrDA	72629-94-8	0.0412	0.0400	103		0.0407	0.0400	102	1.23		65-144	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1
PFTeDA	376-06-7	0.0409	0.0400	102		0.0377	0.0400	94.3	8.06		71-132	30	21-Jul-20 20:32	1	21-Jul-20 20:43	1

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C3-PFBS	IS	87.5		92.6		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C3-HFPO-DA	IS	79.2		83.4		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFHxA	IS	80.7		82.1		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C4-PFHpA	IS	83.4		89.0		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C3-PFHxS	IS	93.0		104		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C5-PFNA	IS	91.4		93.8		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFOA	IS	86.5		89.8		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C8-PFOS	IS	83.3		93.2		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFDA	IS	84.0		84.1		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
d3-MeFOSAA	IS	70.9		74.0		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFUnA	IS	73.0		76.5		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
d5-EtFOSAA	IS	65.6		78.9		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1
13C2-PFDoA	IS	69.4		76.4		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1

Sample ID: LCSD **PFAS Isotope Dilution Table B-15**

Name:	KMEA	Lab Sample:	B0G0090-BS1/B0G0090-BSD1	Date Extracted:	19-Jul-20
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0G0090	Column:	BEH C18
Matrix:	Aqueous	Samp Size:	0.250/0.250 L		

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFTeDA	IS	71.5		77.9		50-150	21-Jul-20 20:32	1	21-Jul-20 20:43	1

Sample ID: EB08-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Blank Water
Date Collected: 10-Jul-20 11:00

Laboratory Data

Lab Sample: 2001472-01
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFHxA	307-24-4	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
HFPO-DA	13252-13-6	ND	0.00247	0.00307	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFHpA	375-85-9	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
ADONA	919005-14-4	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFHxS	355-46-4	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFOA	335-67-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFNA	375-95-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFOS	1763-23-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
9Cl-PF3ONS	756426-58-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFDA	335-76-2	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
MeFOSAA	2355-31-9	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
EtFOSAA	2991-50-6	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFUnA	2058-94-8	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
11Cl-PF3OUdS	763051-92-9	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFDoA	307-55-1	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFTrDA	72629-94-8	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
PFTeDA	376-06-7	ND	0.00140	0.00205	0.00409		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	90.3	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C3-HFPO-DA	IS	74.2	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFHxA	IS	84.5	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C4-PFHpA	IS	85.2	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C3-PFHxS	IS	92.4	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C5-PFNA	IS	94.1	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFOA	IS	88.7	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C8-PFOS	IS	92.5	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFDA	IS	86.0	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
d3-MeFOSAA	IS	74.7	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFUnA	IS	79.8	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
d5-EtFOSAA	IS	82.2	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFDoA	IS	80.8	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1
13C2-PFTeDA	IS	75.0	50 - 150		B0G0090	19-Jul-20	0.244 L	21-Jul-20 22:50	1

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

Results reported to the DL.

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

Vista Analytical Laboratory

Sample ID: TW23S-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 09:00

Laboratory Data

Lab Sample: 2001472-02
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.26	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFHxA	307-24-4	4.86	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
HFPO-DA	13252-13-6	ND	0.00249	0.00310	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFHpA	375-85-9	1.08	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
ADONA	919005-14-4	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFHxS	355-46-4	5.48	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
PFOA	335-67-1	18.2	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
PFNA	375-95-1	0.0151	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFOS	1763-23-1	2.98	0.0142	0.0207	0.0413	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
9Cl-PF3ONS	756426-58-1	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFDA	335-76-2	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
MeFOSAA	2355-31-9	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
EtFOSAA	2991-50-6	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFUnA	2058-94-8	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
11Cl-PF3OUdS	763051-92-9	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFDoA	307-55-1	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFTrDA	72629-94-8	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
PFTeDA	376-06-7	ND	0.00142	0.00207	0.00413		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	80.7	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C3-HFPO-DA	IS	82.5	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFHxA	IS	100	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C4-PFHpA	IS	75.2	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C3-PFHxS	IS	80.0	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C5-PFNA	IS	88.5	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFOA	IS	104	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C8-PFOS	IS	59.0	50 - 150	D	B0G0090	19-Jul-20	0.242 L	23-Jul-20 13:50	10
13C2-PFDA	IS	88.1	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
d3-MeFOSAA	IS	80.9	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFUnA	IS	78.0	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
d5-EtFOSAA	IS	97.2	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFDoA	IS	81.0	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1
13C2-PFTeDA	IS	65.5	50 - 150		B0G0090	19-Jul-20	0.242 L	21-Jul-20 23:00	1

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

Results reported to the DL.

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

Sample ID: TW24S-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 10:30

Laboratory Data

Lab Sample: 2001472-03
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.29	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFHxA	307-24-4	5.29	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
HFPO-DA	13252-13-6	ND	0.00239	0.00298	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFHpA	375-85-9	0.949	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
ADONA	919005-14-4	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFHxS	355-46-4	4.98	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
PFOA	335-67-1	15.3	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
PFNA	375-95-1	0.0186	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFOS	1763-23-1	1.99	0.0136	0.0198	0.0397	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFDA	335-76-2	0.00212	0.00136	0.00198	0.00397	J	B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
MeFOSAA	2355-31-9	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
EtFOSAA	2991-50-6	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFUnA	2058-94-8	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFDoA	307-55-1	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFTrDA	72629-94-8	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
PFTeDA	376-06-7	ND	0.00136	0.00198	0.00397		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	76.6	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C3-HFPO-DA	IS	80.2	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFHxA	IS	75.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C4-PFHpA	IS	76.3	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C3-PFHxS	IS	81.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C5-PFNA	IS	84.1	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFOA	IS	96.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C8-PFOS	IS	66.0	50 - 150	D	B0G0090	19-Jul-20	0.252 L	23-Jul-20 14:01	10
13C2-PFDA	IS	83.2	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
d3-MeFOSAA	IS	75.4	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFUnA	IS	69.6	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
d5-EtFOSAA	IS	76.8	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFDoA	IS	63.9	50 - 150		B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1
13C2-PFTeDA	IS	36.1	50 - 150	H	B0G0090	19-Jul-20	0.252 L	21-Jul-20 23:11	1

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

Results reported to the DL.

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

Sample ID: TW15D-20200710 **PFAS Isotope Dilution Table B-15**

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 08:25

Laboratory Data

Lab Sample: 2001472-04
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFHxA	307-24-4	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
HFPO-DA	13252-13-6	ND	0.00212	0.00264	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFHpA	375-85-9	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
ADONA	919005-14-4	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFHxS	355-46-4	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFOA	335-67-1	0.00266	0.00120	0.00176	0.00352	J	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFNA	375-95-1	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFOS	1763-23-1	0.00226	0.00120	0.00176	0.00352	J	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
9Cl-PF3ONS	756426-58-1	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFDA	335-76-2	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
MeFOSAA	2355-31-9	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
EtFOSAA	2991-50-6	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFUnA	2058-94-8	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
11Cl-PF3OUdS	763051-92-9	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFDoA	307-55-1	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFTrDA	72629-94-8	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
PFTeDA	376-06-7	ND	0.00120	0.00176	0.00352		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	83.2	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C3-HFPO-DA	IS	84.7	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFHxA	IS	86.9	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C4-PFHpA	IS	90.9	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C3-PFHxS	IS	87.1	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C5-PFNA	IS	88.3	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFOA	IS	91.8	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C8-PFOS	IS	85.4	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFDA	IS	80.8	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
d3-MeFOSAA	IS	65.5	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFUnA	IS	72.5	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
d5-EtFOSAA	IS	72.3	50 - 150		B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFDoA	IS	46.9	50 - 150	H	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1
13C2-PFTeDA	IS	6.90	50 - 150	H	B0G0090	19-Jul-20	0.284 L	23-Jul-20 13:18	1

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

Results reported to the DL.

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

Sample ID: TW16D-20200710

PFAS Isotope Dilution Table B-15

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 10-Jul-20 10:30

Laboratory Data

Lab Sample: 2001472-05
Date Received: 14-Jul-20 09:11
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFHxA	307-24-4	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
HFPO-DA	13252-13-6	ND	0.00172	0.00214	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFHpA	375-85-9	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
ADONA	919005-14-4	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFHxS	355-46-4	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFOA	335-67-1	0.00114	0.000976	0.00142	0.00285	J	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFNA	375-95-1	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFOS	1763-23-1	0.00271	0.000976	0.00142	0.00285	J	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
9Cl-PF3ONS	756426-58-1	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFDA	335-76-2	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
MeFOSAA	2355-31-9	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
EtFOSAA	2991-50-6	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFUnA	2058-94-8	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
11Cl-PF3OUdS	763051-92-9	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFDoA	307-55-1	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFTrDA	72629-94-8	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
PFTeDA	376-06-7	ND	0.000976	0.00142	0.00285		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	64.5	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C3-HFPO-DA	IS	66.1	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFHxA	IS	66.2	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C4-PFHpA	IS	64.2	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C3-PFHxS	IS	74.0	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C5-PFNA	IS	70.7	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFOA	IS	70.0	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C8-PFOS	IS	62.3	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFDA	IS	61.5	50 - 150		B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
d3-MeFOSAA	IS	49.9	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFUnA	IS	44.2	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
d5-EtFOSAA	IS	46.5	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFDoA	IS	28.8	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1
13C2-PFTeDA	IS	5.50	50 - 150	H	B0G0090	19-Jul-20	0.351 L	21-Jul-20 23:32	1

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

Results reported to the DL.

When reported, PFHxS, PFOA, PFOS, MeFOSAA and EtFOSAA 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
Conc.	Concentration
CRS	Cleanup Recovery Standard
D	Dilution
DL	Detection Limit
E	The associated compound concentration exceeded the calibration range of the instrument
H	Recovery and/or RPD was outside laboratory acceptance limits
I	Chemical Interference
IS	Internal Standard
J	The amount detected is below the Reporting Limit/LOQ
LOD	Limit of Detection
LOQ	Limit of Quantitation
M	Estimated Maximum Possible Concentration (CA Region 2 projects only)
MDL	Method Detection Limit
NA	Not applicable
ND	Not Detected
OPR	Ongoing Precision and Recovery sample
P	The reported concentration may include contribution from chlorinated diphenyl ether(s).
Q	The ion transition ratio is outside of the acceptance criteria.
RL	Reporting Limit
TEQ	Toxic Equivalency
U	Not Detected (specific projects only)
*	See Cover Letter

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

Vista Analytical Laboratory Certifications

Accrediting Authority	Certificate Number
Alaska Department of Environmental Conservation	17-013
Arkansas Department of Environmental Quality	19-013-0
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777-23
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2018017
Massachusetts Department of Environmental Protection	N/A
Michigan Department of Environmental Quality	9932
Minnesota Department of Health	1521520
New Hampshire Environmental Accreditation Program	207718-B
New Jersey Department of Environmental Protection	190001
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-010
Pennsylvania Department of Environmental Protection	016
Texas Commission on Environmental Quality	T104704189-19-10
Vermont Department of Health	VT-4042
Virginia Department of General Services	10272
Washington Department of Ecology	C584-19
Wisconsin Department of Natural Resources	998036160

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

NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	**Method**
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA TO-9A

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

MATRIX: Drinking Water	
Description of Test	**Method**
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613/1613B
1,4-Dioxane (1,4-Diethyleneoxide) analysis by GC/HRMS	EPA 522
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	ISO 25101 2009

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

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

Vista Analytical

1104 Windfield Way
El Dorado Hills, CA 95762
TEL: 916-673-1520

2001472
0.4°C

Vista PM: Jade White-Dobbs

CHAIN OF CUSTODY RECORD

DATE: 7/10/2020

PAGE: 1 OF 1

LABORATORY CLIENT: KMEA	CLIENT PROJECT NAME / NUMBER: MCAS El Toro and Tustin, PFAS
ADDRESS: 9210 Sky Park Court, Suite 220	PROJECT CONTACT: Kimberly Shiroodi / Brian Johnson
CITY: San Diego, CA 92123	SAMPLER(S): (SIGNATURE) Uly Ruiter
TEL: (619) 399-5900 / E-Mail: kimberly.shiroodi@woodplc.com / E-MAIL: brian.johnson@woodplc.com	P.O. NO.: TO 008 Mod 4 / CONTRACT NO.: N62473-16-D-2405 / LAB USE ONLY

TURNAROUND TIME

☐ SAME DAY ☐ 24 HR ☐ 48HR ☐ 72 HR ☐ 10 DAYS ☒ Standard

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)

☐ RWQCB REPORTING ☐ ARCHIVE SAMPLES UNTIL ___/___/___

SPECIAL INSTRUCTIONS

GW Samples potentially contain elevated levels of PFAS.
* filter as needed

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	QC Level	PFAS by LC/MS-MS
	EB08-20200710	7/10/20	11:00	BW	2		X
	TW23S-20200710		9:00	GW	4*	IV	X
	TW24S-20200710		10:30	"	4*	IV	X
	TW15D-20200710		8:25	"	4*	IV	X
	TW16D-20200710	V	10:30	"	6*	IV	X

UR 7-10-20

Relinquished by: (Signature) Uly Ruiter	Received by: (Signature) / Carrier Tracking Number FedEx	Date: 7/13/20	Time: 12:00
Relinquished by: (Signature) FedEx	Received by: (Signature) Kay A	Date: 07/14/20	Time: 08:11
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2001472 TAT Std

Samples Arrival:	**Date/Time** 07/14/20 09:11		**Initials:** KA		**Location:** WR-2 **Shelf/Rack:** NA		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None
Temp °C: 0.4 (uncorrected) / **Temp °C:** 0.4 (corrected)			**Probe used:** (Y) / N		**Thermometer ID:** DT-3		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill ✓ Trk #	✓		
Shipping Documentation Present?	✓		
Shipping Container: (Vista) Client (Retain) Return Dispose			
Chain of Custody / Sample Documentation Present?	✓		
Chain of Custody / Sample Documentation Complete?	✓		
Holding Time Acceptable?	✓		

Logged In:	**Date/Time** 07/14/20 1216	**Initials:** KS	**Location:** R-13 | WR-2 **Shelf/Rack:** A-2 | B-4	
COC Anomaly/Sample Acceptance Form completed?			✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2001472

LabNumber	CoC Sample ID		SampleAlias	Sample Date/Time		Container	BaseMatrix	Sample Comments
2001472-01	A EB08-20200710	☑		10-Jul-20 11:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-01	B EB08-20200710	☑		10-Jul-20 11:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	A TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	B TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	C TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-02	D TW23S-20200710	☑		10-Jul-20 09:00	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	A TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	B TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	C TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-03	D TW24S-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	A TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	B TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	C TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-04	D TW15D-20200710	☑		10-Jul-20 08:25	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	A TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	B TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	C TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	D TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	E TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	
2001472-05	F TW16D-20200710	☑		10-Jul-20 10:30	☑	HDPE Bottle, 250 mL	Aqueous	

Checkmarks indicate that information on the COC reconciled with the sample label.
Any discrepancies are noted in the following columns.

	Yes	No	NA
Sample Container Intact?	✓		
Sample Custody Seals Intact?			✓
Adequate Sample Volume?	✓		
Container Type Appropriate for Analysis(es)	✓		
Preservation Documented: Na2S2O3 Trizma None Other		✓	✓
If Chlorinated or Drinking Water Samples, Acceptable Preservation?			✓

Comments:

* Samples contain particulate

Verifed by/Date: KS 07/14/20

EXTRACTION INFORMATION

Process Sheet

Workorder: 2001472

Prep Expiration: 2020-07-24
Client: KMEA

Workorder Due: 04-Aug-20 00:00

TAT: 21

Method: **537M PFAS DOD QSM 5.3 (LOQ as mRL)**
Matrix: **Aqueous**

Prep Batch: BOG0090 ~~BOG0128~~ *ME 07/17/2020

Prep Data Entered: 07/20/20
Date and Initials

Version: 537.1 List of 18-EIS
DoD: DoD QSM 5.3

Initial Sequence: S0620w65

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
2001472-01	A	☑	☑	EB08-20200710		R-13 A-2	HDPE Bottle, 250 mL
2001472-02		☑	☑	TW23S-20200710		R-13 A-2	HDPE Bottle, 250 mL
2001472-03		☑	☑	TW24S-20200710		R-13 A-2	HDPE Bottle, 250 mL
2001472-04		☑	☑	TW15D-20200710		R-13 A-2	HDPE Bottle, 250 mL
2001472-05		☑	☑	TW16D-20200710		R-13 A-2	HDPE Bottle, 250 mL

WO Comments: **May have elevated PFAS levels - isolate samples.**
Instrument - begin w/ dils.
Report to DL
Use SOP HT

Pre-Prep Check Out: CHT 07/15/20
Pre-Prep Check In: CHT 07/15/20

Prep Check Out: HR 07/19/20
Prep Check In: N/A

Prep Reconciled Initals/Date: CHT 07/15/20
Spike Reconciled Initals/Date: HR 07/19/20
VialBoxID: Monkey

Matrix: Aqueous

Method: 537M PFAS DOD QSM 5.3 (LOQ as mRL)

Vista Internal Chain-of-Custody

B0G0090

Vista Analytical Laboratory

	Location		L2	R13	L2	R12	L2	R12	L4		
	Reason		Prep	R9	R4	R2	R6	R9	R8		
	Initials		CHT	CHT	HR	TC	TC	AM	GRN		
	Date/Time		07/13/20 0813	07/13/20 0840	07/19/20 0641	07/19/20 1539	07/20/20 0700	07/20/20 13:46	07/21/20 16:46		
Initial Storage	LabNumber	Cont									
R-13 A-2	2001444-01	A	O	O	O	E	E	E	E		
R-13 A-2	2001444-02										
R-13 A-2	2001444-03										
R-13 A-2	2001444-04										
R-13 A-2	2001444-05										
R-13 A-2	2001444-06										
R-13 A-2	2001444-07										
R-13 A-2	2001444-08										

Location Key:
L1 = Prep Lab 1
L2 = Prep Lab 2
L3 = HRMS Diox
L4 = Instrument
Other = _____

Reason Key:
R1 = Percent Solids
R2 = Eluate Preservation
R3 = Sub-Sample
R4 = Extraction
R6 = Concentration
R7 = Filtering
R8 = Analysis
R9 = Storage
Other = _____

Type Key:
O = Original Sample
E = Extract of Sample

Matrix: Aqueous

Method: 537M PFAS DOD QSM 5.3 (LOQ as mRL)

Vista Internal Chain-of-Custody

BOG0090

~~*B0G0128~~

*ME 07181202D

Vista Analytical Laboratory

	Location		L2	R13	L2	R12	L2	R12			
	Reason		Prep	R9	R4	R2	R6	R9			
	Initials		CHH	CHH	HR	TC	TL	AM			
	Date/Time		07/15/20 1401	07/15/20 1410	07/19/20 0041	07/19/20 15:39	07/20/20 0700	07/20/20 13:46			
Initial Storage	LabNumber	Cont									
R-13 A-2	2001472-01	A	O	O	O	E	E	E			
R-13 A-2	2001472-02	↓	↓	↓	↓	↓	↓	↓			
R-13 A-2	2001472-03	↓	↓	↓	↓	↓	↓	↓			
R-13 A-2	2001472-04	↓	↓	↓	↓	↓	↓	↓			
R-13 A-2	2001472-05	↓	↓	↓	↓	↓	↓	↓			

Location Key:
L1 = Prep Lab 1
L2 = Prep Lab 2
L3 = HRMS Diox
L4 = Instrument
Other = _____

Reason Key:
R1 = Percent Solids
R2 = Eluate Preservation
R3 = Sub-Sample
R4 = Extraction
R6 = Concentration
R7 = Filtering
R8 = Analysis
R9 = Storage
Other = _____

Type Key:
O = Original Sample
E = Extract of Sample

Matrix: Aqueous

Method: 537M PFAS DOD QSM 5.3 (LOQ as mRL)

PREPARATION BENCH SHEET

B0G0090

Chemist: HR

Prep Date: 07/19/20

Prep Time: 703

Hood#: 5

Prepared using: ☐ Sonication Shaker ☑ SPE Extraction ☑ Centrifuge ID: C3|C5

Rec Date/Initals: RM 07/20/20 | Date/Initals: CHT 07/18/20 | BalanceID: HRMS-9

Cen	VISTA Sample ID	Rec Vial1	Rec Vial2	pH	Chlorine (Cl)	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE and Reconciliation	ENVI-Carb and Reconciliation
☑	B0G0090-BLK1	☑	☑	5	0	N/A	N/A	(0.250)	HR 07/19/20	HR 07/19/20	HR 07/19/20
☑	B0G0090-BS1	☑	☑	5	0	↓	↓	(0.250)	↓	↓	↓
☑	B0G0090-BSD1	☑	☑	5	0	↓	↓	(0.250)	↓	↓	↓
☐	2001444-01	☑	☑	5	0	275.02	26.23	0.24879	↓	↓	↓
☑	2001444-02	☑	☑	6	0	273.81	26.06	0.24775	↓	↓	↓
☑	2001444-03	☑	☑	6	0	284.89	26.10	0.25679	↓	↓	↓
☑	2001444-04 ③	☑	☑	6	0	306.77	25.90	0.28087	↓	↓	↓
☑	2001444-05 ④ ②	☑	☑	6	0	405.37	26.16	0.37921	↓	↓	↓
☑	2001444-06	☑	☑	6	0	378.84	25.69	0.35315	↓	↓	↓
☑	2001444-07	☑	☑	6	0	289.09	26.06	0.26303	↓	↓	↓
☑	2001444-08	☑	☑	6	0	283.89	25.88	0.25601	↓	↓	↓

IS: 20E1201, 10mL, V8

IS SUP: N/A

NS: 20E1202, 10mL, V7

NS SUP: N/A

SPE Chem: Strata XL-AW 100µm 200mg/6mL

SPE Lot#: SI9-006863

ENVI-Carb Lot#: B02483

Ele SOLV: MeOH/0.5%NH4OH in MeOH

Final Volume(s) 1 mL

Notes: ④ Due to high particulate, sample separated into two centrifuge bottles. Sample lost approximately half of its volume after centrifuging due to amount of particulate. weight of sample after centrifuging: 2001444-05: 156.25 g, 2001444-06: 178.39 g HR 07/19/20
③ HR 07/19/20
② HR 07/19/20

Comments: Assume 1 g = 1 mL
Cen = Centrifuged
Rec = Reconcile final vial transfer

1 = Sample centrifuged twice
2 = Sample deeply colored after centrifuge
3 = Cartridge sorbent discolored after SPE
4 = Sample clogged cartridge, additional cartridge(s) used
5 = Sample recombined at final volume
6 = Sample took longer to SPE, required stronger vacuum
7 = Required Nitrogen line to finish SPE
8 = Required Nitrogen line to finish elution
9 = Sample arrived with low volume
10 = Trizma added to QC (5g/L)

Matrix: Aqueous

Method: 537M PFAS DOD QSM 5.3 (LOQ as mRL)

PREPARATION BENCH SHEET

B0G0090

~~B0G0128~~

*ME 07/18/2020.

Chemist: HR

Prep Date: 07/19/20

Prep Time: 703

Hood#: 5

Prepared using: ☐ Sonication Shaker ☑ SPE Extraction ☑ Centrifuge ID: C3/C5

Rec Date/Initals: AM 07/20/20

Date/Initals: CHT 07/15/20

BalanceID: HRB-9

Cen	VISTA Sample ID	Rec Vial1	Rec Vial2	pH	Chlorine (Cl)	Bottle + Sample (g)	Bottle Only (g)	Sample Amt. (L)	IS/NS CHEM/WIT DATE	SPE and Reconciliation	ENVI-Carb and Reconciliation
☐	B0G0128-BLK1	☐	☐	5	0	NA	NA	(0.250)	ME 07/17/2020		
☐	B0G0128-BS1	☐	☐	5	0			(0.250)			
☐	B0G0128-BSD1	☐	☐	5	0			(0.250)			
☐	2001472-01	☑	☑	5	0	270.00	25.73	0.24427	HR 07/19/20	HR 07/19/20	HR 07/19/20
☑	2001472-02	☑	☑	6	0	267.56	25.72	0.24184			
☑	2001472-03 (3)	☑	☑	6	0	277.65	25.91	0.25174			
☑	2001472-04	☑	☑	6	0	310.23	25.97	0.28426			
☑	2001472-05 (A)(2)	☑	☑	6	0	376.93	26.12	0.35081			

IS: 20E1201, 10mL (V8)

IS SUP: N/A

NS: 20E1202, 10mL (V7)

NS SUP: N/A

SPE Chem: Strata-XL-AW, 100um, 200mg/6mL

SPE Lot#: SIB-006863

ENVI-Carb Lot#: B02483

Ele SOLV: MeOH/0.5%NH4OH in MeOH

Final Volume(s) 1 mL

Notes: (A) Due to high particulate, sample separated into two centrifuge bottles sample lost approximately half of its volume after centrifuging due to amount of particulate. weight of sample after centrifuging:
2001472-05: 186.78 g HR 07/19/20
(2) HR 07/19/20
(3) HR 07/19/20

Comments: Assume 1 g = 1 mL
Cen = Centrifuged
Rec = Reconcile final vial transfer

1 = Sample centrifuged twice
2 = Sample deeply colored after centrifuge
3 = Cartridge sorbent discolored after SPE
4 = Sample clogged cartridge, additional cartridge(s) used
5 = Sample recombined at final volume
6 = Sample took longer to SPE, required stronger vacuum
7 = Required Nitrogen line to finish SPE
8 = Required Nitrogen line to finish elution
9 = Sample arrived with low volume
10 = Trizma added to QC (5g/L)

Batch: B0G0090

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
2001444-01	0.24879 ✓	N/A	N/A	1000	19-Jul-20 07:03	HNR			Blank Water	537M PFAS DOD QSM 5.3
2001444-02	0.24775 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001444-03	0.25879 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001444-04	0.28087 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001444-05	0.37921 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001444-06	0.35315 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001444-07	0.26303 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001444-08	0.25801 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001472-01	0.24427 ✓			1000	19-Jul-20 07:03	HNR			Blank Water	537M PFAS DOD QSM 5.3
2001472-02	0.24184 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001472-03	0.25174 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001472-04	0.28426 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
2001472-05	0.35081 ✓			1000	19-Jul-20 07:03	HNR			Groundwater	537M PFAS DOD QSM 5.3
B0G0090-BLK1	0.25 ✓			1000	19-Jul-20 07:03	HNR				QC
B0G0090-BS1	0.25 ✓			1000	19-Jul-20 07:03	HNR	20E1202 ✓	10 ✓		QC
B0G0090-BSD1	0.25 ✓			1000	19-Jul-20 07:03	HNR ✓	20E1202 ✓	10 ✓		QC

All bolded data on report verified against written benchsheet by (initial/date) TC 07/20/20

Printed: 7/20/2020 6:58:15AM
Page 1 of 1

Sample Data – PFAS Isotope Dilution Table B-15

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-30.qld

Last Altered: Friday, July 24, 2020 15:36:07 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:36:27 Pacific Daylight Time

Name: 200721P1-30, Date: 21-Jul-2020, Time: 20:22:10, ID: B0G0090-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80		1.126e3	0.250		2.56						YES
2	7	PFHxA	313.0 > 269.0		9.415e3	0.250		3.08						YES
3	9	HFPO-DA	285.1 > 168.9		1.697e3	0.250		3.31						YES
4	11	PFHpA	363.0 > 319		9.184e3	0.250		3.69						YES
5	12	ADONA	376.8 > 250.9		9.184e3	0.250		3.78						YES
6	51	13C3-PFBS-EIS	302.0 > 98.9	1.126e3		0.250	96.924	2.50	2.56	1130	46.473	92.9		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	9.415e3		0.250	854.580	3.08	3.08	9410	44.067	88.1		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.697e3		0.250	179.588	3.30	3.31	1700	37.807	75.6		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	9.184e3		0.250	833.947	3.68	3.69	9180	44.052	88.1		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	9.184e3		0.250	833.947	3.68	3.69	9180	44.052	88.1		
11	-1													
12	13	L-PFHxS	399 > 79.9		2.333e3	0.250		3.83						YES
13	1...	Total PFHxS	399 > 79.9	0.000e0	2.333e3	0.250		3.93		0.000				
14	16	L-PFOA	413 > 369		1.174e4	0.250		4.20						YES
15	1...	Total PFOA	413 > 369	0.000e0	1.174e4	0.250		4.60		0.000				
16	21	PFNA	463.0 > 418.8		1.112e4	0.250		4.64						YES
17	61	13C3-PFHxS-EIS	402 > 80	2.333e3		0.250	182.953	3.82	3.83	2330	51.008	102.0		
18	61	13C3-PFHxS-EIS	402 > 80	2.333e3		0.250	182.953	3.82	3.83	2330	51.008	102.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.174e4		0.250	1066.462	4.35	4.20	11700	44.046	88.1		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.174e4		0.250	1066.462	4.35	4.20	11700	44.046	88.1		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.112e4		0.250	943.916	4.96	4.64	11100	47.138	94.3		
22	-1													
23	23	L-PFOS	499 > 80		2.203e3	0.250		4.73						YES
24	1...	Total PFOS	499> 80	0.000e0	2.203e3	0.250		4.60		0.000				
25	25	9Cl-PF30NS	531 > 351		2.203e3	0.250		4.93						YES
26	26	PFDA	513 > 469		1.214e4	0.250		5.02						YES
27	33	PFUdA	563.0 > 519		1.176e4	0.250		5.34						YES
28	71	13C8-PFOS-EIS	507.1 > 80	2.203e3		0.250	193.524	4.72	4.73	2200	45.541	91.1		
29	71	13C8-PFOS-EIS	507.1 > 80	2.203e3		0.250	193.524	4.72	4.73	2200	45.541	91.1		
30	71	13C8-PFOS-EIS	507.1 > 80	2.203e3		0.250	193.524	4.72	4.73	2200	45.541	91.1		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.214e4		0.250	1149.255	5.01	5.02	12100	42.239	84.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.176e4		0.250	1217.713	5.33	5.34	11800	38.639	77.3		
33	-1													
34	29	L-MeFOSAA	570 > 419		2.744e3	0.250		5.16						YES
35	1...	Total N-MeFOSAA	570. > 419	0.000e0	2.744e3	0.250		5.19		0.000				
36	31	L-EtFOSAA	583.9 > 419		2.181e3	0.250		5.32						YES

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-30.qld

Last Altered: Friday, July 24, 2020 15:36:07 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:36:27 Pacific Daylight Time

Name: 200721P1-30, Date: 21-Jul-2020, Time: 20:22:10, ID: B0G0090-BLK1 Method Blank 0.25, Description: Method Blank

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	0.000e0	2.181e3	0.250		5.37		0.000				
38	35	11Cl-PF30UdS	631 > 451		1.316e4	0.250		5.56						YES
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.744e3		0.250	273.698	5.16	5.16	2740	40.107	80.2		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.744e3		0.250	273.698	5.16	5.16	2740	40.107	80.2		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.181e3		0.250	214.700	5.31	5.32	2180	40.626	81.3		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.181e3		0.250	214.700	5.31	5.32	2180	40.626	81.3		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	1.316e4		0.250	1316.711	5.85	5.62	13200	39.978	80.0		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.316e4	0.250		5.62						YES
46	39	PFTrDA	662.9 > 618.9		1.316e4	0.250		5.85						YES
47	41	PFTeDA	713.0 > 669.0		1.306e4	0.250		6.07						YES
48	1...	TDCA	498.3>106.9			0.250		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	2.203e3		0.250	193.524	4.72	4.73	2200	45.541	91.1		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	1.316e4		0.250	1316.711	5.85	5.62	13200	39.978	80.0		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	1.316e4		0.250	1316.711	5.85	5.62	13200	39.978	80.0		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.306e4		0.250	1368.133	6.07	6.07	13100	38.179	76.4		

RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-30.qld

Last Altered: Friday, July 24, 2020 15:36:07 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:36:27 Pacific Daylight Time

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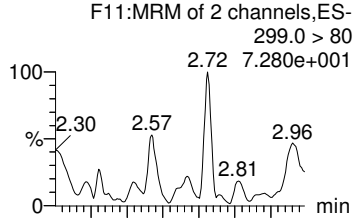
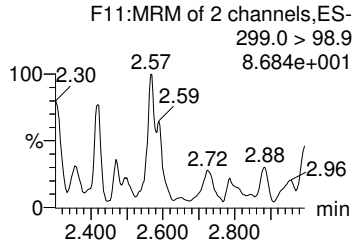
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

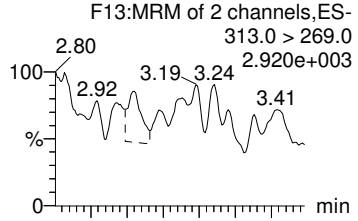
Name: 200721P1-30, Date: 21-Jul-2020, Time: 20:22:10, ID: B0G0090-BLK1 Method Blank 0.25, Description: Method Blank

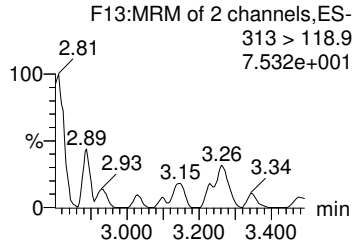
PFBS



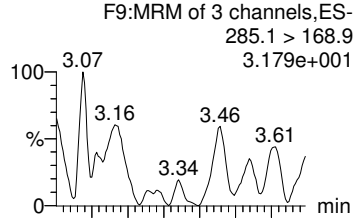


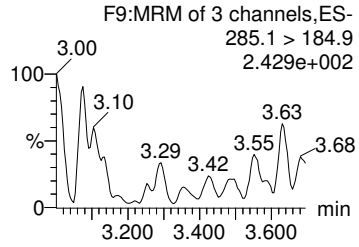
PFHxA





HFPO-DA





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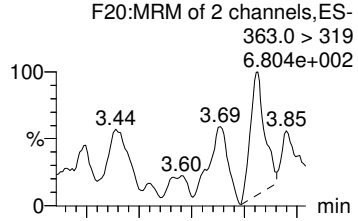

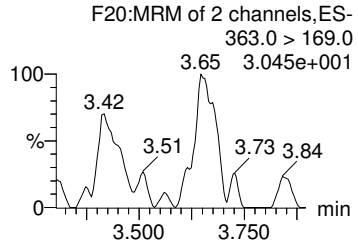

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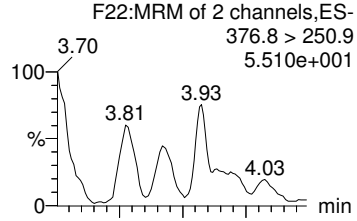

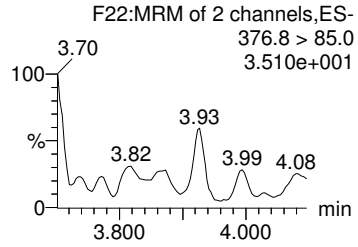

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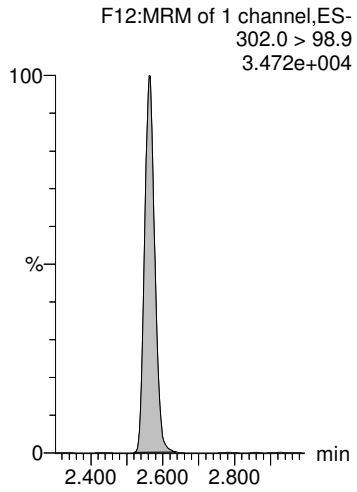
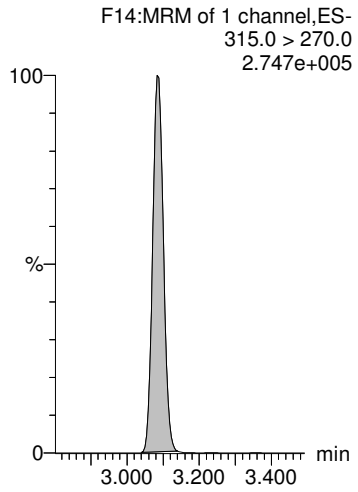


13C2-PFHxA-EIS



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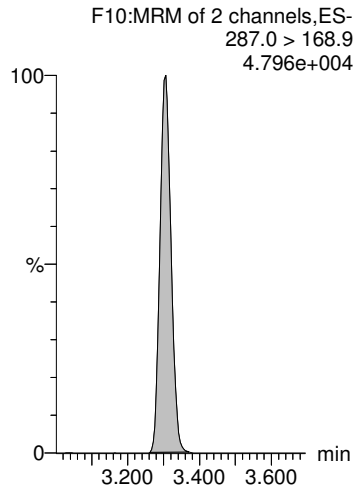

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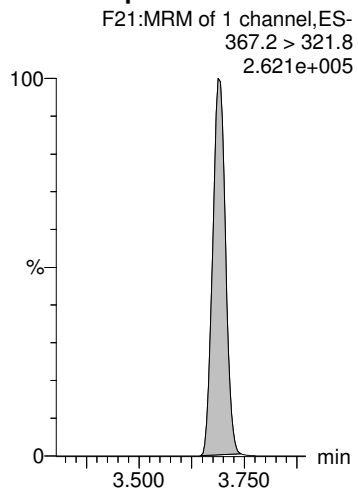

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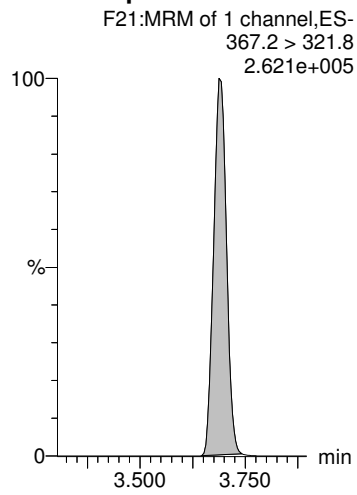

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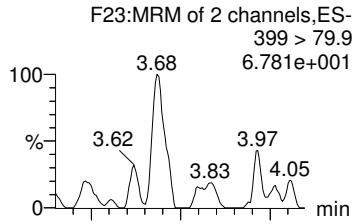
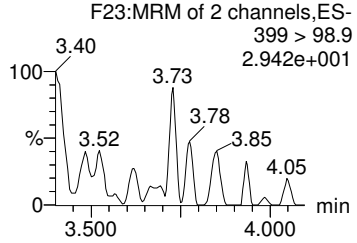
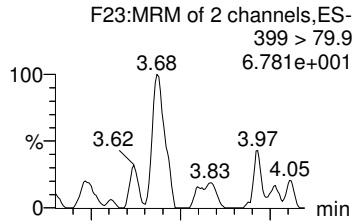
Name: 200721P1-30, Date: 21-Jul-2020, Time: 20:22:10, ID: B0G0090-BLK1 Method Blank 0.25, Description: Method Blank

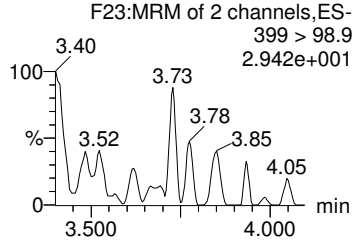
L-PFHxS



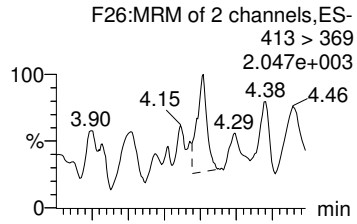


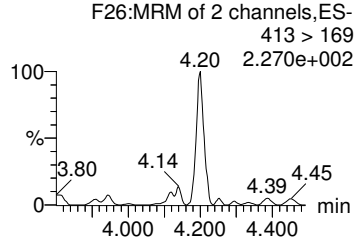
Total PFHxS



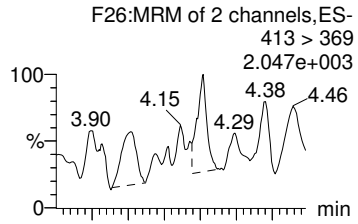


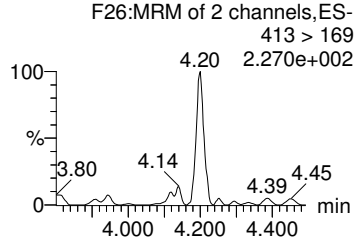
L-PFOA



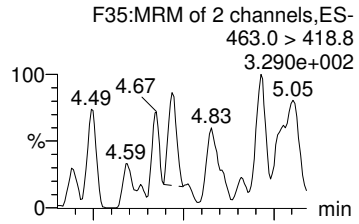


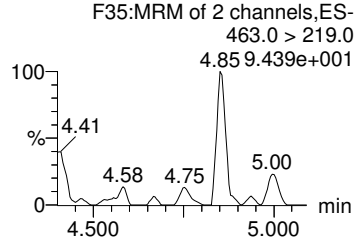
Total PFOA



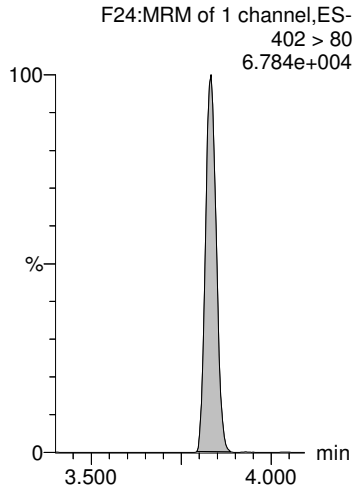


PFNA

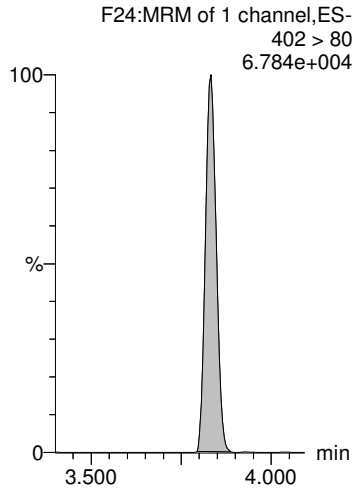




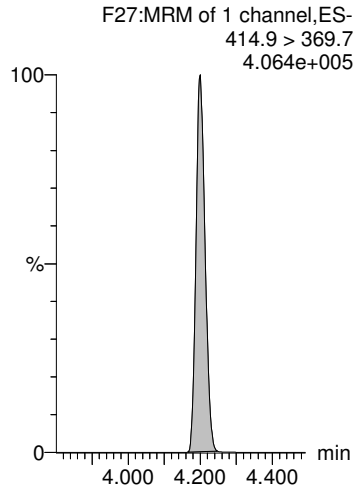
13C3-PFHxS-EIS



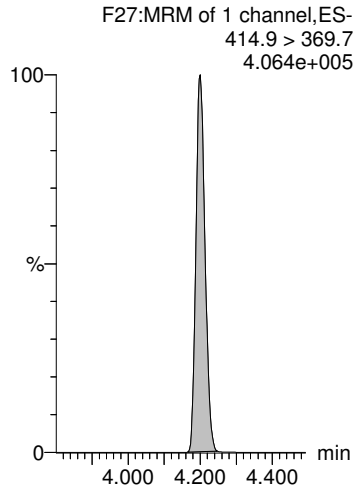
13C3-PFHxS-EIS



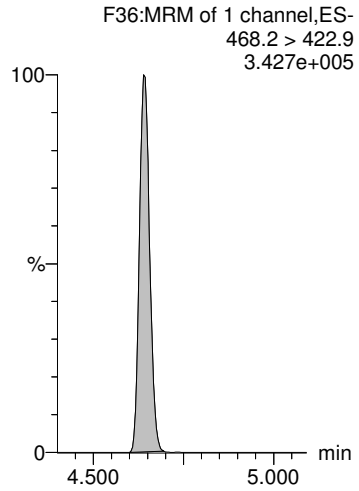
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS

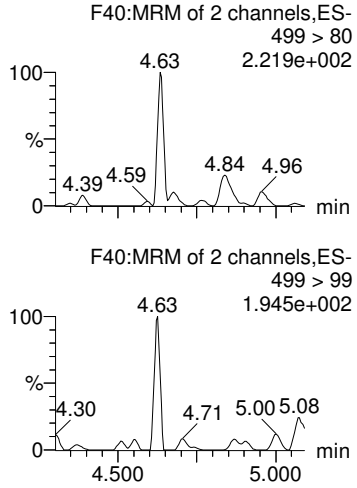


Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-30.qld

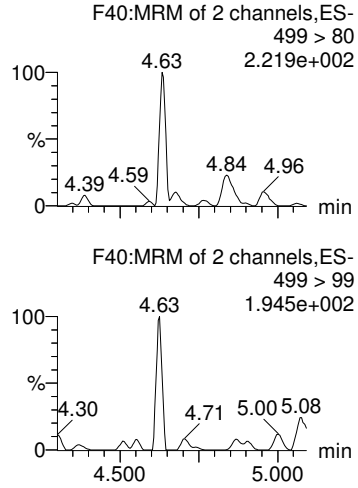
Last Altered: Friday, July 24, 2020 15:36:07 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:36:27 Pacific Daylight Time

Name: 200721P1-30, Date: 21-Jul-2020, Time: 20:22:10, ID: B0G0090-BLK1 Method Blank 0.25, Description: Method Blank

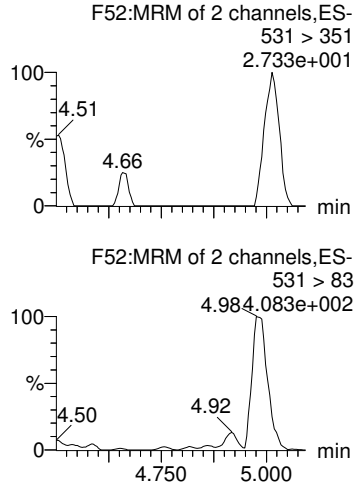
L-PFOS



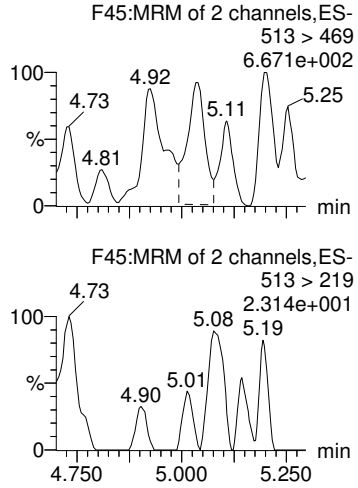
Total PFOS



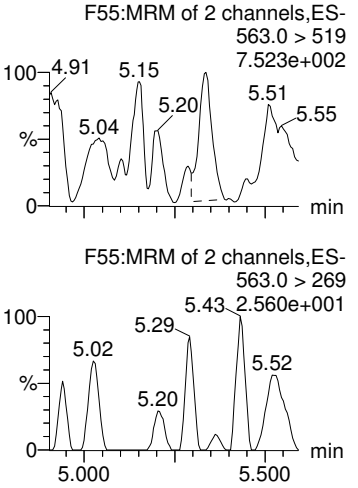
9Cl-PF30NS



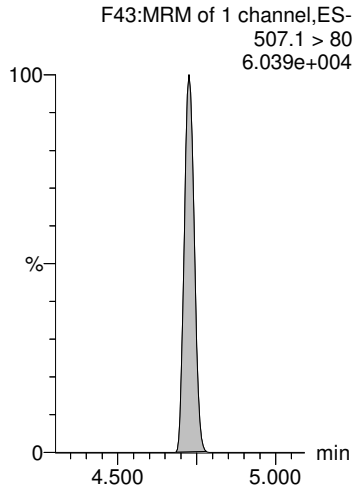
PFDA



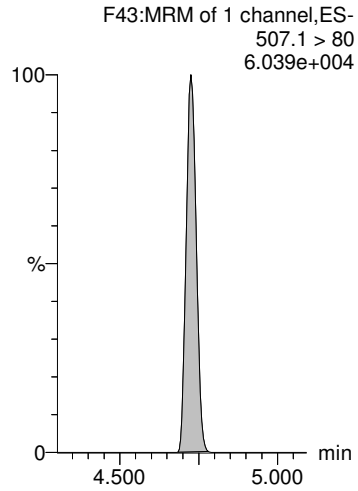
PFUdA



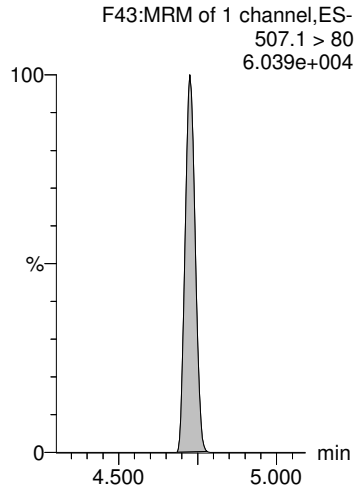
13C8-PFOS-EIS



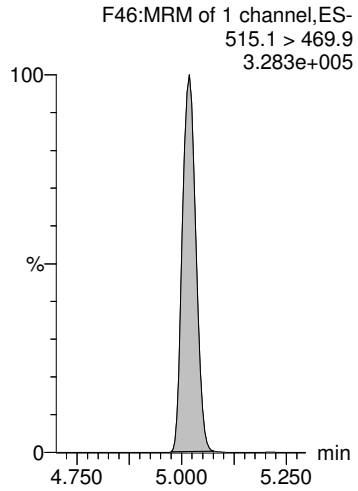
13C8-PFOS-EIS



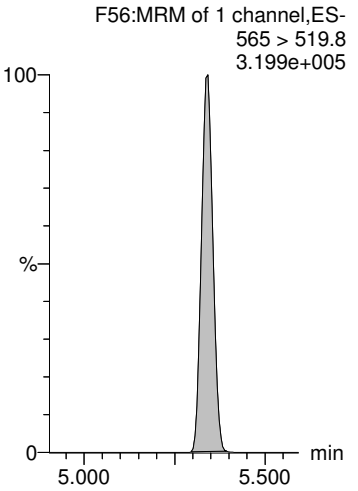
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



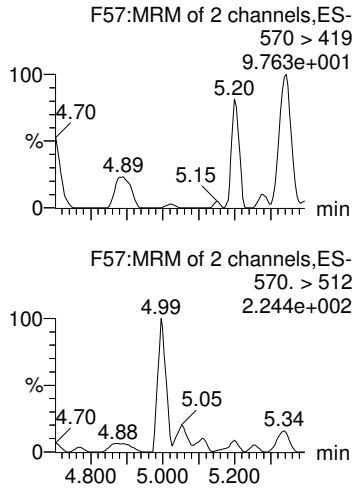
RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-30.qld

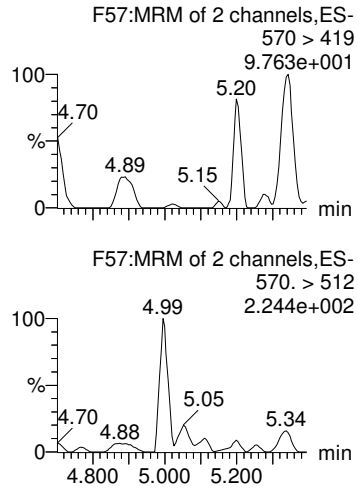
Last Altered: Friday, July 24, 2020 15:36:07 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:36:27 Pacific Daylight Time

Name: 200721P1-30, Date: 21-Jul-2020, Time: 20:22:10, ID: B0G0090-BLK1 Method Blank 0.25, Description: Method Blank

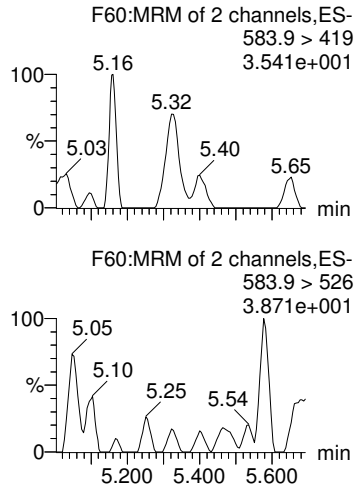
L-MeFOSAA



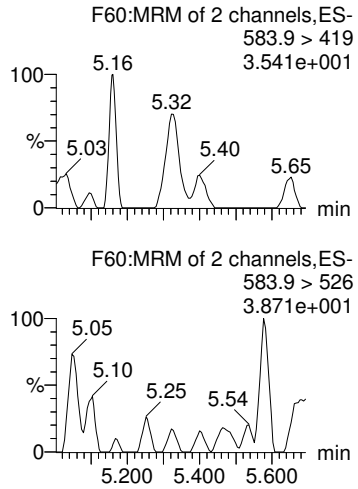
Total N-MeFOSAA



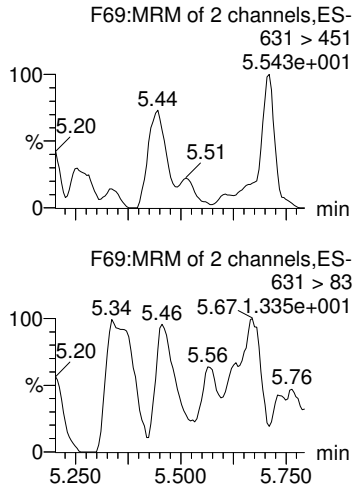
L-EtFOSAA



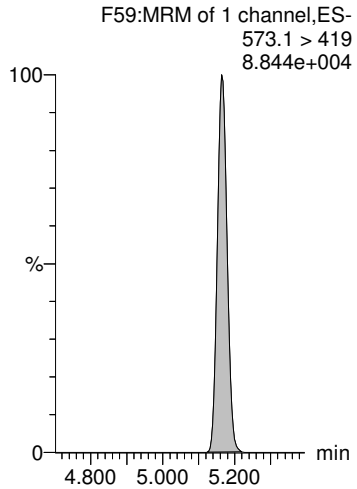
Total N-EtFOSAA



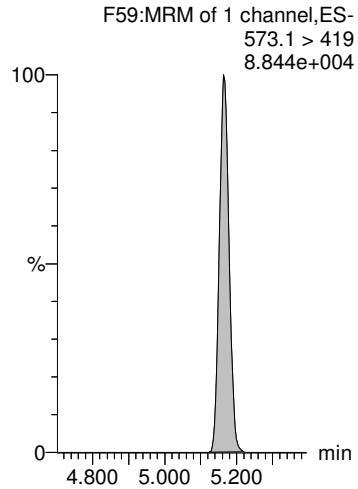
11Cl-PF30UdS



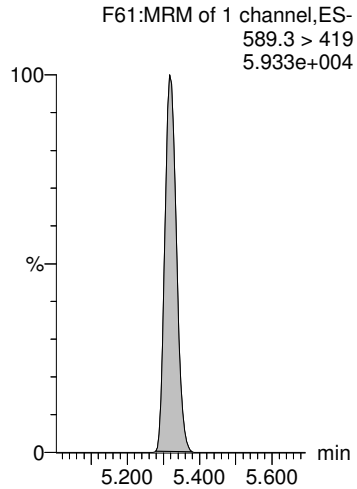
d3-N-MeFOSAA-EIS



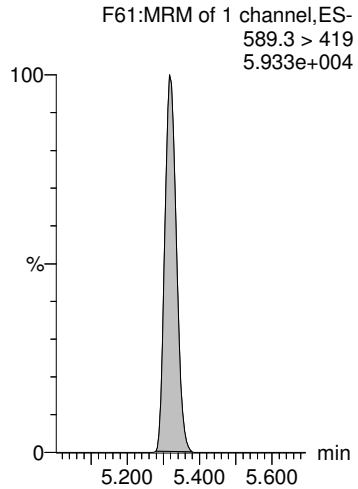
d3-N-MeFOSAA-EIS



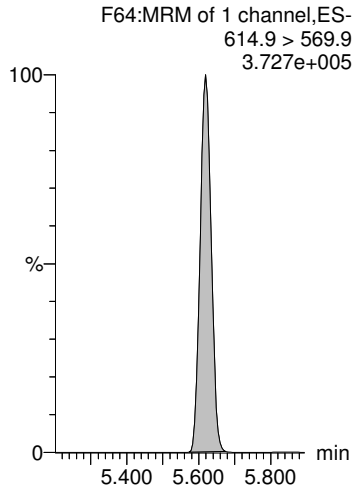
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



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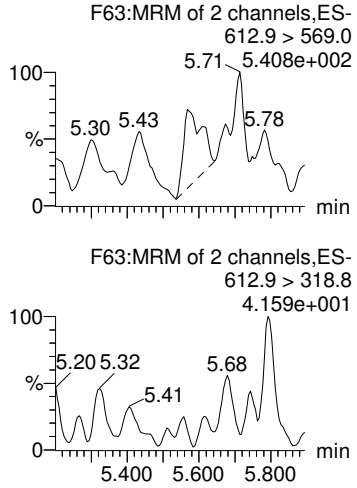
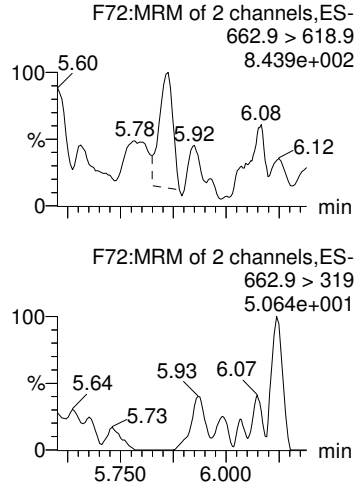
Last Altered: Friday, July 24, 2020 15:36:07 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:36:27 Pacific Daylight Time

Name: 200721P1-30, Date: 21-Jul-2020, Time: 20:22:10, ID: B0G0090-BLK1 Method Blank 0.25, Description: Method Blank

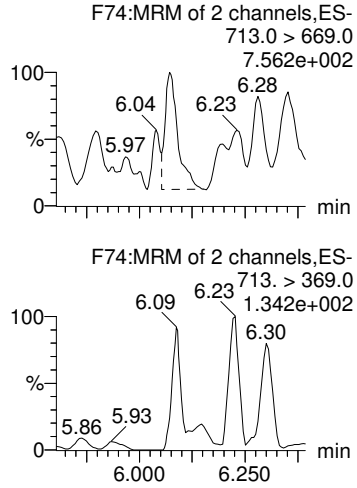
PFDoA



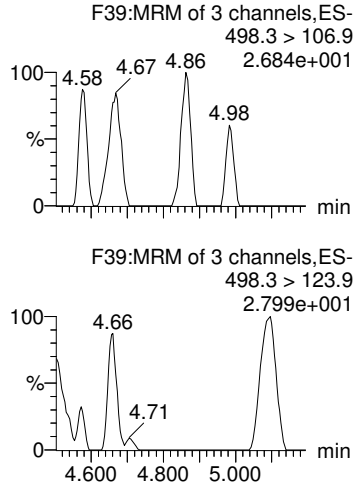
PFTrDA



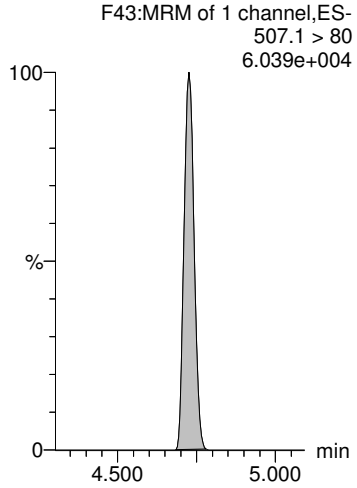
PFTeDA



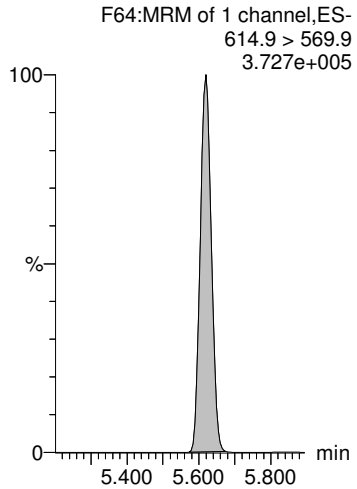
TDCA



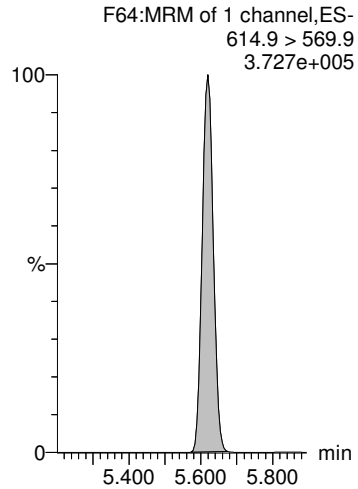
13C8-PFOS-EIS



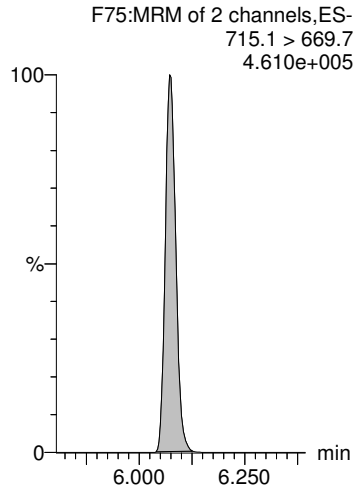
13C2-PFDoA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-31.qld

Last Altered: Friday, July 24, 2020 15:44:36 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:46:08 Pacific Daylight Time

Name: 200721P1-31, Date: 21-Jul-2020, Time: 20:32:36, ID: B0G0090-BS1 OPR 0.25, Description: OPR

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80	2.214e3	1.061e3	0.250		2.56	2.56	26.1	41.323	103.3	2.435	NO
2	7	PFHxA	313.0 > 269.0	7.590e3	8.625e3	0.250		3.09	3.09	11.0	41.071	102.7	14.706	NO
3	9	HFPO-DA	285.1 > 168.9	1.419e3	1.778e3	0.250		3.31	3.31	9.97	38.767	96.9	2.312	NO
4	11	PFHpA	363.0 > 319	8.345e3	8.694e3	0.250		3.69	3.69	12.0	39.209	98.0	37.137	NO
5	12	ADONA	376.8 > 250.9	1.603e4	8.694e3	0.250		3.78	3.80	23.0	40.094	100.2	3.832	NO
6	51	13C3-PFBS-EIS	302.0 > 98.9	1.061e3		0.250	96.924	2.50	2.56	1060	43.767	87.5		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	8.625e3		0.250	854.580	3.08	3.09	8620	40.370	80.7		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.778e3		0.250	179.588	3.30	3.31	1780	39.606	79.2		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.694e3		0.250	833.947	3.68	3.69	8690	41.701	83.4		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.694e3		0.250	833.947	3.68	3.69	8690	41.701	83.4		
11	-1													
12	13	L-PFHxS	399 > 79.9	2.071e3	2.127e3	0.250		3.84	3.84	12.2	41.028	102.6	3.475	NO
13	1...	Total PFHxS	399 > 79.9	2.071e3	2.127e3	0.250		3.93		12.2	41.028			
14	16	L-PFOA	413 > 369	8.589e3	1.153e4	0.250		4.20	4.21	9.31	38.107	95.3	2.875	NO
15	1...	Total PFOA	413 > 369	8.589e3	1.153e4	0.250		4.60		9.31	38.107			
16	21	PFNA	463.0 > 418.8	1.048e4	1.079e4	0.250		4.64	4.65	12.1	38.462	96.2	14.917	NO
17	61	13C3-PFHxS-EIS	402 > 80	2.127e3		0.250	182.953	3.82	3.84	2130	46.513	93.0		
18	61	13C3-PFHxS-EIS	402 > 80	2.127e3		0.250	182.953	3.82	3.84	2130	46.513	93.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.153e4		0.250	1066.462	4.35	4.20	11500	43.263	86.5		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.153e4		0.250	1066.462	4.35	4.20	11500	43.263	86.5		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.079e4		0.250	943.916	4.96	4.64	10800	45.706	91.4		
22	-1													
23	23	L-PFOS	499 > 80	2.161e3	2.015e3	0.250		4.73	4.73	13.4	41.685	104.2	2.772	NO
24	1...	Total PFOS	499> 80	2.161e3	2.015e3	0.250		4.60		13.4	41.685			
25	25	9Cl-PF30NS	531 > 351	3.961e3	2.015e3	0.250		4.93	4.95	24.6	38.296	95.7	36.110	NO
26	26	PFDA	513 > 469	8.108e3	1.207e4	0.250		5.02	5.02	8.39	41.874	104.7	5.872	NO
27	33	PFUdA	563.0 > 519	8.284e3	1.111e4	0.250		5.34	5.34	9.32	37.881	94.7	20.423	NO
28	71	13C8-PFOS-EIS	507.1 > 80	2.015e3		0.250	193.524	4.72	4.73	2020	41.651	83.3		
29	71	13C8-PFOS-EIS	507.1 > 80	2.015e3		0.250	193.524	4.72	4.73	2020	41.651	83.3		
30	71	13C8-PFOS-EIS	507.1 > 80	2.015e3		0.250	193.524	4.72	4.73	2020	41.651	83.3		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.207e4		0.250	1149.255	5.01	5.02	12100	42.025	84.0		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.111e4		0.250	1217.713	5.33	5.34	11100	36.488	73.0		
33	-1													
34	29	L-MeFOSAA	570 > 419	2.351e3	2.427e3	0.250		5.17	5.17	12.1	40.839	102.1	1.723	NO
35	1...	Total N-MeFOSAA	570. > 419	2.351e3	2.427e3	0.250		5.19		12.1	40.839			
36	31	L-EtFOSAA	583.9 > 419	2.690e3	1.762e3	0.250		5.32	5.33	19.1	47.284	118.2	1.465	NO

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-31.qld

Last Altered: Friday, July 24, 2020 15:44:36 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:46:08 Pacific Daylight Time

Name: 200721P1-31, Date: 21-Jul-2020, Time: 20:32:36, ID: B0G0090-BS1 OPR 0.25, Description: OPR

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	2.690e3	1.762e3	0.250		5.37		19.1	47.284			
38	35	11Cl-PF30UdS	631 > 451	2.723e3	1.143e4	0.250		5.56	5.55	2.98	40.195	100.5	16.448	NO
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.427e3		0.250	273.698	5.16	5.17	2430	35.467	70.9		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.427e3		0.250	273.698	5.16	5.17	2430	35.467	70.9		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	1.762e3		0.250	214.700	5.31	5.32	1760	32.821	65.6		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	1.762e3		0.250	214.700	5.31	5.32	1760	32.821	65.6		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	1.143e4		0.250	1316.711	5.85	5.62	11400	34.711	69.4		
44	-1													
45	37	PFDoA	612.9 > 569.0	8.137e3	1.143e4	0.250		5.62	5.62	8.90	39.395	98.5	10.607	NO
46	39	PFTrDA	662.9 > 618.9	9.643e3	1.143e4	0.250		5.86	5.87	10.5	41.220	103.0	104.884	NO
47	41	PFTeDA	713.0 > 669.0	6.179e3	1.223e4	0.250		6.07	6.08	6.32	40.904	102.3	14.025	NO
48	1...	TDCA	498.3>106.9			0.250		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	2.015e3		0.250	193.524	4.72	4.73	2020	41.651	83.3		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	1.143e4		0.250	1316.711	5.85	5.62	11400	34.711	69.4		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	1.143e4		0.250	1316.711	5.85	5.62	11400	34.711	69.4		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.223e4		0.250	1368.133	6.07	6.07	12200	35.755	71.5		

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-31.qld

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Printed: Friday, July 24, 2020 15:46:08 Pacific Daylight Time

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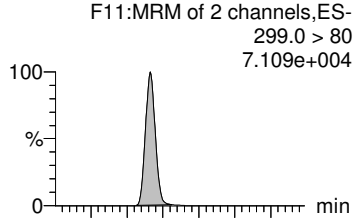
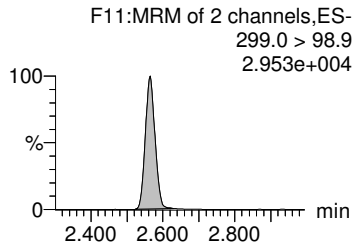
Name: 200721P1-31, Date: 21-Jul-2020, Time: 20:32:36, ID: B0G0090-BS1 OPR 0.25, Description: OPR

PFBS





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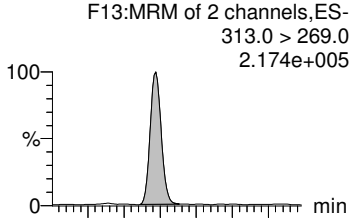
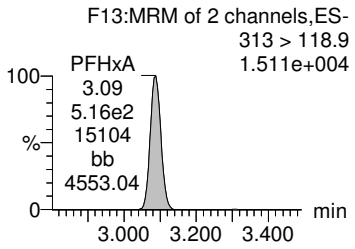
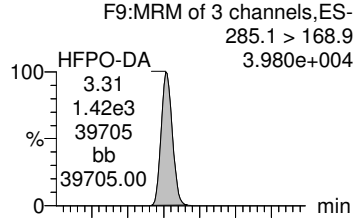
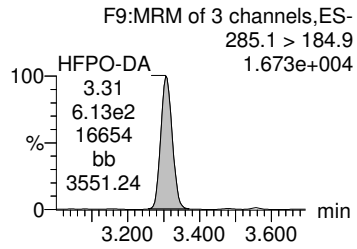




HFPO-DA





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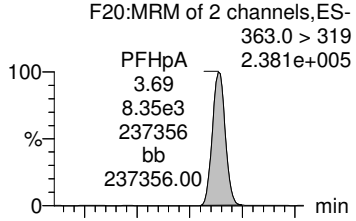

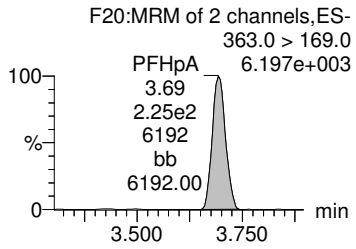

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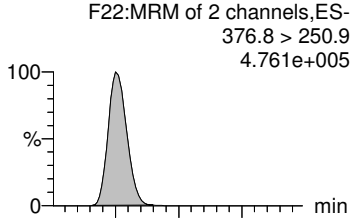

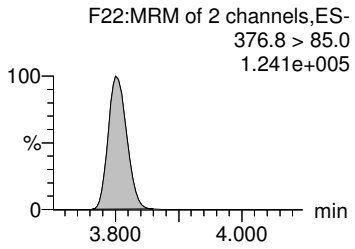

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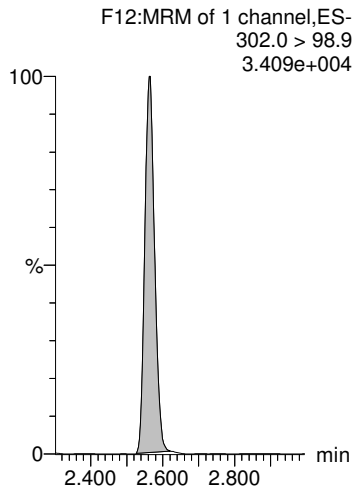

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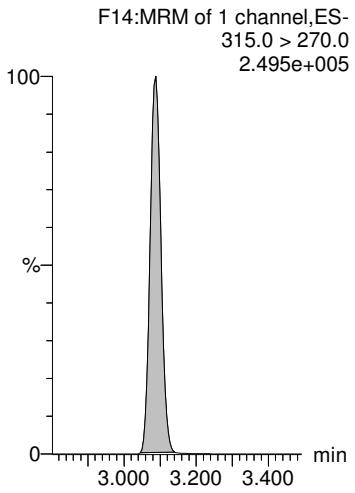

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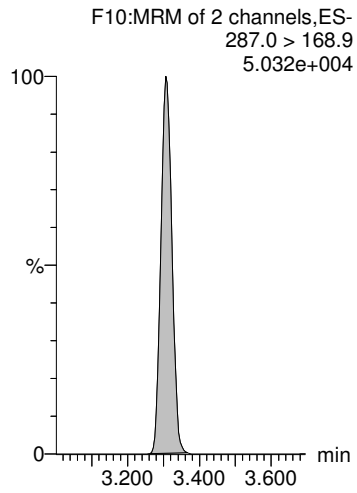

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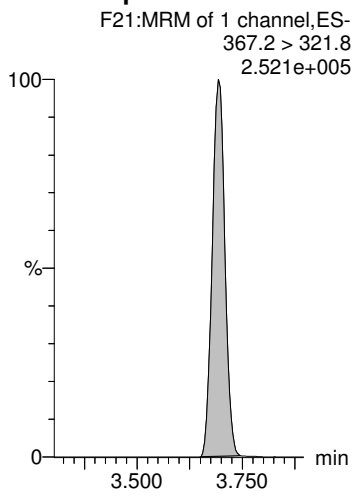

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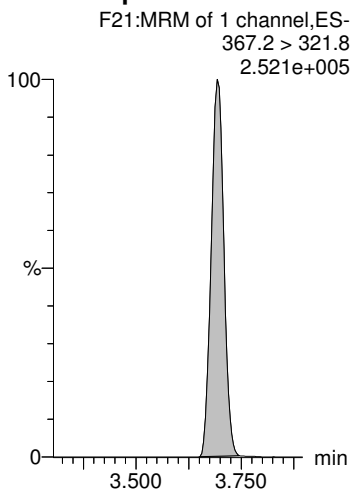

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Name: 200721P1-31, Date: 21-Jul-2020, Time: 20:32:36, ID: B0G0090-BS1 OPR 0.25, Description: OPR

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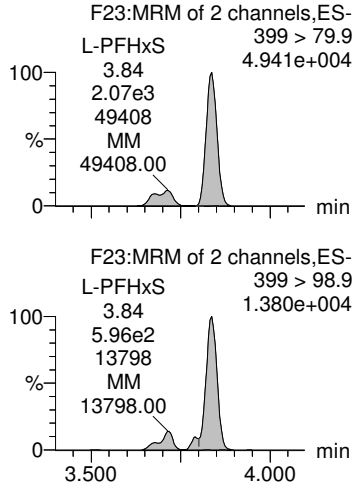

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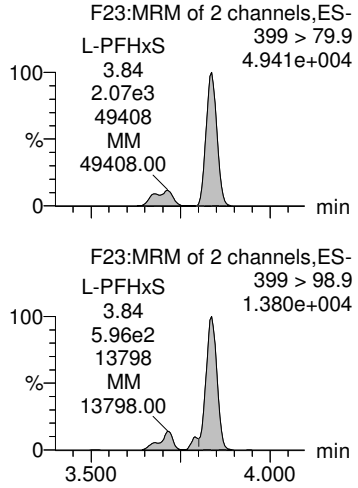
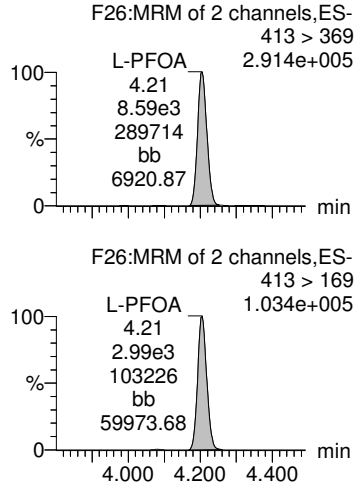


L-PFOA



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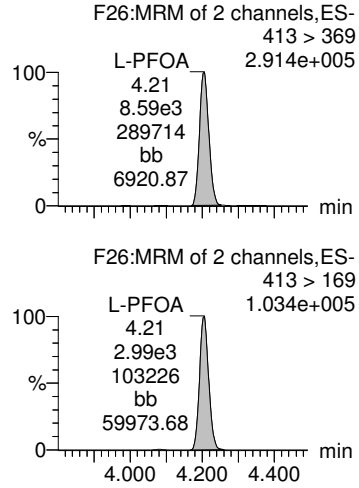

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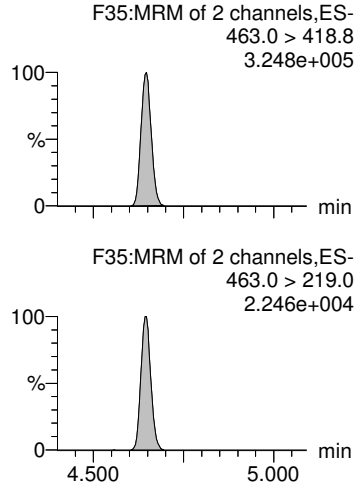

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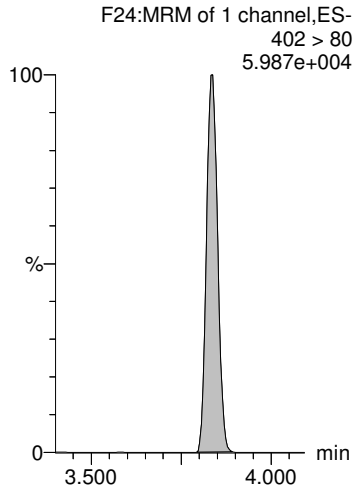

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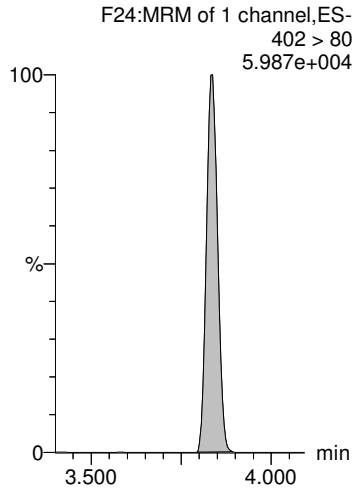

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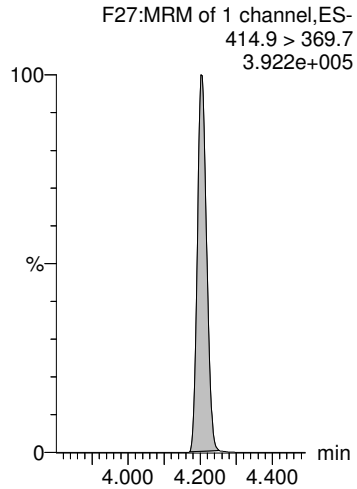

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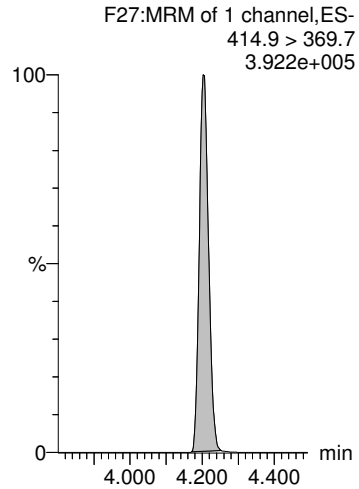

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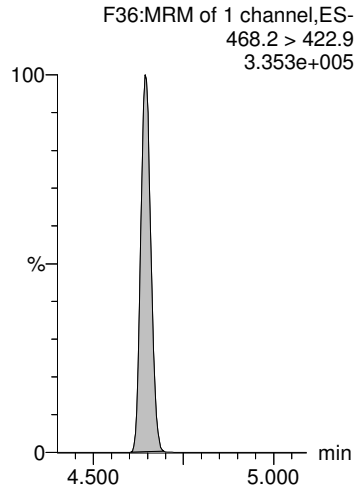

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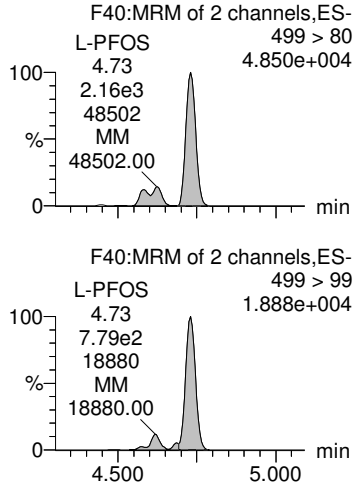
L-PFOS



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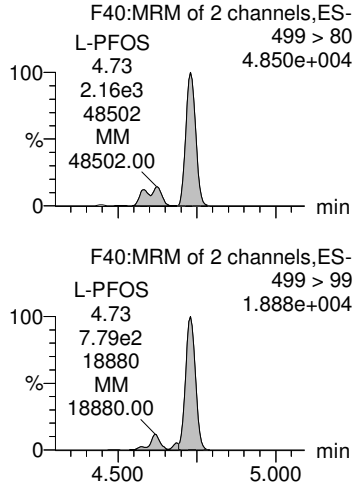
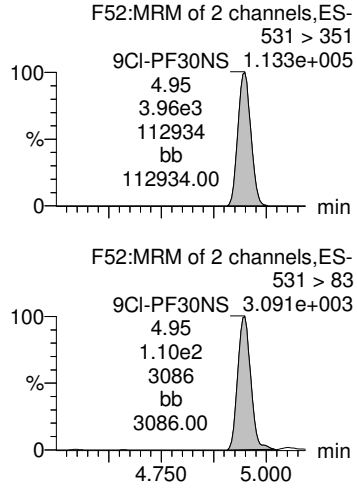


9Cl-PF30NS



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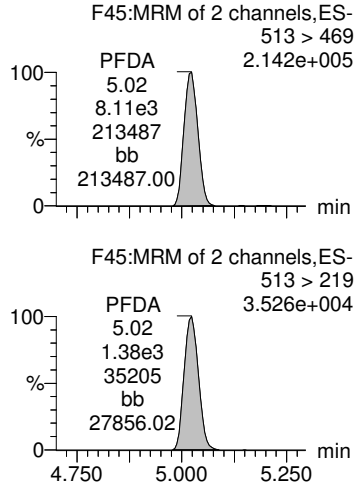

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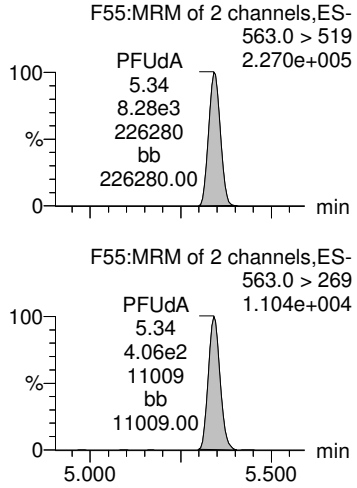

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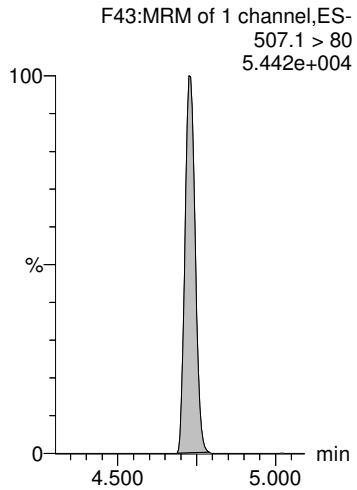

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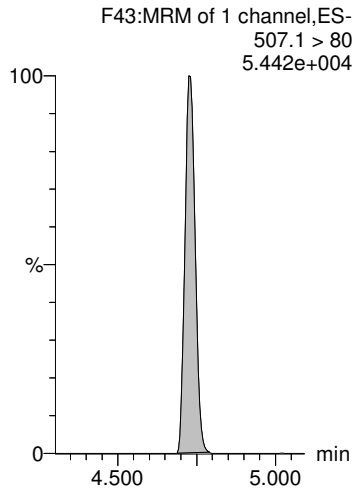

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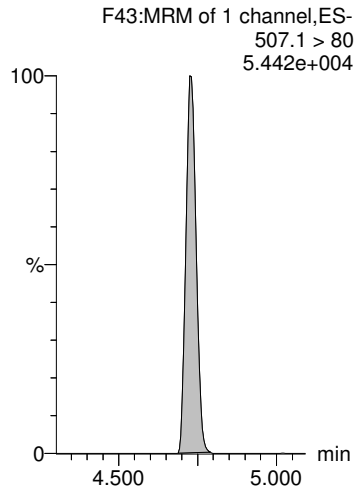

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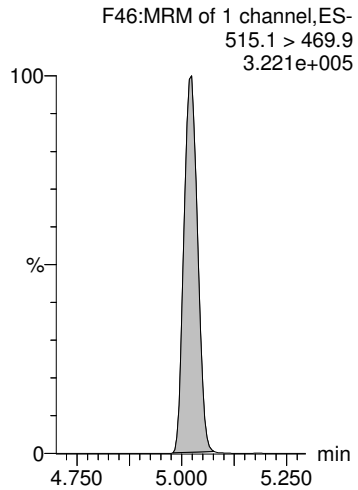

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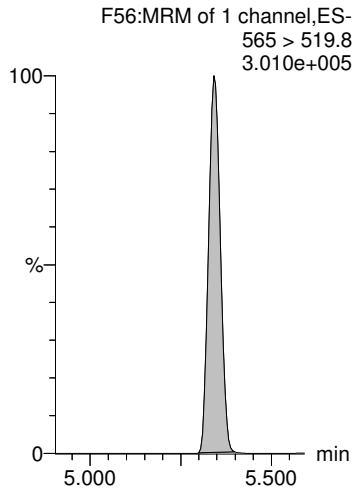

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Name: 200721P1-31, Date: 21-Jul-2020, Time: 20:32:36, ID: B0G0090-BS1 OPR 0.25, Description: OPR

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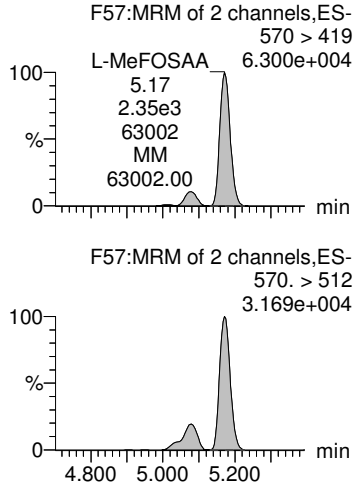

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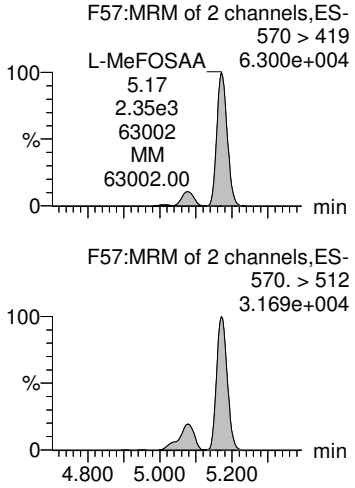

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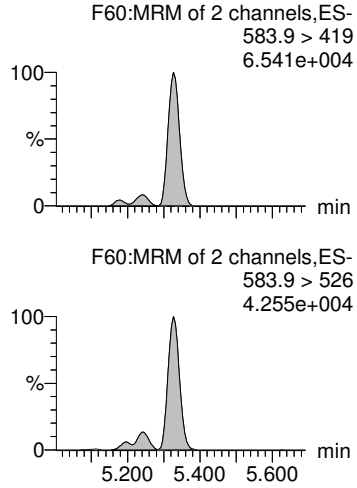

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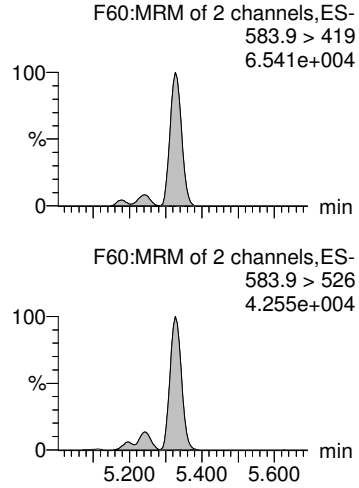
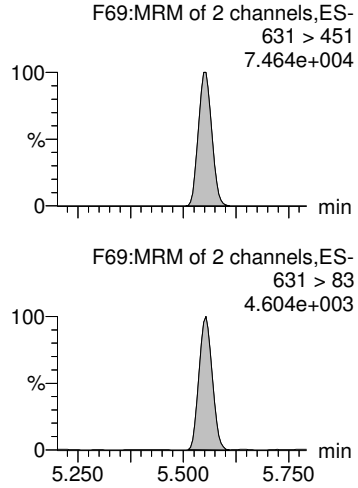
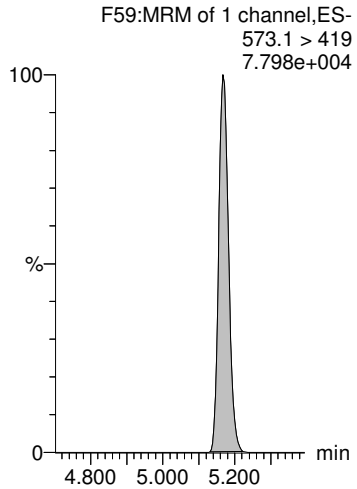


11Cl-PF30UdS



d3-N-MeFOSAA-EIS



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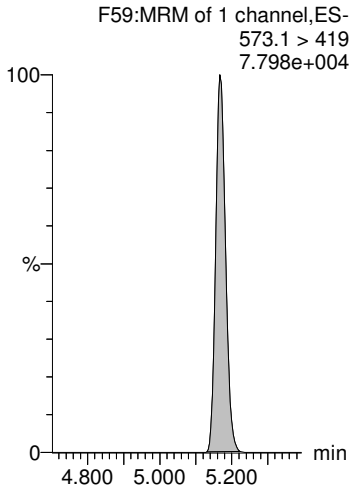

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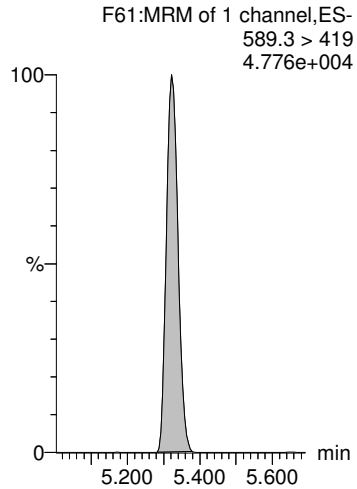

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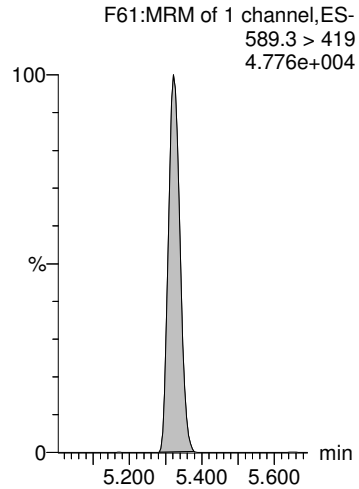

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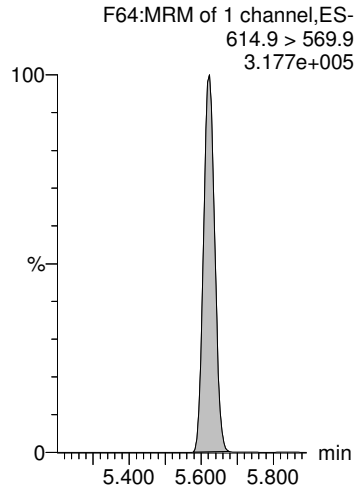

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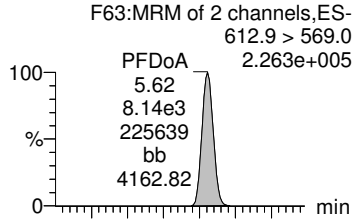
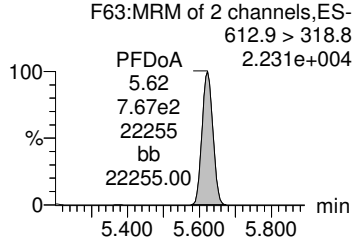
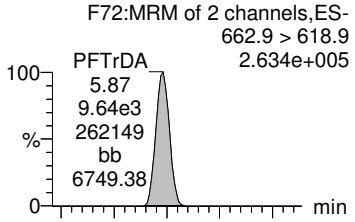
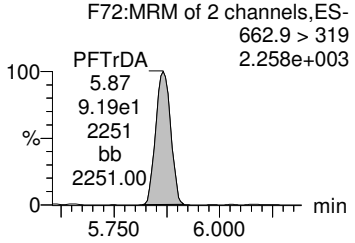
PFDoA



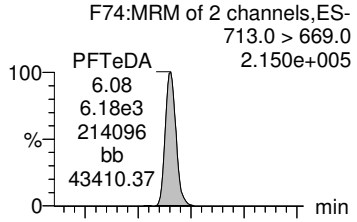


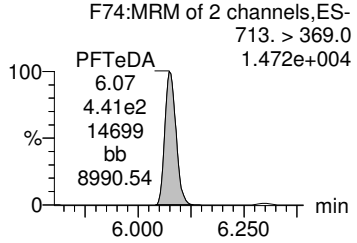
PFTrDA



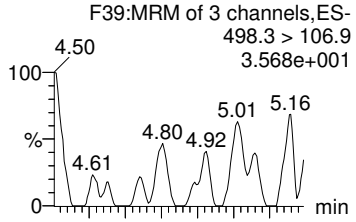


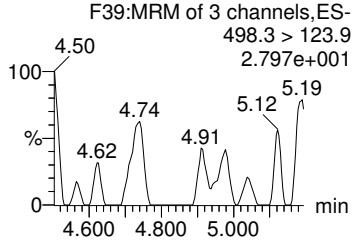
PFTeDA



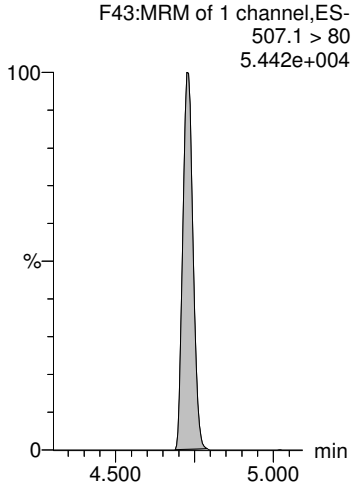


TDCA

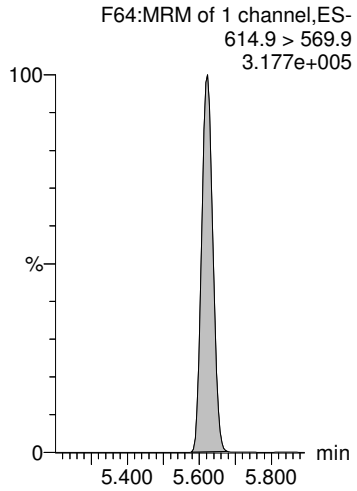




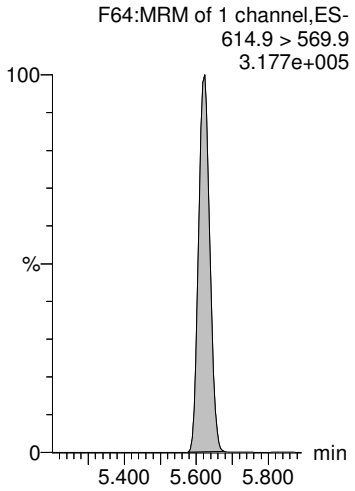
13C8-PFOS-EIS



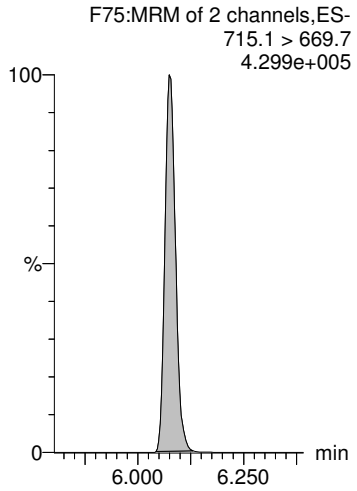
13C2-PFDoA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-32.qld

Last Altered: Friday, July 24, 2020 15:53:06 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:53:59 Pacific Daylight Time

Name: 200721P1-32, Date: 21-Jul-2020, Time: 20:43:13, ID: B0G0090-BSD1 LCSD 0.25, Description: LCSD

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80	2.187e3	1.122e3	0.250		2.56	2.56	24.4	38.591	96.5	2.411	NO
2	7	PFHxA	313.0 > 269.0	7.423e3	8.775e3	0.250		3.08	3.08	10.6	39.472	98.7	14.794	NO
3	9	HFPO-DA	285.1 > 168.9	1.460e3	1.871e3	0.250		3.30	3.31	9.75	37.907	94.8	2.493	NO
4	11	PFHpA	363.0 > 319	8.864e3	9.273e3	0.250		3.69	3.69	11.9	39.050	97.6	46.902	NO
5	12	ADONA	376.8 > 250.9	1.600e4	9.273e3	0.250		3.78	3.80	21.6	37.522	93.8	3.847	NO
6	51	13C3-PFBS-EIS	302.0 > 98.9	1.122e3		0.250	96.924	2.50	2.56	1120	46.312	92.6		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	8.775e3		0.250	854.580	3.08	3.08	8780	41.075	82.1		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.871e3		0.250	179.588	3.30	3.30	1870	41.677	83.4		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	9.273e3		0.250	833.947	3.68	3.69	9270	44.477	89.0		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	9.273e3		0.250	833.947	3.68	3.69	9270	44.477	89.0		
11	-1													
12	13	L-PFHxS	399 > 79.9	2.130e3	2.378e3	0.250		3.83	3.83	11.2	37.747	94.4	4.280	NO
13	1...	Total PFHxS	399 > 79.9	2.130e3	2.378e3	0.250		3.93		11.2	37.747			
14	16	L-PFOA	413 > 369	8.885e3	1.197e4	0.250		4.20	4.20	9.28	37.978	94.9	3.052	NO
15	1...	Total PFOA	413 > 369	8.885e3	1.197e4	0.250		4.60		9.28	37.978			
16	21	PFNA	463.0 > 418.8	1.035e4	1.107e4	0.250		4.64	4.64	11.7	37.023	92.6	13.375	NO
17	61	13C3-PFHxS-EIS	402 > 80	2.378e3		0.250	182.953	3.82	3.83	2380	51.997	104.0		
18	61	13C3-PFHxS-EIS	402 > 80	2.378e3		0.250	182.953	3.82	3.83	2380	51.997	104.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.197e4		0.250	1066.462	4.35	4.20	12000	44.903	89.8		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.197e4		0.250	1066.462	4.35	4.20	12000	44.903	89.8		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.107e4		0.250	943.916	4.96	4.64	11100	46.898	93.8		
22	-1													
23	23	L-PFOS	499 > 80	2.066e3	2.254e3	0.250		4.73	4.73	11.5	35.661	89.2	2.317	NO
24	1...	Total PFOS	499> 80	2.066e3	2.254e3	0.250		4.60		11.5	35.661			
25	25	9Cl-PF30NS	531 > 351	4.031e3	2.254e3	0.250		4.93	4.94	22.4	34.863	87.2	34.391	NO
26	26	PFDA	513 > 469	7.827e3	1.208e4	0.250		5.02	5.02	8.10	40.398	101.0	4.948	NO
27	33	PFUdA	563.0 > 519	8.901e3	1.164e4	0.250		5.34	5.34	9.56	38.847	97.1	21.757	NO
28	71	13C8-PFOS-EIS	507.1 > 80	2.254e3		0.250	193.524	4.72	4.73	2250	46.585	93.2		
29	71	13C8-PFOS-EIS	507.1 > 80	2.254e3		0.250	193.524	4.72	4.73	2250	46.585	93.2		
30	71	13C8-PFOS-EIS	507.1 > 80	2.254e3		0.250	193.524	4.72	4.73	2250	46.585	93.2		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.208e4		0.250	1149.255	5.01	5.02	12100	42.047	84.1		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.164e4		0.250	1217.713	5.33	5.34	11600	38.235	76.5		
33	-1													
34	29	L-MeFOSAA	570 > 419	2.300e3	2.532e3	0.250		5.16	5.17	11.4	38.304	95.8	1.684	NO
35	1...	Total N-MeFOSAA	570. > 419	2.300e3	2.532e3	0.250		5.19		11.4	38.304			
36	31	L-EtFOSAA	583.9 > 419	2.607e3	2.117e3	0.250		5.32	5.33	15.4	38.087	95.2	1.311	NO

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-32.qld

Last Altered: Friday, July 24, 2020 15:53:06 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:53:59 Pacific Daylight Time

Name: 200721P1-32, Date: 21-Jul-2020, Time: 20:43:13, ID: B0G0090-BSD1 LCSD 0.25, Description: LCSD

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	2.607e3	2.117e3	0.250		5.37		15.4	38.087			
38	35	11Cl-PF30UdS	631 > 451	2.844e3	1.258e4	0.250		5.56	5.55	2.83	38.151	95.4	15.619	NO
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.532e3		0.250	273.698	5.16	5.16	2530	37.001	74.0		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.532e3		0.250	273.698	5.16	5.16	2530	37.001	74.0		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.117e3		0.250	214.700	5.31	5.32	2120	39.435	78.9		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.117e3		0.250	214.700	5.31	5.32	2120	39.435	78.9		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	1.258e4		0.250	1316.711	5.85	5.62	12600	38.203	76.4		
44	-1													
45	37	PFDoA	612.9 > 569.0	8.539e3	1.258e4	0.250		5.62	5.62	8.49	37.559	93.9	10.420	NO
46	39	PFTrDA	662.9 > 618.9	1.048e4	1.258e4	0.250		5.85	5.86	10.4	40.715	101.8	108.556	NO
47	41	PFTeDA	713.0 > 669.0	6.206e3	1.331e4	0.250		6.07	6.07	5.83	37.733	94.3	13.449	NO
48	1...	TDCA	498.3>106.9			0.250		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	2.254e3		0.250	193.524	4.72	4.73	2250	46.585	93.2		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	1.258e4		0.250	1316.711	5.85	5.62	12600	38.203	76.4		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	1.258e4		0.250	1316.711	5.85	5.62	12600	38.203	76.4		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.331e4		0.250	1368.133	6.07	6.07	13300	38.926	77.9		

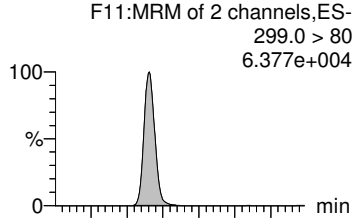
Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-32.qld

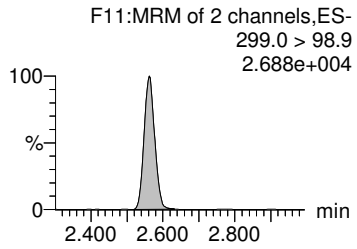
Last Altered: Friday, July 24, 2020 15:53:06 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:53:59 Pacific Daylight Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 24 Jul 2020 15:48:30
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

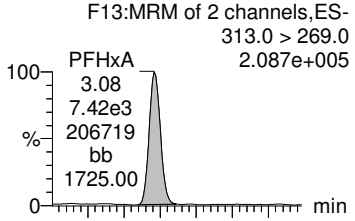
Name: 200721P1-32, Date: 21-Jul-2020, Time: 20:43:13, ID: B0G0090-BSD1 LCSD 0.25, Description: LCSD

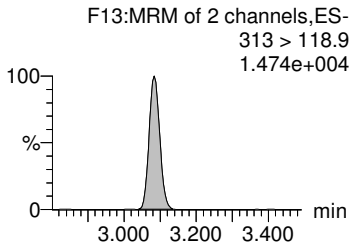
PFBS



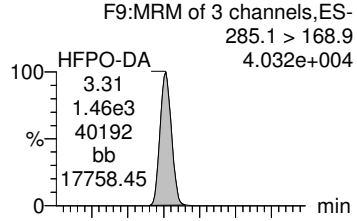


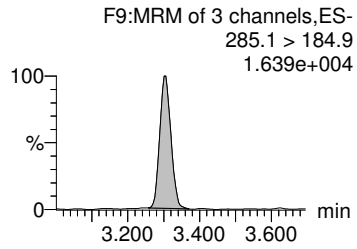
PFHxA



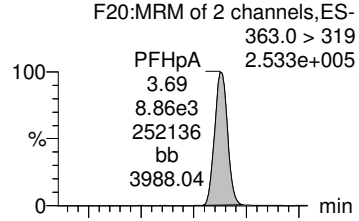


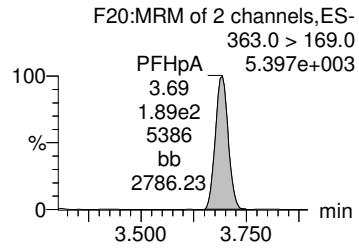
HFPO-DA



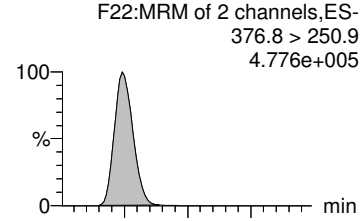


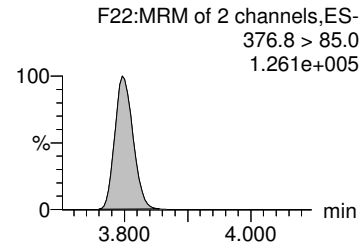
PFHpA



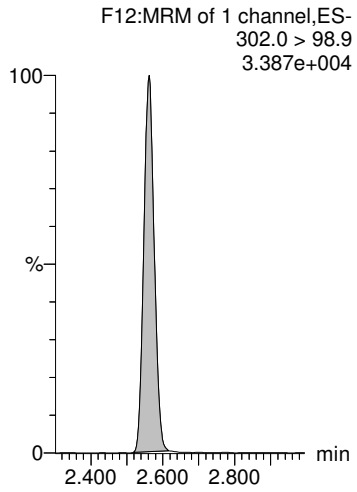


ADONA

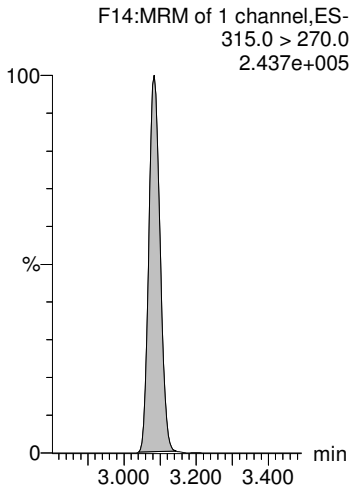




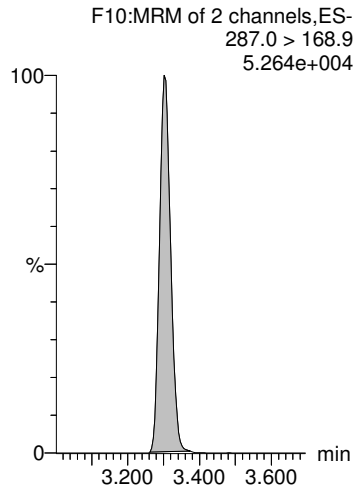
13C3-PFBS-EIS



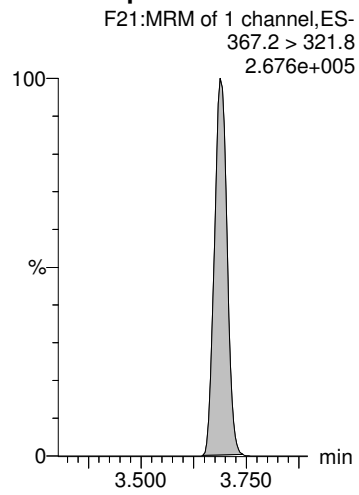
13C2-PFHxA-EIS



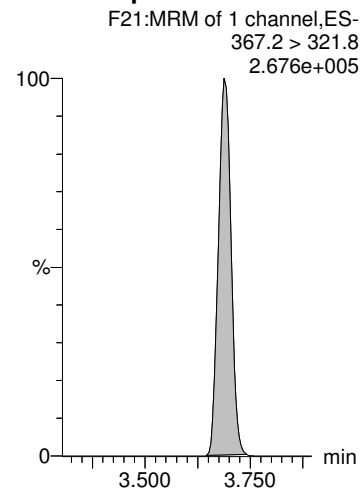
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



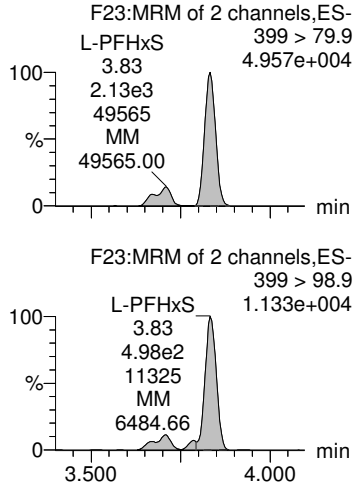
RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-32.qld

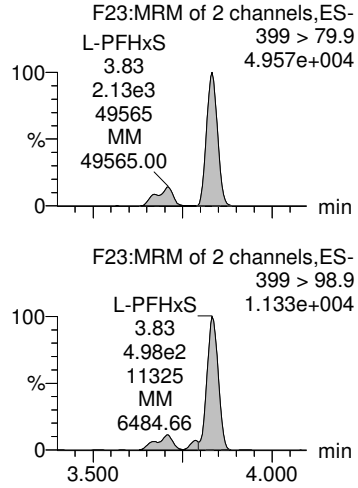
Last Altered: Friday, July 24, 2020 15:53:06 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:53:59 Pacific Daylight Time

Name: 200721P1-32, Date: 21-Jul-2020, Time: 20:43:13, ID: B0G0090-BSD1 LCSD 0.25, Description: LCSD

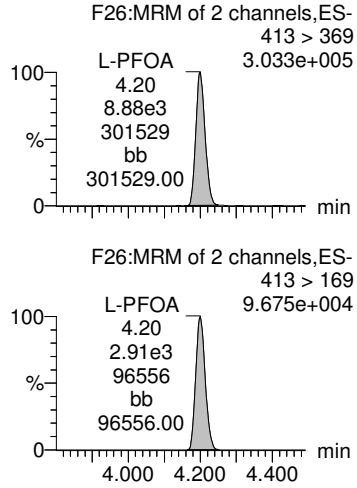
L-PFHxS



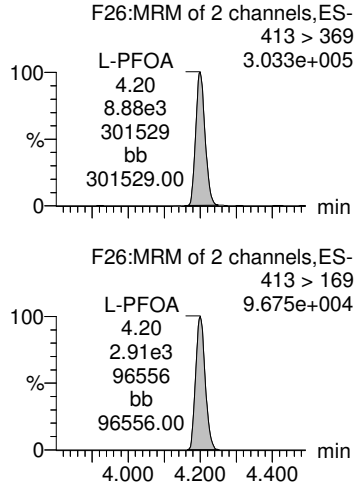
Total PFHxS



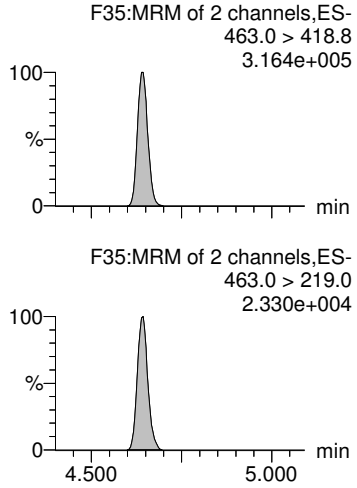
L-PFOA



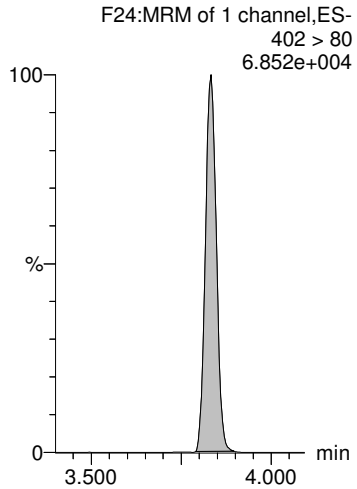
Total PFOA



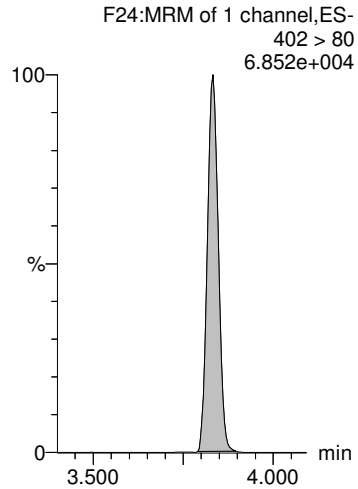
PFNA



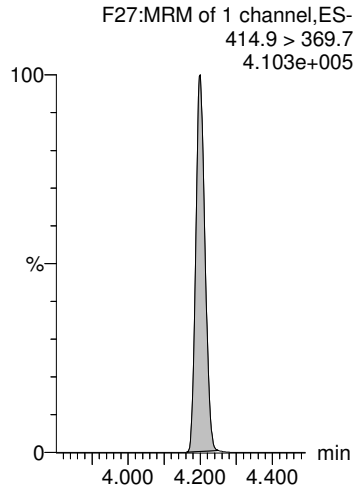
13C3-PFHxS-EIS



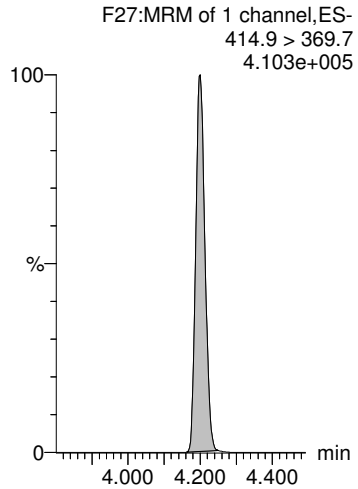
13C3-PFHxS-EIS



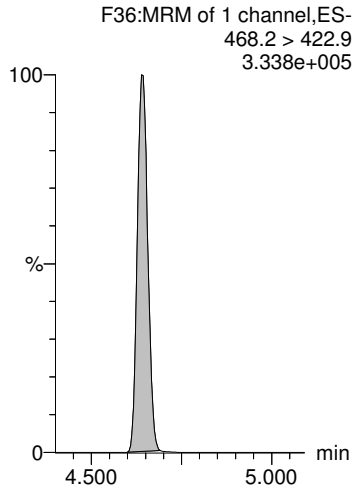
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



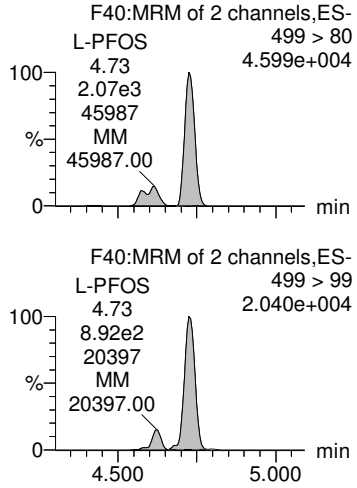
RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-32.qld

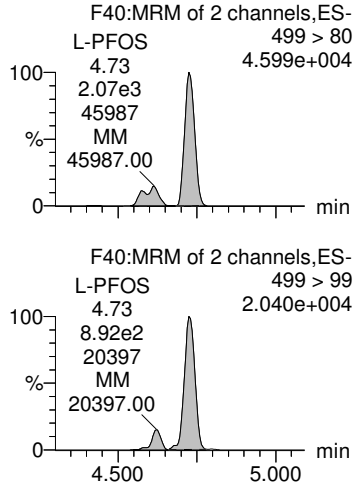
Last Altered: Friday, July 24, 2020 15:53:06 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:53:59 Pacific Daylight Time

Name: 200721P1-32, Date: 21-Jul-2020, Time: 20:43:13, ID: B0G0090-BSD1 LCSD 0.25, Description: LCSD

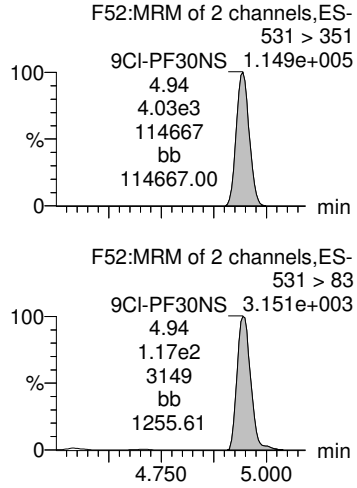
L-PFOS



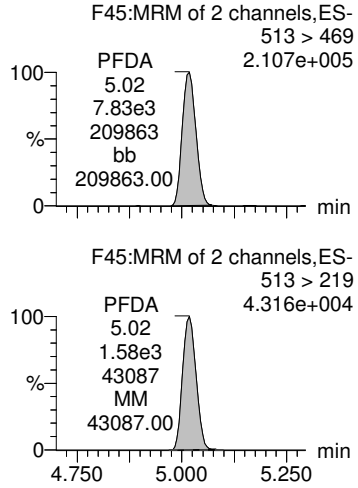
Total PFOS



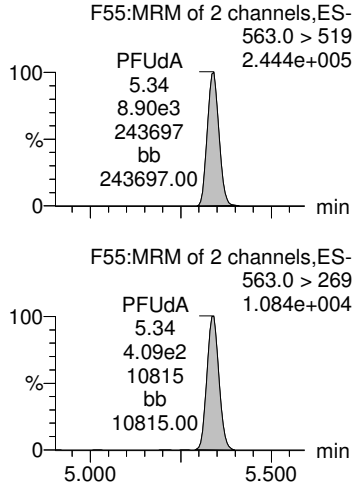
9Cl-PF30NS



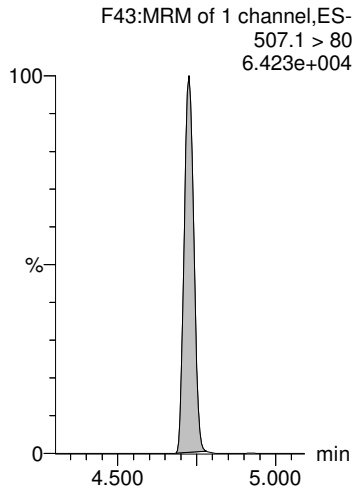
PFDA



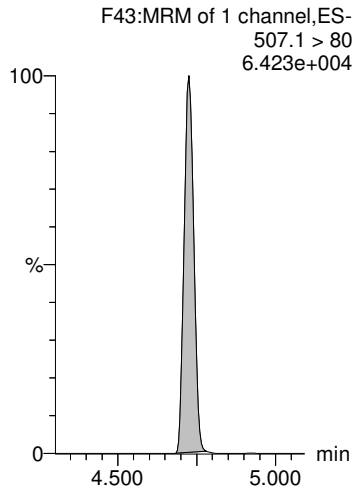
PFUdA



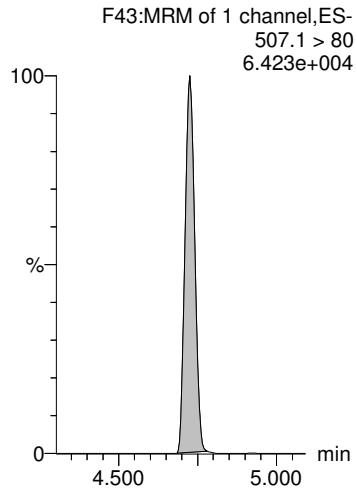
13C8-PFOS-EIS



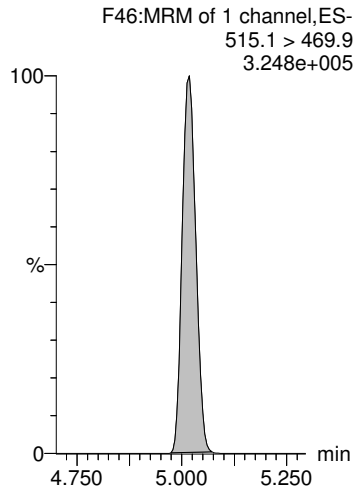
13C8-PFOS-EIS



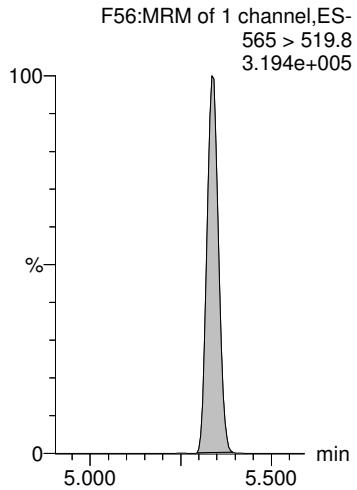
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS

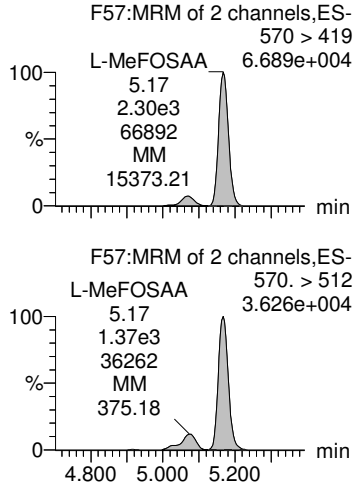


Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-32.qld

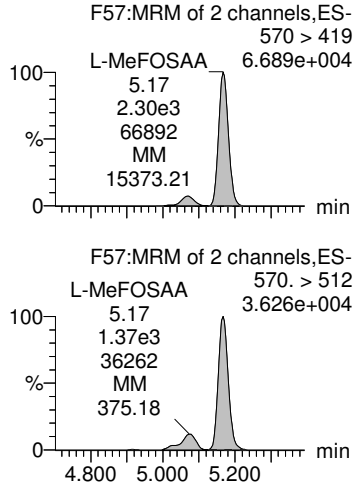
Last Altered: Friday, July 24, 2020 15:53:06 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:53:59 Pacific Daylight Time

Name: 200721P1-32, Date: 21-Jul-2020, Time: 20:43:13, ID: B0G0090-BSD1 LCSD 0.25, Description: LCSD

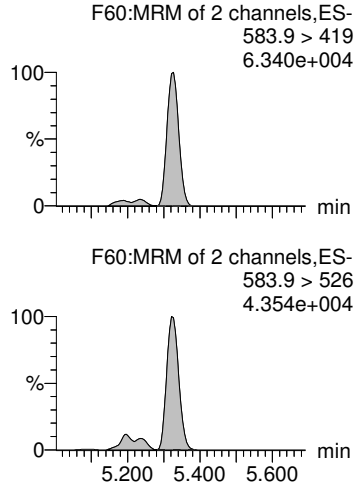
L-MeFOSAA



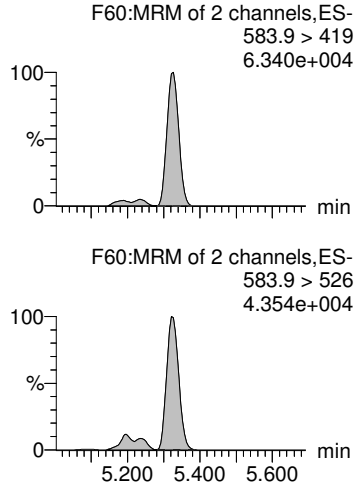
Total N-MeFOSAA



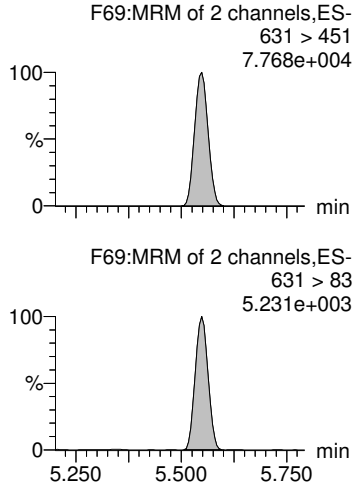
L-EtFOSAA



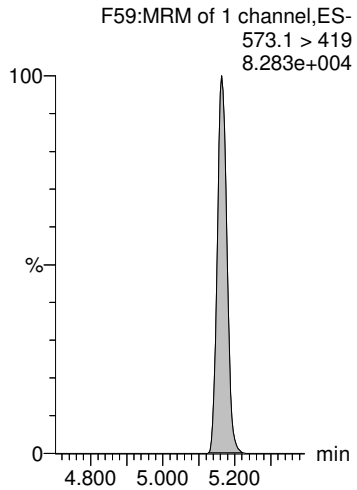
Total N-EtFOSAA



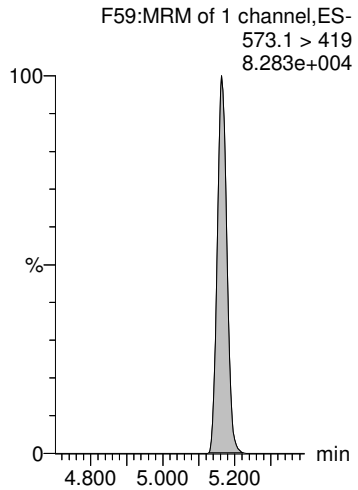
11Cl-PF30UdS



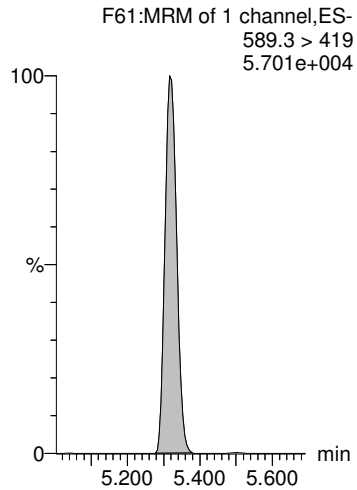
d3-N-MeFOSAA-EIS



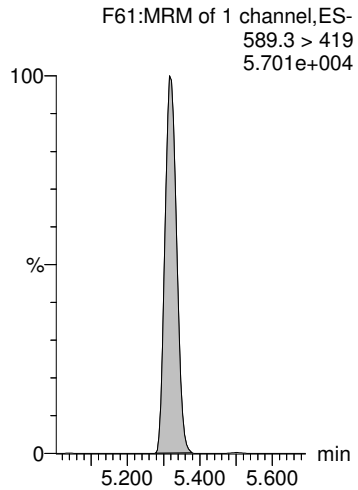
d3-N-MeFOSAA-EIS



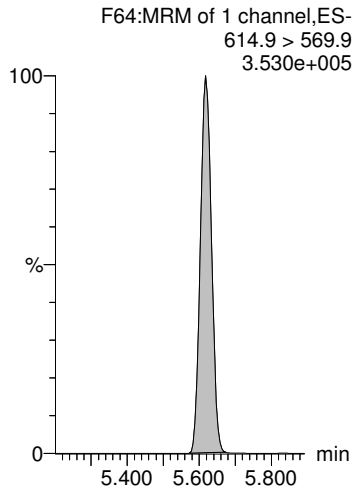
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS

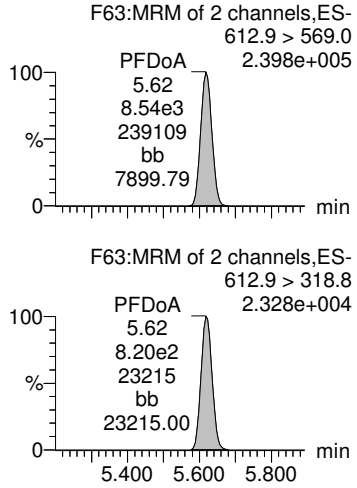


Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-32.qld

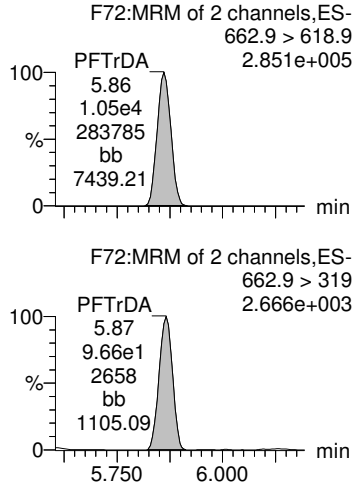
Last Altered: Friday, July 24, 2020 15:53:06 Pacific Daylight Time
Printed: Friday, July 24, 2020 15:53:59 Pacific Daylight Time

Name: 200721P1-32, Date: 21-Jul-2020, Time: 20:43:13, ID: B0G0090-BSD1 LCSD 0.25, Description: LCSD

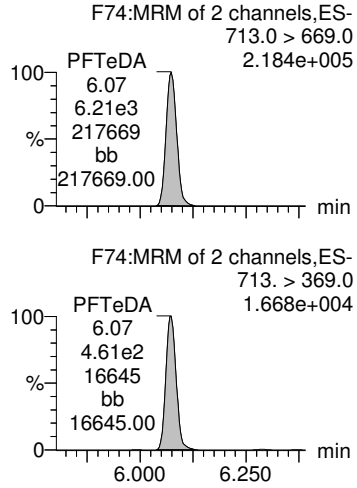
PFDoA



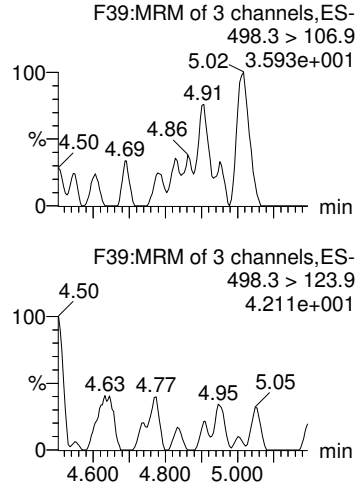
PFTrDA



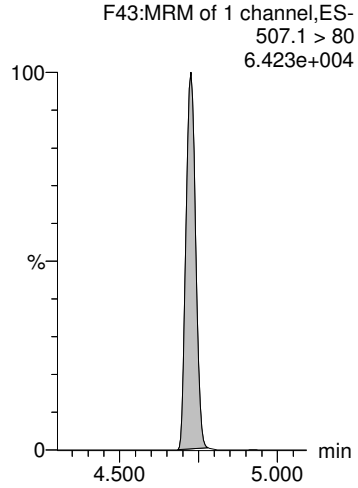
PFTeDA



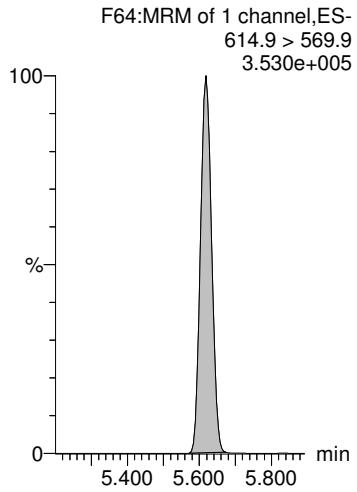
TDCA



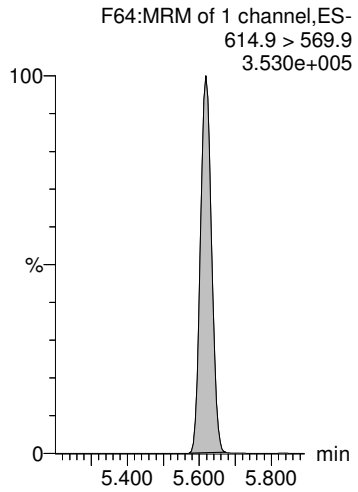
13C8-PFOS-EIS



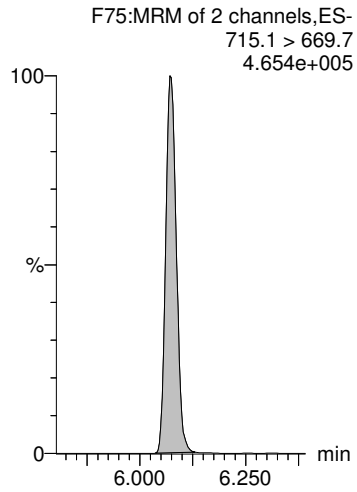
13C2-PFDoA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-44.qld

Last Altered: Friday, July 24, 2020 16:04:29 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:06:33 Pacific Daylight Time

Name: 200721P1-44, Date: 21-Jul-2020, Time: 22:50:24, ID: 2001472-01 EB08-20200710 0.24427, Description: EB08-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80		1.095e3	0.244		2.56						YES
2	7	PFHxA	313.0 > 269.0		9.026e3	0.244		3.09						YES
3	9	HFPO-DA	285.1 > 168.9		1.666e3	0.244		3.31						YES
4	11	PFHpA	363.0 > 319		8.877e3	0.244		3.69						YES
5	12	ADONA	376.8 > 250.9		8.877e3	0.244		3.78						YES
6	51	13C3-PFBS-EIS	302.0 > 98.9	1.095e3		0.244	96.924	2.50	2.56	1090	46.229	90.3		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	9.026e3		0.244	854.580	3.08	3.09	9030	43.241	84.5		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.666e3		0.244	179.588	3.30	3.31	1670	37.970	74.2		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	8.877e3		0.244	833.947	3.68	3.69	8880	43.576	85.2		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	8.877e3		0.244	833.947	3.68	3.69	8880	43.576	85.2		
11	-1													
12	13	L-PFHxS	399 > 79.9		2.114e3	0.244		3.83						YES
13	1...	Total PFHxS	399 > 79.9	0.000e0	2.114e3	0.244		3.93		0.000				
14	16	L-PFOA	413 > 369	8.294e1	1.182e4	0.244		4.20	4.21	0.0877	0.131		6.026	NO
15	1...	Total PFOA	413 > 369	8.294e1	1.182e4	0.244		4.60		0.0877	0.131			
16	21	PFNA	463.0 > 418.8		1.110e4	0.244		4.64						YES
17	61	13C3-PFHxS-EIS	402 > 80	2.114e3		0.244	182.953	3.82	3.83	2110	47.296	92.4		
18	61	13C3-PFHxS-EIS	402 > 80	2.114e3		0.244	182.953	3.82	3.83	2110	47.296	92.4		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.182e4		0.244	1066.462	4.35	4.20	11800	45.389	88.7		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.182e4		0.244	1066.462	4.35	4.20	11800	45.389	88.7		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.110e4		0.244	943.916	4.96	4.64	11100	48.150	94.1		
22	-1													
23	23	L-PFOS	499 > 80		2.238e3	0.244		4.73						YES
24	1...	Total PFOS	499> 80	0.000e0	2.238e3	0.244		4.60		0.000				
25	25	9Cl-PF30NS	531 > 351		2.238e3	0.244		4.93						YES
26	26	PFDA	513 > 469		1.236e4	0.244		5.02						YES
27	33	PFUdA	563.0 > 519		1.215e4	0.244		5.34						YES
28	71	13C8-PFOS-EIS	507.1 > 80	2.238e3		0.244	193.524	4.72	4.73	2240	47.350	92.5		
29	71	13C8-PFOS-EIS	507.1 > 80	2.238e3		0.244	193.524	4.72	4.73	2240	47.350	92.5		
30	71	13C8-PFOS-EIS	507.1 > 80	2.238e3		0.244	193.524	4.72	4.73	2240	47.350	92.5		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.236e4		0.244	1149.255	5.01	5.02	12400	44.029	86.0		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.215e4		0.244	1217.713	5.33	5.34	12100	40.830	79.8		
33	-1													
34	29	L-MeFOSAA	570 > 419		2.556e3	0.244		5.16						YES
35	1...	Total N-MeFOSAA	570. > 419	0.000e0	2.556e3	0.244		5.19		0.000				
36	31	L-EtFOSAA	583.9 > 419		2.207e3	0.244		5.32						YES

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-44.qld

Last Altered: Friday, July 24, 2020 16:04:29 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:06:33 Pacific Daylight Time

Name: 200721P1-44, Date: 21-Jul-2020, Time: 22:50:24, ID: 2001472-01 EB08-20200710 0.24427, Description: EB08-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	0.000e0	2.207e3	0.244		5.37		0.000				
38	35	11Cl-PF30UdS	631 > 451		1.330e4	0.244		5.56						YES
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.556e3		0.244	273.698	5.16	5.16	2560	38.227	74.7		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.556e3		0.244	273.698	5.16	5.16	2560	38.227	74.7		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.207e3		0.244	214.700	5.31	5.32	2210	42.075	82.2		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.207e3		0.244	214.700	5.31	5.32	2210	42.075	82.2		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	1.330e4		0.244	1316.711	5.85	5.62	13300	41.359	80.8		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.330e4	0.244		5.62						YES
46	39	PFTrDA	662.9 > 618.9		1.330e4	0.244		5.85						YES
47	41	PFTeDA	713.0 > 669.0		1.283e4	0.244		6.08						YES
48	1...	TDCA	498.3>106.9			0.244		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	2.238e3		0.244	193.524	4.72	4.73	2240	47.350	92.5		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	1.330e4		0.244	1316.711	5.85	5.62	13300	41.359	80.8		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	1.330e4		0.244	1316.711	5.85	5.62	13300	41.359	80.8		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.283e4		0.244	1368.133	6.07	6.08	12800	38.396	75.0		

RK 7/24/2020

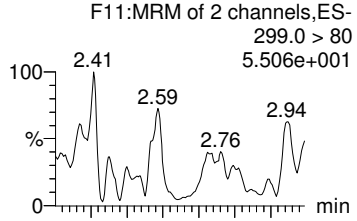
Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-44.qld

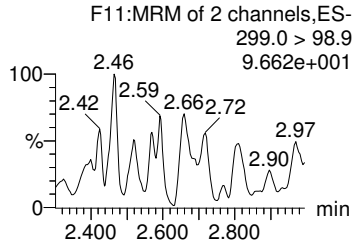
Last Altered: Friday, July 24, 2020 16:04:29 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:06:33 Pacific Daylight Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 24 Jul 2020 16:02:02
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

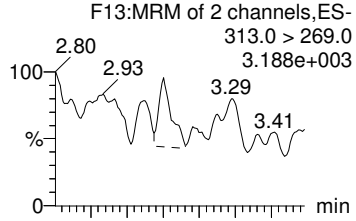
Name: 200721P1-44, Date: 21-Jul-2020, Time: 22:50:24, ID: 2001472-01 EB08-20200710 0.24427, Description: EB08-20200710

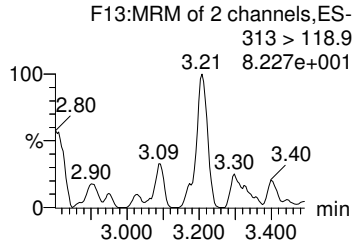
PFBS





PFHxA





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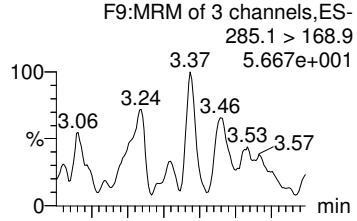

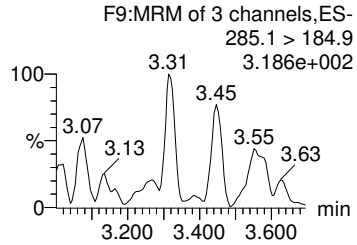

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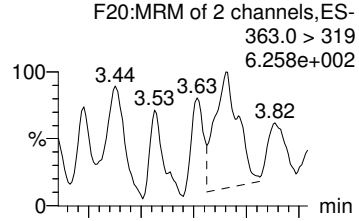

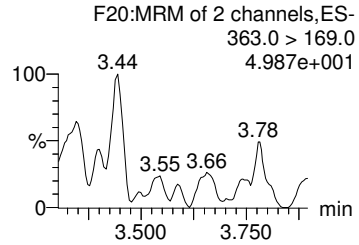

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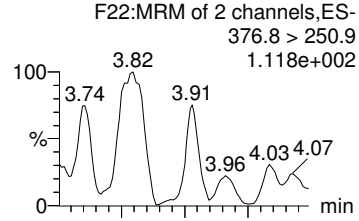

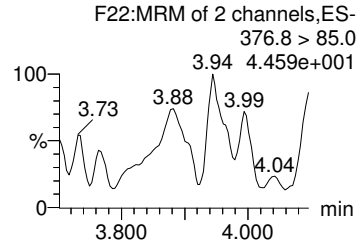

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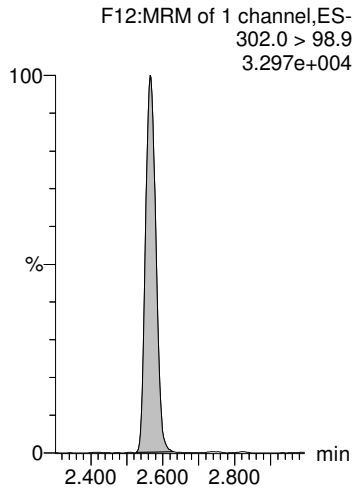

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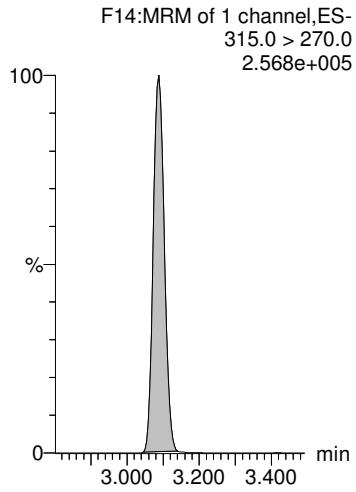

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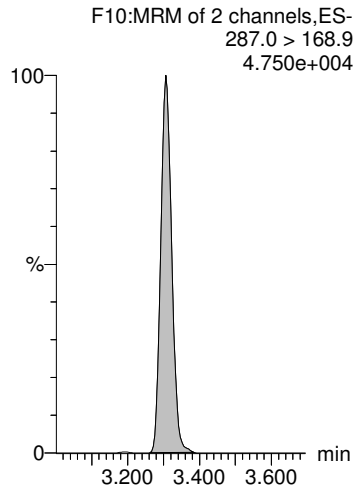

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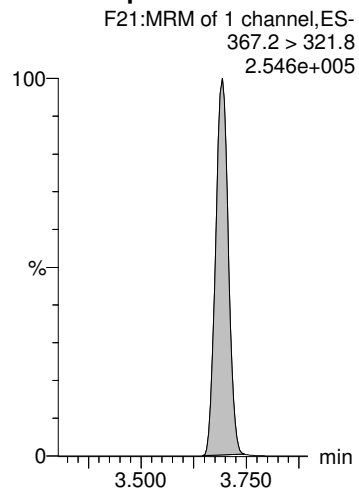

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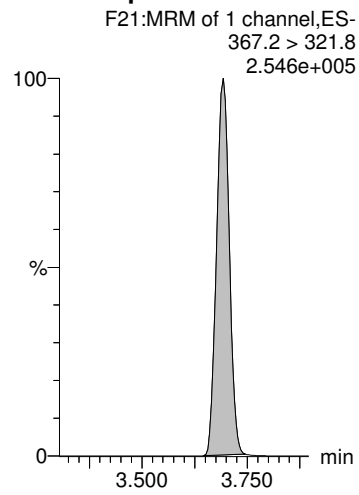

RK 7/24/2020

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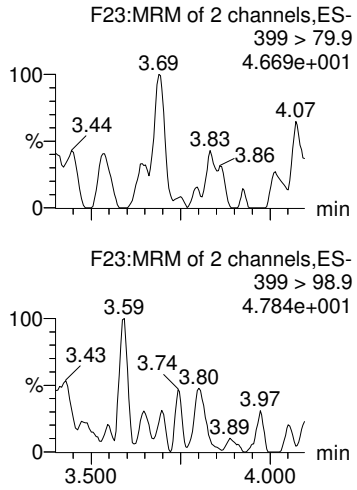
L-PFHxS



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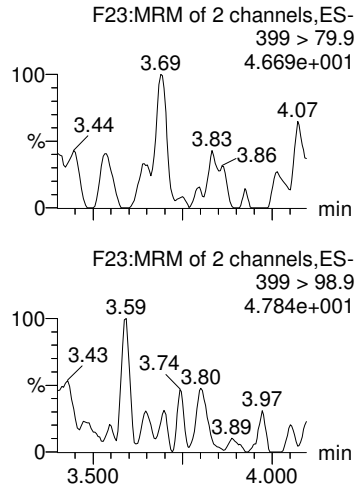
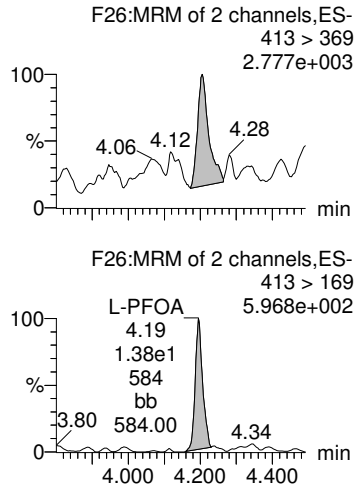


L-PFOA



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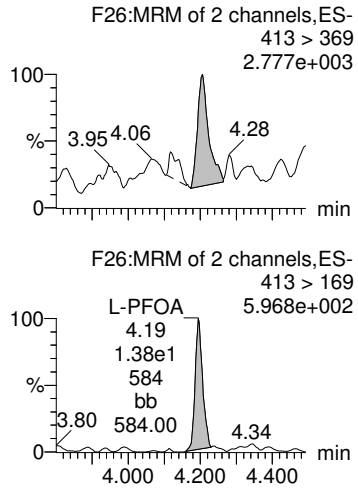

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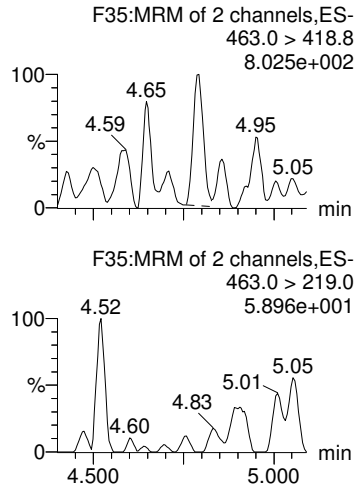

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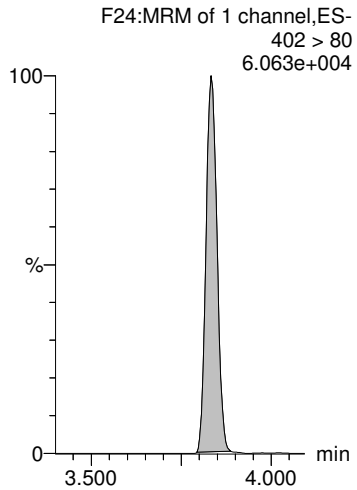

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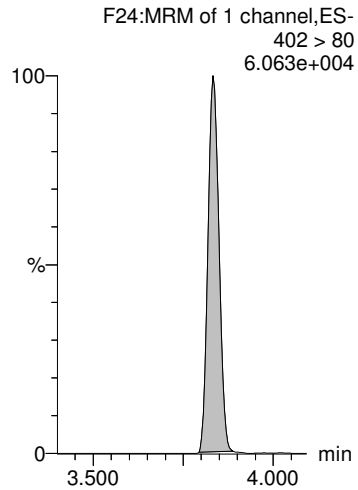

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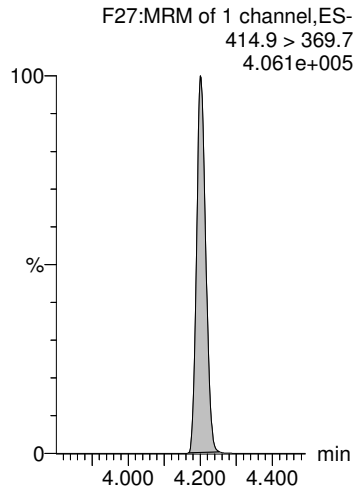

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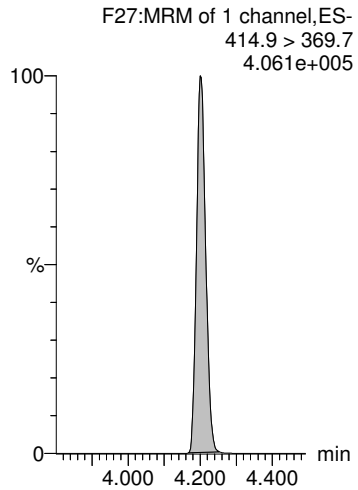
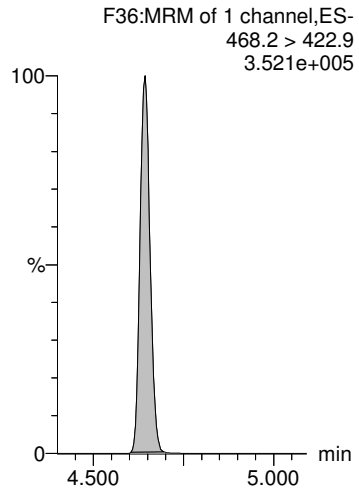


13C5-PFNA-EIS



RK 7/24/2020

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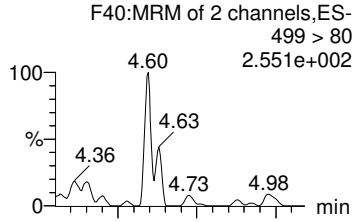
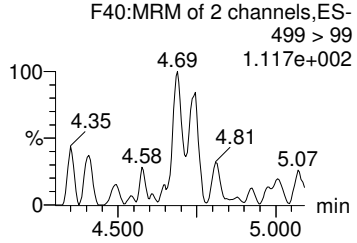
L-PFOS





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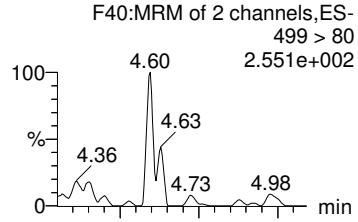

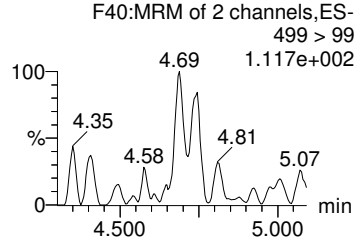

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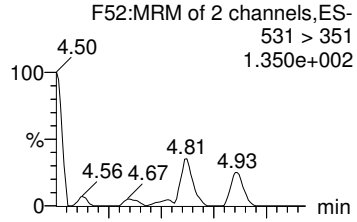

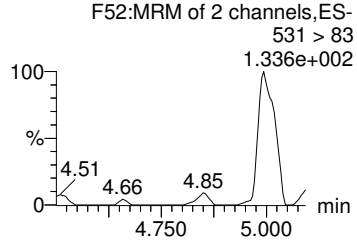

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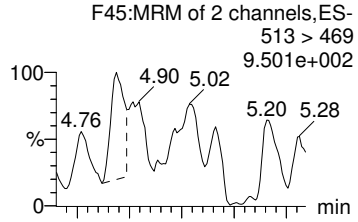

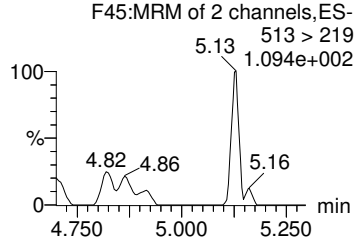

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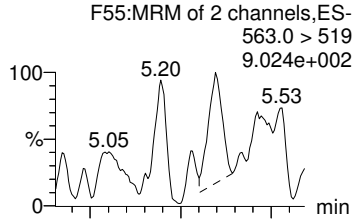

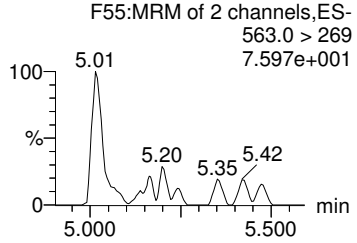

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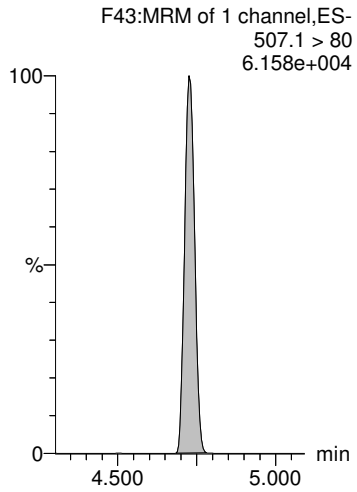

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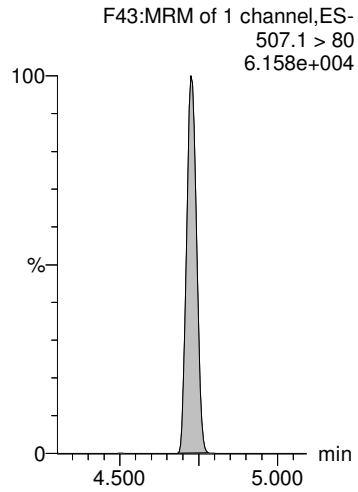

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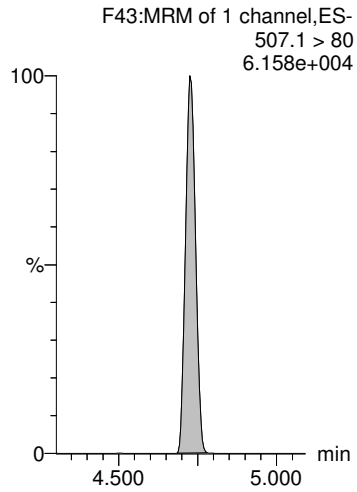

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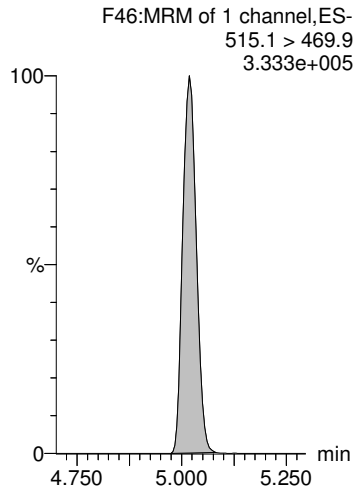

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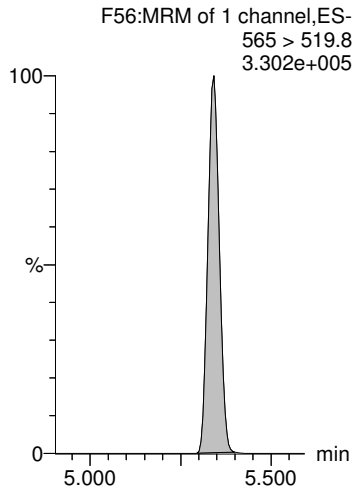

RK 7/24/2020

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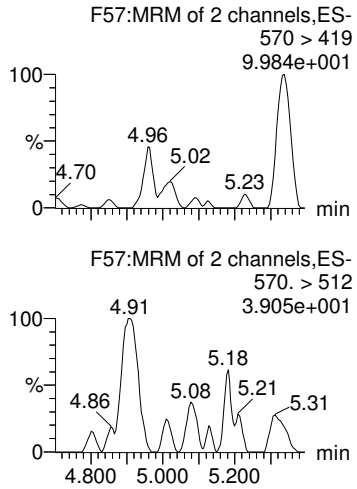
L-MeFOSAA



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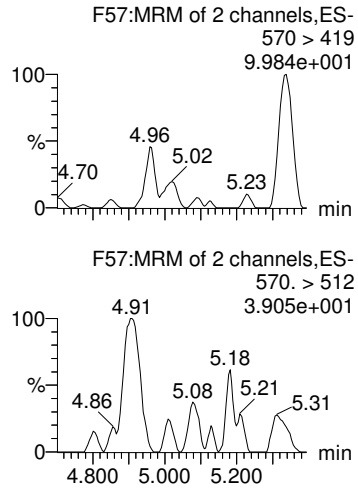

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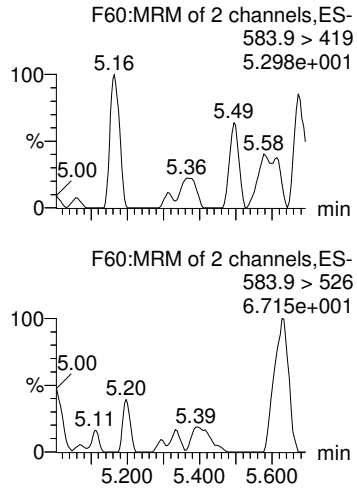

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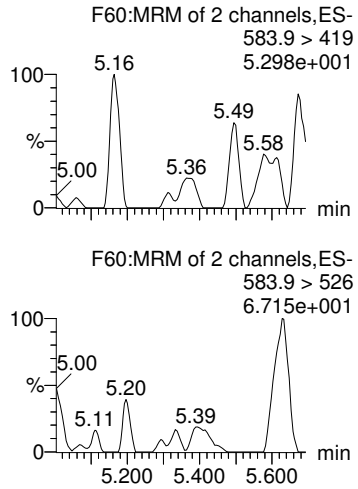

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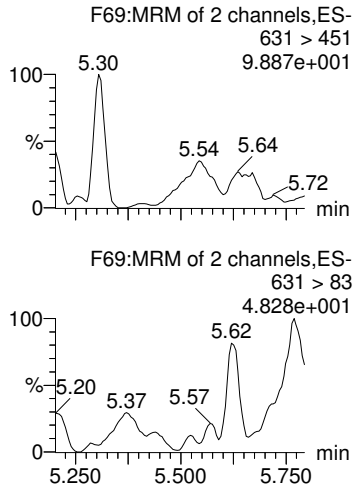

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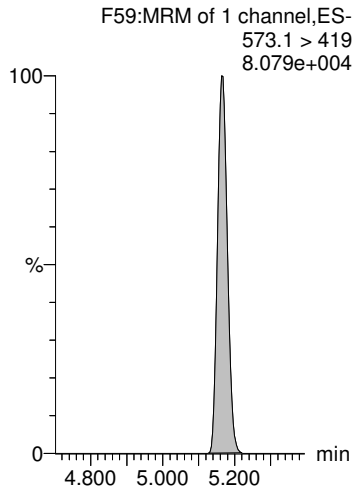

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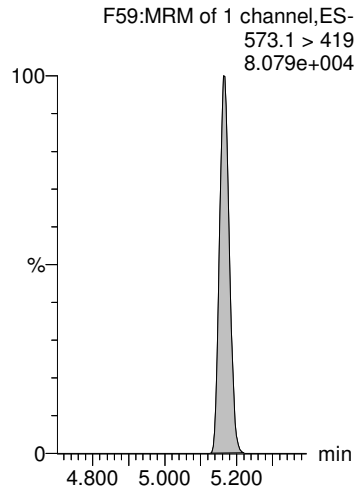
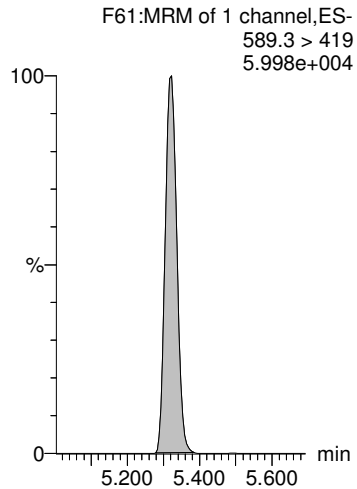


d5-N-EtFOSAA-EIS



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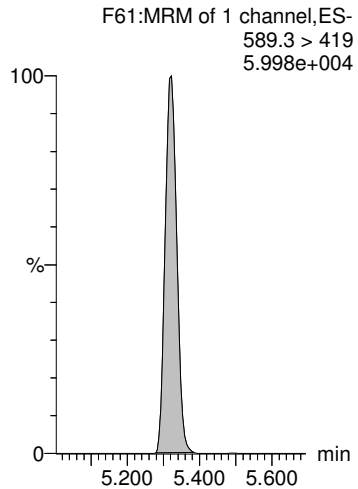

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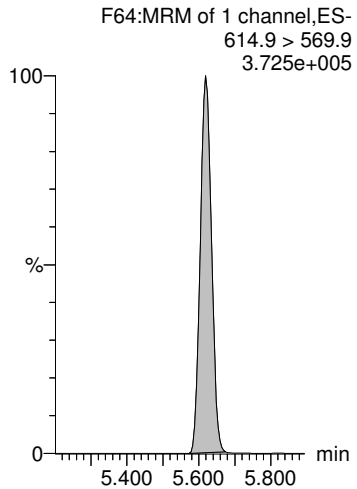

RK 7/24/2020

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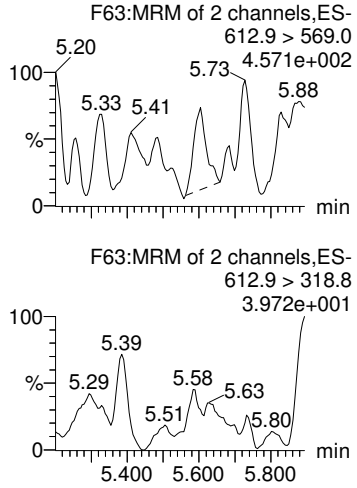

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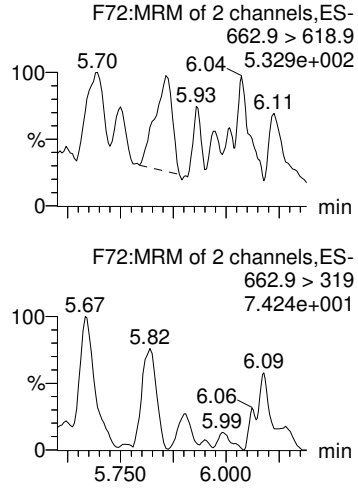
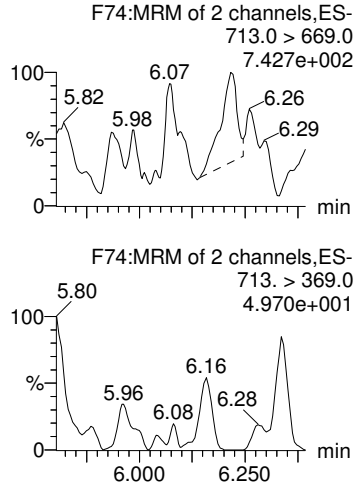
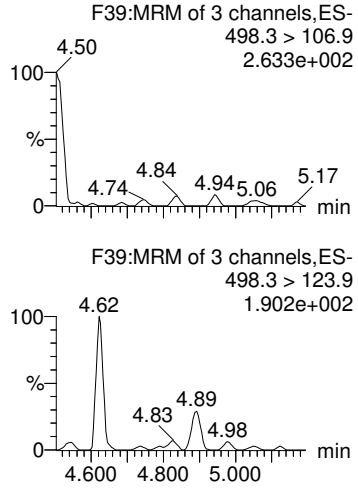


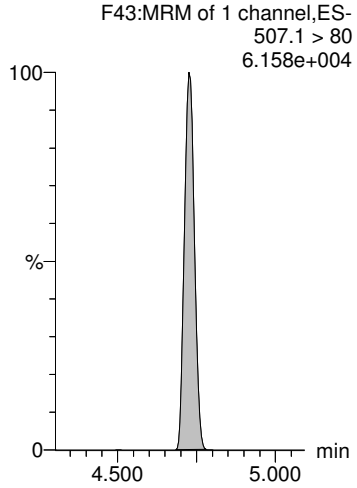
PFTeDA



TDCA



13C8-PFOS-EIS



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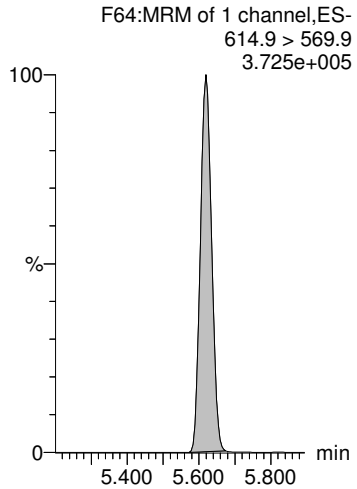

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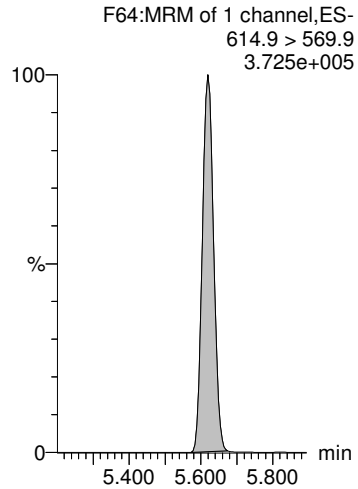

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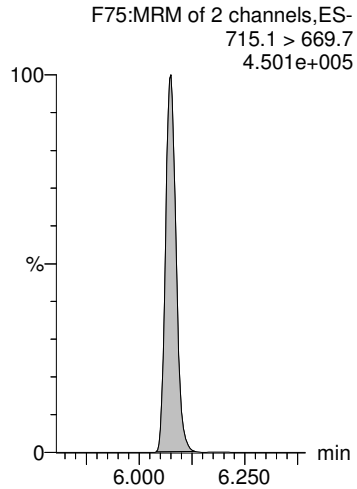

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-45.qld

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Printed: Friday, July 24, 2020 16:35:21 Pacific Daylight Time

Name: 200721P1-45, Date: 21-Jul-2020, Time: 23:00:59, ID: 2001472-02 TW23S-20200710 0.24184, Description: TW23S-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.		%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80	6.334e4	9.780e2	0.242		2.57	2.57	810	1255.727			2.426	NO
2	7	PFHxA	313.0 > 269.0	7.983e5	7.338e3	0.242		3.09	3.09	1360	5272.148	*E		14.536	NO
3	9	HFPO-DA	285.1 > 168.9		1.852e3	0.242		3.31							YES
4	11	PFHpA	363.0 > 319	2.032e5	7.835e3	0.242		3.69	3.70	324	1083.029			42.588	NO
5	12	ADONA	376.8 > 250.9		7.835e3	0.242		3.78							YES
6	51	13C3-PFBS-EIS	302.0 > 98.9	9.780e2		0.242	96.924	2.50	2.57	978	41.723		80.7		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	7.338e3		0.242	854.580	3.08	3.09	7340	35.504		68.7		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.852e3		0.242	179.588	3.30	3.31	1850	42.634		82.5		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	7.835e3		0.242	833.947	3.68	3.69	7840	38.849		75.2		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	7.835e3		0.242	833.947	3.68	3.69	7840	38.849		75.2		
11	-1														
12	13	L-PFHxS	399 > 79.9	2.177e5	1.429e3	0.242		3.83	3.84	1900	6470.503	*E		4.028	NO
13	1...	Total PFHxS	399 > 79.9	2.177e5	1.429e3	0.242		3.93		1900	6470.503				
14	16	L-PFOA	413 > 369	1.917e6	7.748e3	0.242		4.20	4.20	3090		*E		2.649	NO
15	1...	Total PFOA	413 > 369	1.917e6	7.748e3	0.242		4.60		0.000					
16	21	PFNA	463.0 > 418.8	3.887e3	1.044e4	0.242		4.65	4.65	4.65	15.116			13.112	NO
17	61	13C3-PFHxS-EIS	402 > 80	1.429e3		0.242	182.953	3.82	3.83	1430	32.307		62.5		
18	61	13C3-PFHxS-EIS	402 > 80	1.429e3		0.242	182.953	3.82	3.83	1430	32.307		62.5		
19	69	13C2-PFOA-EIS	414.9 > 369.7	7.748e3		0.242	1066.462	4.35	4.20	7750	30.042		58.1		
20	69	13C2-PFOA-EIS	414.9 > 369.7	7.748e3		0.242	1066.462	4.35	4.20	7750	30.042		58.1		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.044e4		0.242	943.916	4.96	4.65	10400	45.725		88.5		
22	-1														
23	23	L-PFOS	499 > 80	1.337e5	1.838e3	0.242		4.73	4.73	910	2887.685	*E		2.428	NO
24	1...	Total PFOS	499> 80	1.337e5	1.838e3	0.242		4.60		910	2887.685				
25	25	9Cl-PF30NS	531 > 351		1.838e3	0.242		4.94							YES
26	26	PFDA	513 > 469	2.447e2	1.265e4	0.242		5.02	5.02	0.242	1.073			5.483	NO
27	33	PFUdA	563.0 > 519		1.187e4	0.242		5.35							YES
28	71	13C8-PFOS-EIS	507.1 > 80	1.838e3		0.242	193.524	4.72	4.73	1840	39.272		76.0		
29	71	13C8-PFOS-EIS	507.1 > 80	1.838e3		0.242	193.524	4.72	4.73	1840	39.272		76.0		
30	71	13C8-PFOS-EIS	507.1 > 80	1.838e3		0.242	193.524	4.72	4.73	1840	39.272		76.0		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.265e4		0.242	1149.255	5.01	5.02	12700	45.517		88.1		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.187e4		0.242	1217.713	5.33	5.35	11900	40.292		78.0		
33	-1														
34	29	L-MeFOSAA	570 > 419		2.766e3	0.242		5.17							YES
35	1...	Total N-MeFOSAA	570. > 419	0.000e0	2.766e3	0.242		5.19		0.000					
36	31	L-EtFOSAA	583.9 > 419		2.609e3	0.242		5.32							YES

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-45.qld

Last Altered: Friday, July 24, 2020 16:34:49 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:35:21 Pacific Daylight Time

Name: 200721P1-45, Date: 21-Jul-2020, Time: 23:00:59, ID: 2001472-02 TW23S-20200710 0.24184, Description: TW23S-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	0.000e0	2.609e3	0.242		5.37		0.000				
38	35	11Cl-PF30UdS	631 > 451		1.333e4	0.242		5.56						YES
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.766e3		0.242	273.698	5.16	5.17	2770	41.794	80.9		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.766e3		0.242	273.698	5.16	5.17	2770	41.794	80.9		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.609e3		0.242	214.700	5.31	5.32	2610	50.252	97.2		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.609e3		0.242	214.700	5.31	5.32	2610	50.252	97.2		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	1.333e4		0.242	1316.711	5.85	5.62	13300	41.853	81.0		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.333e4	0.242		5.62						YES
46	39	PFTrDA	662.9 > 618.9		1.333e4	0.242		5.86						YES
47	41	PFTeDA	713.0 > 669.0		1.121e4	0.242		6.08						YES
48	1...	TDCA	498.3>106.9			0.242		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	1.838e3		0.242	193.524	4.72	4.73	1840	39.272	76.0		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	1.333e4		0.242	1316.711	5.85	5.62	13300	41.853	81.0		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	1.333e4		0.242	1316.711	5.85	5.62	13300	41.853	81.0		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.121e4		0.242	1368.133	6.07	6.08	11200	33.869	65.5		

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-45.qld

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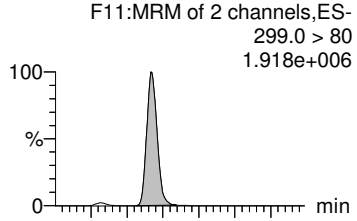
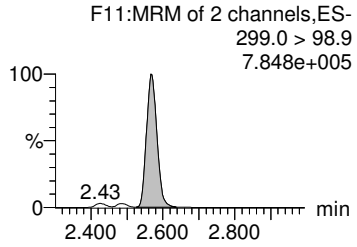
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Name: 200721P1-45, Date: 21-Jul-2020, Time: 23:00:59, ID: 2001472-02 TW23S-20200710 0.24184, Description: TW23S-20200710

PFBS





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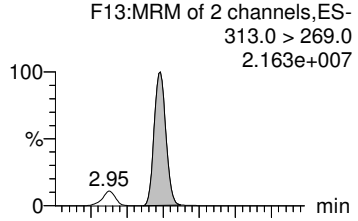
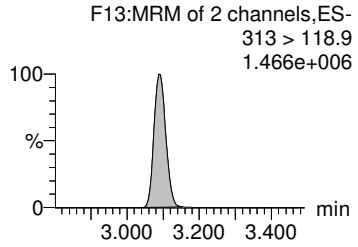
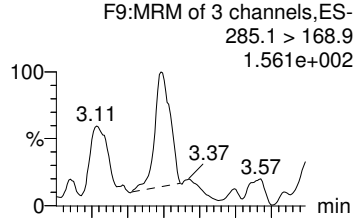
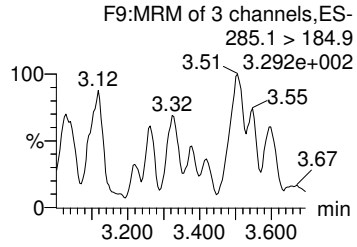


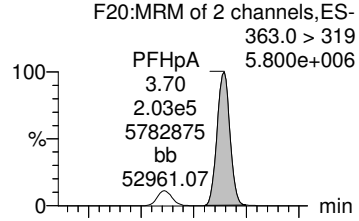


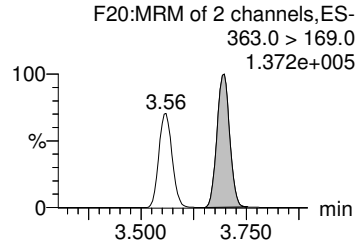
HFPO-DA



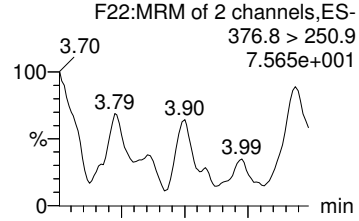


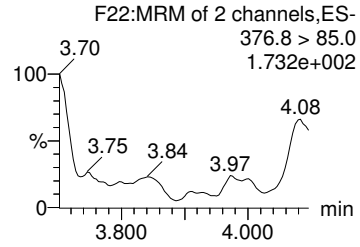
PFHpA





ADONA





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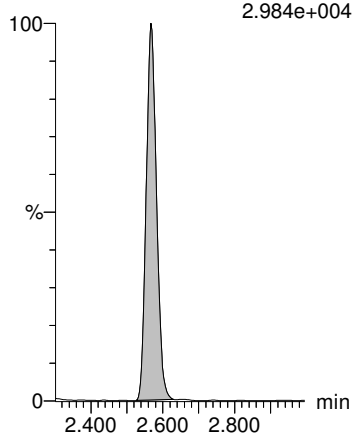

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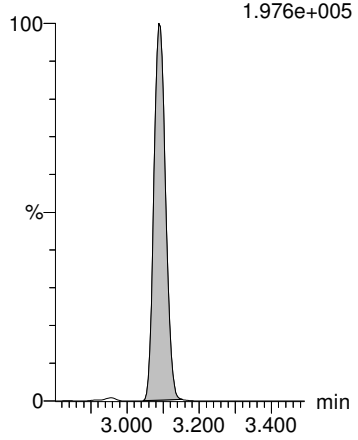
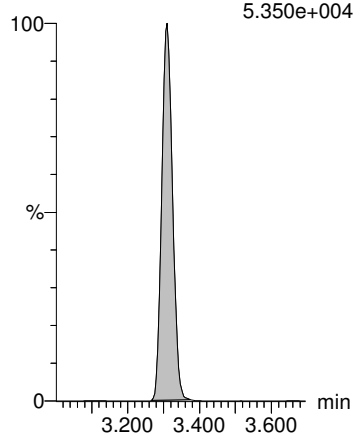


13C3-HFPO-DA-EIS



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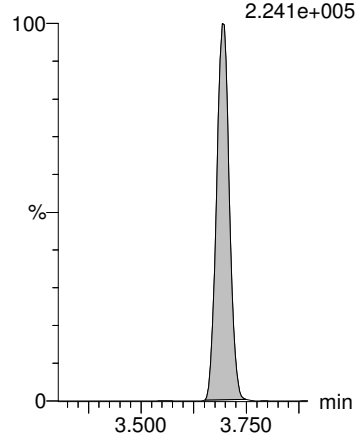

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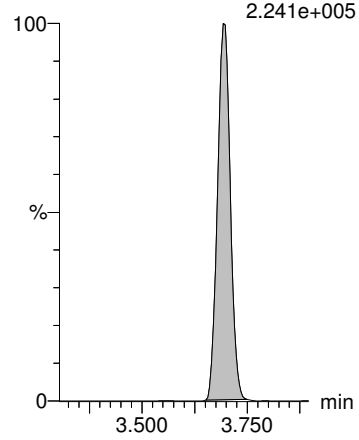

RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-45.qld

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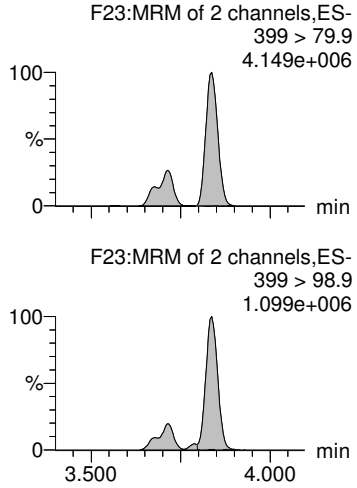
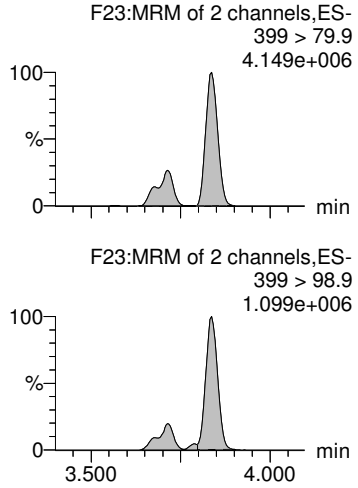
Name: 200721P1-45, Date: 21-Jul-2020, Time: 23:00:59, ID: 2001472-02 TW23S-20200710 0.24184, Description: TW23S-20200710

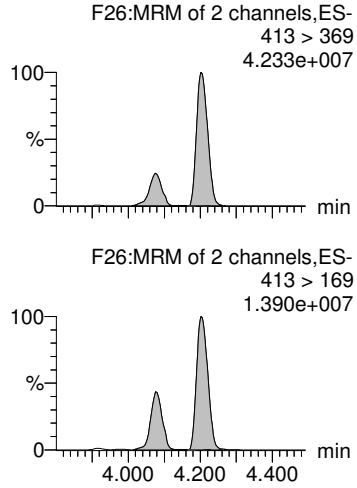
L-PFHxS



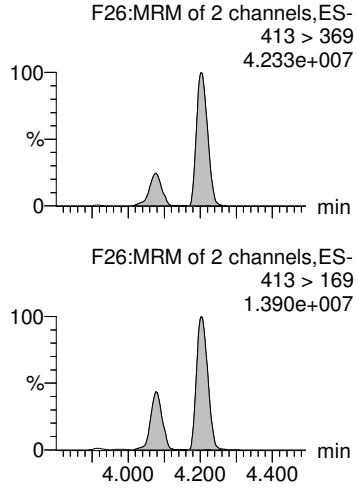
Total PFHxS



L-PFOA



Total PFOA



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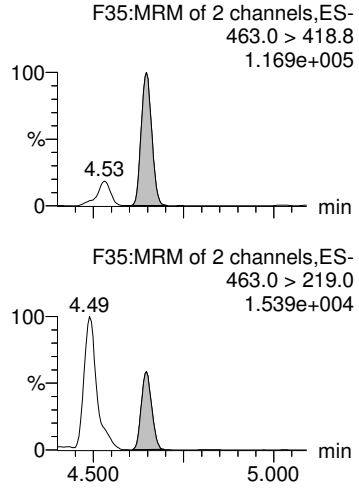

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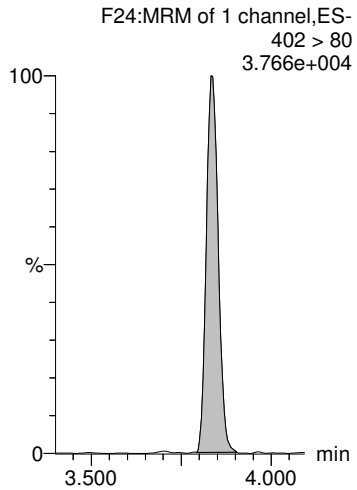

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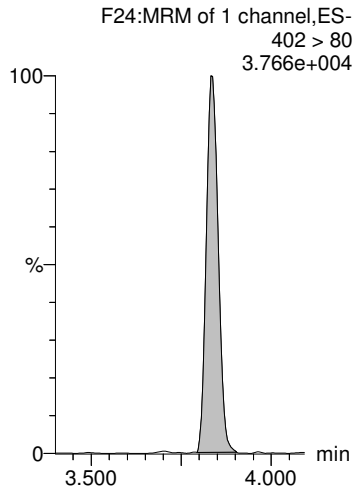

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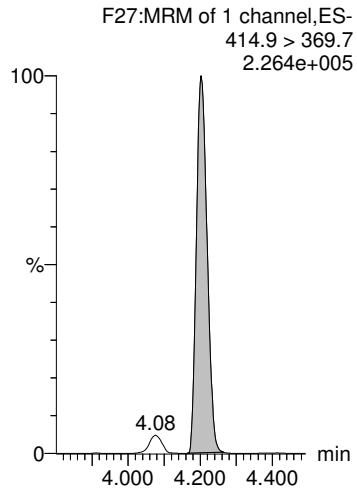

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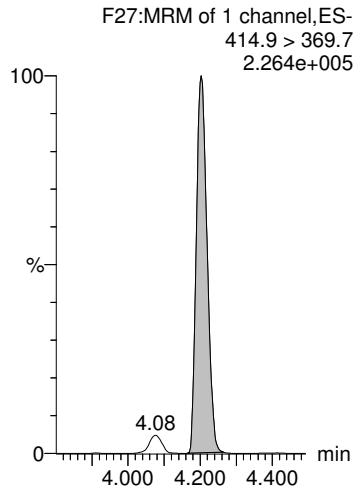
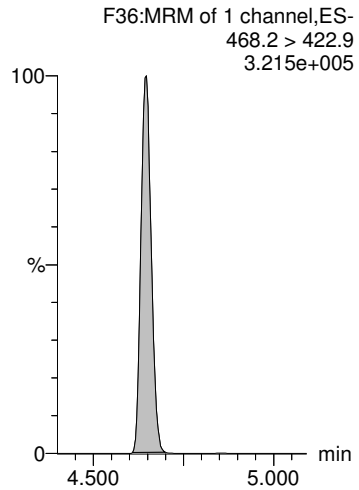


13C5-PFNA-EIS



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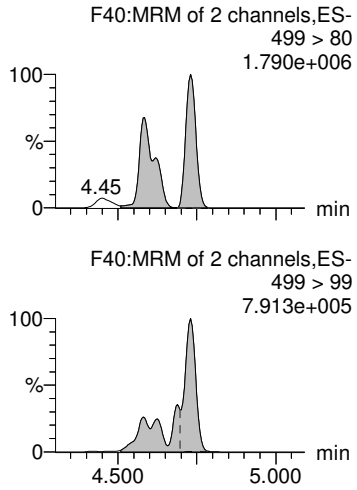
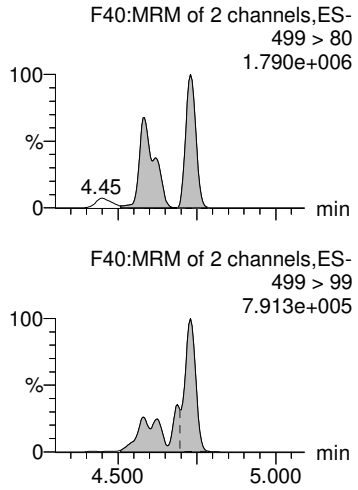
Name: 200721P1-45, Date: 21-Jul-2020, Time: 23:00:59, ID: 2001472-02 TW23S-20200710 0.24184, Description: TW23S-20200710

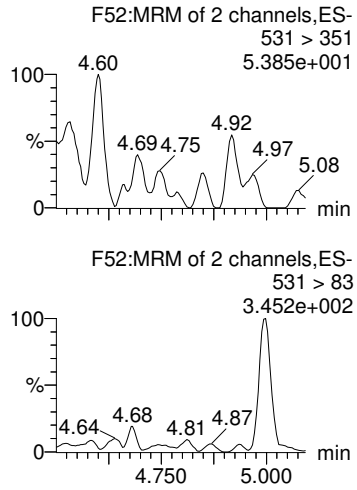
L-PFOS



Total PFOS



9Cl-PF30NS



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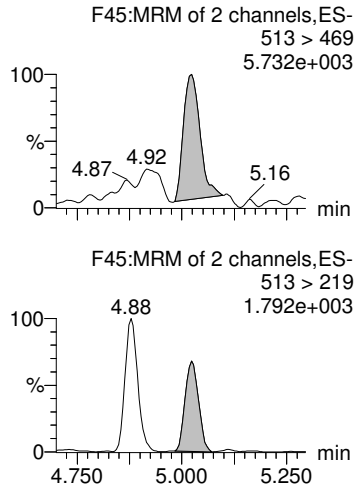
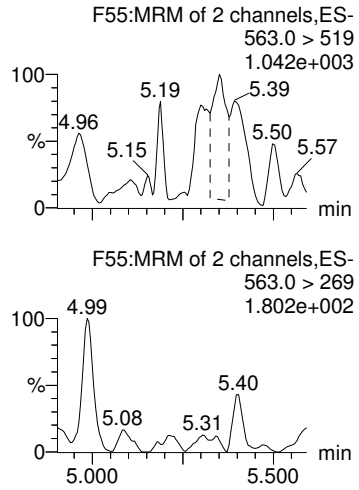
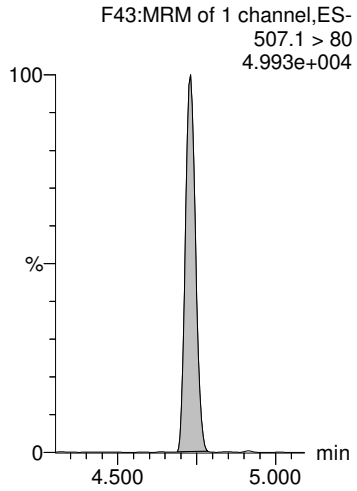


PFUdA



13C8-PFOS-EIS



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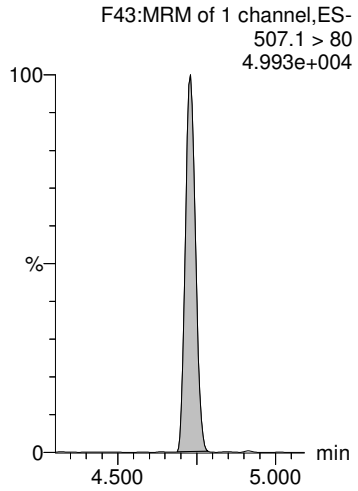

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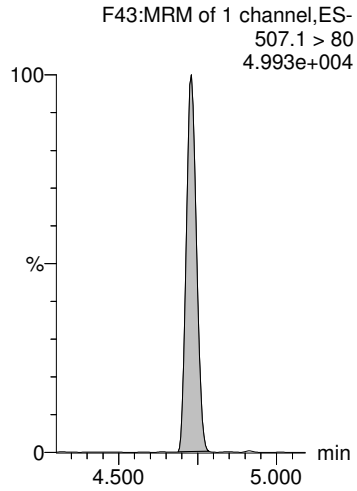

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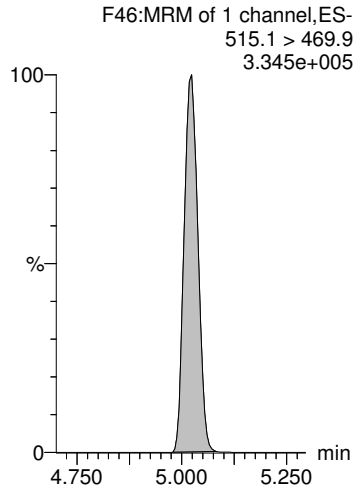

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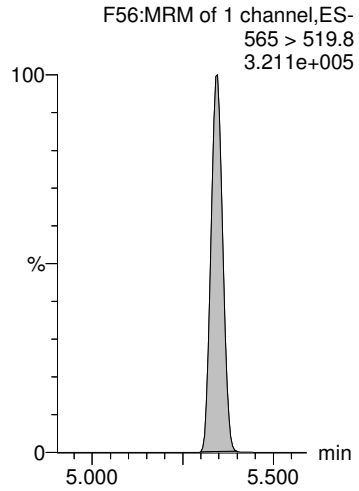

RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-45.qld

Last Altered: Friday, July 24, 2020 16:34:49 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:35:21 Pacific Daylight Time

Name: 200721P1-45, Date: 21-Jul-2020, Time: 23:00:59, ID: 2001472-02 TW23S-20200710 0.24184, Description: TW23S-20200710

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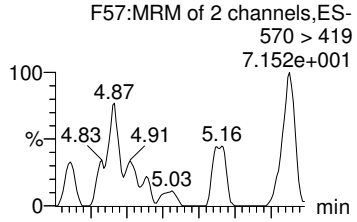

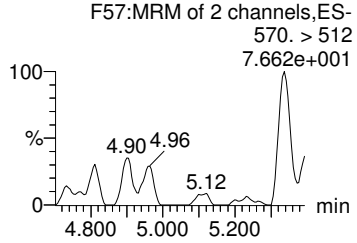

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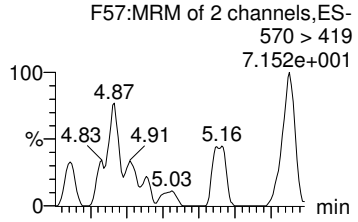

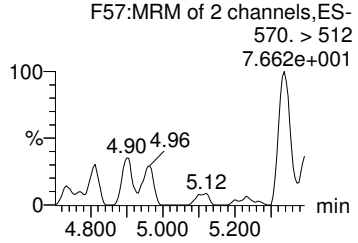

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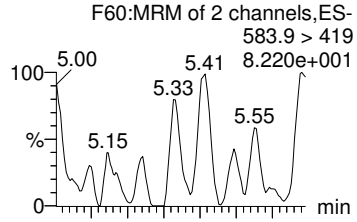

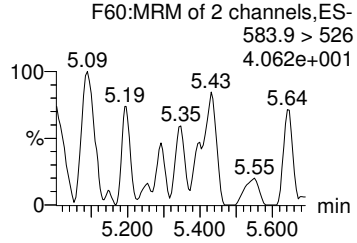

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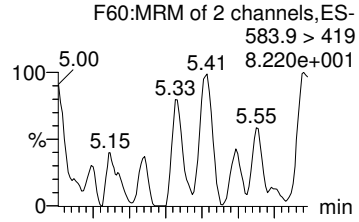
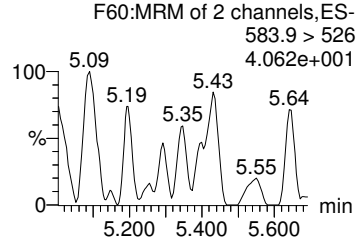
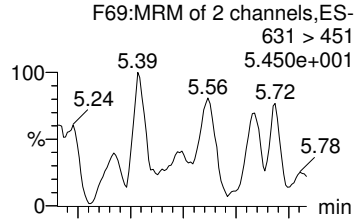
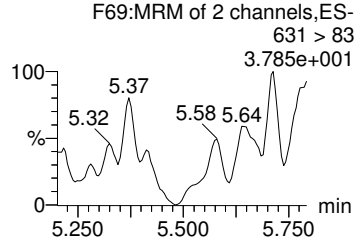


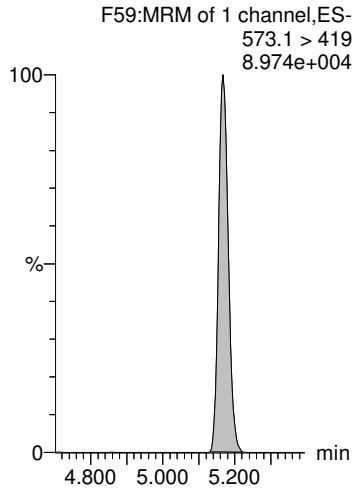


11Cl-PF30UdS





d3-N-MeFOSAA-EIS



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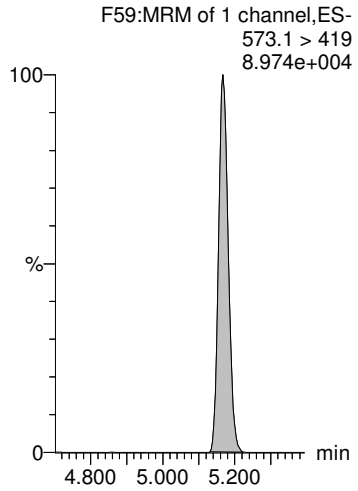
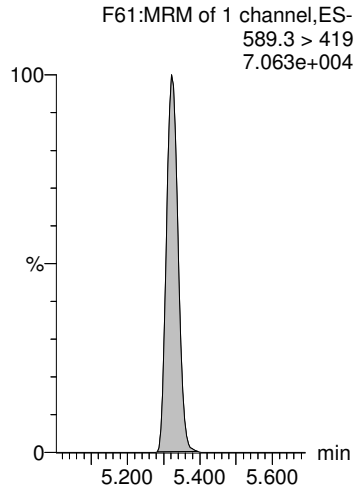


d5-N-EtFOSAA-EIS



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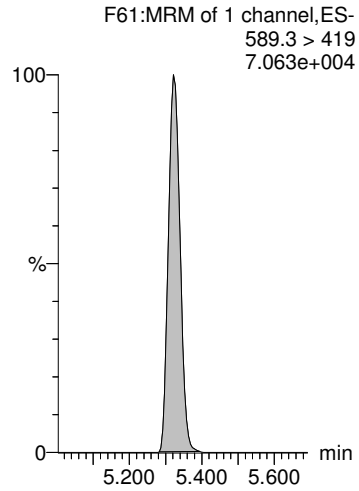
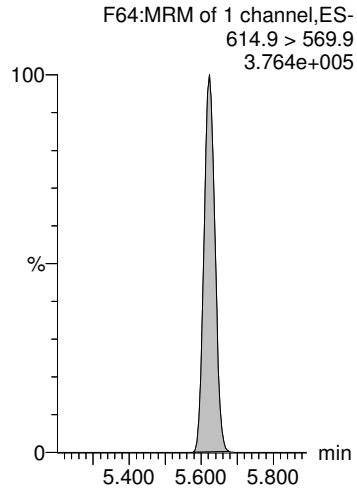


13C2-PFDoA-EIS



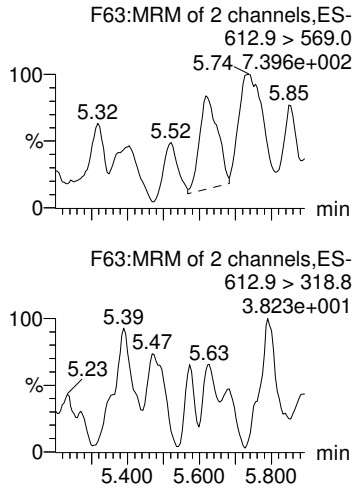
RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-45.qld

Last Altered: Friday, July 24, 2020 16:34:49 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:35:21 Pacific Daylight Time

Name: 200721P1-45, Date: 21-Jul-2020, Time: 23:00:59, ID: 2001472-02 TW23S-20200710 0.24184, Description: TW23S-20200710

PFDoA



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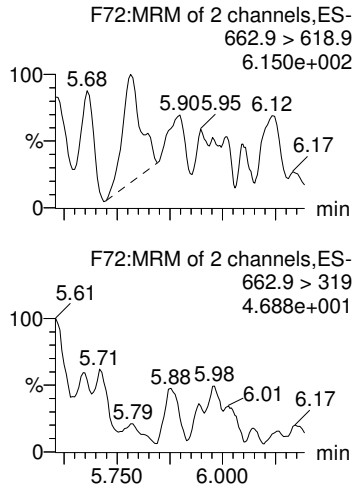

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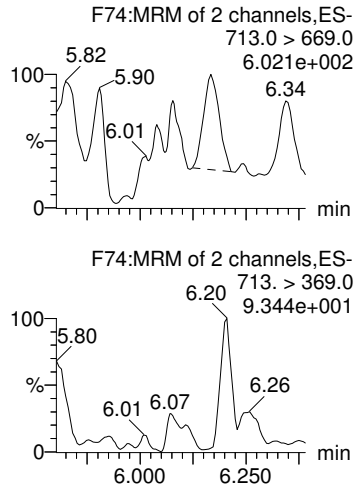

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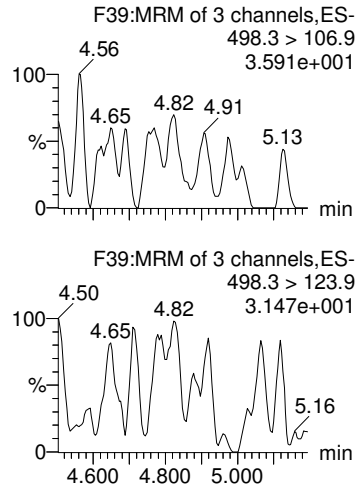

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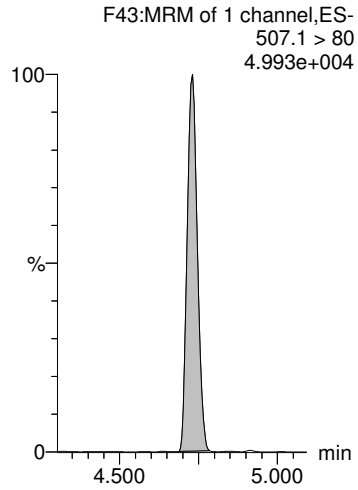

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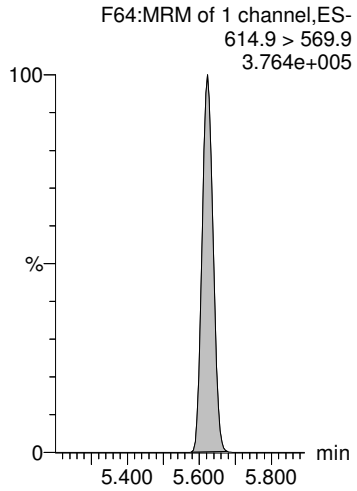

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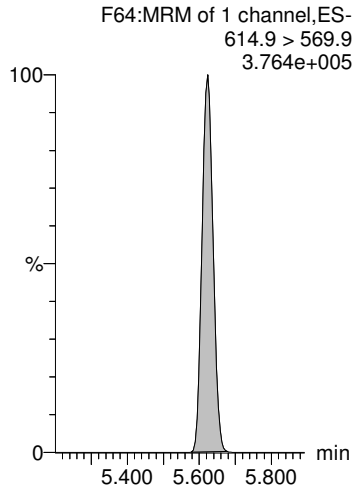

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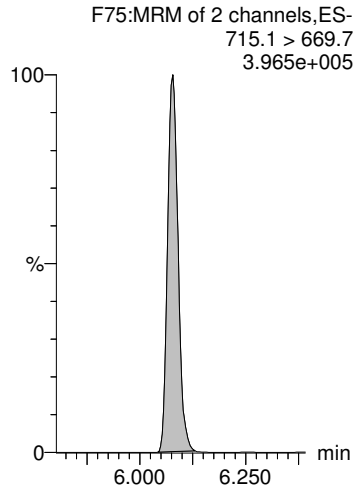


RK 7/24/2020

Vista Analytical Laboratory

OC 7/27/2020

Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-23.qld

Last Altered: Friday, July 24, 2020 17:15:33 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:16:01 Pacific Daylight Time

Name: 200723P1-23, Date: 23-Jul-2020, Time: 13:50:35, ID: 2001472-02@10X TW23S-20200710 0.24184, Description: TW23S-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	RT	Response	Std. Conc	Conc.	%Rec	Ion Ratio	Ratio Out?
1	7	PFHxA	313.0 > 269.0	1.103e5	1.088e3	0.242		3.05	1267.066		4862.061		14.651	NO
2	13	L-PFHxS	399 > 79.9	2.926e4	1.948e2	0.242		3.81	1878.041		5481.435		4.061	NO
3	1...	Total PFHxS	399 > 79.9	2.926e4	1.948e2	0.242			1878.041		5481.435			
4	16	L-PFOA	413 > 369	3.013e5	1.304e3	0.242		4.18	2886.898		18189.601		2.607	NO
5	1...	Total PFOA	413 > 369	3.013e5	1.304e3	0.242			2886.898		18189.601			
6	57	13C2-PFHxA-EIS	315.0 > 270.0	1.088e3		0.242	869.854	3.05	1087.872	12.5	5.171	10.0		
7	61	13C3-PFHxS-EIS	402 > 80	1.948e2		0.242	193.924	3.81	194.779	12.5	4.153	8.0		
8	61	13C3-PFHxS-EIS	402 > 80	1.948e2		0.242	193.924	3.81	194.779	12.5	4.153	8.0		
9	69	13C2-PFOA-EIS	414.9 > 369.7	1.304e3		0.242	1000.992	4.18	1304.435	12.5	5.388	10.4		
10	69	13C2-PFOA-EIS	414.9 > 369.7	1.304e3		0.242	1000.992	4.18	1304.435	12.5	5.388	10.4		
11	-1													
12	23	L-PFOS	499 > 80	1.459e4	1.536e2	0.242		4.71	1187.974		2980.167		2.488	NO
13	1...	Total PFOS	499> 80	1.459e4	1.536e2	0.242			1187.974		2980.167			
14	1...	TDCA	498.3>106.9			0.242								YES
15	1...	TDCA	498.3>106.9			0.242								YES
16	1...	TDCA	498.3>106.9			0.242								YES
17	71	13C8-PFOS-EIS	507.1 > 80	1.536e2		0.242	209.407	4.70	153.567	12.5	3.032	5.9		
18	71	13C8-PFOS-EIS	507.1 > 80	1.536e2		0.242	209.407	4.70	153.567	12.5	3.032	5.9		
19	-1													

Vista Analytical Laboratory

OC 7/27/2020

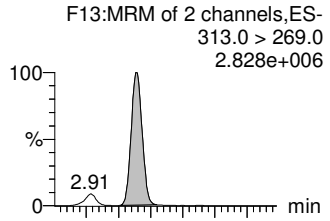
Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-23.qld

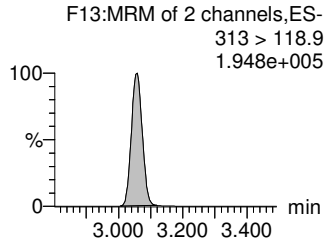
Last Altered: Friday, July 24, 2020 17:15:33 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:16:01 Pacific Daylight Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 24 Jul 2020 17:13:03
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

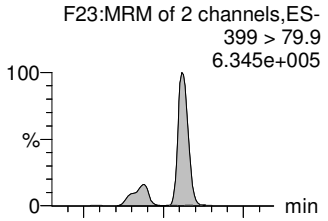
Name: 200723P1-23, Date: 23-Jul-2020, Time: 13:50:35, ID: 2001472-02@10X TW23S-20200710 0.24184, Description: TW23S-20200710

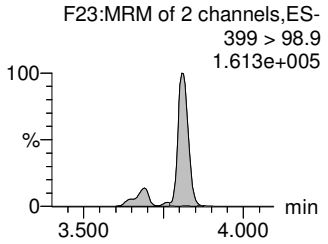
PFHxA



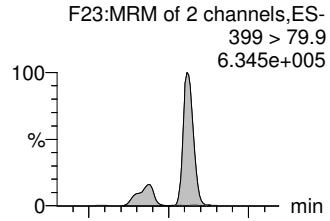


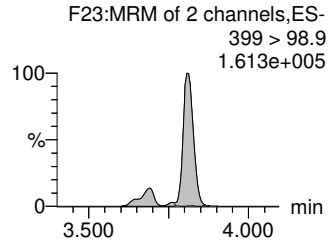
L-PFHxS



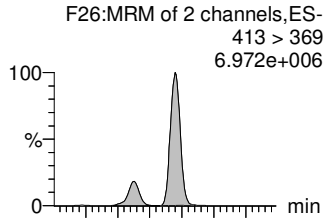


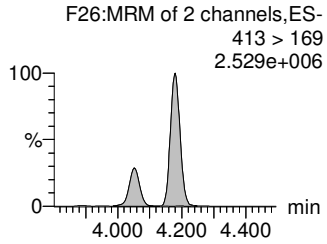
Total PFHxS



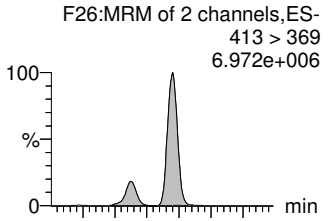


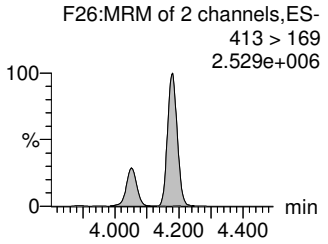
L-PFOA



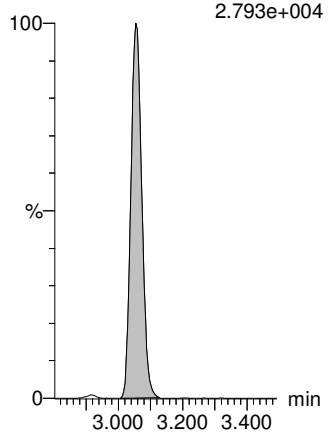


Total PFOA

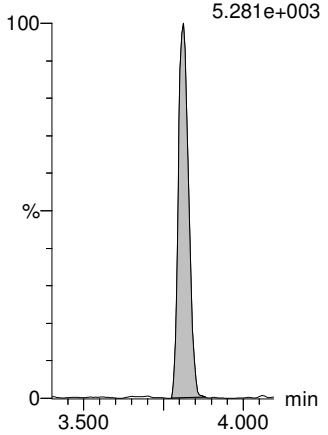




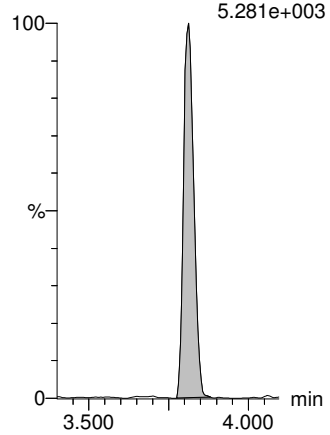
13C2-PFHxA-EIS



13C3-PFHxS-EIS



13C3-PFHxS-EIS



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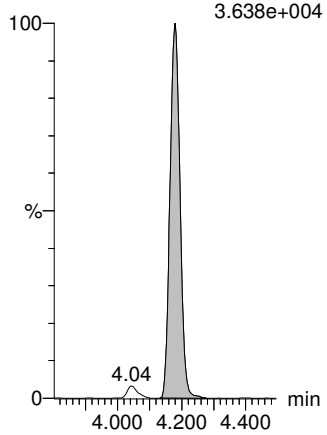

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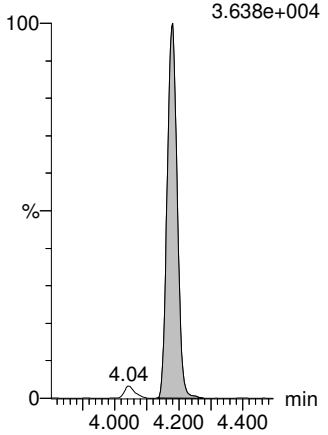

RK 7/24/2020

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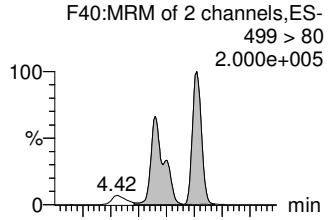
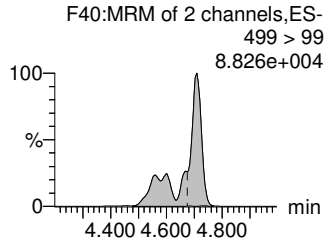
Name: 200723P1-23, Date: 23-Jul-2020, Time: 13:50:35, ID: 2001472-02@10X TW23S-20200710 0.24184, Description: TW23S-20200710

L-PFOS





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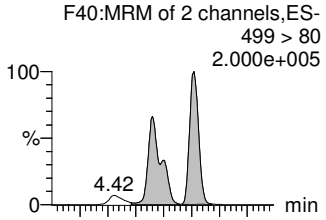

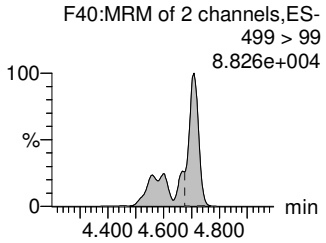

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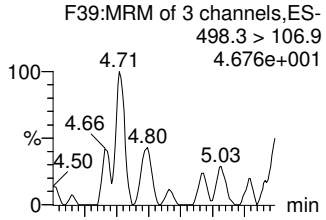

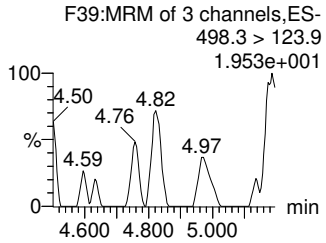

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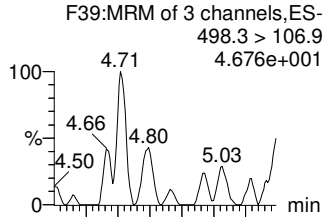

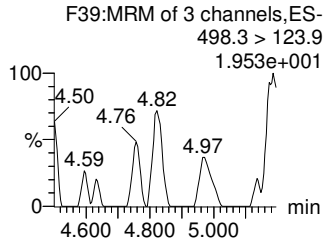

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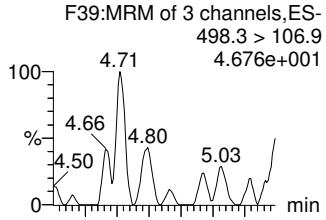

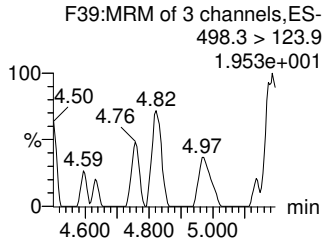

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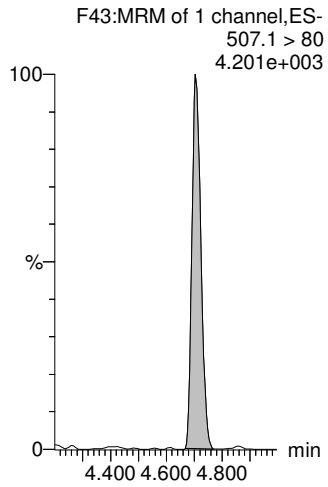

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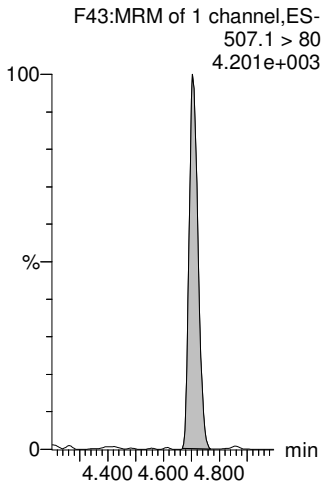

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*See Dilution

Name: 200721P1-46, Date: 21-Jul-2020, Time: 23:11:35, ID: 2001472-03 TW24S-20200710 0.25174, Description: TW24S-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80	6.445e4	9.276e2	0.252		2.56	2.56	869	1289.299		2.410	NO
2	7	PFHxA	313.0 > 269.0	7.559e5	7.338e3	0.252		3.09	3.09	1290	4795.319	*E	15.368	NO
3	9	HFPO-DA	285.1 > 168.9		1.801e3	0.252		3.31						YES
4	11	PFHpA	363.0 > 319	1.878e5	7.952e3	0.252		3.69	3.69	295	948.681		40.000	NO
5	12	ADONA	376.8 > 250.9		7.952e3	0.252		3.78						YES
6	51	13C3-PFBS-EIS	302.0 > 98.9	9.276e2		0.252	96.924	2.50	2.56	928	38.015	76.6		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	7.338e3		0.252	854.580	3.08	3.09	7340	34.110	68.7		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.801e3		0.252	179.588	3.30	3.31	1800	39.844	80.2		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	7.952e3		0.252	833.947	3.68	3.69	7950	37.876	76.3		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	7.952e3		0.252	833.947	3.68	3.69	7950	37.876	76.3		
11	-1													
12	13	L-PFHxS	399 > 79.9	2.196e5	1.408e3	0.252		3.83	3.83	1950	6358.692	*E	4.084	NO
13	1...	Total PFHxS	399 > 79.9	2.196e5	1.408e3	0.252		3.93		1950	6358.692			
14	16	L-PFOA	413 > 369	1.701e6	8.033e3	0.252		4.20	4.20	2650		*E	2.614	NO
15	1...	Total PFOA	413 > 369	1.701e6	8.033e3	0.252		4.60		0.000				
16	21	PFNA	463.0 > 418.8	4.712e3	9.918e3	0.252		4.64	4.64	5.94	18.577		13.476	NO
17	61	13C3-PFHxS-EIS	402 > 80	1.408e3		0.252	182.953	3.82	3.83	1410	30.581	61.6		
18	61	13C3-PFHxS-EIS	402 > 80	1.408e3		0.252	182.953	3.82	3.83	1410	30.581	61.6		
19	69	13C2-PFOA-EIS	414.9 > 369.7	8.033e3		0.252	1066.462	4.35	4.20	8030	29.923	60.3		
20	69	13C2-PFOA-EIS	414.9 > 369.7	8.033e3		0.252	1066.462	4.35	4.20	8030	29.923	60.3		
21	65	13C5-PFNA-EIS	468.2 > 422.9	9.918e3		0.252	943.916	4.96	4.64	9920	41.740	84.1		
22	-1													
23	23	L-PFOS	499 > 80	9.933e4	1.683e3	0.252		4.73	4.73	738	2254.141	*E	2.451	NO
24	1...	Total PFOS	499> 80	9.933e4	1.683e3	0.252		4.60		738	2254.141			
25	25	9Cl-PF30NS	531 > 351		1.683e3	0.252		4.93						YES
26	26	PFDA	513 > 469	4.399e2	1.195e4	0.252		5.02	5.02	0.460	2.120		5.273	NO
27	33	PFUdA	563.0 > 519		1.059e4	0.252		5.34						YES
28	71	13C8-PFOS-EIS	507.1 > 80	1.683e3		0.252	193.524	4.72	4.73	1680	34.536	69.6		
29	71	13C8-PFOS-EIS	507.1 > 80	1.683e3		0.252	193.524	4.72	4.73	1680	34.536	69.6		
30	71	13C8-PFOS-EIS	507.1 > 80	1.683e3		0.252	193.524	4.72	4.73	1680	34.536	69.6		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.195e4		0.252	1149.255	5.01	5.02	12000	41.312	83.2		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.059e4		0.252	1217.713	5.33	5.34	10600	34.547	69.6		
33	-1													
34	29	L-MeFOSAA	570 > 419		2.578e3	0.252		5.16						YES
35	1...	Total N-MeFOSAA	570. > 419	0.000e0	2.578e3	0.252		5.19		0.000				
36	31	L-EtFOSAA	583.9 > 419		2.062e3	0.252		5.32						YES

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-46.qld

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Name: 200721P1-46, Date: 21-Jul-2020, Time: 23:11:35, ID: 2001472-03 TW24S-20200710 0.25174, Description: TW24S-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	0.000e0	2.062e3	0.252		5.37		0.000				
38	35	11Cl-PF30UdS	631 > 451		1.052e4	0.252		5.56						YES
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.578e3		0.252	273.698	5.16	5.16	2580	37.422	75.4		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.578e3		0.252	273.698	5.16	5.16	2580	37.422	75.4		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.062e3		0.252	214.700	5.31	5.32	2060	38.156	76.8		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.062e3		0.252	214.700	5.31	5.32	2060	38.156	76.8		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	1.052e4		0.252	1316.711	5.85	5.62	10500	31.747	63.9		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.052e4	0.252		5.62						YES
46	39	PFTrDA	662.9 > 618.9		1.052e4	0.252		5.85						YES
47	41	PFTeDA	713.0 > 669.0		6.182e3	0.252		6.07						YES
48	1...	TDCA	498.3>106.9			0.252		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	1.683e3		0.252	193.524	4.72	4.73	1680	34.536	69.6		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	1.052e4		0.252	1316.711	5.85	5.62	10500	31.747	63.9		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	1.052e4		0.252	1316.711	5.85	5.62	10500	31.747	63.9		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	6.182e3		0.252	1368.133	6.07	6.07	6180	17.950	36.1		

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Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-46.qld

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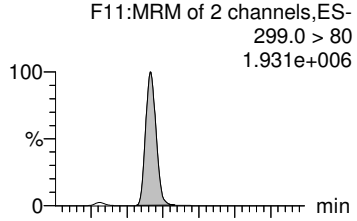
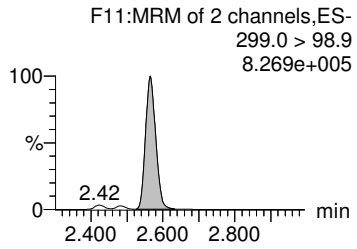
PFBS





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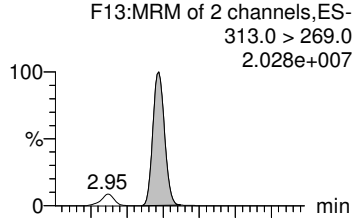

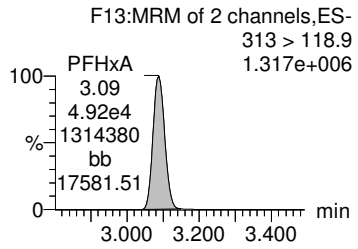

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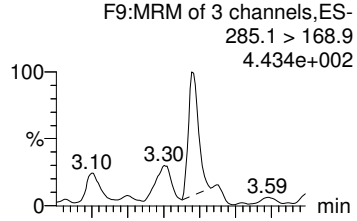
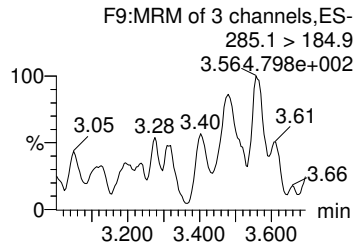
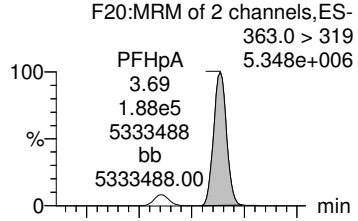
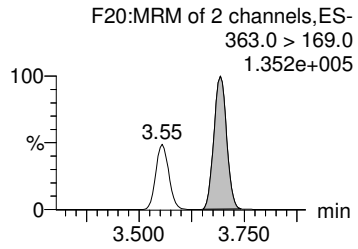




PFHpA





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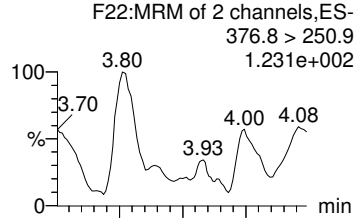

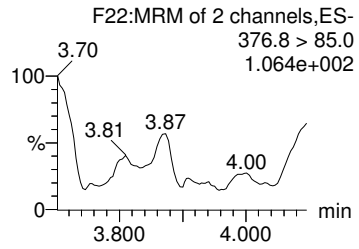

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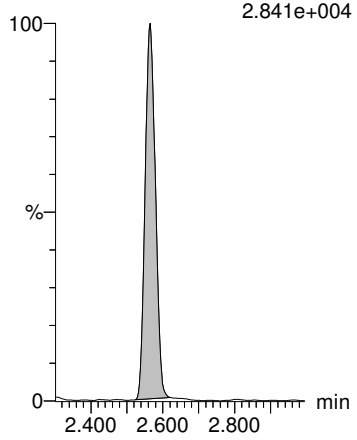

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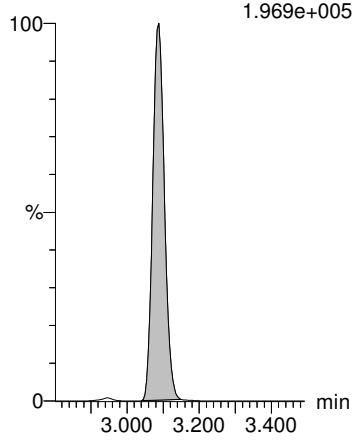

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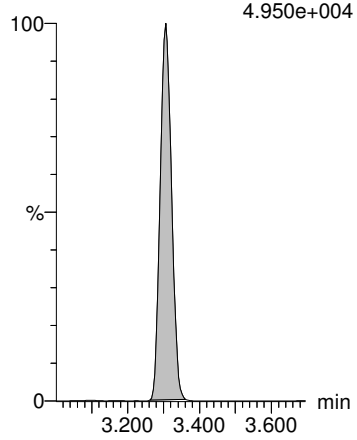

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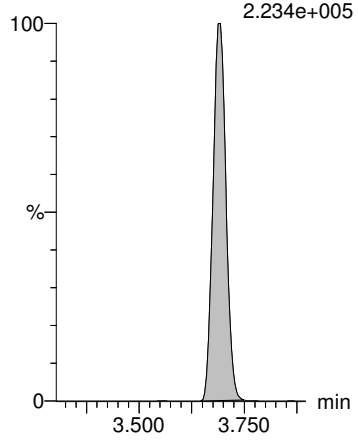

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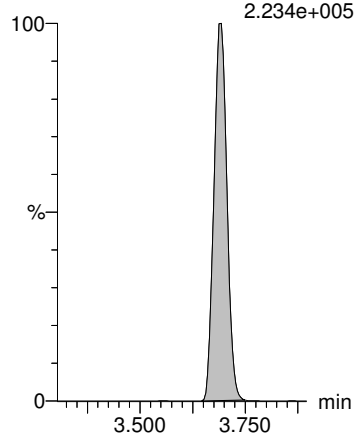

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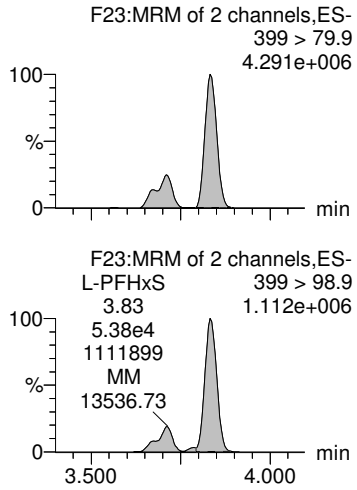
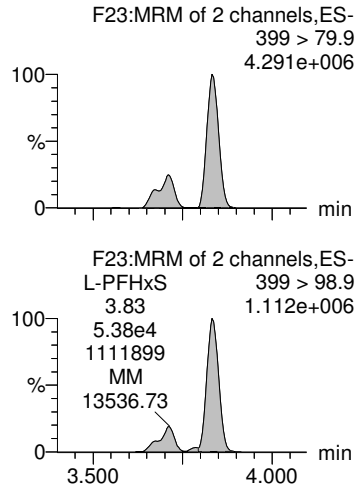
Name: 200721P1-46, Date: 21-Jul-2020, Time: 23:11:35, ID: 2001472-03 TW24S-20200710 0.25174, Description: TW24S-20200710

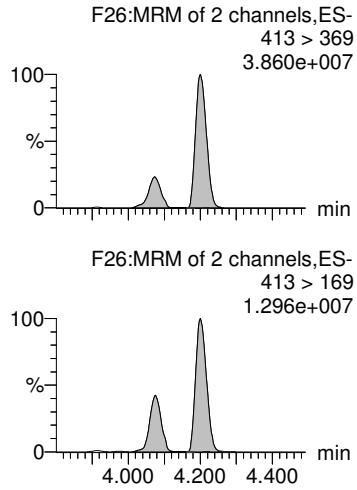
L-PFHxS



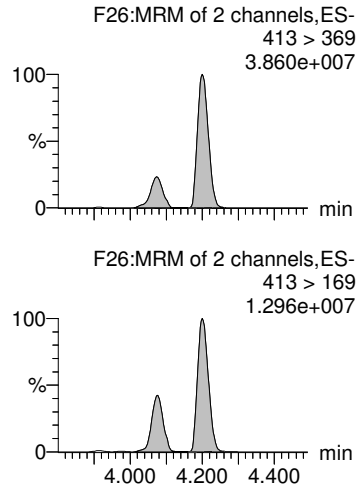
Total PFHxS



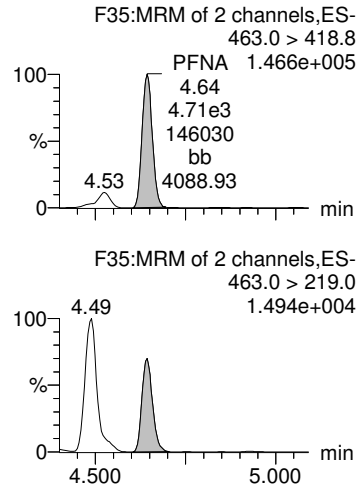
L-PFOA



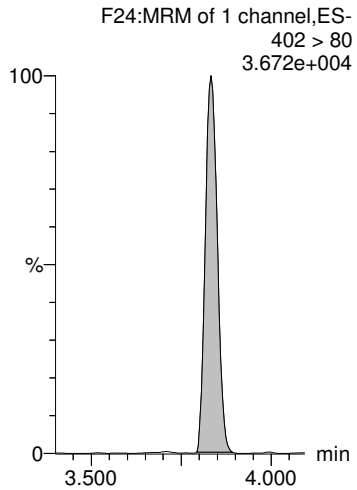
Total PFOA



PFNA



13C3-PFHxS-EIS



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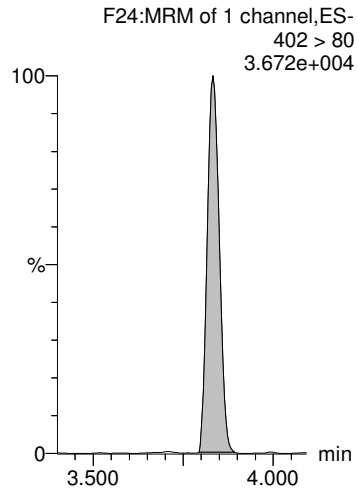
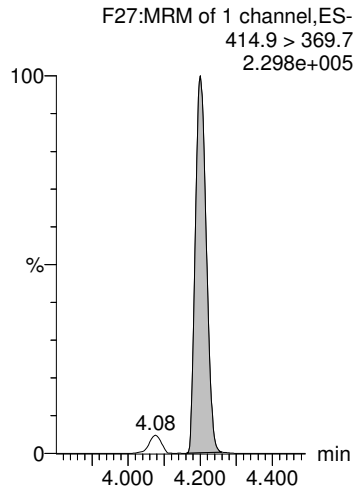
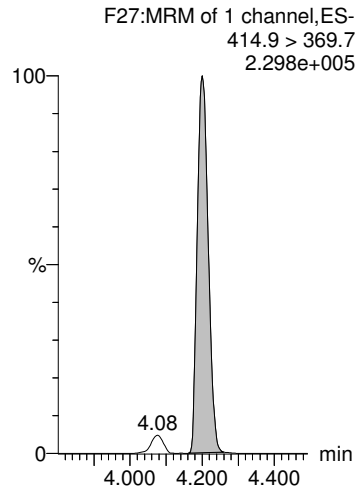


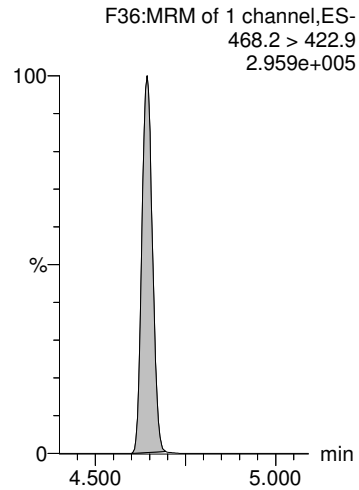
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



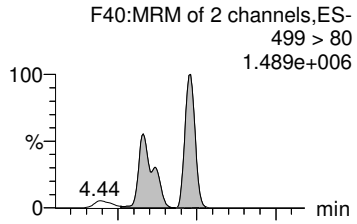
RK 7/24/2020

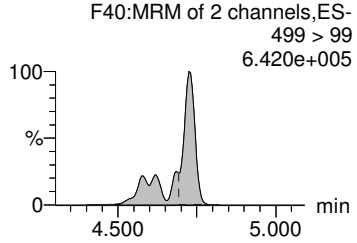
Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-46.qld

Last Altered: Friday, July 24, 2020 16:43:23 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:43:46 Pacific Daylight Time

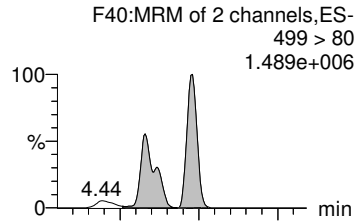
Name: 200721P1-46, Date: 21-Jul-2020, Time: 23:11:35, ID: 2001472-03 TW24S-20200710 0.25174, Description: TW24S-20200710

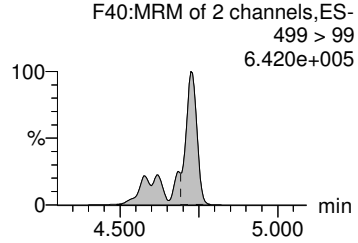
L-PFOS



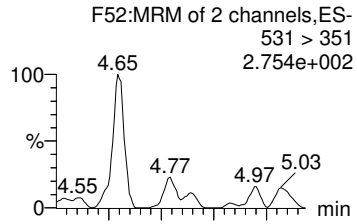


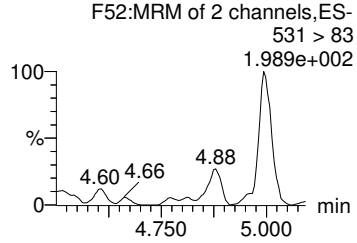
Total PFOS



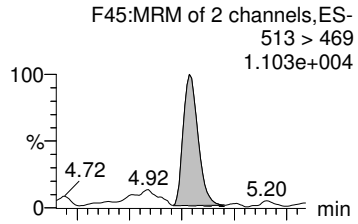


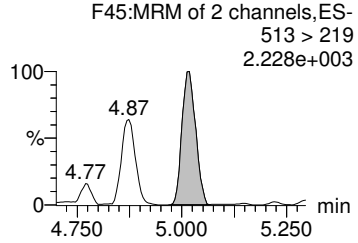
9Cl-PF30NS



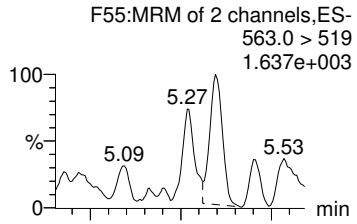


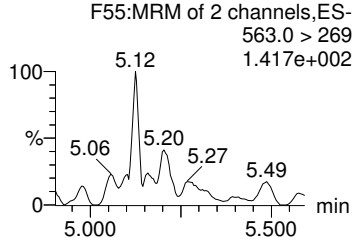
PFDA



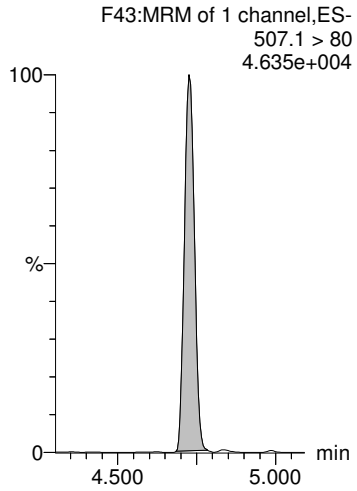


PFUdA





13C8-PFOS-EIS



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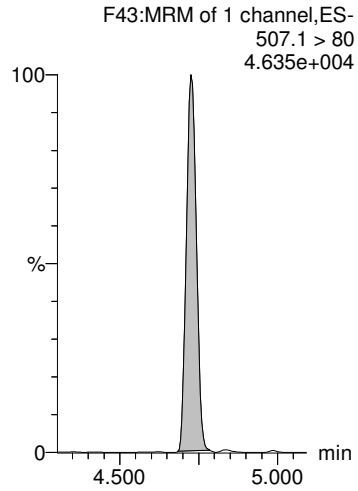
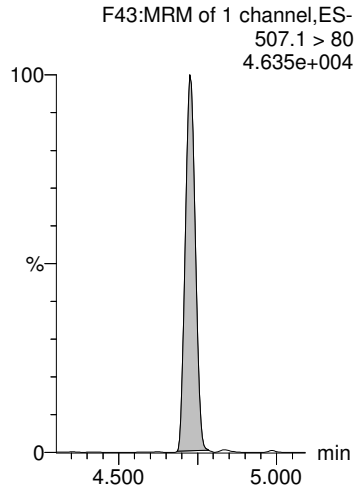
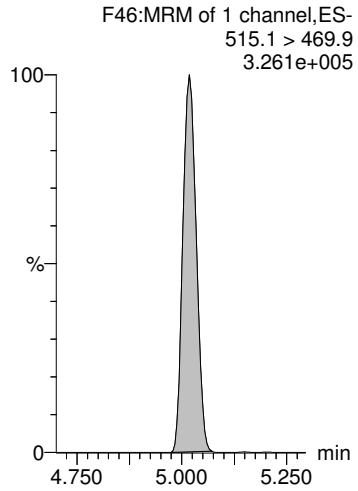


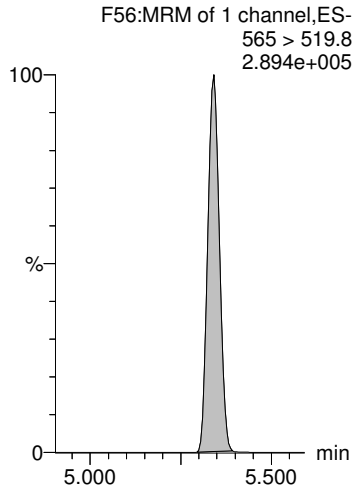
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



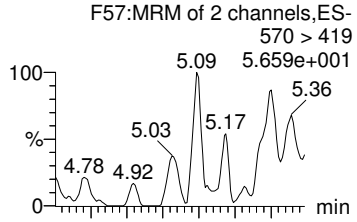
RK 7/24/2020

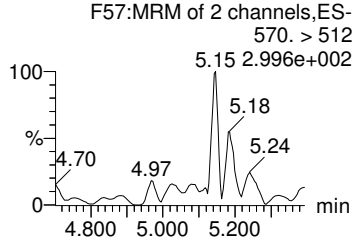
Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-46.qld

Last Altered: Friday, July 24, 2020 16:43:23 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:43:46 Pacific Daylight Time

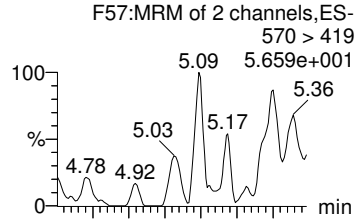
Name: 200721P1-46, Date: 21-Jul-2020, Time: 23:11:35, ID: 2001472-03 TW24S-20200710 0.25174, Description: TW24S-20200710

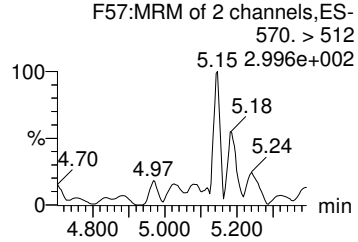
L-MeFOSAA



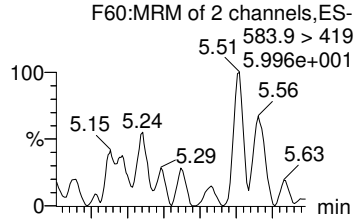


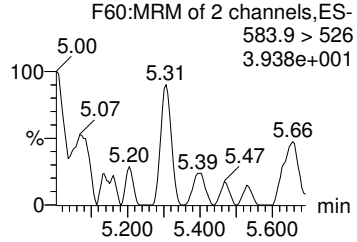
Total N-MeFOSAA





L-EtFOSAA





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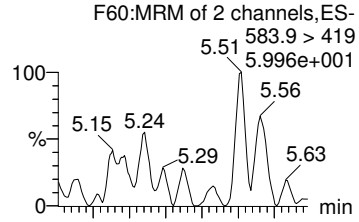
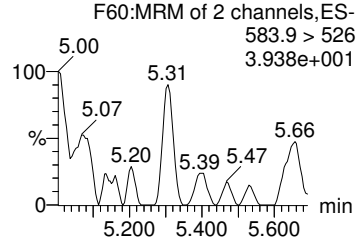
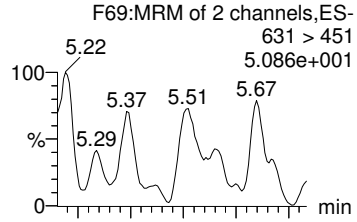
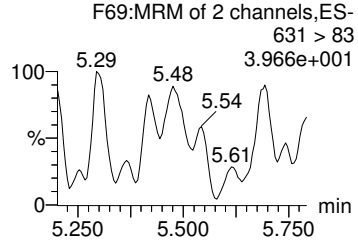


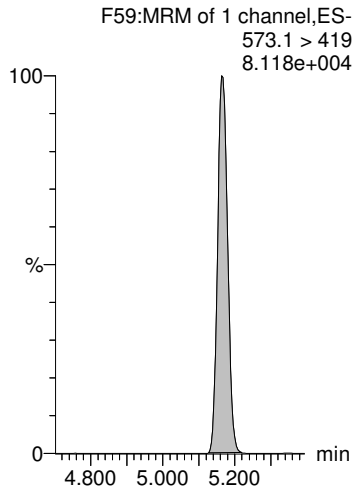


11Cl-PF30UdS

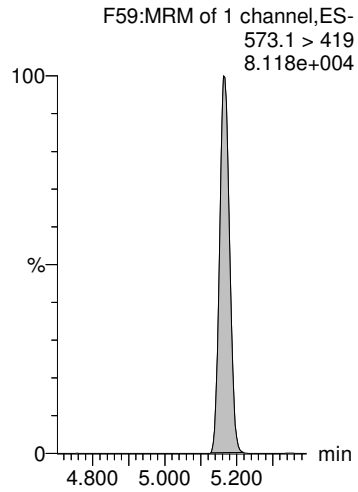




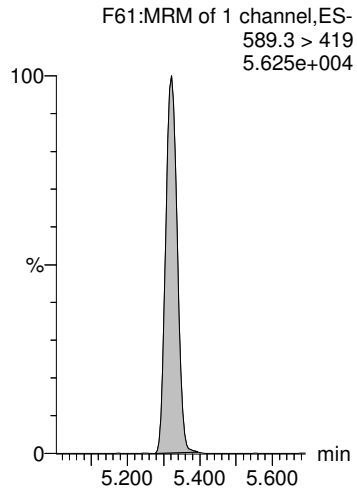
d3-N-MeFOSAA-EIS



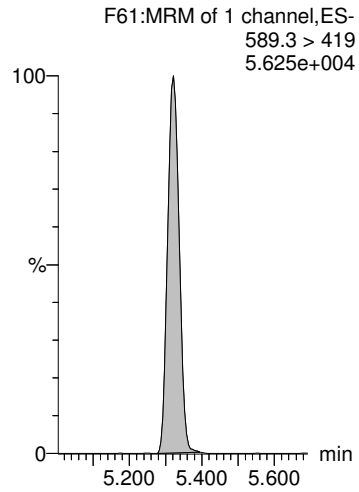
d3-N-MeFOSAA-EIS



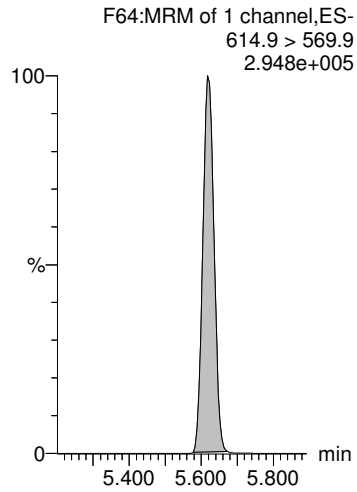
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



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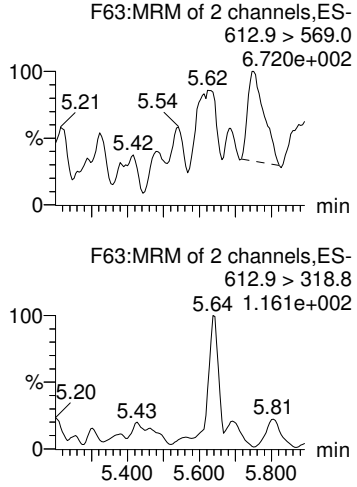
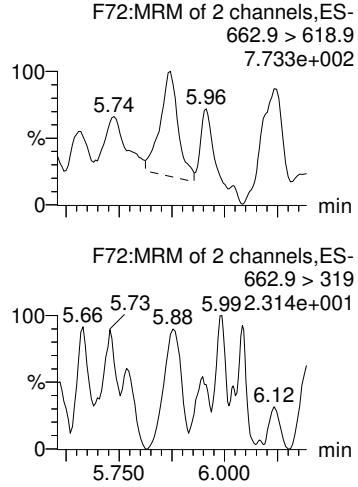
Last Altered: Friday, July 24, 2020 16:43:23 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:43:46 Pacific Daylight Time

Name: 200721P1-46, Date: 21-Jul-2020, Time: 23:11:35, ID: 2001472-03 TW24S-20200710 0.25174, Description: TW24S-20200710

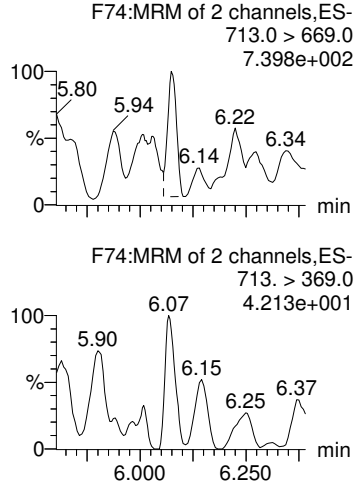
PFDoA



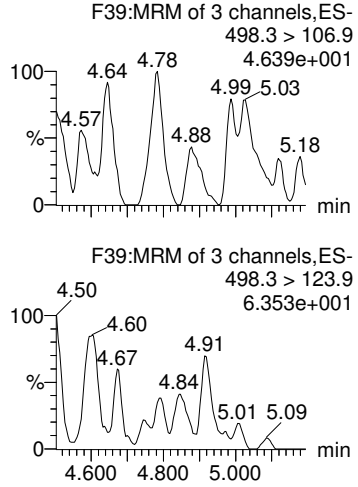
PFTrDA



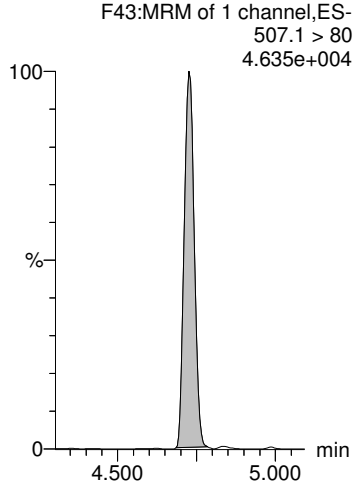
PFTeDA



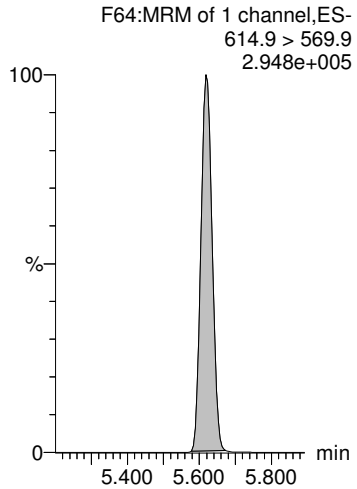
TDCA



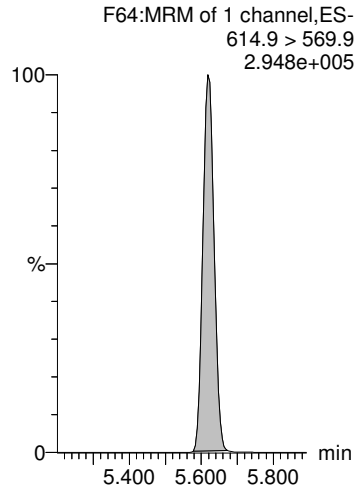
13C8-PFOS-EIS



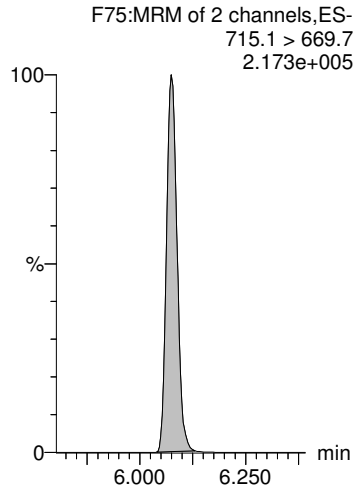
13C2-PFDoA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



Vista Analytical Laboratory

OC 7/27/2020

Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-24.qld

Last Altered: Friday, July 24, 2020 17:22:53 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:23:45 Pacific Daylight Time

Name: 200723P1-24, Date: 23-Jul-2020, Time: 14:01:11, ID: 2001472-03@10X TW24S-20200710 0.25174, Description: TW24S-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	RT	Response	Std. Conc	Conc.	%Rec	Ion Ratio	Ratio Out?
1	7	PFHxA	313.0 > 269.0	9.325e4	8.124e2	0.252		3.05	1434.807		5289.216		15.693	NO
2	13	L-PFHxS	399 > 79.9	2.748e4	1.953e2	0.252		3.81	1759.050		4981.569		4.025	NO
3	1...	Total PFHxS	399 > 79.9	2.748e4	1.953e2	0.252			1759.050		4981.569			
4	16	L-PFOA	413 > 369	2.554e5	1.197e3	0.252		4.18	2667.288		15258.338		2.689	NO
5	1...	Total PFOA	413 > 369	2.554e5	1.197e3	0.252			2667.288		15258.338			
6	57	13C2-PFHxA-EIS	315.0 > 270.0	8.124e2		0.252	869.854	3.05	812.410	12.5	3.710	7.5		
7	61	13C3-PFHxS-EIS	402 > 80	1.953e2		0.252	193.924	3.81	195.273	12.5	4.000	8.1		
8	61	13C3-PFHxS-EIS	402 > 80	1.953e2		0.252	193.924	3.81	195.273	12.5	4.000	8.1		
9	69	13C2-PFOA-EIS	414.9 > 369.7	1.197e3		0.252	1000.992	4.18	1197.102	12.5	4.751	9.6		
10	69	13C2-PFOA-EIS	414.9 > 369.7	1.197e3		0.252	1000.992	4.18	1197.102	12.5	4.751	9.6		
11	-1													
12	23	L-PFOS	499 > 80	1.040e4	1.735e2	0.252		4.71	749.345		1993.311		2.408	NO
13	1...	Total PFOS	499> 80	1.040e4	1.735e2	0.252			749.345		1993.311			
14	1...	TDCA	498.3>106.9			0.252								YES
15	1...	TDCA	498.3>106.9			0.252								YES
16	1...	TDCA	498.3>106.9			0.252								YES
17	71	13C8-PFOS-EIS	507.1 > 80	1.735e2		0.252	209.407	4.71	173.494	12.5	3.291	6.6		
18	71	13C8-PFOS-EIS	507.1 > 80	1.735e2		0.252	209.407	4.71	173.494	12.5	3.291	6.6		
19	-1													

RK 7/24/2020

Vista Analytical Laboratory

OC 7/27/2020

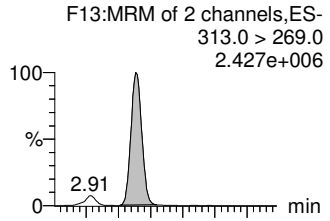
Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-24.qld

Last Altered: Friday, July 24, 2020 17:22:53 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:23:45 Pacific Daylight Time

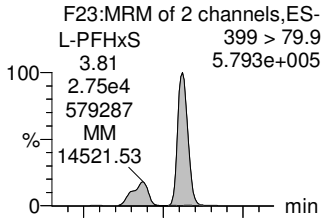
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 24 Jul 2020 17:18:38
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-24, Date: 23-Jul-2020, Time: 14:01:11, ID: 2001472-03@10X TW24S-20200710 0.25174, Description: TW24S-20200710

PFHxA



L-PFHxS



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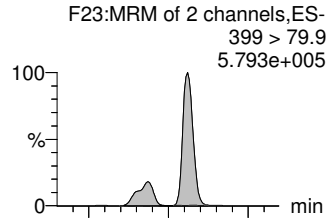

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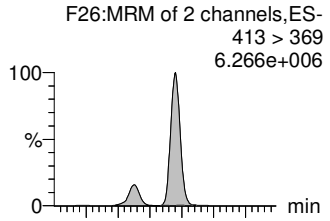

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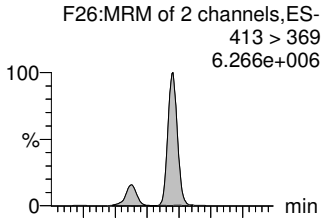

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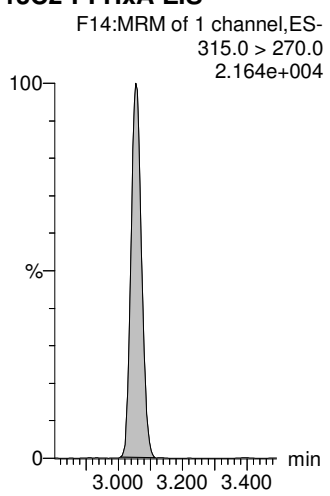

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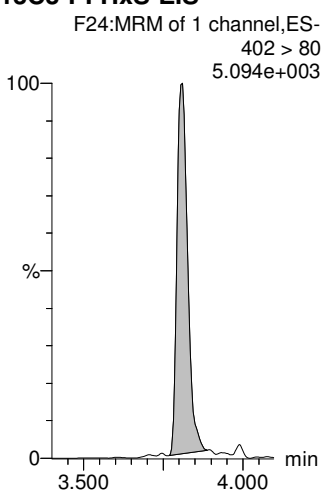

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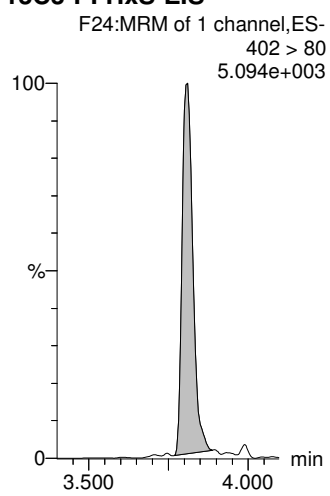

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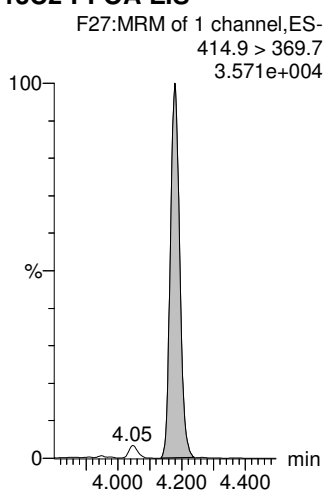

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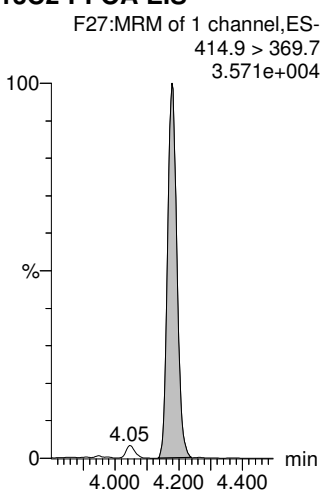


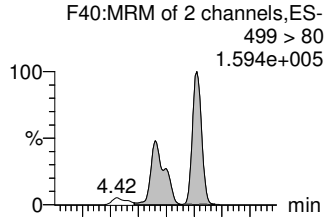
RK 7/24/2020

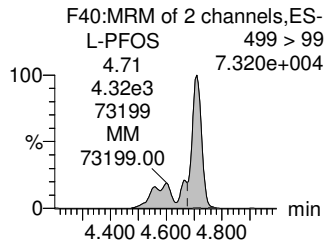
Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-24.qld

Last Altered: Friday, July 24, 2020 17:22:53 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:23:45 Pacific Daylight Time

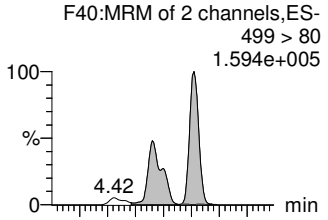
Name: 200723P1-24, Date: 23-Jul-2020, Time: 14:01:11, ID: 2001472-03@10X TW24S-20200710 0.25174, Description: TW24S-20200710

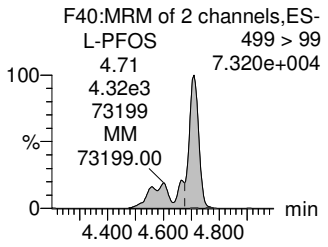
L-PFOS





Total PFOS





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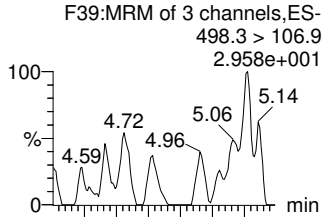

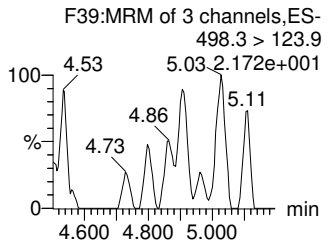

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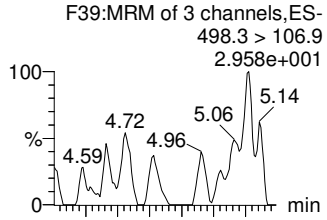

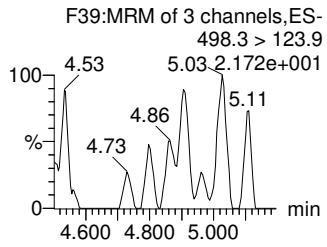

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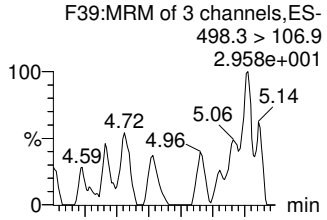
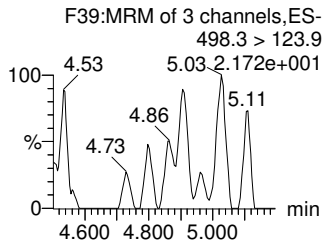
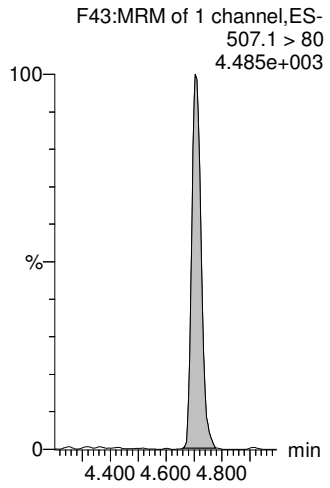




13C8-PFOS-EIS



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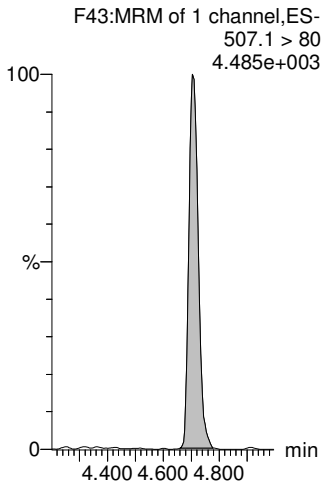

Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-20.qld

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Printed: Friday, July 24, 2020 17:04:19 Pacific Daylight Time

Name: 200723P1-20, Date: 23-Jul-2020, Time: 13:18:47, ID: 2001472-04 TW15D-20200710 0.28426, Description: TW15D-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80	1.713e1	9.881e2	0.284		2.53	2.53	0.217	0.424		2.960	NO
2	7	PFHxA	313.0 > 269.0	2.068e2	9.445e3	0.284		3.06	3.05	0.274	0.834		12.908	NO
3	9	HFPO-DA	285.1 > 168.9		1.854e3	0.284		3.28						YES
4	11	PFHpA	363.0 > 319		9.132e3	0.284		3.67						YES
5	12	ADONA	376.8 > 250.9		9.132e3	0.284		3.76						YES
6	51	13C3-PFBS-EIS	302.0 > 98.9	9.881e2		0.284	95.030	2.52	2.53	988	36.579	83.2		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	9.445e3		0.284	869.854	3.05	3.06	9450	38.199	86.9		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.854e3		0.284	175.191	3.27	3.28	1850	37.231	84.7		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	9.132e3		0.284	803.699	3.66	3.67	9130	39.974	90.9		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	9.132e3		0.284	803.699	3.66	3.67	9130	39.974	90.9		
11	-1													
12	13	L-PFHxS	399 > 79.9	3.648e1	2.110e3	0.284		3.81	3.81	0.216	0.778		4.821	NO
13	1...	Total PFHxS	399 > 79.9	3.648e1	2.110e3	0.284		3.93		0.216	0.778			
14	16	L-PFOA	413 > 369	7.101e2	1.149e4	0.284		4.18	4.18	0.773	2.656		3.110	NO
15	1...	Total PFOA	413 > 369	7.101e2	1.149e4	0.284		4.60		0.773	2.656			
16	21	PFNA	463.0 > 418.8		1.048e4	0.284		4.62						YES
17	61	13C3-PFHxS-EIS	402 > 80	2.110e3		0.284	193.924	3.80	3.81	2110	38.284	87.1		
18	61	13C3-PFHxS-EIS	402 > 80	2.110e3		0.284	193.924	3.80	3.81	2110	38.284	87.1		
19	69	13C2-PFOA-EIS	414.9 > 369.7	1.149e4		0.284	1000.992	4.38	4.18	11500	40.376	91.8		
20	69	13C2-PFOA-EIS	414.9 > 369.7	1.149e4		0.284	1000.992	4.38	4.18	11500	40.376	91.8		
21	65	13C5-PFNA-EIS	468.2 > 422.9	1.048e4		0.284	949.634	4.96	4.62	10500	38.812	88.3		
22	-1													
23	23	L-PFOS	499 > 80	1.325e2	2.235e3	0.284		4.71	4.71	0.741	2.258		3.115	NO
24	1...	Total PFOS	499> 80	1.325e2	2.235e3	0.284		4.60		0.741	2.258			
25	25	9Cl-PF30NS	531 > 351		2.235e3	0.284		4.92						YES
26	26	PFDA	513 > 469	1.116e2	1.200e4	0.284		5.00	5.01	0.116	0.354		71.524	NO
27	33	PFUdA	563.0 > 519		1.046e4	0.284		5.33						YES
28	71	13C8-PFOS-EIS	507.1 > 80	2.235e3		0.284	209.407	4.70	4.71	2240	37.553	85.4		
29	71	13C8-PFOS-EIS	507.1 > 80	2.235e3		0.284	209.407	4.70	4.71	2240	37.553	85.4		
30	71	13C8-PFOS-EIS	507.1 > 80	2.235e3		0.284	209.407	4.70	4.71	2240	37.553	85.4		
31	73	13C2-PFDA-EIS	515.1 > 469.9	1.200e4		0.284	1188.753	4.99	5.00	12000	35.513	80.8		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.046e4		0.284	1153.749	5.23	5.33	10500	31.903	72.5		
33	-1													
34	29	L-MeFOSAA	570 > 419		2.144e3	0.284		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.000e0	2.144e3	0.284		5.19		0.000				
36	31	L-EtFOSAA	583.9 > 419		2.091e3	0.284		5.31						YES

Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-20.qld

Last Altered: Friday, July 24, 2020 17:03:56 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:04:19 Pacific Daylight Time

Name: 200723P1-20, Date: 23-Jul-2020, Time: 13:18:47, ID: 2001472-04 TW15D-20200710 0.28426, Description: TW15D-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	0.000e0	2.091e3	0.284		5.37		0.000				
38	35	11Cl-PF30UdS	631 > 451		8.647e3	0.284		5.55						YES
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.144e3		0.284	261.878	5.15	5.15	2140	28.800	65.5		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	2.144e3		0.284	261.878	5.15	5.15	2140	28.800	65.5		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.091e3		0.284	231.458	5.30	5.31	2090	31.775	72.3		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.091e3		0.284	231.458	5.30	5.31	2090	31.775	72.3		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	8.647e3		0.284	1474.556	5.86	5.61	8650	20.631	46.9		
44	-1													
45	37	PFDoA	612.9 > 569.0		8.647e3	0.284		5.61						YES
46	39	PFTrDA	662.9 > 618.9		8.647e3	0.284		5.84						YES
47	41	PFTeDA	713.0 > 669.0		1.241e3	0.284		6.07						YES
48	1...	TDCA	498.3>106.9			0.284		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	2.235e3		0.284	209.407	4.70	4.71	2240	37.553	85.4		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	8.647e3		0.284	1474.556	5.86	5.61	8650	20.631	46.9		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	8.647e3		0.284	1474.556	5.86	5.61	8650	20.631	46.9		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	1.241e3		0.284	1435.289	6.06	6.07	1240	3.042	6.9		

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Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-20.qld

Last Altered: Friday, July 24, 2020 17:03:56 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:04:19 Pacific Daylight Time

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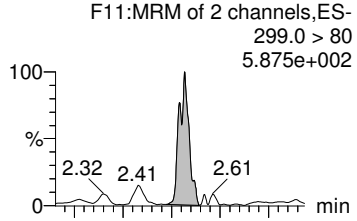
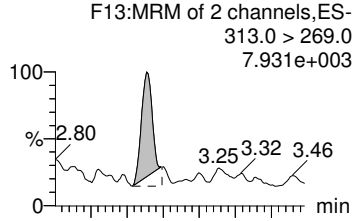
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-20, Date: 23-Jul-2020, Time: 13:18:47, ID: 2001472-04 TW15D-20200710 0.28426, Description: TW15D-20200710

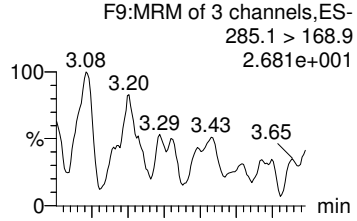
PFBS



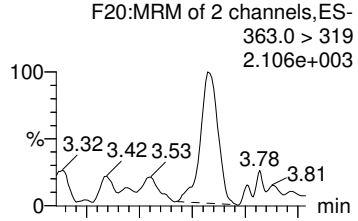
PFHxA



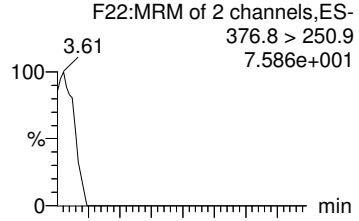
HFPO-DA



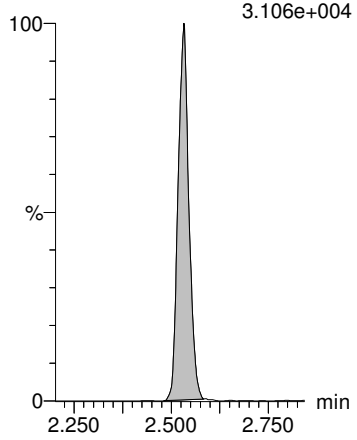
PFHpA



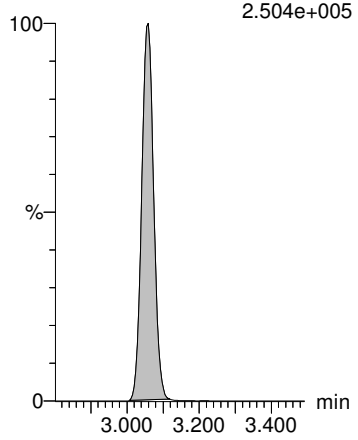
ADONA



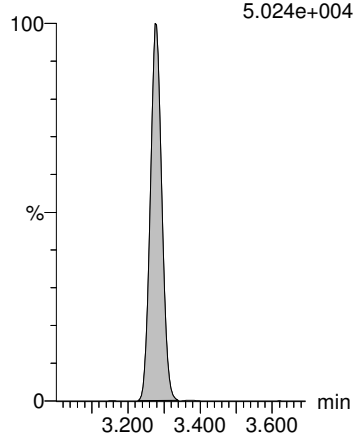
13C3-PFBS-EIS



13C2-PFHxA-EIS



13C3-HFPO-DA-EIS



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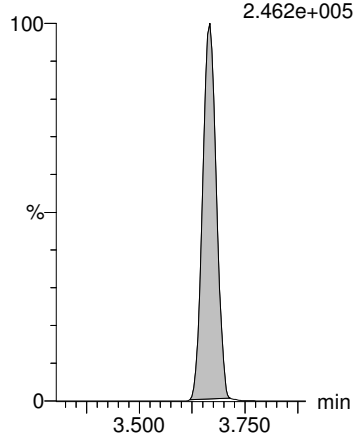
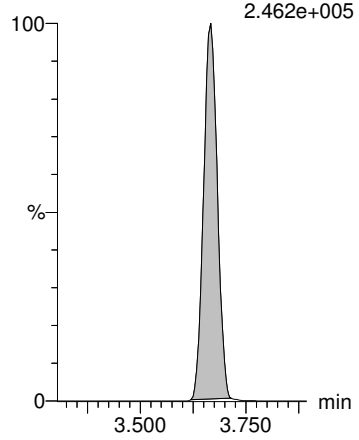


13C4-PFHpA-EIS

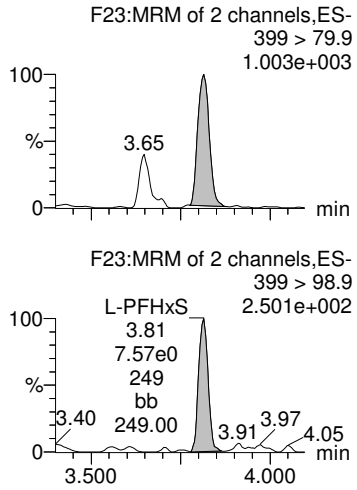


Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-20.qld

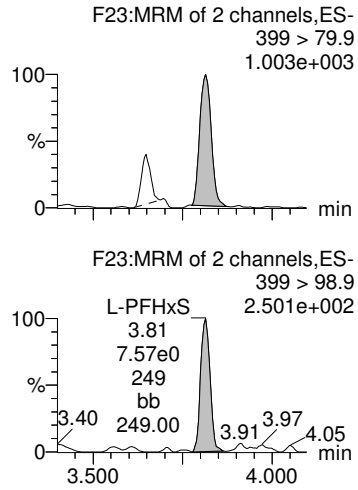
Last Altered: Friday, July 24, 2020 17:03:56 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:04:19 Pacific Daylight Time

Name: 200723P1-20, Date: 23-Jul-2020, Time: 13:18:47, ID: 2001472-04 TW15D-20200710 0.28426, Description: TW15D-20200710

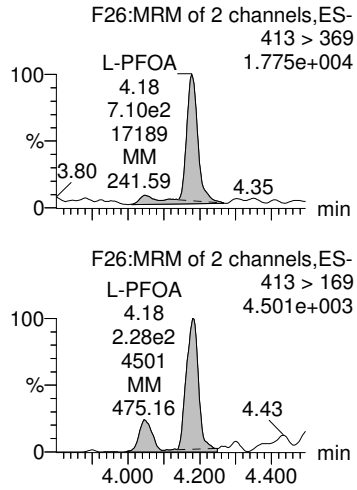
L-PFHxS



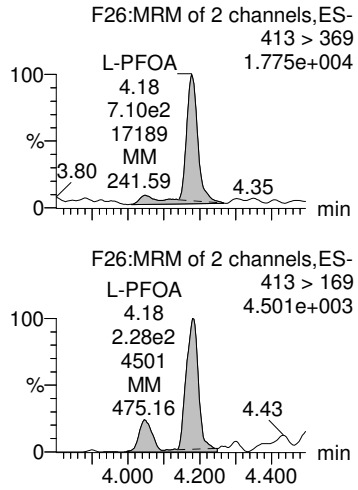
Total PFHxS



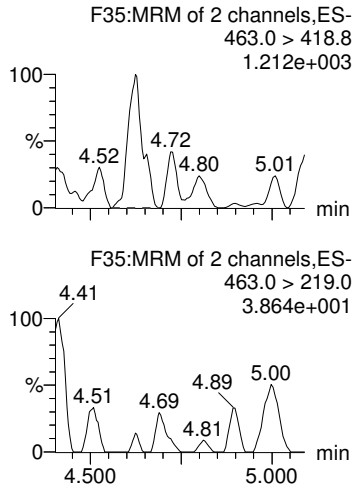
L-PFOA



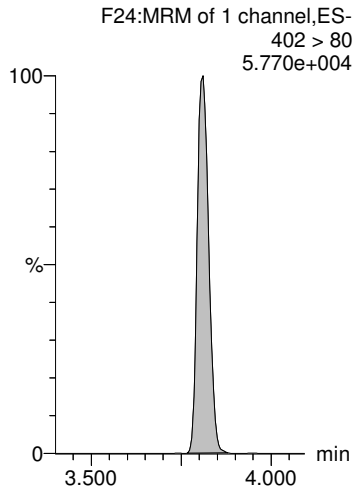
Total PFOA



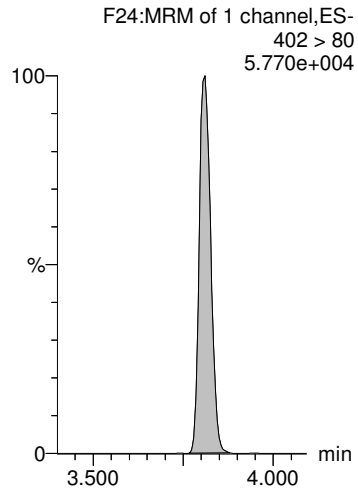
PFNA



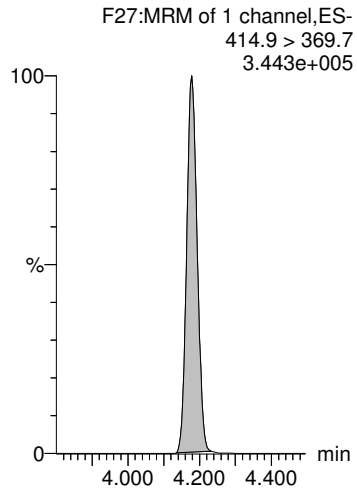
13C3-PFHxS-EIS



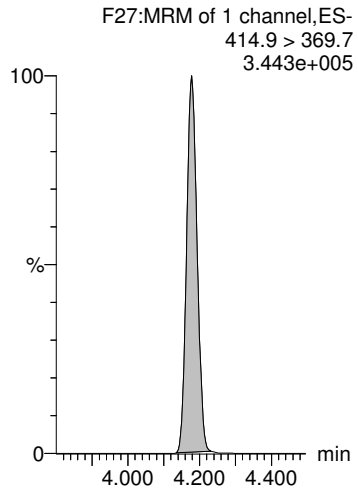
13C3-PFHxS-EIS



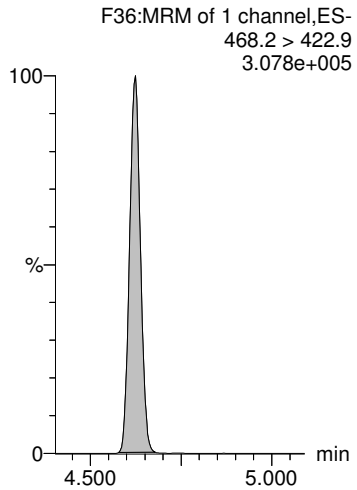
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS

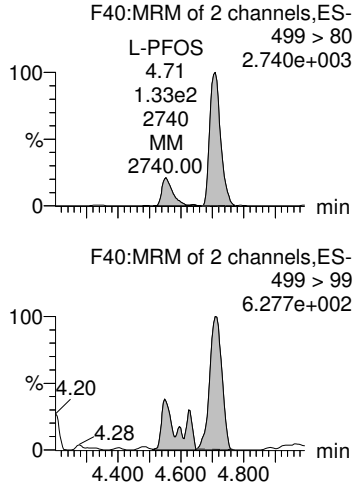


Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-20.qld

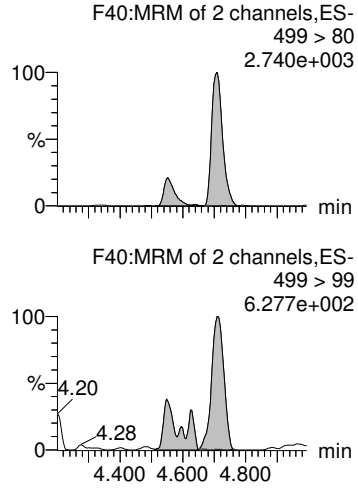
Last Altered: Friday, July 24, 2020 17:03:56 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:04:19 Pacific Daylight Time

Name: 200723P1-20, Date: 23-Jul-2020, Time: 13:18:47, ID: 2001472-04 TW15D-20200710 0.28426, Description: TW15D-20200710

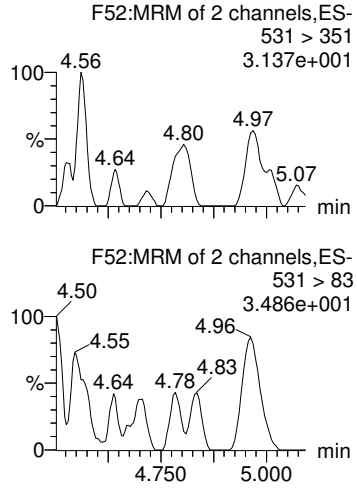
L-PFOS



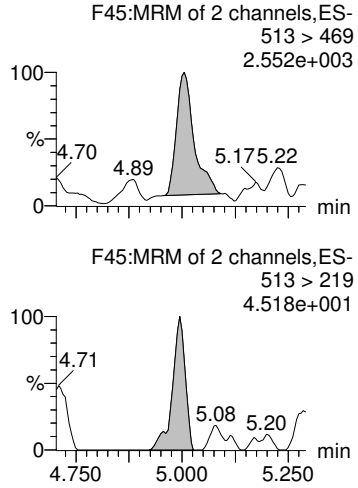
Total PFOS



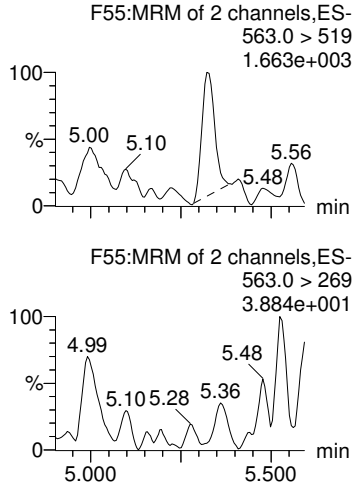
9Cl-PF30NS



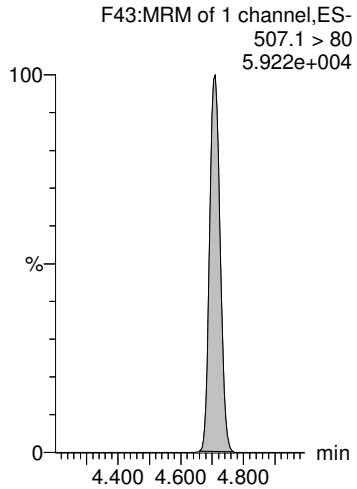
PFDA



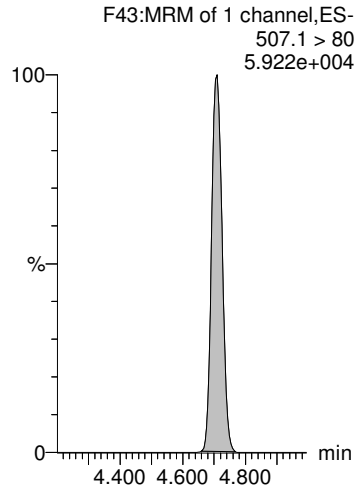
PFUdA



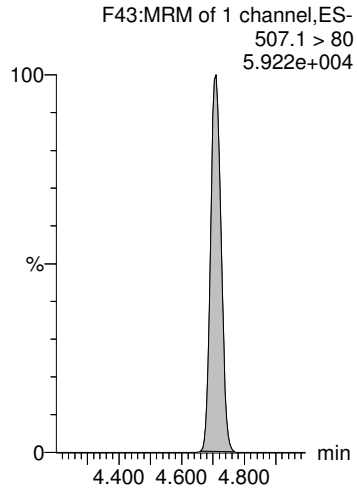
13C8-PFOS-EIS



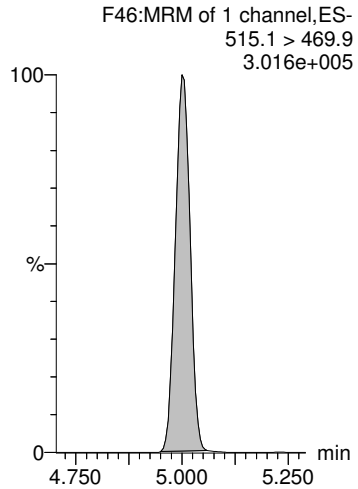
13C8-PFOS-EIS



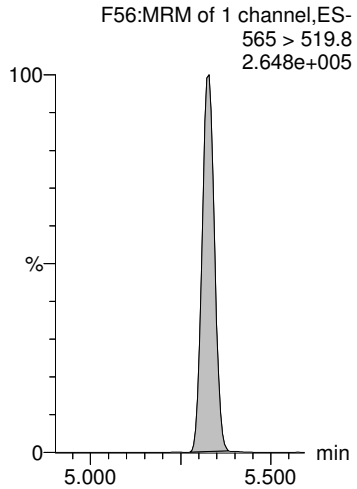
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



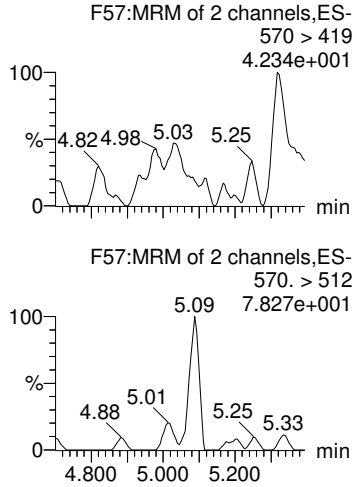
RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-20.qld

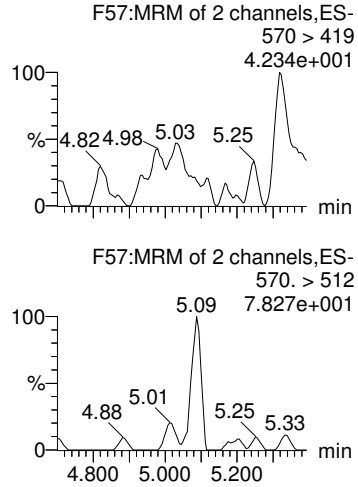
Last Altered: Friday, July 24, 2020 17:03:56 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:04:19 Pacific Daylight Time

Name: 200723P1-20, Date: 23-Jul-2020, Time: 13:18:47, ID: 2001472-04 TW15D-20200710 0.28426, Description: TW15D-20200710

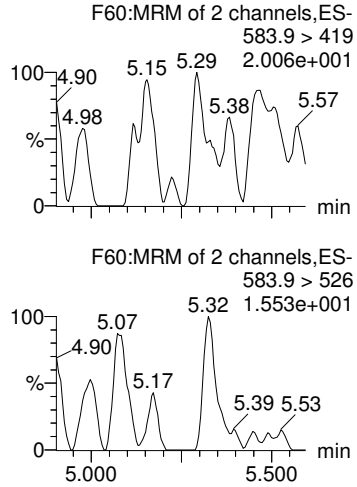
L-MeFOSAA



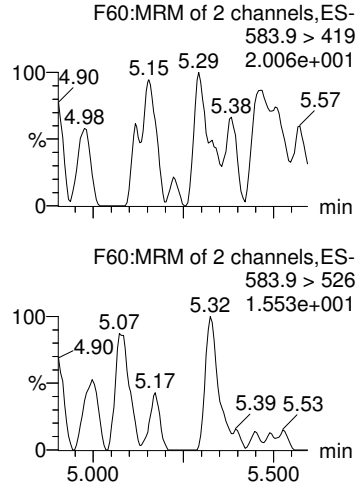
Total N-MeFOSAA



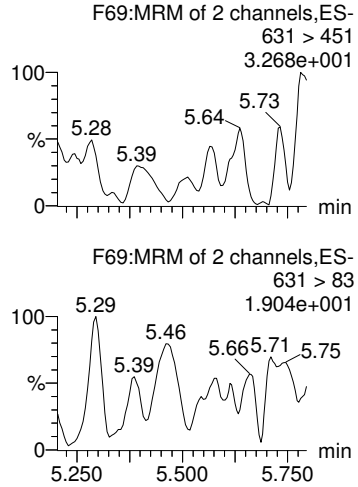
L-EtFOSAA



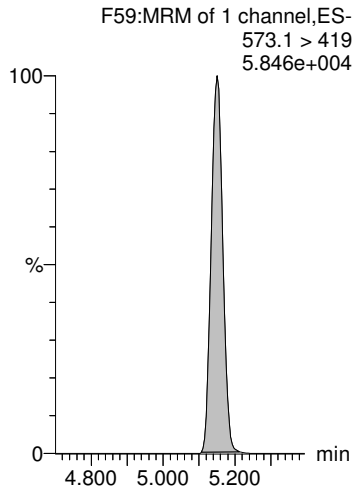
Total N-EtFOSAA



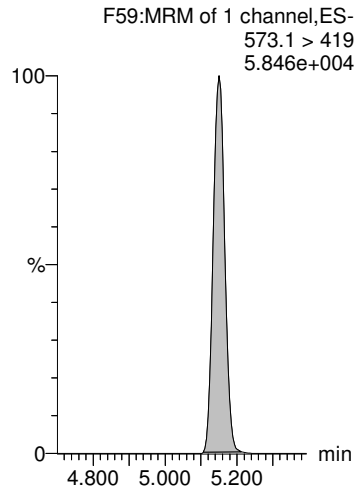
11Cl-PF30UdS



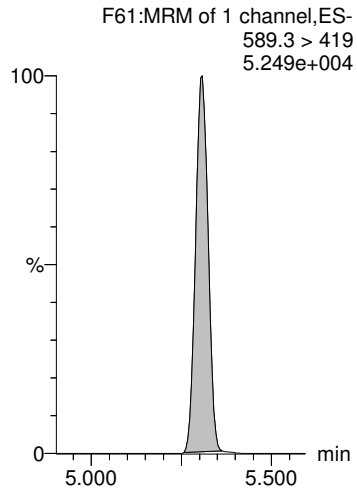
d3-N-MeFOSAA-EIS



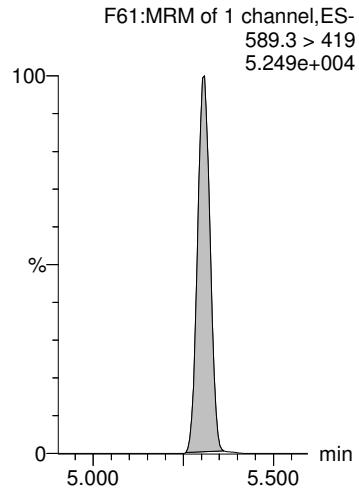
d3-N-MeFOSAA-EIS



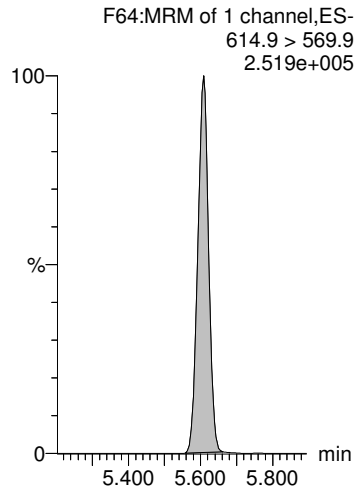
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



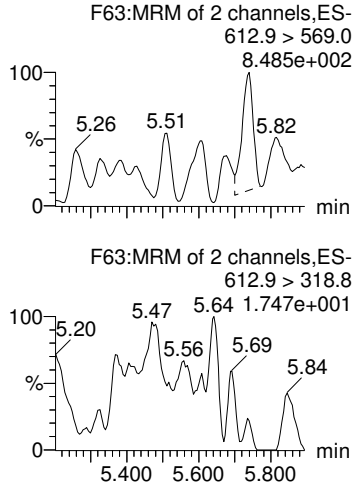
RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-20.qld

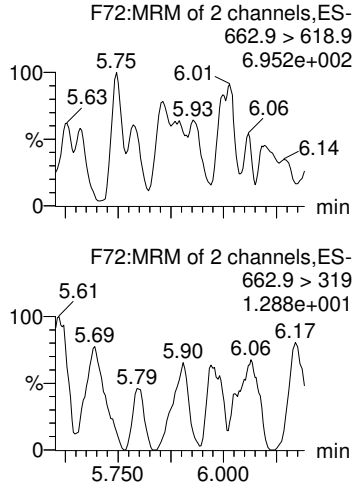
Last Altered: Friday, July 24, 2020 17:03:56 Pacific Daylight Time
Printed: Friday, July 24, 2020 17:04:19 Pacific Daylight Time

Name: 200723P1-20, Date: 23-Jul-2020, Time: 13:18:47, ID: 2001472-04 TW15D-20200710 0.28426, Description: TW15D-20200710

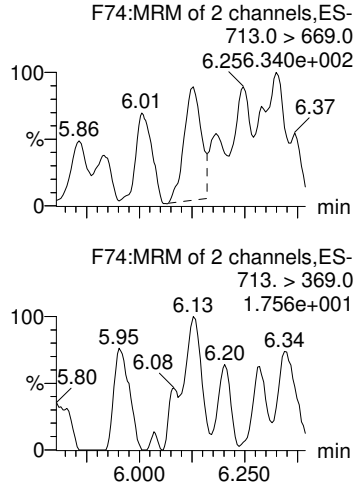
PFDoA



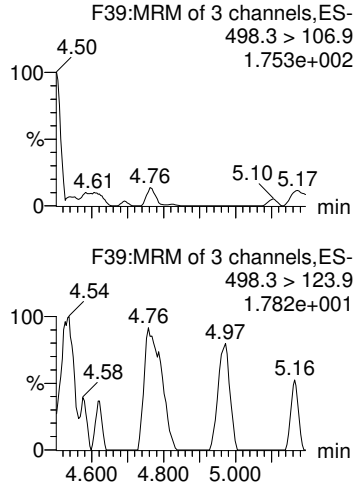
PFTrDA



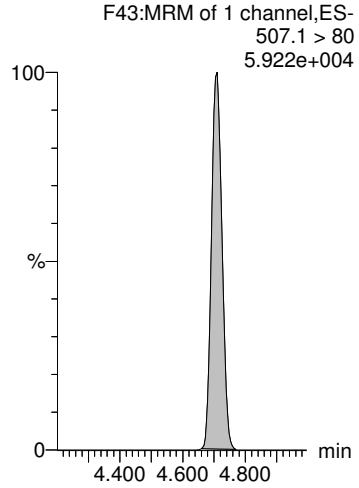
PFTeDA



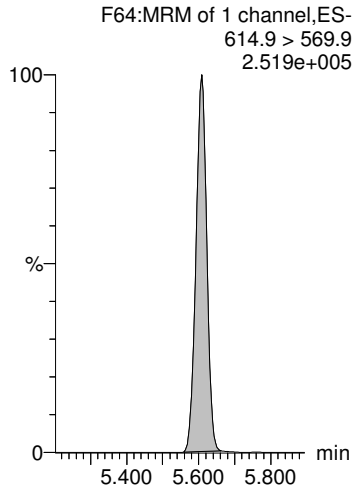
TDCA



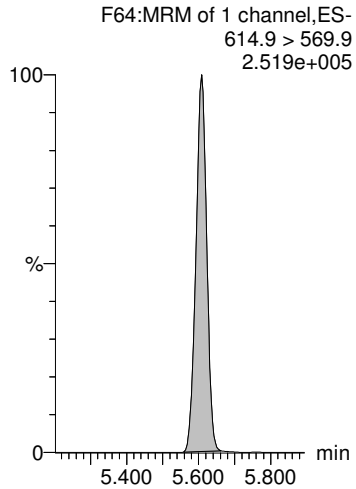
13C8-PFOS-EIS



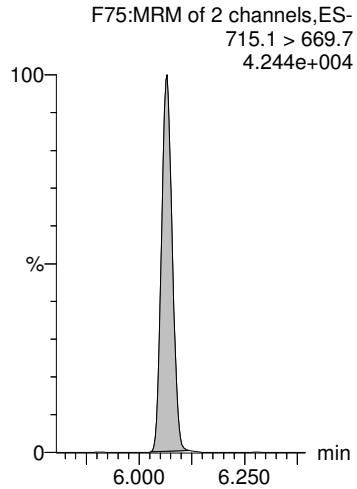
13C2-PFDoA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-48.qld

Last Altered: Friday, July 24, 2020 16:51:51 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:52:44 Pacific Daylight Time

Name: 200721P1-48, Date: 21-Jul-2020, Time: 23:32:47, ID: 2001472-05 TW16D-20200710 0.35081, Description: TW16D-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 80		7.816e2	0.351		2.56						YES
2	7	PFHxA	313.0 > 269.0		7.067e3	0.351		3.09						YES
3	9	HFPO-DA	285.1 > 168.9		1.483e3	0.351		3.31						YES
4	11	PFHpA	363.0 > 319		6.689e3	0.351		3.69						YES
5	12	ADONA	376.8 > 250.9		6.689e3	0.351		3.78						YES
6	51	13C3-PFBS-EIS	302.0 > 98.9	7.816e2		0.351	96.924	2.50	2.56	782	22.988	64.5		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	7.067e3		0.351	854.580	3.08	3.09	7070	23.573	66.2		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	1.483e3		0.351	179.588	3.30	3.31	1480	23.543	66.1		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.689e3		0.351	833.947	3.68	3.69	6690	22.863	64.2		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.689e3		0.351	833.947	3.68	3.69	6690	22.863	64.2		
11	-1													
12	13	L-PFHxS	399 > 79.9	5.486e1	1.693e3	0.351		3.83	3.83	0.405	0.942		12.403	NO
13	1...	Total PFHxS	399 > 79.9	5.486e1	1.693e3	0.351		3.93		0.405	0.942			
14	16	L-PFOA	413 > 369	3.321e2	9.338e3	0.351		4.20	4.20	0.445	1.138		3.967	NO
15	1...	Total PFOA	413 > 369	3.321e2	9.338e3	0.351		4.60		0.445	1.138			
16	21	PFNA	463.0 > 418.8		8.345e3	0.351		4.64						YES
17	61	13C3-PFHxS-EIS	402 > 80	1.693e3		0.351	182.953	3.82	3.83	1690	26.379	74.0		
18	61	13C3-PFHxS-EIS	402 > 80	1.693e3		0.351	182.953	3.82	3.83	1690	26.379	74.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.338e3		0.351	1066.462	4.35	4.20	9340	24.959	70.0		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.338e3		0.351	1066.462	4.35	4.20	9340	24.959	70.0		
21	65	13C5-PFNA-EIS	468.2 > 422.9	8.345e3		0.351	943.916	4.96	4.64	8340	25.201	70.7		
22	-1													
23	23	L-PFOS	499 > 80	1.408e2	1.508e3	0.351		4.73	4.73	1.17	2.714		2.427	NO
24	1...	Total PFOS	499> 80	1.408e2	1.508e3	0.351		4.60		1.17	2.714			
25	25	9Cl-PF30NS	531 > 351		1.508e3	0.351		4.93						YES
26	26	PFDA	513 > 469		8.835e3	0.351		5.02						YES
27	33	PFUdA	563.0 > 519		6.727e3	0.351		5.34						YES
28	71	13C8-PFOS-EIS	507.1 > 80	1.508e3		0.351	193.524	4.72	4.73	1510	22.216	62.3		
29	71	13C8-PFOS-EIS	507.1 > 80	1.508e3		0.351	193.524	4.72	4.73	1510	22.216	62.3		
30	71	13C8-PFOS-EIS	507.1 > 80	1.508e3		0.351	193.524	4.72	4.73	1510	22.216	62.3		
31	73	13C2-PFDA-EIS	515.1 > 469.9	8.835e3		0.351	1149.255	5.01	5.02	8830	21.914	61.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	6.727e3		0.351	1217.713	5.33	5.34	6730	15.748	44.2		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.706e3	0.351		5.16						YES
35	1...	Total N-MeFOSAA	570. > 419	0.000e0	1.706e3	0.351		5.19		0.000				
36	31	L-EtFOSAA	583.9 > 419		1.248e3	0.351		5.32						YES

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-48.qld

Last Altered: Friday, July 24, 2020 16:51:51 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:52:44 Pacific Daylight Time

Name: 200721P1-48, Date: 21-Jul-2020, Time: 23:32:47, ID: 2001472-05 TW16D-20200710 0.35081, Description: TW16D-20200710

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	583.9 > 419	0.000e0	1.248e3	0.351		5.37		0.000				
38	35	11Cl-PF30UdS	631 > 451		4.747e3	0.351		5.56						YES
39	77	d3-N-MeFOSAA-EIS	573.1 > 419	1.706e3		0.351	273.698	5.16	5.16	1710	17.764	49.9		
40	77	d3-N-MeFOSAA-EIS	573.1 > 419	1.706e3		0.351	273.698	5.16	5.16	1710	17.764	49.9		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	1.248e3		0.351	214.700	5.31	5.32	1250	16.575	46.5		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	1.248e3		0.351	214.700	5.31	5.32	1250	16.575	46.5		
43	83	13C2-PFDoA-EIS	614.9 > 569.9	4.747e3		0.351	1316.711	5.85	5.62	4750	10.278	28.8		
44	-1													
45	37	PFDoA	612.9 > 569.0		4.747e3	0.351		5.62						YES
46	39	PFTrDA	662.9 > 618.9		4.747e3	0.351		5.85						YES
47	41	PFTeDA	713.0 > 669.0		9.410e2	0.351		6.08						YES
48	1...	TDCA	498.3>106.9			0.351		4.47						YES
49	71	13C8-PFOS-EIS	507.1 > 80	1.508e3		0.351	193.524	4.72	4.73	1510	22.216	62.3		
50	83	13C2-PFDoA-EIS	614.9 > 569.9	4.747e3		0.351	1316.711	5.85	5.62	4750	10.278	28.8		
51	83	13C2-PFDoA-EIS	614.9 > 569.9	4.747e3		0.351	1316.711	5.85	5.62	4750	10.278	28.8		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	9.410e2		0.351	1368.133	6.07	6.08	941	1.961	5.5		

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-48.qld

Last Altered: Friday, July 24, 2020 16:51:51 Pacific Daylight Time
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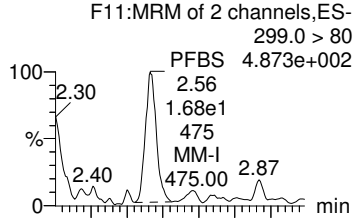
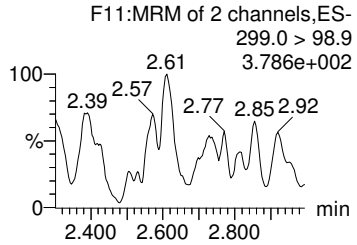
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

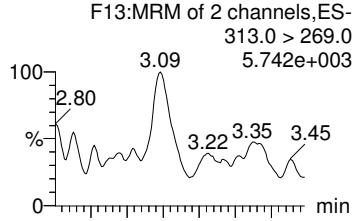
Name: 200721P1-48, Date: 21-Jul-2020, Time: 23:32:47, ID: 2001472-05 TW16D-20200710 0.35081, Description: TW16D-20200710

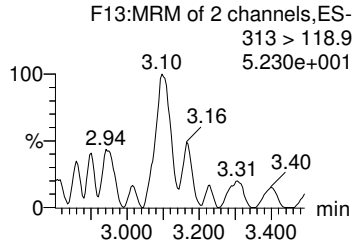
PFBS





PFHxA





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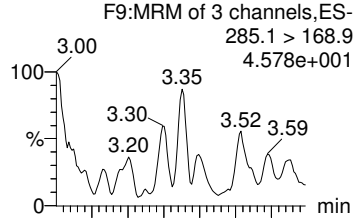

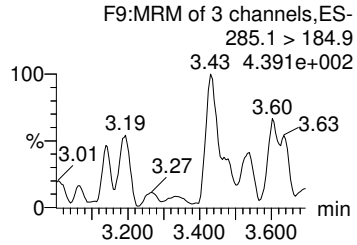

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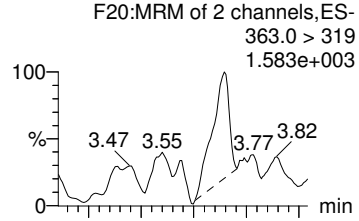

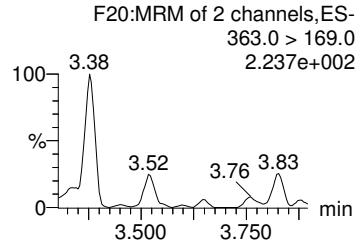

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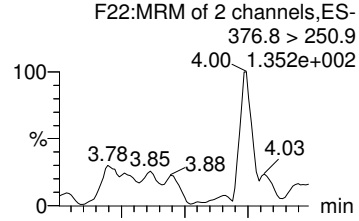

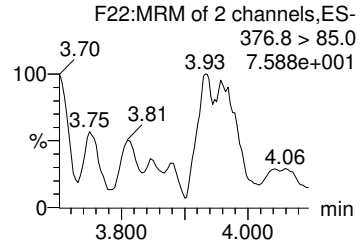

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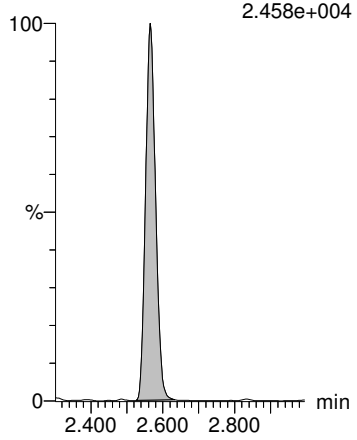

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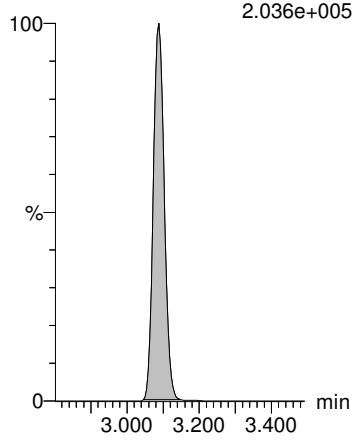

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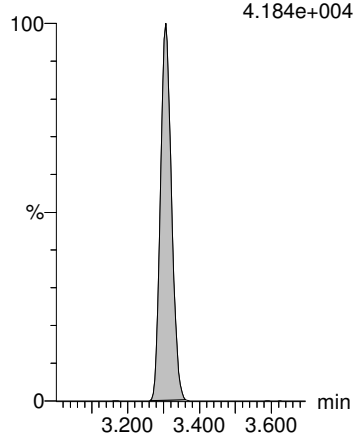

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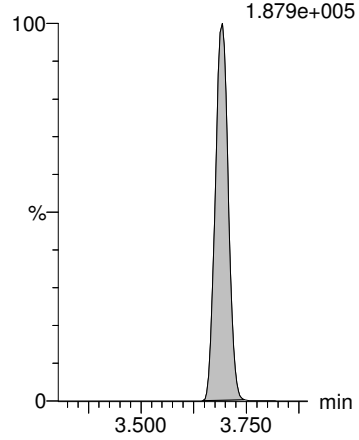

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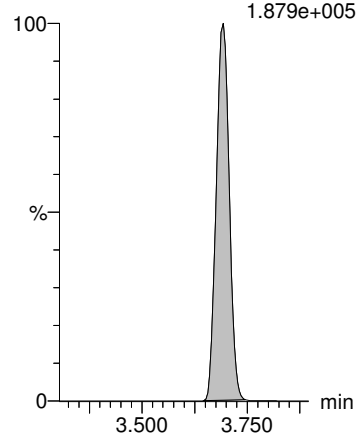

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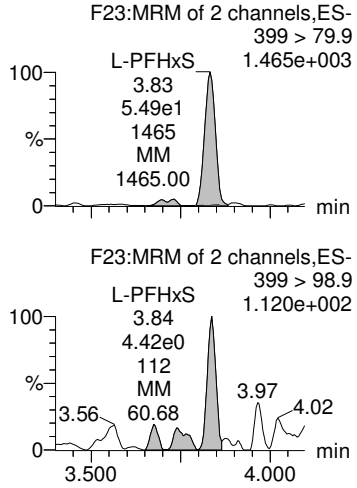
Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-48.qld

Last Altered: Friday, July 24, 2020 16:51:51 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:52:44 Pacific Daylight Time

Name: 200721P1-48, Date: 21-Jul-2020, Time: 23:32:47, ID: 2001472-05 TW16D-20200710 0.35081, Description: TW16D-20200710

L-PFHxS



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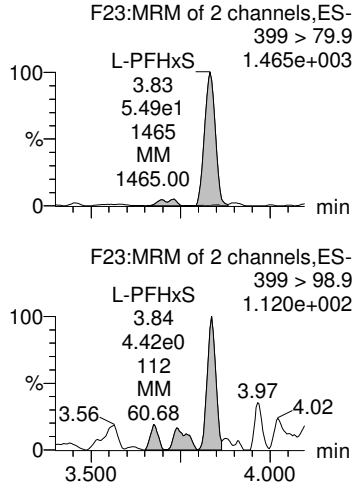
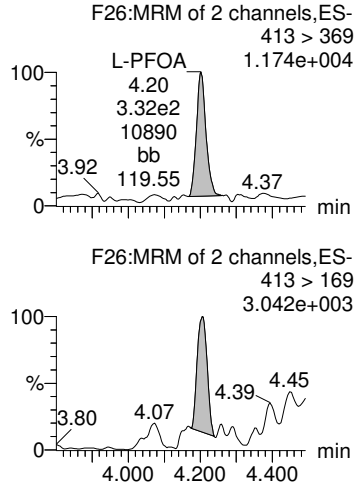


L-PFOA



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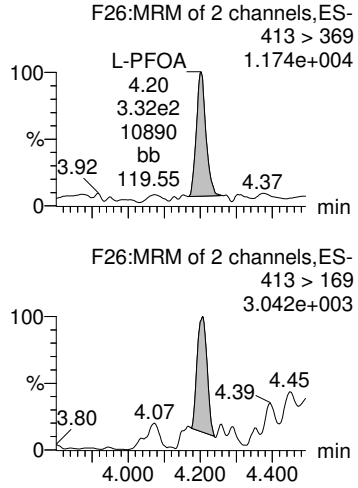

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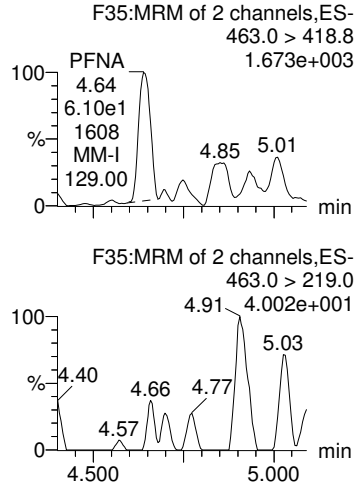

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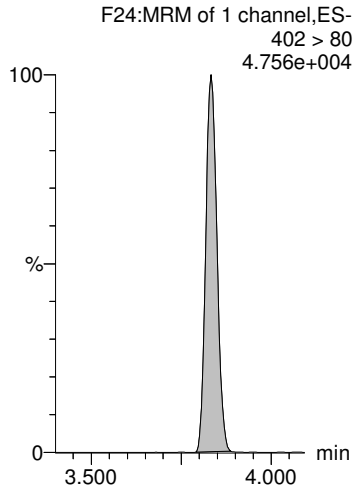

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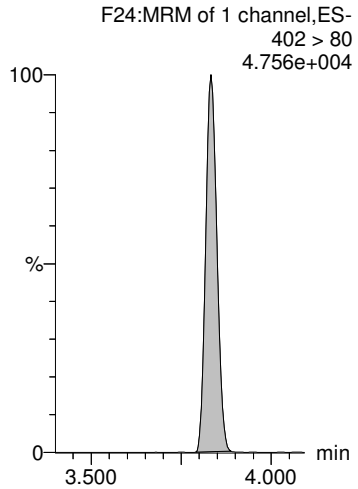

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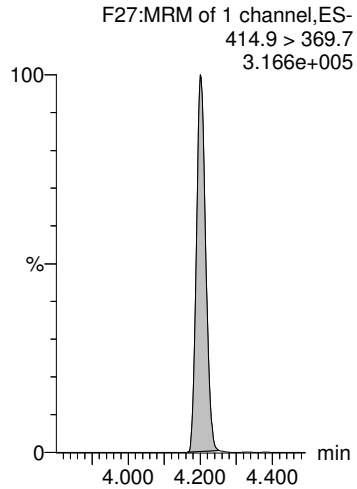

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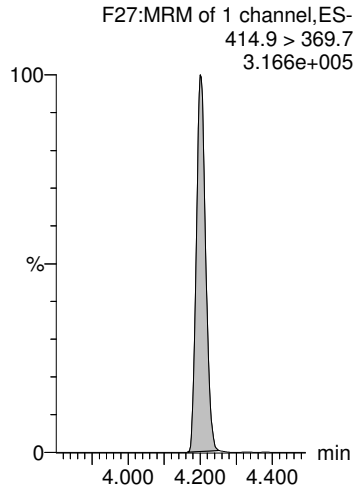

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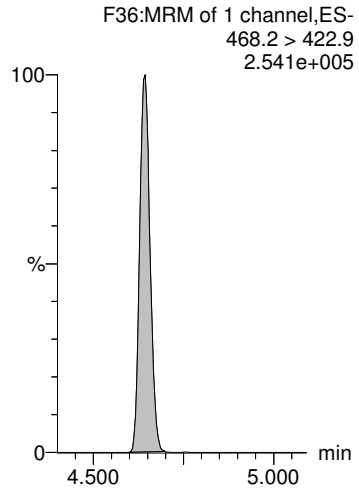


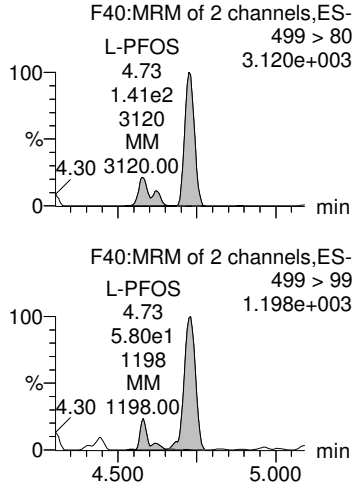
RK 7/24/2020

Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-48.qld

Last Altered: Friday, July 24, 2020 16:51:51 Pacific Daylight Time
Printed: Friday, July 24, 2020 16:52:44 Pacific Daylight Time

Name: 200721P1-48, Date: 21-Jul-2020, Time: 23:32:47, ID: 2001472-05 TW16D-20200710 0.35081, Description: TW16D-20200710

L-PFOS



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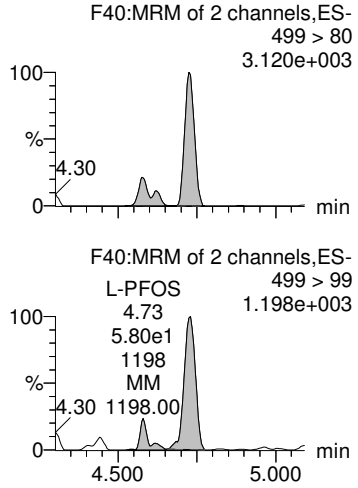

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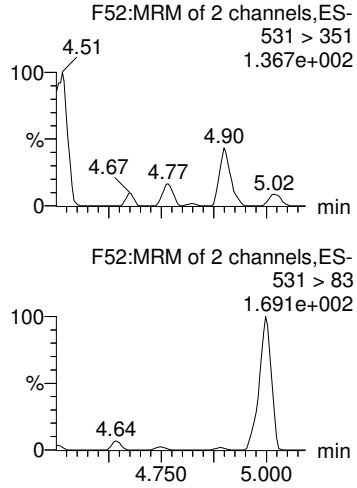

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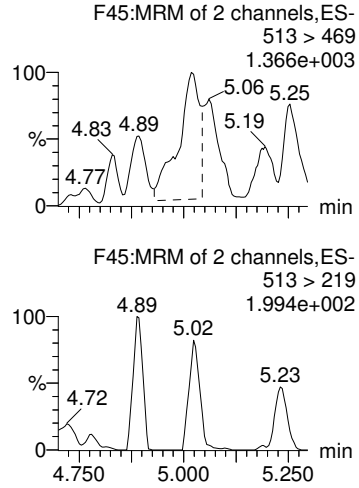
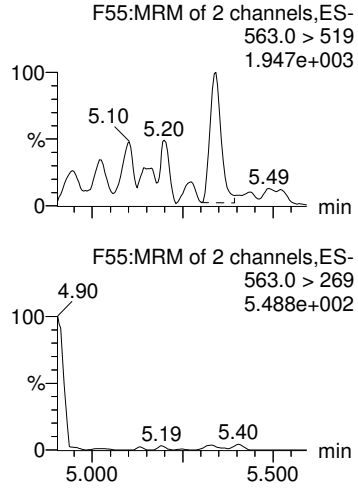


PFUdA



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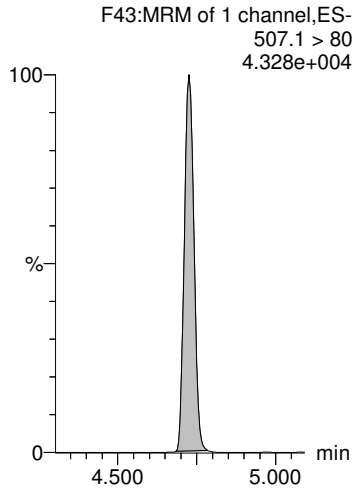

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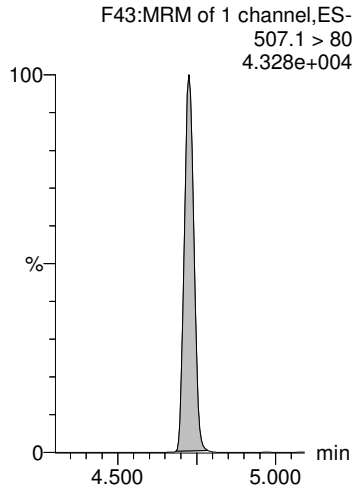

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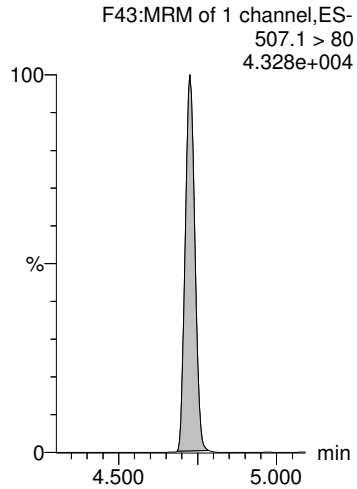

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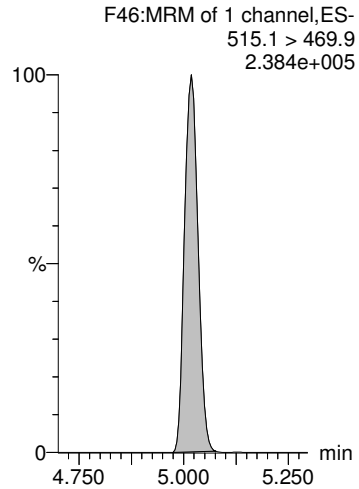

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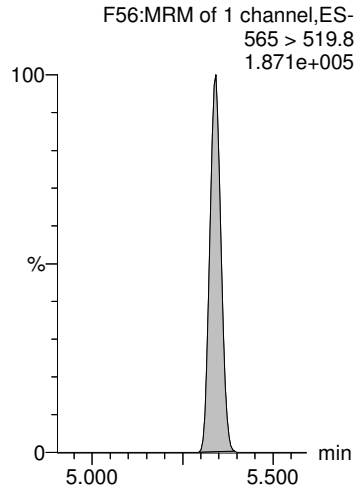

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Dataset: P:\PFAS5.PRO\RESULTS\200721P1\200721P1-48.qld

Last Altered: Friday, July 24, 2020 16:51:51 Pacific Daylight Time
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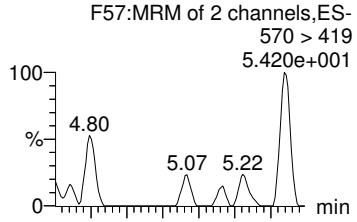
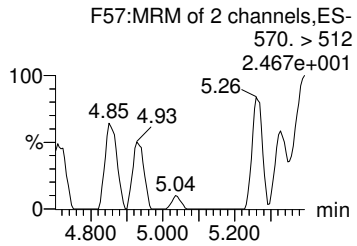
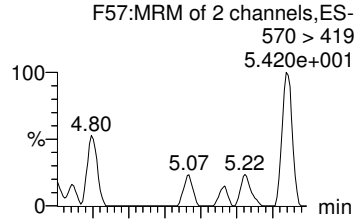
Name: 200721P1-48, Date: 21-Jul-2020, Time: 23:32:47, ID: 2001472-05 TW16D-20200710 0.35081, Description: TW16D-20200710

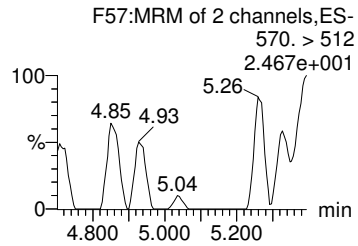
L-MeFOSAA



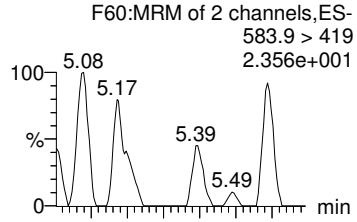


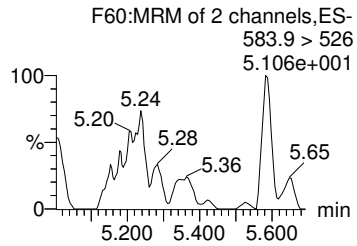
Total N-MeFOSAA



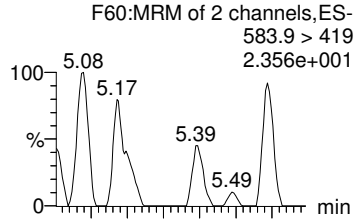


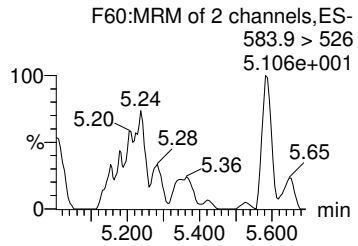
L-EtFOSAA





Total N-EtFOSAA





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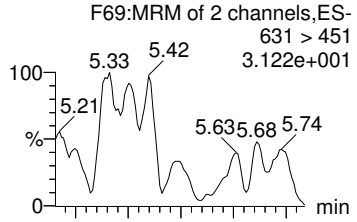

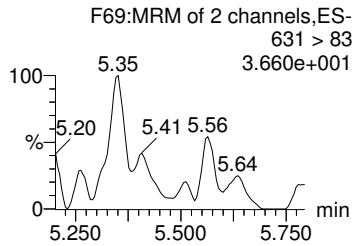

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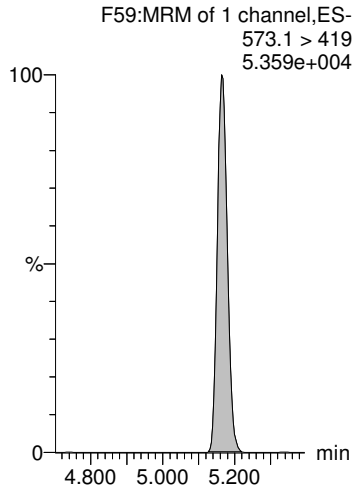

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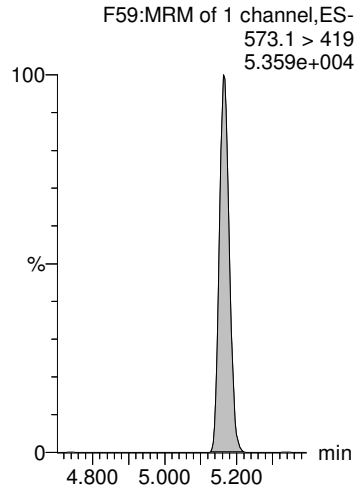

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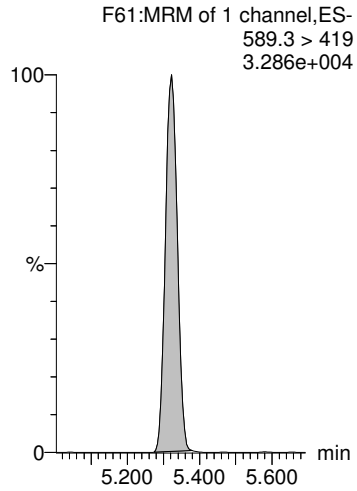

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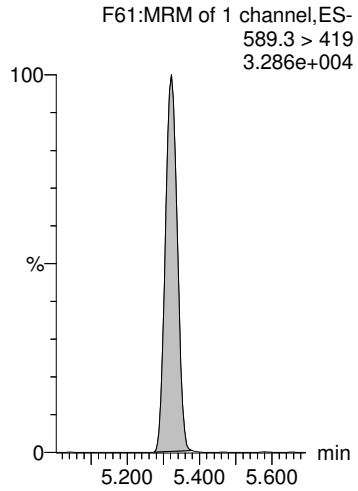

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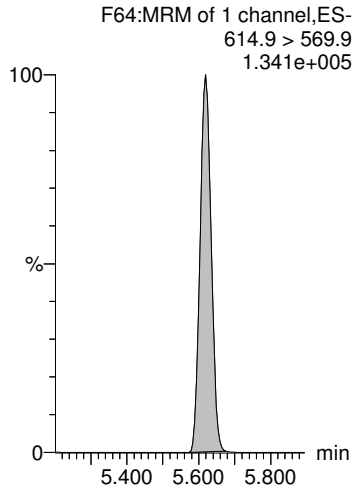

RK 7/24/2020

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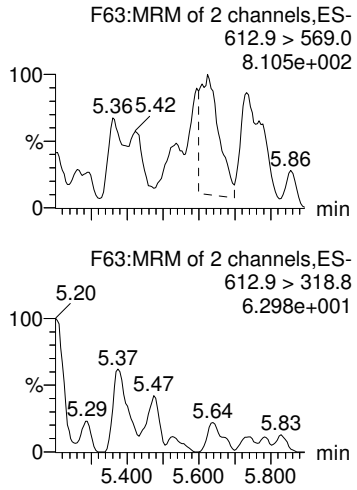

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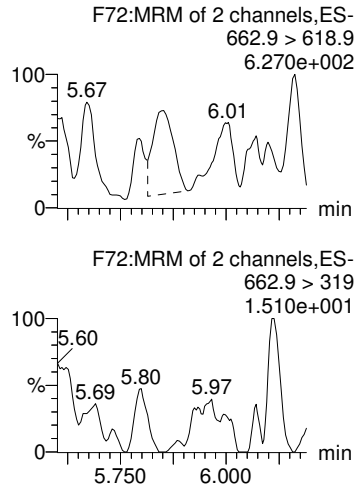

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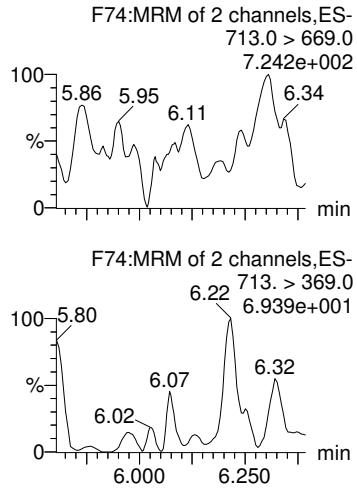

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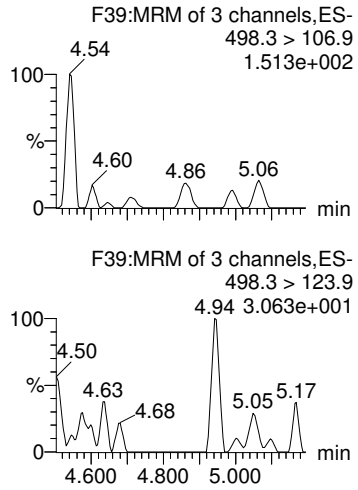

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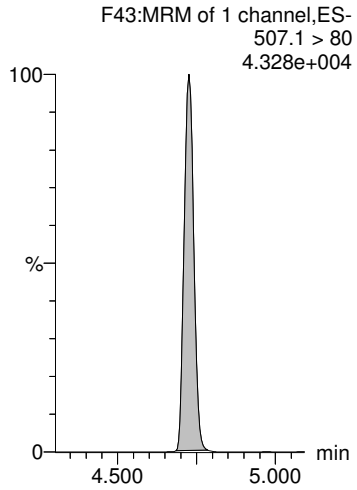

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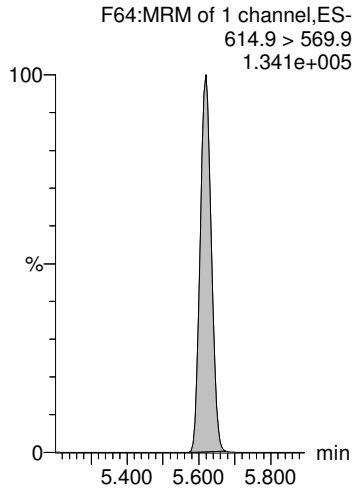

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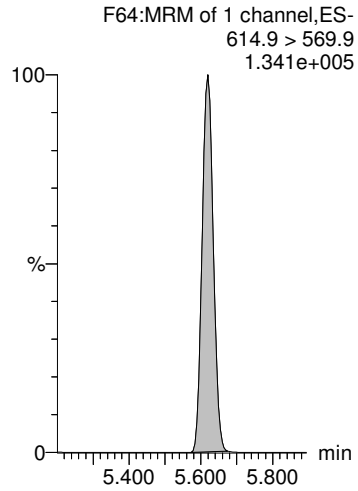

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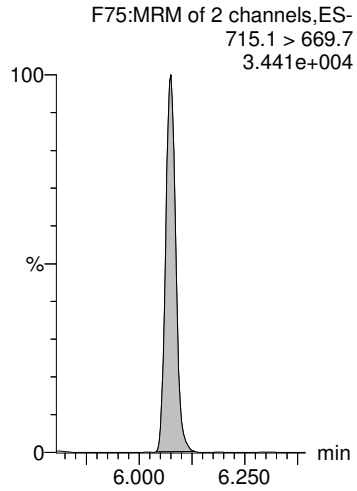

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS (CCV)

Vista Analytical Laboratory

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Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

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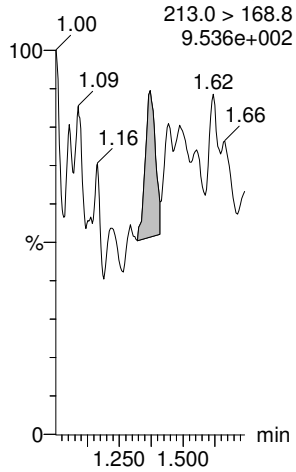
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 10:23:03

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

PFBA



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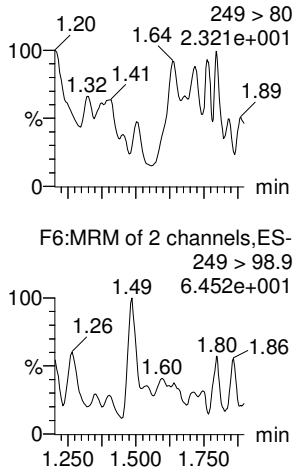
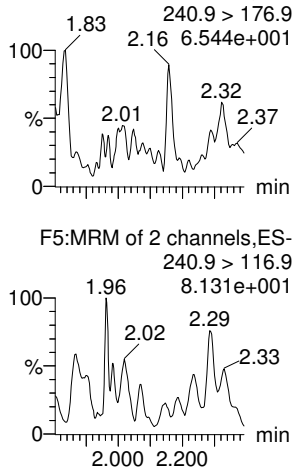


3:3 FTCA



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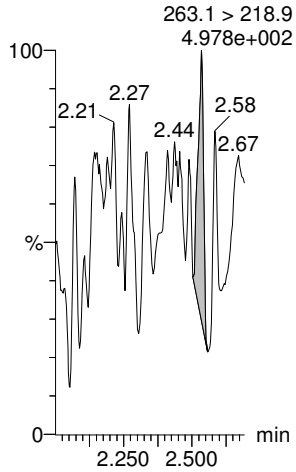

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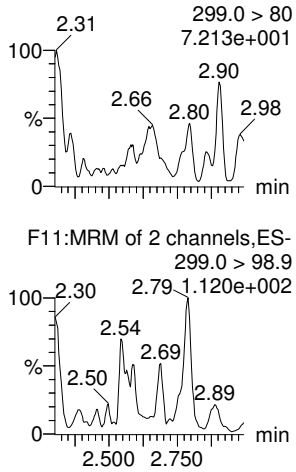
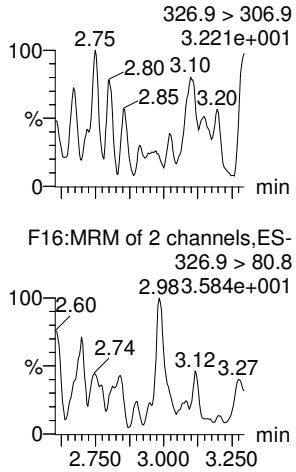


4:2 FTS



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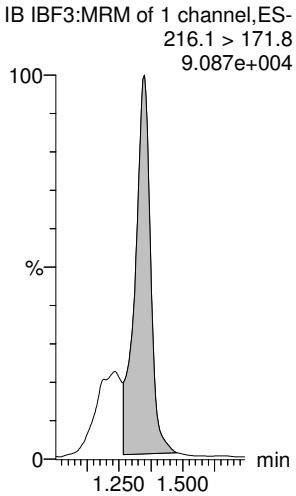

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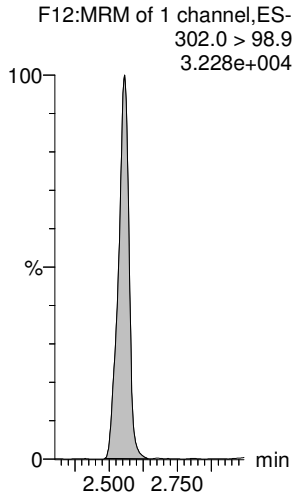

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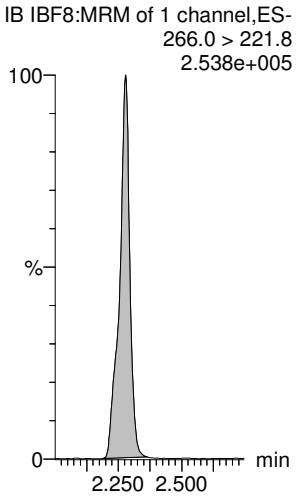

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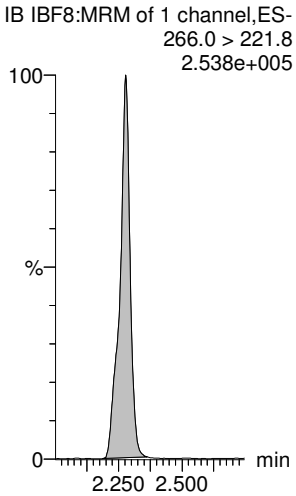

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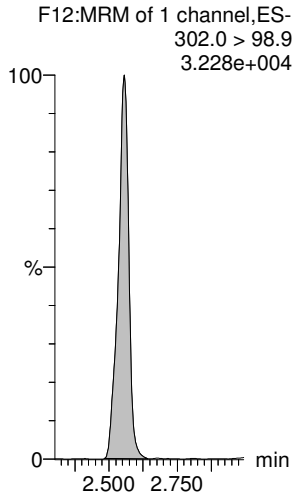

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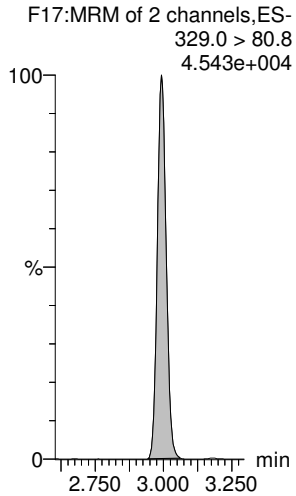

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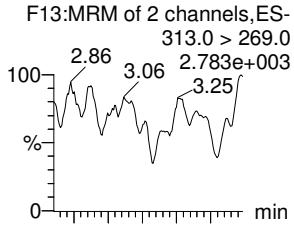
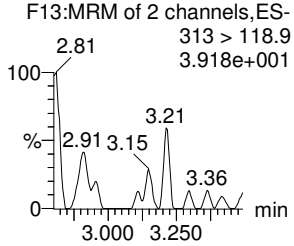
Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

PFHxA





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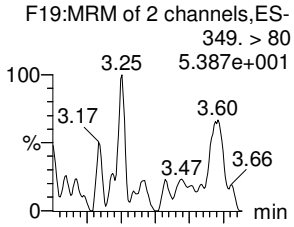

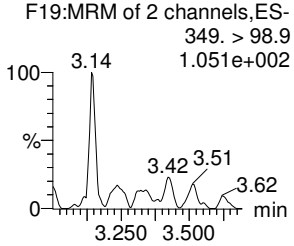

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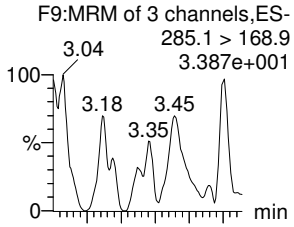

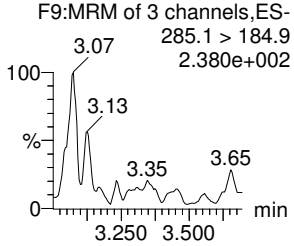

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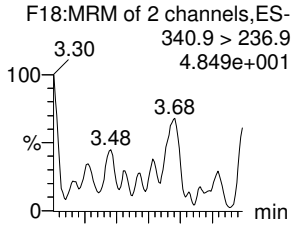

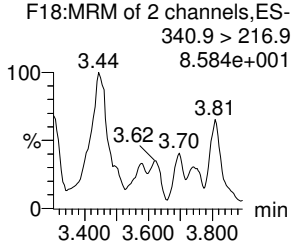

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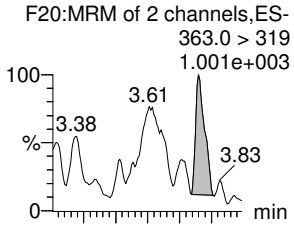

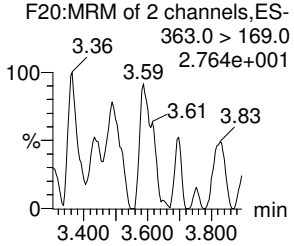

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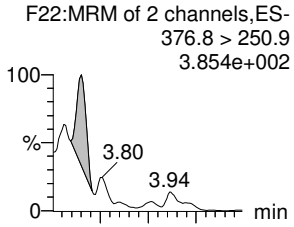

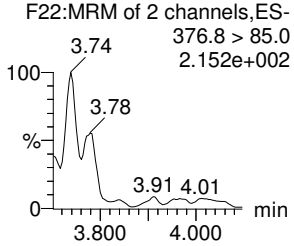

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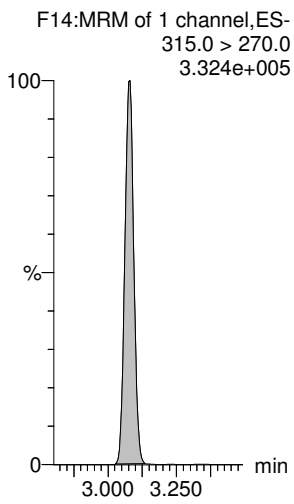

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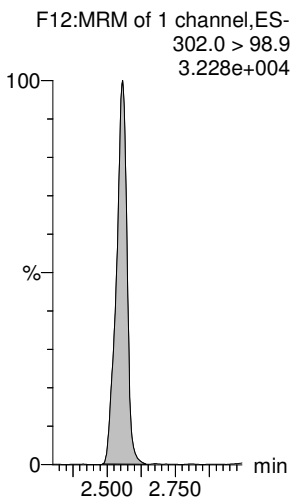

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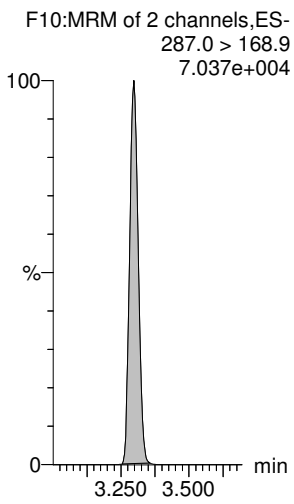

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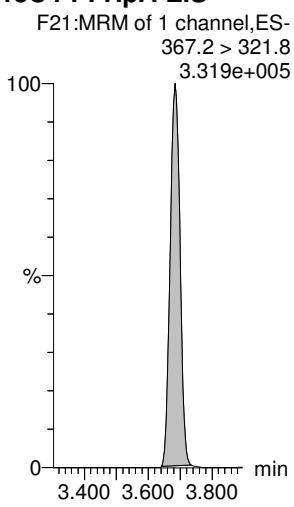

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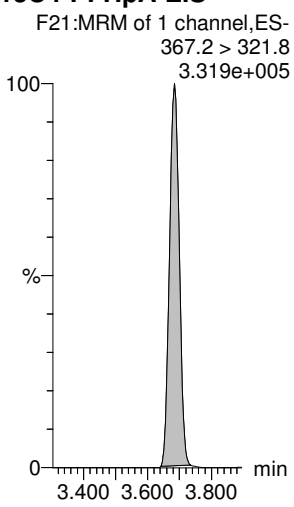

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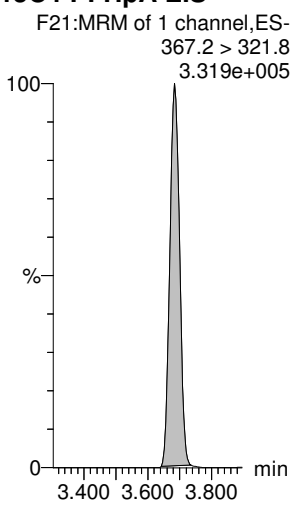

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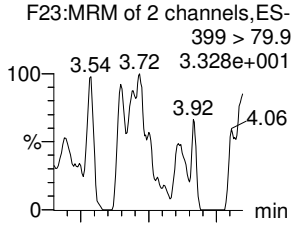
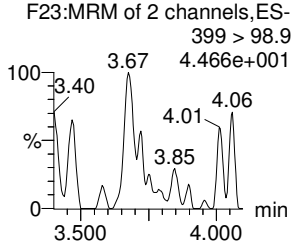
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

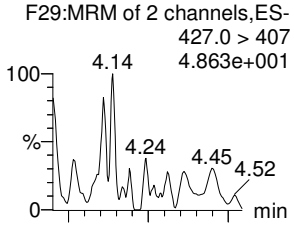
Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

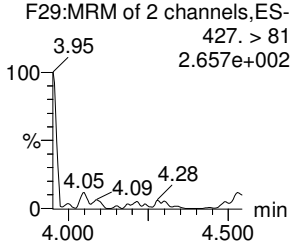
L-PFHxS





6:2 FTS





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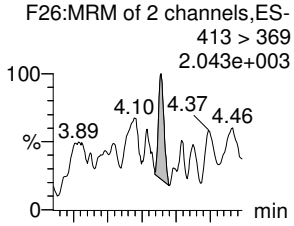
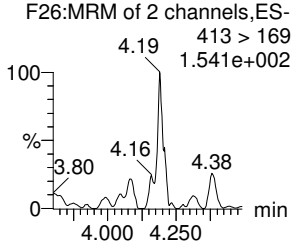
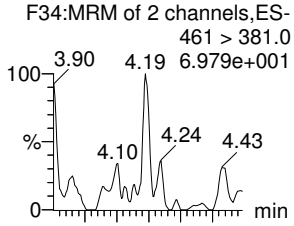
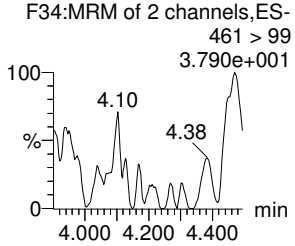


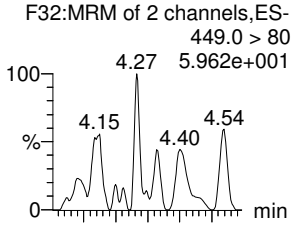


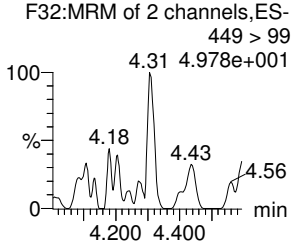
PFEChS



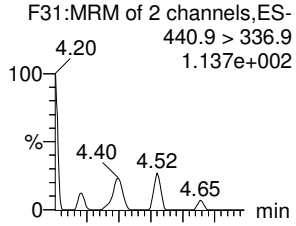


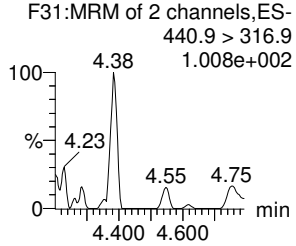
PFHpS



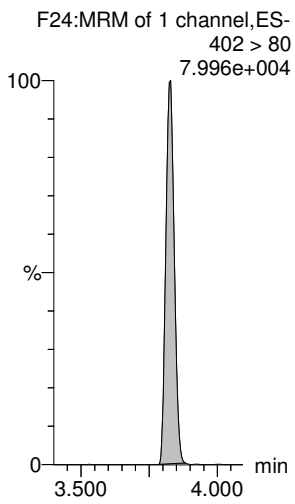


7:3 FTCA

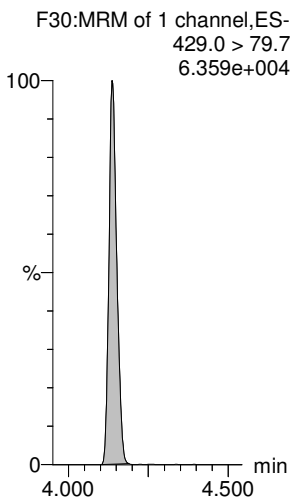




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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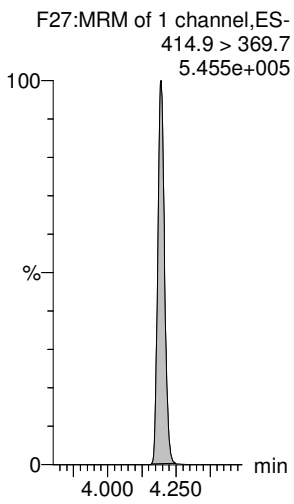

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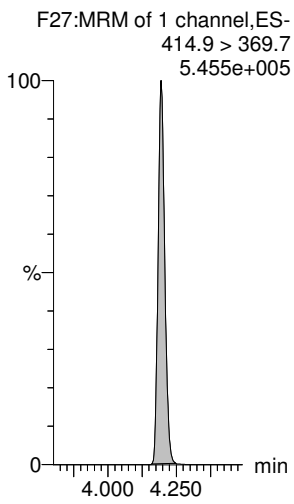
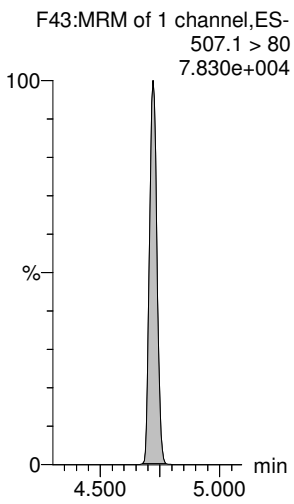
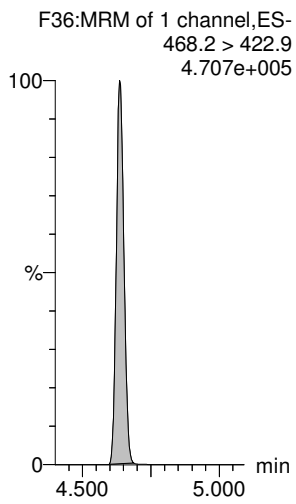


13C8-PFOS-EIS



13C5-PFNA-EIS



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Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

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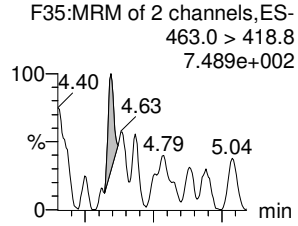

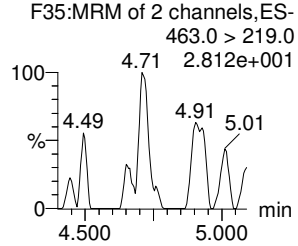

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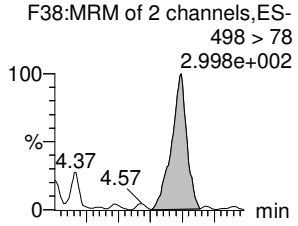
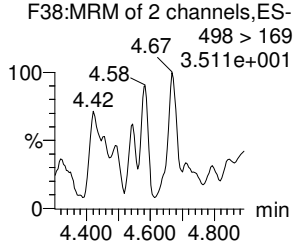
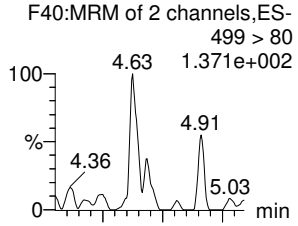
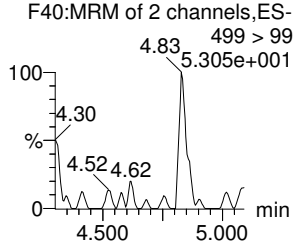


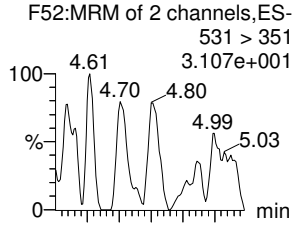


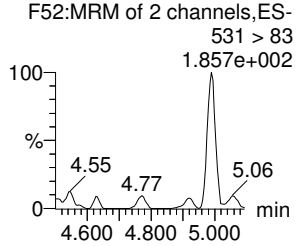
L-PFOS





9Cl-PF30NS





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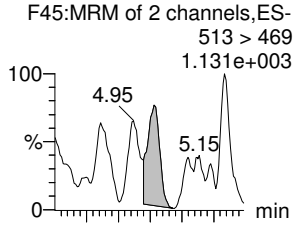
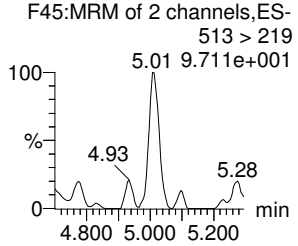
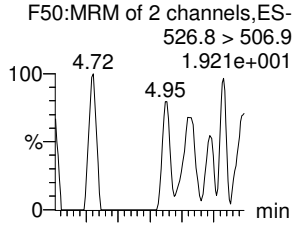
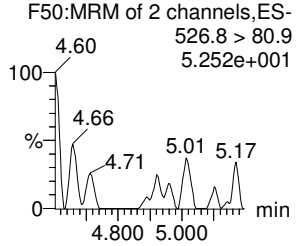


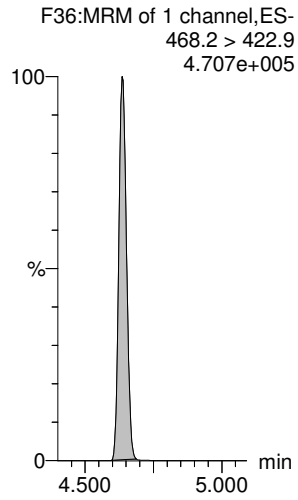


8:2 FTS

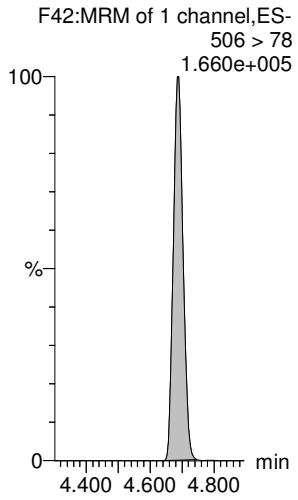




13C5-PFNA-EIS



13C8-PFOSA-EIS



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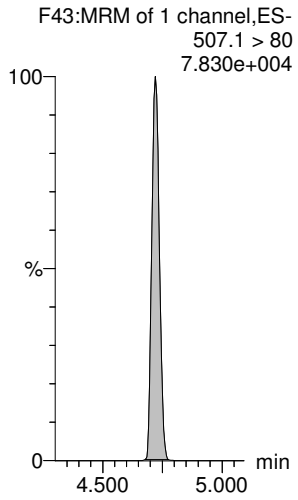

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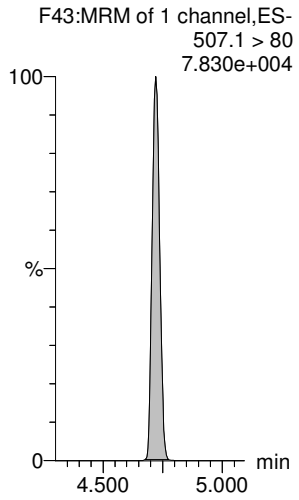

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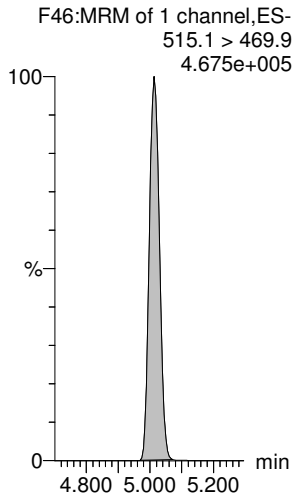
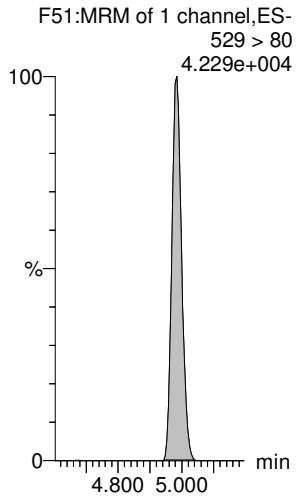


13C2-8:2 FTS-EIS



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Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
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Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

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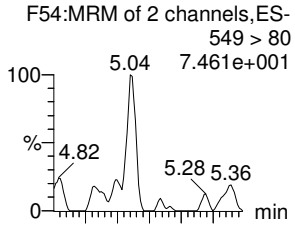

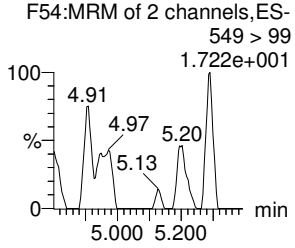

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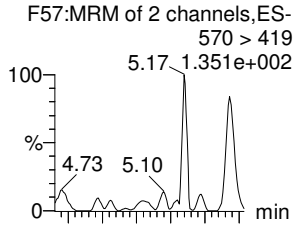
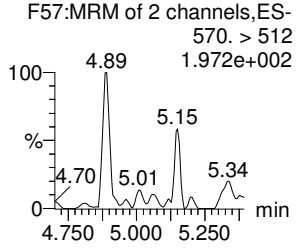
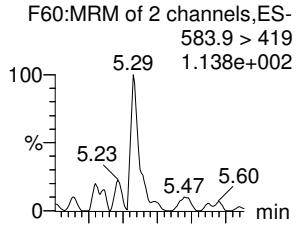
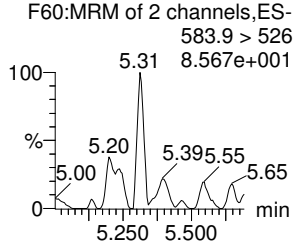




L-EtFOSAA





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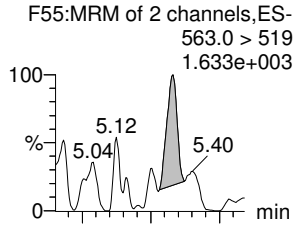

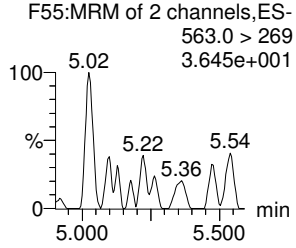

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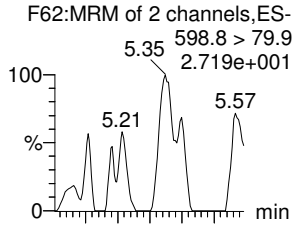

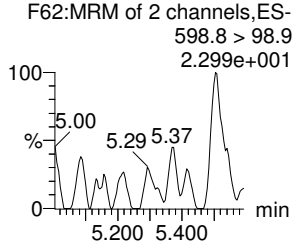

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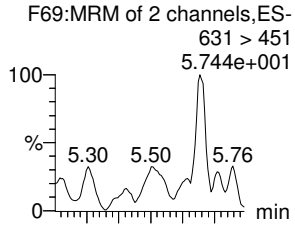
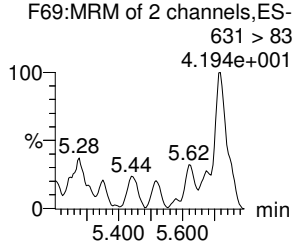
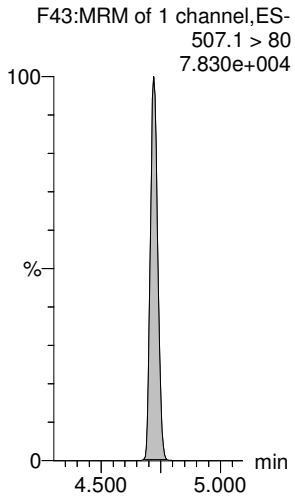
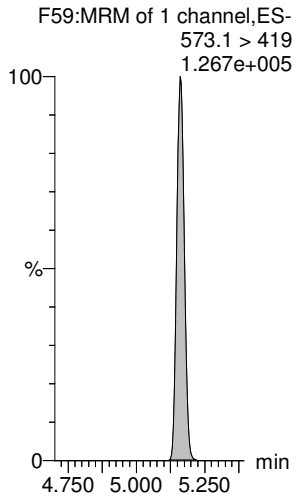




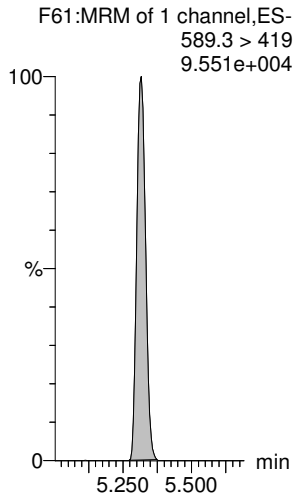
13C8-PFOS-EIS



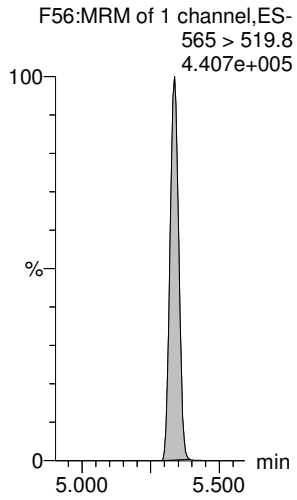
d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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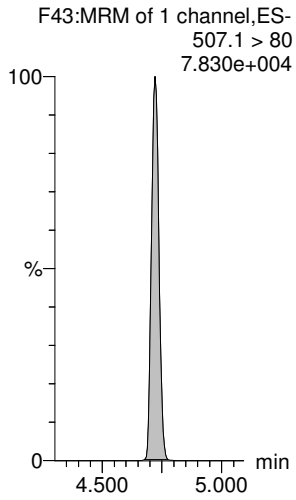

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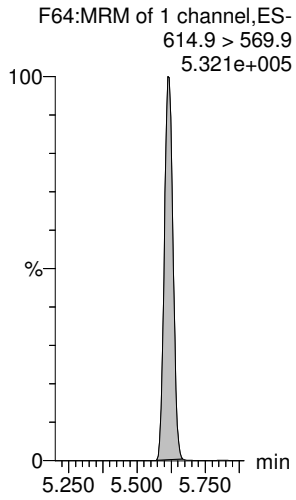

Vista Analytical Laboratory

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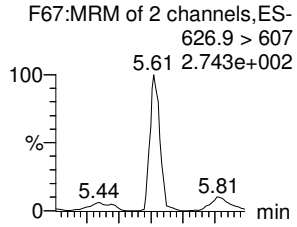
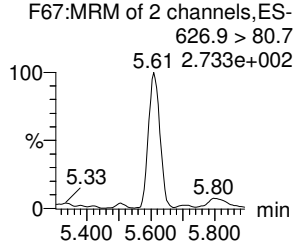
Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

10:2 FTS





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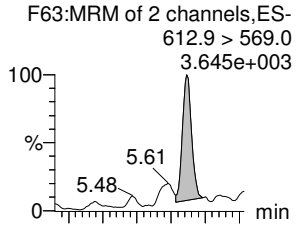
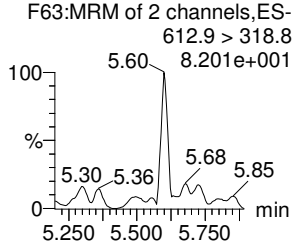
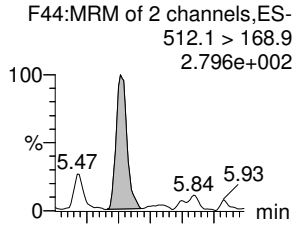
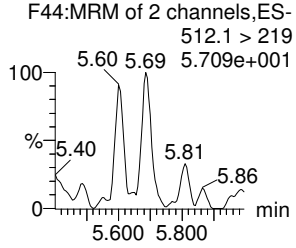




N-MeFOSA





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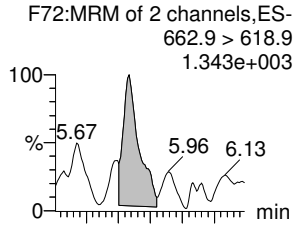
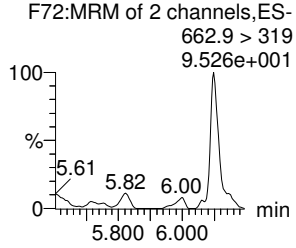
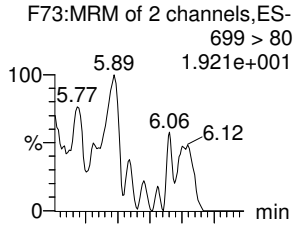
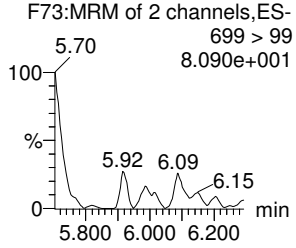




PFDoS





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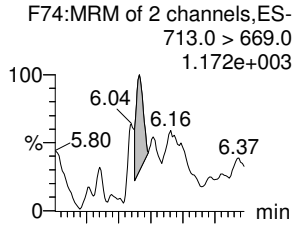
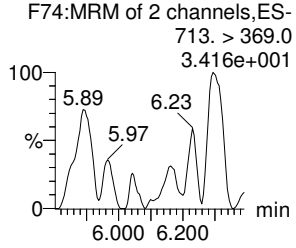
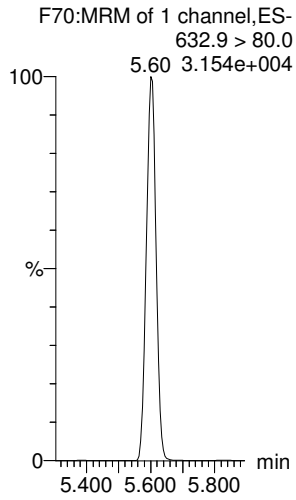
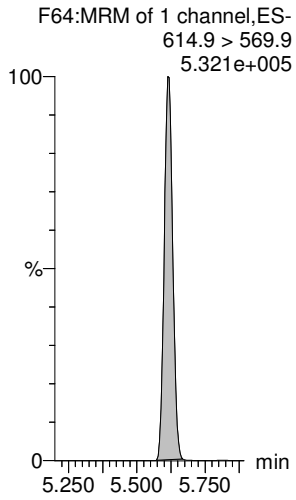




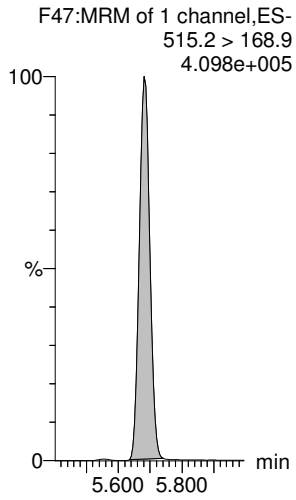
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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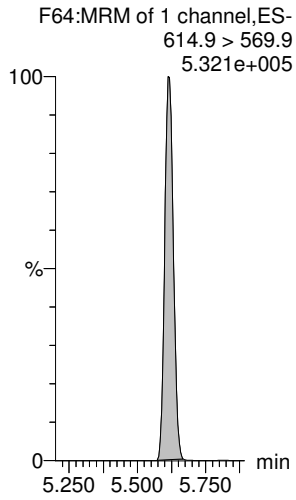

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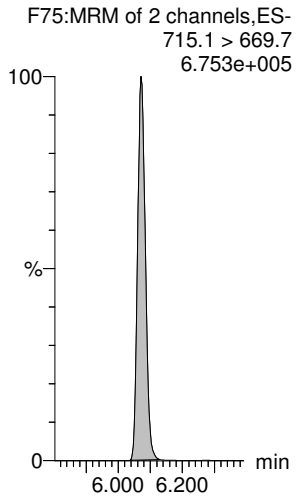

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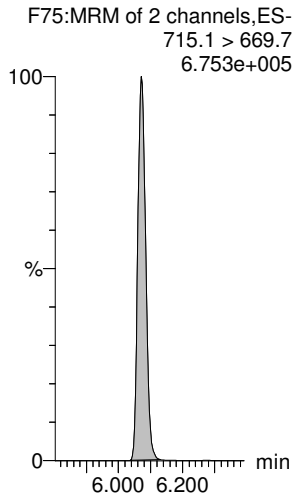

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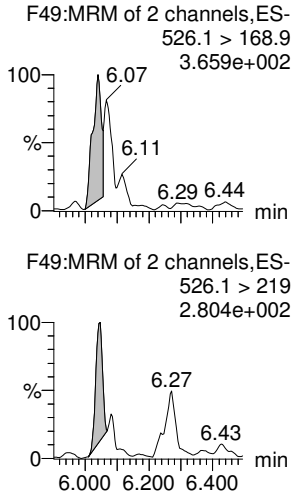
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

N-EtFOSA



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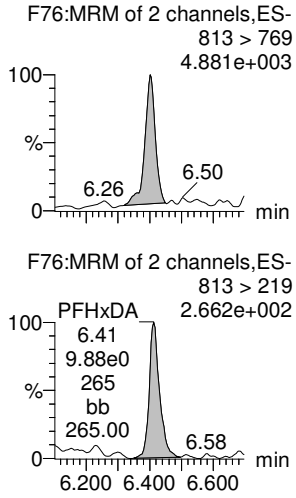

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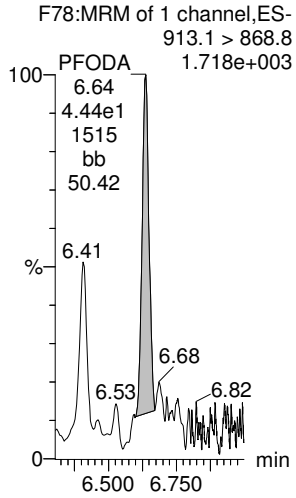
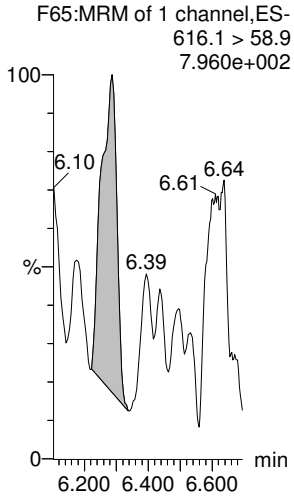
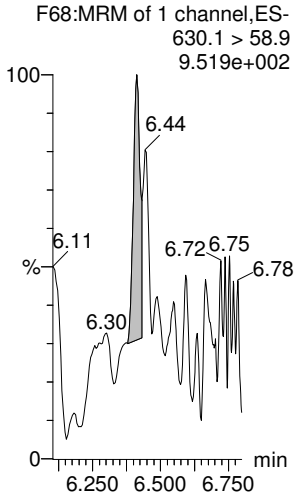


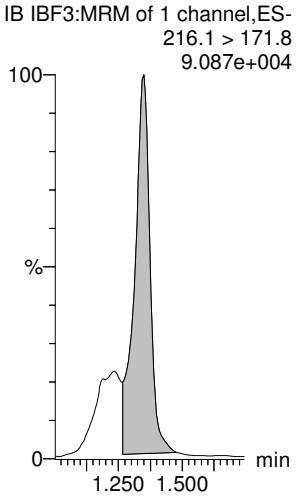
N-MeFOSE



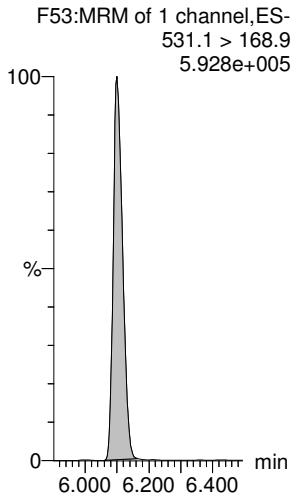
N-EtFOSE



13C3-PFBA-RSD



d5-N-ETFOSA-EIS



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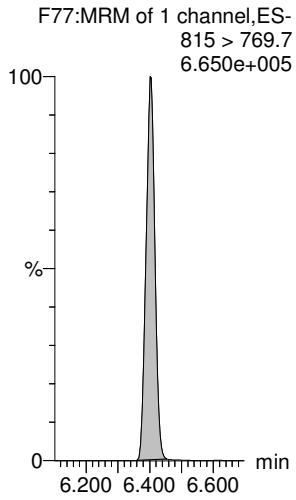

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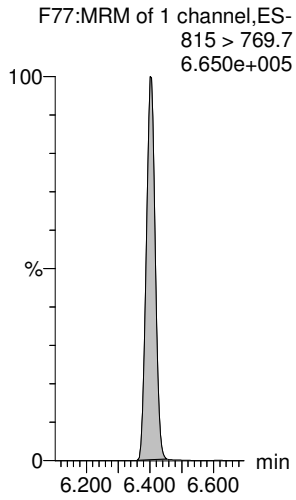
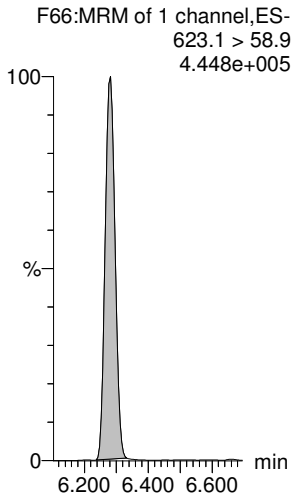
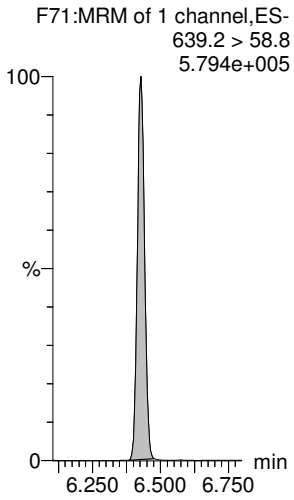


d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



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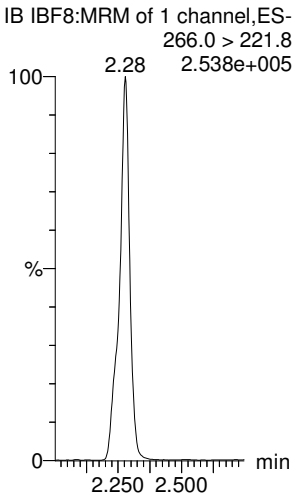

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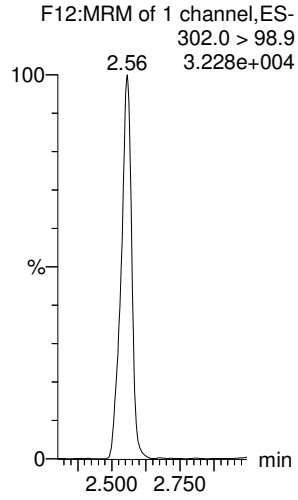
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

13C3-PFBS-RSD



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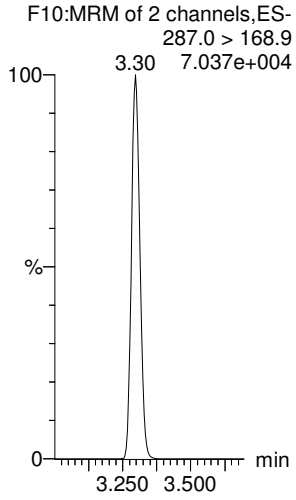
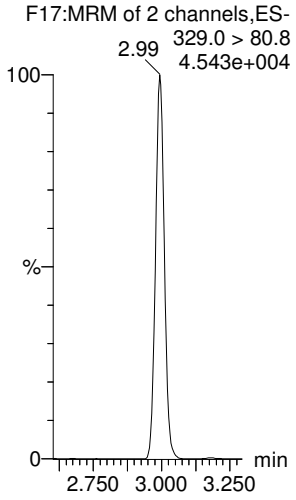
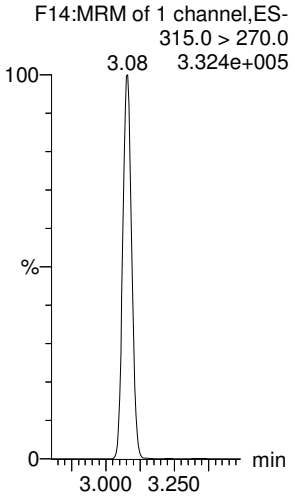


13C2-4:2 FTS-RSD



13C2-PFHxA-RSD



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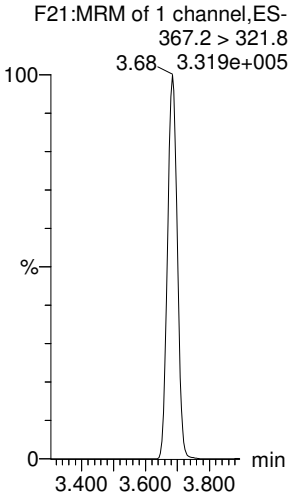

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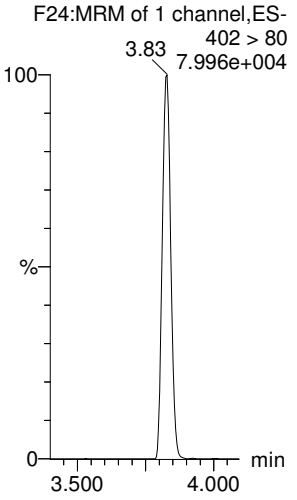

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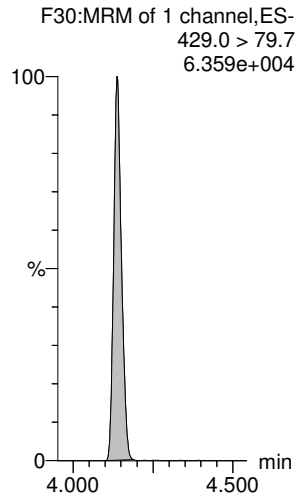

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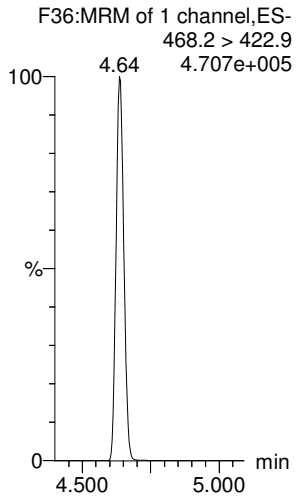
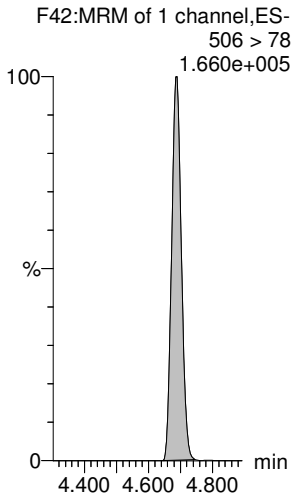
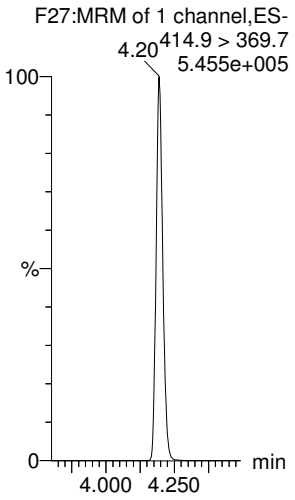


13C8-PFOSA-RSD



13C2-PFOA-RSD



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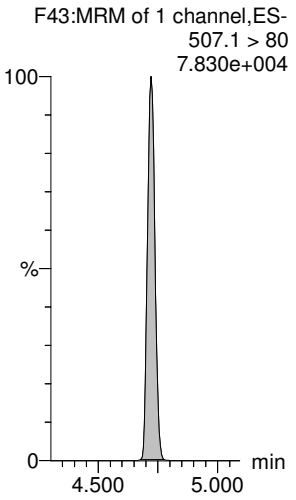
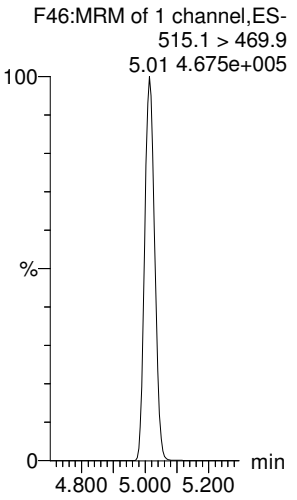


13C2-PFDA-RSD



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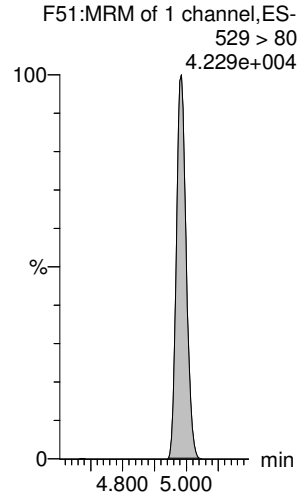
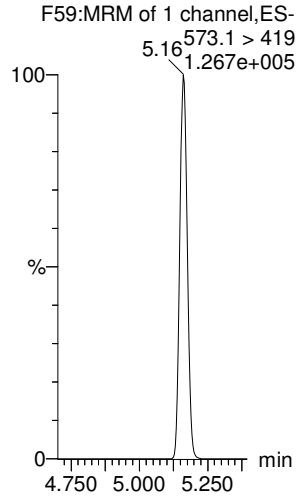
Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

13C2-8:2 FTS-RSD



d3-N-MeFOSAA-RSD



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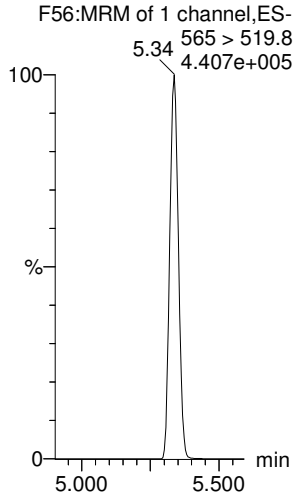
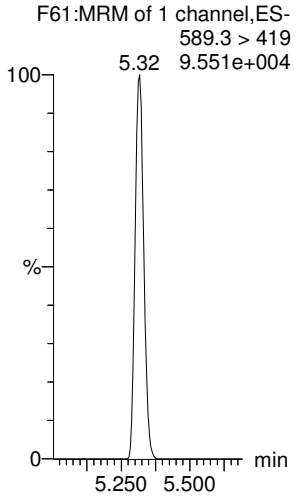


d5-N-EtFOSAA-RSD



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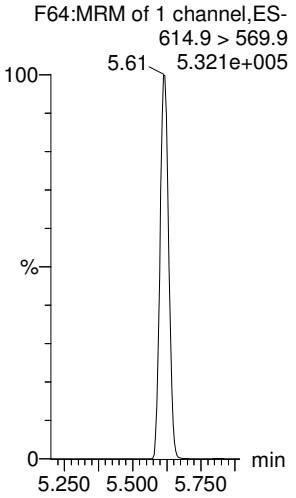
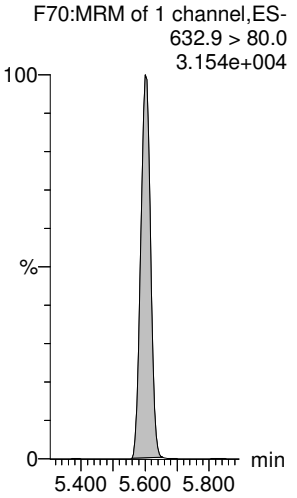


13C2-10:2 FTS-RSD



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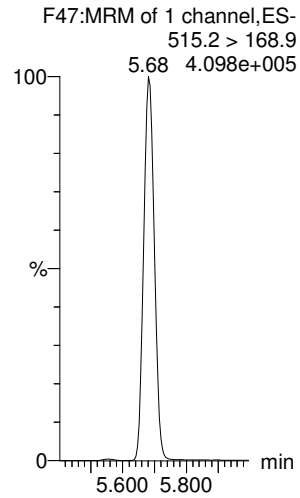
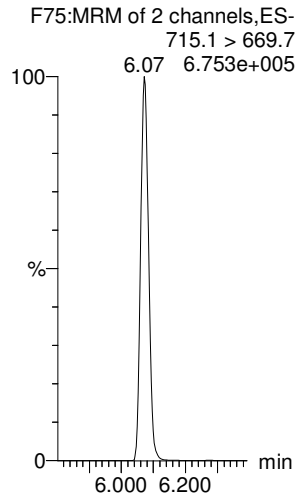


13C2-PFTeDA-RSD



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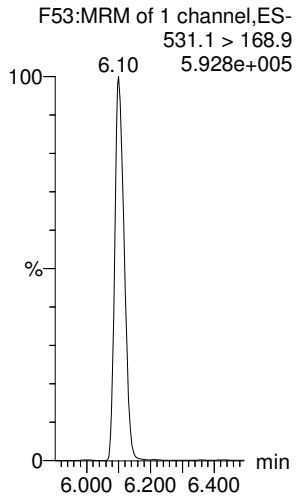
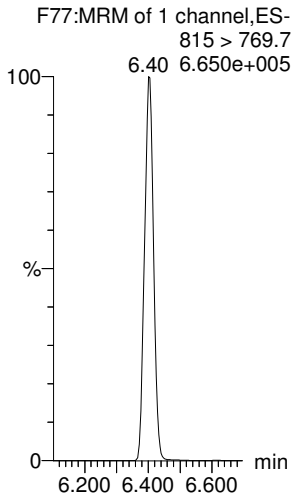
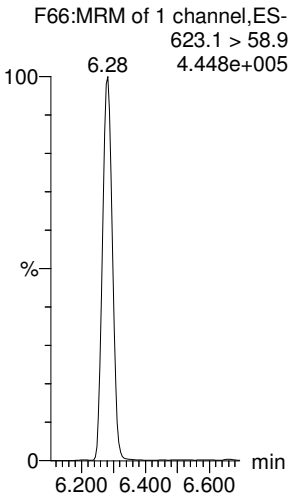


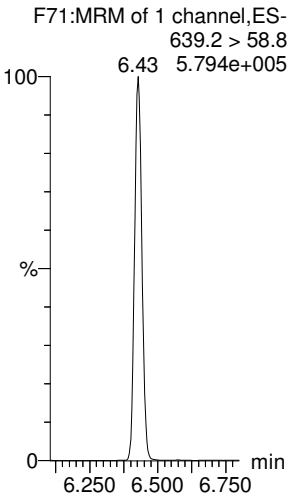
13C2-PFHxDA-RSD



d7-N-MeFOSE-RSD



d9-N-EtFOSE-RSD



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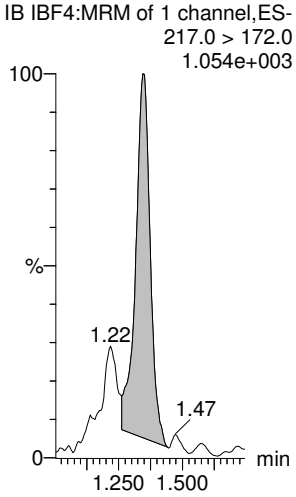
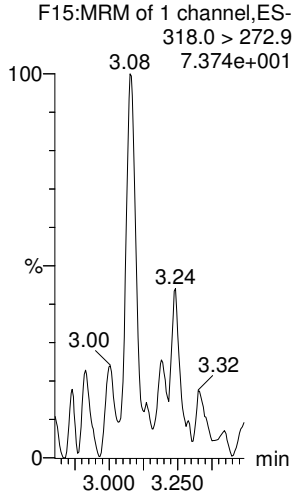
Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

13C4-PFBA



13C5-PFHxA



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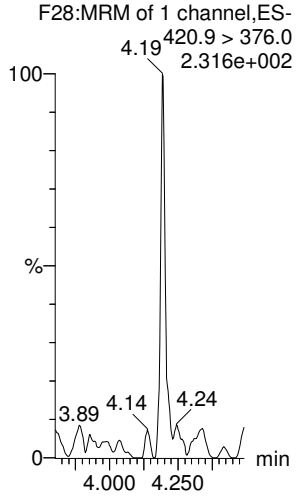

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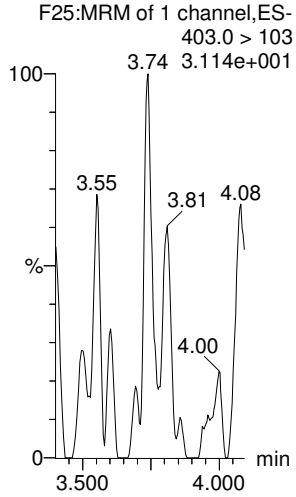
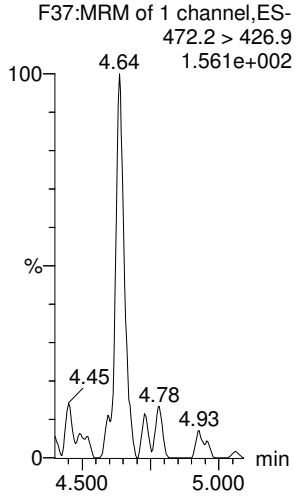
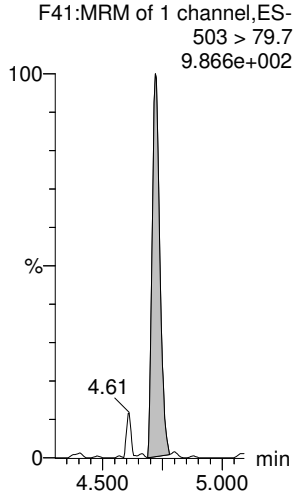


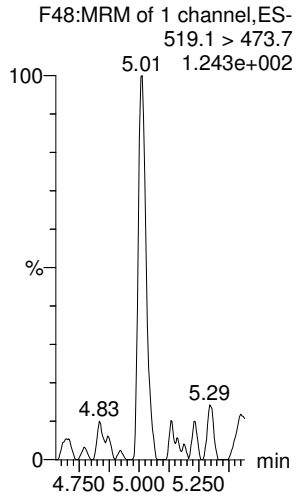
13C9-PFNA



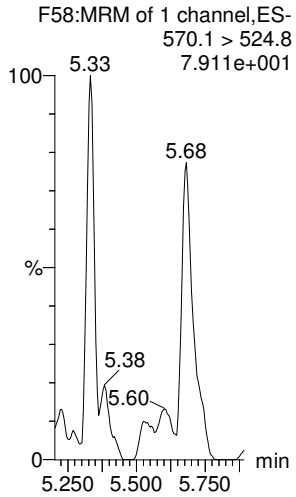
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	16.528	6244.469	1.00	1.37	0.033		0.0294		NO		
2	2	PFPrS	249 > 80		1435.981	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		11763.304	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	8.208	11763.304	1.00	2.54	0.009				NO		
5	5	PFBS	299.0 > 80		1435.981	1.00						NO		YES
6	6	4:2 FTS	326.9 > 306.9		1686.258	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	6244.469		1.00	1.35	6244.469	12.500	18.7	149.7	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1435.981		1.00	2.56	1435.981	12.500	14.8	118.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	11763.304		1.00	2.28	11763.304	12.500	15.8	126.7	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	11763.304		1.00	2.28	11763.304	12.500	15.8	126.7	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1435.981		1.00	2.56	1435.981	12.500	14.8	118.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1686.258		1.00	2.99	1686.258	12.500	15.5	123.9	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0		12385.373	1.00						NO		YES
15	8	PFPeS	349.>80		1435.981	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2521.312	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		11617.181	1.00						NO		YES
18	11	PFHpA	363.0 > 319	28.692	11617.181	1.00	3.76	0.031		0.0134		NO		YES
19	12	ADONA	376.8 > 250.9	5.701	11617.181	1.00	3.76	0.006				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	12385.373		1.00	3.08	12385.373	12.500	14.5	115.9	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1435.981		1.00	2.56	1435.981	12.500	14.8	118.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2521.312		1.00	3.30	2521.312	12.500	14.0	112.3	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	11617.181		1.00	3.68	11617.181	12.500	13.9	111.4	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	11617.181		1.00	3.68	11617.181	12.500	13.9	111.4	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	11617.181		1.00	3.68	11617.181	12.500	13.9	111.4	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9		2828.424	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407		1797.154	1.00						NO		YES
29	16	L-PFOA	413 > 369	36.685	15428.597	1.00	4.19	0.030				NO		YES
30	18	PFecHS	461 > 381.0		15428.597	1.00						NO		YES
31	19	PFHpS	449.0 > 80		2792.300	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		14996.380	1.00						NO		YES
33	61	13C3-PFHxS-EIS	402 > 80	2828.424		1.00	3.83	2828.424	12.500	15.5	123.7	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1797.154		1.00	4.14	1797.154	12.500	14.7	117.3	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	15428.597		1.00	4.20	15428.597	12.500	14.5	115.7	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	15428.597		1.00	4.20	15428.597	12.500	14.5	115.7	NO		

Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	14996.380		1.00	4.64	14996.380	12.500	15.9	127.1	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	12.212	14996.380	1.00	4.59	0.010				NO		YES
41	22	PFOSA	498 > 78	16.198	5711.040	1.00	4.70	0.035		0.0279		NO		YES
42	23	L-PFOS	499 > 80		2792.300	1.00						NO		YES
43	25	9Cl-PF30NS	531 > 351		2792.300	1.00						NO		YES
44	26	PFDA	513 > 469	36.956	17054.973	1.00	5.01	0.027				NO		YES
45	27	8:2 FTS	526.8 > 506.9		1489.415	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	14996.380		1.00	4.64	14996.380	12.500	15.9	127.1	NO		
47	67	13C8-PFOSA-EIS	506 > 78	5711.040		1.00	4.69	5711.040	12.500	15.2	121.7	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	17054.973		1.00	5.01	17054.973	12.500	14.8	118.7	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1489.415		1.00	4.98	1489.415	12.500	13.5	107.8	NO		
52	-1													
53	28	PFNS	549 > 80		2792.300	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		3960.501	1.00						NO		YES
55	31	L-EtFOSAA	583.9 > 419		3498.057	1.00						NO		YES
56	33	PFUdA	563.0 > 519	56.648	15892.551	1.00	5.33	0.045		0.00240		NO		YES
57	34	PFDS	598.8 >79.9		2792.300	1.00						NO		YES
58	35	11Cl-PF30UdS	631 > 451		19110.158	1.00						NO		YES
59	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	3960.501		1.00	5.16	3960.501	12.500	14.5	115.8	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3498.057		1.00	5.32	3498.057	12.500	16.3	130.3	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	15892.551		1.00	5.34	15892.551	12.500	13.1	104.4	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	19110.158		1.00	5.61	19110.158	12.500	14.5	116.1	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607			1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	131.089	19110.158	1.00	5.68	0.086		0.0806		NO		YES
68	38	N-MeFOSA	512.1 > 168.9	10.647	15588.355	1.00	5.61	0.102		0.102		NO		YES
69	39	PFTrDA	662.9 > 618.9	74.206	19110.158	1.00	5.83	0.049		0.00966		NO		YES
70	40	PFDoS	699 > 80		19022.357	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	21.607	19022.357	1.00	6.06	0.014		0.0128		NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0			1.00			12.500			NO		

Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	19110.158		1.00	5.61	19110.158	12.500	14.5	116.1	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	15588.355		1.00	5.68	15588.355	149.200	143	95.8	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	19110.158		1.00	5.61	19110.158	12.500	14.5	116.1	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	19022.357		1.00	6.07	19022.357	12.500	13.9	111.2	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	19022.357		1.00	6.07	19022.357	12.500	13.9	111.2	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	10.547	19948.238	1.00	6.04	0.079				NO	1.782	NO
80	43	PFHxDA	813 > 769	177.634	21390.617	1.00	6.40	0.104				NO	17.976	NO
81	44	PFODA	913.1 > 868.8	44.376	21390.617	1.00	6.64	0.026		0.0281		NO		
82	45	N-MeFOSE	616.1 > 58.9	36.498	15629.993	1.00	6.29	0.348		0.355		NO		
83	46	N-EtFOSE	630.1 > 58.9	18.770	17703.230	1.00	6.41	0.158		0.394		NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	6244.469	65.880	1.00	1.35	1184.819	12.500	1240	9907.2	YES		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	19948.238		1.00	6.10	19948.238	149.200	144	96.8	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	21390.617		1.00	6.40	21390.617	12.500	12.6	100.8	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	21390.617		1.00	6.40	21390.617	12.500	12.6	100.8	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	15629.993		1.00	6.28	15629.993	149.200	149	100.1	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	17703.230		1.00	6.43	17703.230	149.200	144	96.6	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8			1.00			12.500			NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9			1.00			12.500			NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9			1.00			12.500			NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8			1.00			12.500			NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0			1.00			12.500			NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8			1.00			12.500			NO		
97	62	13C3-PFHxS-RSD	402 > 80			1.00			12.500			NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1797.154	36.981	1.00	4.14	607.459	12.500	1190	9480.5	YES		
99	66	13C5-PFNA-RSD	468.2 > 422.9			1.00			12.500			NO		
100	68	13C8-PFOSA-RSD	506 > 78	5711.040		1.00	4.69		12.500			NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7			1.00			12.500			NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2792.300	36.981	1.00	4.72	943.829	12.500	1200	9611.0	YES		
103	74	13C2-PFDA-RSD	515.1 > 469.9			1.00			12.500			NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1489.415	36.981	1.00	4.98	503.439	12.500	1140	9143.1	YES		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419			1.00			12.500			NO		
107	80	13C2-PFUdA-RSD	565 > 519.8			1.00			12.500			NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419			1.00			12.500			NO		

Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9			1.00			12.500			NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1097.060	36.981	1.00	5.60	370.819	12.500	1180	9468.6	YES		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9			1.00			149.200			NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7			1.00			12.500			NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9			1.00			149.200			NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7			1.00			12.500			NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9			1.00			149.200			NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8			1.00			149.200			NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	65.880	65.880	1.00	1.35	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9			1.00			12.500			NO		
120	1...	13C8-PFOA	420.9 > 376.0			1.00			12.500			NO		
121	1...	18O2-PFHxS	403.0 > 103			1.00			12.500			NO		
122	1...	13C9-PFNA	472.2 > 426.9			1.00			12.500			NO		
123	1...	13C4-PFOS	503 > 79.7	36.981	36.981	1.00	4.72	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7			1.00			12.500			NO		
125	1...	13C7-PFUdA	570.1 > 524.8			1.00			12.500			NO		

LC Calibration Standards Review Checklist Q5

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	NM
Calibration ID:	ST200722IP1-11	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-12	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-13	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-14	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

07/22/20 QV

Full Mass Cal. Date: 07/10/2020

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Instrument Blank Saved ☑

All Branches in Acquisition Window ☑

IIS Area Saved N/A

Reviewed By: 7/23/2020
Initials/Date

Comments:

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-38.qld

Last Altered: Wednesday, July 22, 2020 13:25:07 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 13:25:59 Pacific Daylight Time

JAM 7/23/2020

Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	3291.867	4024.538	1.00	1.35	10.224	10.000	9.62	96.2	NO		
2	2	PFPrS	249 > 80	831.197	1212.308	1.00	1.68	8.570	10.000	9.78	97.8	NO	2.381	NO
3	3	3:3 FTCA	240.9 > 176.9	540.381	9636.043	1.00	2.15	0.701	10.000	9.52	95.2	NO	3.257	NO
4	4	PFPeA	263.1 > 218.9	7091.533	9636.043	1.00	2.29	9.199	10.000	9.85	98.5	NO		
5	5	PFBS	299.0 > 80	2518.091	1212.308	1.00	2.56	25.964	10.000	10.3	102.8	NO	2.532	NO
6	6	4:2 FTS	326.9 > 306.9	2711.973	1329.542	1.00	3.00	25.497	10.000	9.60	96.0	NO	10.119	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	4024.538		1.00	1.36	4024.538	12.500	12.1	96.5	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1212.308		1.00	2.56	1212.308	12.500	12.5	100.1	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	9636.043		1.00	2.29	9636.043	12.500	13.0	103.8	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	9636.043		1.00	2.29	9636.043	12.500	13.0	103.8	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1212.308		1.00	2.56	1212.308	12.500	12.5	100.1	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1329.542		1.00	3.00	1329.542	12.500	12.2	97.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	9393.906	11200.387	1.00	3.08	10.484	10.000	9.78	97.8	NO	15.633	NO
15	8	PFPeS	349.>80	2092.667	1212.308	1.00	3.29	21.577	10.000	10.4	104.4	NO	2.191	NO
16	9	HFPO-DA	285.1 > 168.9	1792.413	2297.204	1.00	3.30	9.753	10.000	9.48	94.8	NO	2.430	NO
17	10	5:3 FTCA	340.9 > 236.9	1163.404	10319.517	1.00	3.63	1.409	10.000	9.34	93.4	NO	1.616	NO
18	11	PFHpA	363.0 > 319	9832.183	10319.517	1.00	3.69	11.910	10.000	9.73	97.3	NO	41.779	NO
19	12	ADONA	376.8 > 250.9	18163.270	10319.517	1.00	3.80	22.001	10.000	9.57	95.7	NO	3.780	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	11200.387		1.00	3.08	11200.387	12.500	13.1	104.9	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1212.308		1.00	2.56	1212.308	12.500	12.5	100.1	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2297.204		1.00	3.30	2297.204	12.500	12.8	102.3	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	10319.517		1.00	3.69	10319.517	12.500	12.4	99.0	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	10319.517		1.00	3.69	10319.517	12.500	12.4	99.0	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	10319.517		1.00	3.69	10319.517	12.500	12.4	99.0	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9	2363.096	2369.520	1.00	3.83	12.466	10.000	10.5	105.1	NO	4.160	NO
28	15	6:2 FTS	427.0 > 407	1244.696	1581.990	1.00	4.14	9.835	10.000	10.2	102.2	NO	0.711	NO
29	16	L-PFOA	413 > 369	9476.796	13214.498	1.00	4.20	8.964	10.000	9.17	91.7	NO	2.944	NO
30	18	PFecHS	461 > 381.0	1945.609	13214.498	1.00	4.21	1.840	10.000	9.04	90.4	NO	0.500	NO
31	19	PFHpS	449.0 > 80	1794.700	2627.221	1.00	4.31	8.539	10.000	8.46	84.6	NO	1.717	NO
32	20	7:3 FTCA	440.9 > 336.9	2116.986	11934.722	1.00	4.63	2.217	10.000	9.53	95.3	NO	1.243	NO
33	61	13C3-PFHxS-EIS	402 > 80	2369.520		1.00	3.83	2369.520	12.500	13.0	103.6	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1581.990		1.00	4.14	1581.990	12.500	12.9	103.2	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	13214.498		1.00	4.20	13214.498	12.500	12.4	99.1	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	13214.498		1.00	4.20	13214.498	12.500	12.4	99.1	NO		

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Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-38.qld

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Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2627.221		1.00	4.73	2627.221	12.500	13.6	108.6	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	11934.722		1.00	4.64	11934.722	12.500	12.6	101.2	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	11405.071	11934.722	1.00	4.64	11.945	10.000	9.46	94.6	NO	12.478	NO
41	22	PFOSA	498 > 78	2782.268	5087.436	1.00	4.69	6.836	10.000	9.67	96.7	NO	24.312	NO
42	23	L-PFOS	499 > 80	2473.200	2627.221	1.00	4.73	11.767	10.000	9.15	91.5	NO	2.461	NO
43	25	9Cl-PF30NS	531 > 351	4812.028	2627.221	1.00	4.94	22.895	10.000	8.93	89.3	NO	37.034	NO
44	26	PFDA	513 > 469	10028.680	14344.003	1.00	5.02	8.739	10.000	10.9	109.0	NO	5.337	NO
45	27	8:2 FTS	526.8 > 506.9	1267.472	1318.298	1.00	4.99	12.018	10.000	9.49	94.9	NO	0.695	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	11934.722		1.00	4.64	11934.722	12.500	12.6	101.2	NO		
47	67	13C8-PFOSA-EIS	506 > 78	5087.436		1.00	4.69	5087.436	12.500	13.6	108.4	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2627.221		1.00	4.73	2627.221	12.500	13.6	108.6	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2627.221		1.00	4.73	2627.221	12.500	13.6	108.6	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	14344.003		1.00	5.02	14344.003	12.500	12.5	99.8	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1318.298		1.00	4.99	1318.298	12.500	11.9	95.4	NO		
52	-1													
53	28	PFNS	549 > 80	2537.333	2627.221	1.00	5.08	12.072	10.000	9.29	92.9	NO	2.697	NO
54	29	L-MeFOSAA	570 > 419	3222.174	3492.875	1.00	5.17	11.531	10.000	9.72	97.2	NO	1.658	NO
55	31	L-EtFOSAA	583.9 > 419	3855.781	2922.462	1.00	5.33	16.492	10.000	10.2	102.1	NO	1.407	NO
56	33	PFUdA	563.0 > 519	10982.027	13955.947	1.00	5.34	9.836	10.000	9.99	99.9	NO	16.578	NO
57	34	PFDS	598.8 >79.9	2643.882	2627.221	1.00	5.39	12.579	10.000	9.52	95.2	NO	2.405	NO
58	35	11Cl-PF30UdS	631 > 451	3838.299	17005.922	1.00	5.55	2.821	10.000	9.52	95.2	NO	14.576	NO
59	71	13C8-PFOS-EIS	507.1 > 80	2627.221		1.00	4.73	2627.221	12.500	13.6	108.6	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	3492.875		1.00	5.16	3492.875	12.500	12.8	102.1	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	2922.462		1.00	5.32	2922.462	12.500	13.6	108.9	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	13955.947		1.00	5.34	13955.947	12.500	11.5	91.7	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2627.221		1.00	4.73	2627.221	12.500	13.6	108.6	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	17005.922		1.00	5.62	17005.922	12.500	12.9	103.3	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1382.282	945.500	1.00	5.61	18.274	10.000	9.54	95.4	NO	0.839	NO
67	37	PFDoA	612.9 > 569.0	11196.534	17005.922	1.00	5.62	8.230	10.000	9.10	91.0	NO	10.321	NO
68	38	N-MeFOSA	512.1 > 168.9	6298.942	16323.864	1.00	5.66	57.572	50.000	51.8	103.7	NO	1.988	NO
69	39	PFTrDA	662.9 > 618.9	13262.398	17005.922	1.00	5.86	9.748	10.000	9.52	95.2	NO	103.110	NO
70	40	PFDoS	699 > 80	2568.876	17113.197	1.00	5.89	1.876	10.000	9.25	92.5	NO	2.069	NO
71	41	PFTeDA	713.0 > 669.0	8292.447	17113.197	1.00	6.07	6.057	10.000	9.81	98.1	NO	13.810	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	945.500		1.00	5.60	945.500	12.500	12.1	97.2	NO		

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Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	17005.922		1.00	5.62	17005.922	12.500	12.9	103.3	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	16323.864		1.00	5.69	16323.864	149.200	150	100.3	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	17005.922		1.00	5.62	17005.922	12.500	12.9	103.3	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	17113.197		1.00	6.07	17113.197	12.500	12.5	100.1	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	17113.197		1.00	6.07	17113.197	12.500	12.5	100.1	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	8320.422	20974.672	1.00	6.09	59.186	50.000	50.4	100.8	NO	1.999	NO
80	43	PFHxDA	813 > 769	15654.296	21609.863	1.00	6.41	9.055	10.000	9.50	95.0	NO	29.956	NO
81	44	PFODA	913.1 > 868.8	13271.514	21609.863	1.00	6.64	7.677	10.000	9.76	97.6	NO		
82	45	N-MeFOSE	616.1 > 58.9	6151.993	16075.988	1.00	6.29	57.096	50.000	48.3	96.6	NO		
83	46	N-EtFOSE	630.1 > 58.9	6380.355	18793.578	1.00	6.44	50.653	50.000	45.8	91.5	NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	4024.538	4363.541	1.00	1.36	11.529	12.500	12.1	96.4	NO		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	20974.672		1.00	6.10	20974.672	149.200	152	101.8	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	21609.863		1.00	6.41	21609.863	12.500	12.7	101.9	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	21609.863		1.00	6.41	21609.863	12.500	12.7	101.9	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	16075.988		1.00	6.28	16075.988	149.200	154	102.9	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	18793.578		1.00	6.43	18793.578	149.200	153	102.6	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8	9715.608	13062.030	1.00	2.29	9.298	12.500	12.3	98.7	NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9	1214.980	974.504	1.00	2.56	15.585	12.500	11.8	94.1	NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2297.204	13062.030	1.00	3.30	2.198	12.500	13.1	105.0	NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8	1329.542	974.504	1.00	3.00	17.054	12.500	11.6	92.7	NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0	11200.387	13062.030	1.00	3.08	10.718	12.500	12.6	100.8	NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8	10319.517	13062.030	1.00	3.69	9.875	12.500	12.5	100.0	NO		
97	62	13C3-PFHxS-RSD	402 > 80	2369.520	974.504	1.00	3.83	30.394	12.500	11.7	94.0	NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1581.990	3187.338	1.00	4.14	6.204	12.500	12.1	96.8	NO		
99	66	13C5-PFNA-RSD	468.2 > 422.9	11934.722	13448.318	1.00	4.64	11.093	12.500	11.6	92.9	NO		
100	68	13C8-PFOSA-RSD	506 > 78	5087.436	11442.550	1.00	4.69	5.558	12.500	12.7	101.9	NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7	13214.498	10966.205	1.00	4.20	15.063	12.500	12.0	95.7	NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2627.221	3187.338	1.00	4.73	10.303	12.500	13.1	104.9	NO		
103	74	13C2-PFDA-RSD	515.1 > 469.9	14344.003	13577.095	1.00	5.02	13.206	12.500	12.0	96.4	NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1318.298	3187.338	1.00	4.99	5.170	12.500	11.7	93.9	NO		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419	3492.875	11442.550	1.00	5.16	3.816	12.500	12.4	99.0	NO		
107	80	13C2-PFUdA-RSD	565 > 519.8	13955.947	11442.550	1.00	5.34	15.246	12.500	11.6	92.6	NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419	2922.462	11442.550	1.00	5.32	3.193	12.500	13.0	103.8	NO		

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Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9	17005.922	13577.095	1.00	5.62	15.657	12.500	12.5	99.8	NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	938.153	3187.338	1.00	5.60	3.679	12.500	11.7	93.9	NO		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9	16323.864	11442.550	1.00	5.69	17.832	149.200	144	96.8	NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7	17113.197	11442.550	1.00	6.07	18.695	12.500	12.3	98.7	NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9	20974.672	11442.550	1.00	6.10	22.913	149.200	149	99.8	NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7	21609.863	11442.550	1.00	6.41	23.607	12.500	12.4	99.0	NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9	16075.988	11442.550	1.00	6.28	17.562	149.200	144	96.6	NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8	18793.578	11442.550	1.00	6.43	20.530	149.200	150	100.3	NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	4363.541	4363.541	1.00	1.36	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9	13062.030	13062.030	1.00	3.08	12.500	12.500	12.5	100.0	NO		
120	1...	13C8-PFOA	420.9 > 376.0	10966.205	10966.205	1.00	4.20	12.500	12.500	12.5	100.0	NO		
121	1...	18O2-PFHxS	403.0 > 103	974.504	974.504	1.00	3.83	12.500	12.500	12.5	100.0	NO		
122	1...	13C9-PFNA	472.2 > 426.9	13448.318	13448.318	1.00	4.64	12.500	12.500	12.5	100.0	NO		
123	1...	13C4-PFOS	503 > 79.7	3187.338	3187.338	1.00	4.73	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7	13577.095	13577.095	1.00	5.02	12.500	12.500	12.5	100.0	NO		
125	1...	13C7-PFUdA	570.1 > 524.8	11442.550	11442.550	1.00	5.34	12.500	12.500	12.5	100.0	NO		

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 08:22:31
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200721P1-01	IPA	21-Jul-20	15:15:23
2	2	200721P1-02	IPA	21-Jul-20	15:25:59
3	3	200721P1-03	TESTER	21-Jul-20	15:36:35
4	4	200721P1-04	IPA	21-Jul-20	15:47:01
5	5	200721P1-05	ST200721P1-1 PFC CS-2 20G1601	21-Jul-20	15:57:37
6	6	200721P1-06	ST200721P1-2 PFC CS-1 20G1602	21-Jul-20	16:08:14
7	7	200721P1-07	ST200721P1-3 PFC CS0 20G1603	21-Jul-20	16:18:40
8	8	200721P1-08	ST200721P1-4 PFC CS1 20G1604	21-Jul-20	16:29:17
9	9	200721P1-09	ST200721P1-5 PFC CS2 20G1605	21-Jul-20	16:39:53
10	10	200721P1-10	ST200721P1-6 PFC CS3 20G1606	21-Jul-20	16:50:30
11	11	200721P1-11	ST200721P1-7 PFC CS4 20G1607	21-Jul-20	17:01:05
12	12	200721P1-12	ST200721P1-8 PFC CS5 20G1608	21-Jul-20	17:11:41
13	13	200721P1-13	ST200721P1-9 PFC CS6 20G1609	21-Jul-20	17:22:17
14	14	200721P1-14	ST200721P1-10 PFC CS7 20G1610	21-Jul-20	17:32:52
15	15	200721P1-15	IB	21-Jul-20	17:43:28
16	16	200721P1-16	ICV200721P1-1 PFC ICV 20G1611	21-Jul-20	17:54:04
17	17	200721P1-17	IB	21-Jul-20	18:04:40
18	18	200721P1-18	2001430-01@5X IN-49 0.24168	21-Jul-20	18:15:16
19	19	200721P1-19	2001430-02@5X OUT-49 0.23991	21-Jul-20	18:25:43
20	20	200721P1-20	B0G0101-BLK1 Method Blank 0.25	21-Jul-20	18:36:19
21	21	200721P1-21	B0G0101-BS1 OPR 0.25	21-Jul-20	18:46:55
22	22	200721P1-22	B0G0101-BSD1 LCSD 0.25	21-Jul-20	18:57:31
23	23	200721P1-23	2001462-01 AST-Drum-Water-Waste-PFAS 0.25477	21-Jul-20	19:08:08
24	24	200721P1-24	2001463-02 UST52-Drum-Water-Waste-PFAS 0.24714	21-Jul-20	19:18:44
25	25	200721P1-25	2001491-01 REEPAC2709 0.11527	21-Jul-20	19:29:20
26	26	200721P1-26	B0G0104-BLK1 Method Blank 1	21-Jul-20	19:39:56
27	27	200721P1-27	B0G0104-BS1 OPR 1	21-Jul-20	19:50:32
28	28	200721P1-28	2001443-01 Biosolids 1A-1D (COMP) 1.42	21-Jul-20	20:00:58
29	29	200721P1-29	2001443-02 Biosolids 2A-2D (COMP) 1.42	21-Jul-20	20:11:34
30	30	200721P1-30	B0G0090-BLK1 Method Blank 0.25	21-Jul-20	20:22:10
31	31	200721P1-31	B0G0090-BS1 OPR 0.25	21-Jul-20	20:32:36
32	32	200721P1-32	B0G0090-BSD1 LCSD 0.25	21-Jul-20	20:43:13

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Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
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34	34 200721P1-34	2001444-02 TW27S-20200709 0.24775	21-Jul-20	21:04:25
35	35 200721P1-35	2001444-03 TW22S-20200709 0.25879	21-Jul-20	21:15:01
36	36 200721P1-36	2001444-04 TW10D-20200709 0.28087	21-Jul-20	21:25:37
37	37 200721P1-37	IB	21-Jul-20	21:36:12
38	38 200721P1-38	ST200721P1-11 PFC CS3 20G1606	21-Jul-20	21:46:48
39	39 200721P1-39	IB	21-Jul-20	21:57:24
40	40 200721P1-40	2001444-05 TW11D-20200709 0.37921	21-Jul-20	22:07:59
41	41 200721P1-41	2001444-06 TW12D-20200709 0.35315	21-Jul-20	22:18:36
42	42 200721P1-42	2001444-07 TW13D-20200709 0.26303	21-Jul-20	22:29:12
43	43 200721P1-43	2001444-08 TW14D-20200709 0.25801	21-Jul-20	22:39:48
44	44 200721P1-44	2001472-01 EB08-20200710 0.24427	21-Jul-20	22:50:24
45	45 200721P1-45	2001472-02 TW23S-20200710 0.24184	21-Jul-20	23:00:59
46	46 200721P1-46	2001472-03 TW24S-20200710 0.25174	21-Jul-20	23:11:35
47	47 200721P1-47	2001472-04 TW15D-20200710 0.28426	21-Jul-20	23:22:11
48	48 200721P1-48	2001472-05 TW16D-20200710 0.35081	21-Jul-20	23:32:47
49	49 200721P1-49	B0G0100-BLK1 Method Blank 0.25	21-Jul-20	23:43:23
50	50 200721P1-50	B0G0100-BS1 OPR 0.25	21-Jul-20	23:53:58
51	51 200721P1-51	2001458-01 11535 VFR-3-Influent 0.23591	22-Jul-20	00:04:34
52	52 200721P1-52	2001458-02 11535 VFR-3-Midpoint 0.25242	22-Jul-20	00:15:10
53	53 200721P1-53	IB	22-Jul-20	00:25:46
54	54 200721P1-54	ST200721P1-12 PFC CS3 20G1606	22-Jul-20	00:36:21
55	55 200721P1-55	IB	22-Jul-20	00:46:47
56	56 200721P1-56	2001458-03 11535 VFR-3-Effluent 0.2349	22-Jul-20	00:57:24
57	57 200721P1-57	2001458-04 FB-07092020 0.25288	22-Jul-20	01:08:00
58	58 200721P1-58	B0G0091-BLK1 Method Blank 0.25	22-Jul-20	01:18:35
59	59 200721P1-59	B0G0091-BS1 OPR 0.25	22-Jul-20	01:29:11
60	60 200721P1-60	2001451-01 Bronson WWTP Eff 0.24868	22-Jul-20	01:39:47
61	61 200721P1-61	2001451-02 Coldwater WWTP Eff 0.25253	22-Jul-20	01:50:22
62	62 200721P1-62	2001496-01 FPC Eff Unox 0.24678	22-Jul-20	02:00:59
63	63 200721P1-63	2001497-01 Buchanan WWTP Eff 0.24941	22-Jul-20	02:11:34
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65	65 200721P1-65	B0G0076-BS1 OPR 2	22-Jul-20	02:32:46
66	66 200721P1-66	B0G0076-BSD1 LCSD 2	22-Jul-20	02:43:22
67	67 200721P1-67	2001418-01 B-6 3-5 ft 2.4	22-Jul-20	02:53:57
68	68 200721P1-68	2001418-02 B-6 8-10 ft 2.38	22-Jul-20	03:04:33

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 15:58:00 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 15:58:14 Pacific Daylight Time

Compound name: PFBA

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70	70 200721P1-70	2001418-04 B-7 8-10 ft 2.19	22-Jul-20	03:25:45
71	71 200721P1-71	2001418-05 B-8 3-5 ft 2.26	22-Jul-20	03:36:21
72	72 200721P1-72	IB	22-Jul-20	03:46:56
73	73 200721P1-73	ST200721P1-13 PFC CS3 20G1606	22-Jul-20	03:57:22
74	74 200721P1-74	IB	22-Jul-20	04:07:59
75	75 200721P1-75	2001418-06 B-8 8-10 ft 2.07	22-Jul-20	04:18:35
76	76 200721P1-76	2001418-07 M-1 2.07	22-Jul-20	04:29:11
77	77 200721P1-77	B0G0124-BS1 OPR 0.25	22-Jul-20	04:39:47
78	78 200721P1-78	2001432-02 WS 288 0.26307	22-Jul-20	04:50:22
79	79 200721P1-79	B0G0187-BLK1@100X Method Blank 0.001	22-Jul-20	05:00:58
80	80 200721P1-80	B0G0187-BS1@100X OPR 0.001	22-Jul-20	05:11:33
81	81 200721P1-81	2001427-01RE1@100X Phase 4 Sample 1 0.00103	22-Jul-20	05:22:09
82	82 200721P1-82	2001427-02RE1@100X Phase 4, Sample 4 0.00103	22-Jul-20	05:32:45
83	83 200721P1-83	2001427-03RE1@100X Phase 4, Sample 7 0.00102	22-Jul-20	05:43:21
84	84 200721P1-84	IB	22-Jul-20	05:53:56
85	85 200721P1-85	2001427-01@25X Phase 4 Sample 1 0.19207	22-Jul-20	06:04:32
86	86 200721P1-86	IB	22-Jul-20	06:15:08
87	87 200721P1-87	2001427-02@20X Phase 4, Sample 4 0.08972	22-Jul-20	06:25:44
88	88 200721P1-88	IB	22-Jul-20	06:36:20
89	89 200721P1-89	2001427-03@50X Phase 4, Sample 7 0.09458	22-Jul-20	06:46:56
90	90 200721P1-90	IB	22-Jul-20	06:57:31
91	91 200721P1-91	LCMS-200721-BLK1	22-Jul-20	07:08:07
92	92 200721P1-92	LCMS-200721-BS1	22-Jul-20	07:18:43
93	93 200721P1-93	IB	22-Jul-20	07:29:19
94	94 200721P1-94	ST200721P1-14 PFC CS3 20G1606	22-Jul-20	07:39:54
95	95 200721P1-95	IB	22-Jul-20	07:50:30
96	96 200721P1-96	LIPID CLEANUP COLUMN	22-Jul-20	08:01:06

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-38.qld

Last Altered: Wednesday, July 22, 2020 13:25:07 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 13:25:59 Pacific Daylight Time

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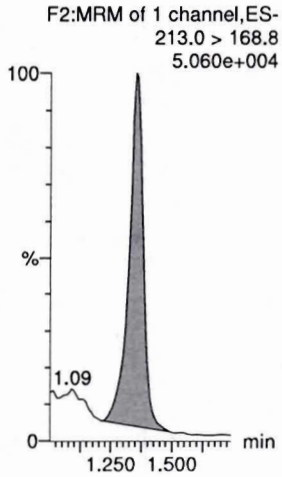
Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

PFBA



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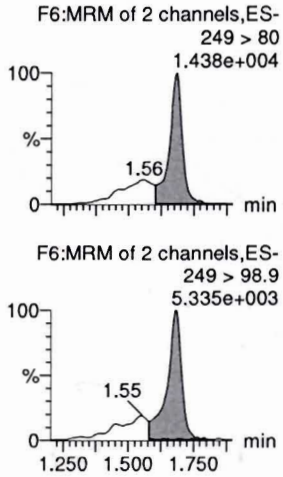

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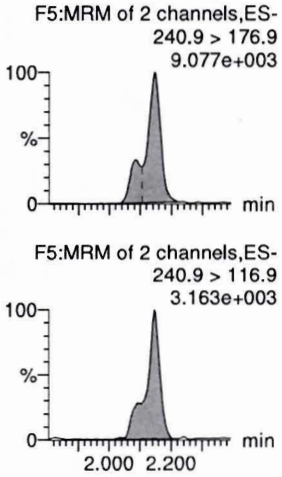

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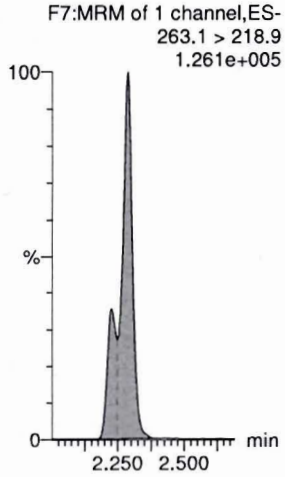

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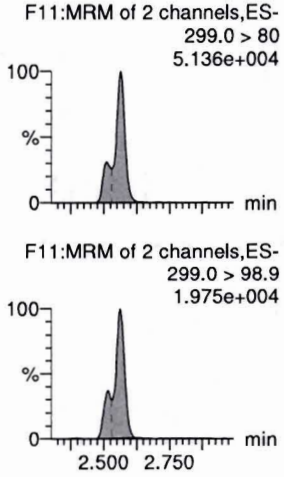

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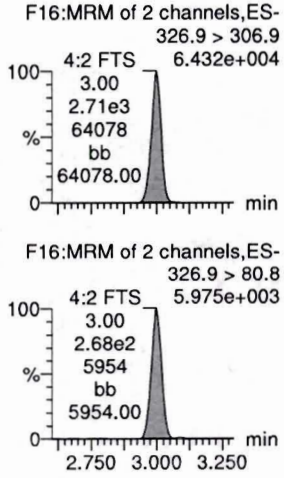

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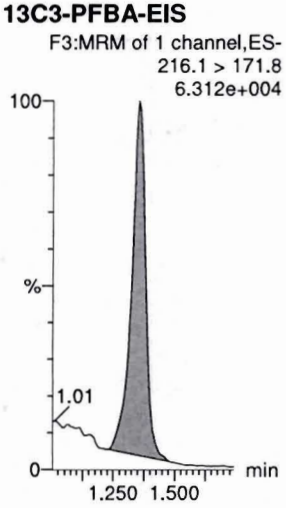

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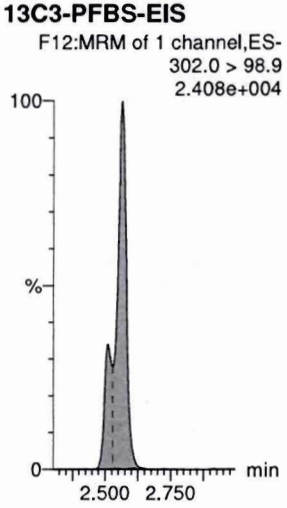

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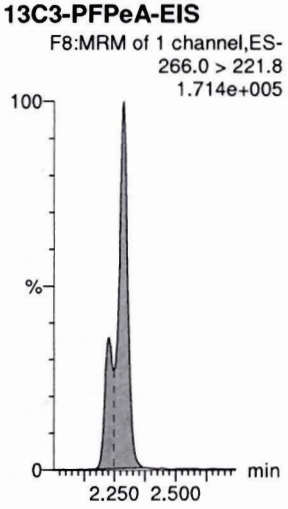

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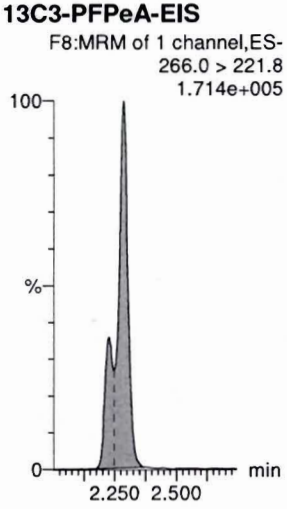

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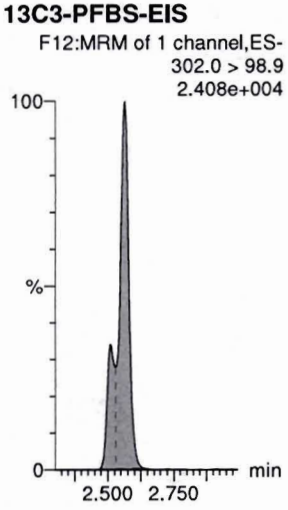

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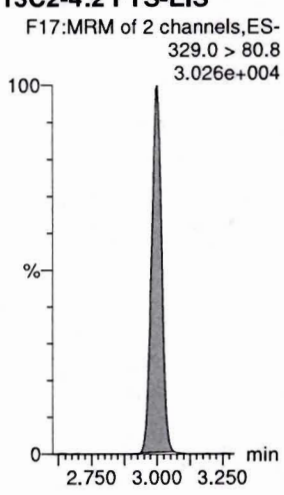

OPV 7/22/2020

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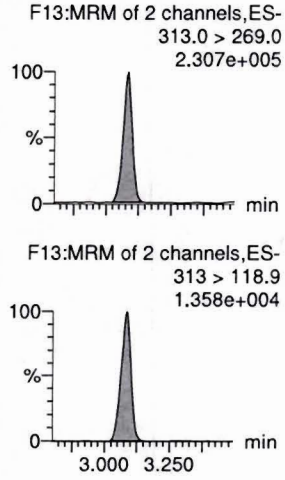
PFHxA



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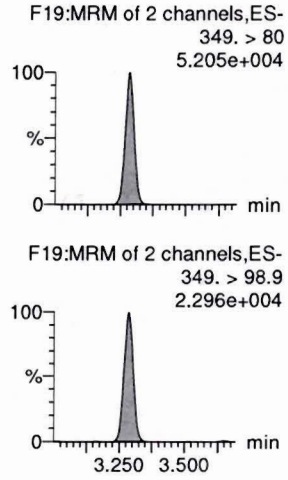

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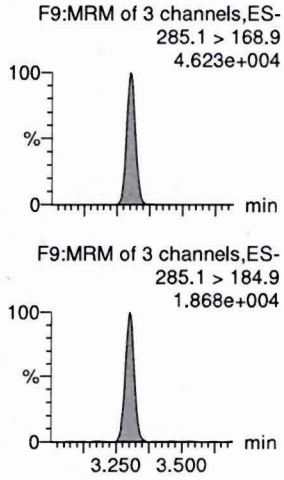
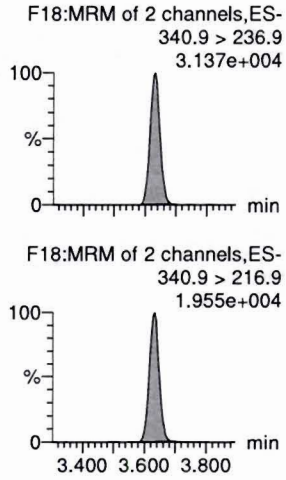


5:3 FTCA



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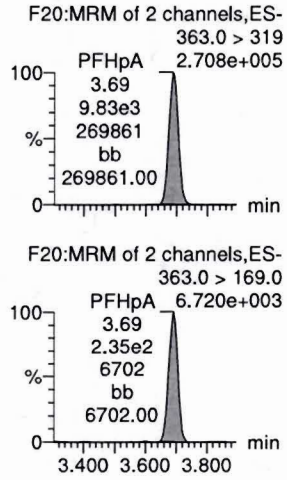

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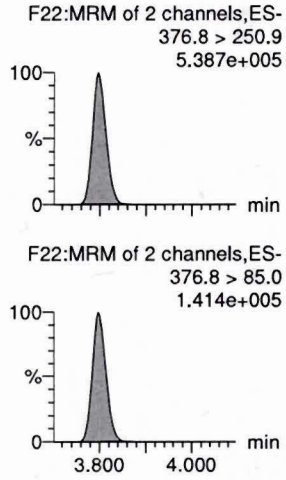

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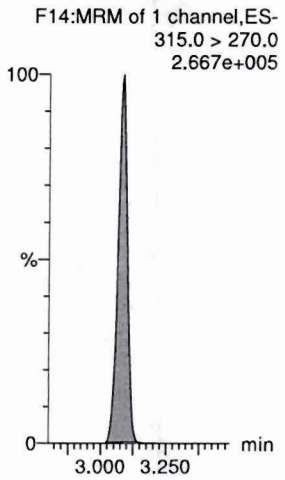

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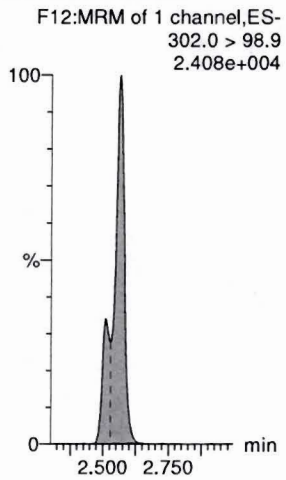

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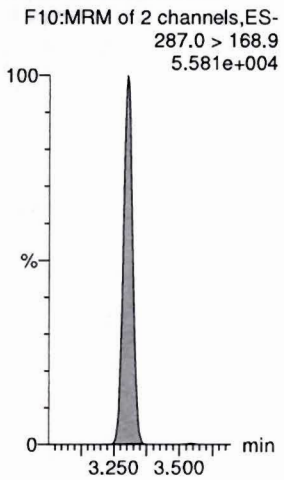

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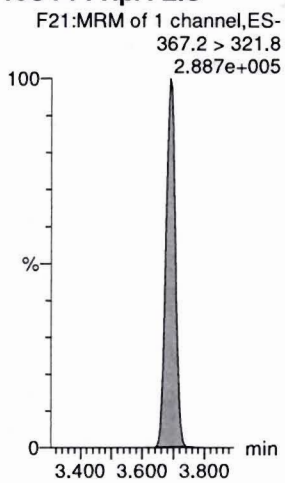

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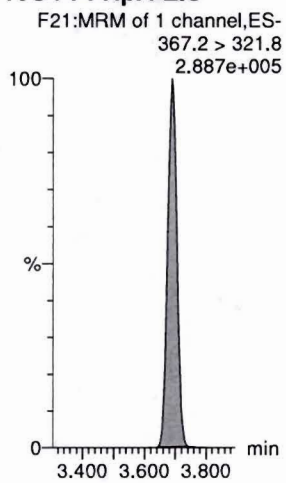

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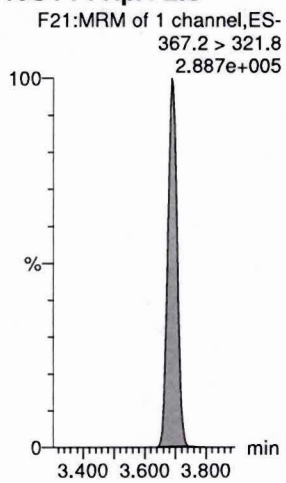

OPV 7/22/2020

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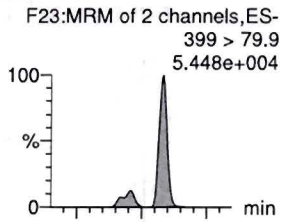
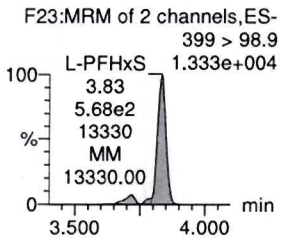
L-PFHxS





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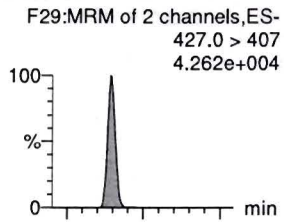

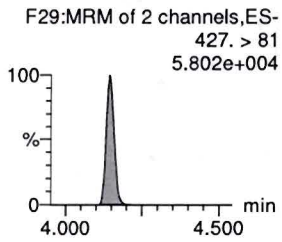

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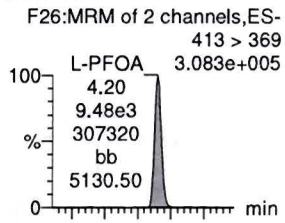

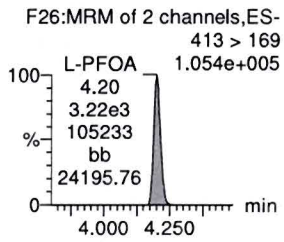

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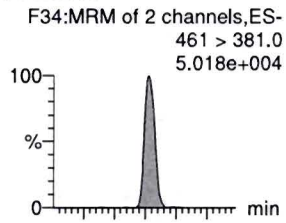
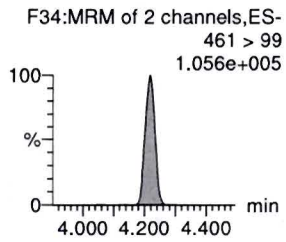
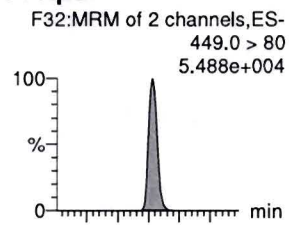
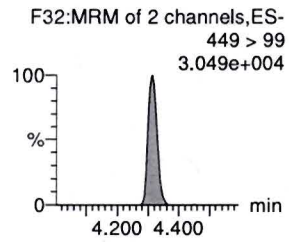




PFHpS





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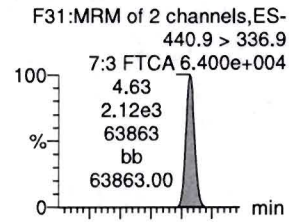
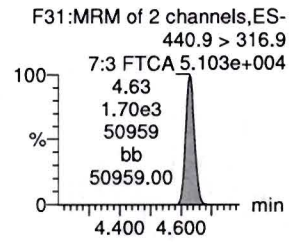
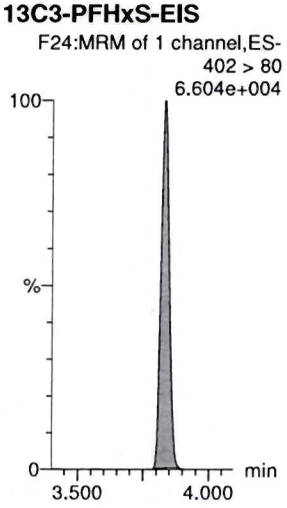
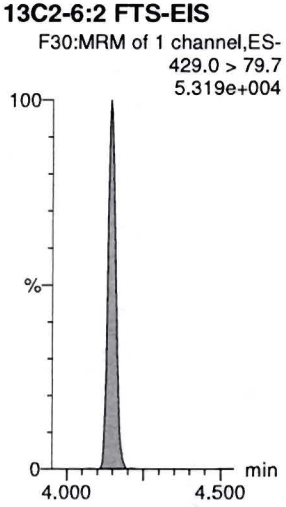




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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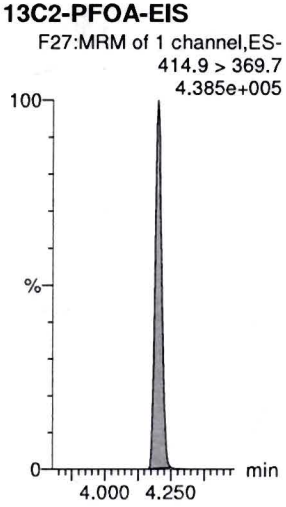

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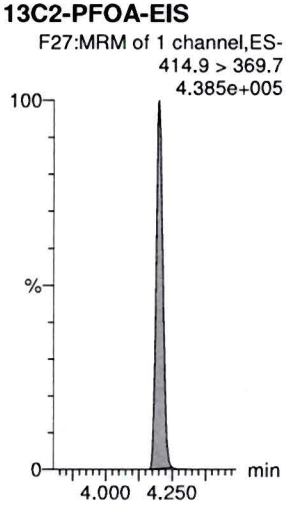
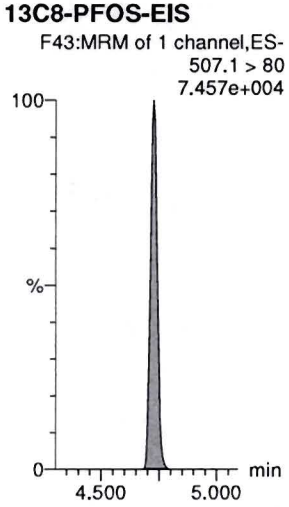
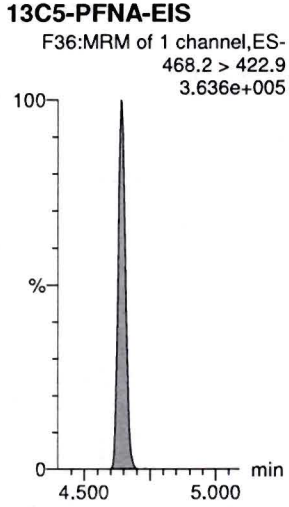


13C8-PFOS-EIS



13C5-PFNA-EIS



OPV 7/22/2020

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Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

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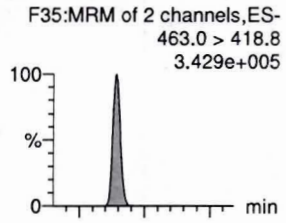

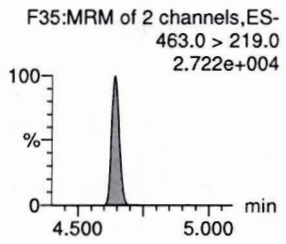

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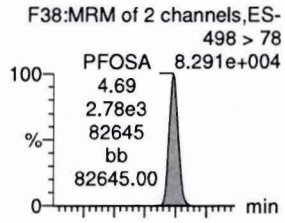
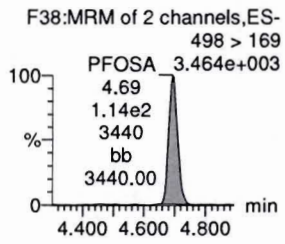
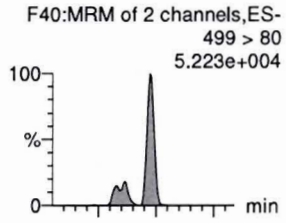
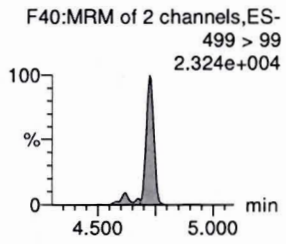


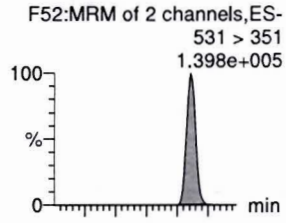


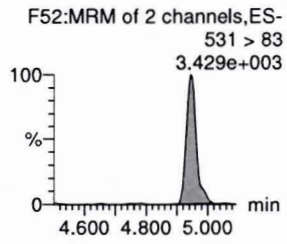
L-PFOS





9Cl-PF30NS





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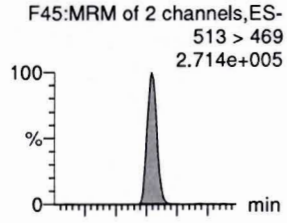
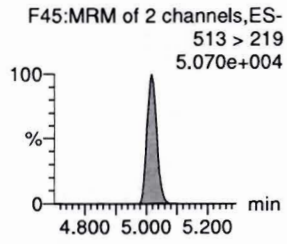
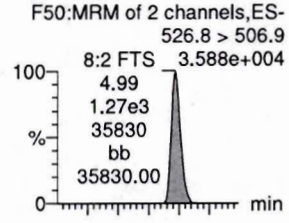
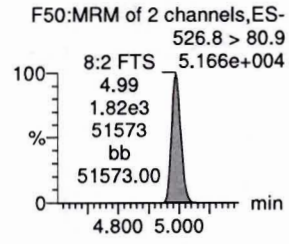


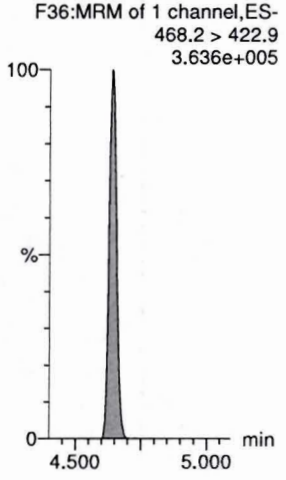


8:2 FTS





13C5-PFNA-EIS



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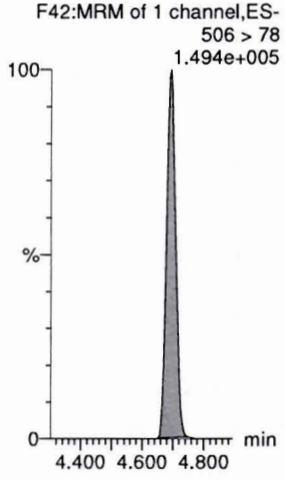

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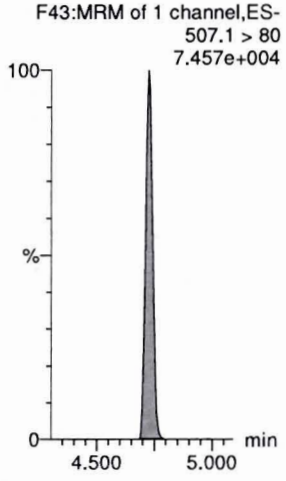

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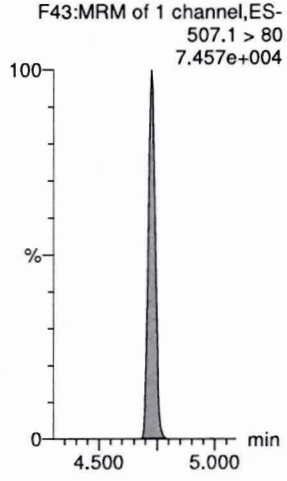

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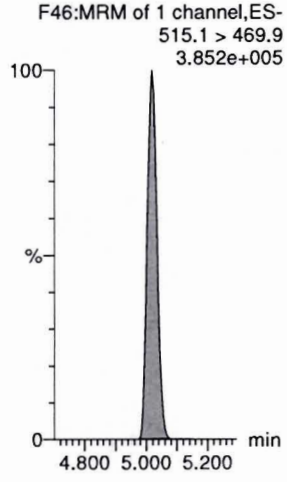

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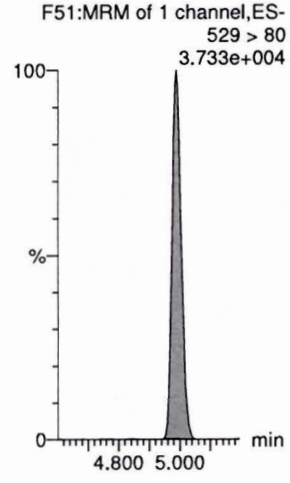

OPV 7/22/2020

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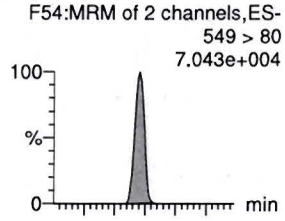
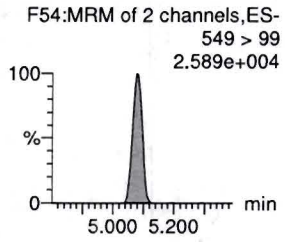
PFNS





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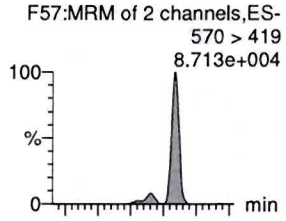

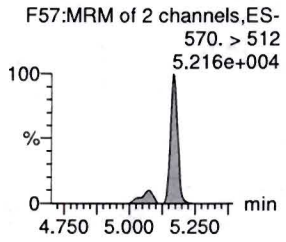

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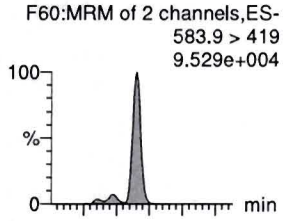

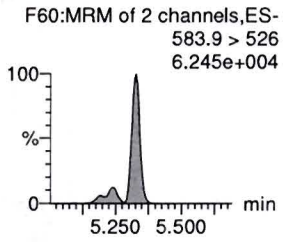

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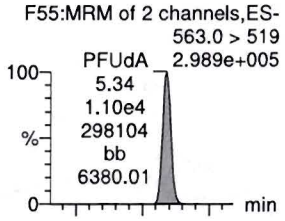

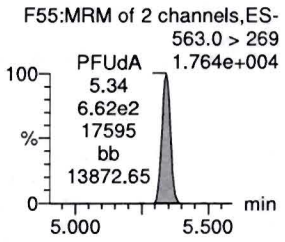

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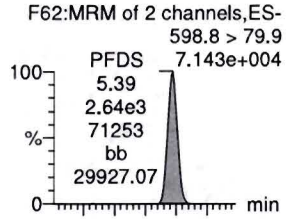

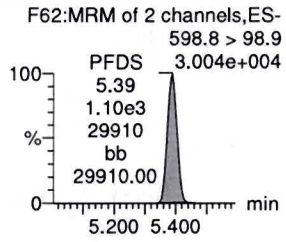

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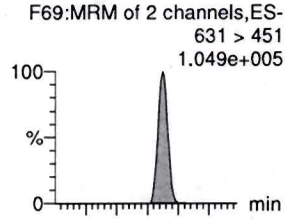

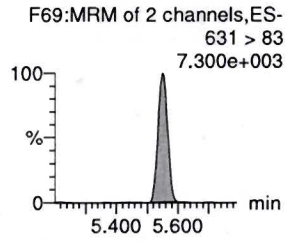

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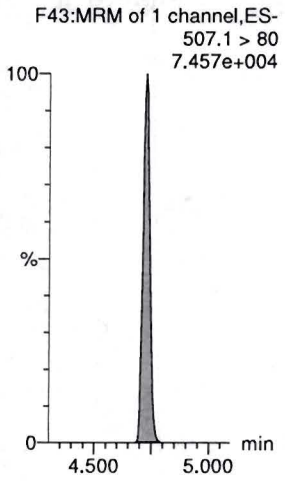
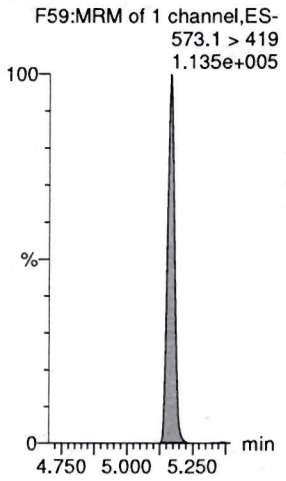


d3-N-MeFOSAA-EIS



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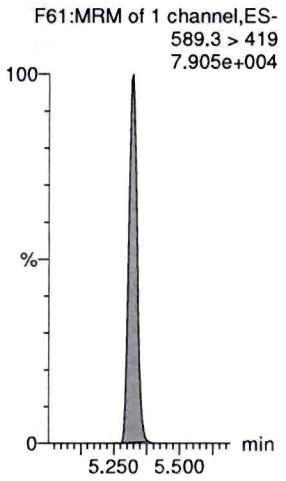

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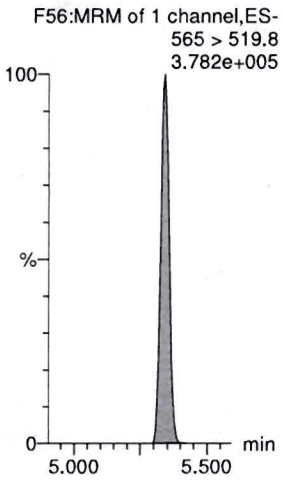

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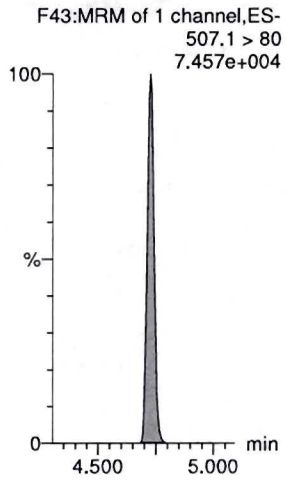

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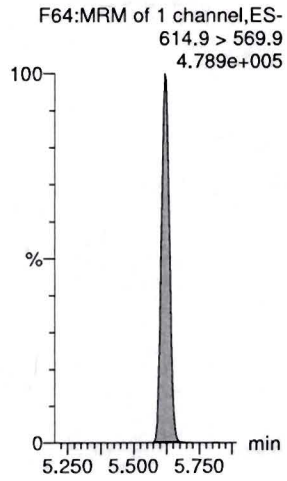

OPV 7/22/2020

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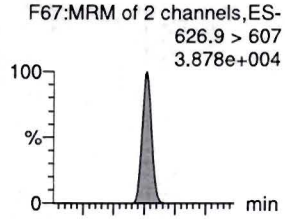
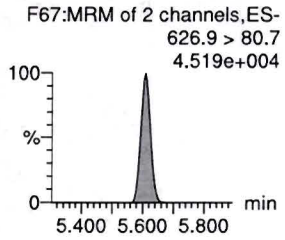
10:2 FTS





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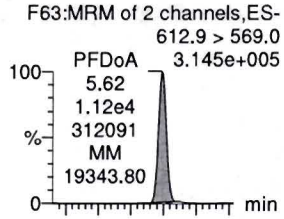
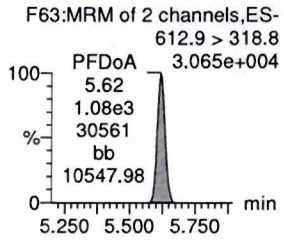
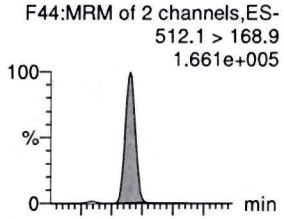
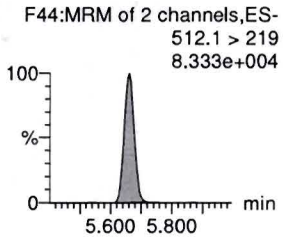




N-MeFOSA





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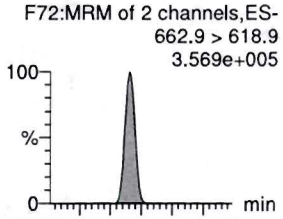

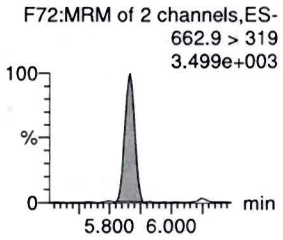

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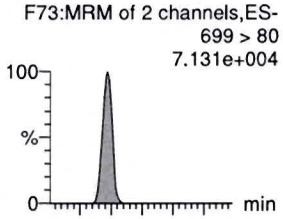

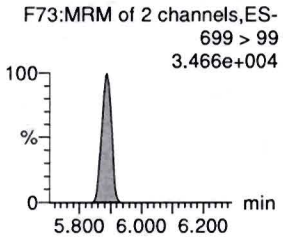

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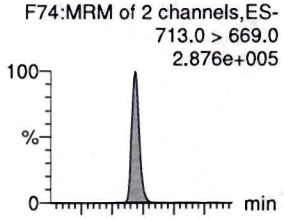
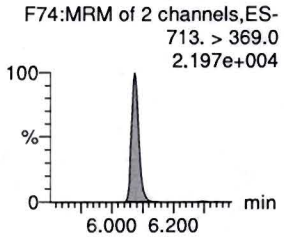
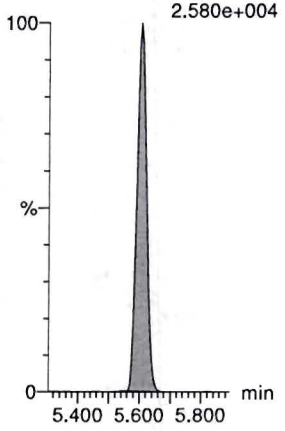
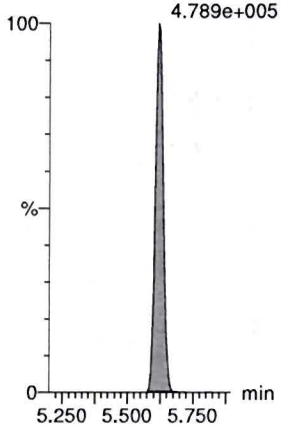




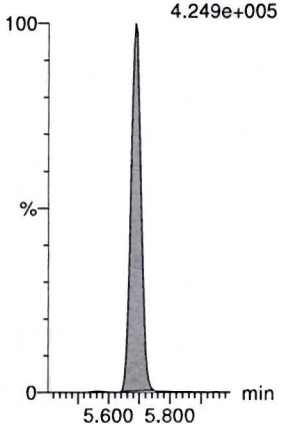
13C2-10:2 FTS-EIS



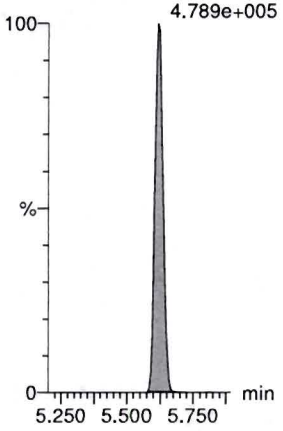
13C2-PFDoA-EIS



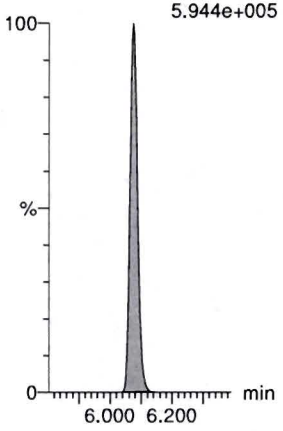
d3-N-MeFOSA-EIS



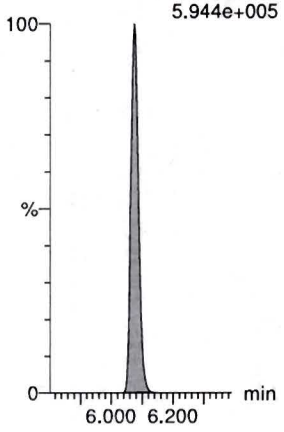
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



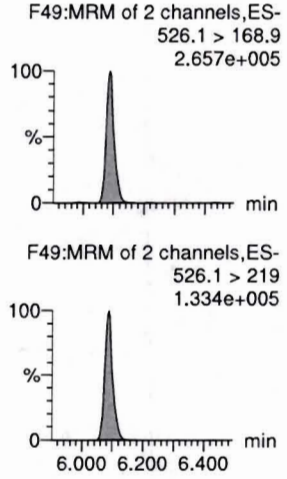
OPV 7/22/2020

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-38.qld

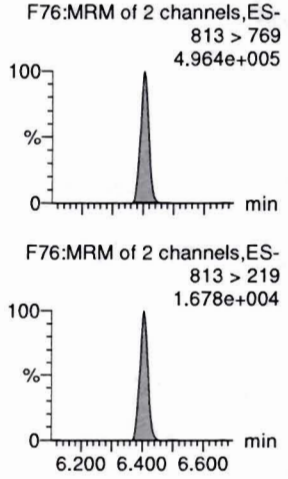
Last Altered: Wednesday, July 22, 2020 13:25:07 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 13:25:59 Pacific Daylight Time

Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

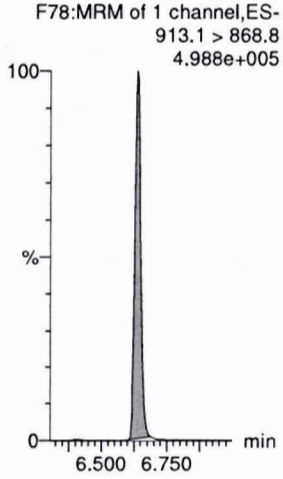
N-EtFOSA



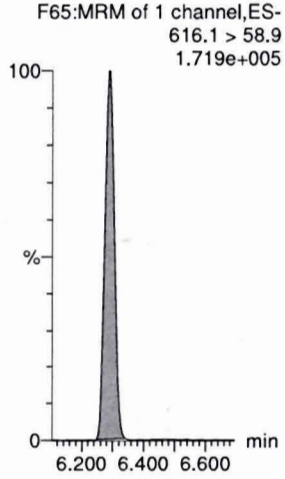
PFHxDA



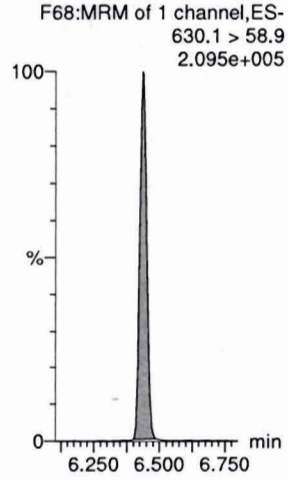
PFODA



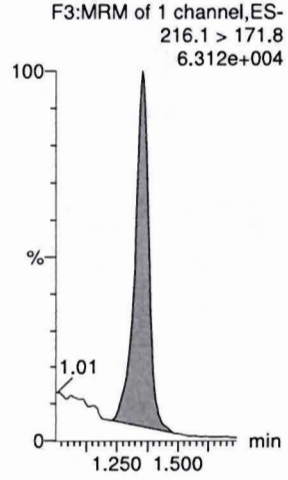
N-MeFOSE



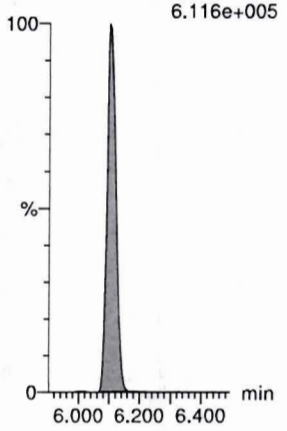
N-EtFOSE



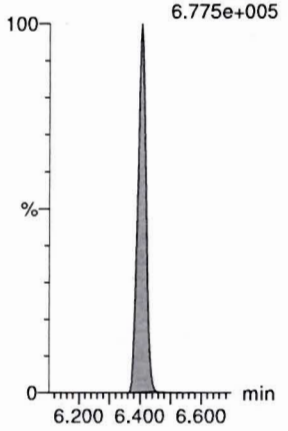
13C3-PFBA-RSD



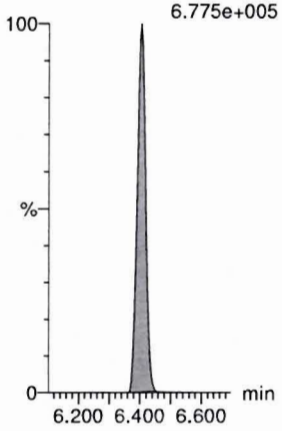
d5-N-ETFOSA-EIS



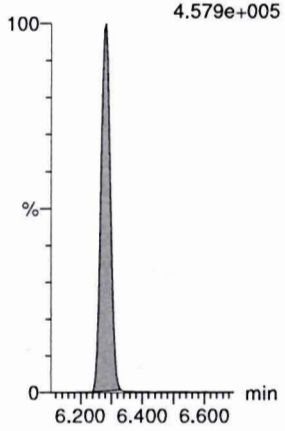
13C2-PFHxDA-EIS



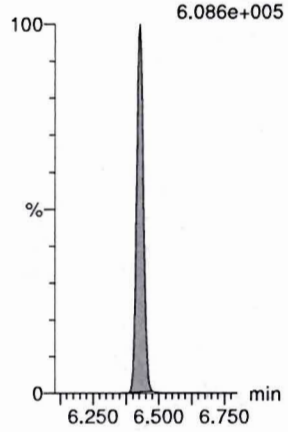
13C2-PFHxDA-EIS



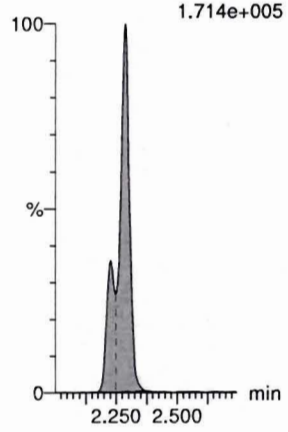
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



OPV 7/22/2020

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-38.qld

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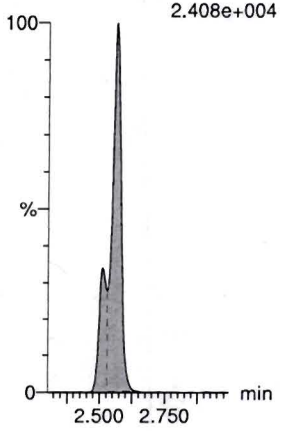
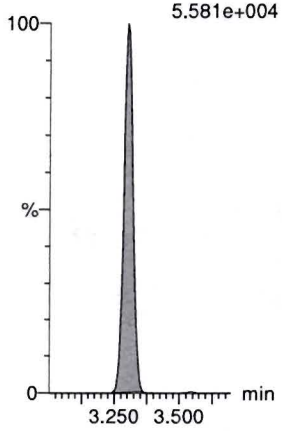
Printed: Wednesday, July 22, 2020 13:25:59 Pacific Daylight Time

Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

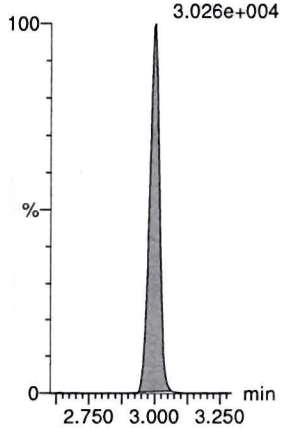
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.408e+004



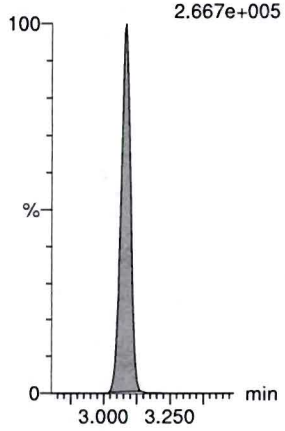
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.581e+004



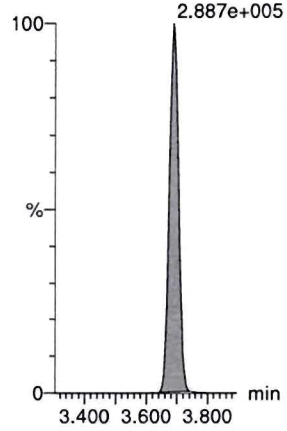
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.026e+004



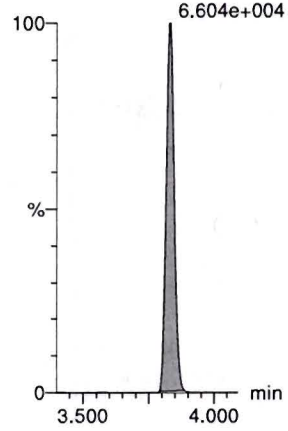
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.667e+005



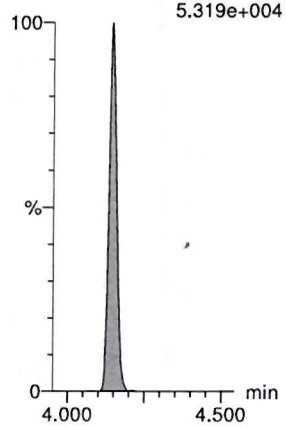
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.887e+005



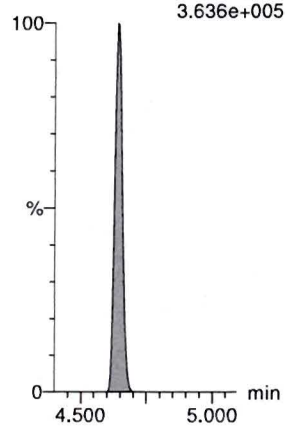
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.604e+004



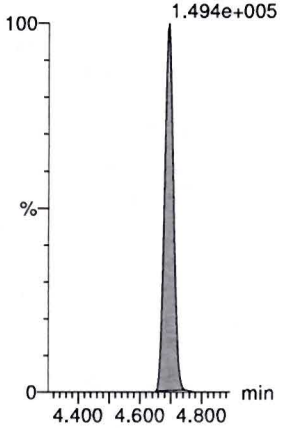
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.319e+004



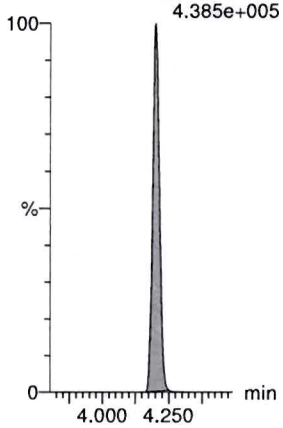
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.636e+005



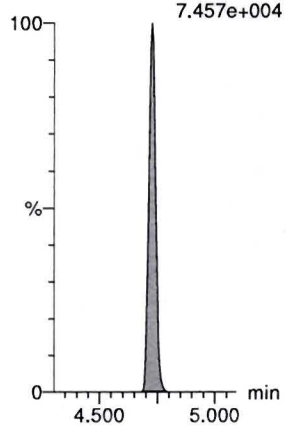
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.494e+005



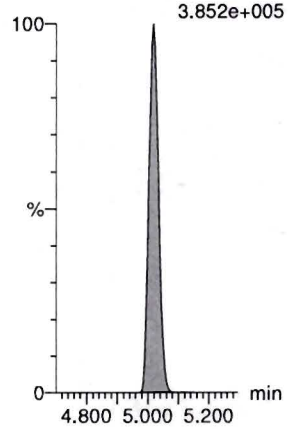
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.385e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
7.457e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.852e+005



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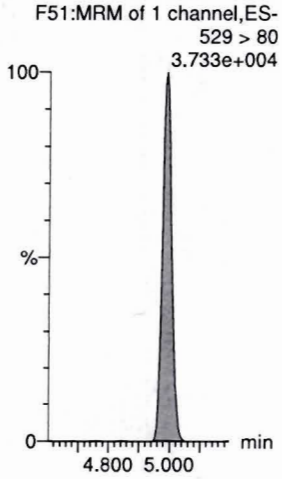
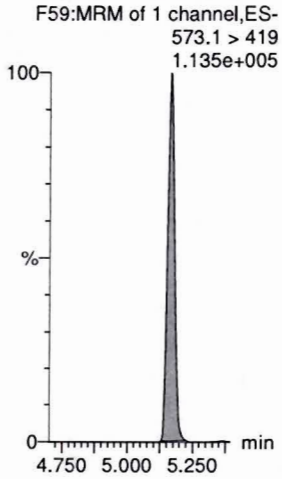
Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

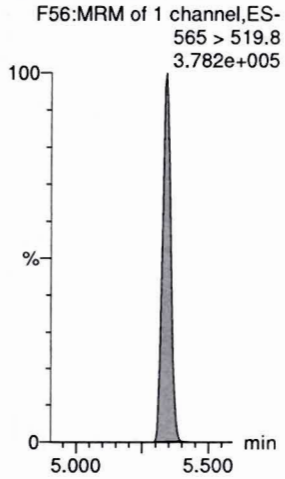
13C2-8:2 FTS-RSD



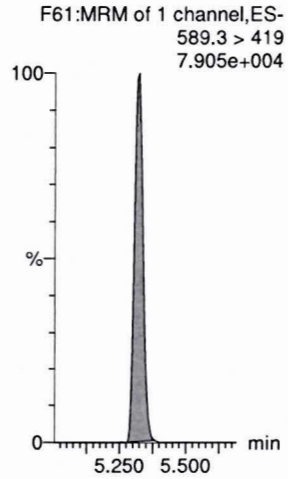
d3-N-MeFOSAA-RSD



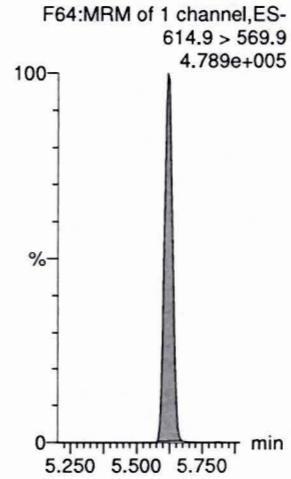
13C2-PFUdA-RSD



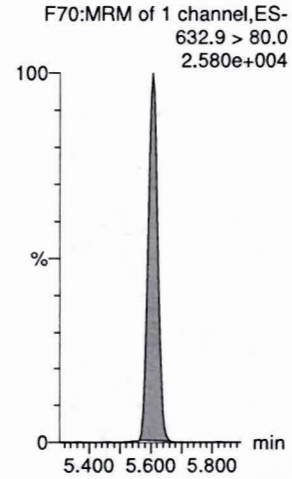
d5-N-EtFOSAA-RSD



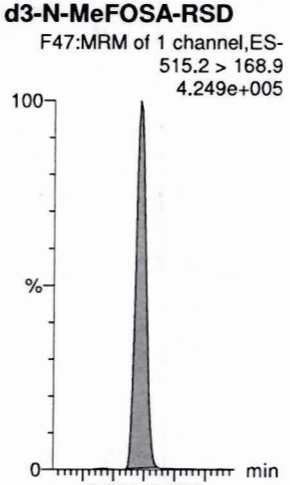
13C2-PFDoA-RSD



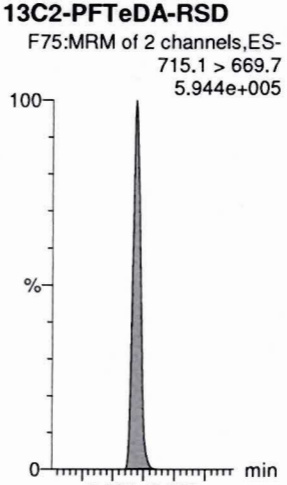
13C2-10:2 FTS-RSD



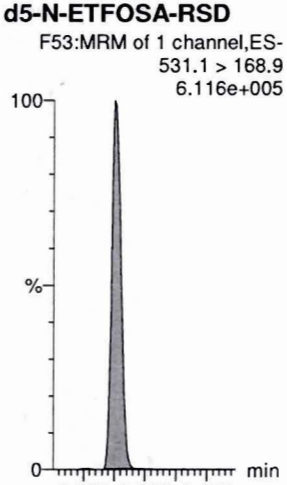
d3-N-MeFOSA-RSD



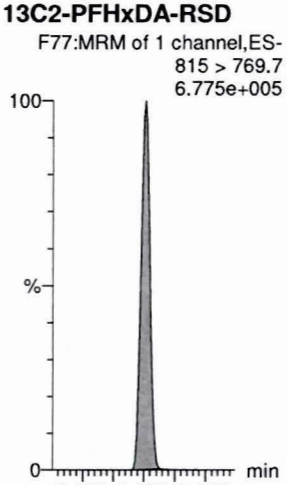
13C2-PFTeDA-RSD



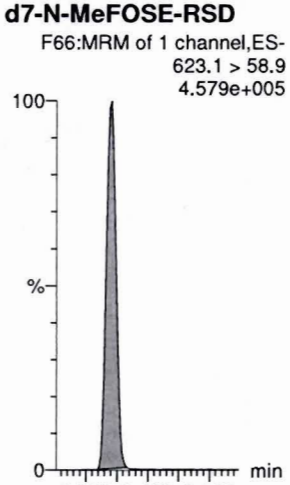
d5-N-ETFOSA-RSD



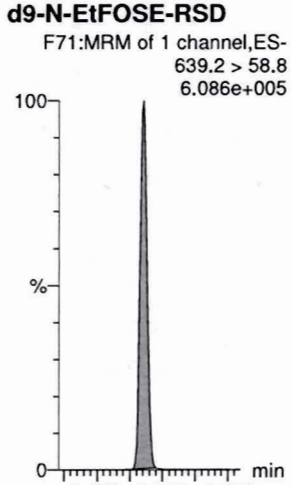
13C2-PFHxDA-RSD



d7-N-MeFOSE-RSD



d9-N-EtFOSE-RSD



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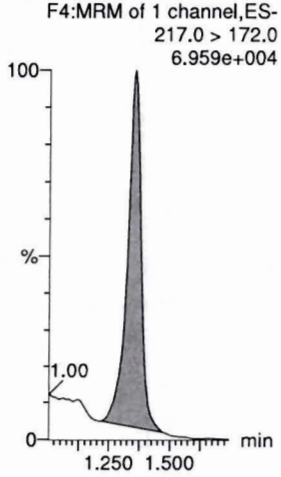
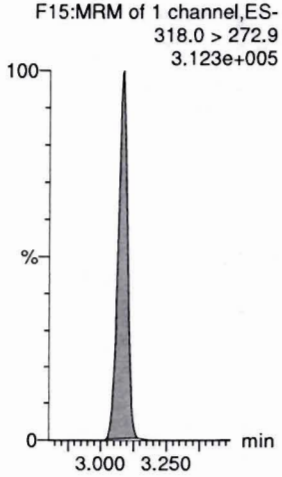
Name: 200721P1-38, Date: 21-Jul-2020, Time: 21:46:48, ID: ST200721P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

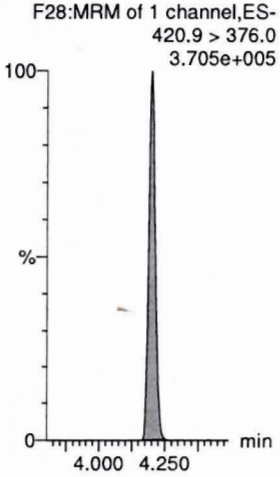
13C4-PFBA



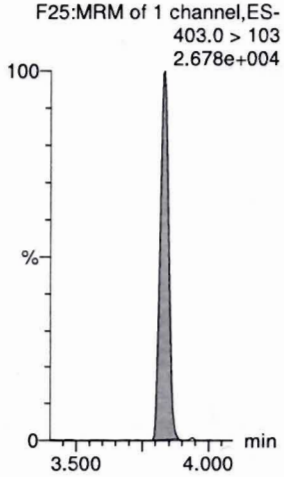
13C5-PFHxA



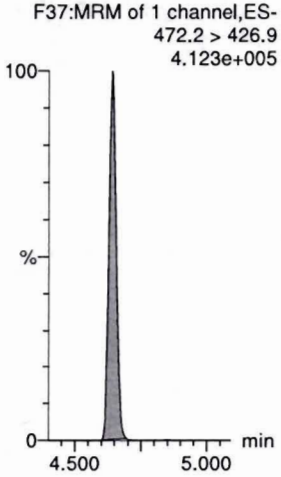
13C8-PFOA



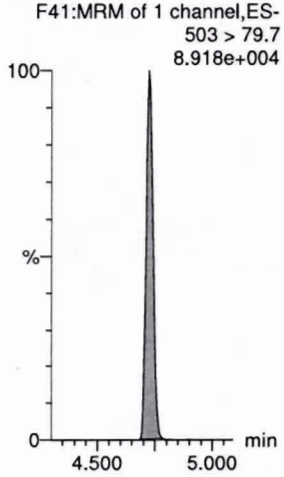
18O2-PFHxS



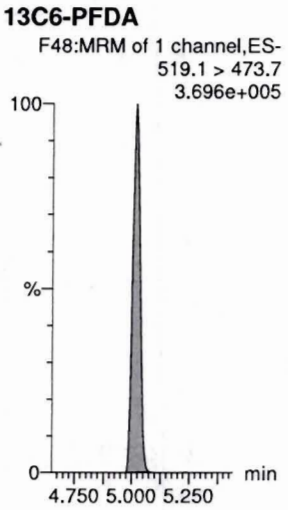
13C9-PFNA



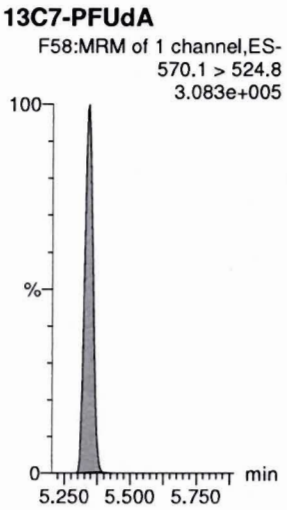
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	3445.540	4058.670	1.00	1.36	10.612	10.000	9.98	99.8	NO		
2	2	PFPrS	249 > 80	892.855	1263.989	1.00	1.68	8.830	10.000	10.1	100.7	NO	2.657	NO
3	3	3:3 FTCA	240.9 > 176.9	532.334	9846.323	1.00	2.15	0.676	10.000	9.18	91.8	NO	3.504	NO
4	4	PFPeA	263.1 > 218.9	7325.802	9846.323	1.00	2.29	9.300	10.000	9.96	99.6	NO		
5	5	PFBS	299.0 > 80	2517.676	1263.989	1.00	2.57	24.898	10.000	9.86	98.6	NO	2.375	NO
6	6	4:2 FTS	326.9 > 306.9	2800.362	1387.065	1.00	3.00	25.236	10.000	9.50	95.0	NO	11.180	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	4058.670		1.00	1.36	4058.670	12.500	12.2	97.3	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1263.989		1.00	2.56	1263.989	12.500	13.0	104.3	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	9846.323		1.00	2.29	9846.323	12.500	13.3	106.0	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	9846.323		1.00	2.29	9846.323	12.500	13.3	106.0	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1263.989		1.00	2.56	1263.989	12.500	13.0	104.3	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1387.065		1.00	3.00	1387.065	12.500	12.7	101.9	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	9478.912	11194.726	1.00	3.08	10.584	10.000	9.88	98.8	NO	14.872	NO
15	8	PFPeS	349.>80	2157.208	1263.989	1.00	3.29	21.333	10.000	10.3	103.2	NO	2.213	NO
16	9	HFPO-DA	285.1 > 168.9	1713.412	2233.203	1.00	3.31	9.591	10.000	9.32	93.2	NO	2.262	NO
17	10	5:3 FTCA	340.9 > 236.9	1174.215	10168.165	1.00	3.63	1.443	10.000	9.57	95.7	NO	1.601	NO
18	11	PFHpA	363.0 > 319	9346.442	10168.165	1.00	3.69	11.490	10.000	9.39	93.9	NO	43.775	NO
19	12	ADONA	376.8 > 250.9	18343.246	10168.165	1.00	3.80	22.550	10.000	9.81	98.1	NO	3.774	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	11194.726		1.00	3.08	11194.726	12.500	13.1	104.8	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1263.989		1.00	2.56	1263.989	12.500	13.0	104.3	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2233.203		1.00	3.31	2233.203	12.500	12.4	99.5	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	10168.165		1.00	3.69	10168.165	12.500	12.2	97.5	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	10168.165		1.00	3.69	10168.165	12.500	12.2	97.5	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	10168.165		1.00	3.69	10168.165	12.500	12.2	97.5	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9	2341.579	2611.962	1.00	3.83	11.206	10.000	9.45	94.5	NO	3.821	NO
28	15	6:2 FTS	427.0 > 407	1233.926	1570.506	1.00	4.15	9.821	10.000	10.2	102.1	NO	0.668	NO
29	16	L-PFOA	413 > 369	9523.452	13700.028	1.00	4.20	8.689	10.000	8.89	88.9	NO	2.980	NO
30	18	PFecHS	461 > 381.0	1971.176	13700.028	1.00	4.21	1.799	10.000	8.84	88.4	NO	0.496	NO
31	19	PFHpS	449.0 > 80	1919.929	2456.007	1.00	4.31	9.772	10.000	9.68	96.8	NO	1.769	NO
32	20	7:3 FTCA	440.9 > 336.9	2127.841	12063.288	1.00	4.63	2.205	10.000	9.48	94.8	NO	1.183	NO
33	61	13C3-PFHxS-EIS	402 > 80	2611.962		1.00	3.83	2611.962	12.500	14.3	114.2	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1570.506		1.00	4.14	1570.506	12.500	12.8	102.5	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	13700.028		1.00	4.20	13700.028	12.500	12.8	102.8	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	13700.028		1.00	4.20	13700.028	12.500	12.8	102.8	NO		

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Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2456.007		1.00	4.73	2456.007	12.500	12.7	101.5	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	12063.288		1.00	4.64	12063.288	12.500	12.8	102.2	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	11732.398	12063.288	1.00	4.64	12.157	10.000	9.62	96.2	NO	12.892	NO
41	22	PFOSA	498 > 78	2793.831	4969.071	1.00	4.69	7.028	10.000	9.94	99.4	NO	21.333	NO
42	23	L-PFOS	499 > 80	2576.950	2456.007	1.00	4.72	13.116	10.000	10.2	102.0	NO	2.728	NO
43	25	9Cl-PF30NS	531 > 351	5100.122	2456.007	1.00	4.94	25.957	10.000	10.1	101.1	NO	36.476	NO
44	26	PFDA	513 > 469	8807.159	14082.481	1.00	5.02	7.817	10.000	9.75	97.5	NO	4.234	NO
45	27	8:2 FTS	526.8 > 506.9	1247.686	1313.149	1.00	4.99	11.877	10.000	9.38	93.8	NO	0.641	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	12063.288		1.00	4.64	12063.288	12.500	12.8	102.2	NO		
47	67	13C8-PFOSA-EIS	506 > 78	4969.071		1.00	4.69	4969.071	12.500	13.2	105.9	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2456.007		1.00	4.73	2456.007	12.500	12.7	101.5	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2456.007		1.00	4.73	2456.007	12.500	12.7	101.5	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	14082.481		1.00	5.02	14082.481	12.500	12.3	98.0	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1313.149		1.00	4.99	1313.149	12.500	11.9	95.1	NO		
52	-1													
53	28	PFNS	549 > 80	2523.550	2456.007	1.00	5.08	12.844	10.000	9.88	98.8	NO	2.554	NO
54	29	L-MeFOSAA	570 > 419	3408.012	3329.526	1.00	5.17	12.795	10.000	10.8	107.8	NO	1.870	NO
55	31	L-EtFOSAA	583.9 > 419	3942.122	3051.050	1.00	5.33	16.151	10.000	9.99	99.9	NO	1.526	NO
56	33	PFUdA	563.0 > 519	11011.812	13723.265	1.00	5.34	10.030	10.000	10.2	101.9	NO	17.027	NO
57	34	PFDS	598.8 >79.9	2595.258	2456.007	1.00	5.39	13.209	10.000	10.0	100.0	NO	2.340	NO
58	35	11Cl-PF30UdS	631 > 451	3945.858	15960.900	1.00	5.55	3.090	10.000	10.4	104.2	NO	13.298	NO
59	71	13C8-PFOS-EIS	507.1 > 80	2456.007		1.00	4.73	2456.007	12.500	12.7	101.5	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	3329.526		1.00	5.16	3329.526	12.500	12.2	97.3	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3051.050		1.00	5.32	3051.050	12.500	14.2	113.7	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	13723.265		1.00	5.34	13723.265	12.500	11.3	90.2	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2456.007		1.00	4.73	2456.007	12.500	12.7	101.5	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	15960.900		1.00	5.62	15960.900	12.500	12.1	97.0	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1394.928	950.448	1.00	5.61	18.346	10.000	9.58	95.8	NO	0.782	NO
67	37	PFDoA	612.9 > 569.0	11435.675	15960.900	1.00	5.62	8.956	10.000	9.91	99.1	NO	10.899	NO
68	38	N-MeFOSA	512.1 > 168.9	6198.467	15911.540	1.00	5.66	58.122	50.000	52.3	104.7	NO	1.939	NO
69	39	PFTrDA	662.9 > 618.9	13079.804	15960.900	1.00	5.86	10.244	10.000	10.0	100.0	NO	104.888	NO
70	40	PFDoS	699 > 80	2639.637	17299.039	1.00	5.89	1.907	10.000	9.40	94.0	NO	2.226	NO
71	41	PFTeDA	713.0 > 669.0	8437.746	17299.039	1.00	6.07	6.097	10.000	9.87	98.7	NO	14.450	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	950.448		1.00	5.61	950.448	12.500	12.2	97.7	NO		

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Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	15960.900		1.00	5.62	15960.900	12.500	12.1	97.0	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	15911.540		1.00	5.69	15911.540	149.200	146	97.8	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	15960.900		1.00	5.62	15960.900	12.500	12.1	97.0	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	17299.039		1.00	6.08	17299.039	12.500	12.6	101.2	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	17299.039		1.00	6.08	17299.039	12.500	12.6	101.2	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	8249.775	20786.545	1.00	6.09	59.215	50.000	50.4	100.8	NO	1.965	NO
80	43	PFHxDA	813 > 769	15577.057	21821.170	1.00	6.40	8.923	10.000	9.36	93.6	NO	32.650	NO
81	44	PFODA	913.1 > 868.8	13250.257	21821.170	1.00	6.64	7.590	10.000	9.65	96.5	NO		
82	45	N-MeFOSE	616.1 > 58.9	5917.316	16721.369	1.00	6.29	52.799	50.000	44.7	89.3	NO		
83	46	N-EtFOSE	630.1 > 58.9	6463.396	19377.621	1.00	6.44	49.766	50.000	45.0	89.9	NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	4058.670	4236.811	1.00	1.36	11.974	12.500	12.5	100.1	NO		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	20786.545		1.00	6.10	20786.545	149.200	151	100.9	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	21821.170		1.00	6.40	21821.170	12.500	12.9	102.9	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	21821.170		1.00	6.40	21821.170	12.500	12.9	102.9	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	16721.369		1.00	6.28	16721.369	149.200	160	107.1	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	19377.621		1.00	6.43	19377.621	149.200	158	105.8	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8	9854.795	13766.895	1.00	2.29	8.948	12.500	11.9	94.9	NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9	1265.639	898.737	1.00	2.56	17.603	12.500	13.3	106.3	NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2233.203	13766.895	1.00	3.31	2.028	12.500	12.1	96.8	NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8	1387.065	898.737	1.00	3.00	19.292	12.500	13.1	104.9	NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0	11194.726	13766.895	1.00	3.08	10.165	12.500	11.9	95.6	NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8	10168.165	13766.895	1.00	3.69	9.232	12.500	11.7	93.5	NO		
97	62	13C3-PFHxS-RSD	402 > 80	2611.962	898.737	1.00	3.83	36.328	12.500	14.0	112.3	NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1570.506	3002.142	1.00	4.14	6.539	12.500	12.8	102.1	NO		
99	66	13C5-PFNA-RSD	468.2 > 422.9	12063.288	12750.022	1.00	4.64	11.827	12.500	12.4	99.0	NO		
100	68	13C8-PFOSA-RSD	506 > 78	4969.071	10897.283	1.00	4.69	5.700	12.500	13.1	104.5	NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7	13700.028	11032.605	1.00	4.20	15.522	12.500	12.3	98.6	NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2456.007	3002.142	1.00	4.73	10.226	12.500	13.0	104.1	NO		
103	74	13C2-PFDA-RSD	515.1 > 469.9	14082.481	13109.707	1.00	5.02	13.428	12.500	12.2	98.0	NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1313.149	3002.142	1.00	4.99	5.468	12.500	12.4	99.3	NO		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419	3329.526	10897.283	1.00	5.16	3.819	12.500	12.4	99.0	NO		
107	80	13C2-PFUdA-RSD	565 > 519.8	13723.265	10897.283	1.00	5.34	15.742	12.500	11.9	95.6	NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419	3051.050	10897.283	1.00	5.32	3.500	12.500	14.2	113.8	NO		

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Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9	15960.900	13109.707	1.00	5.62	15.219	12.500	12.1	97.0	NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	943.625	3002.142	1.00	5.61	3.929	12.500	12.5	100.3	NO		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9	15911.540	10897.283	1.00	5.69	18.252	149.200	148	99.1	NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7	17299.039	10897.283	1.00	6.08	19.843	12.500	13.1	104.7	NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9	20786.545	10897.283	1.00	6.10	23.844	149.200	155	103.9	NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7	21821.170	10897.283	1.00	6.40	25.031	12.500	13.1	105.0	NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9	16721.369	10897.283	1.00	6.28	19.181	149.200	157	105.5	NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8	19377.621	10897.283	1.00	6.43	22.228	149.200	162	108.6	NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	4236.811	4236.811	1.00	1.36	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9	13766.895	13766.895	1.00	3.08	12.500	12.500	12.5	100.0	NO		
120	1...	13C8-PFOA	420.9 > 376.0	11032.605	11032.605	1.00	4.20	12.500	12.500	12.5	100.0	NO		
121	1...	18O2-PFHxS	403.0 > 103	898.737	898.737	1.00	3.83	12.500	12.500	12.5	100.0	NO		
122	1...	13C9-PFNA	472.2 > 426.9	12750.022	12750.022	1.00	4.64	12.500	12.500	12.5	100.0	NO		
123	1...	13C4-PFOS	503 > 79.7	3002.142	3002.142	1.00	4.73	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7	13109.707	13109.707	1.00	5.02	12.500	12.500	12.5	100.0	NO		
125	1...	13C7-PFUdA	570.1 > 524.8	10897.283	10897.283	1.00	5.34	12.500	12.500	12.5	100.0	NO		

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Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 15:58:00 Pacific Daylight Time
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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 08:22:31
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Compound name: PFBA

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2	2	200721P1-02	IPA	21-Jul-20	15:25:59
3	3	200721P1-03	TESTER	21-Jul-20	15:36:35
4	4	200721P1-04	IPA	21-Jul-20	15:47:01
5	5	200721P1-05	ST200721P1-1 PFC CS-2 20G1601	21-Jul-20	15:57:37
6	6	200721P1-06	ST200721P1-2 PFC CS-1 20G1602	21-Jul-20	16:08:14
7	7	200721P1-07	ST200721P1-3 PFC CS0 20G1603	21-Jul-20	16:18:40
8	8	200721P1-08	ST200721P1-4 PFC CS1 20G1604	21-Jul-20	16:29:17
9	9	200721P1-09	ST200721P1-5 PFC CS2 20G1605	21-Jul-20	16:39:53
10	10	200721P1-10	ST200721P1-6 PFC CS3 20G1606	21-Jul-20	16:50:30
11	11	200721P1-11	ST200721P1-7 PFC CS4 20G1607	21-Jul-20	17:01:05
12	12	200721P1-12	ST200721P1-8 PFC CS5 20G1608	21-Jul-20	17:11:41
13	13	200721P1-13	ST200721P1-9 PFC CS6 20G1609	21-Jul-20	17:22:17
14	14	200721P1-14	ST200721P1-10 PFC CS7 20G1610	21-Jul-20	17:32:52
15	15	200721P1-15	IB	21-Jul-20	17:43:28
16	16	200721P1-16	ICV200721P1-1 PFC ICV 20G1611	21-Jul-20	17:54:04
17	17	200721P1-17	IB	21-Jul-20	18:04:40
18	18	200721P1-18	2001430-01@5X IN-49 0.24168	21-Jul-20	18:15:16
19	19	200721P1-19	2001430-02@5X OUT-49 0.23991	21-Jul-20	18:25:43
20	20	200721P1-20	B0G0101-BLK1 Method Blank 0.25	21-Jul-20	18:36:19
21	21	200721P1-21	B0G0101-BS1 OPR 0.25	21-Jul-20	18:46:55
22	22	200721P1-22	B0G0101-BSD1 LCSD 0.25	21-Jul-20	18:57:31
23	23	200721P1-23	2001462-01 AST-Drum-Water-Waste-PFAS 0.25477	21-Jul-20	19:08:08
24	24	200721P1-24	2001463-02 UST52-Drum-Water-Waste-PFAS 0.24714	21-Jul-20	19:18:44
25	25	200721P1-25	2001491-01 REEPAC2709 0.11527	21-Jul-20	19:29:20
26	26	200721P1-26	B0G0104-BLK1 Method Blank 1	21-Jul-20	19:39:56
27	27	200721P1-27	B0G0104-BS1 OPR 1	21-Jul-20	19:50:32
28	28	200721P1-28	2001443-01 Biosolids 1A-1D (COMP) 1.42	21-Jul-20	20:00:58
29	29	200721P1-29	2001443-02 Biosolids 2A-2D (COMP) 1.42	21-Jul-20	20:11:34
30	30	200721P1-30	B0G0090-BLK1 Method Blank 0.25	21-Jul-20	20:22:10
31	31	200721P1-31	B0G0090-BS1 OPR 0.25	21-Jul-20	20:32:36
32	32	200721P1-32	B0G0090-BSD1 LCSD 0.25	21-Jul-20	20:43:13

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Last Altered: Wednesday, July 22, 2020 15:58:00 Pacific Daylight Time
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Compound name: PFBA

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35	35 200721P1-35	2001444-03 TW22S-20200709 0.25879	21-Jul-20	21:15:01
36	36 200721P1-36	2001444-04 TW10D-20200709 0.28087	21-Jul-20	21:25:37
37	37 200721P1-37	IB	21-Jul-20	21:36:12
38	38 200721P1-38	ST200721P1-11 PFC CS3 20G1606	21-Jul-20	21:46:48
39	39 200721P1-39	IB	21-Jul-20	21:57:24
40	40 200721P1-40	2001444-05 TW11D-20200709 0.37921	21-Jul-20	22:07:59
41	41 200721P1-41	2001444-06 TW12D-20200709 0.35315	21-Jul-20	22:18:36
42	42 200721P1-42	2001444-07 TW13D-20200709 0.26303	21-Jul-20	22:29:12
43	43 200721P1-43	2001444-08 TW14D-20200709 0.25801	21-Jul-20	22:39:48
44	44 200721P1-44	2001472-01 EB08-20200710 0.24427	21-Jul-20	22:50:24
45	45 200721P1-45	2001472-02 TW23S-20200710 0.24184	21-Jul-20	23:00:59
46	46 200721P1-46	2001472-03 TW24S-20200710 0.25174	21-Jul-20	23:11:35
47	47 200721P1-47	2001472-04 TW15D-20200710 0.28426	21-Jul-20	23:22:11
48	48 200721P1-48	2001472-05 TW16D-20200710 0.35081	21-Jul-20	23:32:47
49	49 200721P1-49	B0G0100-BLK1 Method Blank 0.25	21-Jul-20	23:43:23
50	50 200721P1-50	B0G0100-BS1 OPR 0.25	21-Jul-20	23:53:58
51	51 200721P1-51	2001458-01 11535 VFR-3-Influent 0.23591	22-Jul-20	00:04:34
52	52 200721P1-52	2001458-02 11535 VFR-3-Midpoint 0.25242	22-Jul-20	00:15:10
53	53 200721P1-53	IB	22-Jul-20	00:25:46
54	54 200721P1-54	ST200721P1-12 PFC CS3 20G1606	22-Jul-20	00:36:21
55	55 200721P1-55	IB	22-Jul-20	00:46:47
56	56 200721P1-56	2001458-03 11535 VFR-3-Effluent 0.2349	22-Jul-20	00:57:24
57	57 200721P1-57	2001458-04 FB-07092020 0.25288	22-Jul-20	01:08:00
58	58 200721P1-58	B0G0091-BLK1 Method Blank 0.25	22-Jul-20	01:18:35
59	59 200721P1-59	B0G0091-BS1 OPR 0.25	22-Jul-20	01:29:11
60	60 200721P1-60	2001451-01 Bronson WWTP Eff 0.24868	22-Jul-20	01:39:47
61	61 200721P1-61	2001451-02 Coldwater WWTP Eff 0.25253	22-Jul-20	01:50:22
62	62 200721P1-62	2001496-01 FPC Eff Unox 0.24678	22-Jul-20	02:00:59
63	63 200721P1-63	2001497-01 Buchanan WWTP Eff 0.24941	22-Jul-20	02:11:34
64	64 200721P1-64	B0G0076-BLK1 Method Blank 2	22-Jul-20	02:22:10
65	65 200721P1-65	B0G0076-BS1 OPR 2	22-Jul-20	02:32:46
66	66 200721P1-66	B0G0076-BSD1 LCSD 2	22-Jul-20	02:43:22
67	67 200721P1-67	2001418-01 B-6 3-5 ft 2.4	22-Jul-20	02:53:57
68	68 200721P1-68	2001418-02 B-6 8-10 ft 2.38	22-Jul-20	03:04:33

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Last Altered: Wednesday, July 22, 2020 15:58:00 Pacific Daylight Time
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Compound name: PFBA

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70	70 200721P1-70	2001418-04 B-7 8-10 ft 2.19	22-Jul-20	03:25:45
71	71 200721P1-71	2001418-05 B-8 3-5 ft 2.26	22-Jul-20	03:36:21
72	72 200721P1-72	IB	22-Jul-20	03:46:56
73	73 200721P1-73	ST200721P1-13 PFC CS3 20G1606	22-Jul-20	03:57:22
74	74 200721P1-74	IB	22-Jul-20	04:07:59
75	75 200721P1-75	2001418-06 B-8 8-10 ft 2.07	22-Jul-20	04:18:35
76	76 200721P1-76	2001418-07 M-1 2.07	22-Jul-20	04:29:11
77	77 200721P1-77	B0G0124-BS1 OPR 0.25	22-Jul-20	04:39:47
78	78 200721P1-78	2001432-02 WS 288 0.26307	22-Jul-20	04:50:22
79	79 200721P1-79	B0G0187-BLK1@100X Method Blank 0.001	22-Jul-20	05:00:58
80	80 200721P1-80	B0G0187-BS1@100X OPR 0.001	22-Jul-20	05:11:33
81	81 200721P1-81	2001427-01RE1@100X Phase 4 Sample 1 0.00103	22-Jul-20	05:22:09
82	82 200721P1-82	2001427-02RE1@100X Phase 4, Sample 4 0.00103	22-Jul-20	05:32:45
83	83 200721P1-83	2001427-03RE1@100X Phase 4, Sample 7 0.00102	22-Jul-20	05:43:21
84	84 200721P1-84	IB	22-Jul-20	05:53:56
85	85 200721P1-85	2001427-01@25X Phase 4 Sample 1 0.19207	22-Jul-20	06:04:32
86	86 200721P1-86	IB	22-Jul-20	06:15:08
87	87 200721P1-87	2001427-02@20X Phase 4, Sample 4 0.08972	22-Jul-20	06:25:44
88	88 200721P1-88	IB	22-Jul-20	06:36:20
89	89 200721P1-89	2001427-03@50X Phase 4, Sample 7 0.09458	22-Jul-20	06:46:56
90	90 200721P1-90	IB	22-Jul-20	06:57:31
91	91 200721P1-91	LCMS-200721-BLK1	22-Jul-20	07:08:07
92	92 200721P1-92	LCMS-200721-BS1	22-Jul-20	07:18:43
93	93 200721P1-93	IB	22-Jul-20	07:29:19
94	94 200721P1-94	ST200721P1-14 PFC CS3 20G1606	22-Jul-20	07:39:54
95	95 200721P1-95	IB	22-Jul-20	07:50:30
96	96 200721P1-96	LIPID CLEANUP COLUMN	22-Jul-20	08:01:06

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-54.qld

Last Altered: Wednesday, July 22, 2020 13:37:15 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 13:38:00 Pacific Daylight Time

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Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

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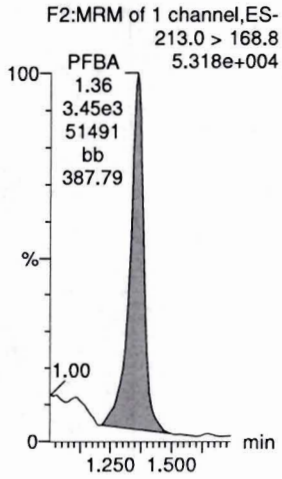

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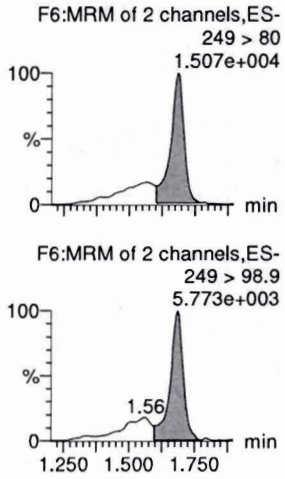
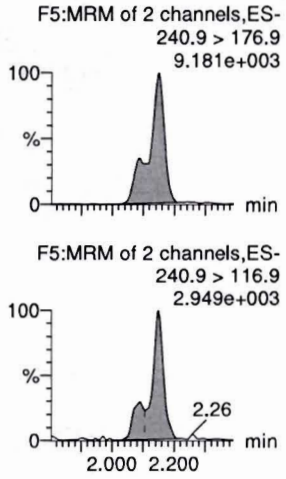
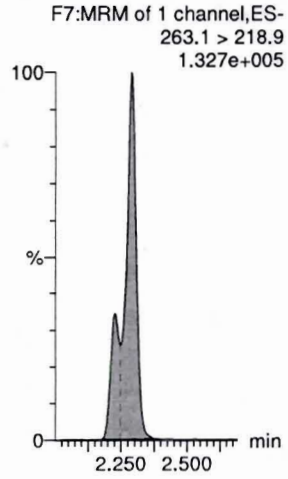


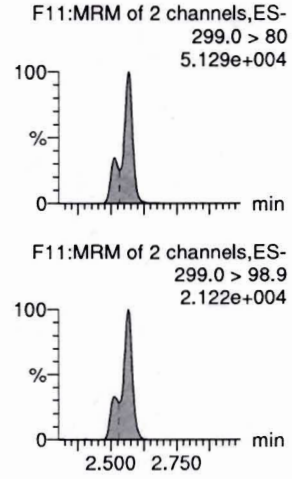
3:3 FTCA



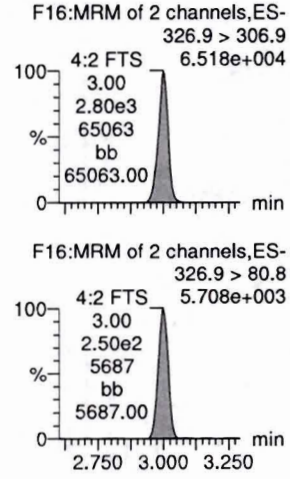
PFPeA



PFBS



4:2 FTS



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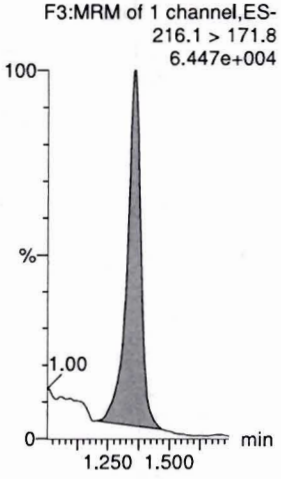

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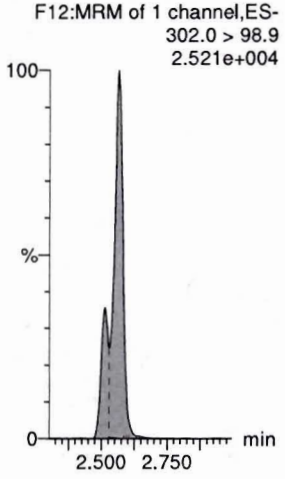

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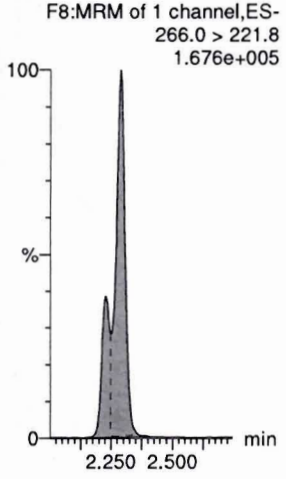

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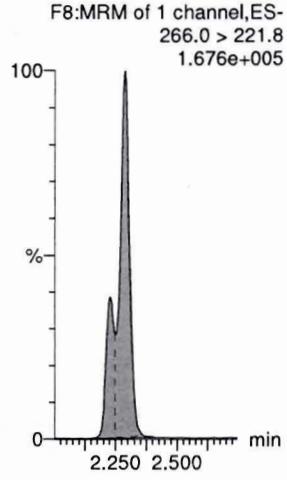

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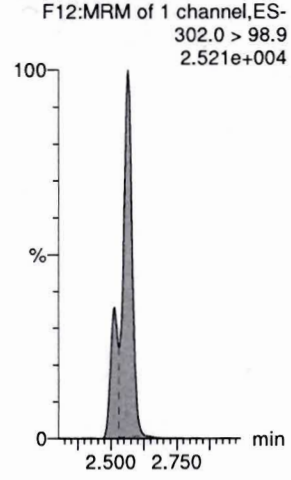

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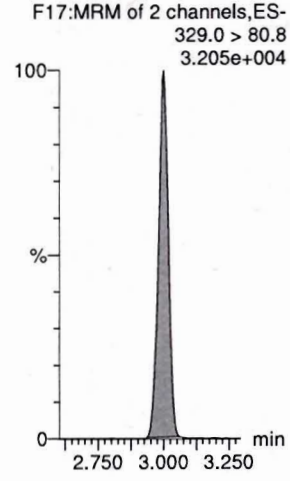

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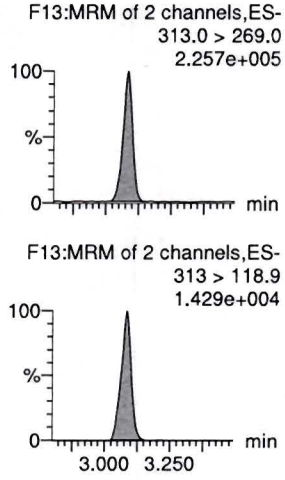
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-54.qld

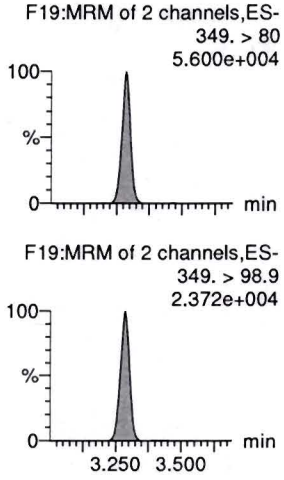
Last Altered: Wednesday, July 22, 2020 13:37:15 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 13:38:00 Pacific Daylight Time

Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

PFHxA



PFPeS



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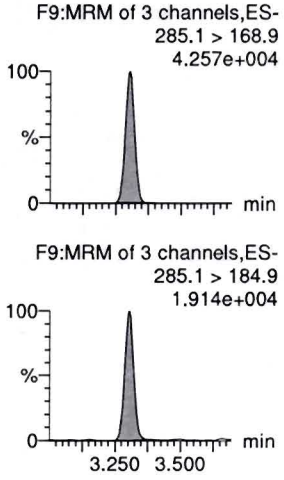
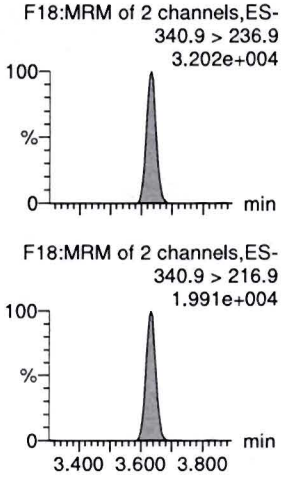
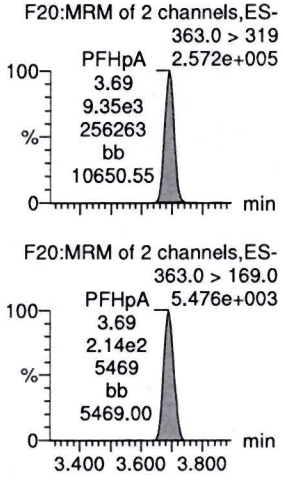


5:3 FTCA



PFHpA



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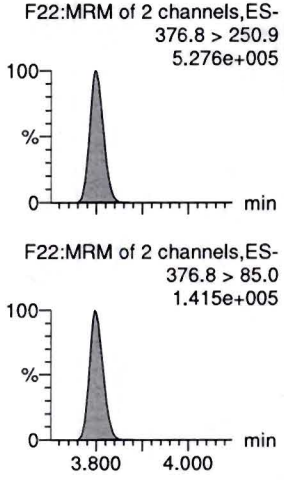

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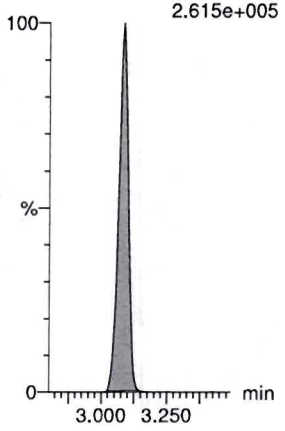
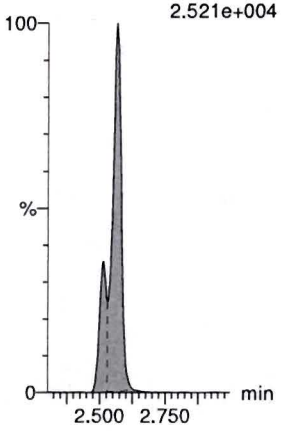


13C3-PFBS-EIS



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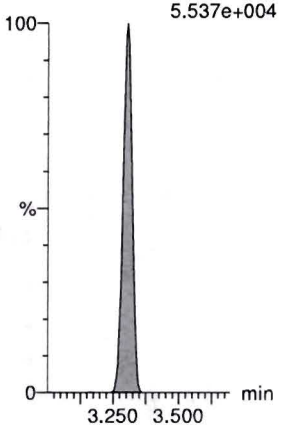

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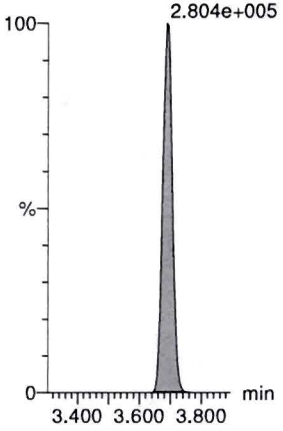

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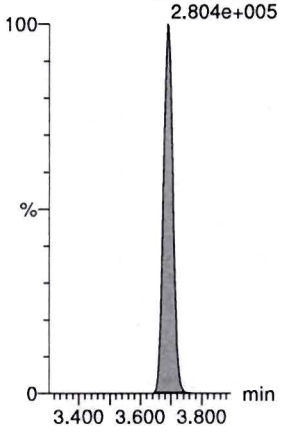

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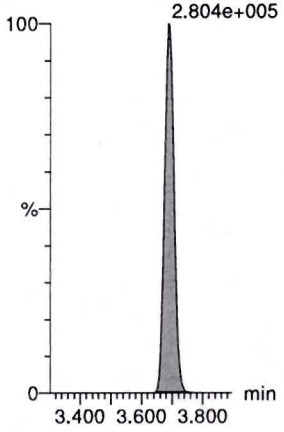

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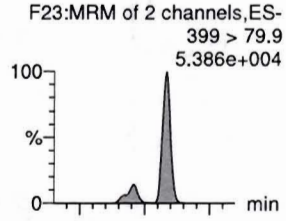
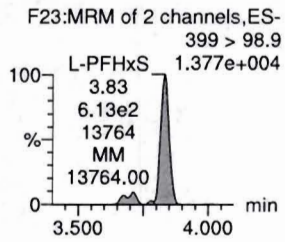
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-54.qld

Last Altered: Wednesday, July 22, 2020 13:37:15 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 13:38:00 Pacific Daylight Time

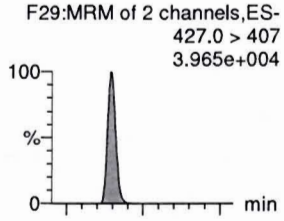
Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

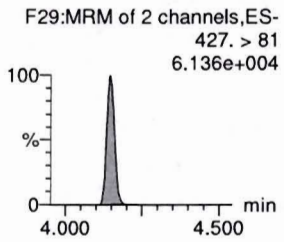
L-PFHxS





6:2 FTS





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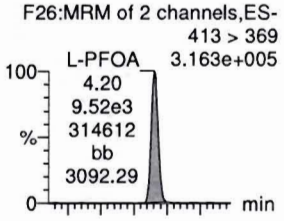

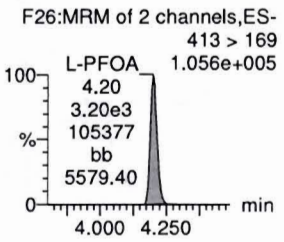

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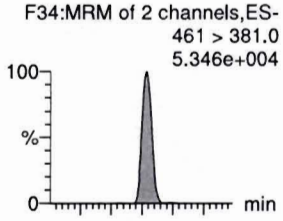

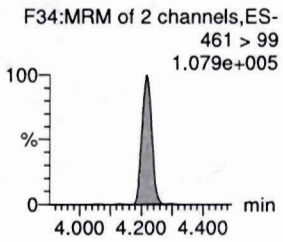

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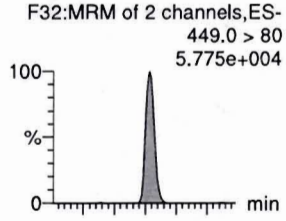

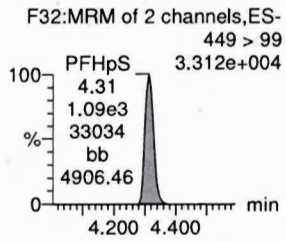

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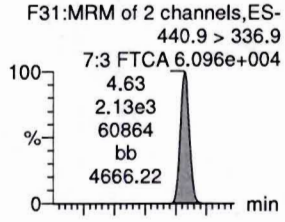

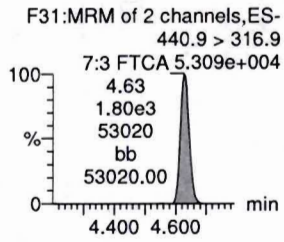

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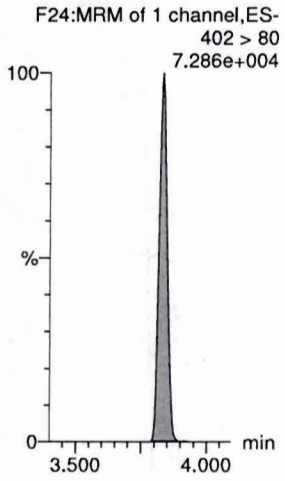
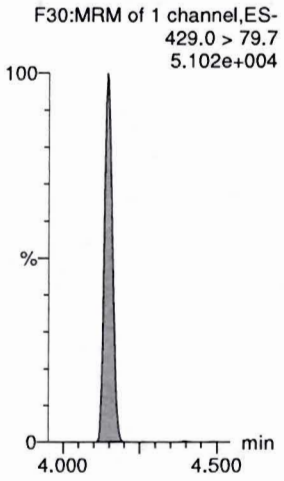


13C2-6:2 FTS-EIS



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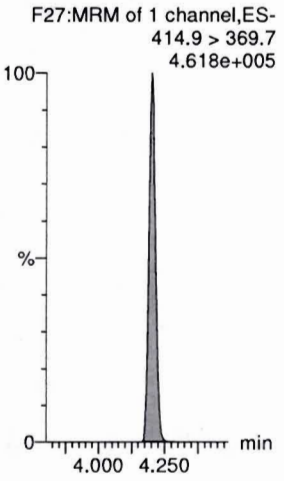

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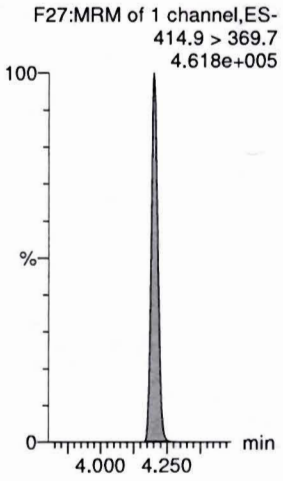
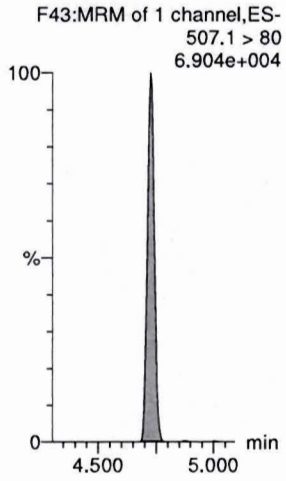
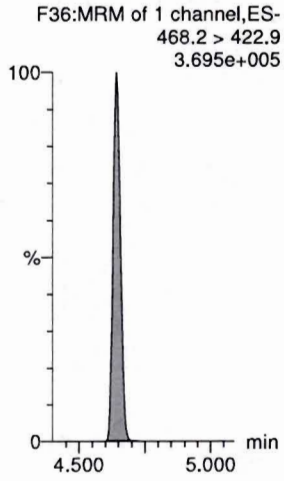


13C8-PFOS-EIS



13C5-PFNA-EIS



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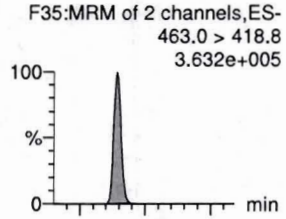

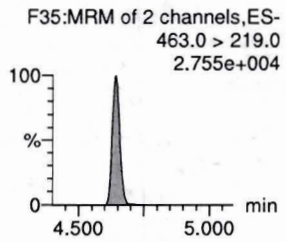

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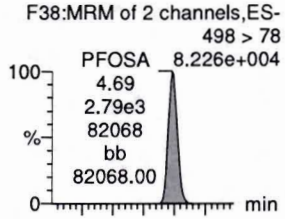

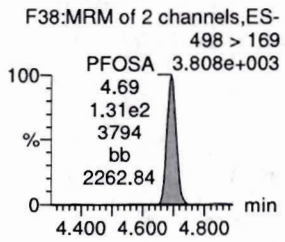

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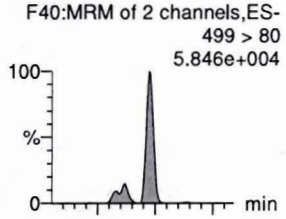

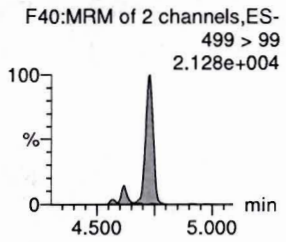

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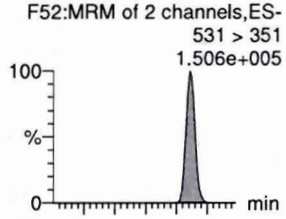

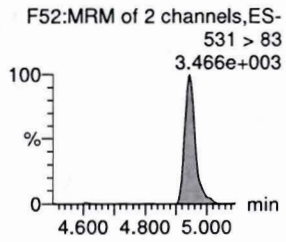

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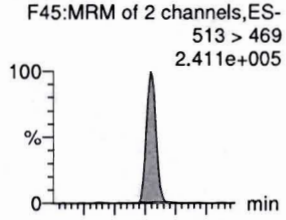

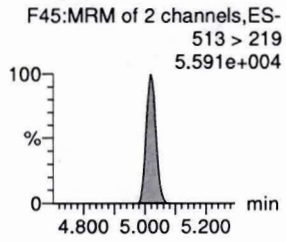

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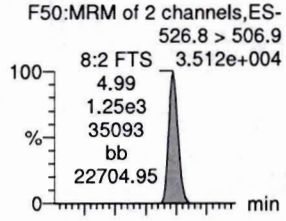

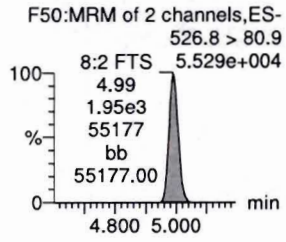

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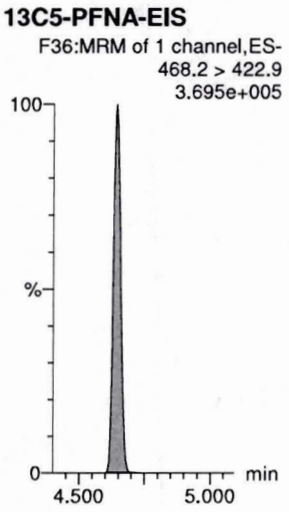

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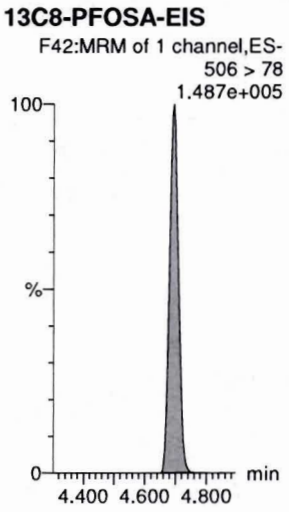

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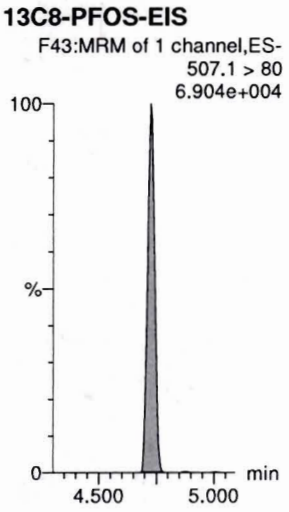

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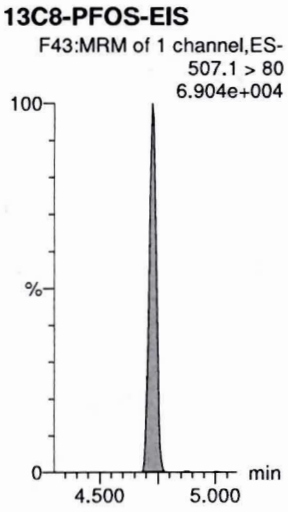

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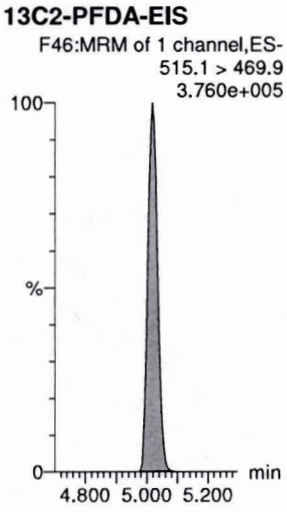

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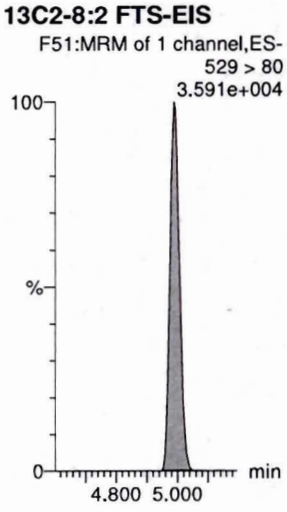

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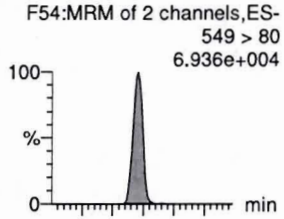

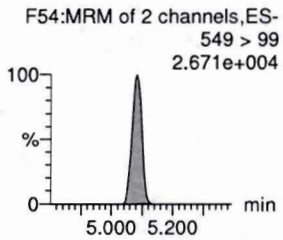

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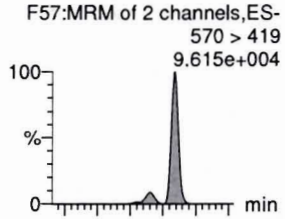

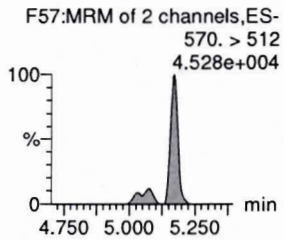

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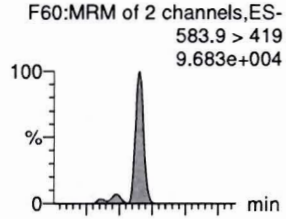

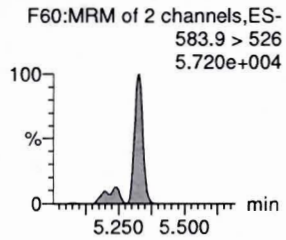

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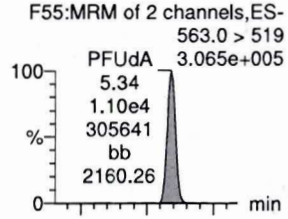

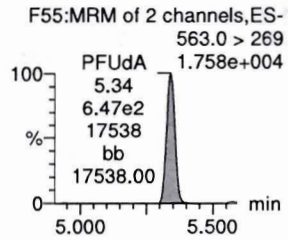

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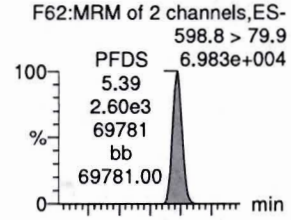

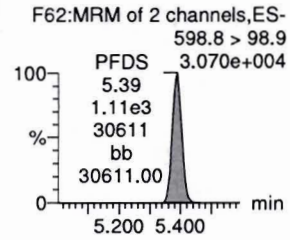

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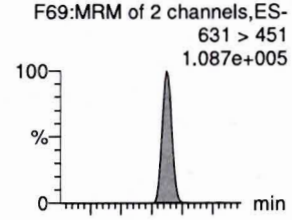

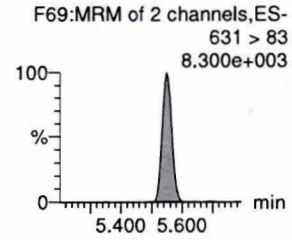

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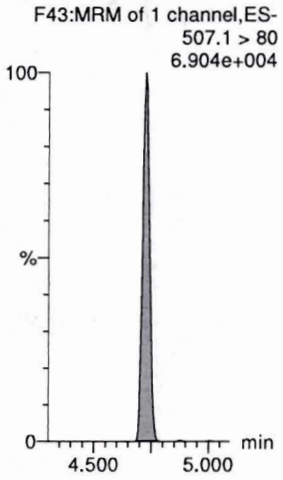

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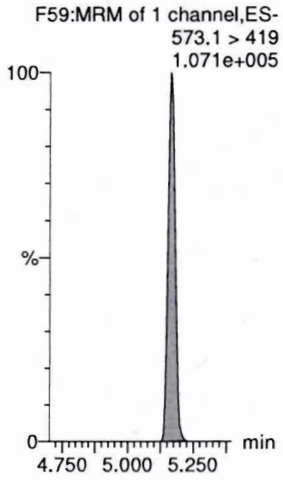

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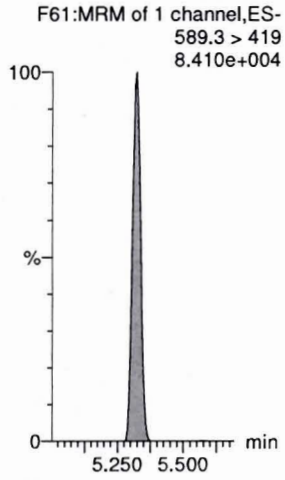

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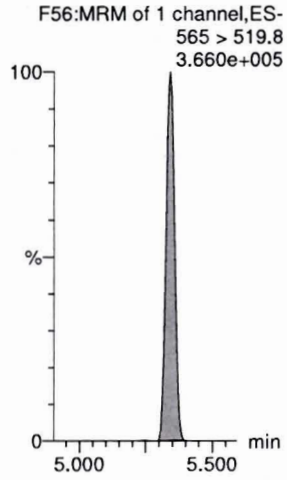

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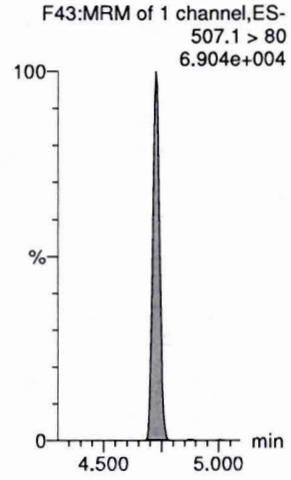

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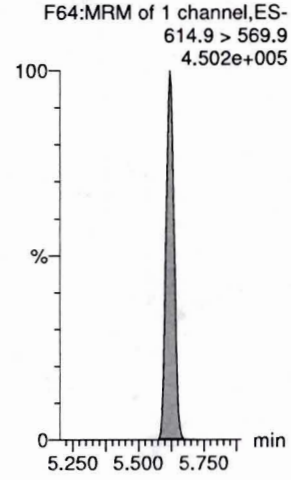

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Last Altered: Wednesday, July 22, 2020 13:37:15 Pacific Daylight Time
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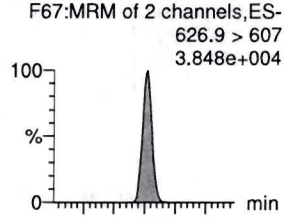
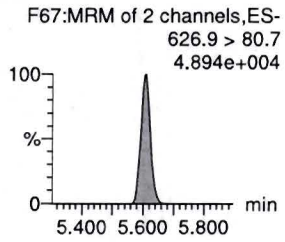
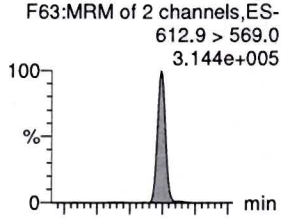
Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

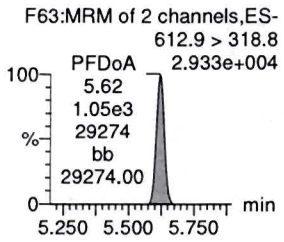
10:2 FTS



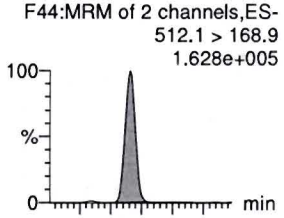


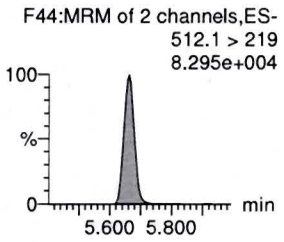
PFDoA





N-MeFOSA





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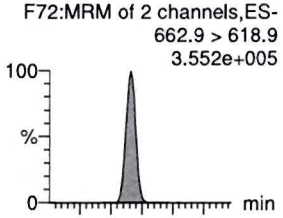

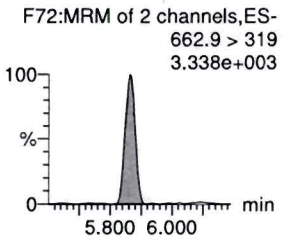

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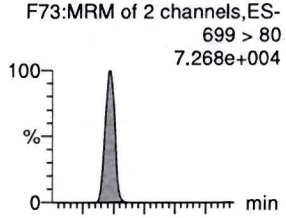
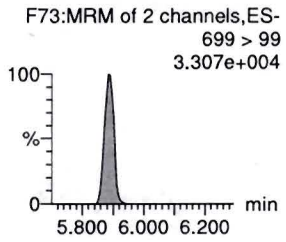
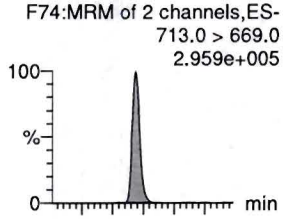
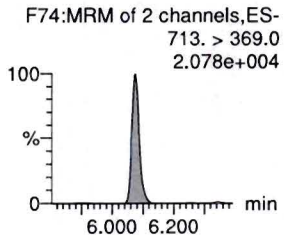


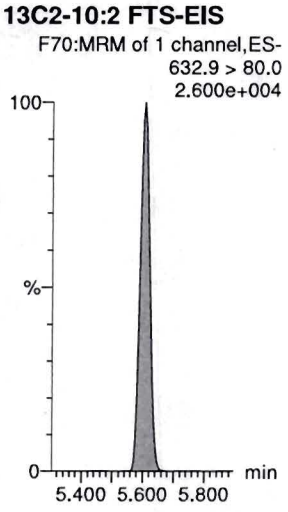


PFTeDA

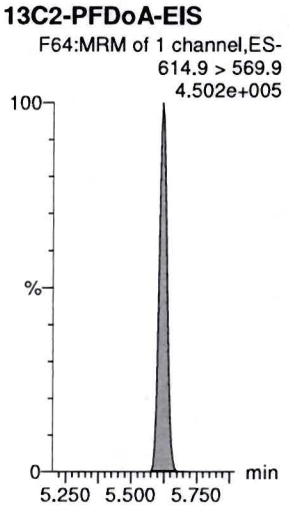




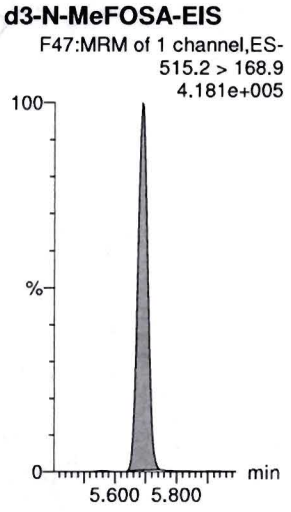
13C2-10:2 FTS-EIS



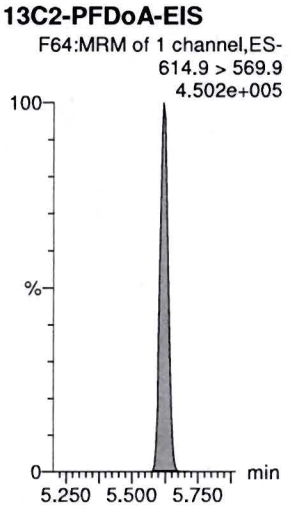
13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



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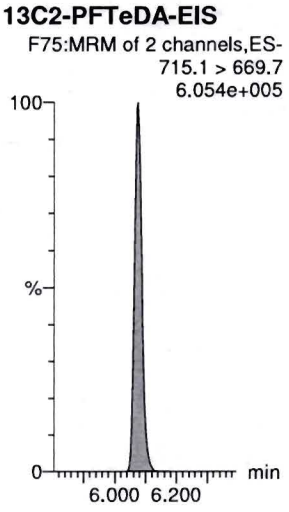

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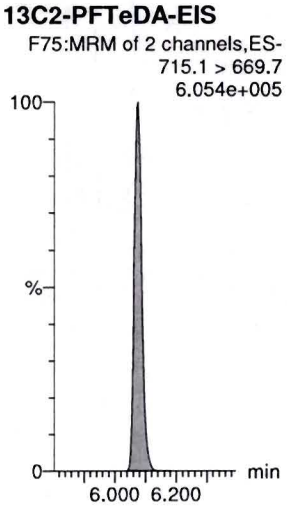

OPV 7/22/2020

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-54.qld

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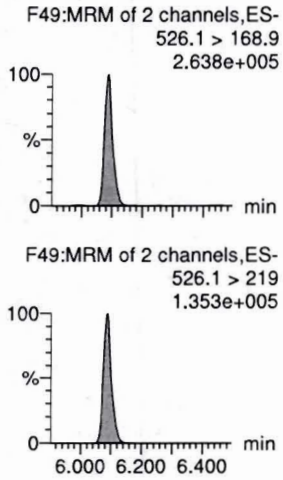
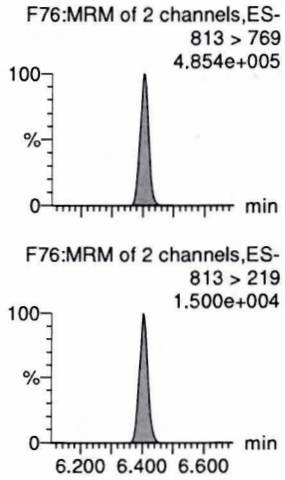
Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

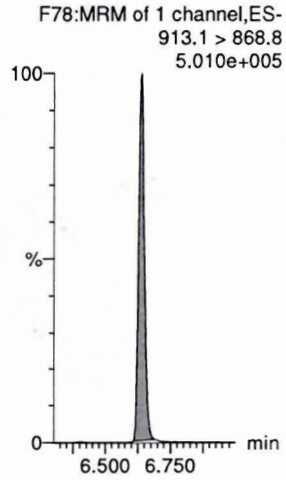
N-EtFOSA



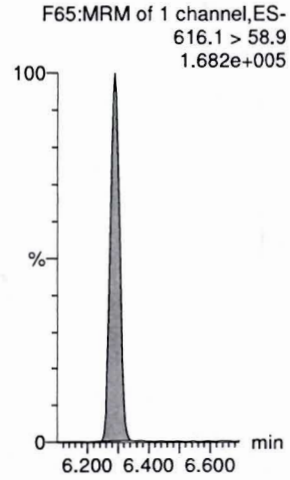
PFHxDA



PFODA



N-MeFOSE



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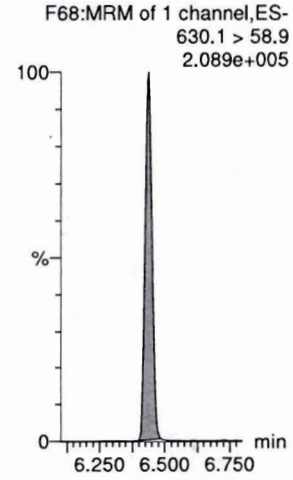
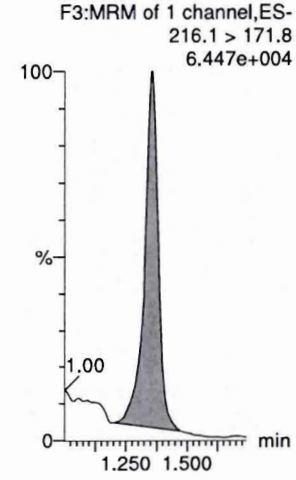
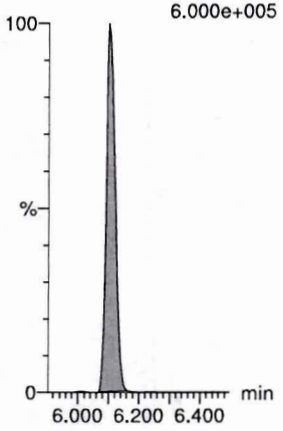


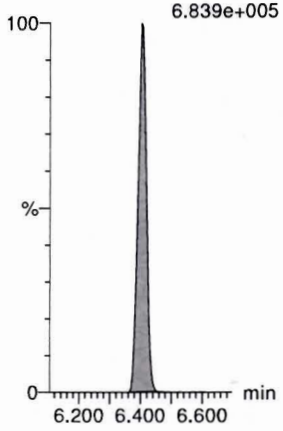
13C3-PFBA-RSD



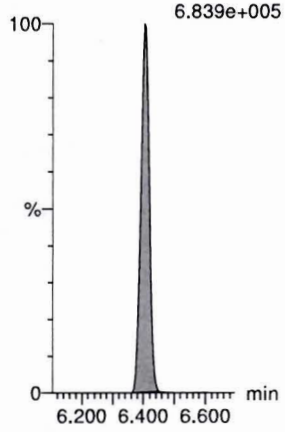
d5-N-ETFOSA-EIS



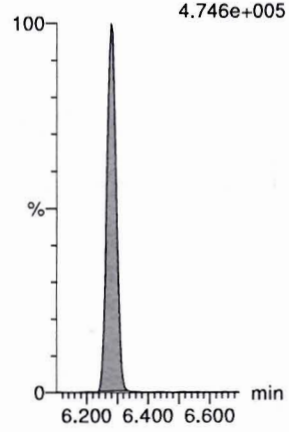
13C2-PFHxDA-EIS



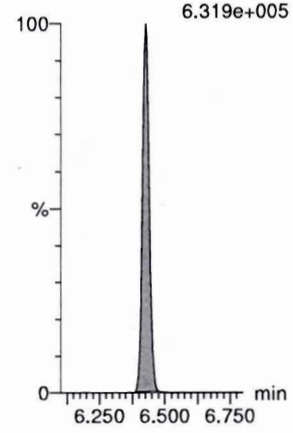
13C2-PFHxDA-EIS



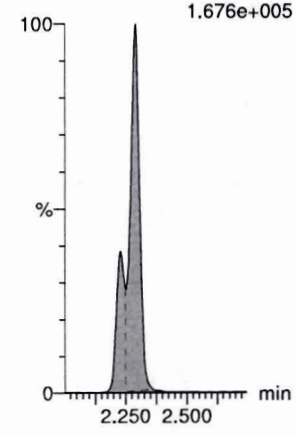
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



OPV 7/22/2020

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-54.qld

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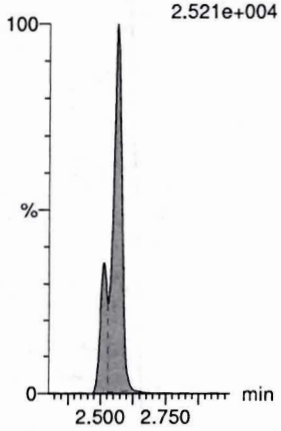
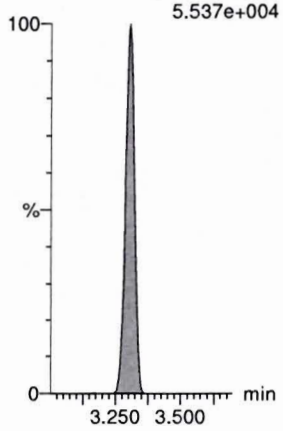
Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

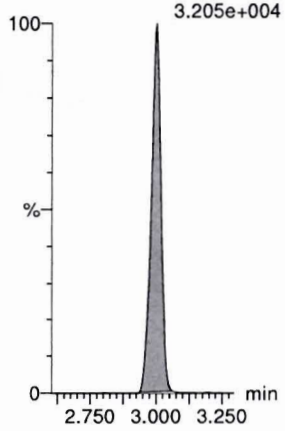
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.521e+004



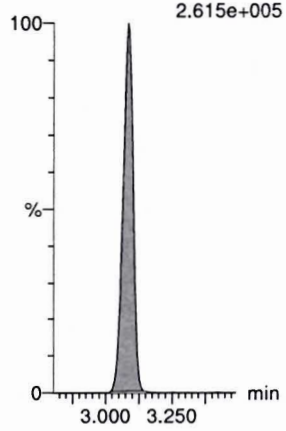
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.537e+004



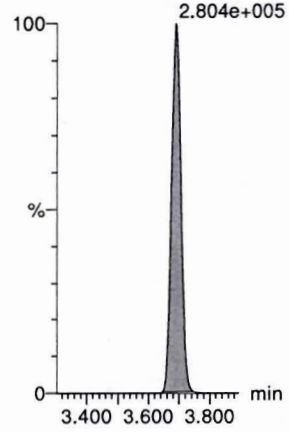
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.205e+004



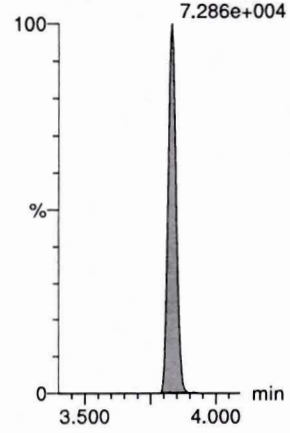
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.615e+005



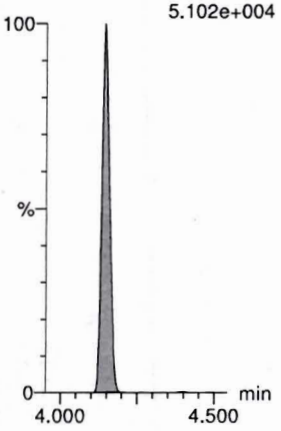
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.804e+005



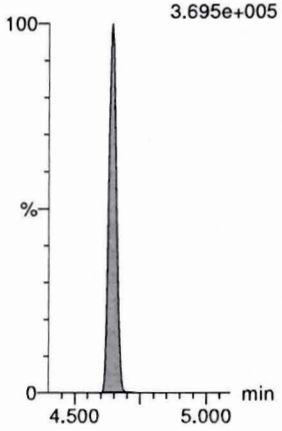
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
7.286e+004



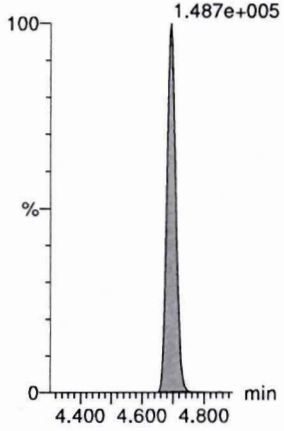
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.102e+004



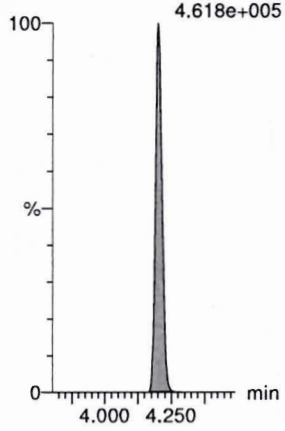
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.695e+005



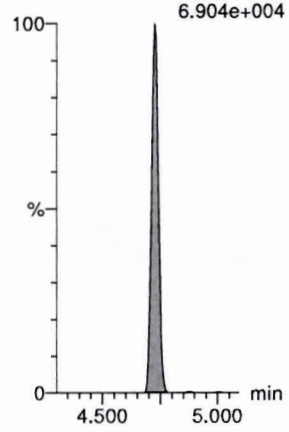
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.487e+005



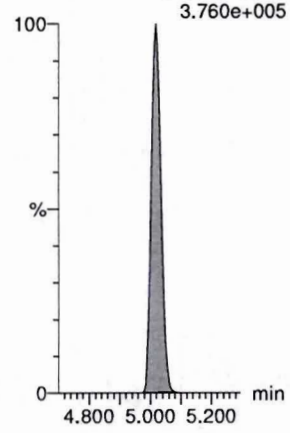
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.618e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.904e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.760e+005



OPV 7/22/2020

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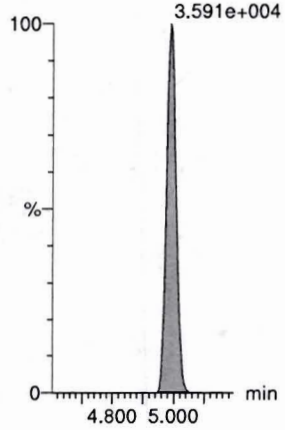
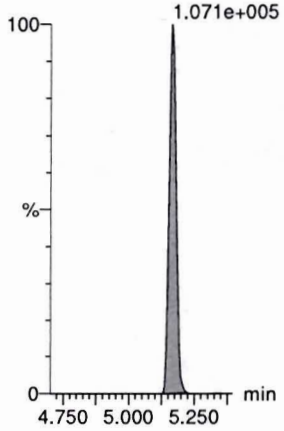
Name: 200721P1-54, Date: 22-Jul-2020, Time: 00:36:21, ID: ST200721P1-12 PFC CS3 20G1606, Description: PFC CS3 20G1606

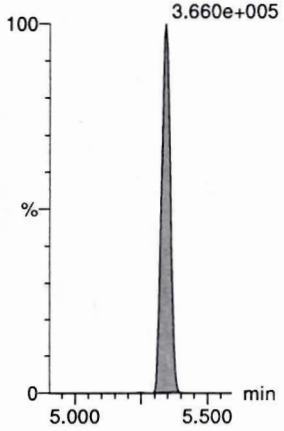
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.591e+004



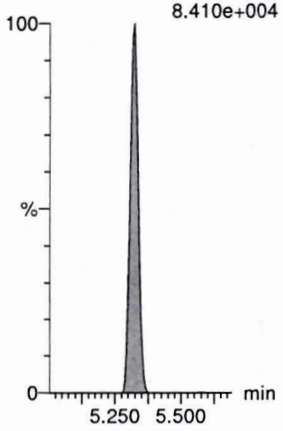
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.071e+005



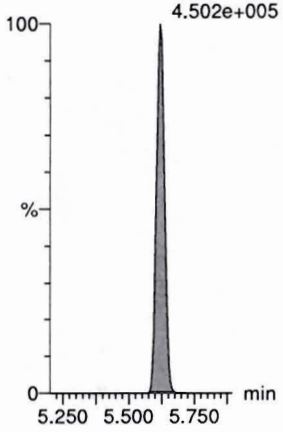
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.660e+005



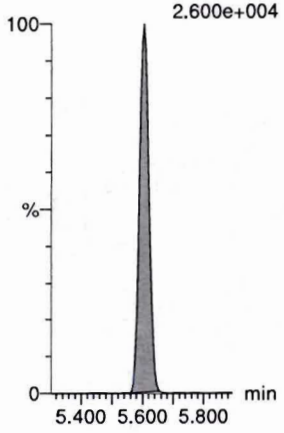
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
8.410e+004



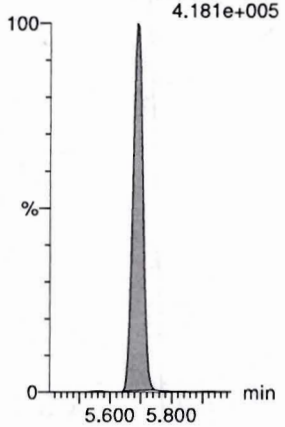
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.502e+005



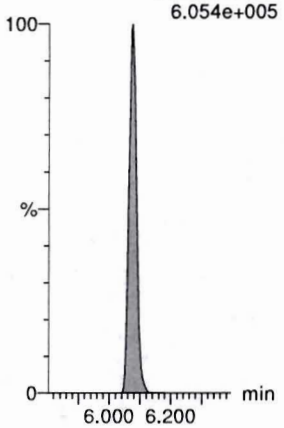
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.600e+004



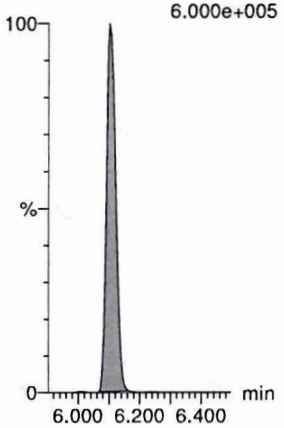
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.181e+005



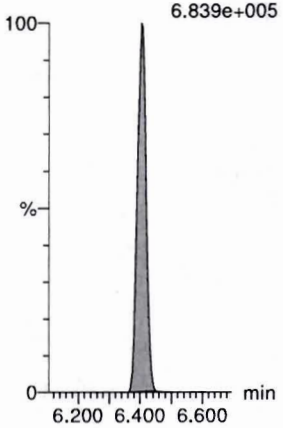
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
6.054e+005



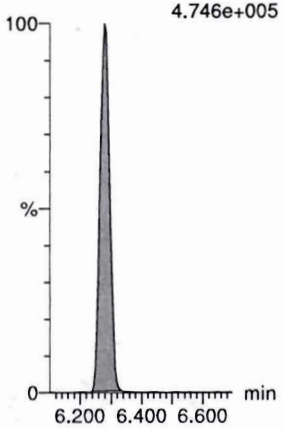
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.000e+005



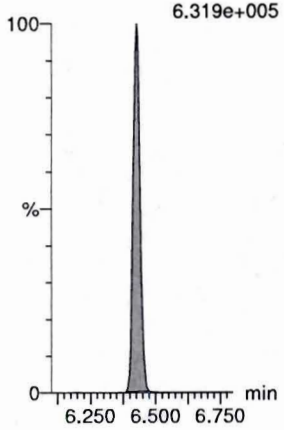
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.839e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.746e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
6.319e+005



OPV 7/22/2020

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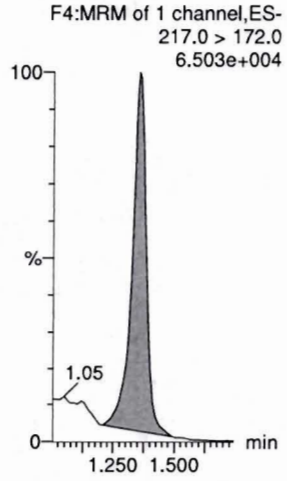
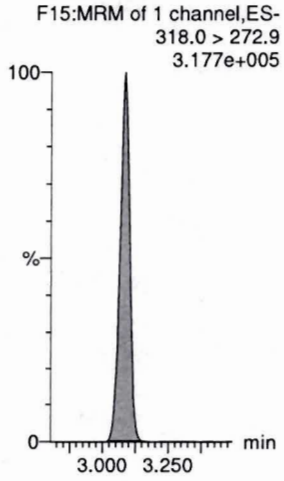
13C4-PFBA



13C5-PFHxA



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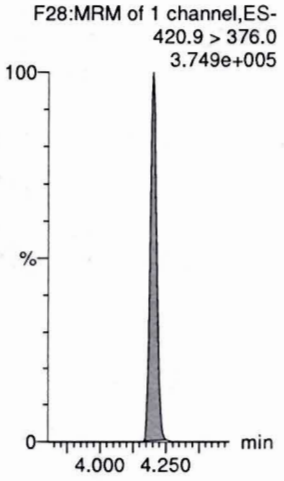
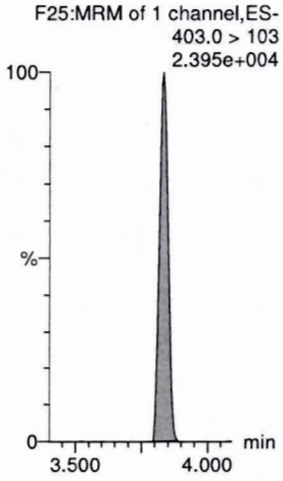


18O2-PFHxS



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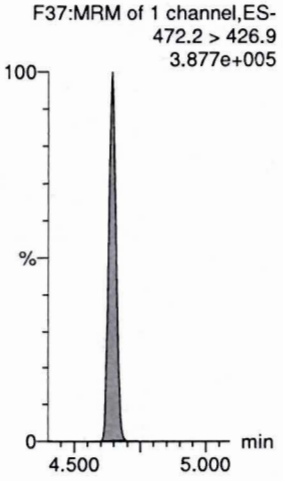
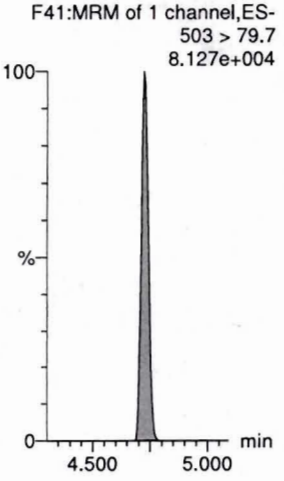
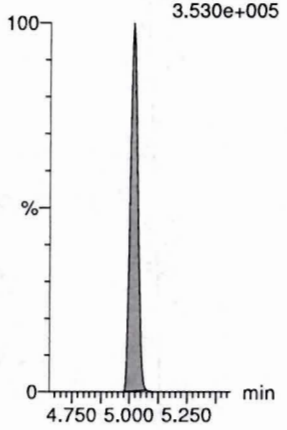


13C4-PFOS



13C6-PFDA



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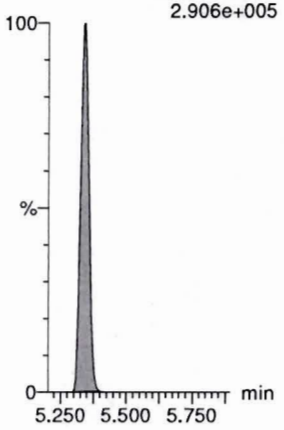

OPV 7/22/2020

Vista Analytical Laboratory

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Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

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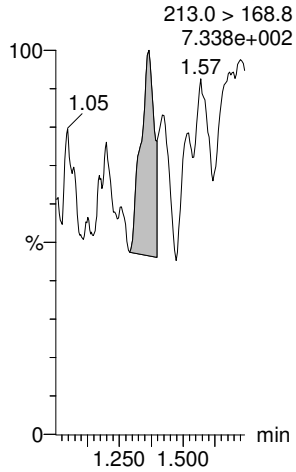
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

PFBA



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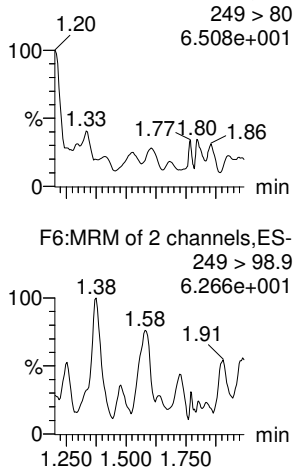
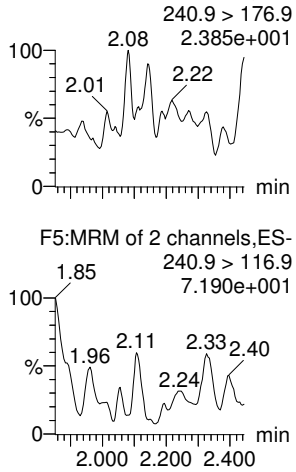


3:3 FTCA



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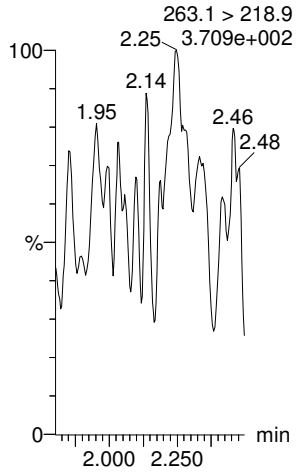

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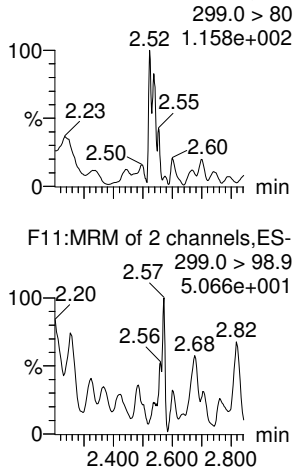
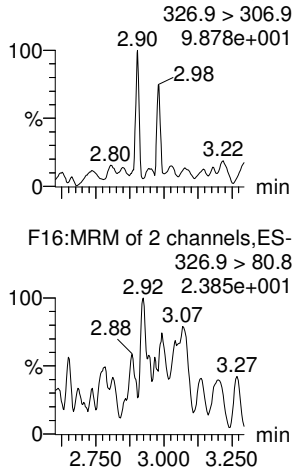
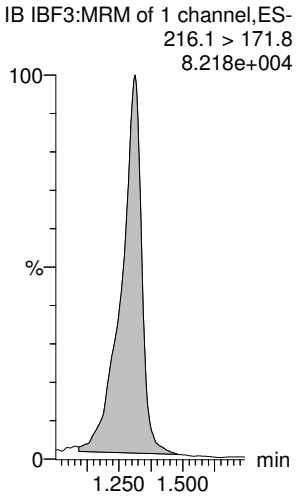


4:2 FTS



13C3-PFBA-EIS



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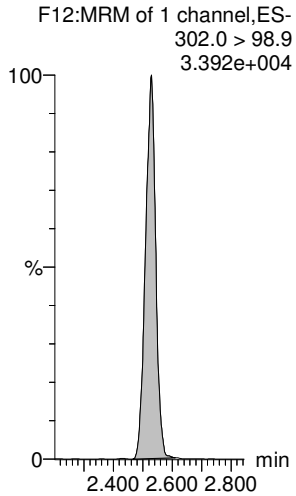
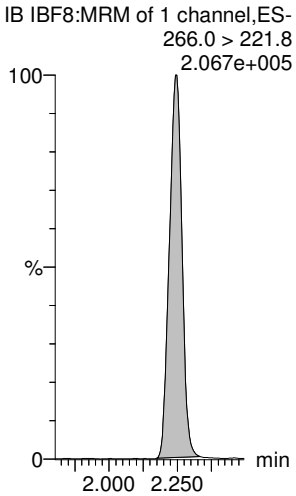


13C3-PFPeA-EIS



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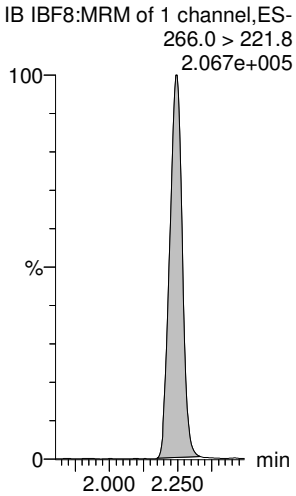

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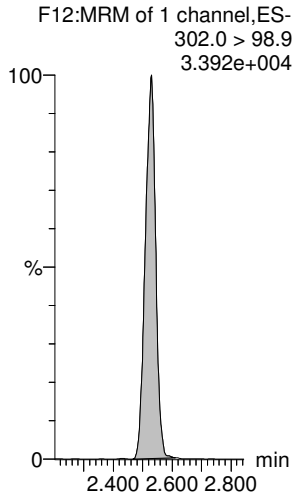
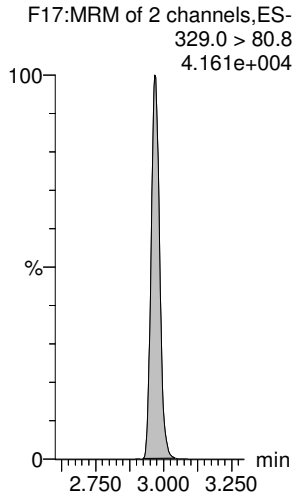


13C2-4:2 FTS-EIS



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Last Altered: Thursday, July 23, 2020 14:32:34 Pacific Daylight Time
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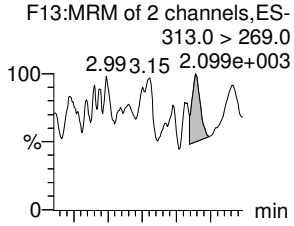
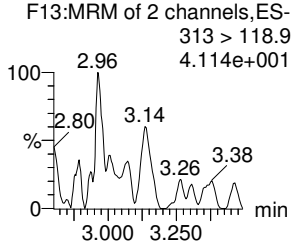
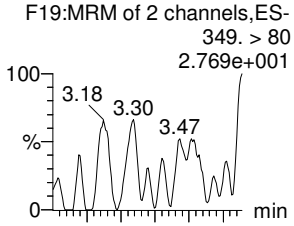
Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

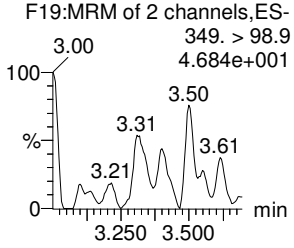
PFHxA



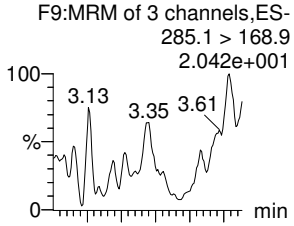


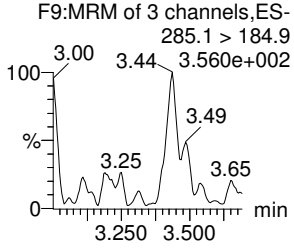
PFPeS



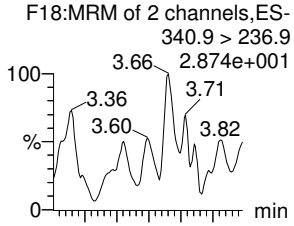


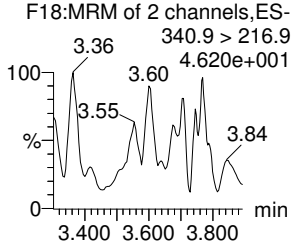
HFPO-DA





5:3 FTCA





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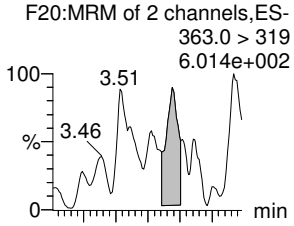

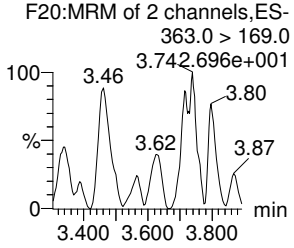

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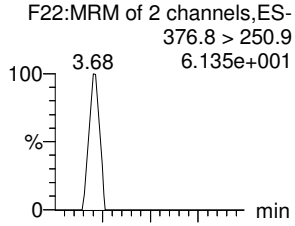

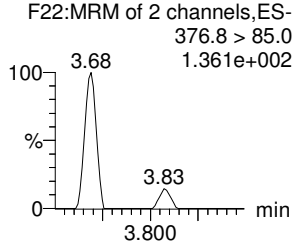

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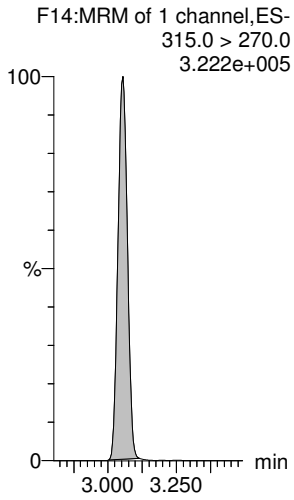
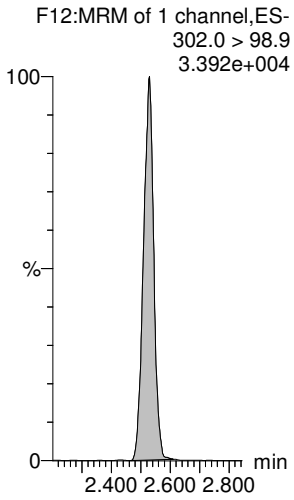
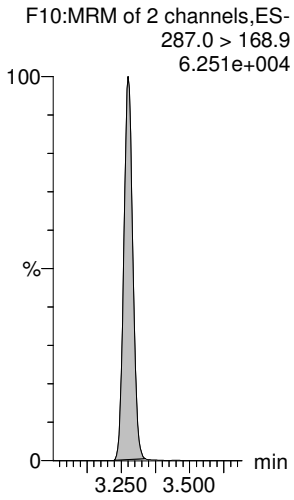


13C3-PFBS-EIS



13C3-HFPO-DA-EIS



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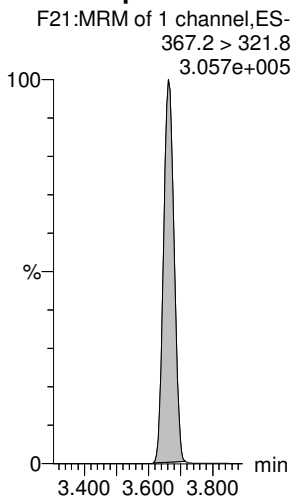

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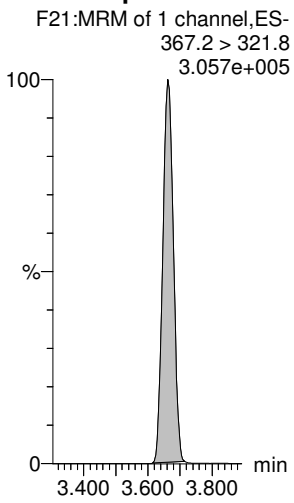

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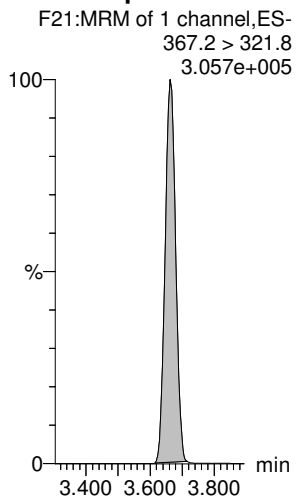

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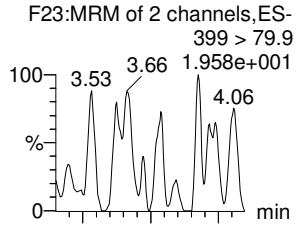
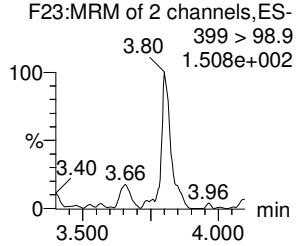
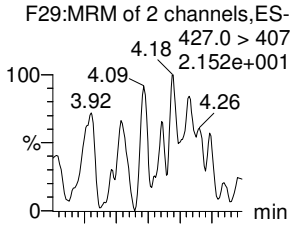
Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

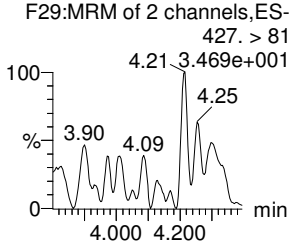
L-PFHxS



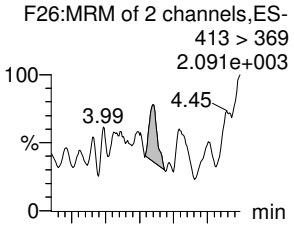


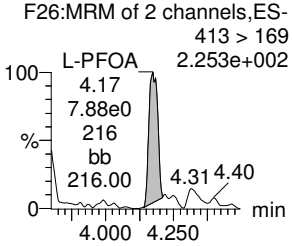
6:2 FTS





L-PFOA





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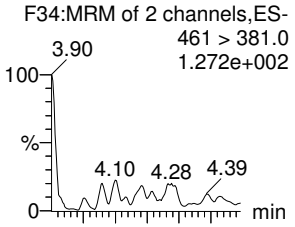

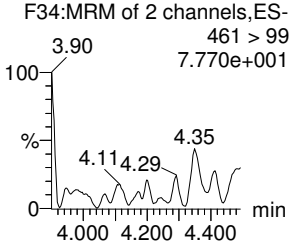

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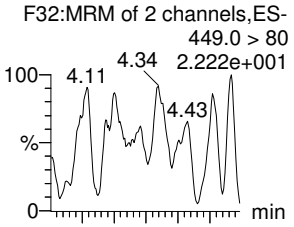

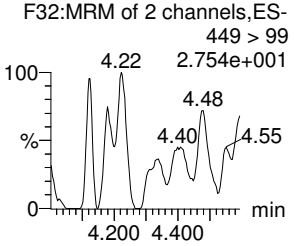

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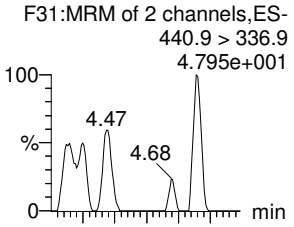

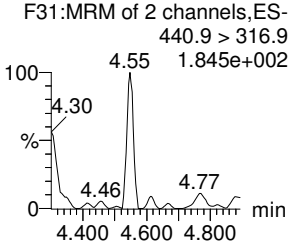

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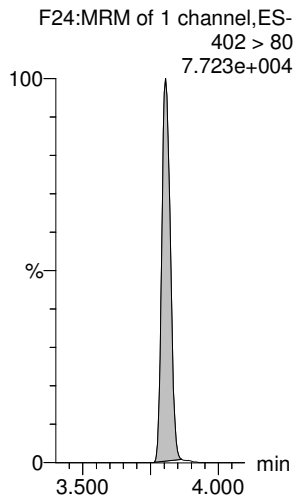
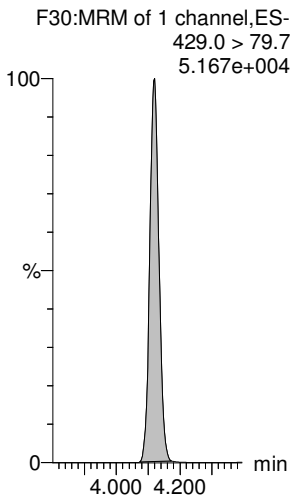


13C2-6:2 FTS-EIS



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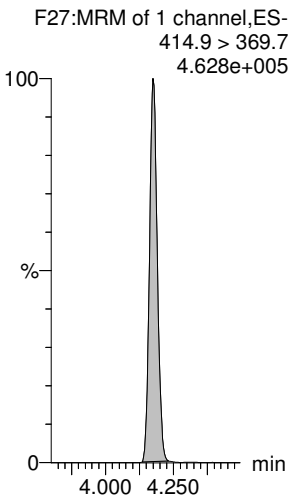

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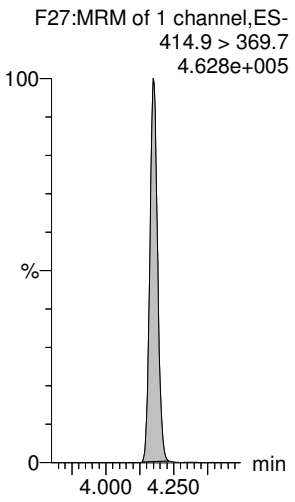

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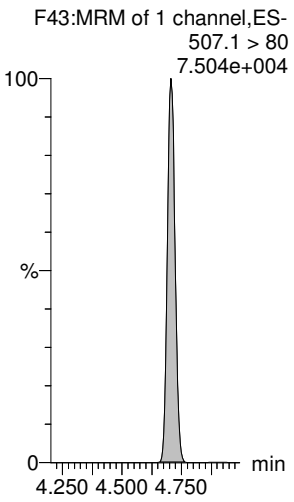
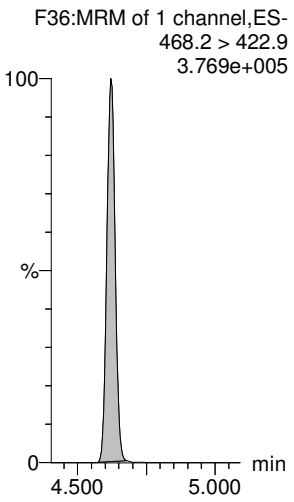


13C5-PFNA-EIS



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Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

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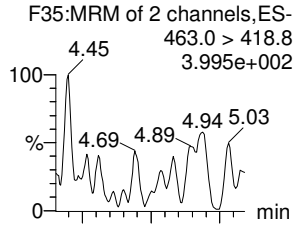

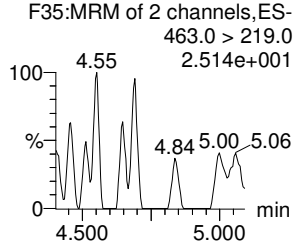

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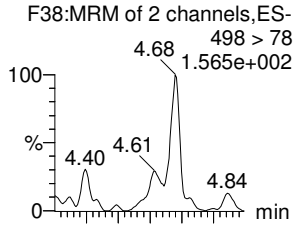
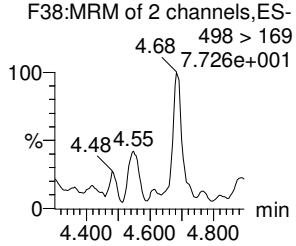
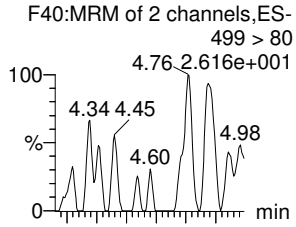
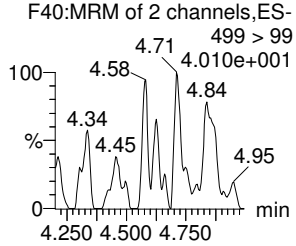




L-PFOS





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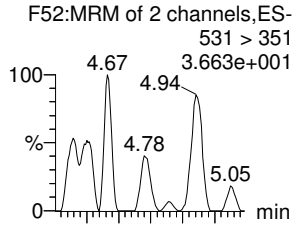

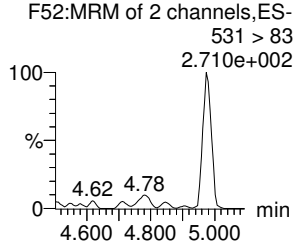

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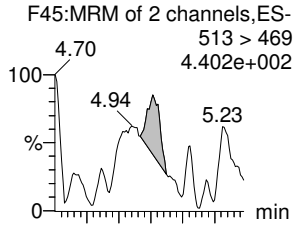
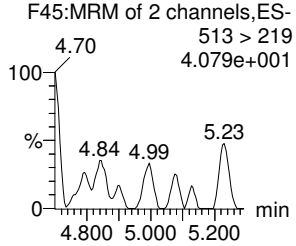
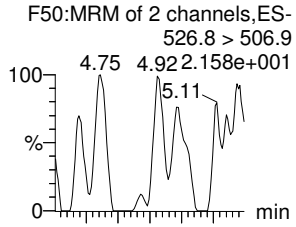
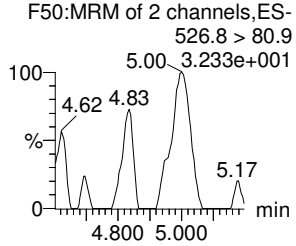




8:2 FTS





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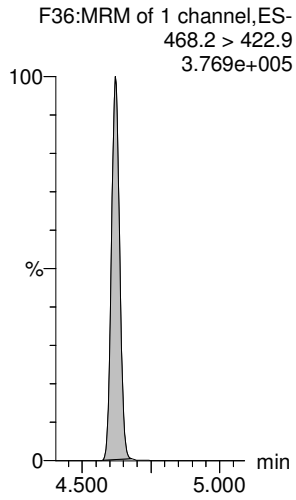

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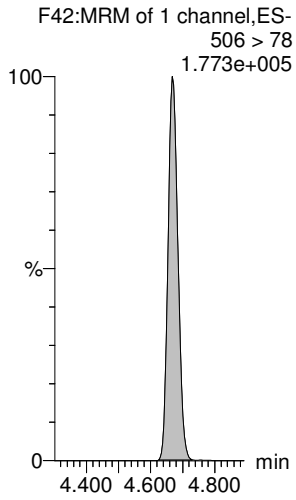

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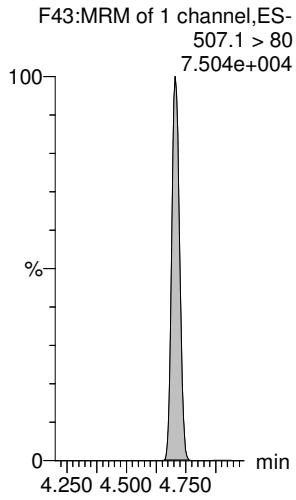

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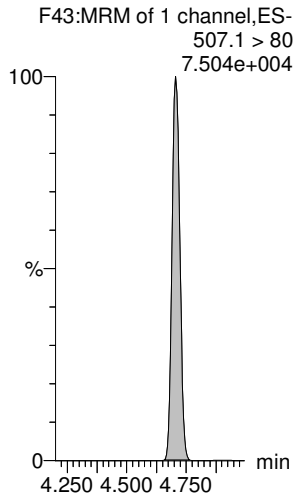

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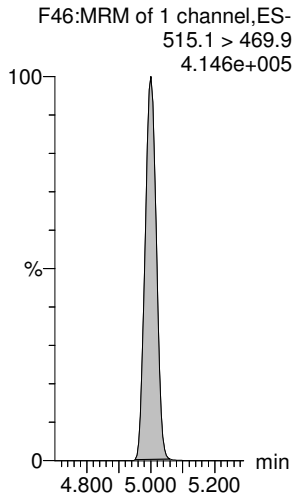

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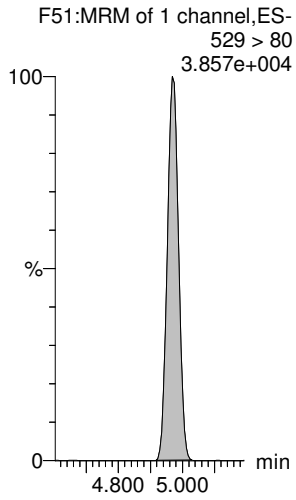

Vista Analytical Laboratory

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Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

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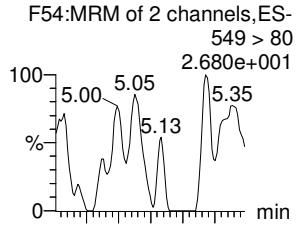

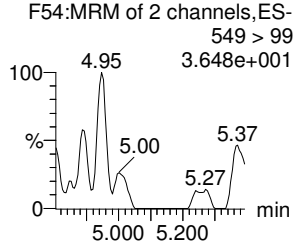

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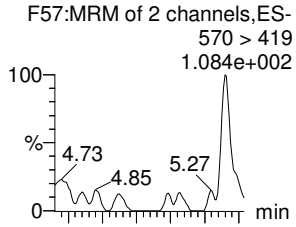
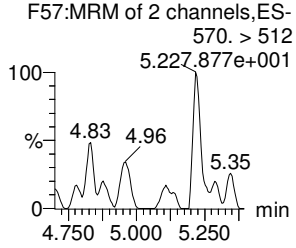
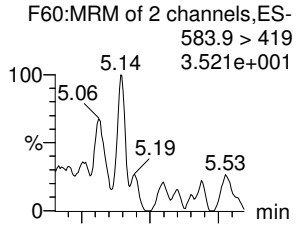
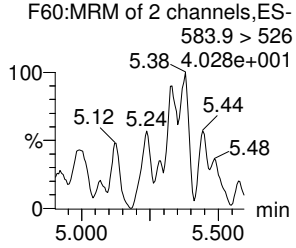




L-EtFOSAA





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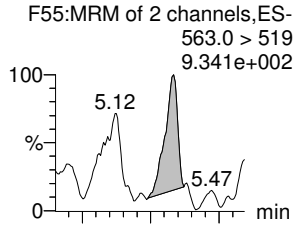

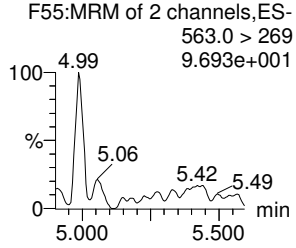

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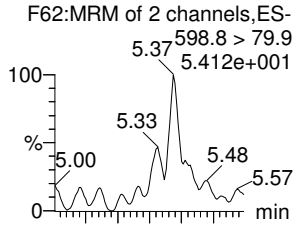

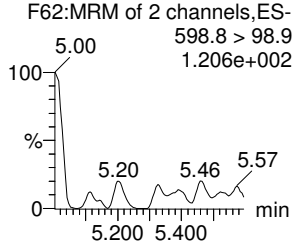

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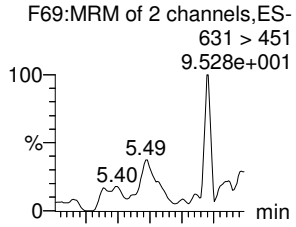

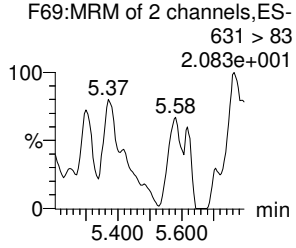

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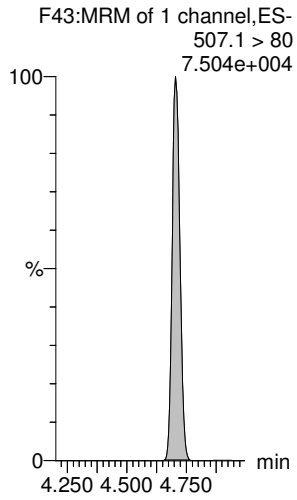

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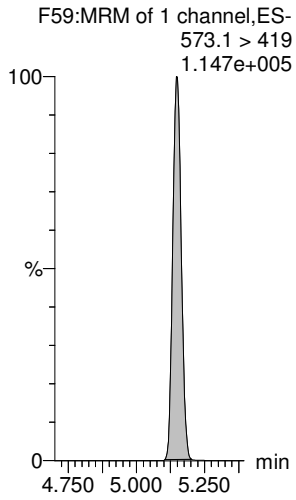

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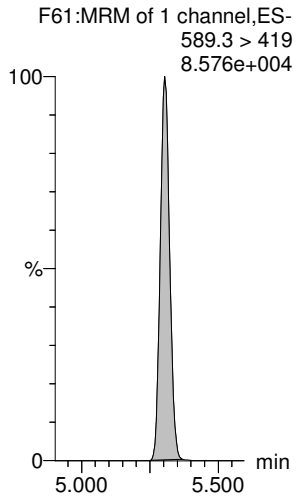

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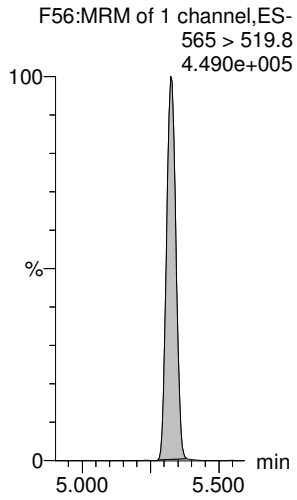

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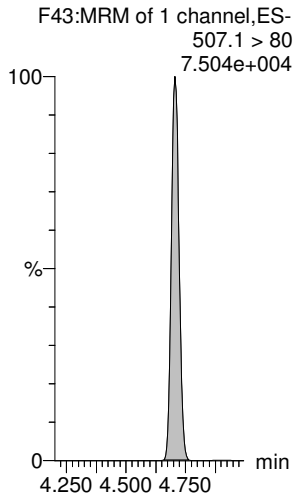

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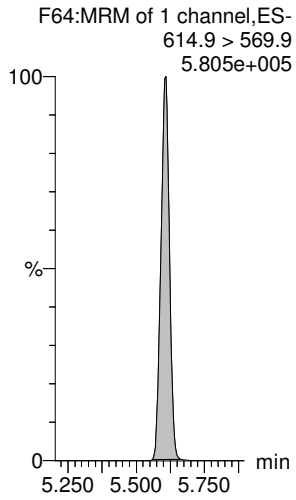

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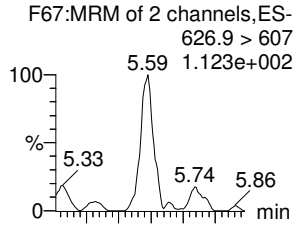
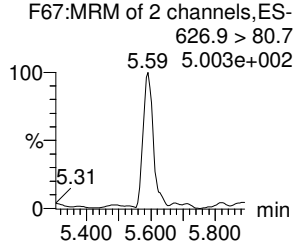
10:2 FTS





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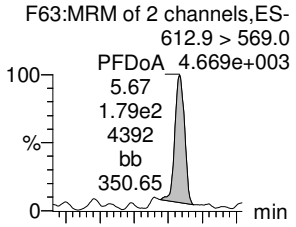

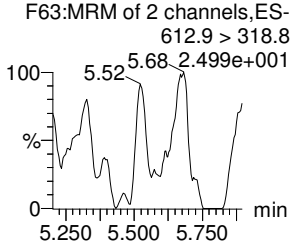

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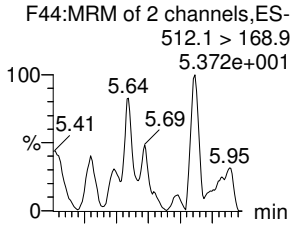

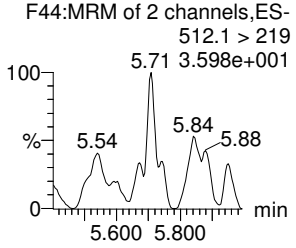

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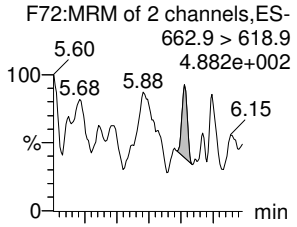

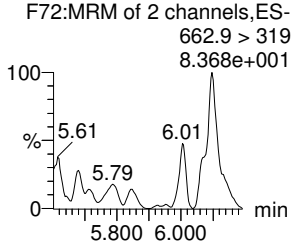

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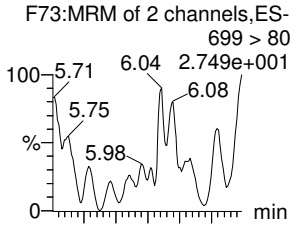
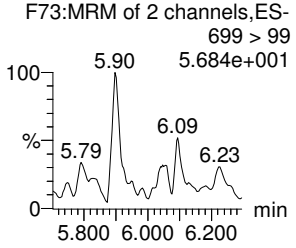
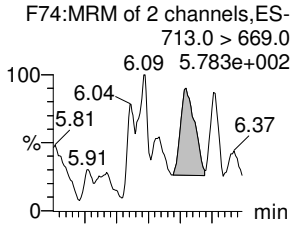
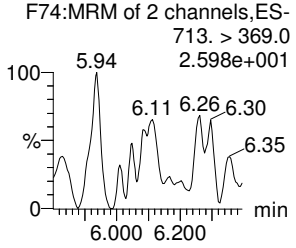


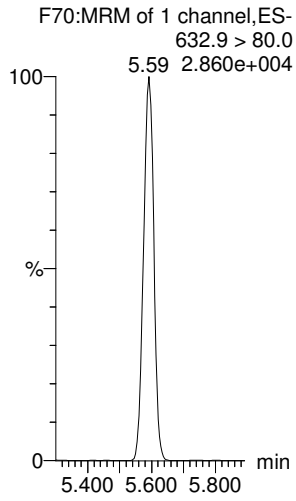


PFTeDA

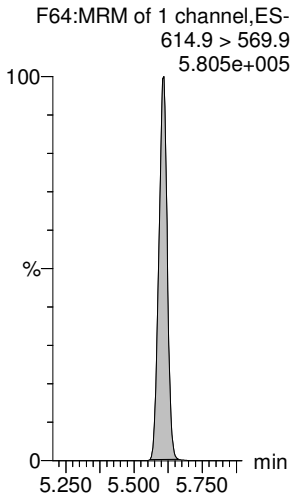




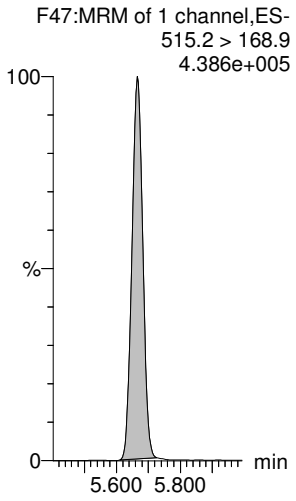
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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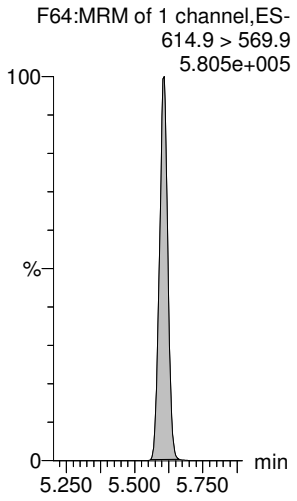

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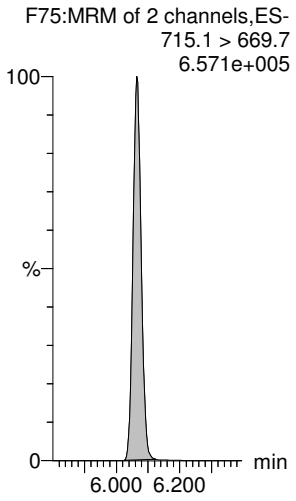

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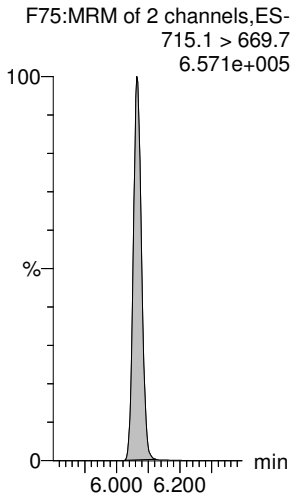

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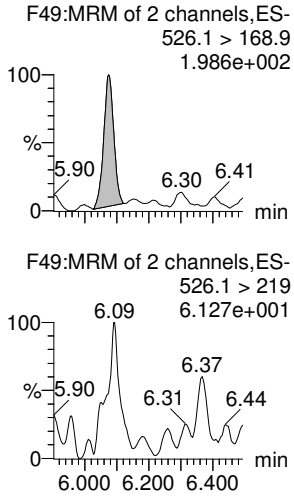
Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

N-EtFOSA



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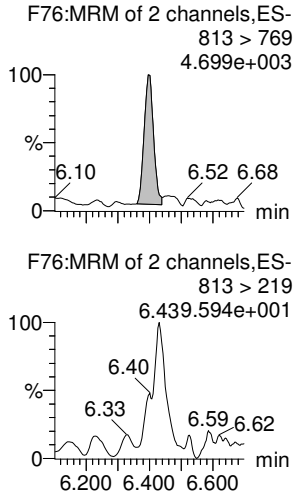

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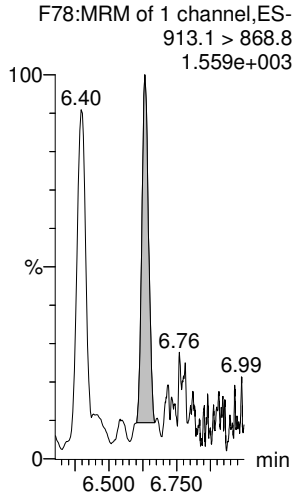
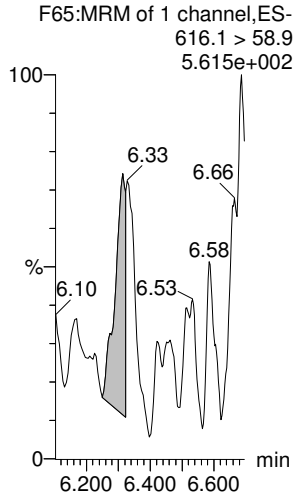


N-MeFOSE



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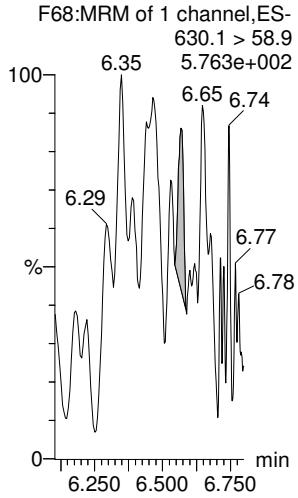
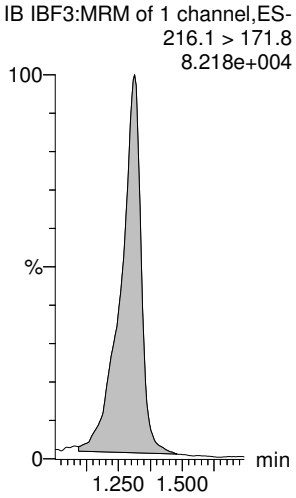
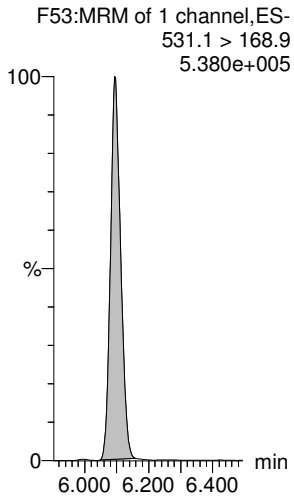


13C3-PFBA-RSD



d5-N-ETFOSA-EIS



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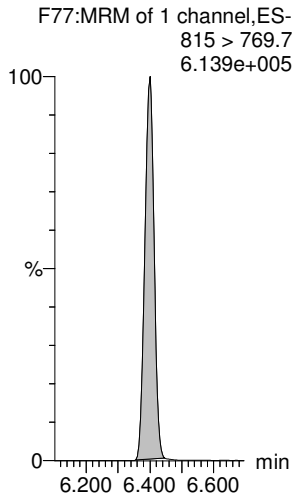

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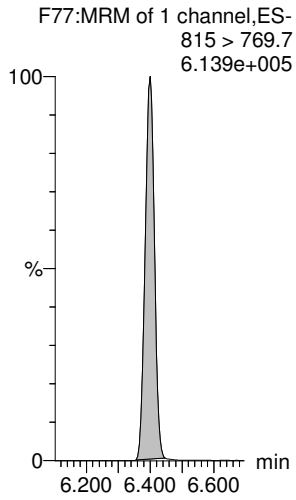
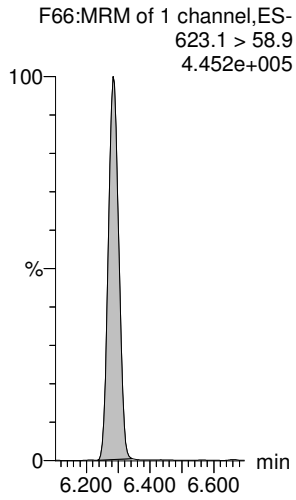


d7-N-MeFOSE-EIS



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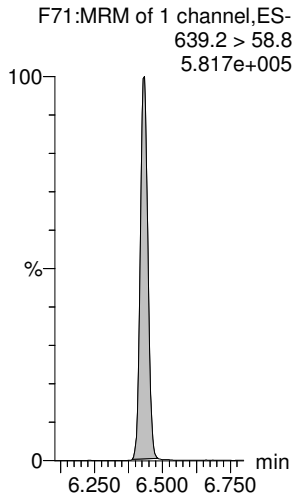

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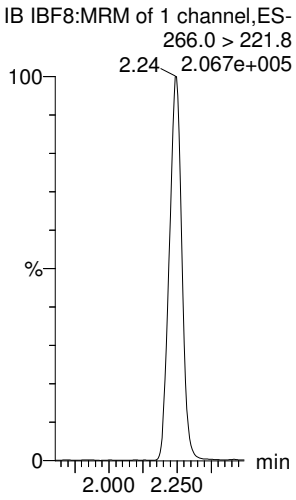

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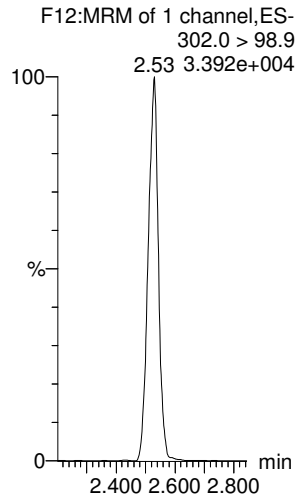
Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

13C3-PFBS-RSD



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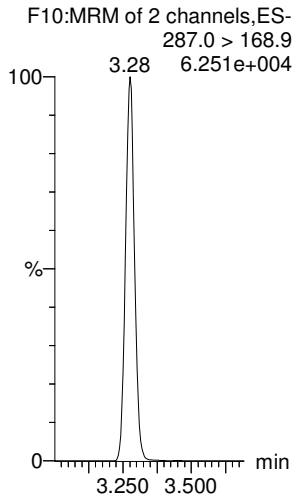
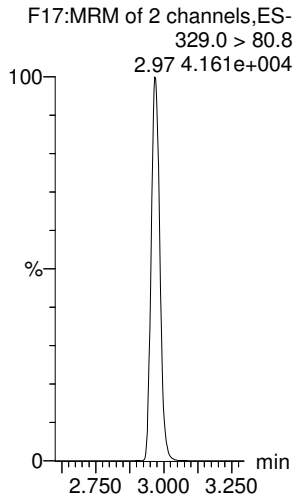


13C2-4:2 FTS-RSD



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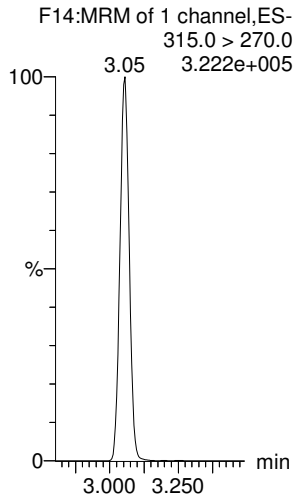

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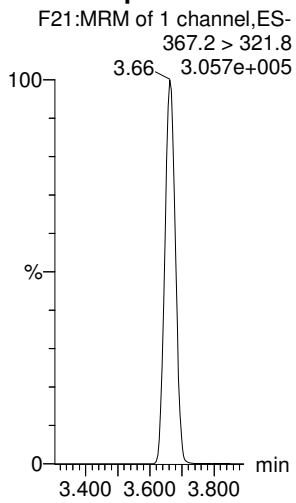

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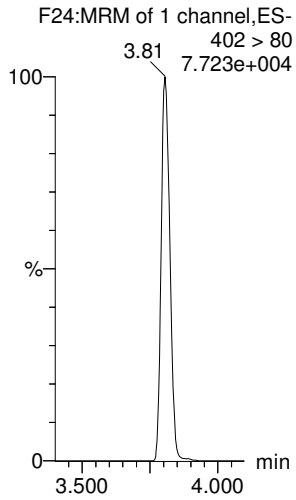

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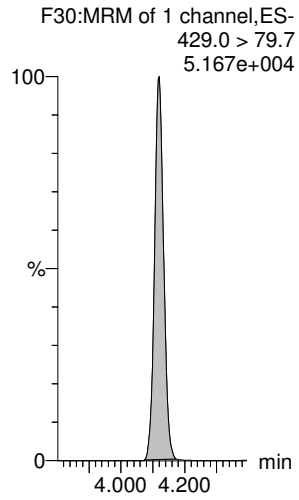
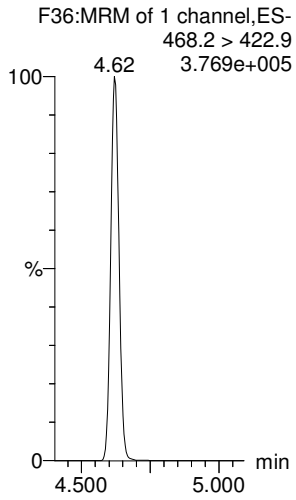
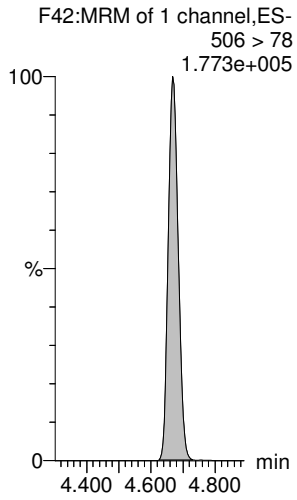


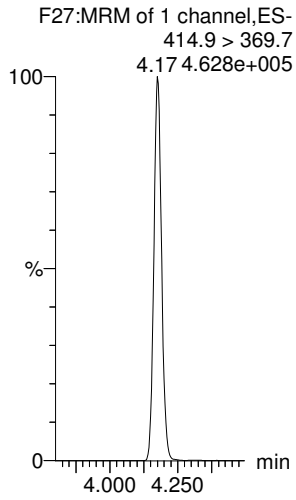
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD



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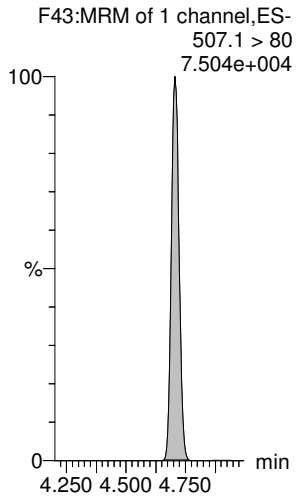
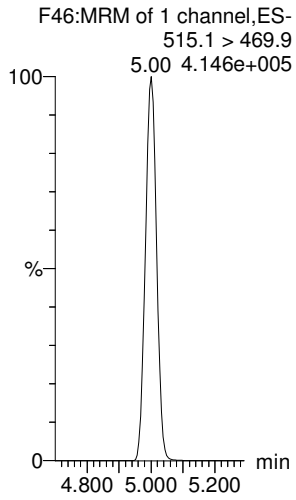


13C2-PFDA-RSD



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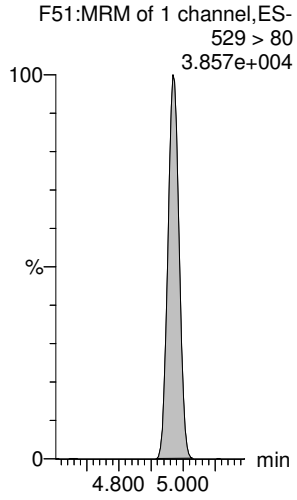
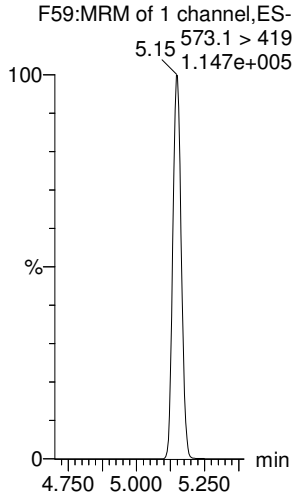
Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

13C2-8:2 FTS-RSD



d3-N-MeFOSAA-RSD



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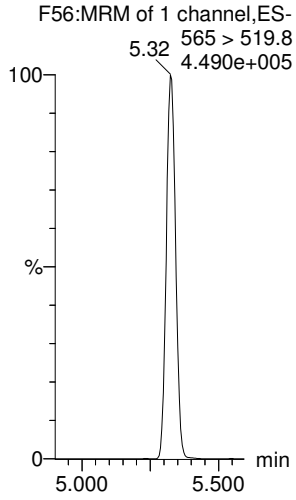
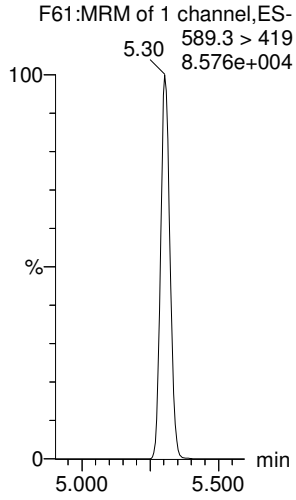


d5-N-EtFOSAA-RSD



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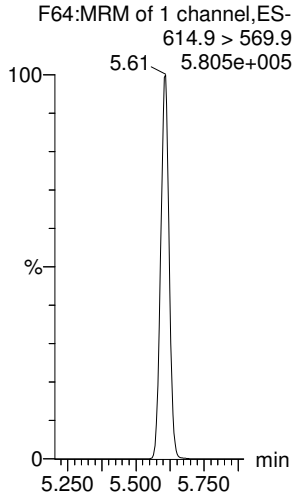
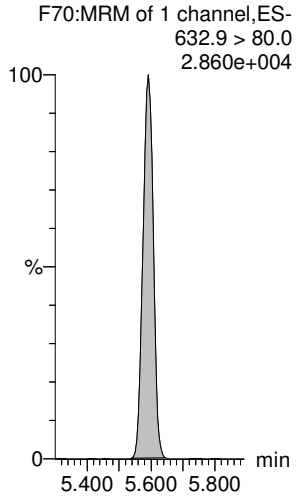


13C2-10:2 FTS-RSD



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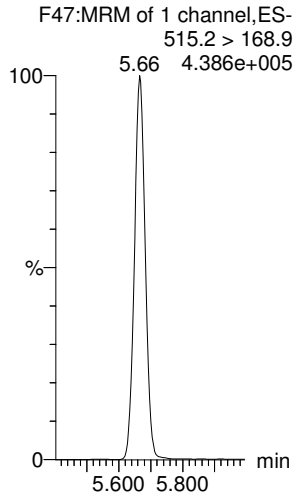

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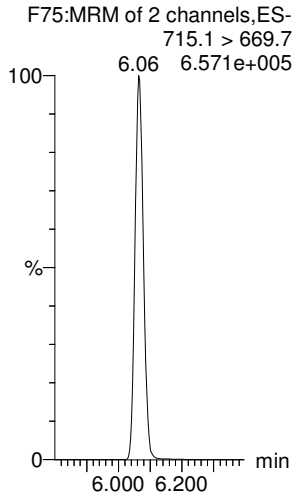

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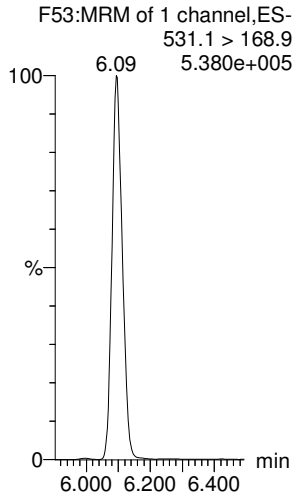
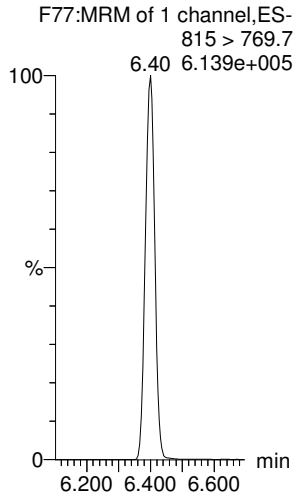
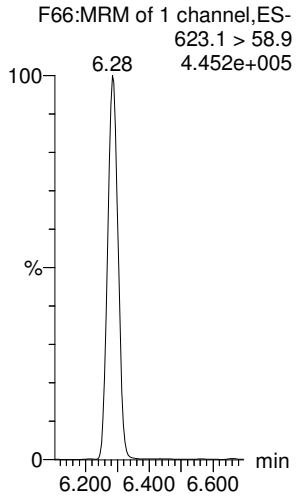


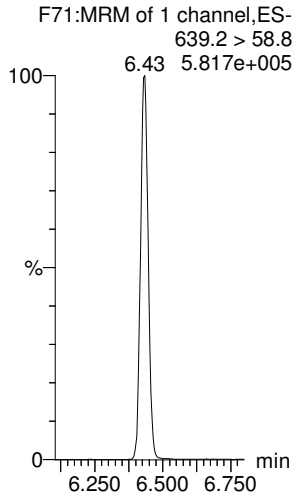
13C2-PFHxDA-RSD



d7-N-MeFOSE-RSD



d9-N-EtFOSE-RSD



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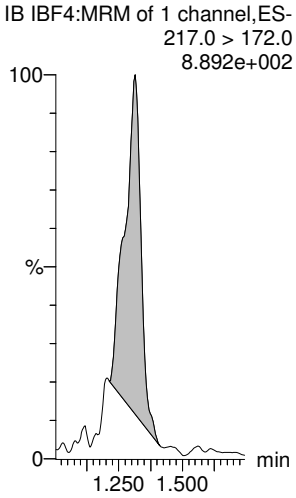
Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

13C4-PFBA



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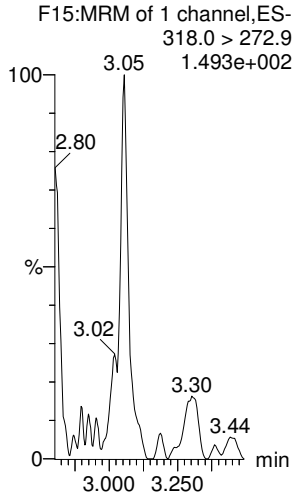

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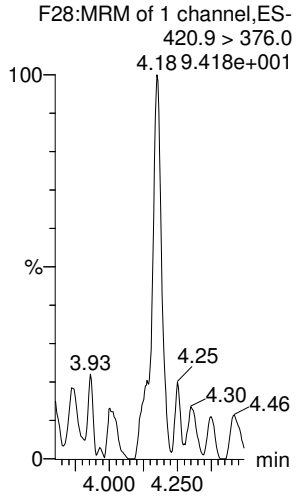
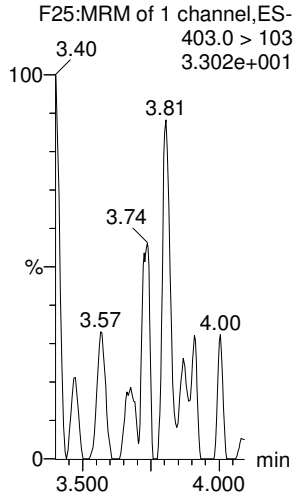
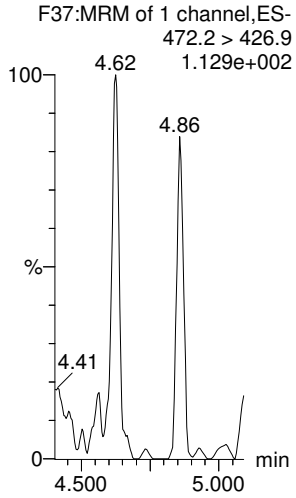


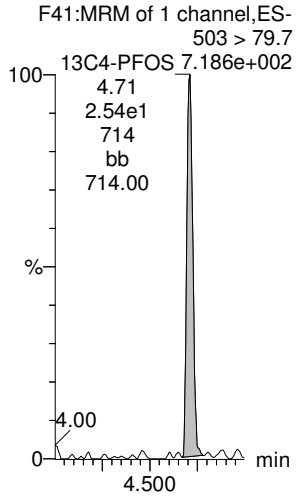
18O2-PFHxS



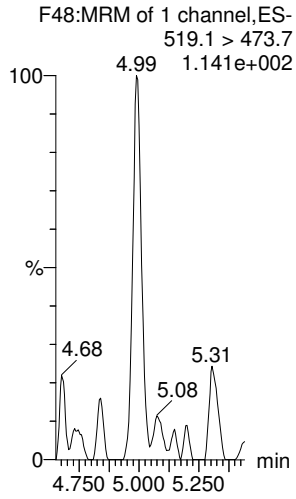
13C9-PFNA



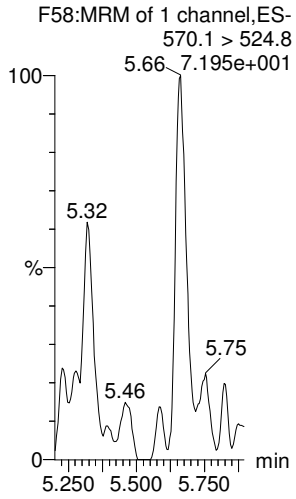
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, July 23, 2020 14:32:34 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	23.480	7458.740	1.00	1.37	0.039		0.0691		NO		
2	2	PFPrS	249 > 80		1353.590	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		10888.818	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9		10888.818	1.00						NO		
5	5	PFBS	299.0 > 80		1353.590	1.00						NO		YES
6	6	4:2 FTS	326.9 > 306.9		1504.876	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	7458.740		1.00	1.31	7458.740	12.500	16.8	134.0	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1353.590		1.00	2.53	1353.590	12.500	14.2	114.0	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	10888.818		1.00	2.24	10888.818	12.500	15.3	122.5	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	10888.818		1.00	2.24	10888.818	12.500	15.3	122.5	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1353.590		1.00	2.53	1353.590	12.500	14.2	114.0	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1504.876		1.00	2.97	1504.876	12.500	13.8	110.5	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	36.190	12605.017	1.00	3.32	0.036		0.0162		NO		YES
15	8	PFPeS	349.>80		1353.590	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2367.110	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		11461.588	1.00						NO		YES
18	11	PFHpA	363.0 > 319	21.933	11461.588	1.00	3.68	0.024		0.0149		NO		YES
19	12	ADONA	376.8 > 250.9		11461.588	1.00						NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	12605.017		1.00	3.05	12605.017	12.500	14.5	115.9	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1353.590		1.00	2.53	1353.590	12.500	14.2	114.0	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2367.110		1.00	3.28	2367.110	12.500	13.5	108.1	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	11461.588		1.00	3.66	11461.588	12.500	14.3	114.1	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	11461.588		1.00	3.66	11461.588	12.500	14.3	114.1	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	11461.588		1.00	3.66	11461.588	12.500	14.3	114.1	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9		2779.535	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407		1689.185	1.00						NO		YES
29	16	L-PFOA	413 > 369	29.397	14815.169	1.00	4.17	0.025				NO	3.731	NO
30	18	PFecHS	461 > 381.0		14815.169	1.00						NO		YES
31	19	PFHpS	449.0 > 80		2755.371	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		13036.242	1.00						NO		YES
33	61	13C3-PFHxS-EIS	402 > 80	2779.535		1.00	3.81	2779.535	12.500	14.3	114.7	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1689.185		1.00	4.12	1689.185	12.500	15.2	121.9	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	14815.169		1.00	4.17	14815.169	12.500	14.8	118.4	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	14815.169		1.00	4.17	14815.169	12.500	14.8	118.4	NO		

Dataset: Untitled

Last Altered: Thursday, July 23, 2020 14:32:34 Pacific Daylight Time
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Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	13036.242		1.00	4.62	13036.242	12.500	13.7	109.8	NO		
39	-1													
40	21	PFNA	463.0 > 418.8		13036.242	1.00						NO		YES
41	22	PFOSA	498 > 78		6246.255	1.00						NO		YES
42	23	L-PFOS	499 > 80		2755.371	1.00						NO		YES
43	25	9Cl-PF30NS	531 > 351		2755.371	1.00						NO		YES
44	26	PFDA	513 > 469	8.671	16548.736	1.00	5.01	0.007				NO		YES
45	27	8:2 FTS	526.8 > 506.9		1559.371	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	13036.242		1.00	4.62	13036.242	12.500	13.7	109.8	NO		
47	67	13C8-PFOSA-EIS	506 > 78	6246.255		1.00	4.67	6246.255	12.500	14.2	113.9	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	16548.736		1.00	5.00	16548.736	12.500	13.9	111.4	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1559.371		1.00	4.97	1559.371	12.500	16.5	131.8	NO		
52	-1													
53	28	PFNS	549 > 80		2755.371	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		4037.174	1.00						NO		YES
55	31	L-EtFOSAA	583.9 > 419		3370.842	1.00						NO		YES
56	33	PFUdA	563.0 > 519	41.781	17469.656	1.00	5.33	0.030				NO		YES
57	34	PFDS	598.8 >79.9		2755.371	1.00						NO		YES
58	35	11Cl-PF30UdS	631 > 451		20302.211	1.00						NO		YES
59	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	4037.174		1.00	5.15	4037.174	12.500	15.4	123.3	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3370.842		1.00	5.30	3370.842	12.500	14.6	116.5	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	17469.656		1.00	5.32	17469.656	12.500	15.1	121.1	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	20302.211		1.00	5.61	20302.211	12.500	13.8	110.1	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607			1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	179.358	20302.211	1.00	5.67	0.110		0.138		NO		YES
68	38	N-MeFOSA	512.1 > 168.9		16858.416	1.00						NO		YES
69	39	PFTrDA	662.9 > 618.9	5.028	20302.211	1.00	6.01	0.003				NO		YES
70	40	PFDoS	699 > 80		19619.930	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	18.918	19619.930	1.00	6.22	0.012				NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0			1.00			12.500			NO		

Dataset: Untitled

Last Altered: Thursday, July 23, 2020 14:32:34 Pacific Daylight Time
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Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	20302.211		1.00	5.61	20302.211	12.500	13.8	110.1	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	16858.416		1.00	5.66	16858.416	149.200	147	98.7	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	20302.211		1.00	5.61	20302.211	12.500	13.8	110.1	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	19619.930		1.00	6.06	19619.930	12.500	13.7	109.4	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	19619.930		1.00	6.06	19619.930	12.500	13.7	109.4	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	6.910	19655.697	1.00	6.07	0.052				NO		YES
80	43	PFHxDA	813 > 769	154.533	20413.049	1.00	6.40	0.095		0.00600		NO		YES
81	44	PFODA	913.1 > 868.8	40.546	20413.049	1.00	6.63	0.025		0.0450		NO		
82	45	N-MeFOSE	616.1 > 58.9	12.702	16610.344	1.00	6.31	0.114		0.144		NO		
83	46	N-EtFOSE	630.1 > 58.9	5.449	18384.426	1.00	6.57	0.044				NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	7458.740	57.358	1.00	1.31	1625.479	12.500	1730	13806.4	YES		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	19655.697		1.00	6.09	19655.697	149.200	137	91.6	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	20413.049		1.00	6.40	20413.049	12.500	12.2	97.6	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	20413.049		1.00	6.40	20413.049	12.500	12.2	97.6	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	16610.344		1.00	6.28	16610.344	149.200	144	96.3	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	18384.426		1.00	6.43	18384.426	149.200	144	96.5	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8			1.00			12.500			NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9			1.00			12.500			NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9			1.00			12.500			NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8			1.00			12.500			NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0			1.00			12.500			NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8			1.00			12.500			NO		
97	62	13C3-PFHxS-RSD	402 > 80			1.00			12.500			NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1689.185	25.374	1.00	4.12	832.144	12.500	1780	14258.6	YES		
99	66	13C5-PFNA-RSD	468.2 > 422.9			1.00			12.500			NO		
100	68	13C8-PFOSA-RSD	506 > 78	6246.255		1.00	4.67		12.500			NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7			1.00			12.500			NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2755.371	25.374	1.00	4.71	1357.379	12.500	1710	13691.8	YES		
103	74	13C2-PFDA-RSD	515.1 > 469.9			1.00			12.500			NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1559.371	25.374	1.00	4.97	768.193	12.500	1760	14053.7	YES		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419			1.00			12.500			NO		
107	80	13C2-PFUdA-RSD	565 > 519.8			1.00			12.500			NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419			1.00			12.500			NO		

Dataset: Untitled

Last Altered: Thursday, July 23, 2020 14:32:34 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9			1.00			12.500			NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1053.500	25.374	1.00	5.59	518.986	12.500	1660	13266.9	YES		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9			1.00			149.200			NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7			1.00			12.500			NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9			1.00			149.200			NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7			1.00			12.500			NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9			1.00			149.200			NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8			1.00			149.200			NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	57.358	57.358	1.00	1.31	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9			1.00			12.500			NO		
120	1...	13C8-PFOA	420.9 > 376.0			1.00			12.500			NO		
121	1...	18O2-PFHxS	403.0 > 103			1.00			12.500			NO		
122	1...	13C9-PFNA	472.2 > 426.9			1.00			12.500			NO		
123	1...	13C4-PFOS	503 > 79.7	25.374	25.374	1.00	4.71	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7			1.00			12.500			NO		
125	1...	13C7-PFUdA	570.1 > 524.8			1.00			12.500			NO		

LC Calibration Standards Review Checklist QS

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	NA
Calibration ID:	8T20072391-11	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-12	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-13	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:	-14	L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	NA ☐	07/24/20 ☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 07/10/2020

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Instrument Blank Saved ☑

All Branches in Acquisition Window ☑

~~**IIS Area Saved**~~ ☐ QM 7/24/2020

Reviewed By: QM 7/24/2020
Initials/Date

Comments:

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-31.qld

Last Altered: Friday, July 24, 2020 08:16:32 Pacific Daylight Time
Printed: Friday, July 24, 2020 08:17:44 Pacific Daylight Time

7/24/2020

Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	5020.208	5945.049	1.00	1.32	10.555	10.000	9.70	97.0	NO		
2	2	PFPrS	249 > 80	1169.310	1246.823	1.00	1.65	11.723	10.000	8.93	89.3	NO	2.641	NO
3	3	3:3 FTCA	240.9 > 176.9	627.669	9625.407	1.00	2.12	0.815	10.000	10.2	101.7	NO	3.662	NO
4	4	PFPeA	263.1 > 218.9	7132.082	9625.407	1.00	2.26	9.262	10.000	9.69	96.9	NO		
5	5	PFBS	299.0 > 80	2403.596	1246.823	1.00	2.54	24.097	10.000	9.02	90.2	NO	2.497	NO
6	6	4:2 FTS	326.9 > 306.9	2745.451	1303.171	1.00	2.97	26.334	10.000	10.4	104.2	NO	11.401	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	5945.049		1.00	1.32	5945.049	12.500	13.4	106.8	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1246.823		1.00	2.54	1246.823	12.500	13.1	105.0	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	9625.407		1.00	2.25	9625.407	12.500	13.5	108.3	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	9625.407		1.00	2.25	9625.407	12.500	13.5	108.3	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1246.823		1.00	2.54	1246.823	12.500	13.1	105.0	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1303.171		1.00	2.97	1303.171	12.500	12.0	95.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	9377.355	10711.883	1.00	3.06	10.943	10.000	10.1	101.4	NO	14.015	NO
15	8	PFPeS	349.>80	2091.810	1246.823	1.00	3.27	20.971	10.000	10.0	100.1	NO	2.255	NO
16	9	HFPO-DA	285.1 > 168.9	1842.055	2223.724	1.00	3.28	10.355	10.000	9.73	97.3	NO	2.424	NO
17	10	5:3 FTCA	340.9 > 236.9	1344.331	9622.173	1.00	3.61	1.746	10.000	10.8	108.3	NO	1.616	NO
18	11	PFHpA	363.0 > 319	10020.955	9622.173	1.00	3.67	13.018	10.000	10.5	104.8	NO	46.823	NO
19	12	ADONA	376.8 > 250.9	18514.109	9622.173	1.00	3.78	24.051	10.000	10.2	102.1	NO	3.812	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	10711.883		1.00	3.06	10711.883	12.500	12.3	98.5	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1246.823		1.00	2.54	1246.823	12.500	13.1	105.0	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2223.724		1.00	3.28	2223.724	12.500	12.7	101.5	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	9622.173		1.00	3.67	9622.173	12.500	12.0	95.8	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	9622.173		1.00	3.67	9622.173	12.500	12.0	95.8	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	9622.173		1.00	3.67	9622.173	12.500	12.0	95.8	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9	2074.216	2309.686	1.00	3.81	11.226	10.000	9.72	97.2	NO	3.638	NO
28	15	6:2 FTS	427.0 > 407	1228.496	1537.335	1.00	4.13	9.989	10.000	9.90	99.0	NO	0.734	NO
29	16	L-PFOA	413 > 369	10110.780	13197.309	1.00	4.18	9.577	10.000	9.96	99.6	NO	3.202	NO
30	18	PFecHS	461 > 381.0	2076.005	13197.309	1.00	4.19	1.966	10.000	9.67	96.7	NO	0.520	NO
31	19	PFHpS	449.0 > 80	1978.964	2362.854	1.00	4.29	10.469	10.000	11.1	111.4	NO	1.726	NO
32	20	7:3 FTCA	440.9 > 336.9	2854.765	12568.430	1.00	4.61	2.839	10.000	10.3	103.0	NO	1.551	NO
33	61	13C3-PFHxS-EIS	402 > 80	2309.686		1.00	3.81	2309.686	12.500	11.9	95.3	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1537.335		1.00	4.13	1537.335	12.500	13.9	110.9	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	13197.309		1.00	4.18	13197.309	12.500	13.2	105.5	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	13197.309		1.00	4.18	13197.309	12.500	13.2	105.5	NO		

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Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-31.qld

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Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2362.854		1.00	4.71	2362.854	12.500	11.3	90.3	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	12568.430		1.00	4.62	12568.430	12.500	13.2	105.9	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	11970.646	12568.430	1.00	4.63	11.905	10.000	9.45	94.5	NO	14.700	NO
41	22	PFOSA	498 > 78	2848.811	5257.572	1.00	4.67	6.773	10.000	9.75	97.5	NO	18.010	NO
42	23	L-PFOS	499 > 80	2238.380	2362.854	1.00	4.71	11.842	10.000	10.3	103.3	NO	2.218	NO
43	25	9Cl-PF30NS	531 > 351	4997.347	2362.854	1.00	4.93	26.437	10.000	11.3	113.0	NO	34.546	NO
44	26	PFDA	513 > 469	9781.251	13737.120	1.00	5.01	8.900	10.000	10.3	103.3	NO	5.093	NO
45	27	8:2 FTS	526.8 > 506.9	1305.743	1267.749	1.00	4.97	12.875	10.000	10.0	100.0	NO	0.696	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	12568.430		1.00	4.62	12568.430	12.500	13.2	105.9	NO		
47	67	13C8-PFOSA-EIS	506 > 78	5257.572		1.00	4.67	5257.572	12.500	12.0	95.9	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2362.854		1.00	4.71	2362.854	12.500	11.3	90.3	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2362.854		1.00	4.71	2362.854	12.500	11.3	90.3	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	13737.120		1.00	5.01	13737.120	12.500	11.6	92.4	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1267.749		1.00	4.97	1267.749	12.500	13.4	107.1	NO		
52	-1													
53	28	PFNS	549 > 80	2515.217	2362.854	1.00	5.07	13.306	10.000	10.9	108.7	NO	2.538	NO
54	29	L-MeFOSAA	570 > 419	3188.052	3535.558	1.00	5.15	11.271	10.000	9.73	97.3	NO	1.706	NO
55	31	L-EtFOSAA	583.9 > 419	3597.314	2871.153	1.00	5.31	15.661	10.000	10.1	100.8	NO	1.373	NO
56	33	PFUdA	563.0 > 519	11871.032	15020.836	1.00	5.33	9.879	10.000	9.96	99.6	NO	18.850	NO
57	34	PFDS	598.8 >79.9	2547.725	2362.854	1.00	5.38	13.478	10.000	11.0	109.6	NO	2.043	NO
58	35	11Cl-PF30UdS	631 > 451	3979.431	17881.238	1.00	5.54	2.782	10.000	10.3	102.6	NO	15.323	NO
59	71	13C8-PFOS-EIS	507.1 > 80	2362.854		1.00	4.71	2362.854	12.500	11.3	90.3	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	3535.558		1.00	5.15	3535.558	12.500	13.5	108.0	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	2871.153		1.00	5.31	2871.153	12.500	12.4	99.2	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	15020.836		1.00	5.33	15020.836	12.500	13.0	104.2	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2362.854		1.00	4.71	2362.854	12.500	11.3	90.3	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	17881.238		1.00	5.61	17881.238	12.500	12.1	97.0	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1536.215	1001.715	1.00	5.60	19.170	10.000	9.39	93.9	NO	0.937	NO
67	37	PFDoA	612.9 > 569.0	12906.226	17881.238	1.00	5.61	9.022	10.000	10.4	103.6	NO	10.708	NO
68	38	N-MeFOSA	512.1 > 168.9	6625.969	17983.777	1.00	5.64	54.971	50.000	50.2	100.4	NO	2.007	NO
69	39	PFTrDA	662.9 > 618.9	15027.030	17881.238	1.00	5.86	10.505	10.000	10.0	100.0	NO	116.793	NO
70	40	PFDoS	699 > 80	2740.953	18584.600	1.00	5.88	1.844	10.000	8.96	89.6	NO	2.214	NO
71	41	PFTeDA	713.0 > 669.0	8892.979	18584.600	1.00	6.07	5.981	10.000	9.72	97.2	NO	13.634	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	1001.715		1.00	5.59	1001.715	12.500	12.5	100.3	NO		

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Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	17881.238		1.00	5.61	17881.238	12.500	12.1	97.0	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	17983.777		1.00	5.67	17983.777	149.200	157	105.3	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	17881.238		1.00	5.61	17881.238	12.500	12.1	97.0	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	18584.600		1.00	6.07	18584.600	12.500	12.9	103.6	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	18584.600		1.00	6.07	18584.600	12.500	12.9	103.6	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	8222.496	21238.238	1.00	6.08	57.764	50.000	51.7	103.4	NO	1.986	NO
80	43	PFHxDA	813 > 769	15388.440	21372.000	1.00	6.40	9.000	10.000	9.13	91.3	NO	29.077	NO
81	44	PFODA	913.1 > 868.8	13367.551	21372.000	1.00	6.63	7.818	10.000	9.90	99.0	NO		
82	45	N-MeFOSE	616.1 > 58.9	6762.757	18235.002	1.00	6.29	55.333	50.000	47.6	95.2	NO		
83	46	N-EtFOSE	630.1 > 58.9	7025.202	19888.031	1.00	6.44	52.703	50.000	49.7	99.4	NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	5917.540	6418.566	1.00	1.32	11.524	12.500	12.2	97.9	NO		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	21238.238		1.00	6.10	21238.238	149.200	148	99.0	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	21372.000		1.00	6.40	21372.000	12.500	12.8	102.1	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	21372.000		1.00	6.40	21372.000	12.500	12.8	102.1	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	18235.002		1.00	6.28	18235.002	149.200	158	105.7	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	19888.031		1.00	6.43	19888.031	149.200	156	104.4	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8	9625.407	12759.386	1.00	2.25	9.430	12.500	12.9	102.9	NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9	1246.823	1015.333	1.00	2.54	15.350	12.500	12.1	97.0	NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2223.724	12759.386	1.00	3.28	2.179	12.500	12.7	101.7	NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8	1303.171	1015.333	1.00	2.97	16.044	12.500	11.6	92.9	NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0	10711.883	12759.386	1.00	3.06	10.494	12.500	12.4	99.4	NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8	9622.173	12759.386	1.00	3.67	9.427	12.500	12.0	95.7	NO		
97	62	13C3-PFHxS-RSD	402 > 80	2309.686	1015.333	1.00	3.81	28.435	12.500	11.4	91.3	NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1537.335	2998.093	1.00	4.13	6.410	12.500	13.7	109.8	NO		
99	66	13C5-PFNA-RSD	468.2 > 422.9	12568.430	13039.897	1.00	4.62	12.048	12.500	12.6	100.7	NO		
100	68	13C8-PFOSA-RSD	506 > 78	5257.572	12357.957	1.00	4.67	5.318	12.500	11.1	88.8	NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7	13197.309	10678.431	1.00	4.18	15.449	12.500	12.3	98.4	NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2362.854	2998.093	1.00	4.71	9.851	12.500	12.4	99.4	NO		
103	74	13C2-PFDA-RSD	515.1 > 469.9	13737.120	13126.874	1.00	5.01	13.081	12.500	11.9	95.1	NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1267.749	2998.093	1.00	4.97	5.286	12.500	12.1	96.7	NO		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419	3535.558	12357.957	1.00	5.15	3.576	12.500	12.8	102.7	NO		
107	80	13C2-PFUdA-RSD	565 > 519.8	15020.836	12357.957	1.00	5.33	15.193	12.500	11.8	94.7	NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419	2871.153	12357.957	1.00	5.31	2.904	12.500	12.4	98.9	NO		

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Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9	17881.238	13126.874	1.00	5.61	17.027	12.500	12.6	100.6	NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	992.831	2998.093	1.00	5.59	4.139	12.500	13.2	105.8	NO		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9	17983.777	12357.957	1.00	5.67	18.190	149.200	143	95.5	NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7	18584.600	12357.957	1.00	6.07	18.798	12.500	12.4	99.2	NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9	21238.238	12357.957	1.00	6.10	21.482	149.200	141	94.7	NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7	21372.000	12357.957	1.00	6.40	21.618	12.500	11.8	94.8	NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9	18235.002	12357.957	1.00	6.28	18.445	149.200	146	97.9	NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8	19888.031	12357.957	1.00	6.43	20.117	149.200	142	95.1	NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	6418.566	6418.566	1.00	1.32	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9	12759.386	12759.386	1.00	3.06	12.500	12.500	12.5	100.0	NO		
120	1...	13C8-PFOA	420.9 > 376.0	10678.431	10678.431	1.00	4.18	12.500	12.500	12.5	100.0	NO		
121	1...	18O2-PFHxS	403.0 > 103	1015.333	1015.333	1.00	3.81	12.500	12.500	12.5	100.0	NO		
122	1...	13C9-PFNA	472.2 > 426.9	13039.897	13039.897	1.00	4.62	12.500	12.500	12.5	100.0	NO		
123	1...	13C4-PFOS	503 > 79.7	2998.093	2998.093	1.00	4.71	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7	13126.874	13126.874	1.00	5.01	12.500	12.500	12.5	100.0	NO		
125	1...	13C7-PFUdA	570.1 > 524.8	12357.957	12357.957	1.00	5.33	12.500	12.500	12.5	100.0	NO		

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Dataset: Untitled

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
1	1 200723P1-01	IPA	23-Jul-20	09:57:35
2	2 200723P1-02	IPA	23-Jul-20	10:08:02
3	3 200723P1-03	TESTER	23-Jul-20	10:18:40
4	4 200723P1-04	IPA	23-Jul-20	10:29:16
5	5 200723P1-05	ST200723P1-1 PFC CS-2 20G1601	23-Jul-20	10:39:51
6	6 200723P1-06	ST200723P1-2 PFC CS-1 20G1602	23-Jul-20	10:50:27
7	7 200723P1-07	ST200723P1-3 PFC CS0 20G1603	23-Jul-20	11:01:03
8	8 200723P1-08	ST200723P1-4 PFC CS1 20G1604	23-Jul-20	11:11:38
9	9 200723P1-09	ST200723P1-5 PFC CS2 20G1605	23-Jul-20	11:22:14
10	10 200723P1-10	ST200723P1-6 PFC CS3 20G1606	23-Jul-20	11:32:50
11	11 200723P1-11	ST200723P1-7 PFC CS4 20G1607	23-Jul-20	11:43:26
12	12 200723P1-12	ST200723P1-8 PFC CS5 20G1608	23-Jul-20	11:54:02
13	13 200723P1-13	ST200723P1-9 PFC CS6 20G1609	23-Jul-20	12:04:37
14	14 200723P1-14	ST200723P1-10 PFC CS7 20G1610	23-Jul-20	12:15:13
15	15 200723P1-15	IB	23-Jul-20	12:25:49
16	16 200723P1-16	ICV200723P1-1 PFC ICV 20G1611	23-Jul-20	12:36:25
17	17 200723P1-17	IB	23-Jul-20	12:47:00
18	18 200723P1-18	2001444-03 TW22S-20200709 0.25879	23-Jul-20	12:57:36
19	19 200723P1-19	2001444-08 TW14D-20200709 0.25801	23-Jul-20	13:08:12
20	20 200723P1-20	2001472-04 TW15D-20200710 0.28426	23-Jul-20	13:18:47
21	21 200723P1-21	2001444-02@10X TW27S-20200709 0.24775	23-Jul-20	13:29:24
22	22 200723P1-22	2001444-07@5X TW13D-20200709 0.26303	23-Jul-20	13:39:59
23	23 200723P1-23	2001472-02@10X TW23S-20200710 0.24184	23-Jul-20	13:50:35
24	24 200723P1-24	2001472-03@10X TW24S-20200710 0.25174	23-Jul-20	14:01:11
25	25 200723P1-25	B0G0144-BLK1 Method Blank 1	23-Jul-20	14:11:47
26	26 200723P1-26	B0G0144-BS1 OPR 1	23-Jul-20	14:22:13
27	27 200723P1-27	2001473-01 SBT20-01 (10.5-11) 1.12	23-Jul-20	14:32:49
28	28 200723P1-28	2001473-03 SBT20-05-(0.5-1) 1.13	23-Jul-20	14:43:25
29	29 200723P1-29	2001473-04 SBT20-05 (10.5-11) 1.1	23-Jul-20	14:54:01
30	30 200723P1-30	IB	23-Jul-20	15:04:37
31	31 200723P1-31	ST200723P1-11 PFC CS3 20G1606	23-Jul-20	15:15:13
32	32 200723P1-32	IB	23-Jul-20	15:25:39

Dataset: Untitled

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Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
33	33 200723P1-33	2001473-05 SBT20-04 (0.5-1) 1.17	23-Jul-20	15:36:16
34	34 200723P1-34	2001473-07 SBT20-04 (6-6.5) 1.21	23-Jul-20	15:46:52
35	35 200723P1-35	2001473-10 SOIL DUPLICATE A 1.19	23-Jul-20	15:57:27
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38	38 200723P1-38	2001473-14 SBT20-03 (0-1) 1.38	23-Jul-20	16:31:26
39	39 200723P1-39	2001473-15 SBT20-03 (10-10.5) 1.09	23-Jul-20	16:42:01
40	40 200723P1-40	2001473-17 SBT20-06 (0-1) 1.18	23-Jul-20	16:53:07
41	41 200723P1-41	2001473-18 SBT20-06 (13-13.5) 1.18	23-Jul-20	17:03:43
42	42 200723P1-42	2001473-20 SBT20-01 (0.5-1) 1.16	23-Jul-20	17:14:19
43	43 200723P1-43	IB	23-Jul-20	17:24:55
44	44 200723P1-44	ST200723P1-12 PFC CS3 20G1606	23-Jul-20	17:35:31
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46	46 200723P1-46	B0G0137-BLK1 Method Blank 0.125	23-Jul-20	17:56:42
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56	56 200723P1-56	2001479-09 OUTFALL 14 0.11185	23-Jul-20	19:42:22
57	57 200723P1-57	2001479-10 OUTFALL 03 0.11497	23-Jul-20	19:52:59
58	58 200723P1-58	IB	23-Jul-20	20:03:34
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60	60 200723P1-60	IB	23-Jul-20	20:24:46
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66	66 200723P1-66	IB	23-Jul-20	21:28:12
67	67 200723P1-67	2001499-03 Final Eff FB 0.24356	23-Jul-20	21:38:47
68	68 200723P1-68	2001499-04 Final Eff Dup 0.2363	23-Jul-20	21:49:23

Vista Analytical Laboratory

Dataset: Untitled

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Compound name: PFBA

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70	70 200723P1-70	IB	23-Jul-20	22:10:35
71	71 200723P1-71	2001427-02 Phase 4, Sample 4 0.08972	23-Jul-20	22:21:10
72	72 200723P1-72	IB	23-Jul-20	22:31:46
73	73 200723P1-73	B0G0178-BLK1 Method Blank 1.25	23-Jul-20	22:42:22
74	74 200723P1-74	B0G0178-BS1 OPR 1.25	23-Jul-20	22:52:48
75	75 200723P1-75	2001415-01RE1 Annual 121.14	23-Jul-20	23:03:25
76	76 200723P1-76	IB	23-Jul-20	23:14:00
77	77 200723P1-77	B0G0189-BLK1 Method Blank 1	23-Jul-20	23:24:36
78	78 200723P1-78	B0G0189-BS1 OPR 1	23-Jul-20	23:35:12
79	79 200723P1-79	2001247-01RE3 Ahlquist 33.85	23-Jul-20	23:45:48
80	80 200723P1-80	IB	23-Jul-20	23:56:23
81	81 200723P1-81	ST200723P1-14 PFC CS3 20G1606	24-Jul-20	00:06:59
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Last Altered: Friday, July 24, 2020 08:16:32 Pacific Daylight Time
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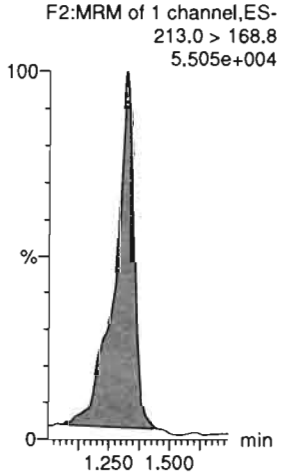

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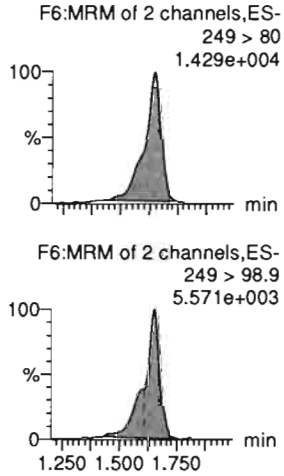
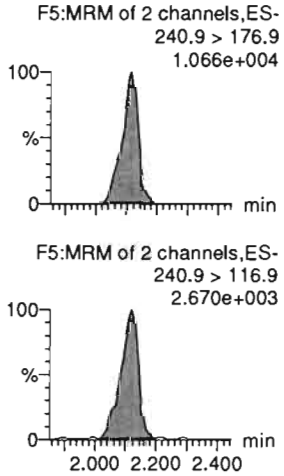


3:3 FTCA



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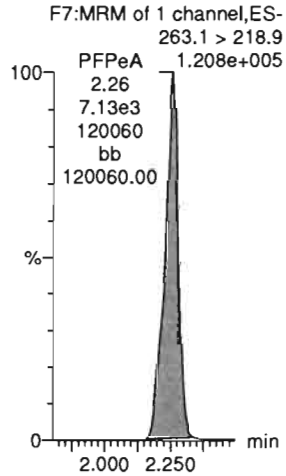

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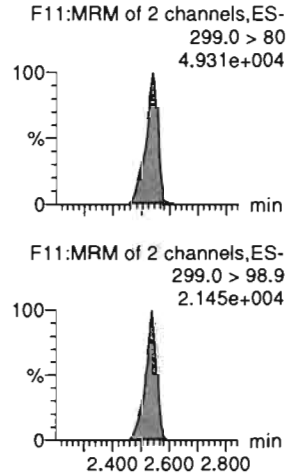
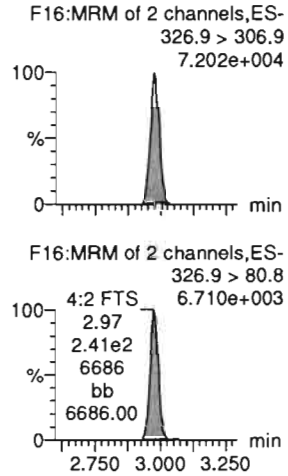


4:2 FTS



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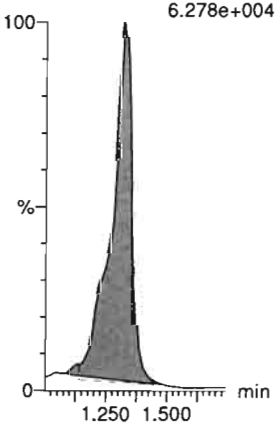

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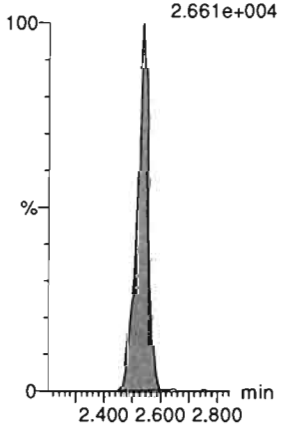

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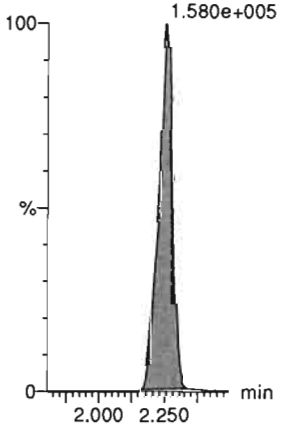

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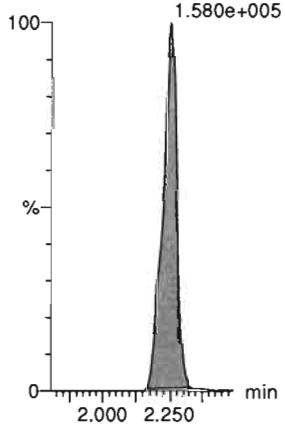

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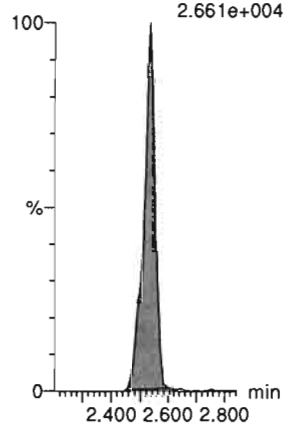

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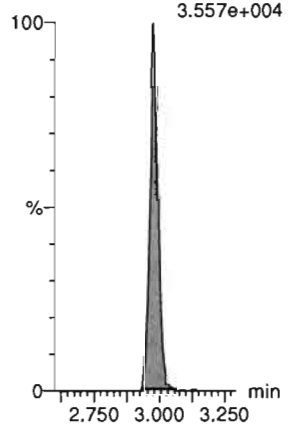

OPV 7/24/2020

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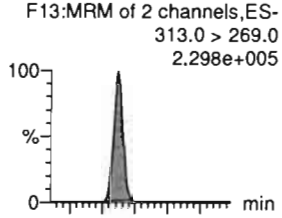

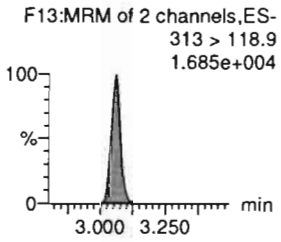

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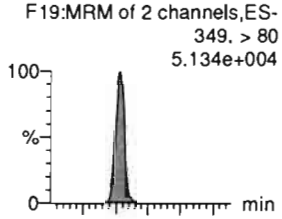
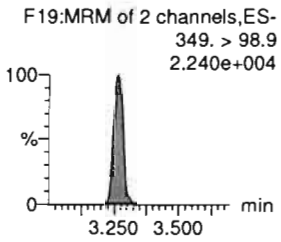
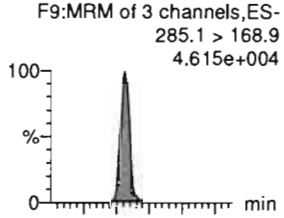
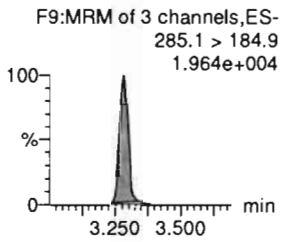


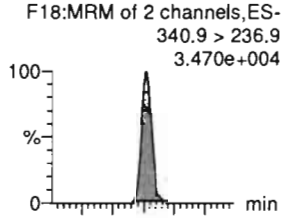


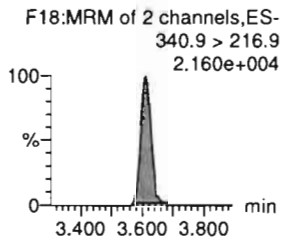
HFPO-DA





5:3 FTCA





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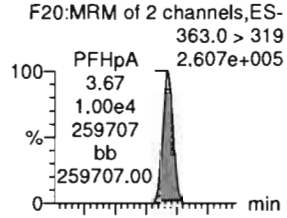

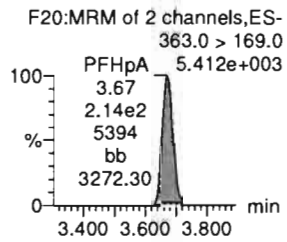

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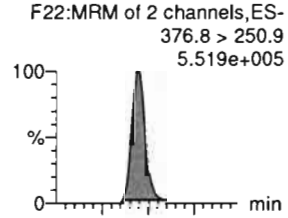

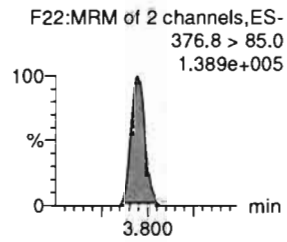

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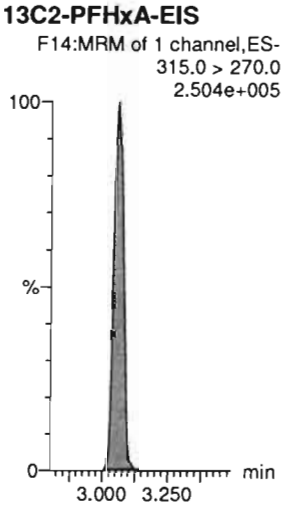

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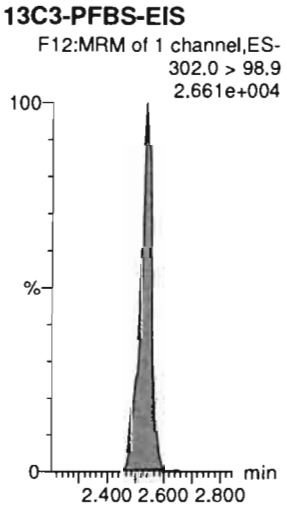

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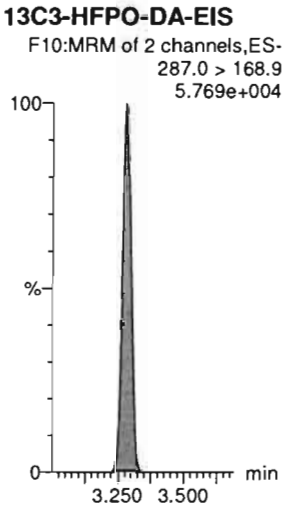

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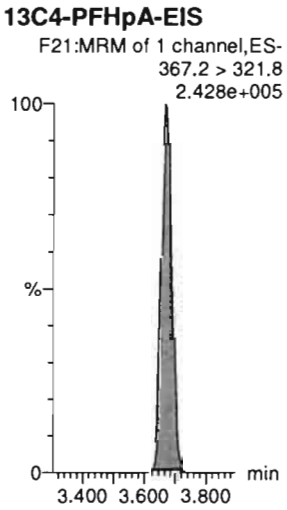

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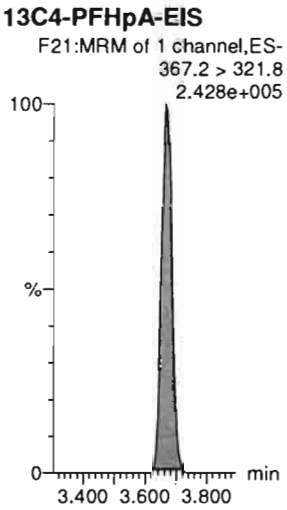

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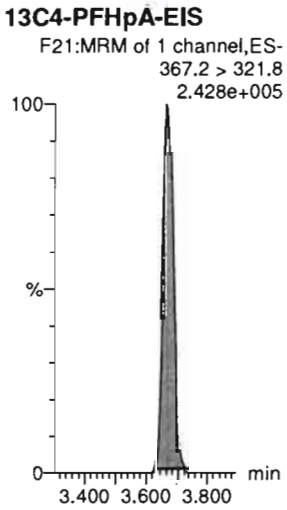

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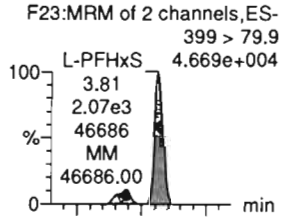
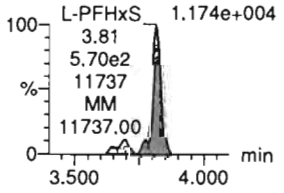
L-PFHxS





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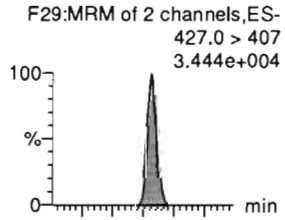

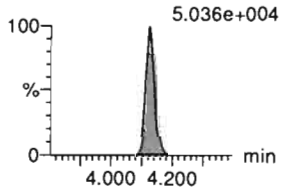

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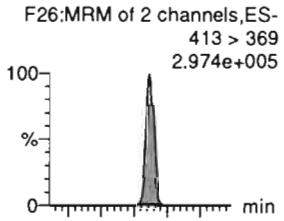

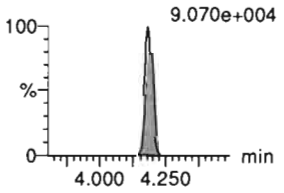

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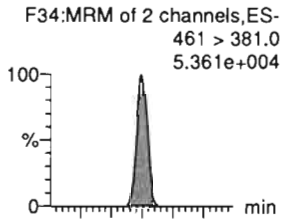

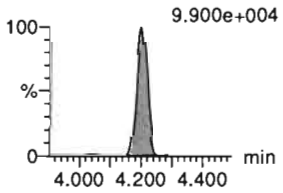

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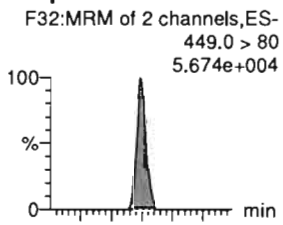
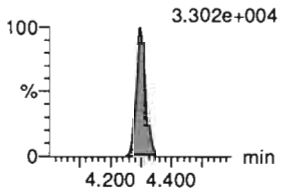
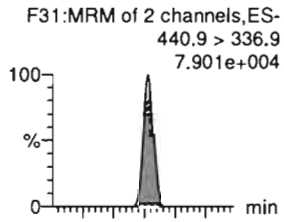
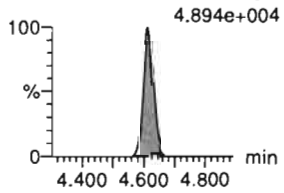


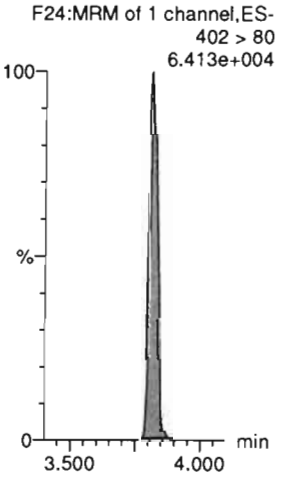


7:3 FTCA

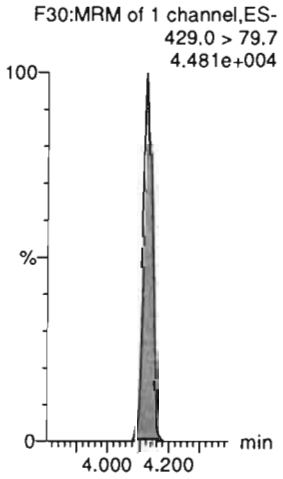




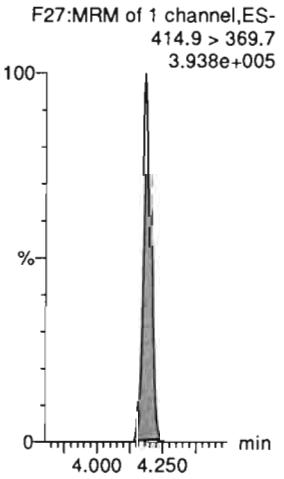
13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



13C2-PFOA-EIS



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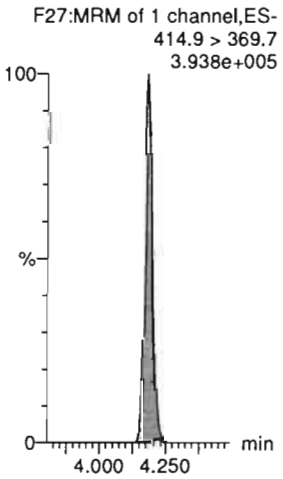
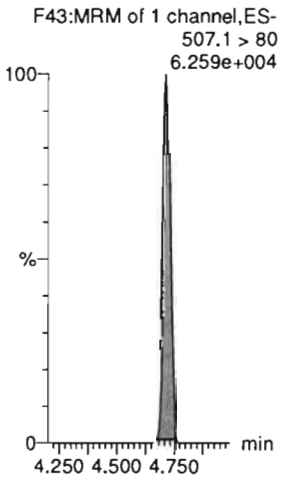
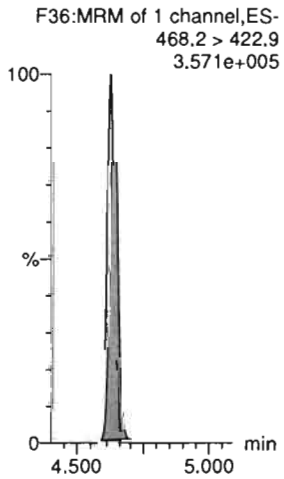


13C8-PFOS-EIS



13C5-PFNA-EIS



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Printed: Friday, July 24, 2020 08:17:44 Pacific Daylight Time

Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

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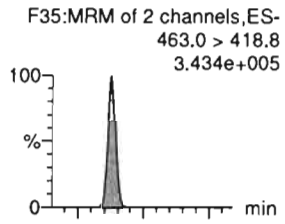

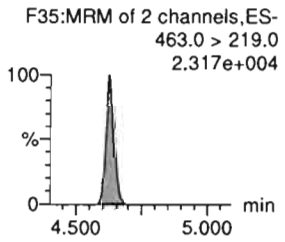

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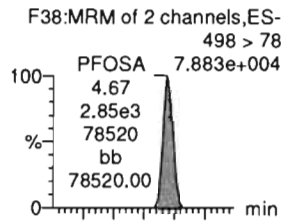
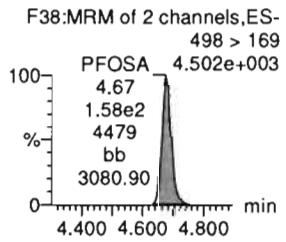
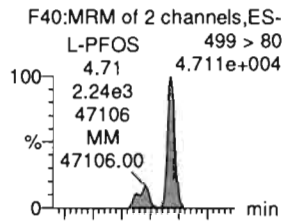
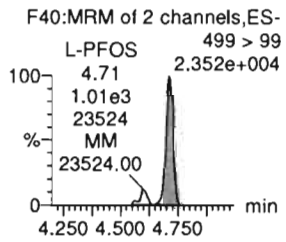


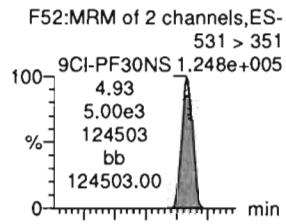


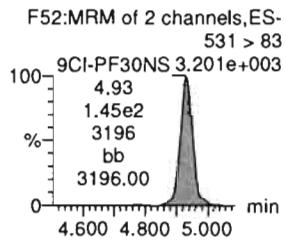
L-PFOS



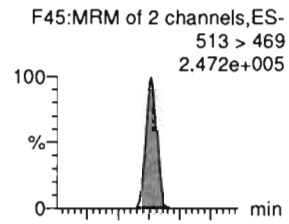


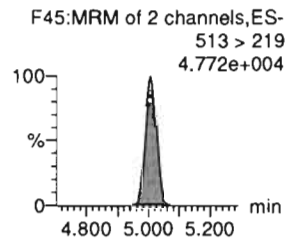
9Cl-PF30NS



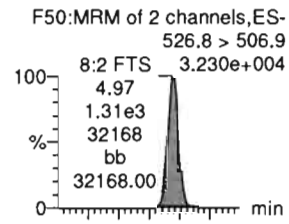


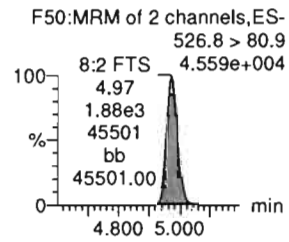
PFDA



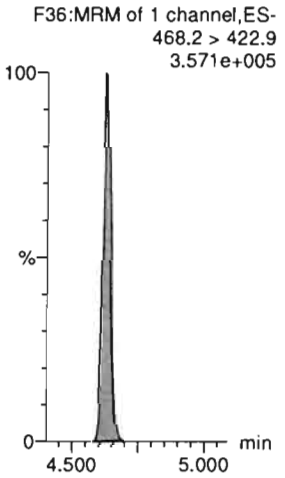


8:2 FTS

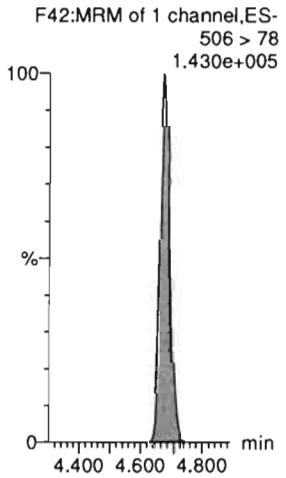




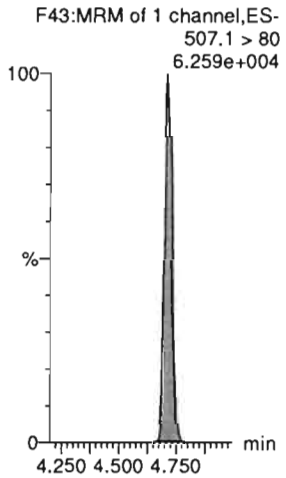
13C5-PFNA-EIS



13C8-PFOSA-EIS



13C8-PFOS-EIS



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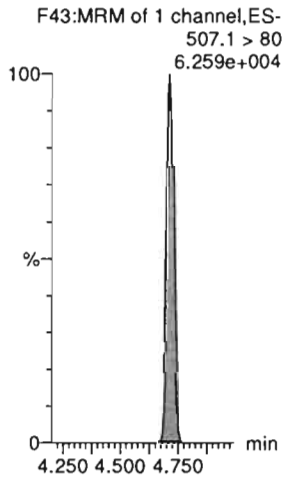
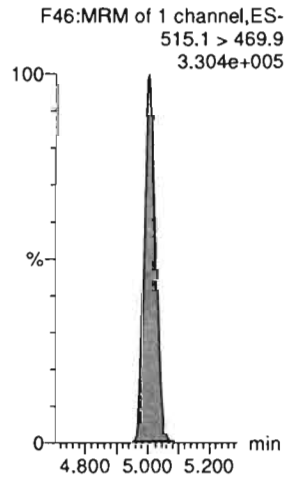
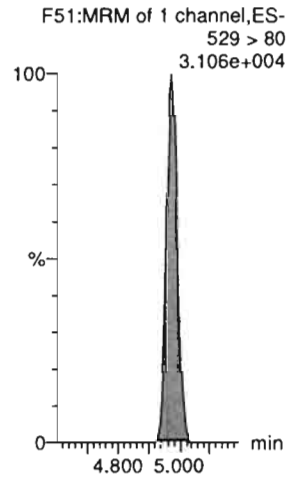


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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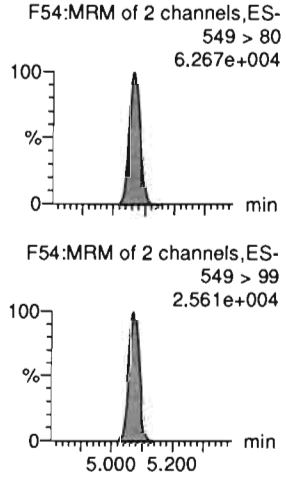

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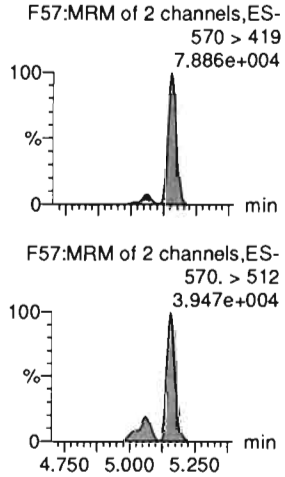

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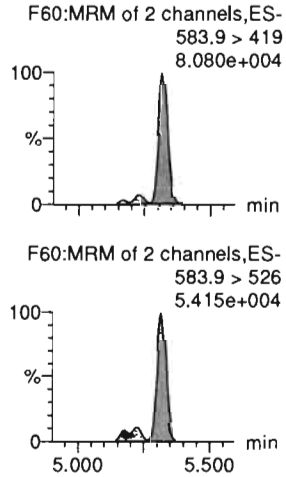
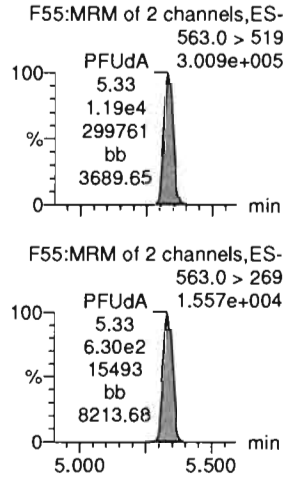


PFUdA



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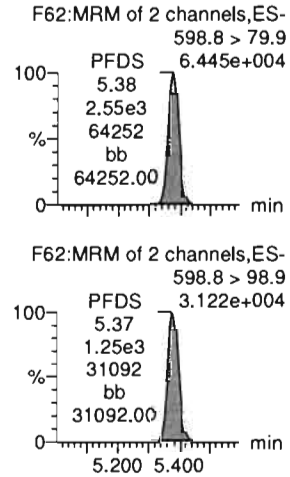
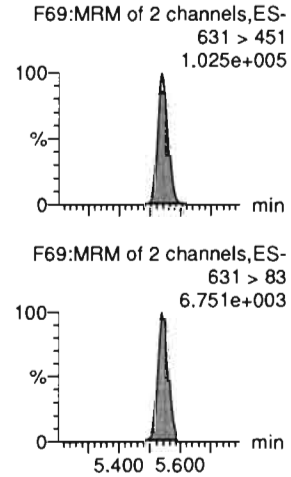
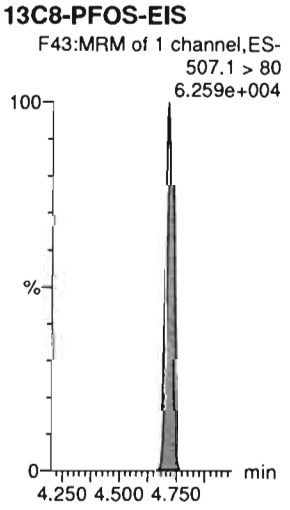


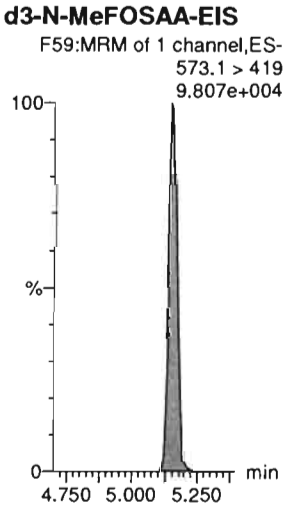
11Cl-PF30UdS



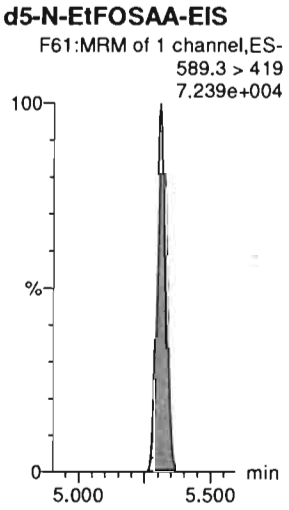
13C8-PFOS-EIS



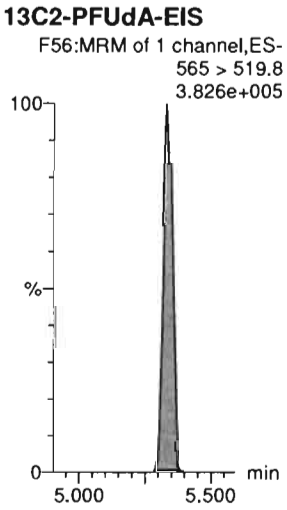
d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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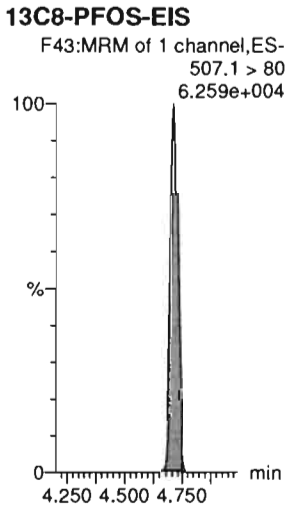

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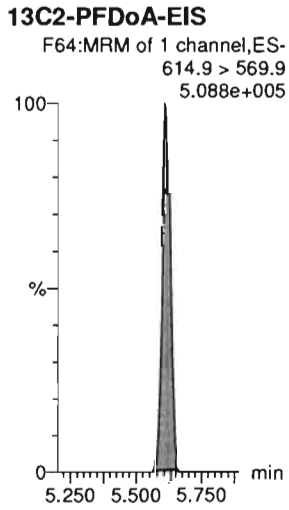

OPV 7/24/2020

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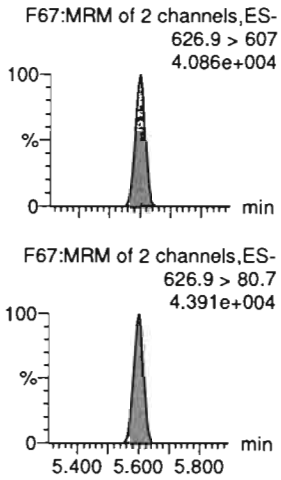
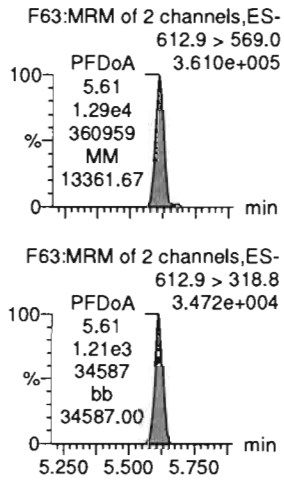
Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

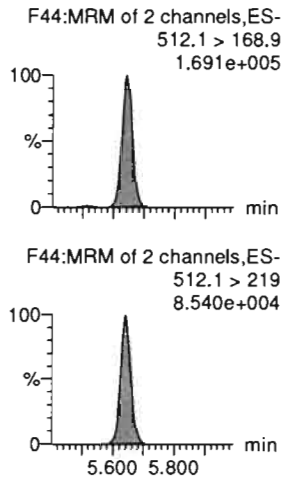
10:2 FTS



PFDoA



N-MeFOSA



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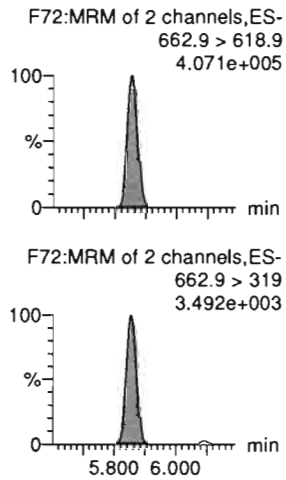

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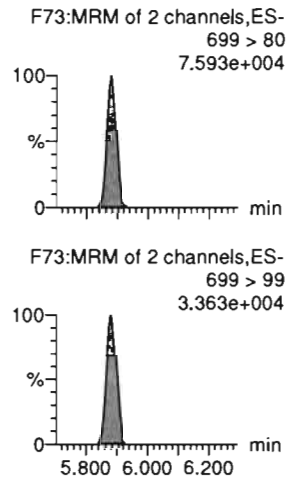

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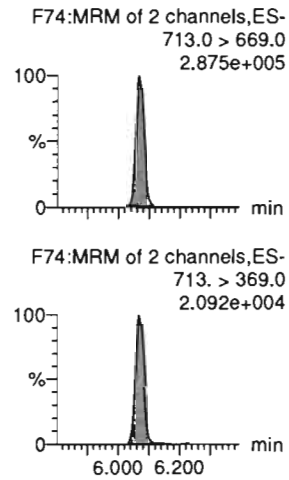
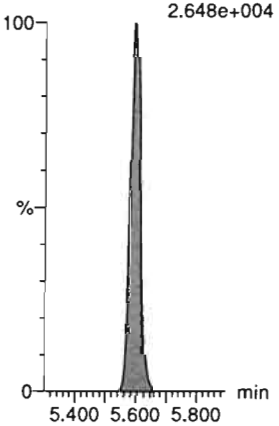
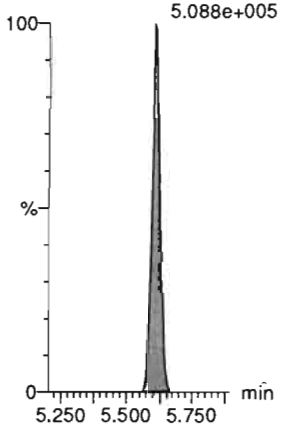


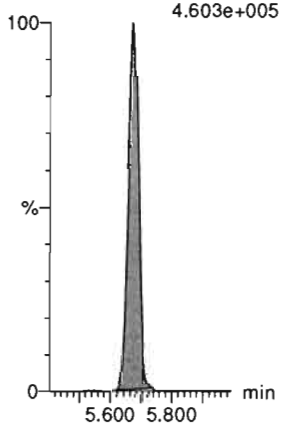
13C2-10:2 FTS-EIS



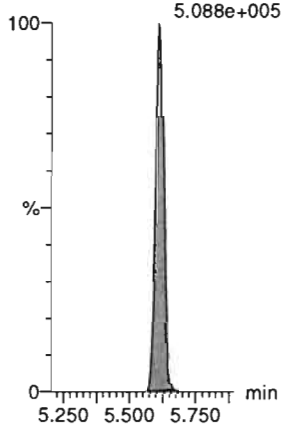
13C2-PFDoA-EIS



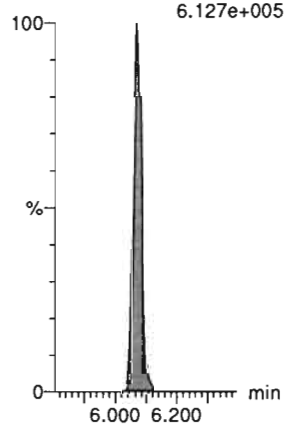
d3-N-MeFOSA-EIS



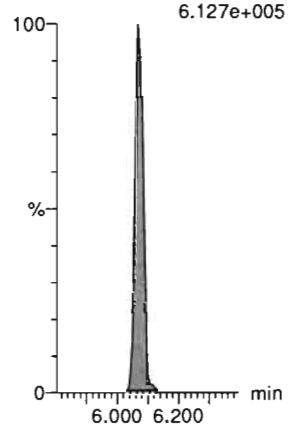
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



OPV 7/24/2020

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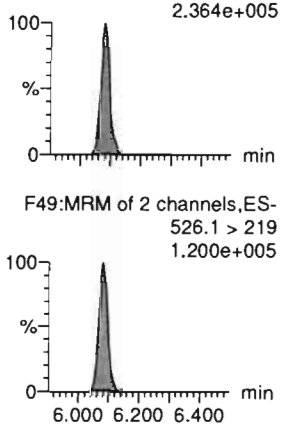
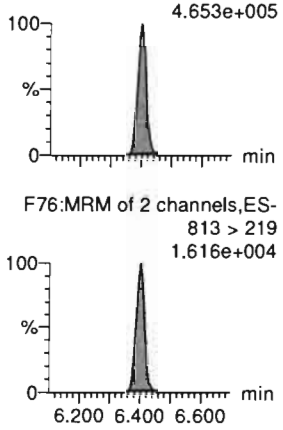
Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

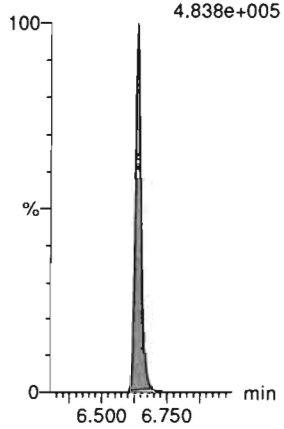
N-EtFOSA



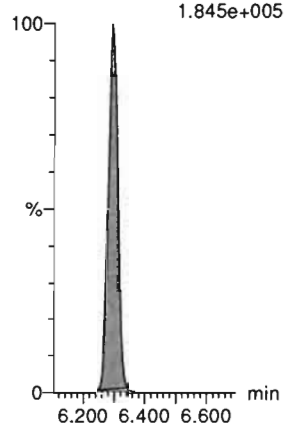
PFHxDA



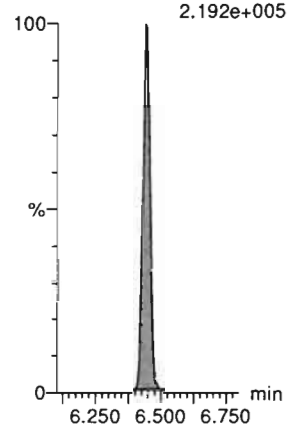
PFODA



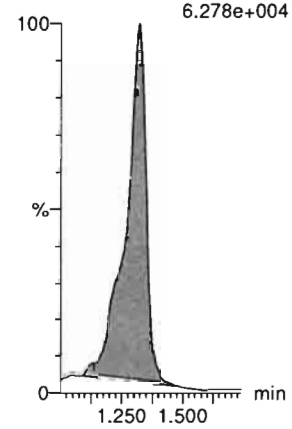
N-MeFOSE



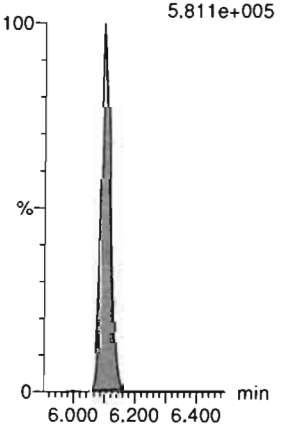
N-EtFOSE



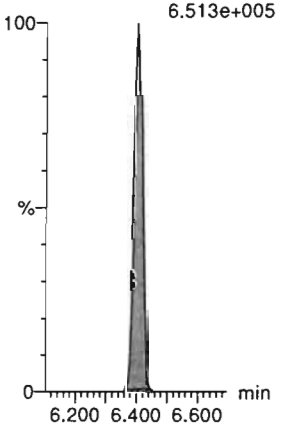
13C3-PFBA-RSD



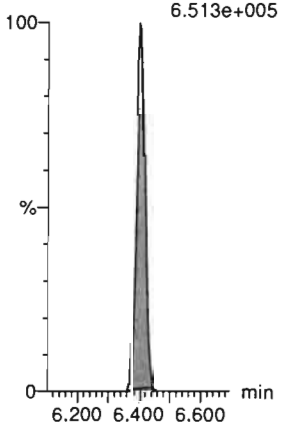
d5-N-ETFOSA-EIS



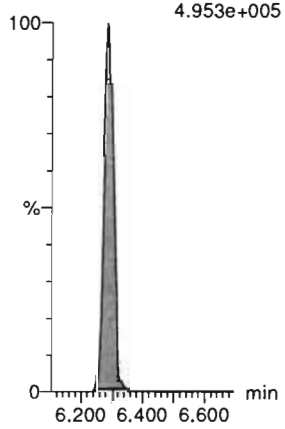
13C2-PFHxDA-EIS



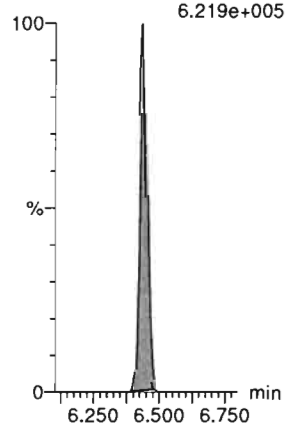
13C2-PFHxDA-EIS



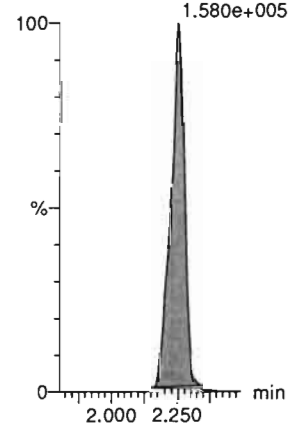
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



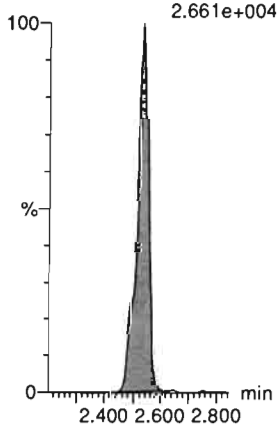
OPV 7/24/2020

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-31.qld

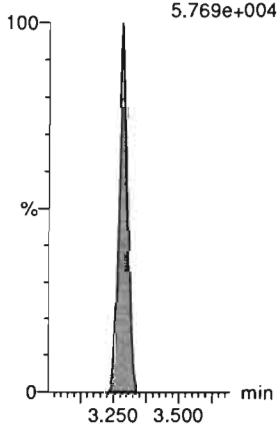
Last Altered: Friday, July 24, 2020 08:16:32 Pacific Daylight Time
Printed: Friday, July 24, 2020 08:17:44 Pacific Daylight Time

Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

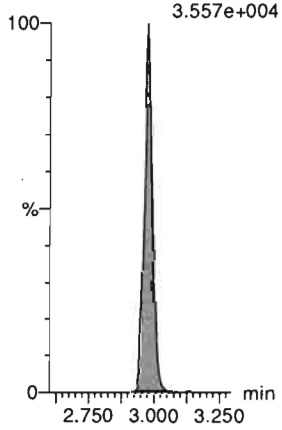
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.661e+004



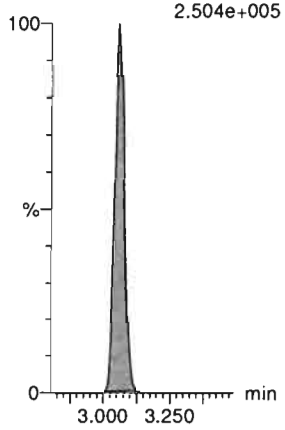
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.769e+004



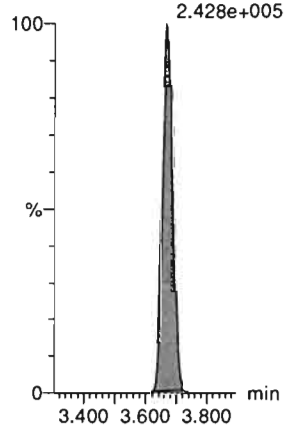
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.557e+004



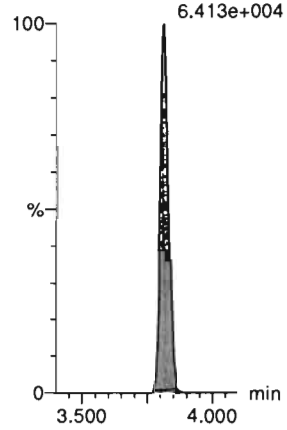
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.504e+005



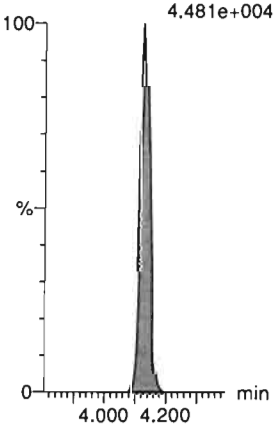
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.428e+005



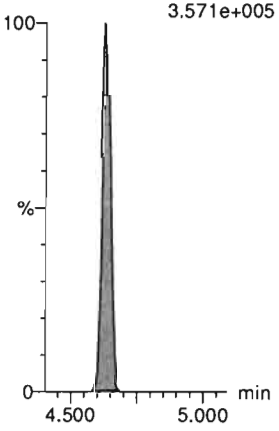
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.413e+004



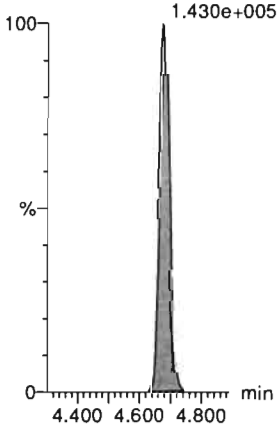
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.481e+004



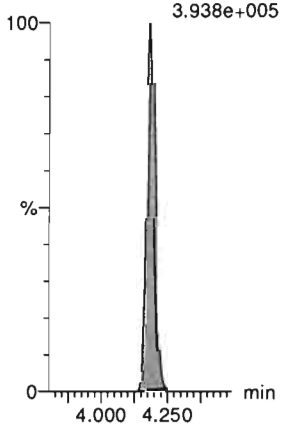
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.571e+005



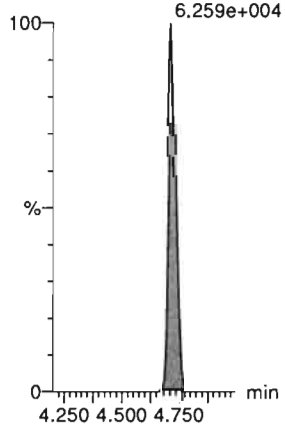
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.430e+005



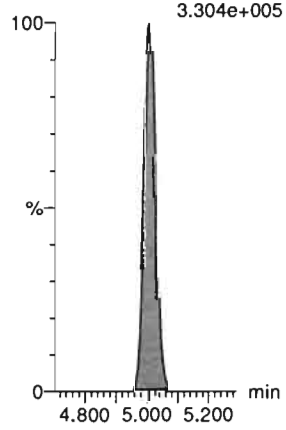
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.938e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.259e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.304e+005

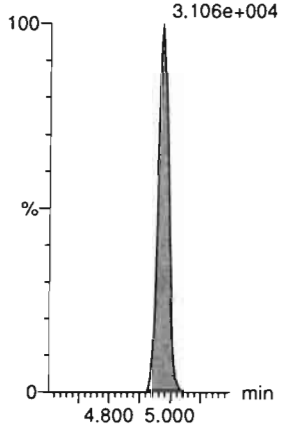


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-31.qld

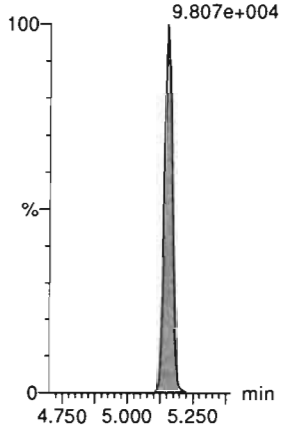
Last Altered: Friday, July 24, 2020 08:16:32 Pacific Daylight Time
Printed: Friday, July 24, 2020 08:17:44 Pacific Daylight Time

Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

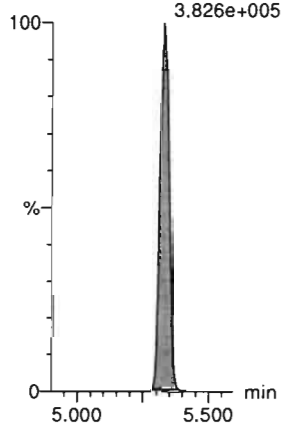
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.106e+004



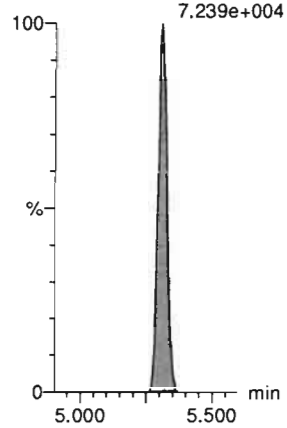
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
9.807e+004



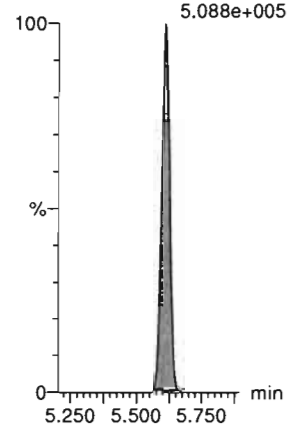
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.826e+005



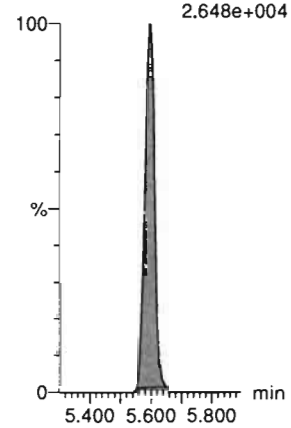
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.239e+004



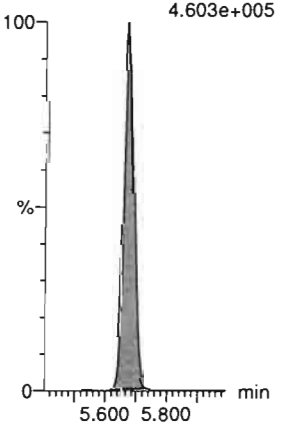
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
5.088e+005



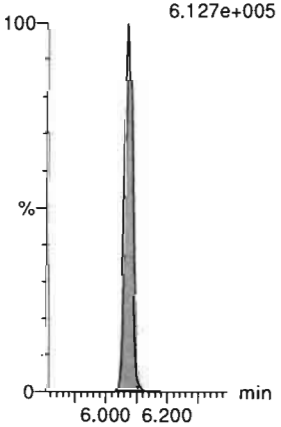
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.648e+004



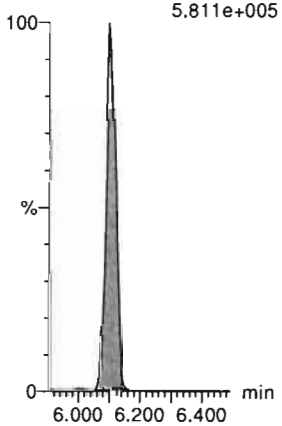
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.603e+005



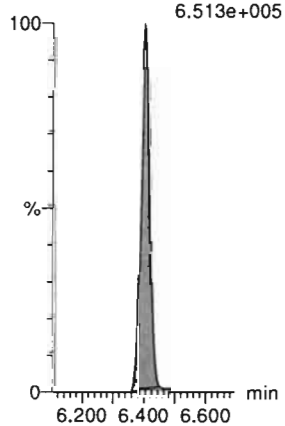
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
6.127e+005



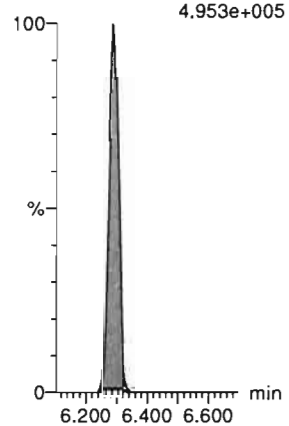
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.811e+005



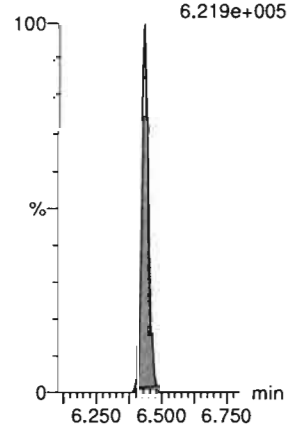
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.513e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.953e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
6.219e+005



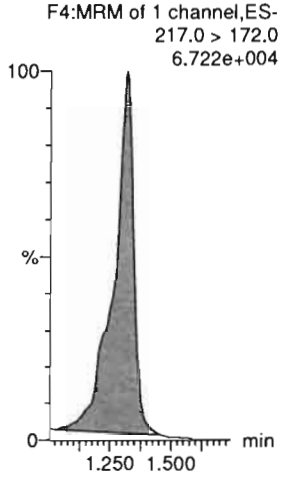
OPV 7/24/2020

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-31.qld

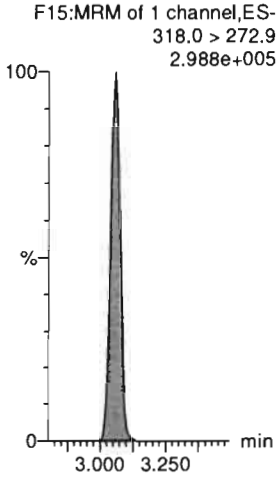
Last Altered: Friday, July 24, 2020 08:16:32 Pacific Daylight Time
Printed: Friday, July 24, 2020 08:17:44 Pacific Daylight Time

Name: 200723P1-31, Date: 23-Jul-2020, Time: 15:15:13, ID: ST200723P1-11 PFC CS3 20G1606, Description: PFC CS3 20G1606

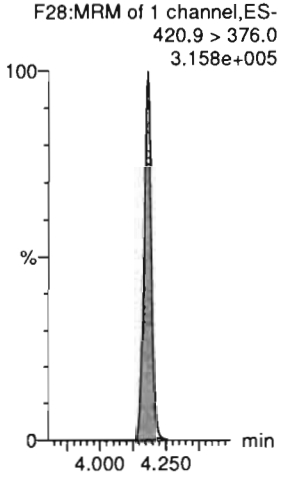
13C4-PFBA



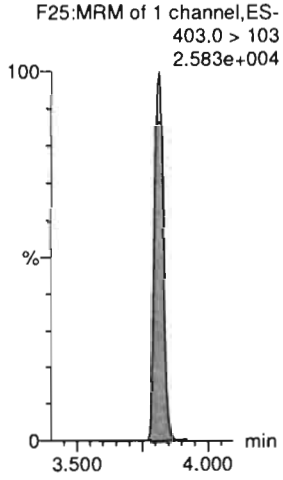
13C5-PFHxA



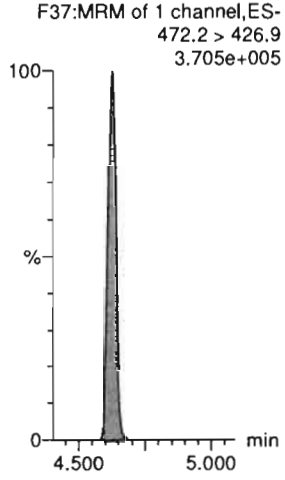
13C8-PFOA



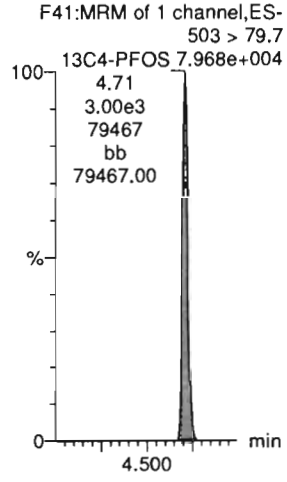
18O2-PFHxS



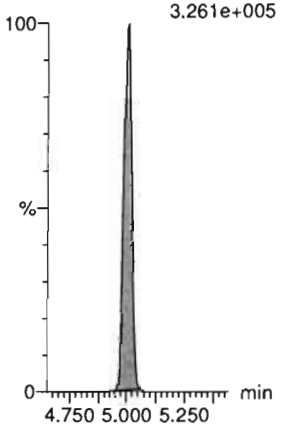
13C9-PFNA



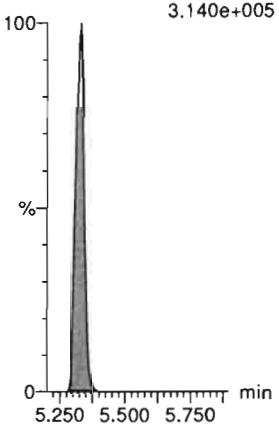
13C4-PFOS



13C6-PFDA



13C7-PFUdA



OPV 7/24/2020

INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

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

High Points
3:3 FTCA: 100
5:3 FTCA:
7:3 FTCA:
10:2 FTS: 250

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:18:57 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 10:17:36
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

JA 7/22/20

Compound name: PFBA
Correlation coefficient: r = 0.999865, r^2 = 0.999730
Calibration curve: 1.0627 * x + 0.00186178
Response type: Internal Std (Ref 47), 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 200721P1-05	Standard	0.250	1.35	92.904	3878.062	0.299	0.3	12.0	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	1.35	169.051	4008.438	0.527	0.5	-1.1	NO	1.000	NO	MM
3	3 200721P1-07	Standard	1.000	1.35	347.888	3915.660	1.111	1.0	4.3	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	1.35	696.903	3993.723	2.181	2.1	2.5	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	1.35	1565.135	3916.714	4.995	4.7	-6.0	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	1.35	3270.551	4170.579	9.802	9.2	-7.8	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	1.35	15581.573	3872.614	50.294	47.3	-5.4	NO	1.000	NO	MM
8	8 200721P1-12	Standard	100.000	1.35	34386.258	4024.432	106.805	100.5	0.5	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	1.35	91162.719	4265.257	267.167	251.4	0.6	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	1.35	75639.406	1773.267	533.192	501.7	0.3	NO	1.000	NO	MM

Compound name: PFPrS
Coefficient of Determination: R^2 = 0.999467
Calibration curve: 0.00027182 * x^2 + 0.879061 * x + -0.0543474
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 200721P1-05	Standard	0.250	1.67	19.635	1203.196	0.204	0.3	17.5	NO	0.999	NO	MM
2	2 200721P1-06	Standard	0.500	1.68	28.378	1187.373	0.299	0.4	-19.7	NO	0.999	NO	MM
3	3 200721P1-07	Standard	1.000	1.67	68.890	1204.610	0.715	0.9	-12.5	NO	0.999	NO	MM
4	4 200721P1-08	Standard	2.000	1.67	165.310	1159.111	1.783	2.1	4.4	NO	0.999	NO	MM
5	5 200721P1-09	Standard	5.000	1.68	440.113	1194.640	4.605	5.3	5.8	NO	0.999	NO	MM
6	6 200721P1-10	Standard	10.000	1.67	839.257	1211.547	8.659	9.9	-1.2	NO	0.999	NO	MM
7	7 200721P1-11	Standard	50.000	1.67	4610.068	1196.104	48.178	54.0	7.9	NO	0.999	NO	MM
8	8 200721P1-12	Standard	100.000	1.68	8836.013	1226.347	90.064	99.5	-0.5	NO	0.999	NO	MM
9	9 200721P1-13	Standard	250.000	1.67	23056.979	1248.294	230.885	244.3	-2.3	NO	0.999	NO	MM
10	10 200721P1-14	Standard	500.000	1.68	20094.508	492.436	510.079	502.3	0.5	NO	0.999	NO	MM

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Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999077
Calibration curve: 4.34079e-008 * x^2 + 0.0740847 * x + -0.0045988
Response type: Internal Std (Ref 49), 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 200721P1-05	Standard	0.250	2.12	7.975	9181.344	0.011	0.2	-16.5	NO	0.999	NO	MM
2	2 200721P1-06	Standard	0.500	2.14	15.716	9117.475	0.022	0.4	-29.4	NO	0.999	NO	MM
3	3 200721P1-07	Standard	1.000	2.14	63.310	8957.632	0.088	1.3	25.5	NO	0.999	NO	MM
4	4 200721P1-08	Standard	2.000	2.14	105.951	9127.859	0.145	2.0	1.0	NO	0.999	NO	MM
5	5 200721P1-09	Standard	5.000	2.14	264.087	9449.793	0.349	4.8	-4.5	NO	0.999	NO	MM
6	6 200721P1-10	Standard	10.000	2.14	537.151	9286.656	0.723	9.8	-1.8	NO	0.999	NO	MM
7	7 200721P1-11	Standard	50.000	2.14	2861.284	9557.008	3.742	50.6	1.2	NO	0.999	NO	MM
8	8 200721P1-12	Standard	100.000	2.14	5838.371	9882.177	7.385	99.7	-0.3	NO	0.999	NO	MM
9	9 200721P1-13	Standard	250.000	2.14	3071.413	10006.371	3.837	51.9	-79.3	YES	0.999	NO	MMX
10	10 200721P1-14	Standard	500.000	2.14	2556.303	4142.414	7.714	104.2	-79.2	YES	0.999	NO	MMX

Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999956
Calibration curve: 0.000104361 * x^2 + 0.929886 * x + 0.0253014
Response type: Internal Std (Ref 49), 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 200721P1-05	Standard	0.250	2.28	189.710	9181.344	0.258	0.3	0.2	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	2.28	358.610	9117.475	0.492	0.5	0.3	NO	1.000	NO	MM
3	3 200721P1-07	Standard	1.000	2.28	692.313	8957.632	0.966	1.0	1.2	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	2.28	1431.931	9127.859	1.961	2.1	4.1	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	2.28	3753.986	9449.793	4.966	5.3	6.2	NO	1.000	NO	MM
6	6 200721P1-10	Standard	10.000	2.28	6942.148	9286.656	9.344	10.0	0.1	NO	1.000	NO	MM
7	7 200721P1-11	Standard	50.000	2.28	35544.559	9557.008	46.490	49.7	-0.6	NO	1.000	NO	MM
8	8 200721P1-12	Standard	100.000	2.28	73659.953	9882.177	93.173	99.1	-0.9	NO	1.000	NO	MM
9	9 200721P1-13	Standard	250.000	2.28	192275.969	10006.371	240.192	251.2	0.5	NO	1.000	NO	MM
10	10 200721P1-14	Standard	500.000	2.28	162606.172	4142.414	490.675	499.6	-0.1	NO	1.000	NO	MM

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Compound name: PFBS
Coefficient of Determination: R^2 = 0.999934
Calibration curve: 0.000491179 * x^2 + 2.5166 * x + 0.0412773
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 200721P1-05	Standard	0.250	2.55	60.267	1203.196	0.626	0.2	-7.0	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	2.56	133.904	1187.373	1.410	0.5	8.7	NO	1.000	NO	MM
3	3 200721P1-07	Standard	1.000	2.56	231.117	1204.610	2.398	0.9	-6.4	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	2.56	492.090	1159.111	5.307	2.1	4.6	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	2.56	1252.818	1194.640	13.109	5.2	3.7	NO	1.000	NO	MM
6	6 200721P1-10	Standard	10.000	2.56	2507.861	1211.547	25.875	10.2	2.4	NO	1.000	NO	MM
7	7 200721P1-11	Standard	50.000	2.56	12214.816	1196.104	127.652	50.2	0.4	NO	1.000	NO	MM
8	8 200721P1-12	Standard	100.000	2.56	25391.625	1226.347	258.814	100.8	0.8	NO	1.000	NO	MM
9	9 200721P1-13	Standard	250.000	2.56	65206.480	1248.294	652.956	247.5	-1.0	NO	1.000	NO	MM
10	10 200721P1-14	Standard	500.000	2.56	54526.004	492.436	1384.089	501.0	0.2	NO	1.000	NO	MM

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999628
Calibration curve: -0.000407561 * x^2 + 2.66264 * x + -0.0289778
Response type: Internal Std (Ref 55), 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 200721P1-05	Standard	0.250	2.99	66.892	1226.205	0.682	0.3	6.8	NO	1.000	NO	bb
2	2 200721P1-06	Standard	0.500	3.00	144.446	1370.541	1.317	0.5	1.1	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	2.99	302.132	1368.020	2.761	1.0	4.8	NO	1.000	NO	bb
4	4 200721P1-08	Standard	2.000	2.99	547.708	1424.864	4.805	1.8	-9.2	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	2.99	1485.377	1425.193	13.028	4.9	-1.9	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	2.99	2795.677	1361.082	25.675	9.7	-3.3	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	3.00	13158.548	1284.530	128.048	48.5	-3.1	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	2.99	27239.781	1322.747	257.417	98.2	-1.8	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	2.99	63307.891	1202.974	657.827	257.2	2.9	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	3.00	55402.285	566.745	1221.940	496.7	-0.7	NO	1.000	NO	bb

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Compound name: PFHxA
Correlation coefficient: r = 0.999880, r^2 = 0.999760
Calibration curve: 1.06654 * x + 0.0486754
Response type: Internal Std (Ref 57), 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 200721P1-05	Standard	0.250	3.08	303.209	10261.329	0.369	0.3	20.3	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	3.08	485.647	10117.663	0.600	0.5	3.4	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	3.08	911.228	10120.983	1.125	1.0	1.0	NO	1.000	NO	bb
4	4 200721P1-08	Standard	2.000	3.08	1739.041	10280.524	2.114	1.9	-3.2	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	3.08	4679.605	10709.876	5.462	5.1	1.5	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	3.08	8912.254	10682.253	10.429	9.7	-2.7	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	3.08	43774.020	10473.296	52.245	48.9	-2.1	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	3.08	96895.266	11233.097	107.823	101.1	1.1	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	3.08	233950.781	11190.709	261.323	245.0	-2.0	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	3.08	206534.297	4790.834	538.879	505.2	1.0	NO	1.000	NO	bb

Compound name: PFPeS
Correlation coefficient: r = 0.998944, r^2 = 0.997889
Calibration curve: 2.06969 * x + -0.0287236
Response type: Internal Std (Ref 51), 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 200721P1-05	Standard	0.250	3.27	36.010	1203.196	0.374	0.2	-22.1	NO	0.998	NO	bb
2	2 200721P1-06	Standard	0.500	3.28	99.009	1187.373	1.042	0.5	3.5	NO	0.998	NO	bb
3	3 200721P1-07	Standard	1.000	3.28	171.110	1204.610	1.776	0.9	-12.8	NO	0.998	NO	bb
4	4 200721P1-08	Standard	2.000	3.28	442.885	1159.111	4.776	2.3	16.1	NO	0.998	NO	bb
5	5 200721P1-09	Standard	5.000	3.28	1054.423	1194.640	11.033	5.3	6.9	NO	0.998	NO	bb
6	6 200721P1-10	Standard	10.000	3.28	2086.539	1211.547	21.528	10.4	4.2	NO	0.998	NO	bb
7	7 200721P1-11	Standard	50.000	3.28	10147.521	1196.104	106.048	51.3	2.5	NO	0.998	NO	bb
8	8 200721P1-12	Standard	100.000	3.28	20385.258	1226.347	207.784	100.4	0.4	NO	0.998	NO	bb
9	9 200721P1-13	Standard	250.000	3.28	47949.973	1248.294	480.155	232.0	-7.2	NO	0.998	NO	bb
10	10 200721P1-14	Standard	500.000	3.28	42023.344	492.436	1066.721	515.4	3.1	NO	0.998	NO	bb

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Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.999565
Calibration curve: -4.3013e-005 * x^2 + 1.02492 * x + 0.0423417
Response type: Internal Std (Ref 53), 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	200721P1-05	Standard	0.250	3.30	50.588	1960.722	0.323	0.3	9.3	NO	1.000	NO	bb
2	2	200721P1-06	Standard	0.500	3.29	100.082	2058.258	0.608	0.6	10.3	NO	1.000	NO	bb
3	3	200721P1-07	Standard	1.000	3.30	157.743	1899.823	1.038	1.0	-2.9	NO	1.000	NO	bb
4	4	200721P1-08	Standard	2.000	3.30	302.422	1990.732	1.899	1.8	-9.4	NO	1.000	NO	bb
5	5	200721P1-09	Standard	5.000	3.30	952.855	1965.079	6.061	5.9	17.5	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	3.30	1718.854	2244.853	9.571	9.3	-7.0	NO	1.000	NO	bb
7	7	200721P1-11	Standard	50.000	3.30	8659.099	2116.604	51.138	50.0	-0.1	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	3.30	17904.256	2252.438	99.360	97.3	-2.7	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	3.30	44808.887	2171.224	257.970	254.4	1.7	NO	1.000	NO	bb
10	10	200721P1-14	Standard	500.000	3.30	39087.949	976.977	500.113	498.3	-0.3	NO	1.000	NO	bb

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999834
Calibration curve: 7.26907e-005 * x^2 + 0.149845 * x + 0.00279886
Response type: Internal Std (Ref 59), 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	200721P1-05	Standard	0.250	3.62	37.873	10110.021	0.047	0.3	17.5	NO	1.000	NO	bb
2	2	200721P1-06	Standard	0.500	3.62	50.201	9486.345	0.066	0.4	-15.5	NO	1.000	NO	bb
3	3	200721P1-07	Standard	1.000	3.62	125.712	9610.576	0.164	1.1	7.2	NO	1.000	NO	bb
4	4	200721P1-08	Standard	2.000	3.62	224.857	9499.615	0.296	2.0	-2.3	NO	1.000	NO	bb
5	5	200721P1-09	Standard	5.000	3.62	592.755	9863.796	0.751	5.0	-0.4	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	3.62	1272.092	10424.336	1.525	10.1	1.1	NO	1.000	NO	bb
7	7	200721P1-11	Standard	50.000	3.62	6230.174	10175.216	7.654	49.9	-0.3	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	3.62	12540.844	9969.317	15.724	100.1	0.1	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	3.63	6331.277	9630.188	8.218	53.4	-78.6	YES	1.000	NO	bbX
10	10	200721P1-14	Standard	500.000	3.63	5588.018	4193.613	16.656	105.7	-78.9	YES	1.000	NO	bbX

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Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999793
Calibration curve: 5.95036e-005 * x^2 + 1.22196 * x + 0.0145496
Response type: Internal Std (Ref 59), 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 200721P1-05	Standard	0.250	3.67	223.788	10110.021	0.277	0.2	-14.2	NO	1.000	NO	bb
2	2 200721P1-06	Standard	0.500	3.68	527.669	9486.345	0.695	0.6	11.4	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	3.68	1064.157	9610.576	1.384	1.1	12.1	NO	1.000	NO	bb
4	4 200721P1-08	Standard	2.000	3.68	1881.977	9499.615	2.476	2.0	0.7	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	3.68	4920.959	9863.796	6.236	5.1	1.8	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	3.68	9740.231	10424.336	11.680	9.5	-4.6	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	3.69	48381.258	10175.216	59.435	48.5	-3.0	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	3.68	97032.977	9969.317	121.665	99.1	-0.9	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	3.68	242554.375	9630.188	314.836	254.5	1.8	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	3.68	209173.141	4193.613	623.487	498.1	-0.4	NO	1.000	NO	bb

Compound name: ADONA
Coefficient of Determination: R^2 = 0.999927
Calibration curve: 0.000167915 * x^2 + 2.29671 * x + 0.0064014
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	0.250	3.79	440.216	10110.021	0.544	0.2	-6.3	NO	1.000	NO	bb
2	2 200721P1-06	Standard	0.500	3.79	915.255	9486.345	1.206	0.5	4.5	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	3.79	1779.188	9610.576	2.314	1.0	0.5	NO	1.000	NO	bb
4	4 200721P1-08	Standard	2.000	3.79	3714.815	9499.615	4.888	2.1	6.3	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	3.79	9121.842	9863.796	11.560	5.0	0.6	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	3.79	18255.244	10424.336	21.890	9.5	-4.8	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	3.79	91948.422	10175.216	112.956	49.0	-2.0	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	3.79	186846.844	9969.317	234.277	101.3	1.3	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	3.79	451122.750	9630.188	585.558	250.4	0.1	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	3.79	399087.125	4193.613	1189.568	499.7	-0.1	NO	1.000	NO	bb

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999917
Calibration curve: 2.03395e-005 * x^2 + 1.18475 * x + 0.0134918
Response type: Internal Std (Ref 61), 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 200721P1-05	Standard	0.250	3.82	55.980	2294.339	0.305	0.2	-1.6	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	3.83	100.333	2377.996	0.527	0.4	-13.2	NO	1.000	NO	MM
3	3 200721P1-07	Standard	1.000	3.82	270.383	2403.637	1.406	1.2	17.5	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	3.82	470.786	2346.755	2.508	2.1	5.3	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	3.82	1061.082	2354.339	5.634	4.7	-5.1	NO	1.000	NO	MM
6	6 200721P1-10	Standard	10.000	3.83	2114.031	2286.915	11.555	9.7	-2.6	NO	1.000	NO	MM
7	7 200721P1-11	Standard	50.000	3.83	11014.865	2329.767	59.099	49.8	-0.3	NO	1.000	NO	MM
8	8 200721P1-12	Standard	100.000	3.82	21558.361	2278.486	118.271	99.6	-0.4	NO	1.000	NO	MM
9	9 200721P1-13	Standard	250.000	3.83	54102.914	2260.156	299.221	251.5	0.6	NO	1.000	NO	MM
10	10 200721P1-14	Standard	500.000	3.83	50346.496	1054.663	596.713	499.4	-0.1	NO	1.000	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999424
Calibration curve: 3.10652e-005 * x^2 + 0.960517 * x + 0.0121136
Response type: Internal Std (Ref 63), 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 200721P1-05	Standard	0.250	4.14	28.052	1503.743	0.233	0.2	-7.9	NO	0.999	NO	bb
2	2 200721P1-06	Standard	0.500	4.14	72.440	1583.574	0.572	0.6	16.5	NO	0.999	NO	bb
3	3 200721P1-07	Standard	1.000	4.14	93.971	1532.415	0.767	0.8	-21.5	NO	0.999	NO	MM
4	4 200721P1-08	Standard	2.000	4.14	250.394	1533.581	2.041	2.1	5.6	NO	0.999	NO	bb
5	5 200721P1-09	Standard	5.000	4.14	597.891	1498.827	4.986	5.2	3.6	NO	0.999	NO	bb
6	6 200721P1-10	Standard	10.000	4.14	1266.763	1532.265	10.334	10.7	7.4	NO	0.999	NO	bb
7	7 200721P1-11	Standard	50.000	4.14	5914.044	1536.075	48.126	50.0	0.0	NO	0.999	NO	bb
8	8 200721P1-12	Standard	100.000	4.14	12002.437	1500.094	100.014	103.8	3.8	NO	0.999	NO	bb
9	9 200721P1-13	Standard	250.000	4.14	27620.703	1471.818	234.580	242.3	-3.1	NO	0.999	NO	bb
10	10 200721P1-14	Standard	500.000	4.14	24924.227	634.471	491.043	503.0	0.6	NO	0.999	NO	bb

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Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999818
Calibration curve: -0.00011566 * x^2 + 0.972216 * x + 0.0565111
Response type: Internal Std (Ref 69), 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	200721P1-05	Standard	0.250	4.19	339.440	12197.543	0.348	0.3	19.9	NO	1.000	NO	MM
2	2	200721P1-06	Standard	0.500	4.19	611.056	13042.796	0.586	0.5	8.9	NO	1.000	NO	MM
3	3	200721P1-07	Standard	1.000	4.19	998.100	12132.295	1.028	1.0	-0.0	NO	1.000	NO	bb
4	4	200721P1-08	Standard	2.000	4.19	2068.941	12984.820	1.992	2.0	-0.5	NO	1.000	NO	bb
5	5	200721P1-09	Standard	5.000	4.19	4853.344	12222.608	4.963	5.1	1.0	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	4.19	9979.626	13330.769	9.358	9.6	-4.2	NO	1.000	NO	bb
7	7	200721P1-11	Standard	50.000	4.19	48048.121	12904.697	46.541	48.1	-3.8	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	4.19	93712.172	11993.592	97.669	101.6	1.6	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	4.20	227840.984	12004.084	237.254	251.5	0.6	NO	1.000	NO	bb
10	10	200721P1-14	Standard	500.000	4.19	202775.891	5553.123	456.446	499.1	-0.2	NO	1.000	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999605
Calibration curve: -1.07902e-005 * x^2 + 0.204772 * x + -0.0106092
Response type: Internal Std (Ref 69), 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	200721P1-05	Standard	0.250	4.21	43.998	12197.543	0.045	0.3	8.8	NO	1.000	NO	bb
2	2	200721P1-06	Standard	0.500	4.20	71.251	13042.796	0.068	0.4	-22.9	NO	1.000	NO	bb
3	3	200721P1-07	Standard	1.000	4.20	186.181	12132.295	0.192	1.0	-1.1	NO	1.000	NO	bb
4	4	200721P1-08	Standard	2.000	4.20	412.554	12984.820	0.397	2.0	-0.4	NO	1.000	NO	bb
5	5	200721P1-09	Standard	5.000	4.20	1059.294	12222.608	1.083	5.3	6.9	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	4.20	1953.283	13330.769	1.832	9.0	-10.0	NO	1.000	NO	bd
7	7	200721P1-11	Standard	50.000	4.21	10031.119	12904.697	9.717	47.6	-4.8	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	4.21	19961.281	11993.592	20.804	102.2	2.2	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	4.21	48952.504	12004.084	50.975	252.3	0.9	NO	1.000	NO	bb
10	10	200721P1-14	Standard	500.000	4.21	44161.602	5553.123	99.407	498.6	-0.3	NO	1.000	NO	bb

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Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999366
Calibration curve: -6.89212e-006 * x^2 + 1.00948 * x + 0.00254648
Response type: Internal Std (Ref 71), 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	200721P1-05	Standard	0.250	4.31	47.515	2195.421	0.271	0.3	6.2	NO	0.999	NO	bb
2	2	200721P1-06	Standard	0.500	4.31	95.118	2349.579	0.506	0.5	-0.2	NO	0.999	NO	bb
3	3	200721P1-07	Standard	1.000	4.30	187.879	2316.462	1.014	1.0	0.2	NO	0.999	NO	bb
4	4	200721P1-08	Standard	2.000	4.31	365.280	2417.927	1.888	1.9	-6.6	NO	0.999	NO	bb
5	5	200721P1-09	Standard	5.000	4.30	945.282	2285.794	5.169	5.1	2.4	NO	0.999	NO	bb
6	6	200721P1-10	Standard	10.000	4.31	1852.806	2419.053	9.574	9.5	-5.2	NO	0.999	NO	bb
7	7	200721P1-11	Standard	50.000	4.31	9551.984	2350.042	50.808	50.3	0.7	NO	0.999	NO	bb
8	8	200721P1-12	Standard	100.000	4.31	18515.555	2181.598	106.089	105.2	5.2	NO	0.999	NO	bb
9	9	200721P1-13	Standard	250.000	4.31	46901.215	2402.709	244.002	242.1	-3.2	NO	0.999	NO	bb
10	10	200721P1-14	Standard	500.000	4.31	40494.195	1000.506	505.921	502.9	0.6	NO	0.999	NO	bb

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999188
Calibration curve: 0.000109641 * x^2 + 0.233238 * x + -0.0157558
Response type: Internal Std (Ref 65), 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	200721P1-05	Standard	0.250	4.63	46.074	11408.764	0.050	0.3	13.6	NO	0.999	NO	MM
2	2	200721P1-06	Standard	0.500	4.62	91.016	11582.682	0.098	0.5	-2.3	NO	0.999	NO	bb
3	3	200721P1-07	Standard	1.000	4.63	217.136	11210.633	0.242	1.1	10.5	NO	0.999	NO	bb
4	4	200721P1-08	Standard	2.000	4.62	357.642	11757.290	0.380	1.7	-15.2	NO	0.999	NO	bb
5	5	200721P1-09	Standard	5.000	4.62	974.379	11806.524	1.032	4.5	-10.4	NO	0.999	NO	bb
6	6	200721P1-10	Standard	10.000	4.62	2251.779	11798.947	2.386	10.2	2.5	NO	0.999	NO	bb
7	7	200721P1-11	Standard	50.000	4.62	11189.494	11533.794	12.127	50.8	1.7	NO	0.999	NO	bb
8	8	200721P1-12	Standard	100.000	4.62	22521.596	11583.920	24.303	99.6	-0.4	NO	0.999	NO	bb
9	9	200721P1-13	Standard	250.000	4.62	11150.246	11854.206	11.758	49.3	-80.3	YES	0.999	NO	bbX
10	10	200721P1-14	Standard	500.000	4.62	9752.604	5043.783	24.170	99.1	-80.2	YES	0.999	NO	bbX

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Compound name: PFNA
Coefficient of Determination: R^2 = 0.999798
Calibration curve: -3.36947e-005 * x^2 + 1.25759 * x + 0.0575575
Response type: Internal Std (Ref 65), 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 200721P1-05	Standard	0.250	4.64	340.821	11408.764	0.373	0.3	0.5	NO	1.000	NO	bb
2	2 200721P1-06	Standard	0.500	4.64	649.646	11582.682	0.701	0.5	2.3	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	4.64	1269.990	11210.633	1.416	1.1	8.0	NO	1.000	NO	db
4	4 200721P1-08	Standard	2.000	4.64	2320.935	11757.290	2.468	1.9	-4.2	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	4.64	6124.228	11806.524	6.484	5.1	2.2	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	4.64	10909.748	11798.947	11.558	9.1	-8.5	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	4.64	57973.973	11533.794	62.831	50.0	-0.0	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	4.64	114440.828	11583.920	123.491	98.4	-1.6	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	4.64	300976.000	11854.206	317.373	254.0	1.6	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	4.64	249501.094	5043.783	618.338	498.3	-0.3	NO	1.000	NO	bb

Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999600
Calibration curve: 2.94594e-005 * x^2 + 0.705257 * x + 0.0157528
Response type: Internal Std (Ref 67), 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 200721P1-05	Standard	0.250	4.68	79.795	4788.881	0.208	0.3	9.2	NO	1.000	NO	bb
2	2 200721P1-06	Standard	0.500	4.69	169.175	4734.183	0.447	0.6	22.2	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	4.68	257.814	4780.948	0.674	0.9	-6.7	NO	1.000	NO	bb
4	4 200721P1-08	Standard	2.000	4.68	472.964	4581.359	1.290	1.8	-9.6	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	4.68	1345.435	4844.647	3.471	4.9	-2.0	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	4.69	2610.113	4691.865	6.954	9.8	-1.7	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	4.69	13096.896	4716.775	34.708	49.1	-1.8	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	4.69	27031.031	4912.495	68.781	97.1	-2.9	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	4.69	69157.523	4719.619	183.165	256.9	2.8	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	4.69	57682.945	2014.119	357.991	497.3	-0.5	NO	1.000	NO	bb

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Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999580
Calibration curve: 1.47461e-005 * x^2 + 1.2922 * x + -0.063193
Response type: Internal Std (Ref 71), 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 200721P1-05	Standard	0.250	4.73	46.050	2195.421	0.262	0.3	0.7	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	4.72	79.953	2349.579	0.425	0.4	-24.4	NO	1.000	NO	MM
3	3 200721P1-07	Standard	1.000	4.72	259.350	2316.462	1.399	1.1	13.2	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	4.72	462.144	2417.927	2.389	1.9	-5.1	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	4.72	1209.598	2285.794	6.615	5.2	3.4	NO	1.000	NO	MM
6	6 200721P1-10	Standard	10.000	4.72	2302.206	2419.053	11.896	9.3	-7.5	NO	1.000	NO	MM
7	7 200721P1-11	Standard	50.000	4.72	11751.331	2350.042	62.506	48.4	-3.2	NO	1.000	NO	MM
8	8 200721P1-12	Standard	100.000	4.72	23530.824	2181.598	134.826	104.3	4.3	NO	1.000	NO	MM
9	9 200721P1-13	Standard	250.000	4.73	61607.496	2402.709	320.511	247.4	-1.0	NO	1.000	NO	MM
10	10 200721P1-14	Standard	500.000	4.73	52070.051	1000.506	650.546	500.6	0.1	NO	1.000	NO	MM

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.997566
Calibration curve: -6.63786e-005 * x^2 + 2.57989 * x + -0.12602
Response type: Internal Std (Ref 71), 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 200721P1-05	Standard	0.250	4.94	105.731	2195.421	0.602	0.3	12.9	NO	0.998	NO	bb
2	2 200721P1-06	Standard	0.500	4.94	179.731	2349.579	0.956	0.4	-16.1	NO	0.998	NO	bb
3	3 200721P1-07	Standard	1.000	4.94	452.568	2316.462	2.442	1.0	-0.5	NO	0.998	NO	bb
4	4 200721P1-08	Standard	2.000	4.94	943.915	2417.927	4.880	1.9	-3.0	NO	0.998	NO	bb
5	5 200721P1-09	Standard	5.000	4.94	2560.432	2285.794	14.002	5.5	9.5	NO	0.998	NO	bb
6	6 200721P1-10	Standard	10.000	4.94	4572.729	2419.053	23.629	9.2	-7.9	NO	0.998	NO	bb
7	7 200721P1-11	Standard	50.000	4.94	24154.789	2350.042	128.481	49.9	-0.2	NO	0.998	NO	bb
8	8 200721P1-12	Standard	100.000	4.94	49479.418	2181.598	283.504	110.3	10.3	NO	0.998	NO	bb
9	9 200721P1-13	Standard	250.000	4.94	115550.523	2402.709	601.147	234.5	-6.2	NO	0.998	NO	bb
10	10 200721P1-14	Standard	500.000	4.94	103075.508	1000.506	1287.792	505.8	1.2	NO	0.998	NO	bb

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Compound name: PFDA
Coefficient of Determination: R^2 = 0.999533
Calibration curve: 0.000170875 * x^2 + 0.796693 * x + 0.0349258
Response type: Internal Std (Ref 73), 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 200721P1-05	Standard	0.250	5.01	276.379	14386.030	0.240	0.3	3.0	NO	1.000	NO	bb
2	2 200721P1-06	Standard	0.500	5.02	459.493	13675.889	0.420	0.5	-3.3	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	5.01	1074.193	13906.310	0.966	1.2	16.8	NO	1.000	NO	bb
4	4 200721P1-08	Standard	2.000	5.01	1608.693	14189.619	1.417	1.7	-13.3	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	5.01	4845.453	14267.585	4.245	5.3	5.6	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	5.01	9846.676	14365.683	8.568	10.7	6.9	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	5.01	47009.688	13755.642	42.719	53.0	5.9	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	5.01	89765.430	14364.021	78.117	96.0	-4.0	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	5.01	236408.859	14108.498	209.456	249.5	-0.2	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	5.01	211389.922	5982.004	441.721	500.6	0.1	NO	1.000	NO	bb

Compound name: 8:2 FTS
Correlation coefficient: r = 0.996969, r^2 = 0.993947
Calibration curve: 1.28153 * x + -0.144274
Response type: Internal Std (Ref 75), 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 200721P1-05	Standard	0.250	4.98	10.222	1377.490	0.093	0.2	-26.0	NO	0.994	NO	bb
2	2 200721P1-06	Standard	0.500	4.98	43.571	1205.205	0.452	0.5	-7.0	NO	0.994	NO	bb
3	3 200721P1-07	Standard	1.000	4.98	154.004	1283.104	1.500	1.3	28.3	NO	0.994	NO	bb
4	4 200721P1-08	Standard	2.000	4.98	267.374	1432.690	2.333	1.9	-3.4	NO	0.994	NO	bb
5	5 200721P1-09	Standard	5.000	4.98	590.156	1399.320	5.272	4.2	-15.5	NO	0.994	NO	bb
6	6 200721P1-10	Standard	10.000	4.98	1302.527	1381.165	11.788	9.3	-6.9	NO	0.994	NO	bb
7	7 200721P1-11	Standard	50.000	4.98	6108.170	1266.858	60.269	47.1	-5.7	NO	0.994	NO	bb
8	8 200721P1-12	Standard	100.000	4.98	12033.758	1253.450	120.006	93.8	-6.2	NO	0.994	NO	bb
9	9 200721P1-13	Standard	250.000	4.98	29067.527	1255.029	289.511	226.0	-9.6	NO	0.994	NO	bb
10	10 200721P1-14	Standard	500.000	4.98	27751.066	506.596	684.744	534.4	6.9	NO	0.994	NO	bb

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Compound name: PFNS
Coefficient of Determination: R^2 = 0.998246
Calibration curve: -9.88855e-006 * x^2 + 1.30347 * x + -0.0396359
Response type: Internal Std (Ref 71), 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 200721P1-05	Standard	0.250	5.07	48.442	2195.421	0.276	0.2	-3.2	NO	0.998	NO	bb
2	2 200721P1-06	Standard	0.500	5.07	116.318	2349.579	0.619	0.5	1.0	NO	0.998	NO	bb
3	3 200721P1-07	Standard	1.000	5.08	227.006	2316.462	1.225	1.0	-3.0	NO	0.998	NO	bb
4	4 200721P1-08	Standard	2.000	5.07	468.128	2417.927	2.420	1.9	-5.6	NO	0.998	NO	bb
5	5 200721P1-09	Standard	5.000	5.07	1253.436	2285.794	6.854	5.3	5.8	NO	0.998	NO	bb
6	6 200721P1-10	Standard	10.000	5.08	2264.565	2419.053	11.702	9.0	-9.9	NO	0.998	NO	bb
7	7 200721P1-11	Standard	50.000	5.08	11840.633	2350.042	62.981	48.4	-3.3	NO	0.998	NO	bb
8	8 200721P1-12	Standard	100.000	5.08	24908.887	2181.598	142.722	109.6	9.6	NO	0.998	NO	bb
9	9 200721P1-13	Standard	250.000	5.08	59814.789	2402.709	311.184	239.2	-4.3	NO	0.998	NO	bb
10	10 200721P1-14	Standard	500.000	5.08	52343.980	1000.506	653.969	503.7	0.7	NO	0.998	NO	bb

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999021
Calibration curve: -0.000154605 * x^2 + 1.19639 * x + -0.0889953
Response type: Internal Std (Ref 77), 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 200721P1-05	Standard	0.250	5.17	57.645	3308.744	0.218	0.3	2.6	NO	0.999	NO	MM
2	2 200721P1-06	Standard	0.500	5.16	86.582	3273.515	0.331	0.4	-29.9	NO	0.999	NO	MM
3	3 200721P1-07	Standard	1.000	5.16	316.604	3250.077	1.218	1.1	9.2	NO	0.999	NO	MM
4	4 200721P1-08	Standard	2.000	5.16	599.564	3401.248	2.203	1.9	-4.2	NO	0.999	NO	MM
5	5 200721P1-09	Standard	5.000	5.16	1480.483	3225.330	5.738	4.9	-2.5	NO	0.999	NO	MM
6	6 200721P1-10	Standard	10.000	5.16	3294.243	3421.219	12.036	10.1	1.5	NO	0.999	NO	MM
7	7 200721P1-11	Standard	50.000	5.16	14950.164	3463.952	53.949	45.4	-9.1	NO	0.999	NO	MM
8	8 200721P1-12	Standard	100.000	5.16	31927.771	3386.353	117.855	99.9	-0.1	NO	0.999	NO	MM
9	9 200721P1-13	Standard	250.000	5.17	78636.977	3281.248	299.570	259.1	3.7	NO	0.999	NO	MM
10	10 200721P1-14	Standard	500.000	5.16	67516.117	1520.875	554.912	495.6	-0.9	NO	0.999	NO	MM

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 10:17:36
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Compound name: L-EtFOSAA
Coefficient of Determination: R^2 = 0.999532
Calibration curve: 0.000408239 * x^2 + 1.59543 * x + 0.167393
Response type: Internal Std (Ref 81), 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	200721P1-05	Standard	0.250	5.32	101.563	2678.479	0.474	0.2	-23.1	NO	1.000	NO	MM
2	2	200721P1-06	Standard	0.500	5.32	208.915	2627.101	0.994	0.5	3.6	NO	1.000	NO	MM
3	3	200721P1-07	Standard	1.000	5.32	402.780	2693.587	1.869	1.1	6.6	NO	1.000	NO	MM
4	4	200721P1-08	Standard	2.000	5.32	779.641	2806.869	3.472	2.1	3.5	NO	1.000	NO	MM
5	5	200721P1-09	Standard	5.000	5.32	1699.735	2739.324	7.756	4.8	-5.0	NO	1.000	NO	MM
6	6	200721P1-10	Standard	10.000	5.32	3850.733	2683.755	17.935	11.1	11.1	NO	1.000	NO	MM
7	7	200721P1-11	Standard	50.000	5.32	17920.520	2636.466	84.965	52.4	4.9	NO	1.000	NO	MM
8	8	200721P1-12	Standard	100.000	5.32	36497.344	2773.451	164.494	100.4	0.4	NO	1.000	NO	MM
9	9	200721P1-13	Standard	250.000	5.32	86506.266	2616.856	413.217	243.7	-2.5	NO	1.000	NO	MM
10	10	200721P1-14	Standard	500.000	5.32	78370.750	1082.429	905.033	502.5	0.5	NO	1.000	NO	MM

Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999900
Calibration curve: -4.57877e-006 * x^2 + 0.979979 * x + 0.0422082
Response type: Internal Std (Ref 79), 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	200721P1-05	Standard	0.250	5.33	309.551	13939.626	0.278	0.2	-3.9	NO	1.000	NO	MM
2	2	200721P1-06	Standard	0.500	5.34	592.803	13730.669	0.540	0.5	1.5	NO	1.000	NO	MM
3	3	200721P1-07	Standard	1.000	5.34	1055.623	13797.326	0.956	0.9	-6.7	NO	1.000	NO	MM
4	4	200721P1-08	Standard	2.000	5.34	2527.298	14465.220	2.184	2.2	9.3	NO	1.000	NO	bb
5	5	200721P1-09	Standard	5.000	5.33	6160.408	14826.915	5.194	5.3	5.1	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	5.34	11501.832	15221.418	9.445	9.6	-4.0	NO	1.000	NO	bb
7	7	200721P1-11	Standard	50.000	5.34	56088.770	14479.813	48.420	49.4	-1.2	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	5.34	116345.977	14956.539	97.237	99.2	-0.8	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	5.34	272629.750	13790.758	247.113	252.4	1.0	NO	1.000	NO	bb
10	10	200721P1-14	Standard	500.000	5.34	237638.875	6088.014	487.924	499.0	-0.2	NO	1.000	NO	bb

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Compound name: PFDS
Correlation coefficient: r = 0.999639, r^2 = 0.999279
Calibration curve: 1.32841 * x + -0.0719879
Response type: Internal Std (Ref 71), 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	200721P1-05	Standard	0.250	5.38	28.960	2195.421	0.165	0.2	-28.7	NO	0.999	NO	bb
2	2	200721P1-06	Standard	0.500	5.38	118.117	2349.579	0.628	0.5	5.4	NO	0.999	NO	bb
3	3	200721P1-07	Standard	1.000	5.38	250.322	2316.462	1.351	1.1	7.1	NO	0.999	NO	bb
4	4	200721P1-08	Standard	2.000	5.38	524.583	2417.927	2.712	2.1	4.8	NO	0.999	NO	bb
5	5	200721P1-09	Standard	5.000	5.38	1318.505	2285.794	7.210	5.5	9.6	NO	0.999	NO	bb
6	6	200721P1-10	Standard	10.000	5.38	2559.427	2419.053	13.225	10.0	0.1	NO	0.999	NO	bb
7	7	200721P1-11	Standard	50.000	5.38	12603.589	2350.042	67.039	50.5	1.0	NO	0.999	NO	bb
8	8	200721P1-12	Standard	100.000	5.38	23975.557	2181.598	137.374	103.5	3.5	NO	0.999	NO	bb
9	9	200721P1-13	Standard	250.000	5.38	61289.730	2402.709	318.857	240.1	-4.0	NO	0.999	NO	bb
10	10	200721P1-14	Standard	500.000	5.38	53723.035	1000.506	671.198	505.3	1.1	NO	0.999	NO	bb

Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.999781, r^2 = 0.999562
Calibration curve: 0.29781 * x + -0.0132975
Response type: Internal Std (Ref 83), 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	200721P1-05	Standard	0.250	5.54	77.062	16127.644	0.060	0.2	-1.9	NO	1.000	NO	bb
2	2	200721P1-06	Standard	0.500	5.54	182.017	16434.764	0.138	0.5	1.9	NO	1.000	NO	bb
3	3	200721P1-07	Standard	1.000	5.54	398.525	16499.408	0.302	1.1	5.8	NO	1.000	NO	bb
4	4	200721P1-08	Standard	2.000	5.54	805.949	16679.688	0.604	2.1	3.6	NO	1.000	NO	bb
5	5	200721P1-09	Standard	5.000	5.54	1859.317	16258.736	1.429	4.8	-3.1	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	5.54	3697.804	16458.893	2.808	9.5	-5.3	NO	1.000	NO	bb
7	7	200721P1-11	Standard	50.000	5.55	18479.695	15726.110	14.689	49.4	-1.3	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	5.54	37379.195	16035.551	29.138	97.9	-2.1	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	5.55	93633.531	15231.616	76.841	258.1	3.2	NO	1.000	NO	bb
10	10	200721P1-14	Standard	500.000	5.55	80432.977	6817.745	147.470	495.2	-1.0	NO	1.000	NO	bb

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Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999681
Calibration curve: 0.000604252 * x^2 + 1.8992 * x + 0.101076
Response type: Internal Std (Ref 85), 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 200721P1-05	Standard	0.250	5.60	50.753	992.253	0.639	0.3	13.4	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	5.60	86.093	971.084	1.108	0.5	6.0	NO	1.000	NO	MM
3	3 200721P1-07	Standard	1.000	5.60	166.187	958.567	2.167	1.1	8.7	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	5.60	346.137	1022.311	4.232	2.2	8.7	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	5.60	659.774	962.726	8.566	4.5	-11.0	NO	1.000	NO	MM
6	6 200721P1-10	Standard	10.000	5.60	1405.374	973.115	18.053	9.4	-5.8	NO	1.000	NO	MM
7	7 200721P1-11	Standard	50.000	5.60	7263.587	936.833	96.917	50.2	0.4	NO	1.000	NO	MM
8	8 200721P1-12	Standard	100.000	5.60	13651.090	861.592	198.050	101.0	1.0	NO	1.000	NO	MM
9	9 200721P1-13	Standard	250.000	5.60	31106.887	759.645	511.866	249.6	-0.1	NO	1.000	NO	MM
10	10 200721P1-14	Standard	500.000	5.60	27999.229	353.493	990.091	455.3	-8.9	NO	1.000	NO	MMX

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999909
Calibration curve: -1.21607e-005 * x^2 + 0.902694 * x + 0.0129658
Response type: Internal Std (Ref 83), 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 200721P1-05	Standard	0.250	5.61	313.788	16127.644	0.243	0.3	2.0	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	5.61	619.995	16434.764	0.472	0.5	1.6	NO	1.000	NO	MM
3	3 200721P1-07	Standard	1.000	5.61	1189.685	16499.408	0.901	1.0	-1.6	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	5.61	2425.643	16679.688	1.818	2.0	-0.0	NO	1.000	NO	MM
5	5 200721P1-09	Standard	5.000	5.61	6257.953	16258.736	4.811	5.3	6.3	NO	1.000	NO	MM
6	6 200721P1-10	Standard	10.000	5.61	11673.141	16458.893	8.865	9.8	-1.9	NO	1.000	NO	MM
7	7 200721P1-11	Standard	50.000	5.62	56983.266	15726.110	45.294	50.2	0.4	NO	1.000	NO	MM
8	8 200721P1-12	Standard	100.000	5.61	113554.492	16035.551	88.518	98.2	-1.8	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	5.62	276629.750	15231.616	227.019	252.3	0.9	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	5.62	244121.734	6817.745	447.585	499.2	-0.2	NO	1.000	NO	bb

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Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999287
Calibration curve: -3.01399e-005 * x^2 + 1.11234 * x + -0.011542
Response type: Internal Std (Ref 87), 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 200721P1-05	Standard	1.250	5.66	115.691	15814.095	1.092	1.0	-20.7	NO	0.999	NO	bb
2	2 200721P1-06	Standard	2.500	5.65	290.541	15612.939	2.776	2.5	0.3	NO	0.999	NO	bb
3	3 200721P1-07	Standard	5.000	5.66	641.928	15609.952	6.136	5.5	10.5	NO	0.999	NO	bb
4	4 200721P1-08	Standard	10.000	5.66	1162.896	16147.192	10.745	9.7	-3.3	NO	0.999	NO	bb
5	5 200721P1-09	Standard	25.000	5.65	3199.701	15870.027	30.082	27.1	8.3	NO	0.999	NO	bb
6	6 200721P1-10	Standard	50.000	5.66	6072.704	16271.418	55.683	50.1	0.3	NO	0.999	NO	bb
7	7 200721P1-11	Standard	250.000	5.66	30292.729	15831.338	285.489	258.5	3.4	NO	0.999	NO	bb
8	8 200721P1-12	Standard	500.000	5.66	60475.906	15911.779	567.065	517.0	3.4	NO	0.999	NO	bb
9	9 200721P1-13	Standard	1250.000	5.66	143553.000	16573.305	1292.326	1200.9	-3.9	NO	0.999	NO	bb
10	10 200721P1-14	Standard	2500.000	5.66	124841.766	7127.498	2613.314	2521.7	0.9	NO	0.999	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999652
Calibration curve: -2.26201e-005 * x^2 + 1.02022 * x + 0.0386781
Response type: Internal Std (Ref 83), 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 200721P1-05	Standard	0.250	5.86	343.337	16127.644	0.266	0.2	-10.8	NO	1.000	NO	MM
2	2 200721P1-06	Standard	0.500	5.86	704.037	16434.764	0.535	0.5	-2.6	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	5.86	1449.139	16499.408	1.098	1.0	3.8	NO	1.000	NO	MM
4	4 200721P1-08	Standard	2.000	5.86	2843.225	16679.688	2.131	2.1	2.5	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	5.86	7088.345	16258.736	5.450	5.3	6.1	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	5.86	13141.084	16458.893	9.980	9.7	-2.5	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	5.86	66636.328	15726.110	52.966	51.9	3.9	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	5.86	132834.031	16035.551	103.547	101.7	1.7	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	5.86	301200.094	15231.616	247.183	243.6	-2.6	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	5.86	276640.125	6817.745	507.206	502.7	0.5	NO	1.000	NO	bb

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Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999341
Calibration curve: -1.88437e-005 * x^2 + 0.205138 * x + -0.0201172
Response type: Internal Std (Ref 89), 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	200721P1-05	Standard	0.250	5.88	54.297	16038.352	0.042	0.3	21.7	NO	0.999	NO	bb
2	2	200721P1-06	Standard	0.500	5.88	101.380	16793.621	0.075	0.5	-6.8	NO	0.999	NO	bb
3	3	200721P1-07	Standard	1.000	5.88	261.296	16766.408	0.195	1.0	4.8	NO	0.999	NO	bb
4	4	200721P1-08	Standard	2.000	5.88	463.867	17040.012	0.340	1.8	-12.1	NO	0.999	NO	bb
5	5	200721P1-09	Standard	5.000	5.88	1395.072	17065.094	1.022	5.1	1.6	NO	0.999	NO	bb
6	6	200721P1-10	Standard	10.000	5.88	2595.662	17101.666	1.897	9.4	-6.5	NO	0.999	NO	bb
7	7	200721P1-11	Standard	50.000	5.88	13228.909	16600.949	9.961	48.9	-2.3	NO	0.999	NO	bb
8	8	200721P1-12	Standard	100.000	5.88	25257.498	16089.913	19.622	96.6	-3.4	NO	0.999	NO	bb
9	9	200721P1-13	Standard	250.000	5.88	63226.199	15231.297	51.888	259.2	3.7	NO	0.999	NO	bb
10	10	200721P1-14	Standard	500.000	5.88	54405.816	7003.894	97.099	496.0	-0.8	NO	0.999	NO	bb

Compound name: PFTeDA
Correlation coefficient: r = 0.999904, r^2 = 0.999808
Calibration curve: 0.617022 * x + 0.00631418
Response type: Internal Std (Ref 89), 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	200721P1-05	Standard	0.250	6.07	220.799	16038.352	0.172	0.3	7.5	NO	1.000	NO	bb
2	2	200721P1-06	Standard	0.500	6.07	411.755	16793.621	0.306	0.5	-2.7	NO	1.000	NO	bb
3	3	200721P1-07	Standard	1.000	6.07	821.937	16766.408	0.613	1.0	-1.7	NO	1.000	NO	bb
4	4	200721P1-08	Standard	2.000	6.07	1665.392	17040.012	1.222	2.0	-1.5	NO	1.000	NO	db
5	5	200721P1-09	Standard	5.000	6.07	4369.509	17065.094	3.201	5.2	3.5	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	6.07	8079.674	17101.666	5.906	9.6	-4.4	NO	1.000	NO	bb
7	7	200721P1-11	Standard	50.000	6.07	40094.293	16600.949	30.190	48.9	-2.2	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	6.07	79660.055	16089.913	61.887	100.3	0.3	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	6.07	191612.688	15231.297	157.252	254.8	1.9	NO	1.000	NO	bb
10	10	200721P1-14	Standard	500.000	6.07	171569.734	7003.894	306.204	496.3	-0.7	NO	1.000	NO	bb

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999984
Calibration curve: -1.46911e-005 * x^2 + 1.1718 * x + 0.183292
Response type: Internal Std (Ref 91), 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	200721P1-05	Standard	1.250	6.08	215.653	20298.416	1.585	1.2	-4.3	NO	1.000	NO	bb
2	2	200721P1-06	Standard	2.500	6.09	424.900	20040.957	3.163	2.5	1.7	NO	1.000	NO	bb
3	3	200721P1-07	Standard	5.000	6.09	789.155	19962.805	5.898	4.9	-2.5	NO	1.000	NO	bb
4	4	200721P1-08	Standard	10.000	6.08	1634.563	20063.875	12.155	10.2	2.2	NO	1.000	NO	bb
5	5	200721P1-09	Standard	25.000	6.08	4127.402	20398.430	30.189	25.6	2.5	NO	1.000	NO	bb
6	6	200721P1-10	Standard	50.000	6.09	8116.041	20602.043	58.776	50.0	0.1	NO	1.000	NO	bb
7	7	200721P1-11	Standard	250.000	6.08	40175.195	20316.732	295.035	252.4	1.0	NO	1.000	NO	bb
8	8	200721P1-12	Standard	500.000	6.08	78382.891	20201.715	578.898	497.0	-0.6	NO	1.000	NO	bb
9	9	200721P1-13	Standard	1250.000	6.09	181252.563	18769.162	1440.815	1249.0	-0.1	NO	1.000	NO	bb
10	10	200721P1-14	Standard	2500.000	6.09	157113.594	8257.349	2838.847	2500.9	0.0	NO	1.000	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999896
Calibration curve: -0.00019858 * x^2 + 0.942369 * x + 0.121902
Response type: Internal Std (Ref 93), 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	200721P1-05	Standard	0.250	6.40	571.223	19136.105	0.373	0.3	6.6	NO	1.000	NO	bb
2	2	200721P1-06	Standard	0.500	6.40	960.646	20783.354	0.578	0.5	-3.2	NO	1.000	NO	db
3	3	200721P1-07	Standard	1.000	6.40	1778.864	20344.471	1.093	1.0	3.1	NO	1.000	NO	bb
4	4	200721P1-08	Standard	2.000	6.40	3202.233	20237.166	1.978	2.0	-1.5	NO	1.000	NO	bb
5	5	200721P1-09	Standard	5.000	6.40	8370.819	21092.230	4.961	5.1	2.8	NO	1.000	NO	bb
6	6	200721P1-10	Standard	10.000	6.40	14852.819	21213.760	8.752	9.2	-8.2	NO	1.000	NO	bb
7	7	200721P1-11	Standard	50.000	6.41	77315.688	20685.012	46.722	50.0	-0.0	NO	1.000	NO	bb
8	8	200721P1-12	Standard	100.000	6.40	153976.109	20813.521	92.474	100.1	0.1	NO	1.000	NO	bb
9	9	200721P1-13	Standard	250.000	6.41	366979.906	20439.244	224.433	251.3	0.5	NO	1.000	NO	bb
10	10	200721P1-14	Standard	500.000	6.40	327442.281	9720.033	421.092	499.2	-0.2	NO	1.000	NO	bb

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Compound name: PFODA
Coefficient of Determination: R^2 = 0.999872
Calibration curve: -0.000140238 * x^2 + 0.787183 * x + 0.00380131
Response type: Internal Std (Ref 93), 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 200721P1-05	Standard	0.250	6.64	320.207	19136.105	0.209	0.3	4.4	NO	1.000	NO	bb
2	2 200721P1-06	Standard	0.500	6.64	682.896	20783.354	0.411	0.5	3.4	NO	1.000	NO	bb
3	3 200721P1-07	Standard	1.000	6.64	1256.039	20344.471	0.772	1.0	-2.4	NO	1.000	NO	bb
4	4 200721P1-08	Standard	2.000	6.63	2568.794	20237.166	1.587	2.0	0.6	NO	1.000	NO	bb
5	5 200721P1-09	Standard	5.000	6.64	6628.228	21092.230	3.928	5.0	-0.2	NO	1.000	NO	bb
6	6 200721P1-10	Standard	10.000	6.64	12885.602	21213.760	7.593	9.7	-3.4	NO	1.000	NO	bb
7	7 200721P1-11	Standard	50.000	6.64	64926.465	20685.012	39.235	50.3	0.6	NO	1.000	NO	bb
8	8 200721P1-12	Standard	100.000	6.63	126132.383	20813.521	75.751	97.9	-2.1	NO	1.000	NO	bb
9	9 200721P1-13	Standard	250.000	6.64	311758.688	20439.244	190.662	253.7	1.5	NO	1.000	NO	bb
10	10 200721P1-14	Standard	500.000	6.64	278007.594	9720.033	357.519	498.4	-0.3	NO	1.000	NO	bb

Compound name: N-MeFOSE
Correlation coefficient: r = 0.999906, r^2 = 0.999812
Calibration curve: 1.18349 * x + -0.0713831
Response type: Internal Std (Ref 95), 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 200721P1-05	Standard	1.250	6.29	147.394	15489.832	1.420	1.3	0.8	NO	1.000	NO	MM
2	2 200721P1-06	Standard	2.500	6.29	325.704	15700.992	3.095	2.7	7.0	NO	1.000	NO	bb
3	3 200721P1-07	Standard	5.000	6.29	577.553	15579.406	5.531	4.7	-5.3	NO	1.000	NO	bb
4	4 200721P1-08	Standard	10.000	6.29	1222.580	16161.275	11.287	9.6	-4.0	NO	1.000	NO	bb
5	5 200721P1-09	Standard	25.000	6.29	3250.353	15805.107	30.683	26.0	3.9	NO	1.000	NO	bb
6	6 200721P1-10	Standard	50.000	6.29	6336.513	15617.574	60.535	51.2	2.4	NO	1.000	NO	bb
7	7 200721P1-11	Standard	250.000	6.29	30608.146	15893.394	287.335	242.8	-2.9	NO	1.000	NO	bb
8	8 200721P1-12	Standard	500.000	6.29	61037.707	15782.606	577.017	487.6	-2.5	NO	1.000	NO	bb
9	9 200721P1-13	Standard	1250.000	6.29	158259.719	16026.271	1473.353	1245.0	-0.4	NO	1.000	NO	bb
10	10 200721P1-14	Standard	2500.000	6.29	138898.766	6940.995	2985.695	2522.8	0.9	NO	1.000	NO	bb

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.999536, r^2 = 0.999072
Calibration curve: 1.11276 * x + -0.280039
Response type: Internal Std (Ref 97), 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 200721P1-05	Standard	1.250	6.44	135.967	17530.951	1.157	1.3	3.3	NO	0.999	NO	bb
2	2 200721P1-06	Standard	2.500	6.44	323.361	17507.275	2.756	2.7	9.1	NO	0.999	NO	bb
3	3 200721P1-07	Standard	5.000	6.44	652.500	17415.674	5.590	5.3	5.5	NO	0.999	NO	bb
4	4 200721P1-08	Standard	10.000	6.44	1225.900	17372.070	10.529	9.7	-2.9	NO	0.999	NO	bb
5	5 200721P1-09	Standard	25.000	6.44	3267.808	18131.018	26.891	24.4	-2.3	NO	0.999	NO	bb
6	6 200721P1-10	Standard	50.000	6.44	6459.148	18317.928	52.610	47.5	-4.9	NO	0.999	NO	bb
7	7 200721P1-11	Standard	250.000	6.44	32263.313	18119.773	265.659	239.0	-4.4	NO	0.999	NO	bb
8	8 200721P1-12	Standard	500.000	6.44	63552.367	17577.781	539.432	485.0	-3.0	NO	0.999	NO	bb
9	9 200721P1-13	Standard	1250.000	6.44	167520.859	18556.531	1346.917	1210.7	-3.1	NO	0.999	NO	bb
10	10 200721P1-14	Standard	2500.000	6.44	144955.406	7568.906	2857.394	2568.1	2.7	NO	0.999	NO	bb

Compound name: 13C3-PFBA-EIS
Response Factor: 333.646
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	1.34	3878.062		3878.062	11.6	-7.0	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	1.35	4008.438		4008.438	12.0	-3.9	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	1.34	3915.660		3915.660	11.7	-6.1	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	1.35	3993.723		3993.723	12.0	-4.2	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	1.35	3916.714		3916.714	11.7	-6.1	NO		NO	MMX
6	6 200721P1-10	Standard	12.500	1.35	4170.579		4170.579	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	1.35	3872.614		3872.614	11.6	-7.1	NO		NO	MMX
8	8 200721P1-12	Standard	12.500	1.35	4024.432		4024.432	12.1	-3.5	NO		NO	MMX
9	9 200721P1-13	Standard	12.500	1.34	4265.257		4265.257	12.8	2.3	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	1.35	1773.267		1773.267	5.3	-57.5	NO		NO	bbX

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Compound name: 13C3-PFBA-RSD
Response Factor: 0.956731
RRF SD: 0.0228565, Relative SD: 2.38902
Response type: Internal Std (Ref 99), 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 200721P1-05	Standard	12.500	1.34	3878.062	3994.731	12.135	12.7	1.5	NO		NO	bb
2	2 200721P1-06	Standard	12.500	1.35	4008.438	4245.616	11.802	12.3	-1.3	NO		NO	bb
3	3 200721P1-07	Standard	12.500	1.34	3915.660	4005.715	12.219	12.8	2.2	NO		NO	bb
4	4 200721P1-08	Standard	12.500	1.35	3993.723	4067.908	12.272	12.8	2.6	NO		NO	bb
5	5 200721P1-09	Standard	12.500	1.35	3926.796	4061.748	12.085	12.6	1.0	NO		NO	MM
6	6 200721P1-10	Standard	12.500	1.35	4170.579	4299.691	12.125	12.7	1.4	NO		NO	bb
7	7 200721P1-11	Standard	12.500	1.35	3899.595	4207.689	11.585	12.1	-3.1	NO		NO	MM
8	8 200721P1-12	Standard	12.500	1.35	4008.167	4299.805	11.652	12.2	-2.6	NO		NO	MM
9	9 200721P1-13	Standard	12.500	1.34	4265.257	4623.988	11.530	12.1	-3.6	NO		NO	bb
10	10 200721P1-14	Standard	12.500	1.35	1773.267	1818.776	12.187	12.7	1.9	NO		NO	bb

Compound name: 13C3-PFPeA-EIS
Response Factor: 742.932
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	2.28	9181.344		9181.344	12.4	-1.1	NO		NO	MMX
2	2 200721P1-06	Standard	12.500	2.28	9117.475		9117.475	12.3	-1.8	NO		NO	MMX
3	3 200721P1-07	Standard	12.500	2.28	8957.632		8957.632	12.1	-3.5	NO		NO	MMX
4	4 200721P1-08	Standard	12.500	2.28	9127.859		9127.859	12.3	-1.7	NO		NO	MMX
5	5 200721P1-09	Standard	12.500	2.28	9449.793		9449.793	12.7	1.8	NO		NO	MMX
6	6 200721P1-10	Standard	12.500	2.28	9286.656		9286.656	12.5	0.0	NO		NO	MM
7	7 200721P1-11	Standard	12.500	2.28	9557.008		9557.008	12.9	2.9	NO		NO	MMX
8	8 200721P1-12	Standard	12.500	2.28	9882.177		9882.177	13.3	6.4	NO		NO	MMX
9	9 200721P1-13	Standard	12.500	2.28	10006.371		10006.371	13.5	7.7	NO		NO	MMX
10	10 200721P1-14	Standard	12.500	2.28	4142.414		4142.414	5.6	-55.4	NO		NO	MMX

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Compound name: 13C3-PFPeA-RSD
Response Factor: 0.753976
RRF SD: 0.0140526, Relative SD: 1.8638
Response type: Internal Std (Ref 101), 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 200721P1-05	Standard	12.500	2.28	9270.438	12103.613	9.574	12.7	1.6	NO		NO	MM
2	2 200721P1-06	Standard	12.500	2.28	9121.997	12136.501	9.395	12.5	-0.3	NO		NO	MM
3	3 200721P1-07	Standard	12.500	2.28	8929.044	11786.868	9.469	12.6	0.5	NO		NO	MM
4	4 200721P1-08	Standard	12.500	2.28	9129.319	11888.808	9.599	12.7	1.8	NO		NO	MM
5	5 200721P1-09	Standard	12.500	2.28	9470.673	12700.689	9.321	12.4	-1.1	NO		NO	MM
6	6 200721P1-10	Standard	12.500	2.28	9276.092	12561.873	9.230	12.2	-2.1	NO		NO	MM
7	7 200721P1-11	Standard	12.500	2.28	9416.932	12831.812	9.173	12.2	-2.7	NO		NO	MM
8	8 200721P1-12	Standard	12.500	2.28	9807.939	13116.901	9.347	12.4	-0.8	NO		NO	MM
9	9 200721P1-13	Standard	12.500	2.28	10005.824	12832.749	9.746	12.9	3.4	NO		NO	MM
10	10 200721P1-14	Standard	12.500	2.28	4165.571	5544.105	9.392	12.5	-0.3	NO		NO	MM

Compound name: 13C3-PFBS-EIS
Response Factor: 96.9238
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	2.56	1203.196		1203.196	12.4	-0.7	NO		NO	MMX
2	2 200721P1-06	Standard	12.500	2.56	1187.373		1187.373	12.3	-2.0	NO		NO	MMX
3	3 200721P1-07	Standard	12.500	2.55	1204.610		1204.610	12.4	-0.6	NO		NO	MMX
4	4 200721P1-08	Standard	12.500	2.56	1159.111		1159.111	12.0	-4.3	NO		NO	MMX
5	5 200721P1-09	Standard	12.500	2.56	1194.640		1194.640	12.3	-1.4	NO		NO	MMX
6	6 200721P1-10	Standard	12.500	2.56	1211.547		1211.547	12.5	0.0	NO		NO	MM
7	7 200721P1-11	Standard	12.500	2.56	1196.104		1196.104	12.3	-1.3	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	2.56	1226.347		1226.347	12.7	1.2	NO		NO	MMX
9	9 200721P1-13	Standard	12.500	2.56	1248.294		1248.294	12.9	3.0	NO		NO	MMX
10	10 200721P1-14	Standard	12.500	2.56	492.436		492.436	5.1	-59.4	NO		NO	MMX

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Compound name: 13C3-PFBS-RSD
Response Factor: 1.32535
RRF SD: 0.0868866, Relative SD: 6.55574
Response type: Internal Std (Ref 102), 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 200721P1-05	Standard	12.500	2.56	1208.253	921.623	16.388	12.4	-1.1	NO		NO	MM
2	2 200721P1-06	Standard	12.500	2.56	1188.882	968.284	15.348	11.6	-7.4	NO		NO	MM
3	3 200721P1-07	Standard	12.500	2.55	1204.854	827.817	18.193	13.7	9.8	NO		NO	MM
4	4 200721P1-08	Standard	12.500	2.56	1159.038	928.911	15.597	11.8	-5.9	NO		NO	MM
5	5 200721P1-09	Standard	12.500	2.56	1194.747	850.413	17.561	13.3	6.0	NO		NO	MM
6	6 200721P1-10	Standard	12.500	2.56	1211.428	917.368	16.507	12.5	-0.4	NO		NO	MM
7	7 200721P1-11	Standard	12.500	2.56	1196.104	832.346	17.963	13.6	8.4	NO		NO	bb
8	8 200721P1-12	Standard	12.500	2.56	1226.352	977.833	15.677	11.8	-5.4	NO		NO	MM
9	9 200721P1-13	Standard	12.500	2.56	1248.372	912.883	17.094	12.9	3.2	NO		NO	MM
10	10 200721P1-14	Standard	12.500	2.56	492.610	401.362	15.342	11.6	-7.4	NO		NO	MM

Compound name: 13C3-HFPO-DA-EIS
Response Factor: 179.588
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	3.30	1960.722		1960.722	10.9	-12.7	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	3.30	2058.258		2058.258	11.5	-8.3	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	3.29	1899.823		1899.823	10.6	-15.4	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	3.30	1990.732		1990.732	11.1	-11.3	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	3.29	1965.079		1965.079	10.9	-12.5	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	3.30	2244.853		2244.853	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.30	2116.604		2116.604	11.8	-5.7	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	3.30	2252.438		2252.438	12.5	0.3	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	3.30	2171.224		2171.224	12.1	-3.3	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	3.30	976.977		976.977	5.4	-56.5	NO		NO	bbX

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Compound name: 13C3-HFPO-DA-RSD
Response Factor: 0.167572
RRF SD: 0.00720002, Relative SD: 4.29666
Response type: Internal Std (Ref 101), 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 200721P1-05	Standard	12.500	3.30	1960.722	12103.613	2.025	12.1	-3.3	NO		NO	bb
2	2 200721P1-06	Standard	12.500	3.30	2058.258	12136.501	2.120	12.7	1.2	NO		NO	bb
3	3 200721P1-07	Standard	12.500	3.29	1899.823	11786.868	2.015	12.0	-3.8	NO		NO	bb
4	4 200721P1-08	Standard	12.500	3.30	1990.732	11888.808	2.093	12.5	-0.1	NO		NO	bb
5	5 200721P1-09	Standard	12.500	3.29	1965.079	12700.689	1.934	11.5	-7.7	NO		NO	bb
6	6 200721P1-10	Standard	12.500	3.30	2244.853	12561.873	2.234	13.3	6.6	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.30	2116.604	12831.812	2.062	12.3	-1.6	NO		NO	bb
8	8 200721P1-12	Standard	12.500	3.30	2252.438	13116.901	2.147	12.8	2.5	NO		NO	bb
9	9 200721P1-13	Standard	12.500	3.30	2171.224	12832.749	2.115	12.6	1.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	3.30	976.977	5544.105	2.203	13.1	5.2	NO		NO	bb

Compound name: 13C2-4:2 FTS-EIS
Response Factor: 108.887
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	2.99	1226.205		1226.205	11.3	-9.9	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	2.99	1370.541		1370.541	12.6	0.7	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	2.99	1368.020		1368.020	12.6	0.5	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	2.99	1424.864		1424.864	13.1	4.7	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	2.99	1425.193		1425.193	13.1	4.7	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	2.99	1361.082		1361.082	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.00	1284.530		1284.530	11.8	-5.6	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	2.99	1322.747		1322.747	12.1	-2.8	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	2.99	1202.974		1202.974	11.0	-11.6	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	2.99	566.745		566.745	5.2	-58.4	NO		NO	bbX

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Compound name: 13C2-4:2 FTS-RSD
Response Factor: 1.47178
RRF SD: 0.128257, Relative SD: 8.71443
Response type: Internal Std (Ref 102), 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 200721P1-05	Standard	12.500	2.99	1226.205	921.623	16.631	11.3	-9.6	NO		NO	bb
2	2 200721P1-06	Standard	12.500	2.99	1370.541	968.284	17.693	12.0	-3.8	NO		NO	bb
3	3 200721P1-07	Standard	12.500	2.99	1368.020	827.817	20.657	14.0	12.3	NO		NO	bb
4	4 200721P1-08	Standard	12.500	2.99	1424.864	928.911	19.174	13.0	4.2	NO		NO	bb
5	5 200721P1-09	Standard	12.500	2.99	1425.193	850.413	20.949	14.2	13.9	NO		NO	bb
6	6 200721P1-10	Standard	12.500	2.99	1361.082	917.368	18.546	12.6	0.8	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.00	1284.530	832.346	19.291	13.1	4.9	NO		NO	bb
8	8 200721P1-12	Standard	12.500	2.99	1322.747	977.833	16.909	11.5	-8.1	NO		NO	bb
9	9 200721P1-13	Standard	12.500	2.99	1202.974	912.883	16.472	11.2	-10.5	NO		NO	bb
10	10 200721P1-14	Standard	12.500	2.99	566.745	401.362	17.651	12.0	-4.1	NO		NO	bb

Compound name: 13C2-PFHxA-EIS
Response Factor: 854.58
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	3.08	10261.329		10261.329	12.0	-3.9	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	3.08	10117.663		10117.663	11.8	-5.3	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	3.08	10120.983		10120.983	11.8	-5.3	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	3.08	10280.524		10280.524	12.0	-3.8	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	3.08	10709.876		10709.876	12.5	0.3	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	3.08	10682.253		10682.253	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.08	10473.296		10473.296	12.3	-2.0	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	3.08	11233.097		11233.097	13.1	5.2	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	3.08	11190.709		11190.709	13.1	4.8	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	3.08	4790.834		4790.834	5.6	-55.2	NO		NO	bbX

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Compound name: 13C2-PFHxA-RSD
Response Factor: 0.850721
RRF SD: 0.0165774, Relative SD: 1.94862
Response type: Internal Std (Ref 101), 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 200721P1-05	Standard	12.500	3.08	10261.329	12103.613	10.597	12.5	-0.3	NO		NO	bb
2	2 200721P1-06	Standard	12.500	3.08	10117.663	12136.501	10.421	12.2	-2.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	3.08	10120.983	11786.868	10.733	12.6	0.9	NO		NO	bb
4	4 200721P1-08	Standard	12.500	3.08	10280.524	11888.808	10.809	12.7	1.6	NO		NO	bb
5	5 200721P1-09	Standard	12.500	3.08	10709.876	12700.689	10.541	12.4	-0.9	NO		NO	bb
6	6 200721P1-10	Standard	12.500	3.08	10682.253	12561.873	10.630	12.5	-0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.08	10473.296	12831.812	10.202	12.0	-4.1	NO		NO	bb
8	8 200721P1-12	Standard	12.500	3.08	11233.097	13116.901	10.705	12.6	0.7	NO		NO	bb
9	9 200721P1-13	Standard	12.500	3.08	11190.709	12832.749	10.901	12.8	2.5	NO		NO	bb
10	10 200721P1-14	Standard	12.500	3.08	4790.834	5544.105	10.802	12.7	1.6	NO		NO	bb

Compound name: 13C4-PFHpA-EIS
Response Factor: 833.947
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	3.68	10110.021		10110.021	12.1	-3.0	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	3.68	9486.345		9486.345	11.4	-9.0	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	3.68	9610.576		9610.576	11.5	-7.8	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	3.68	9499.615		9499.615	11.4	-8.9	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	3.68	9863.796		9863.796	11.8	-5.4	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	3.68	10424.336		10424.336	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.68	10175.216		10175.216	12.2	-2.4	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	3.68	9969.317		9969.317	12.0	-4.4	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	3.68	9630.188		9630.188	11.5	-7.6	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	3.68	4193.613		4193.613	5.0	-59.8	NO		NO	bbX

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Compound name: 13C4-PFHpA-RSD
Response Factor: 0.789765
RRF SD: 0.0302056, Relative SD: 3.82463
Response type: Internal Std (Ref 101), 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 200721P1-05	Standard	12.500	3.68	10110.021	12103.613	10.441	13.2	5.8	NO		NO	bb
2	2 200721P1-06	Standard	12.500	3.68	9486.345	12136.501	9.770	12.4	-1.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	3.68	9610.576	11786.868	10.192	12.9	3.2	NO		NO	bb
4	4 200721P1-08	Standard	12.500	3.68	9499.615	11888.808	9.988	12.6	1.2	NO		NO	bb
5	5 200721P1-09	Standard	12.500	3.68	9863.796	12700.689	9.708	12.3	-1.7	NO		NO	bb
6	6 200721P1-10	Standard	12.500	3.68	10424.336	12561.873	10.373	13.1	5.1	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.68	10175.216	12831.812	9.912	12.6	0.4	NO		NO	bb
8	8 200721P1-12	Standard	12.500	3.68	9969.317	13116.901	9.500	12.0	-3.8	NO		NO	bb
9	9 200721P1-13	Standard	12.500	3.68	9630.188	12832.749	9.380	11.9	-5.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	3.68	4193.613	5544.105	9.455	12.0	-4.2	NO		NO	bb

Compound name: 13C3-PFHxS-EIS
Response Factor: 182.953
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	3.82	2294.339		2294.339	12.5	0.3	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	3.82	2377.996		2377.996	13.0	4.0	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	3.82	2403.637		2403.637	13.1	5.1	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	3.82	2346.755		2346.755	12.8	2.6	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	3.82	2354.339		2354.339	12.9	2.9	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	3.82	2286.915		2286.915	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.83	2329.767		2329.767	12.7	1.9	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	3.82	2278.486		2278.486	12.5	-0.4	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	3.83	2260.156		2260.156	12.4	-1.2	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	3.83	1054.663		1054.663	5.8	-53.9	NO		NO	bbX

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Compound name: 13C3-PFHxS-RSD
Response Factor: 2.58694
RRF SD: 0.181764, Relative SD: 7.02622
Response type: Internal Std (Ref 102), 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 200721P1-05	Standard	12.500	3.82	2294.339	921.623	31.118	12.0	-3.8	NO		NO	bb
2	2 200721P1-06	Standard	12.500	3.82	2377.996	968.284	30.699	11.9	-5.1	NO		NO	bb
3	3 200721P1-07	Standard	12.500	3.82	2403.637	827.817	36.295	14.0	12.2	NO		NO	bb
4	4 200721P1-08	Standard	12.500	3.82	2346.755	928.911	31.579	12.2	-2.3	NO		NO	bb
5	5 200721P1-09	Standard	12.500	3.82	2354.339	850.413	34.606	13.4	7.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	3.82	2286.915	917.368	31.161	12.0	-3.6	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.83	2329.767	832.346	34.988	13.5	8.2	NO		NO	bb
8	8 200721P1-12	Standard	12.500	3.82	2278.486	977.833	29.127	11.3	-9.9	NO		NO	bb
9	9 200721P1-13	Standard	12.500	3.83	2260.156	912.883	30.948	12.0	-4.3	NO		NO	bb
10	10 200721P1-14	Standard	12.500	3.83	1054.663	401.362	32.846	12.7	1.6	NO		NO	bb

Compound name: 13C2-6:2 FTS-EIS
Response Factor: 122.581
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	4.14	1503.743		1503.743	12.3	-1.9	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	4.14	1583.574		1583.574	12.9	3.3	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	4.14	1532.415		1532.415	12.5	0.0	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	4.14	1533.581		1533.581	12.5	0.1	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	4.14	1498.827		1498.827	12.2	-2.2	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	4.14	1532.265		1532.265	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.14	1536.075		1536.075	12.5	0.2	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	4.14	1500.094		1500.094	12.2	-2.1	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	4.14	1471.818		1471.818	12.0	-3.9	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	4.14	634.471		634.471	5.2	-58.6	NO		NO	bbX

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Compound name: 13C2-6:2 FTS-RSD
Response Factor: 0.512594
RRF SD: 0.0234987, Relative SD: 4.58427
Response type: Internal Std (Ref 105), 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 200721P1-05	Standard	12.500	4.14	1503.743	2880.563	6.525	12.7	1.8	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.14	1583.574	3170.917	6.243	12.2	-2.6	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.14	1532.415	2692.578	7.114	13.9	11.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.14	1533.581	2978.643	6.436	12.6	0.4	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.14	1498.827	2998.279	6.249	12.2	-2.5	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.14	1532.265	3050.164	6.279	12.3	-2.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.14	1536.075	3020.368	6.357	12.4	-0.8	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.14	1500.094	3050.115	6.148	12.0	-4.1	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.14	1471.818	3007.508	6.117	11.9	-4.5	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.14	634.471	1200.518	6.606	12.9	3.1	NO		NO	bb

Compound name: 13C5-PFNA-EIS
Response Factor: 943.916
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	4.64	11408.764		11408.764	12.1	-3.3	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	4.64	11582.682		11582.682	12.3	-1.8	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	4.64	11210.633		11210.633	11.9	-5.0	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	4.64	11757.290		11757.290	12.5	-0.4	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	4.64	11806.524		11806.524	12.5	0.1	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	4.64	11798.947		11798.947	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.64	11533.794		11533.794	12.2	-2.2	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	4.64	11583.920		11583.920	12.3	-1.8	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	4.64	11854.206		11854.206	12.6	0.5	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	4.64	5043.783		5043.783	5.3	-57.3	NO		NO	bbX

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Compound name: 13C5-PFNA-RSD
Response Factor: 0.955377
RRF SD: 0.0442589, Relative SD: 4.63261
Response type: Internal Std (Ref 104), 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 200721P1-05	Standard	12.500	4.64	11408.764	11913.315	11.971	12.5	0.2	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.64	11582.682	12586.591	11.503	12.0	-3.7	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.64	11210.633	11610.588	12.069	12.6	1.1	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.64	11757.290	12470.643	11.785	12.3	-1.3	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.64	11806.524	11997.783	12.301	12.9	3.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.64	11798.947	12942.644	11.395	11.9	-4.6	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.64	11533.794	12661.336	11.387	11.9	-4.7	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.64	11583.920	12332.434	11.741	12.3	-1.7	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.64	11854.206	12339.051	12.009	12.6	0.6	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.64	5043.783	4754.334	13.261	13.9	11.0	NO		NO	bb

Compound name: 13C8-PFOSA-EIS
Response Factor: 375.349
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	4.68	4788.881		4788.881	12.8	2.1	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	4.68	4734.183		4734.183	12.6	0.9	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	4.68	4780.948		4780.948	12.7	1.9	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	4.68	4581.359		4581.359	12.2	-2.4	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	4.68	4844.647		4844.647	12.9	3.3	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	4.68	4691.865		4691.865	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.68	4716.775		4716.775	12.6	0.5	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	4.68	4912.495		4912.495	13.1	4.7	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	4.69	4719.619		4719.619	12.6	0.6	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	4.69	2014.119		2014.119	5.4	-57.1	NO		NO	bbX

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Compound name: 13C8-PFOSA-RSD
Response Factor: 0.436349
RRF SD: 0.0235038, Relative SD: 5.38646
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	12.500	4.68	4788.881	10654.064	5.619	12.9	3.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.68	4734.183	11544.650	5.126	11.7	-6.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.68	4780.948	10813.996	5.526	12.7	1.3	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.68	4581.359	11534.780	4.965	11.4	-9.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.68	4844.647	10611.802	5.707	13.1	4.6	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.68	4691.865	11427.382	5.132	11.8	-5.9	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.68	4716.775	10949.390	5.385	12.3	-1.3	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.68	4912.495	10819.862	5.675	13.0	4.1	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.69	4719.619	10639.380	5.545	12.7	1.7	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.69	2014.119	4293.402	5.864	13.4	7.5	NO		NO	bb

Compound name: 13C2-PFOA-EIS
Response Factor: 1066.46
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	4.19	12197.543		12197.543	11.4	-8.5	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	4.19	13042.796		13042.796	12.2	-2.2	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	4.19	12132.295		12132.295	11.4	-9.0	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	4.19	12984.820		12984.820	12.2	-2.6	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	4.19	12222.608		12222.608	11.5	-8.3	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	4.19	13330.769		13330.769	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.20	12904.697		12904.697	12.1	-3.2	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	4.19	11993.592		11993.592	11.2	-10.0	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	4.20	12004.084		12004.084	11.3	-10.0	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	4.20	5553.123		5553.123	5.2	-58.3	NO		NO	bbX

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Compound name: 13C2-PFOA-RSD
Response Factor: 1.25959
RRF SD: 0.0375678, Relative SD: 2.98254
Response type: Internal Std (Ref 103), 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 200721P1-05	Standard	12.500	4.19	12197.543	9699.839	15.719	12.5	-0.2	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.19	13042.796	10285.072	15.852	12.6	0.7	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.19	12132.295	9811.902	15.456	12.3	-1.8	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.19	12984.820	10020.025	16.199	12.9	2.9	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.19	12222.608	9927.104	15.390	12.2	-2.3	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.19	13330.769	10572.630	15.761	12.5	0.1	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.20	12904.697	10036.786	16.072	12.8	2.1	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.19	11993.592	10062.950	14.898	11.8	-5.4	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.20	12004.084	9662.771	15.529	12.3	-1.4	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.20	5553.123	4188.180	16.574	13.2	5.3	NO		NO	bb

Compound name: 13C8-PFOS-EIS
Response Factor: 193.524
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	4.72	2195.421		2195.421	11.3	-9.2	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	4.72	2349.579		2349.579	12.1	-2.9	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	4.72	2316.462		2316.462	12.0	-4.2	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	4.72	2417.927		2417.927	12.5	-0.0	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	4.72	2285.794		2285.794	11.8	-5.5	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	4.72	2419.053		2419.053	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.72	2350.042		2350.042	12.1	-2.9	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	4.72	2181.598		2181.598	11.3	-9.8	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	4.72	2402.709		2402.709	12.4	-0.7	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	4.72	1000.506		1000.506	5.2	-58.6	NO		NO	bbX

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Compound name: 13C8-PFOS-RSD
Response Factor: 0.785627
RRF SD: 0.0432951, Relative SD: 5.51089
Response type: Internal Std (Ref 105), 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 200721P1-05	Standard	12.500	4.72	2195.421	2880.563	9.527	12.1	-3.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.72	2349.579	3170.917	9.262	11.8	-5.7	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.72	2316.462	2692.578	10.754	13.7	9.5	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.72	2417.927	2978.643	10.147	12.9	3.3	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.72	2285.794	2998.279	9.530	12.1	-3.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.72	2419.053	3050.164	9.914	12.6	0.9	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.72	2350.042	3020.368	9.726	12.4	-1.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.72	2181.598	3050.115	8.941	11.4	-9.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.72	2402.709	3007.508	9.986	12.7	1.7	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.72	1000.506	1200.518	10.417	13.3	6.1	NO		NO	bb

Compound name: 13C2-PFDA-EIS
Response Factor: 1149.25
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	5.01	14386.030		14386.030	12.5	0.1	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	5.01	13675.889		13675.889	11.9	-4.8	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	5.01	13906.310		13906.310	12.1	-3.2	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	5.01	14189.619		14189.619	12.3	-1.2	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	5.01	14267.585		14267.585	12.4	-0.7	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	5.01	14365.683		14365.683	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.01	13755.642		13755.642	12.0	-4.2	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	5.01	14364.021		14364.021	12.5	-0.0	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	5.01	14108.498		14108.498	12.3	-1.8	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	5.01	5982.004		5982.004	5.2	-58.4	NO		NO	bbX

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Compound name: 13C2-PFDA-RSD
Response Factor: 1.09625
RRF SD: 0.0379494, Relative SD: 3.46175
Response type: Internal Std (Ref 106), 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 200721P1-05	Standard	12.500	5.01	14386.030	12592.287	14.281	13.0	4.2	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.01	13675.889	12140.506	14.081	12.8	2.8	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.01	13906.310	12302.781	14.129	12.9	3.1	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.01	14189.619	12717.201	13.947	12.7	1.8	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.01	14267.585	13011.079	13.707	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.01	14365.683	13486.905	13.314	12.1	-2.8	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.01	13755.642	13380.959	12.850	11.7	-6.2	NO		NO	bb
8	8 200721P1-12	Standard	12.500	5.01	14364.021	13229.895	13.572	12.4	-1.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	5.01	14108.498	12587.682	14.010	12.8	2.2	NO		NO	bb
10	10 200721P1-14	Standard	12.500	5.01	5982.004	5690.762	13.140	12.0	-4.1	NO		NO	bb

Compound name: 13C2-8:2 FTS-EIS
Response Factor: 110.493
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	4.98	1377.490		1377.490	12.5	-0.3	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	4.98	1205.205		1205.205	10.9	-12.7	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	4.98	1283.104		1283.104	11.6	-7.1	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	4.98	1432.690		1432.690	13.0	3.7	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	4.98	1399.320		1399.320	12.7	1.3	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	4.98	1381.165		1381.165	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.98	1266.858		1266.858	11.5	-8.3	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	4.98	1253.450		1253.450	11.3	-9.2	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	4.98	1255.029		1255.029	11.4	-9.1	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	4.98	506.596		506.596	4.6	-63.3	NO		NO	bbX

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Compound name: 13C2-8:2 FTS-RSD
Response Factor: 0.4405
RRF SD: 0.0350334, Relative SD: 7.9531
Response type: Internal Std (Ref 105), 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 200721P1-05	Standard	12.500	4.98	1377.490	2880.563	5.978	13.6	8.6	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.98	1205.205	3170.917	4.751	10.8	-13.7	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.98	1283.104	2692.578	5.957	13.5	8.2	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.98	1432.690	2978.643	6.012	13.6	9.2	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.98	1399.320	2998.279	5.834	13.2	5.9	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.98	1381.165	3050.164	5.660	12.8	2.8	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.98	1266.858	3020.368	5.243	11.9	-4.8	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.98	1253.450	3050.115	5.137	11.7	-6.7	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.98	1255.029	3007.508	5.216	11.8	-5.3	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.98	506.596	1200.518	5.275	12.0	-4.2	NO		NO	bb

Compound name: d3-N-MeFOSAA-EIS
Response Factor: 273.698
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	5.16	3308.744		3308.744	12.1	-3.3	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	5.16	3273.515		3273.515	12.0	-4.3	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	5.16	3250.077		3250.077	11.9	-5.0	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	5.16	3401.248		3401.248	12.4	-0.6	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	5.16	3225.330		3225.330	11.8	-5.7	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	5.16	3421.219		3421.219	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.16	3463.952		3463.952	12.7	1.2	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	5.16	3386.353		3386.353	12.4	-1.0	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	5.16	3281.248		3281.248	12.0	-4.1	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	5.16	1520.875		1520.875	5.6	-55.5	NO		NO	bbX

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Compound name: d3-N-MeFOSAA-RSD
Response Factor: 0.308483
RRF SD: 0.0187176, Relative SD: 6.06762
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	12.500	5.16	3308.744	10654.064	3.882	12.6	0.7	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.16	3273.515	11544.650	3.544	11.5	-8.1	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.16	3250.077	10813.996	3.757	12.2	-2.6	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.16	3401.248	11534.780	3.686	11.9	-4.4	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.16	3225.330	10611.802	3.799	12.3	-1.5	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.16	3421.219	11427.382	3.742	12.1	-2.9	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.16	3463.952	10949.390	3.955	12.8	2.6	NO		NO	bb
8	8 200721P1-12	Standard	12.500	5.16	3386.353	10819.862	3.912	12.7	1.5	NO		NO	bb
9	9 200721P1-13	Standard	12.500	5.16	3281.248	10639.380	3.855	12.5	-0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	5.16	1520.875	4293.402	4.428	14.4	14.8	NO		NO	bb

Compound name: 13C2-PFUdA-EIS
Response Factor: 1217.71
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	5.33	13939.626		13939.626	11.4	-8.4	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	5.33	13730.669		13730.669	11.3	-9.8	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	5.34	13797.326		13797.326	11.3	-9.4	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	5.34	14465.220		14465.220	11.9	-5.0	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	5.33	14826.915		14826.915	12.2	-2.6	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	5.34	15221.418		15221.418	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.34	14479.813		14479.813	11.9	-4.9	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	5.34	14956.539		14956.539	12.3	-1.7	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	5.34	13790.758		13790.758	11.3	-9.4	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	5.34	6088.014		6088.014	5.0	-60.0	NO		NO	bbX

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Compound name: 13C2-PFUdA-RSD
Response Factor: 1.31758
RRF SD: 0.0696066, Relative SD: 5.2829
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	12.500	5.33	13939.626	10654.064	16.355	12.4	-0.7	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.33	13730.669	11544.650	14.867	11.3	-9.7	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.34	13797.326	10813.996	15.948	12.1	-3.2	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.34	14465.220	11534.780	15.676	11.9	-4.8	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.33	14826.915	10611.802	17.465	13.3	6.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.34	15221.418	11427.382	16.650	12.6	1.1	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.34	14479.813	10949.390	16.530	12.5	0.4	NO		NO	bb
8	8 200721P1-12	Standard	12.500	5.34	14956.539	10819.862	17.279	13.1	4.9	NO		NO	bb
9	9 200721P1-13	Standard	12.500	5.34	13790.758	10639.380	16.202	12.3	-1.6	NO		NO	bb
10	10 200721P1-14	Standard	12.500	5.34	6088.014	4293.402	17.725	13.5	7.6	NO		NO	bb

Compound name: d5-N-EtFOSAA-EIS
Response Factor: 214.7
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	5.31	2678.479		2678.479	12.5	-0.2	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	5.31	2627.101		2627.101	12.2	-2.1	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	5.31	2693.587		2693.587	12.5	0.4	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	5.32	2806.869		2806.869	13.1	4.6	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	5.31	2739.324		2739.324	12.8	2.1	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	5.32	2683.755		2683.755	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.32	2636.466		2636.466	12.3	-1.8	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	5.32	2773.451		2773.451	12.9	3.3	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	5.32	2616.856		2616.856	12.2	-2.5	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	5.32	1082.429		1082.429	5.0	-59.7	NO		NO	bbX

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Compound name: d5-N-EtFOSAA-RSD
Response Factor: 0.245957
RRF SD: 0.0095957, Relative SD: 3.90137
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	12.500	5.31	2678.479	10654.064	3.143	12.8	2.2	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.31	2627.101	11544.650	2.845	11.6	-7.5	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.31	2693.587	10813.996	3.114	12.7	1.3	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.32	2806.869	11534.780	3.042	12.4	-1.1	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.31	2739.324	10611.802	3.227	13.1	5.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.32	2683.755	11427.382	2.936	11.9	-4.5	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.32	2636.466	10949.390	3.010	12.2	-2.1	NO		NO	bb
8	8 200721P1-12	Standard	12.500	5.32	2773.451	10819.862	3.204	13.0	4.2	NO		NO	bb
9	9 200721P1-13	Standard	12.500	5.32	2616.856	10639.380	3.074	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	5.32	1082.429	4293.402	3.151	12.8	2.5	NO		NO	bb

Compound name: 13C2-PFDoA-EIS
Response Factor: 1316.71
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	5.61	16127.644		16127.644	12.2	-2.0	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	5.61	16434.764		16434.764	12.5	-0.1	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	5.61	16499.408		16499.408	12.5	0.2	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	5.61	16679.688		16679.688	12.7	1.3	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	5.61	16258.736		16258.736	12.3	-1.2	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	5.61	16458.893		16458.893	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.62	15726.110		15726.110	11.9	-4.5	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	5.61	16035.551		16035.551	12.2	-2.6	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	5.62	15231.616		15231.616	11.6	-7.5	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	5.62	6817.745		6817.745	5.2	-58.6	NO		NO	bbX

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Compound name: 13C2-PFDoA-RSD
Response Factor: 1.25525
RRF SD: 0.0629996, Relative SD: 5.01887
Response type: Internal Std (Ref 106), 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 200721P1-05	Standard	12.500	5.61	16127.644	12592.287	16.009	12.8	2.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.61	16434.764	12140.506	16.921	13.5	7.8	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.61	16499.408	12302.781	16.764	13.4	6.8	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.61	16679.688	12717.201	16.395	13.1	4.5	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.61	16258.736	13011.079	15.620	12.4	-0.4	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.61	16458.893	13486.905	15.255	12.2	-2.8	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.62	15726.110	13380.959	14.691	11.7	-6.4	NO		NO	bb
8	8 200721P1-12	Standard	12.500	5.61	16035.551	13229.895	15.151	12.1	-3.4	NO		NO	bb
9	9 200721P1-13	Standard	12.500	5.62	15231.616	12587.682	15.126	12.0	-3.6	NO		NO	bb
10	10 200721P1-14	Standard	12.500	5.62	6817.745	5690.762	14.975	11.9	-4.6	NO		NO	bb

Compound name: 13C2-10:2 FTS-EIS
Response Factor: 77.8492
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	5.60	992.253		992.253	12.7	2.0	NO		NO	MMX
2	2 200721P1-06	Standard	12.500	5.60	971.084		971.084	12.5	-0.2	NO		NO	MMX
3	3 200721P1-07	Standard	12.500	5.60	958.567		958.567	12.3	-1.5	NO		NO	MMX
4	4 200721P1-08	Standard	12.500	5.60	1022.311		1022.311	13.1	5.1	NO		NO	MMX
5	5 200721P1-09	Standard	12.500	5.60	962.726		962.726	12.4	-1.1	NO		NO	MMX
6	6 200721P1-10	Standard	12.500	5.60	973.115		973.115	12.5	0.0	NO		NO	MM
7	7 200721P1-11	Standard	12.500	5.60	936.833		936.833	12.0	-3.7	NO		NO	MMX
8	8 200721P1-12	Standard	12.500	5.60	861.592		861.592	11.1	-11.5	NO		NO	MMX
9	9 200721P1-13	Standard	12.500	5.60	759.645		759.645	9.8	-21.9	NO		NO	MMX
10	10 200721P1-14	Standard	12.500	5.60	353.493		353.493	4.5	-63.7	YES		NO	MMX

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Compound name: 13C2-10:2 FTS-RSD
Response Factor: 0.313302
RRF SD: 0.0317009, Relative SD: 10.1183
Response type: Internal Std (Ref 105), 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 200721P1-05	Standard	12.500	5.60	987.708	2880.563	4.286	13.7	9.4	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.60	962.275	3170.917	3.793	12.1	-3.1	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.60	952.008	2692.578	4.420	14.1	12.9	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.60	1013.788	2978.643	4.254	13.6	8.6	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.60	957.162	2998.279	3.990	12.7	1.9	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.60	967.162	3050.164	3.964	12.7	1.2	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.60	930.396	3020.368	3.851	12.3	-1.7	NO		NO	db
8	8 200721P1-12	Standard	12.500	5.60	861.750	3050.115	3.532	11.3	-9.8	NO		NO	MM
9	9 200721P1-13	Standard	12.500	5.60	759.554	3007.508	3.157	10.1	-19.4	NO		NO	MM
10	10 200721P1-14	Standard	12.500	5.60	352.671	1200.518	3.672	11.7	-6.2	NO		NO	dbX

Compound name: d3-N-MeFOSA-EIS
Response Factor: 109.058
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	149.200	5.68	15814.095		15814.095	145.0	-2.8	NO		NO	bbX
2	2 200721P1-06	Standard	149.200	5.68	15612.939		15612.939	143.2	-4.0	NO		NO	bbX
3	3 200721P1-07	Standard	149.200	5.68	15609.952		15609.952	143.1	-4.1	NO		NO	bbX
4	4 200721P1-08	Standard	149.200	5.68	16147.192		16147.192	148.1	-0.8	NO		NO	bbX
5	5 200721P1-09	Standard	149.200	5.68	15870.027		15870.027	145.5	-2.5	NO		NO	bbX
6	6 200721P1-10	Standard	149.200	5.68	16271.418		16271.418	149.2	0.0	NO		NO	bb
7	7 200721P1-11	Standard	149.200	5.68	15831.338		15831.338	145.2	-2.7	NO		NO	bbX
8	8 200721P1-12	Standard	149.200	5.68	15911.779		15911.779	145.9	-2.2	NO		NO	bbX
9	9 200721P1-13	Standard	149.200	5.69	16573.305		16573.305	152.0	1.9	NO		NO	bbX
10	10 200721P1-14	Standard	149.200	5.68	7127.498		7127.498	65.4	-56.2	NO		NO	bbX

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Compound name: d3-N-MeFOSA-RSD
Response Factor: 0.12344
RRF SD: 0.00721451, Relative SD: 5.84455
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	149.200	5.68	15814.095	10654.064	18.554	150.3	0.7	NO		NO	bb
2	2 200721P1-06	Standard	149.200	5.68	15612.939	11544.650	16.905	136.9	-8.2	NO		NO	bb
3	3 200721P1-07	Standard	149.200	5.68	15609.952	10813.996	18.044	146.2	-2.0	NO		NO	bb
4	4 200721P1-08	Standard	149.200	5.68	16147.192	11534.780	17.498	141.8	-5.0	NO		NO	bb
5	5 200721P1-09	Standard	149.200	5.68	15870.027	10611.802	18.694	151.4	1.5	NO		NO	bb
6	6 200721P1-10	Standard	149.200	5.68	16271.418	11427.382	17.799	144.2	-3.4	NO		NO	bb
7	7 200721P1-11	Standard	149.200	5.68	15831.338	10949.390	18.073	146.4	-1.9	NO		NO	bb
8	8 200721P1-12	Standard	149.200	5.68	15911.779	10819.862	18.383	148.9	-0.2	NO		NO	bb
9	9 200721P1-13	Standard	149.200	5.69	16573.305	10639.380	19.472	157.7	5.7	NO		NO	bb
10	10 200721P1-14	Standard	149.200	5.68	7127.498	4293.402	20.751	168.1	12.7	NO		NO	bb

Compound name: 13C2-PFTeDA-EIS
Response Factor: 1368.13
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	6.07	16038.352		16038.352	11.7	-6.2	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	6.07	16793.621		16793.621	12.3	-1.8	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	6.07	16766.408		16766.408	12.3	-2.0	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	6.07	17040.012		17040.012	12.5	-0.4	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	6.07	17065.094		17065.094	12.5	-0.2	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	6.07	17101.666		17101.666	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	6.07	16600.949		16600.949	12.1	-2.9	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	6.07	16089.913		16089.913	11.8	-5.9	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	6.07	15231.297		15231.297	11.1	-10.9	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	6.07	7003.894		7003.894	5.1	-59.0	NO		NO	bbX

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Compound name: 13C2-PFTeDA-RSD
Response Factor: 1.51586
RRF SD: 0.0638433, Relative SD: 4.2117
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	12.500	6.07	16038.352	10654.064	18.817	12.4	-0.7	NO		NO	bb
2	2 200721P1-06	Standard	12.500	6.07	16793.621	11544.650	18.183	12.0	-4.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	6.07	16766.408	10813.996	19.380	12.8	2.3	NO		NO	bb
4	4 200721P1-08	Standard	12.500	6.07	17040.012	11534.780	18.466	12.2	-2.5	NO		NO	bb
5	5 200721P1-09	Standard	12.500	6.07	17065.094	10611.802	20.102	13.3	6.1	NO		NO	bb
6	6 200721P1-10	Standard	12.500	6.07	17101.666	11427.382	18.707	12.3	-1.3	NO		NO	bb
7	7 200721P1-11	Standard	12.500	6.07	16600.949	10949.390	18.952	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	6.07	16089.913	10819.862	18.588	12.3	-1.9	NO		NO	bb
9	9 200721P1-13	Standard	12.500	6.07	15231.297	10639.380	17.895	11.8	-5.6	NO		NO	bb
10	10 200721P1-14	Standard	12.500	6.07	7003.894	4293.402	20.391	13.5	7.6	NO		NO	bb

Compound name: d5-N-ETFOSA-EIS
Response Factor: 138.083
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	149.200	6.10	20298.416		20298.416	147.0	-1.5	NO		NO	bbX
2	2 200721P1-06	Standard	149.200	6.10	20040.957		20040.957	145.1	-2.7	NO		NO	bbX
3	3 200721P1-07	Standard	149.200	6.10	19962.805		19962.805	144.6	-3.1	NO		NO	bbX
4	4 200721P1-08	Standard	149.200	6.10	20063.875		20063.875	145.3	-2.6	NO		NO	bbX
5	5 200721P1-09	Standard	149.200	6.10	20398.430		20398.430	147.7	-1.0	NO		NO	bbX
6	6 200721P1-10	Standard	149.200	6.10	20602.043		20602.043	149.2	0.0	NO		NO	bb
7	7 200721P1-11	Standard	149.200	6.10	20316.732		20316.732	147.1	-1.4	NO		NO	bbX
8	8 200721P1-12	Standard	149.200	6.10	20201.715		20201.715	146.3	-1.9	NO		NO	bbX
9	9 200721P1-13	Standard	149.200	6.10	18769.162		18769.162	135.9	-8.9	NO		NO	bbX
10	10 200721P1-14	Standard	149.200	6.10	8257.349		8257.349	59.8	-59.9	NO		NO	bbX

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Compound name: d5-N-ETFOSA-RSD
Response Factor: 0.153835
RRF SD: 0.0060475, Relative SD: 3.93117
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	149.200	6.10	20298.416	10654.064	23.815	154.8	3.8	NO		NO	bb
2	2 200721P1-06	Standard	149.200	6.10	20040.957	11544.650	21.699	141.1	-5.5	NO		NO	bb
3	3 200721P1-07	Standard	149.200	6.10	19962.805	10813.996	23.075	150.0	0.5	NO		NO	bb
4	4 200721P1-08	Standard	149.200	6.10	20063.875	11534.780	21.743	141.3	-5.3	NO		NO	bb
5	5 200721P1-09	Standard	149.200	6.10	20398.430	10611.802	24.028	156.2	4.7	NO		NO	bb
6	6 200721P1-10	Standard	149.200	6.10	20602.043	11427.382	22.536	146.5	-1.8	NO		NO	bb
7	7 200721P1-11	Standard	149.200	6.10	20316.732	10949.390	23.194	150.8	1.1	NO		NO	bb
8	8 200721P1-12	Standard	149.200	6.10	20201.715	10819.862	23.339	151.7	1.7	NO		NO	bb
9	9 200721P1-13	Standard	149.200	6.10	18769.162	10639.380	22.052	143.3	-3.9	NO		NO	bb
10	10 200721P1-14	Standard	149.200	6.10	8257.349	4293.402	24.041	156.3	4.7	NO		NO	bb

Compound name: 13C2-PFHxDA-EIS
Response Factor: 1697.1
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	12.500	6.40	19136.105		19136.105	11.3	-9.8	NO		NO	bbX
2	2 200721P1-06	Standard	12.500	6.40	20783.354		20783.354	12.2	-2.0	NO		NO	bbX
3	3 200721P1-07	Standard	12.500	6.40	20344.471		20344.471	12.0	-4.1	NO		NO	bbX
4	4 200721P1-08	Standard	12.500	6.40	20237.166		20237.166	11.9	-4.6	NO		NO	bbX
5	5 200721P1-09	Standard	12.500	6.40	21092.230		21092.230	12.4	-0.6	NO		NO	bbX
6	6 200721P1-10	Standard	12.500	6.40	21213.760		21213.760	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	6.41	20685.012		20685.012	12.2	-2.5	NO		NO	bbX
8	8 200721P1-12	Standard	12.500	6.40	20813.521		20813.521	12.3	-1.9	NO		NO	bbX
9	9 200721P1-13	Standard	12.500	6.41	20439.244		20439.244	12.0	-3.7	NO		NO	bbX
10	10 200721P1-14	Standard	12.500	6.40	9720.033		9720.033	5.7	-54.2	NO		NO	bbX

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Compound name: 13C2-PFHxDA-RSD
Response Factor: 1.9074
RRF SD: 0.143326, Relative SD: 7.51422
Response type: Internal Std (Ref 107), 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	200721P1-05	Standard	12.500	6.40	19136.105	10654.064	22.452	11.8	-5.8	NO		NO	bb
2	2	200721P1-06	Standard	12.500	6.40	20783.354	11544.650	22.503	11.8	-5.6	NO		NO	bb
3	3	200721P1-07	Standard	12.500	6.40	20344.471	10813.996	23.516	12.3	-1.4	NO		NO	bb
4	4	200721P1-08	Standard	12.500	6.40	20237.166	11534.780	21.931	11.5	-8.0	NO		NO	bb
5	5	200721P1-09	Standard	12.500	6.40	21092.230	10611.802	24.845	13.0	4.2	NO		NO	bb
6	6	200721P1-10	Standard	12.500	6.40	21213.760	11427.382	23.205	12.2	-2.7	NO		NO	bb
7	7	200721P1-11	Standard	12.500	6.41	20685.012	10949.390	23.614	12.4	-1.0	NO		NO	bb
8	8	200721P1-12	Standard	12.500	6.40	20813.521	10819.862	24.046	12.6	0.9	NO		NO	bb
9	9	200721P1-13	Standard	12.500	6.41	20439.244	10639.380	24.014	12.6	0.7	NO		NO	bb
10	10	200721P1-14	Standard	12.500	6.40	9720.033	4293.402	28.299	14.8	18.7	NO		NO	bb

Compound name: d7-N-MeFOSE-EIS
Response Factor: 104.675
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200721P1-05	Standard	149.200	6.28	15489.832		15489.832	148.0	-0.8	NO		NO	bbX
2	2	200721P1-06	Standard	149.200	6.28	15700.992		15700.992	150.0	0.5	NO		NO	bbX
3	3	200721P1-07	Standard	149.200	6.28	15579.406		15579.406	148.8	-0.2	NO		NO	bbX
4	4	200721P1-08	Standard	149.200	6.28	16161.275		16161.275	154.4	3.5	NO		NO	bbX
5	5	200721P1-09	Standard	149.200	6.28	15805.107		15805.107	151.0	1.2	NO		NO	bbX
6	6	200721P1-10	Standard	149.200	6.28	15617.574		15617.574	149.2	0.0	NO		NO	bb
7	7	200721P1-11	Standard	149.200	6.28	15893.394		15893.394	151.8	1.8	NO		NO	bbX
8	8	200721P1-12	Standard	149.200	6.28	15782.606		15782.606	150.8	1.1	NO		NO	bbX
9	9	200721P1-13	Standard	149.200	6.28	16026.271		16026.271	153.1	2.6	NO		NO	bbX
10	10	200721P1-14	Standard	149.200	6.28	6940.995		6940.995	66.3	-55.6	NO		NO	bbX

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Compound name: d7-N-MeFOSE-RSD
Response Factor: 0.121858
RRF SD: 0.00623888, Relative SD: 5.11981
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	149.200	6.28	15489.832	10654.064	18.174	149.1	-0.0	NO		NO	bb
2	2 200721P1-06	Standard	149.200	6.28	15700.992	11544.650	17.000	139.5	-6.5	NO		NO	bb
3	3 200721P1-07	Standard	149.200	6.28	15579.406	10813.996	18.008	147.8	-1.0	NO		NO	bb
4	4 200721P1-08	Standard	149.200	6.28	16161.275	11534.780	17.514	143.7	-3.7	NO		NO	bb
5	5 200721P1-09	Standard	149.200	6.28	15805.107	10611.802	18.617	152.8	2.4	NO		NO	bb
6	6 200721P1-10	Standard	149.200	6.28	15617.574	11427.382	17.083	140.2	-6.0	NO		NO	bb
7	7 200721P1-11	Standard	149.200	6.28	15893.394	10949.390	18.144	148.9	-0.2	NO		NO	bb
8	8 200721P1-12	Standard	149.200	6.28	15782.606	10819.862	18.233	149.6	0.3	NO		NO	bb
9	9 200721P1-13	Standard	149.200	6.28	16026.271	10639.380	18.829	154.5	3.6	NO		NO	bb
10	10 200721P1-14	Standard	149.200	6.28	6940.995	4293.402	20.208	165.8	11.1	NO		NO	bb

Compound name: d9-N-EtFOSE-EIS
Response Factor: 122.774
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200721P1-05	Standard	149.200	6.43	17530.951		17530.951	142.8	-4.3	NO		NO	bbX
2	2 200721P1-06	Standard	149.200	6.43	17507.275		17507.275	142.6	-4.4	NO		NO	bbX
3	3 200721P1-07	Standard	149.200	6.43	17415.674		17415.674	141.9	-4.9	NO		NO	bbX
4	4 200721P1-08	Standard	149.200	6.43	17372.070		17372.070	141.5	-5.2	NO		NO	bbX
5	5 200721P1-09	Standard	149.200	6.43	18131.018		18131.018	147.7	-1.0	NO		NO	bbX
6	6 200721P1-10	Standard	149.200	6.43	18317.928		18317.928	149.2	0.0	NO		NO	bb
7	7 200721P1-11	Standard	149.200	6.43	18119.773		18119.773	147.6	-1.1	NO		NO	bbX
8	8 200721P1-12	Standard	149.200	6.43	17577.781		17577.781	143.2	-4.0	NO		NO	bbX
9	9 200721P1-13	Standard	149.200	6.43	18556.531		18556.531	151.1	1.3	NO		NO	bbX
10	10 200721P1-14	Standard	149.200	6.43	7568.906		7568.906	61.6	-58.7	NO		NO	bbX

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Compound name: d9-N-EtFOSE-RSD
Response Factor: 0.137203
RRF SD: 0.00720305, Relative SD: 5.24992
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	149.200	6.43	17530.951	10654.064	20.568	149.9	0.5	NO		NO	bb
2	2 200721P1-06	Standard	149.200	6.43	17507.275	11544.650	18.956	138.2	-7.4	NO		NO	bb
3	3 200721P1-07	Standard	149.200	6.43	17415.674	10813.996	20.131	146.7	-1.7	NO		NO	bb
4	4 200721P1-08	Standard	149.200	6.43	17372.070	11534.780	18.826	137.2	-8.0	NO		NO	bb
5	5 200721P1-09	Standard	149.200	6.43	18131.018	10611.802	21.357	155.7	4.3	NO		NO	bb
6	6 200721P1-10	Standard	149.200	6.43	18317.928	11427.382	20.037	146.0	-2.1	NO		NO	bb
7	7 200721P1-11	Standard	149.200	6.43	18119.773	10949.390	20.686	150.8	1.1	NO		NO	bb
8	8 200721P1-12	Standard	149.200	6.43	17577.781	10819.862	20.307	148.0	-0.8	NO		NO	bb
9	9 200721P1-13	Standard	149.200	6.43	18556.531	10639.380	21.802	158.9	6.5	NO		NO	bb
10	10 200721P1-14	Standard	149.200	6.43	7568.906	4293.402	22.036	160.6	7.6	NO		NO	bb

Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 8.27511e-017, Relative SD: 8.27511e-015
Response type: Internal Std (Ref 99), 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 200721P1-05	Standard	12.500	1.35	3994.731	3994.731	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	1.35	4245.616	4245.616	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	1.35	4005.715	4005.715	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	1.35	4067.908	4067.908	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	1.35	4061.748	4061.748	12.500	12.5	0.0	NO		NO	MM
6	6 200721P1-10	Standard	12.500	1.35	4299.691	4299.691	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	1.35	4207.689	4207.689	12.500	12.5	0.0	NO		NO	MM
8	8 200721P1-12	Standard	12.500	1.35	4299.805	4299.805	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	1.35	4623.988	4623.988	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	1.35	1818.776	1818.776	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 8.27511e-017, Relative SD: 8.27511e-015
Response type: Internal Std (Ref 101), 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 200721P1-05	Standard	12.500	3.08	12103.613	12103.613	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	3.08	12136.501	12136.501	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	3.08	11786.868	11786.868	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	3.08	11888.808	11888.808	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	3.08	12700.689	12700.689	12.500	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	3.08	12561.873	12561.873	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.08	12831.812	12831.812	12.500	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	3.08	13116.901	13116.901	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	3.08	12832.749	12832.749	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	3.08	5544.105	5544.105	12.500	12.5	0.0	NO		NO	bb

Compound name: 18O2-PFHxS
Response Factor: 1
RRF SD: 9.79125e-017, Relative SD: 9.79125e-015
Response type: Internal Std (Ref 102), 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 200721P1-05	Standard	12.500	3.82	921.623	921.623	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	3.82	968.284	968.284	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	3.82	827.817	827.817	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	3.82	928.911	928.911	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	3.82	850.413	850.413	12.500	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	3.82	917.368	917.368	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	3.83	832.346	832.346	12.500	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	3.82	977.833	977.833	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	3.83	912.883	912.883	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	3.83	401.362	401.362	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 103), 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 200721P1-05	Standard	12.500	4.19	9699.839	9699.839	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.19	10285.072	10285.072	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.19	9811.902	9811.902	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.19	10020.025	10020.025	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.19	9927.104	9927.104	12.500	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.19	10572.630	10572.630	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.19	10036.786	10036.786	12.500	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.19	10062.950	10062.950	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.20	9662.771	9662.771	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.20	4188.180	4188.180	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C9-PFNA
Response Factor: 1
RRF SD: 3.70074e-017, Relative SD: 3.70074e-015
Response type: Internal Std (Ref 104), 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 200721P1-05	Standard	12.500	4.64	11913.315	11913.315	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.64	12586.591	12586.591	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.64	11610.588	11610.588	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.64	12470.643	12470.643	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.64	11997.783	11997.783	12.500	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.64	12942.644	12942.644	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.64	12661.336	12661.336	12.500	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.64	12332.434	12332.434	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.64	12339.051	12339.051	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.64	4754.334	4754.334	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 105), 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 200721P1-05	Standard	12.500	4.72	2880.563	2880.563	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	4.72	3170.917	3170.917	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	4.72	2692.578	2692.578	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	4.72	2978.643	2978.643	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	4.72	2998.279	2998.279	12.500	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	4.72	3050.164	3050.164	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	4.72	3020.368	3020.368	12.500	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	4.72	3050.115	3050.115	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	4.73	3007.508	3007.508	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	4.72	1200.518	1200.518	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C6-PFDA
Response Factor: 1
RRF SD: 8.27511e-017, Relative SD: 8.27511e-015
Response type: Internal Std (Ref 106), 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 200721P1-05	Standard	12.500	5.01	12592.287	12592.287	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.01	12140.506	12140.506	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.01	12302.781	12302.781	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.01	12717.201	12717.201	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.01	13011.079	13011.079	12.500	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.01	13486.905	13486.905	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.01	13380.959	13380.959	12.500	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	5.01	13229.895	13229.895	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	5.01	12587.682	12587.682	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	5.01	5690.762	5690.762	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C7-PFUdA
Response Factor: 1
RRF SD: 3.70074e-017, Relative SD: 3.70074e-015
Response type: Internal Std (Ref 107), 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 200721P1-05	Standard	12.500	5.33	10654.064	10654.064	12.500	12.5	0.0	NO		NO	bb
2	2 200721P1-06	Standard	12.500	5.33	11544.650	11544.650	12.500	12.5	0.0	NO		NO	bb
3	3 200721P1-07	Standard	12.500	5.33	10813.996	10813.996	12.500	12.5	0.0	NO		NO	bb
4	4 200721P1-08	Standard	12.500	5.34	11534.780	11534.780	12.500	12.5	0.0	NO		NO	bb
5	5 200721P1-09	Standard	12.500	5.33	10611.802	10611.802	12.500	12.5	0.0	NO		NO	bb
6	6 200721P1-10	Standard	12.500	5.34	11427.382	11427.382	12.500	12.5	0.0	NO		NO	bb
7	7 200721P1-11	Standard	12.500	5.34	10949.390	10949.390	12.500	12.5	0.0	NO		NO	bb
8	8 200721P1-12	Standard	12.500	5.33	10819.862	10819.862	12.500	12.5	0.0	NO		NO	bb
9	9 200721P1-13	Standard	12.500	5.34	10639.380	10639.380	12.500	12.5	0.0	NO		NO	bb
10	10 200721P1-14	Standard	12.500	5.34	4293.402	4293.402	12.500	12.5	0.0	NO		NO	bb

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 10:17:36
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

ST200721P1-1 DV 07/22/20

Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ~~ST200720P1-1~~ PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	# Name	IS#	CoD	CoD Flag	%RSD
1	1 PFBA	47	0.9997	NO	
2	2 PFPrS	51	0.9995	NO	
3	3 3:3 FTCA	49	0.9991	NO	
4	4 PFPeA	49	1.0000	NO	
5	5 PFBS	51	0.9999	NO	
6	6 4:2 FTS	55	0.9996	NO	
7	7 PFHxA	57	0.9998	NO	
8	8 PFPeS	51	0.9979	NO	
9	9 HFPO-DA	53	0.9996	NO	
10	10 5:3 FTCA	59	0.9998	NO	
11	11 PFHpA	59	0.9998	NO	
12	12 ADONA	59	0.9999	NO	
13	13 L-PFHxS	61	0.9999	NO	
14	15 6:2 FTS	63	0.9994	NO	
15	16 L-PFOA	69	0.9998	NO	
16	18 PFecHS	69	0.9996	NO	
17	19 PFHpS	71	0.9994	NO	
18	20 7:3 FTCA	65	0.9992	NO	
19	21 PFNA	65	0.9998	NO	
20	22 PFOSA	67	0.9996	NO	
21	23 L-PFOS	71	0.9996	NO	
22	25 9Cl-PF30NS	71	0.9976	NO	
23	26 PFDA	73	0.9995	NO	
24	27 8:2 FTS	75	0.9939	NO	
25	28 PFNS	71	0.9982	NO	
26	29 L-MeFOSAA	77	0.9990	NO	

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Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 10:17:36
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

ST200721P1-1 dpv 07/22/20

Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ~~ST200720P1-1~~ PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	81	0.9995	NO	
2	33	PFUdA	79	0.9999	NO	
3	34	PFDS	71	0.9993	NO	
4	35	11Cl-PF30UdS	83	0.9996	NO	
5	36	10:2 FTS	85	0.9997	NO	
6	37	PFDoA	83	0.9999	NO	
7	38	N-MeFOSA	87	0.9993	NO	
8	39	PFTrDA	83	0.9997	NO	
9	40	PFDoS	89	0.9993	NO	
10	41	PFTeDA	89	0.9998	NO	
11	42	N-EtFOSA	91	1.0000	NO	
12	43	PFHxDA	93	0.9999	NO	
13	44	PFODA	93	0.9999	NO	
14	45	N-MeFOSE	95	0.9998	NO	
15	46	N-EtFOSE	97	0.9991	NO	
16	47	13C3-PFBA-EIS			NO	0.000
17	48	13C3-PFBA-RSD	99		NO	2.389
18	49	13C3-PFPeA-EIS			NO	0.000
19	50	13C3-PFPeA-RSD	101		NO	1.864
20	51	13C3-PFBS-EIS			NO	0.000
21	52	13C3-PFBS-RSD	102		NO	6.556
22	53	13C3-HFPO-DA-EIS			NO	0.000
23	54	13C3-HFPO-DA-RSD	101		NO	4.297
24	55	13C2-4:2 FTS-EIS			NO	0.000
25	56	13C2-4:2 FTS-RSD	102		NO	8.714
26	57	13C2-PFHxA-EIS			NO	0.000
27	58	13C2-PFHxA-RSD	101		NO	1.949
28	59	13C4-PFHpA-EIS			NO	0.000
29	60	13C4-PFHpA-RSD	101		NO	3.825
30	61	13C3-PFHxS-EIS			NO	0.000
31	62	13C3-PFHxS-RSD	102		NO	7.026
32	63	13C2-6:2 FTS-EIS			NO	0.000

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Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ~~ST200720P1-1~~ PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	13C2-6:2 FTS-RSD	105		NO	4.584
34	65	13C5-PFNA-EIS			NO	0.000
35	66	13C5-PFNA-RSD	104		NO	4.633
36	67	13C8-PFOSA-EIS			NO	0.000
37	68	13C8-PFOSA-RSD	107		NO	5.386
38	69	13C2-PFOA-EIS			NO	0.000
39	70	13C2-PFOA-RSD	103		NO	2.983
40	71	13C8-PFOS-EIS			NO	0.000
41	72	13C8-PFOS-RSD	105		NO	5.511
42	73	13C2-PFDA-EIS			NO	0.000
43	74	13C2-PFDA-RSD	106		NO	3.462
44	75	13C2-8:2 FTS-EIS			NO	0.000
45	76	13C2-8:2 FTS-RSD	105		NO	7.953
46	77	d3-N-MeFOSAA-EIS			NO	0.000
47	78	d3-N-MeFOSAA-RSD	107		NO	6.068
48	79	13C2-PFUdA-EIS			NO	0.000
49	80	13C2-PFUdA-RSD	107		NO	5.283
50	81	d5-N-EtFOSAA-EIS			NO	0.000
51	82	d5-N-EtFOSAA-RSD	107		NO	3.901
52	83	13C2-PFDoA-EIS			NO	0.000
53	84	13C2-PFDoA-RSD	106		NO	5.019
54	85	13C2-10:2 FTS-EIS			NO	0.000
55	86	13C2-10:2 FTS-RSD	105		NO	10.118
56	87	d3-N-MeFOSA-EIS			NO	0.000
57	88	d3-N-MeFOSA-RSD	107		NO	5.845
58	89	13C2-PFTeDA-EIS			NO	0.000
59	90	13C2-PFTeDA-RSD	107		NO	4.212
60	91	d5-N-ETFOSA-EIS			NO	0.000
61	92	d5-N-ETFOSA-RSD	107		NO	3.931
62	93	13C2-PFHxDA-EIS			NO	0.000
63	94	13C2-PFHxDA-RSD	107		NO	7.514
64	95	d7-N-MeFOSE-EIS			NO	0.000
65	96	d7-N-MeFOSE-RSD	107		NO	5.120
66	97	d9-N-EtFOSE-EIS			NO	0.000
67	98	d9-N-EtFOSE-RSD	107		NO	5.250
68	99	13C4-PFBA	99		NO	0.000

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Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ~~ST200720P1-1~~ PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	#	Name	IS#	CoD	CoD Flag	%RSD
69	1...	13C5-PFHxA	101		NO	0.000
70	1...	18O2-PFHxS	102		NO	0.000
71	1...	13C8-PFOA	103		NO	0.000
72	1...	13C9-PFNA	104		NO	0.000
73	1...	13C4-PFOS	105		NO	0.000
74	1...	13C6-PFDA	106		NO	0.000
75	1...	13C7-PFUdA	107		NO	0.000

Quantify Sample Summary Report **MassLynx V4.2 SCN977**

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 11:26:15
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

ST200720P1-1 ON 07/22/20

Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ~~ST200720P1-6~~ PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio Out?
1	1	PFBA	1.35	1.35			
2	2	PFPrS	1.69	1.67	2.501	2.501	NO
3	3	3:3 FTCA	2.14	2.14	3.538	3.538	NO
4	4	PFPeA	2.28	2.28			
5	5	PFBS	2.56	2.56	2.501	2.501	NO
6	6	4:2 FTS	2.99	2.99	10.977	10.977	NO
7	7	PFHxA	3.08	3.08	15.925	15.925	NO
8	8	PFPeS	3.28	3.28	2.077	2.077	NO
9	9	HFPO-DA	3.30	3.30	2.293	2.293	NO
10	10	5:3 FTCA	3.64	3.62	1.696	1.696	NO
11	11	PFHpA	3.68	3.68	44.676	44.676	NO
12	12	ADONA	3.78	3.79	3.852	3.852	NO
13	13	L-PFHxS	3.82	3.83	3.989	3.989	NO
14	15	6:2 FTS	4.14	4.14	0.769	0.769	NO
15	16	L-PFOA	4.19	4.19	3.125	3.125	NO
16	18	PFecHS	4.21	4.20	0.514	0.514	NO
17	19	PFHpS	4.29	4.31	1.929	1.929	NO
18	20	7:3 FTCA	4.63	4.62	1.182	1.182	NO
19	21	PFNA	4.64	4.64	12.434	12.434	NO
20	22	PFOSA	4.68	4.69	19.950	19.950	NO
21	23	L-PFOS	4.72	4.72	2.464	2.464	NO
22	25	9Cl-PF30NS	4.93	4.94	31.593	31.593	NO
23	26	PFDA	5.01	5.01	5.604	5.604	NO
24	27	8:2 FTS	4.98	4.98	0.752	0.752	NO
25	28	PFNS	5.06	5.08	2.378	2.378	NO
26	29	L-MeFOSAA	5.16	5.16	1.702	1.702	NO

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Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

ST200721P1-6 qpv 07/22/20

Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ~~ST200720P1-6~~ PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio Out?
1	31	L-EtFOSAA	5.32	5.32	1.474	1.474	NO
2	33	PFUdA	5.34	5.34	18.725	18.725	NO
3	34	PFDS	5.36	5.38	1.992	1.992	NO
4	35	11Cl-PF30UdS	5.56	5.54	16.647	16.647	NO
5	36	10:2 FTS	5.60	5.60	0.846	0.846	NO
6	37	PFDoA	5.61	5.61	11.022	11.022	NO
7	38	N-MeFOSA	5.67	5.66	2.037	2.037	NO
8	39	PFTrDA	5.85	5.86	101.892	101.892	NO
9	40	PFDoS	5.88	5.88	2.213	2.213	NO
10	41	PFTeDA	6.07	6.07	13.009	13.009	NO
11	42	N-EtFOSA	6.08	6.09	2.003	2.003	NO
12	43	PFHxDA	6.40	6.40	29.707	29.707	NO
13	44	PFODA	6.61	6.64			
14	45	N-MeFOSE	6.28	6.29			
15	46	N-EtFOSE	6.43	6.44			

Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 12:09:35 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 12:09:48 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 08:22:31
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200721P1-01	IPA	21-Jul-20	15:15:23
2	2	200721P1-02	IPA	21-Jul-20	15:25:59
3	3	200721P1-03	TESTER	21-Jul-20	15:36:35
4	4	200721P1-04	IPA	21-Jul-20	15:47:01
5	5	200721P1-05	ST200721P1-1 PFC CS-2 20G1601	21-Jul-20	15:57:37
6	6	200721P1-06	ST200721P1-2 PFC CS-1 20G1602	21-Jul-20	16:08:14
7	7	200721P1-07	ST200721P1-3 PFC CS0 20G1603	21-Jul-20	16:18:40
8	8	200721P1-08	ST200721P1-4 PFC CS1 20G1604	21-Jul-20	16:29:17
9	9	200721P1-09	ST200721P1-5 PFC CS2 20G1605	21-Jul-20	16:39:53
10	10	200721P1-10	ST200721P1-6 PFC CS3 20G1606	21-Jul-20	16:50:30
11	11	200721P1-11	ST200721P1-7 PFC CS4 20G1607	21-Jul-20	17:01:05
12	12	200721P1-12	ST200721P1-8 PFC CS5 20G1608	21-Jul-20	17:11:41
13	13	200721P1-13	ST200721P1-9 PFC CS6 20G1609	21-Jul-20	17:22:17
14	14	200721P1-14	ST200721P1-10 PFC CS7 20G1610	21-Jul-20	17:32:52
15	15	200721P1-15	IB	21-Jul-20	17:43:28
16	16	200721P1-16	ICV200721P1-1 PFC ICV 20G1611	21-Jul-20	17:54:04
17	17	200721P1-17	IB	21-Jul-20	18:04:40

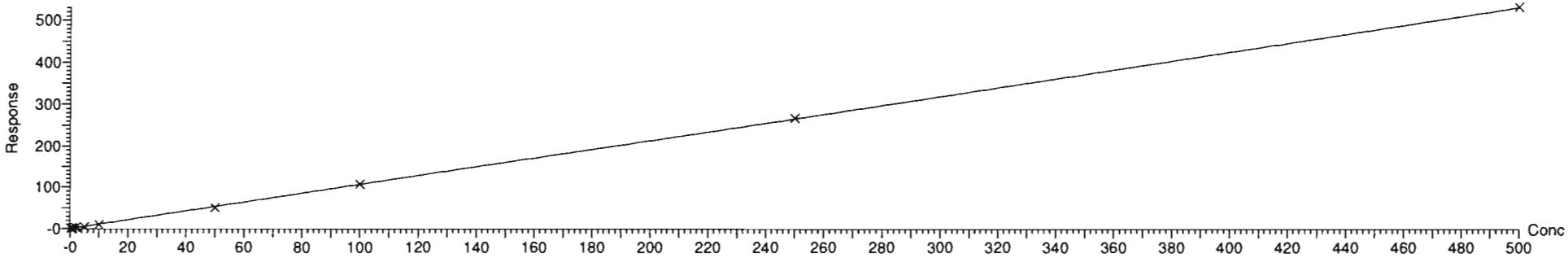
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

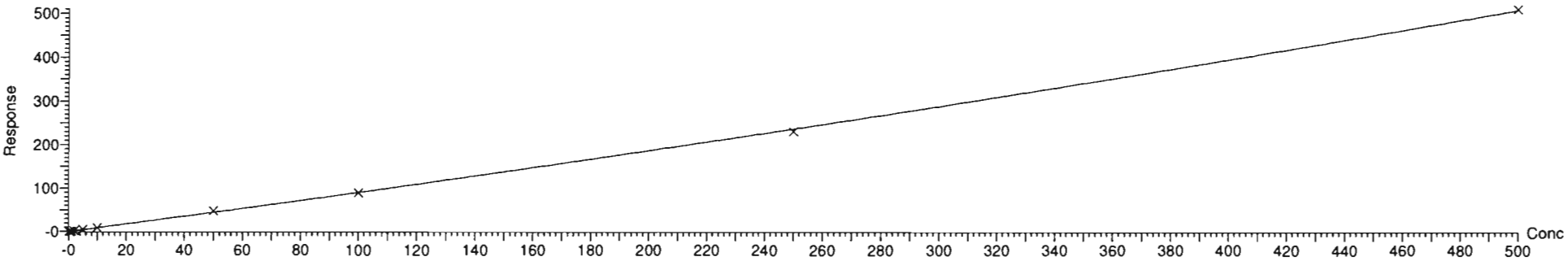
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 10:17:36
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Compound name: PFBA
Correlation coefficient: r = 0.999865, r^2 = 0.999730
Calibration curve: 1.0627 * x + 0.00186178
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



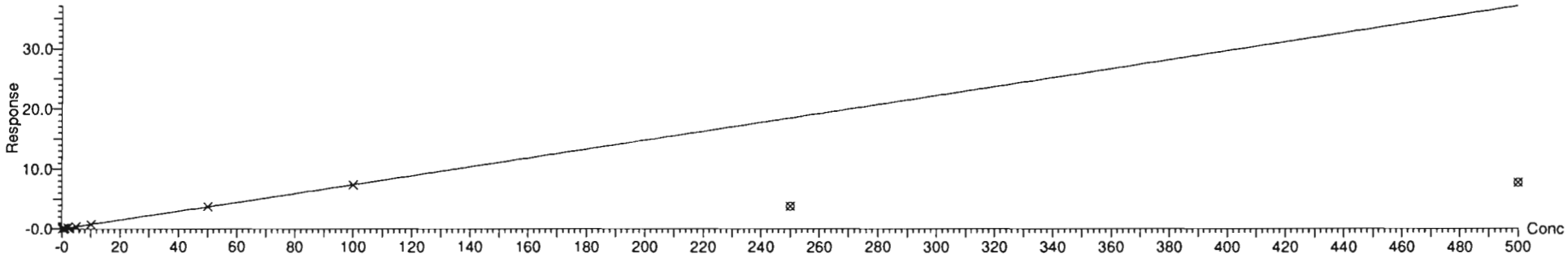
Compound name: PFPrS
Coefficient of Determination: R^2 = 0.999467
Calibration curve: 0.00027182 * x^2 + 0.879061 * x + -0.0543474
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



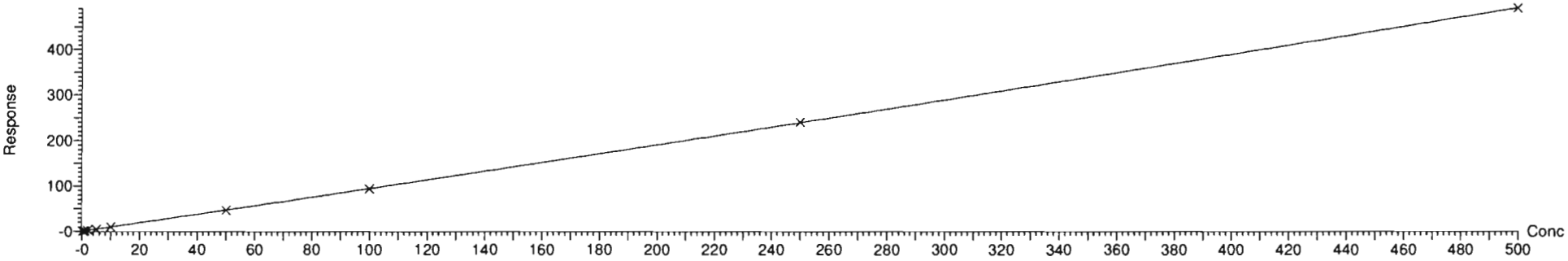
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999077
Calibration curve: 4.34079e-008 * x^2 + 0.0740847 * x + -0.0045988
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999956
Calibration curve: 0.000104361 * x^2 + 0.929886 * x + 0.0253014
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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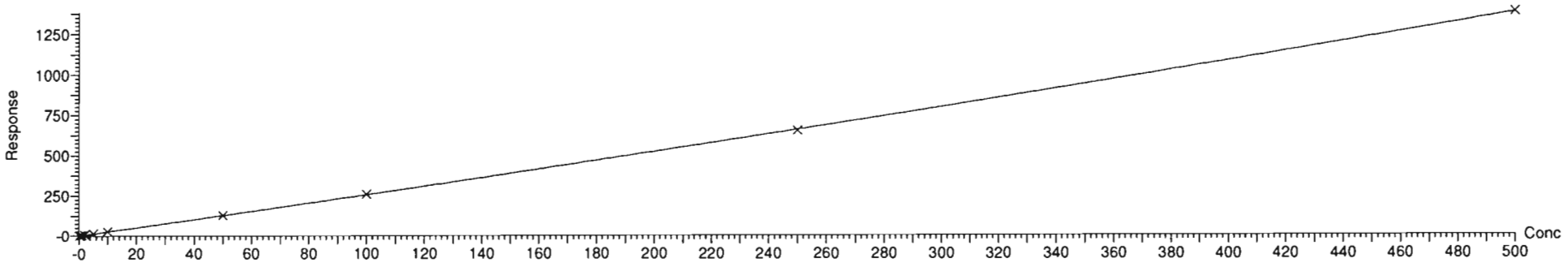
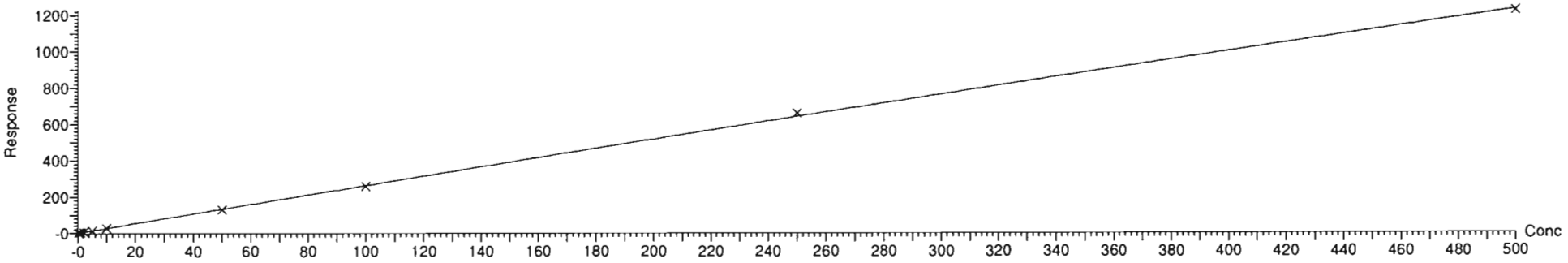
Compound name: PFBS
Coefficient of Determination: R^2 = 0.999934
Calibration curve: 0.000491179 * x^2 + 2.5166 * x + 0.0412773
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



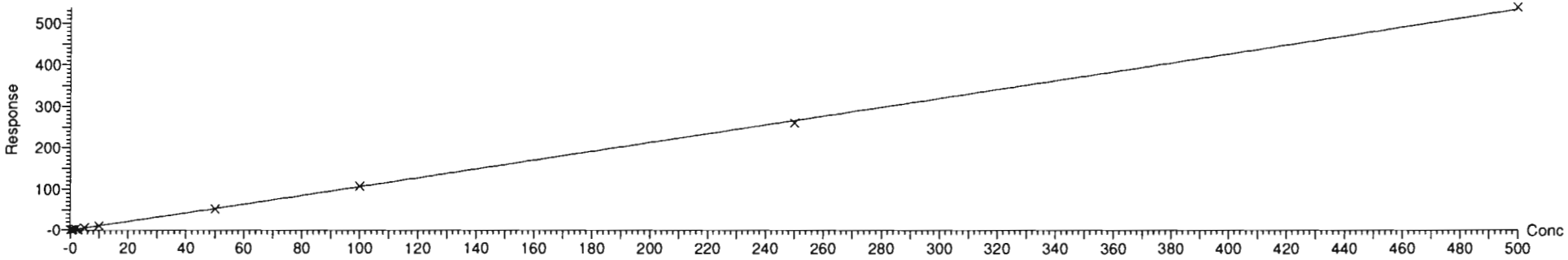
Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999628
Calibration curve: -0.000407561 * x^2 + 2.66264 * x + -0.0289778
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



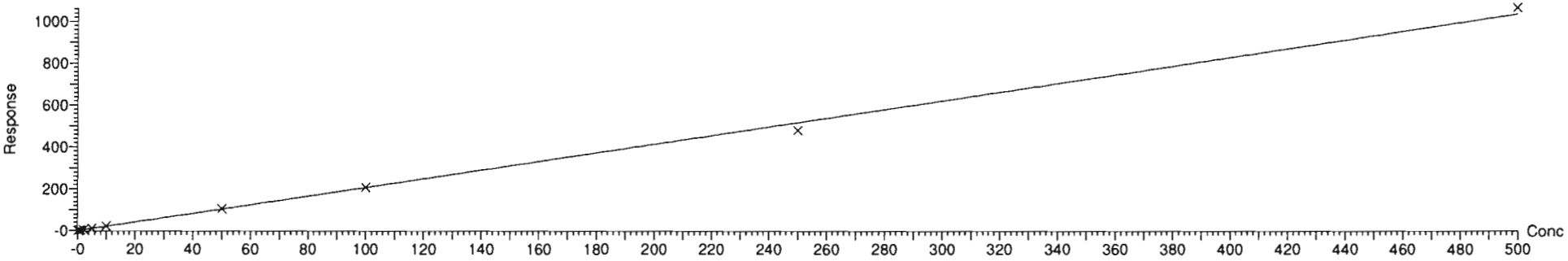
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: PFHxA
Correlation coefficient: r = 0.999880, r^2 = 0.999760
Calibration curve: 1.06654 * x + 0.0486754
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeS
Correlation coefficient: r = 0.998944, r^2 = 0.997889
Calibration curve: 2.06969 * x + -0.0287236
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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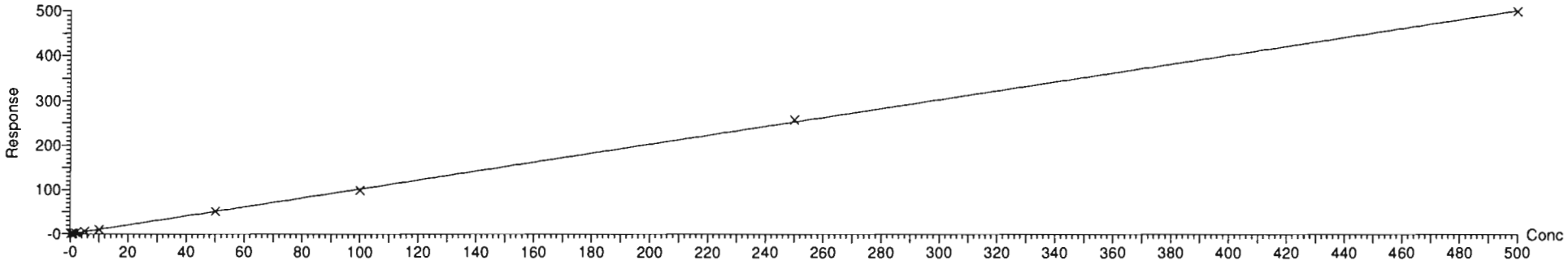
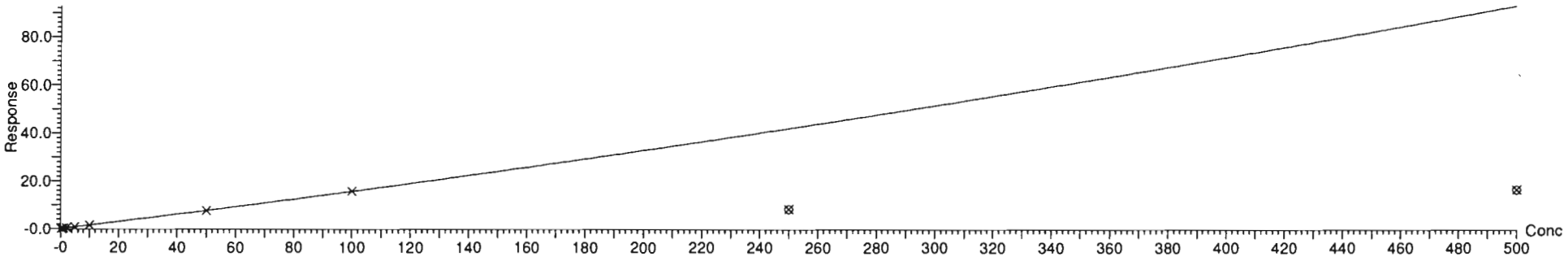
Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.999565
Calibration curve: -4.3013e-005 * x^2 + 1.02492 * x + 0.0423417
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



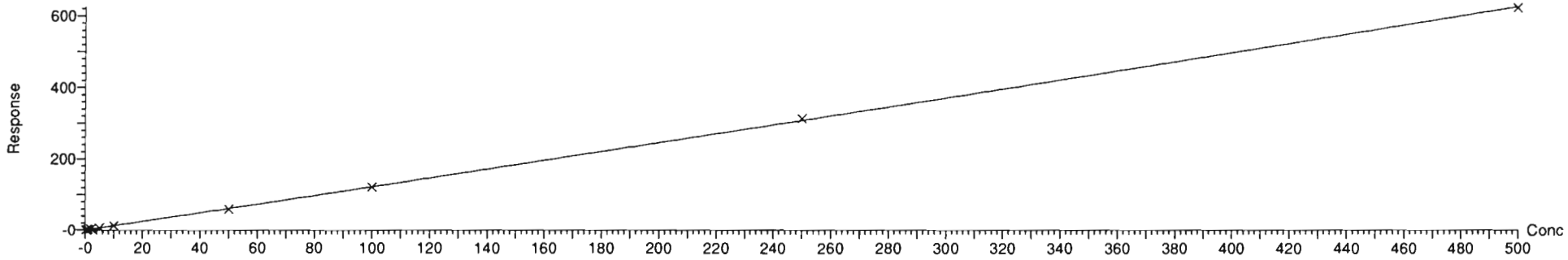
Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999834
Calibration curve: 7.26907e-005 * x^2 + 0.149845 * x + 0.00279886
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



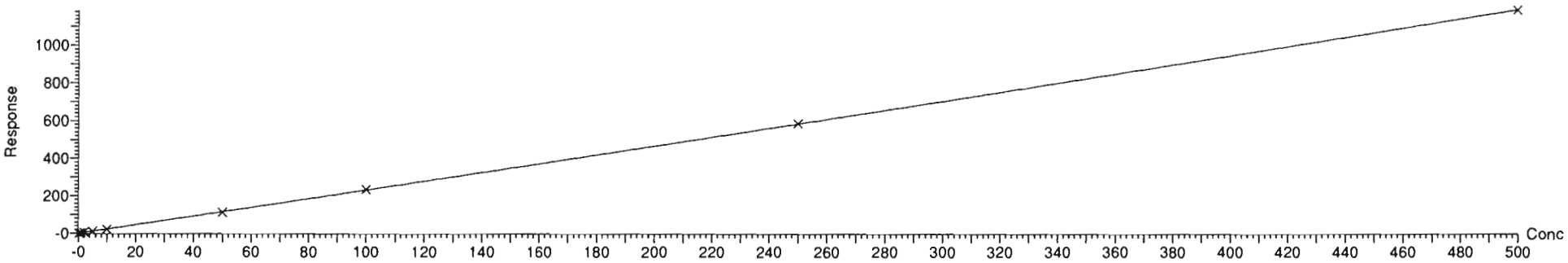
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999793
Calibration curve: 5.95036e-005 * x^2 + 1.22196 * x + 0.0145496
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



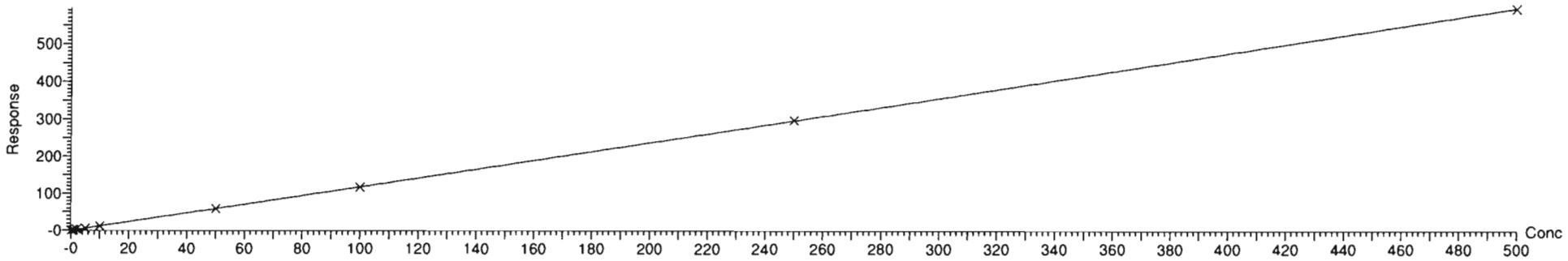
Compound name: ADONA
Coefficient of Determination: R^2 = 0.999927
Calibration curve: 0.000167915 * x^2 + 2.29671 * x + 0.0064014
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



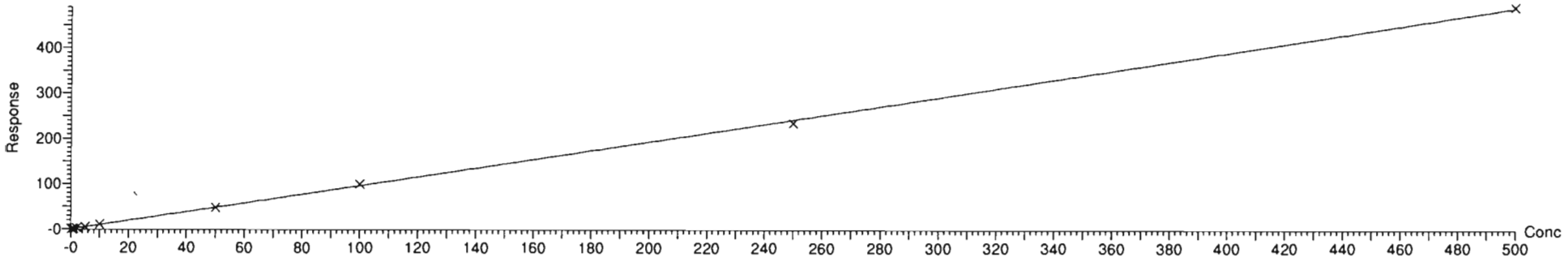
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999917
Calibration curve: 2.03395e-005 * x^2 + 1.18475 * x + 0.0134918
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



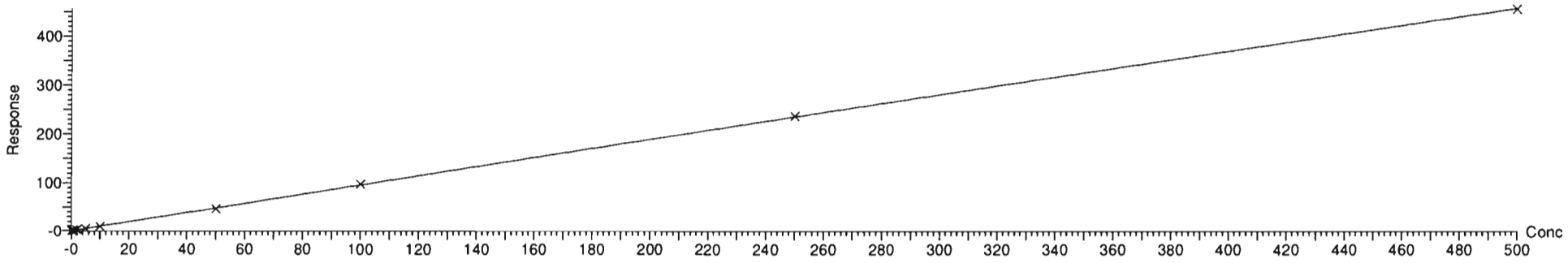
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.999424
Calibration curve: 3.10652e-005 * x^2 + 0.960517 * x + 0.0121136
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



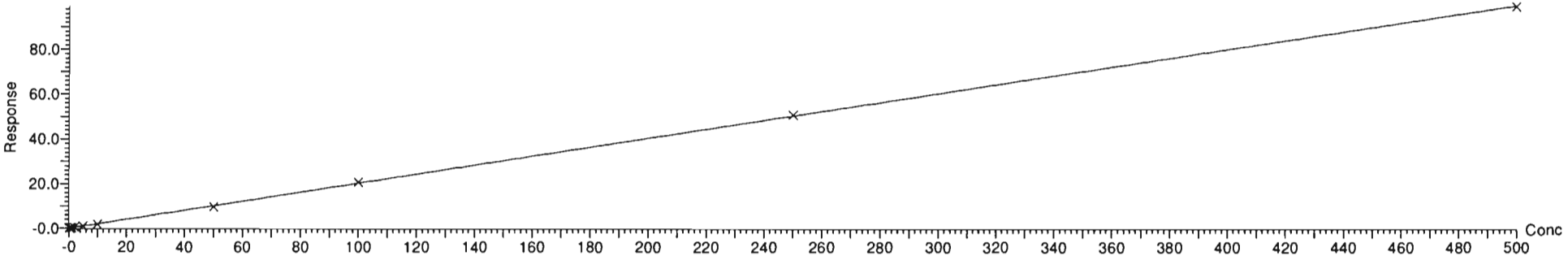
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999818
Calibration curve: -0.00011566 * x^2 + 0.972216 * x + 0.0565111
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999605
Calibration curve: -1.07902e-005 * x^2 + 0.204772 * x + -0.0106092
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999366
Calibration curve: -6.89212e-006 * x^2 + 1.00948 * x + 0.00254648
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
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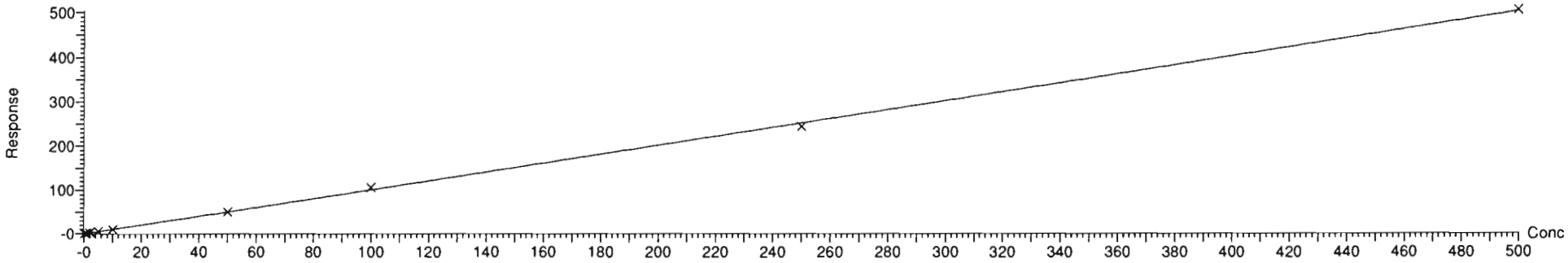
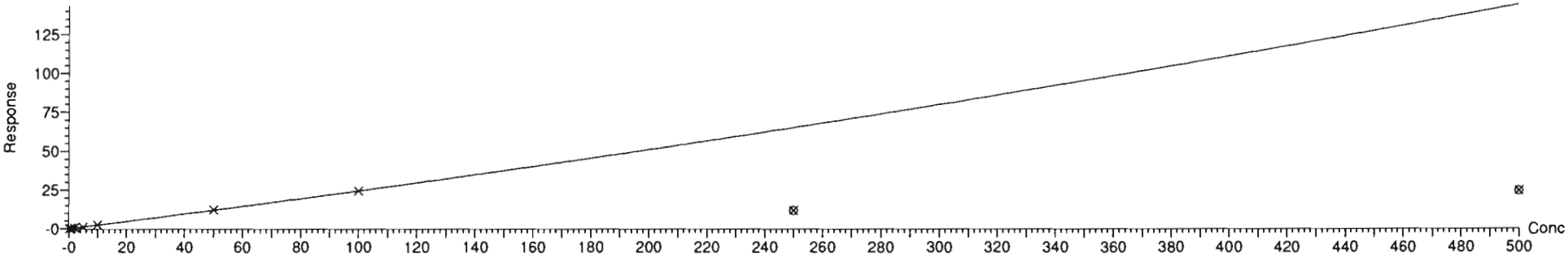


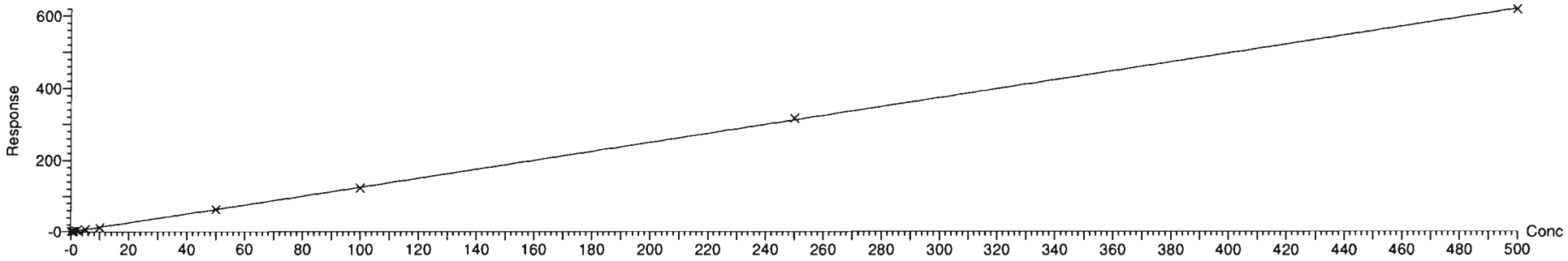
Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999188
Calibration curve: 0.000109641 * x^2 + 0.233238 * x + -0.0157558
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



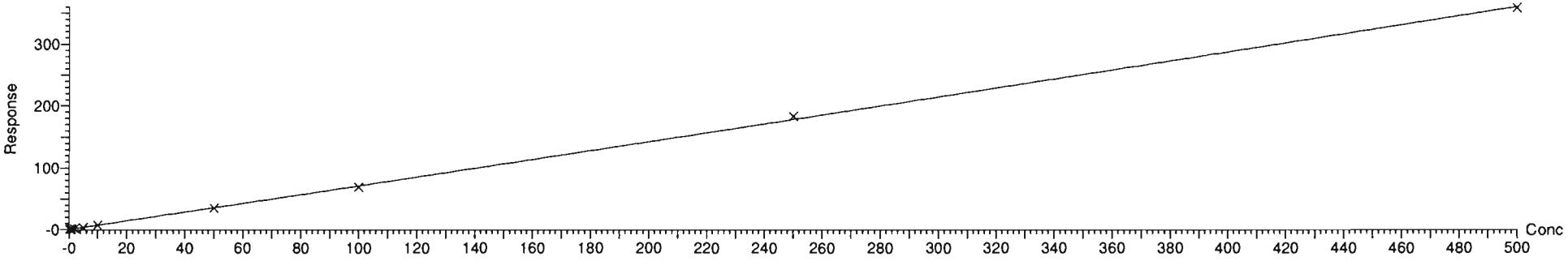
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: PFNA
Coefficient of Determination: R^2 = 0.999798
Calibration curve: -3.36947e-005 * x^2 + 1.25759 * x + 0.0575575
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



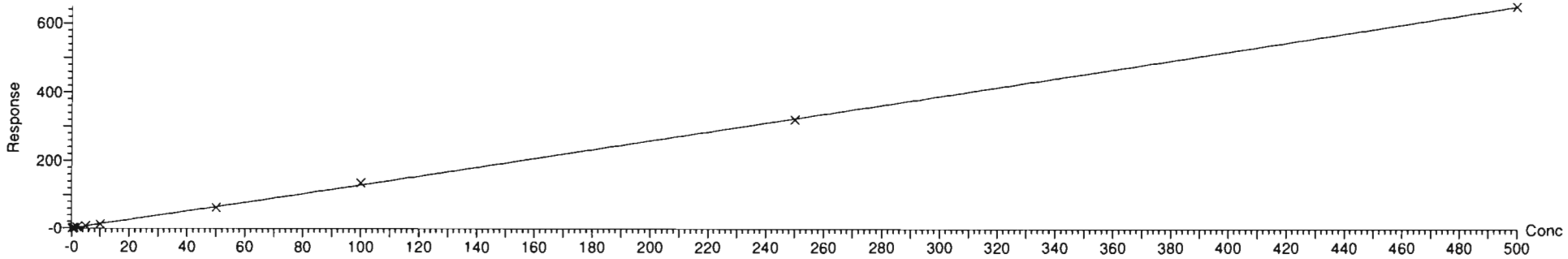
Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999600
Calibration curve: 2.94594e-005 * x^2 + 0.705257 * x + 0.0157528
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



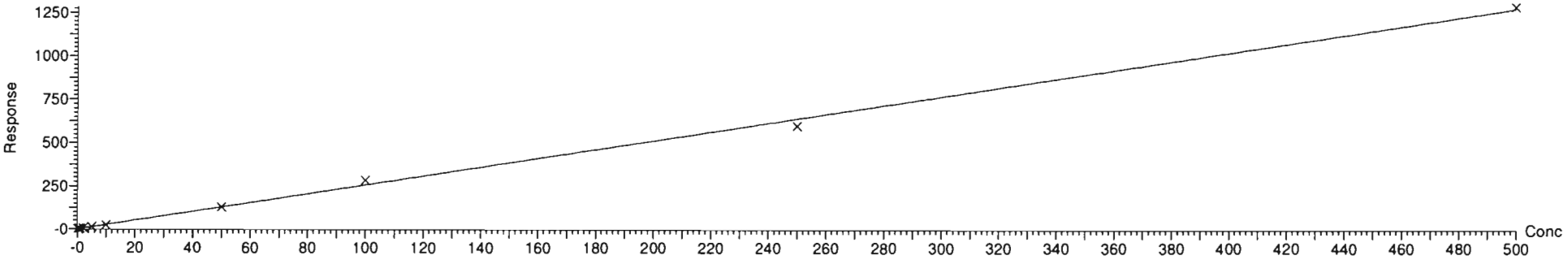
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999580
Calibration curve: 1.47461e-005 * x^2 + 1.2922 * x + -0.063193
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



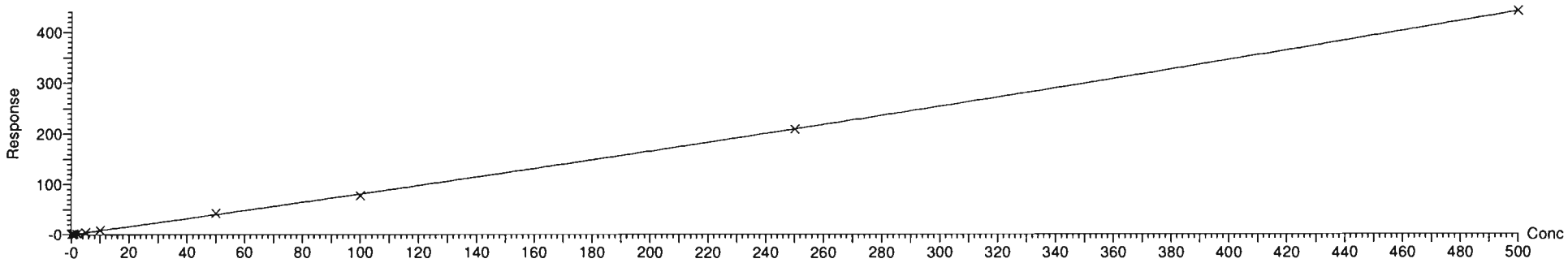
Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.997566
Calibration curve: -6.63786e-005 * x^2 + 2.57989 * x + -0.12602
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



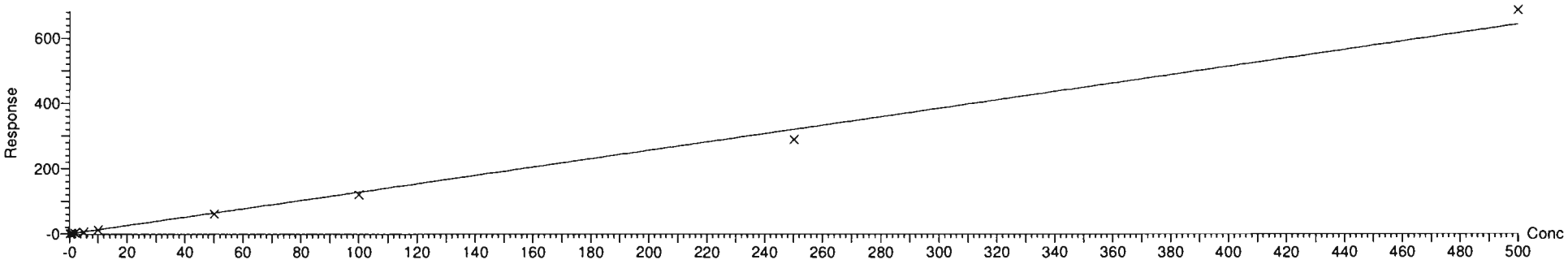
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999533
Calibration curve: 0.000170875 * x^2 + 0.796693 * x + 0.0349258
Response type: Internal Std (Ref 73), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



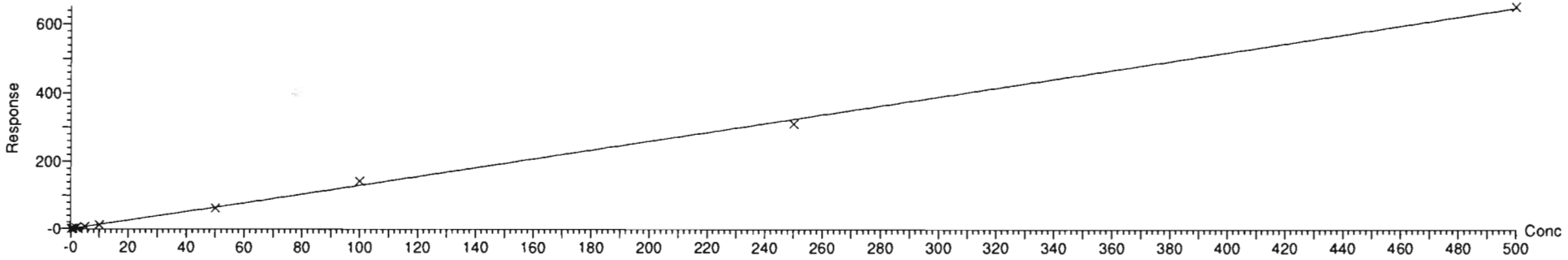
Compound name: 8:2 FTS
Correlation coefficient: r = 0.996969, r^2 = 0.993947
Calibration curve: 1.28153 * x + -0.144274
Response type: Internal Std (Ref 75), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



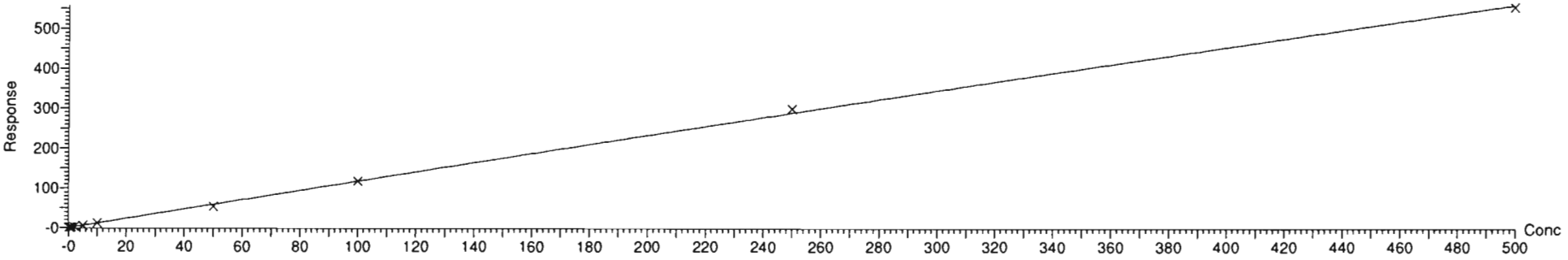
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:00 Pacific Daylight Time

Compound name: PFNS
Coefficient of Determination: R^2 = 0.998246
Calibration curve: -9.88855e-006 * x^2 + 1.30347 * x + -0.0396359
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999021
Calibration curve: -0.000154605 * x^2 + 1.19639 * x + -0.0889953
Response type: Internal Std (Ref 77), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



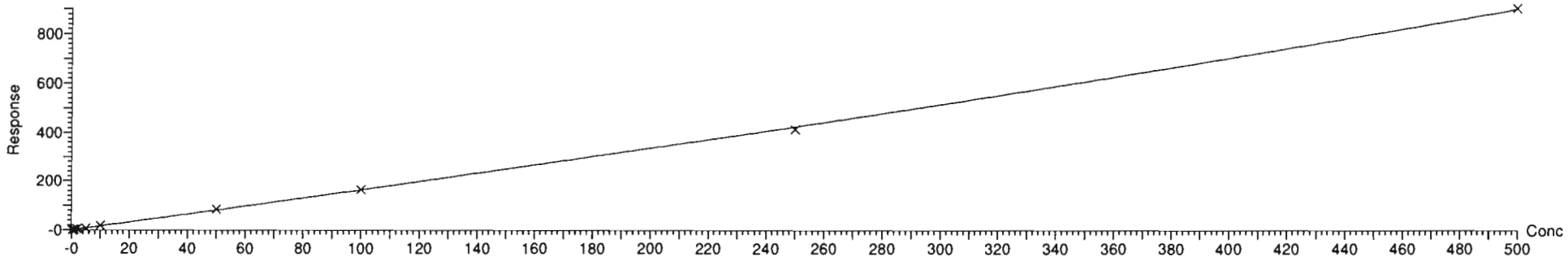
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

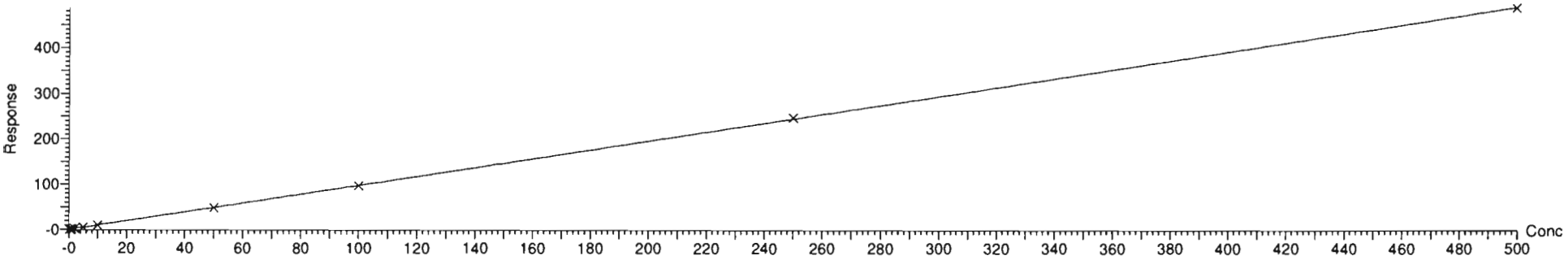
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 10:17:36
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

Compound name: L-EtFOSAA
Coefficient of Determination: R^2 = 0.999532
Calibration curve: 0.000408239 * x^2 + 1.59543 * x + 0.167393
Response type: Internal Std (Ref 81), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



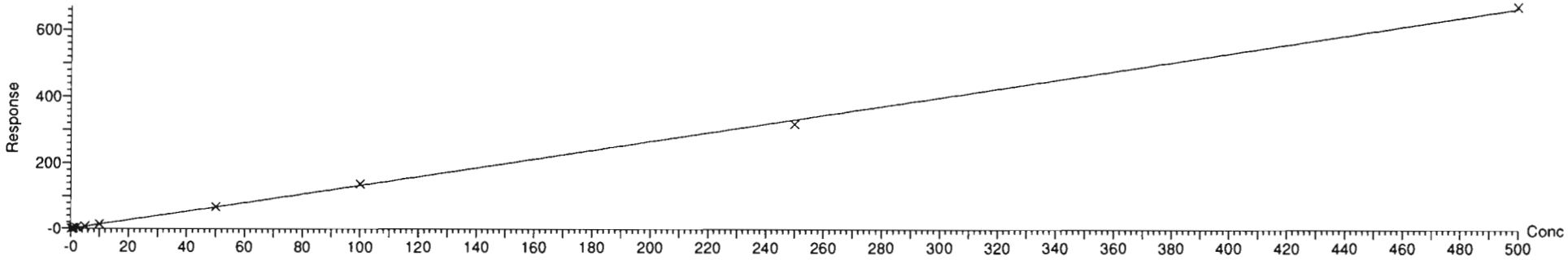
Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999900
Calibration curve: -4.57877e-006 * x^2 + 0.979979 * x + 0.0422082
Response type: Internal Std (Ref 79), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



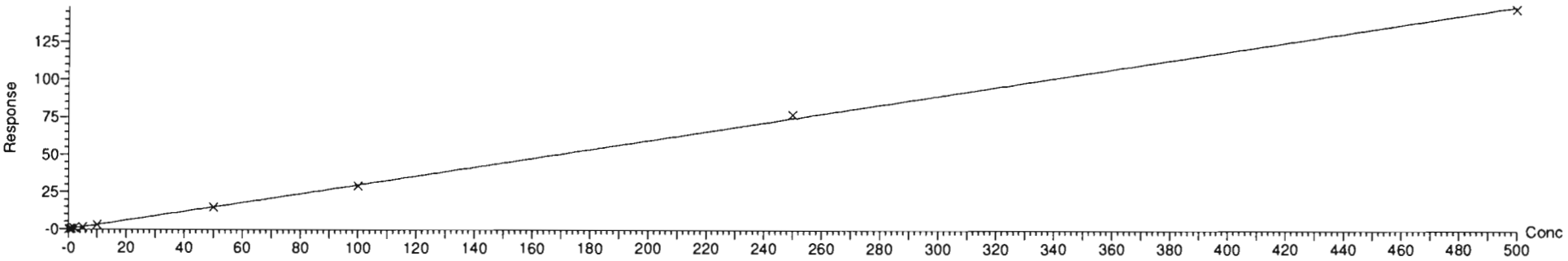
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Compound name: PFDS
Correlation coefficient: r = 0.999639, r^2 = 0.999279
Calibration curve: 1.32841 * x + -0.0719879
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



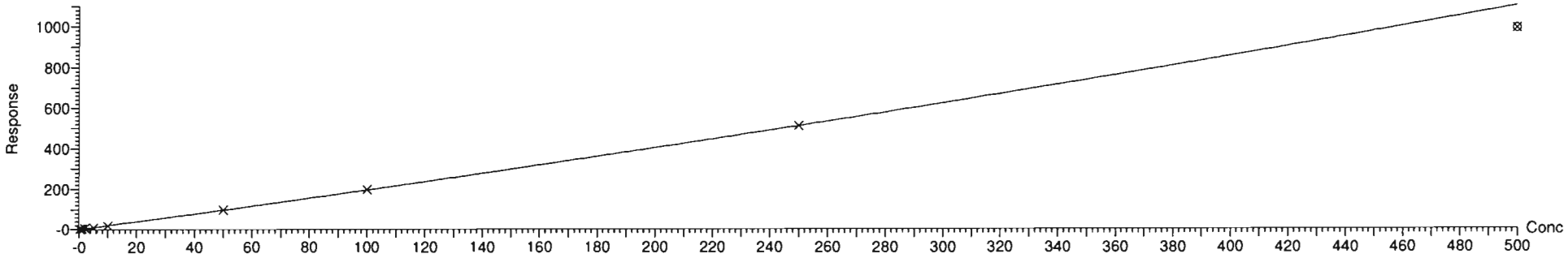
Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.999781, r^2 = 0.999562
Calibration curve: 0.29781 * x + -0.0132975
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



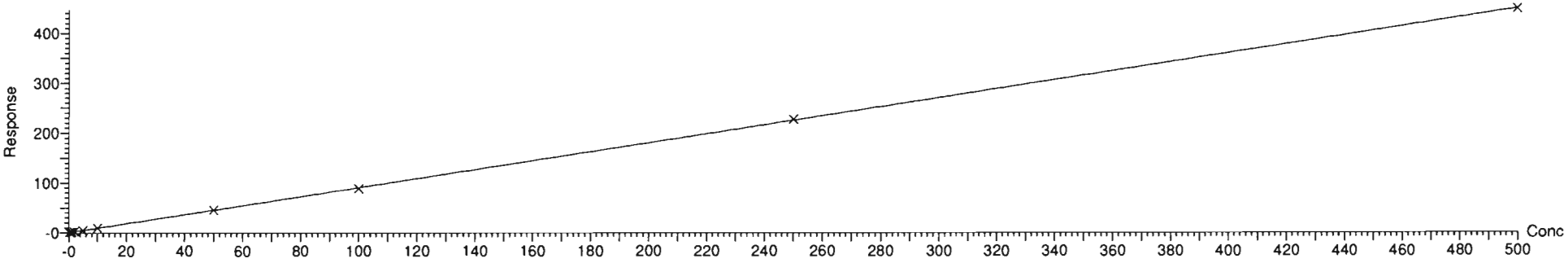
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999681
Calibration curve: 0.000604252 * x^2 + 1.8992 * x + 0.101076
Response type: Internal Std (Ref 85), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



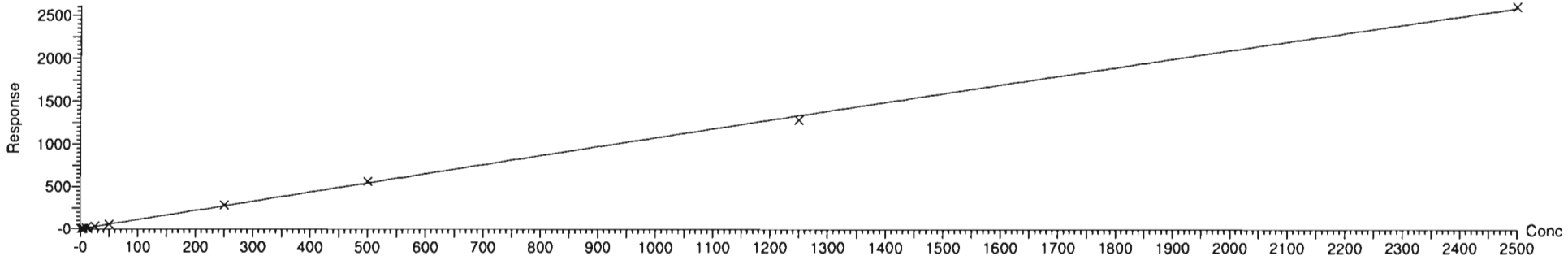
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999909
Calibration curve: -1.21607e-005 * x^2 + 0.902694 * x + 0.0129658
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



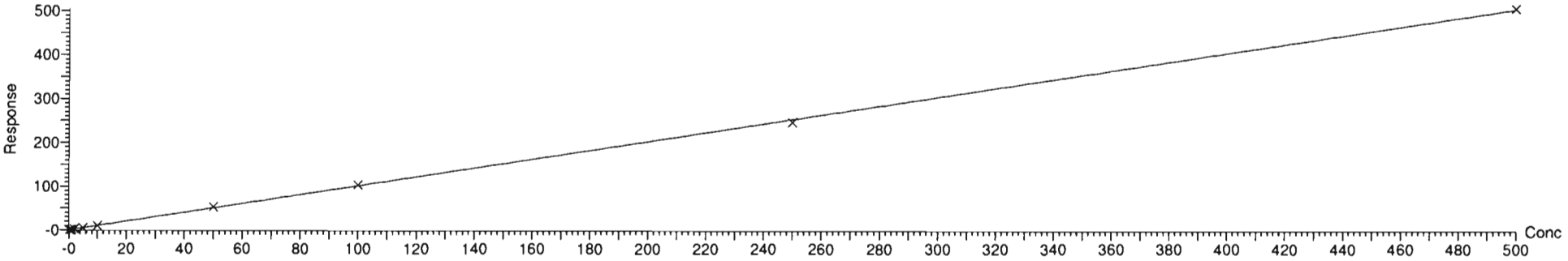
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999287
Calibration curve: -3.01399e-005 * x^2 + 1.11234 * x + -0.011542
Response type: Internal Std (Ref 87), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



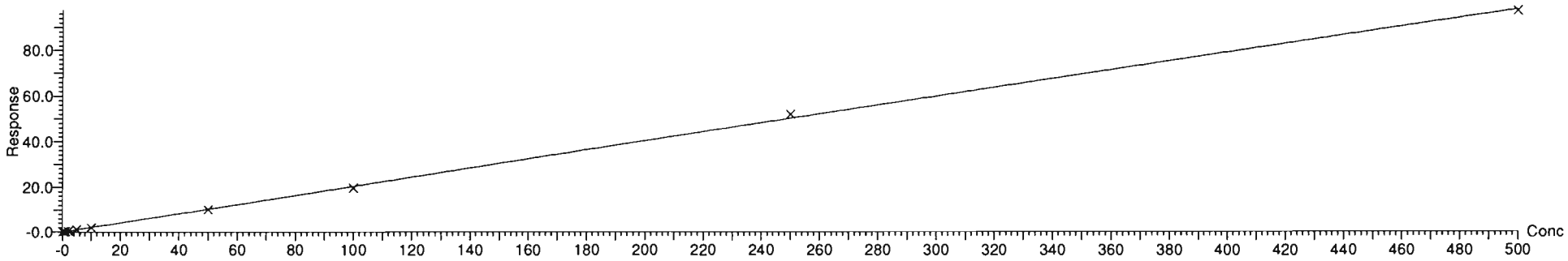
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999652
Calibration curve: -2.26201e-005 * x^2 + 1.02022 * x + 0.0386781
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



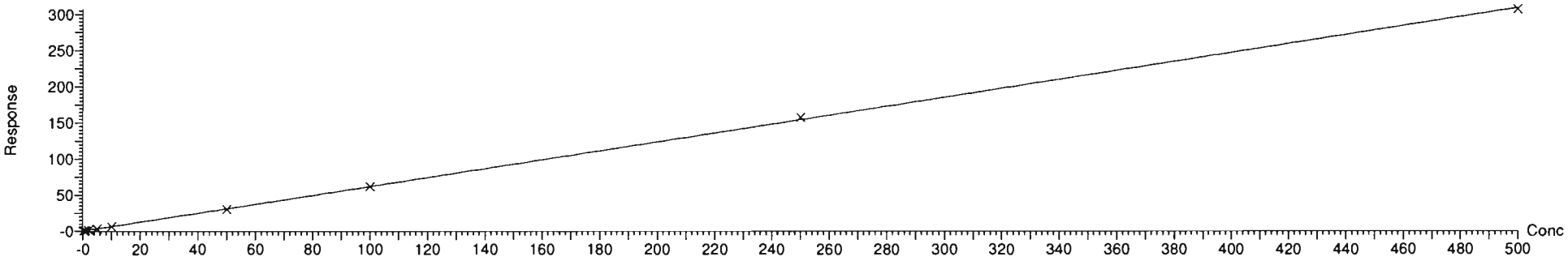
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999341
Calibration curve: -1.88437e-005 * x^2 + 0.205138 * x + -0.0201172
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



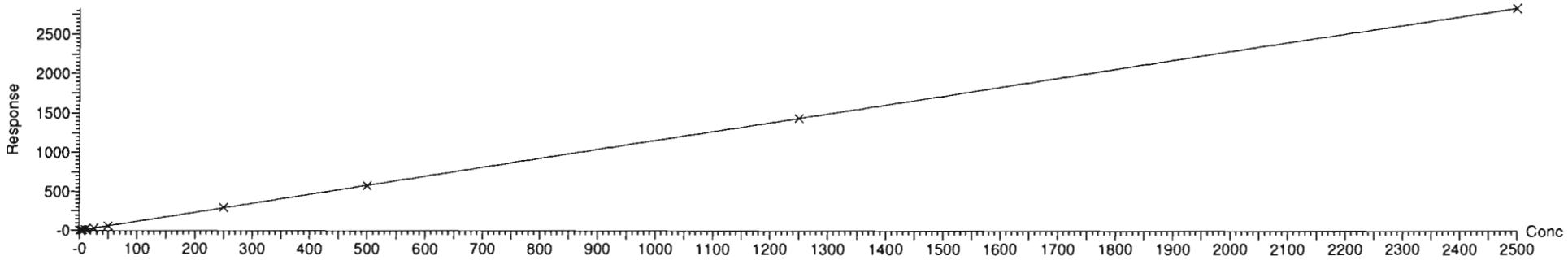
Compound name: PFTeDA
Correlation coefficient: r = 0.999904, r^2 = 0.999808
Calibration curve: 0.617022 * x + 0.00631418
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



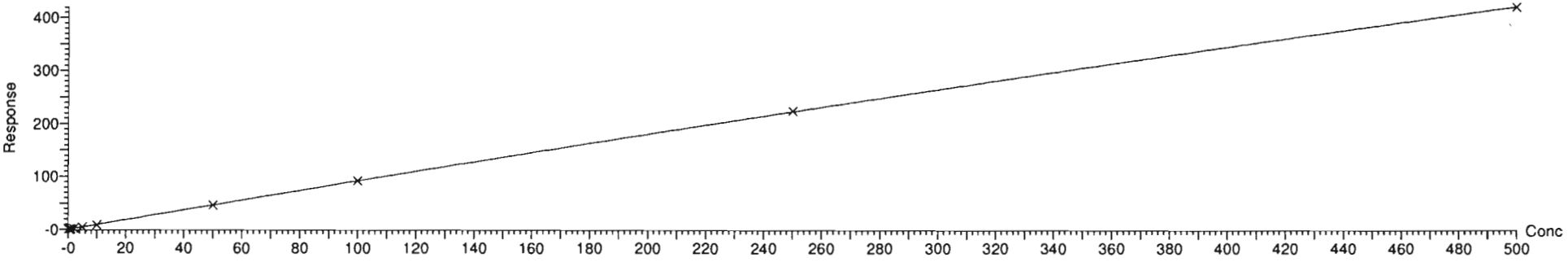
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999984
Calibration curve: -1.46911e-005 * x^2 + 1.1718 * x + 0.183292
Response type: Internal Std (Ref 91), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



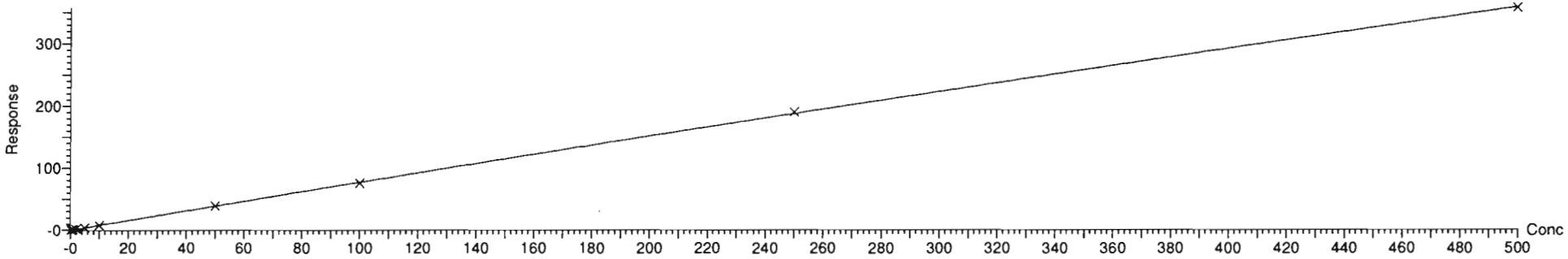
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999896
Calibration curve: -0.00019858 * x^2 + 0.942369 * x + 0.121902
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



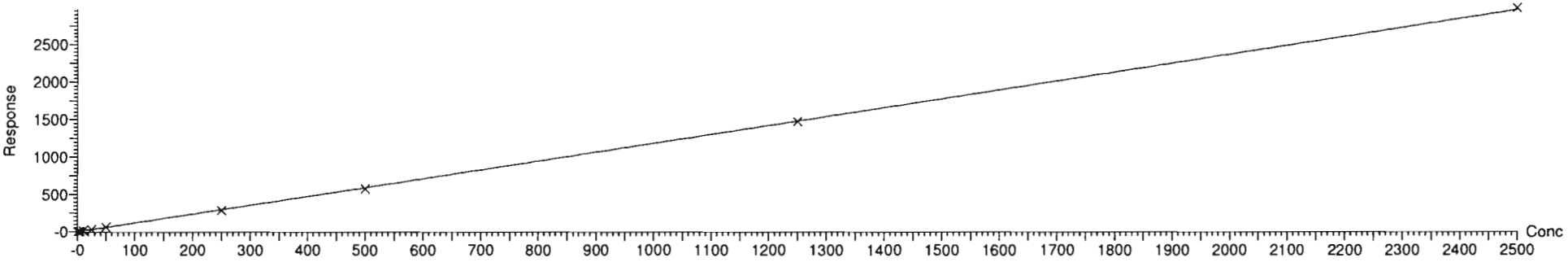
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.999872
Calibration curve: -0.000140238 * x^2 + 0.787183 * x + 0.00380131
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



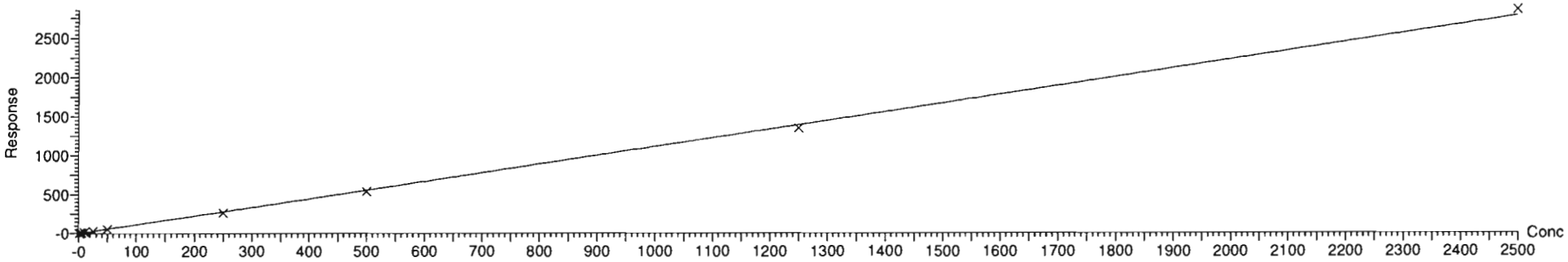
Compound name: N-MeFOSE
Correlation coefficient: r = 0.999906, r^2 = 0.999812
Calibration curve: 1.18349 * x + -0.0713831
Response type: Internal Std (Ref 95), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:23:12 Pacific Daylight Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999536, r^2 = 0.999072
Calibration curve: 1.11276 * x + -0.280039
Response type: Internal Std (Ref 97), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

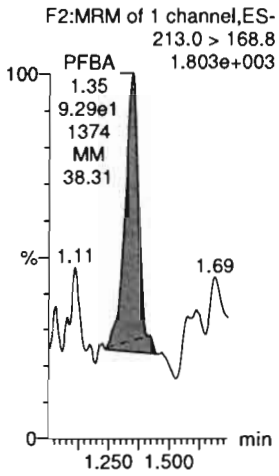
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072120.mdb 22 Jul 2020 10:17:36
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 11:04:01

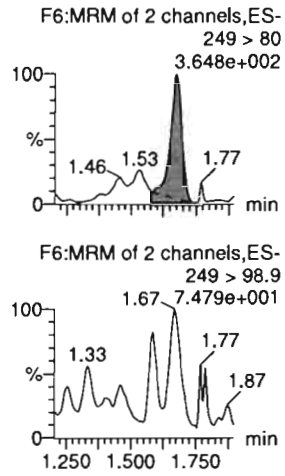
ST200721P1-1 OPV 07/22/20

Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ~~ST200720P1-1~~ PFC CS-2 20G1601, Description: PFC CS-2 20G1601

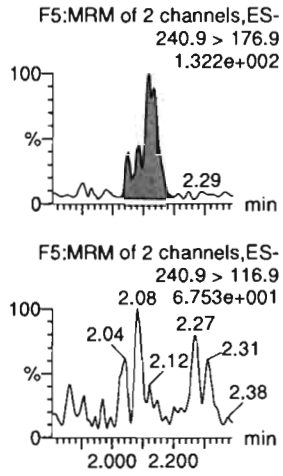
PFBA



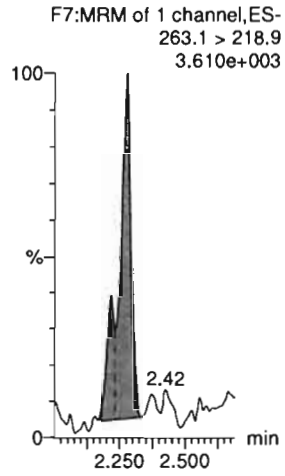
PFPrS



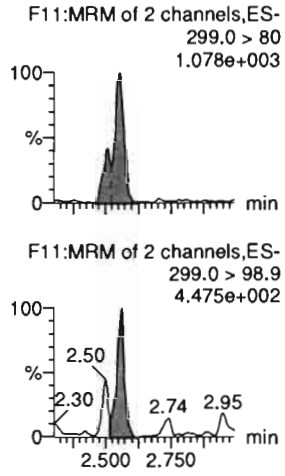
3:3 FTCA



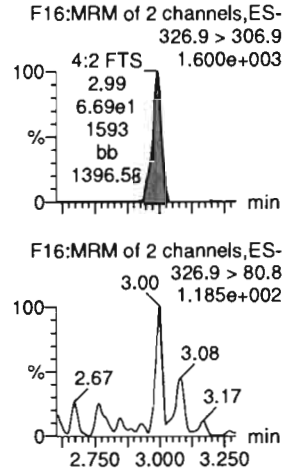
PFPeA



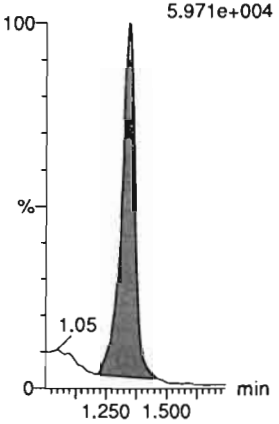
PFBS



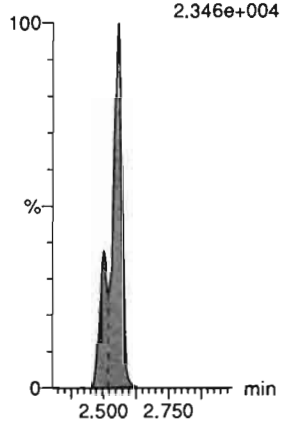
4:2 FTS



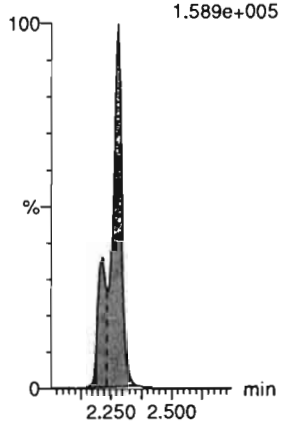
13C3-PFBA-EIS



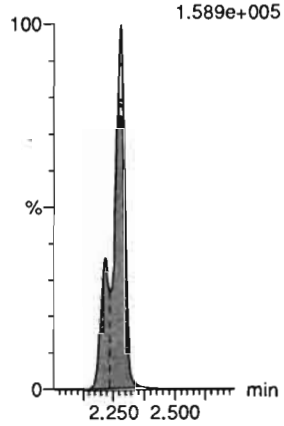
13C3-PFBS-EIS



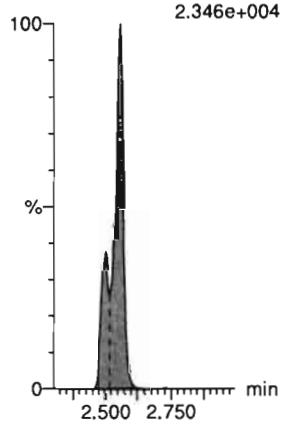
13C3-PFPeA-EIS



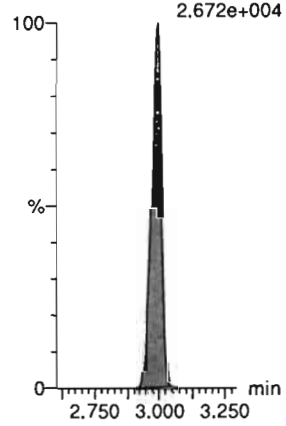
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

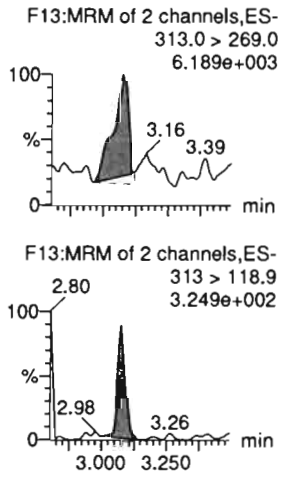


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

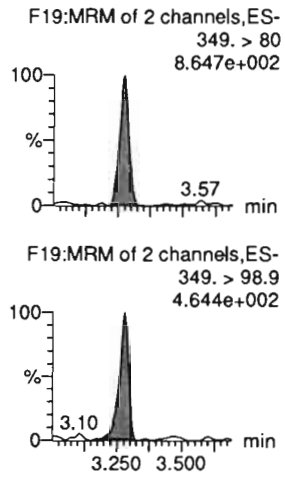
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ST200720P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

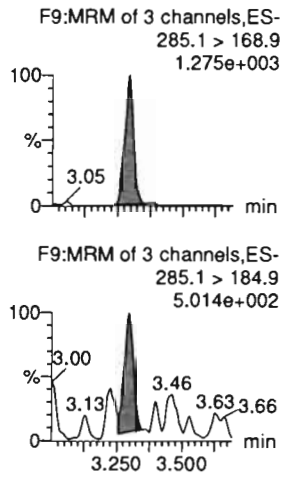
PFHxA



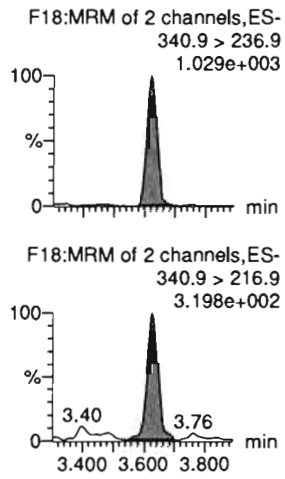
PFPeS



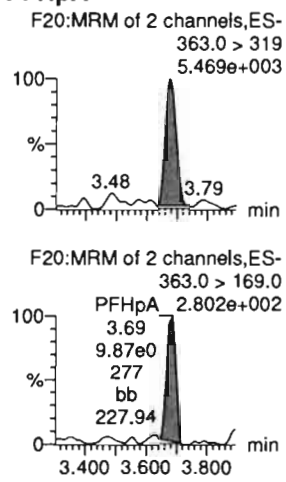
HFPO-DA



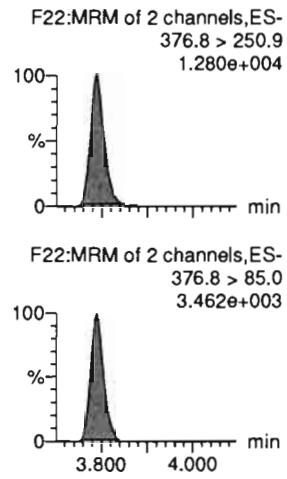
5:3 FTCA



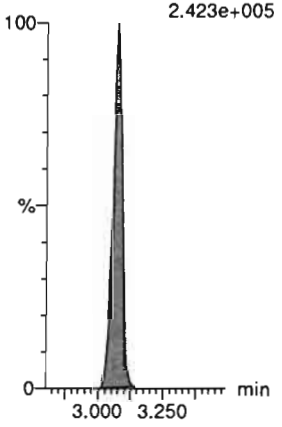
PFHpA



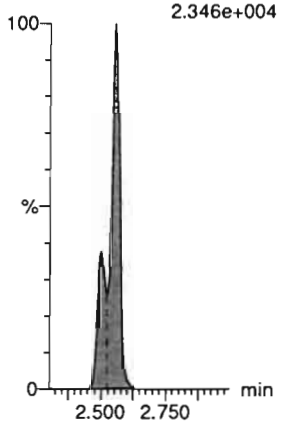
ADONA



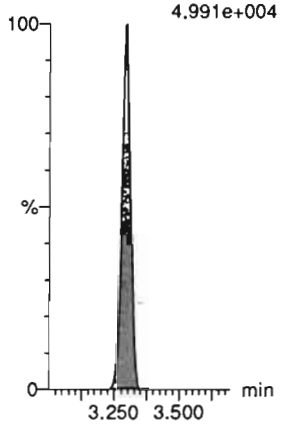
13C2-PFHxA-EIS



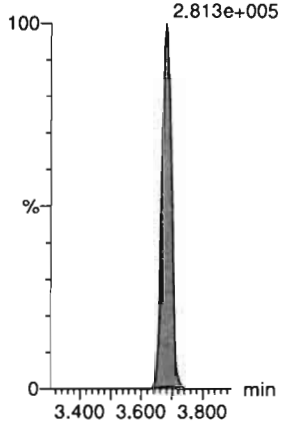
13C3-PFBS-EIS



13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



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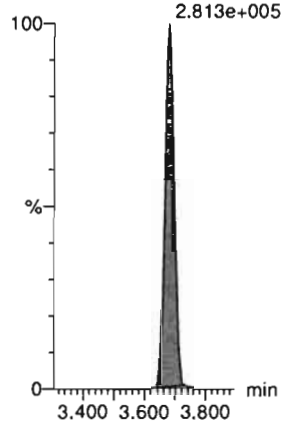

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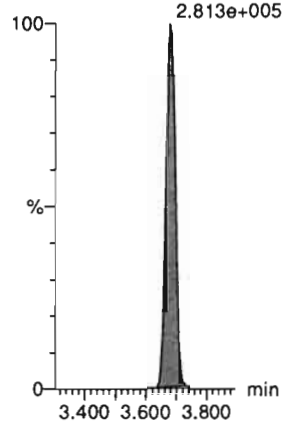

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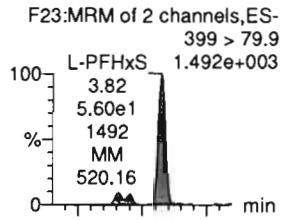
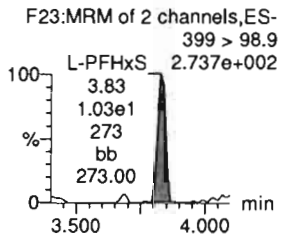
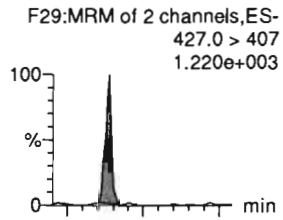
Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ST200720P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

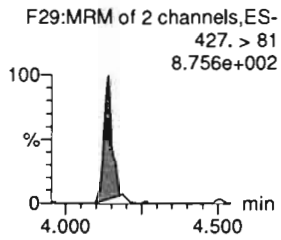
L-PFHxS





6:2 FTS





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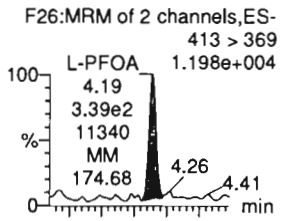

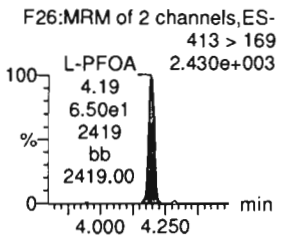

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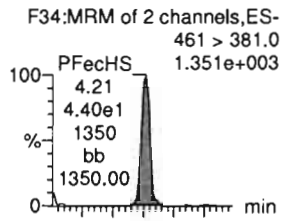

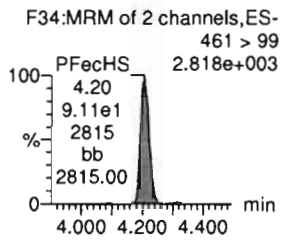

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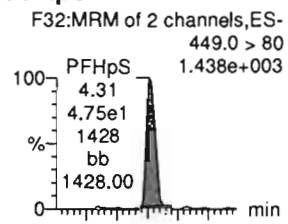

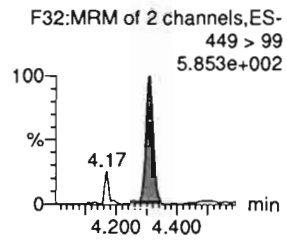

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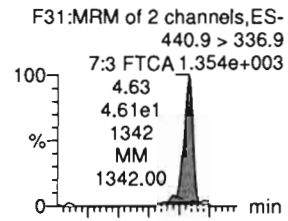
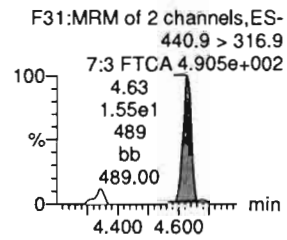
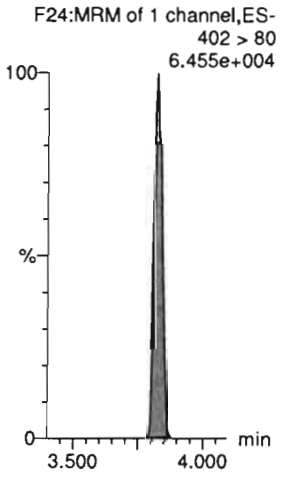
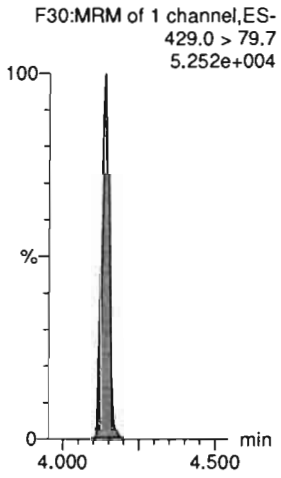




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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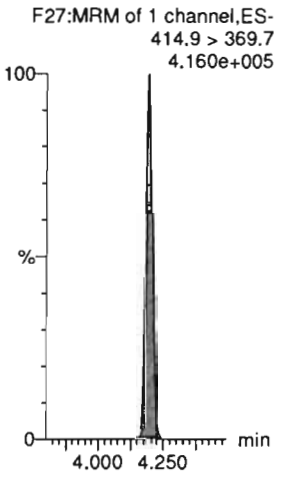

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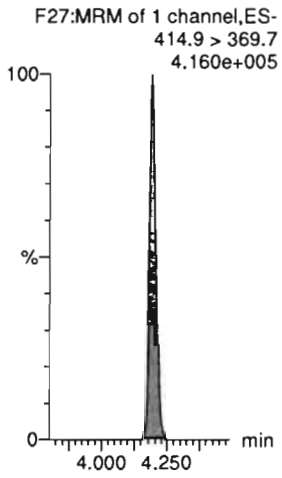

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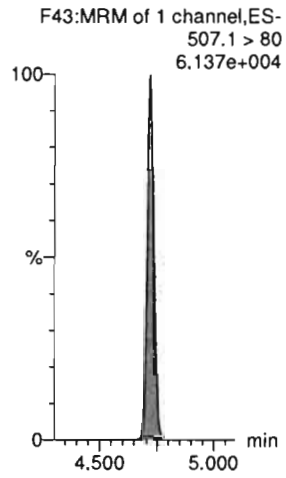
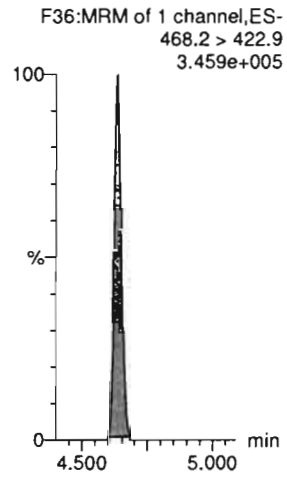


13C5-PFNA-EIS



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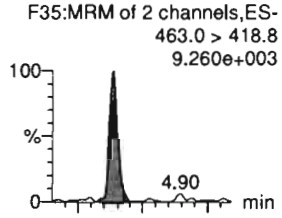

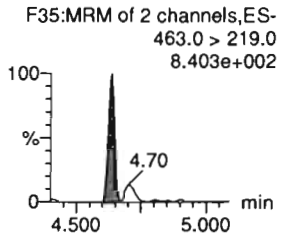

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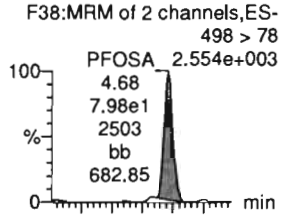
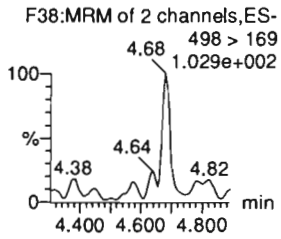
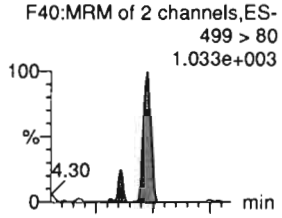
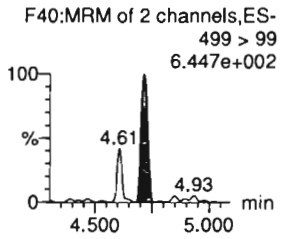




L-PFOS





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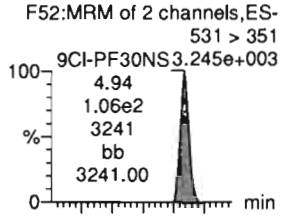

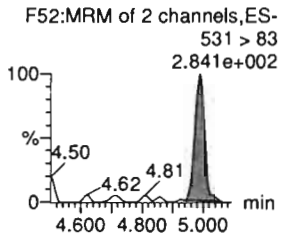

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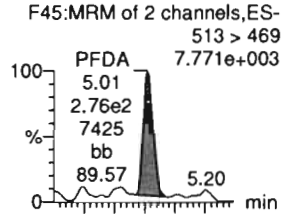

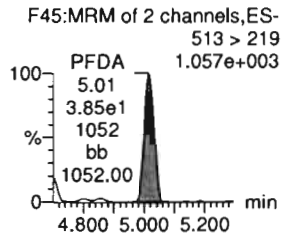

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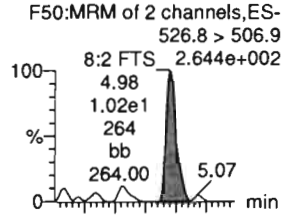

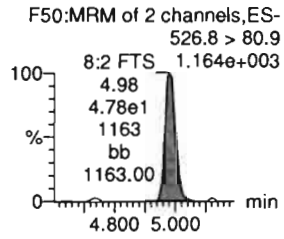

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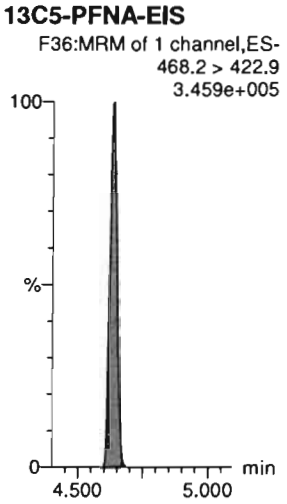

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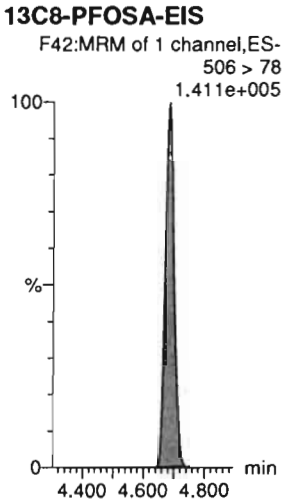

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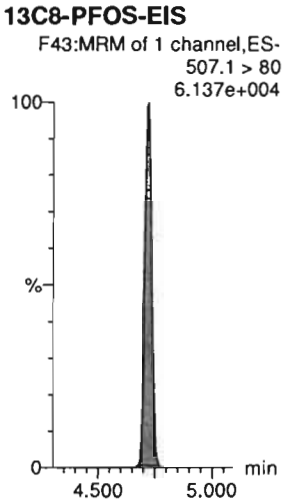

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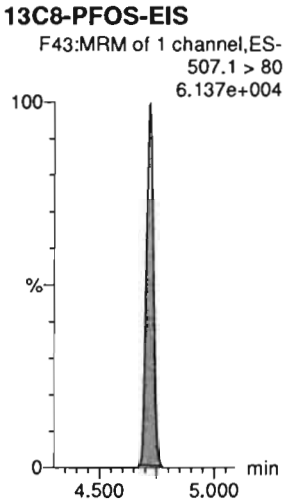

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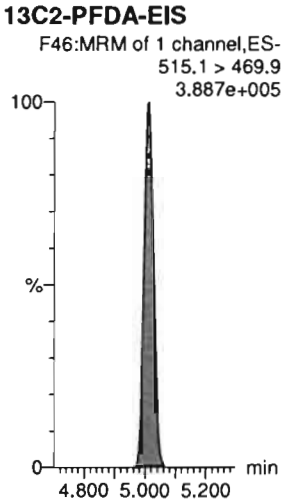

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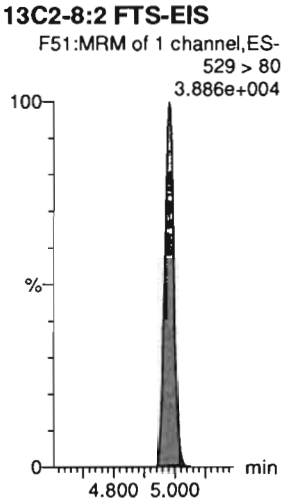

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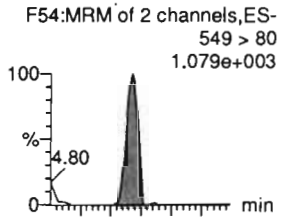
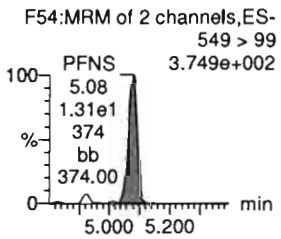
PFNS





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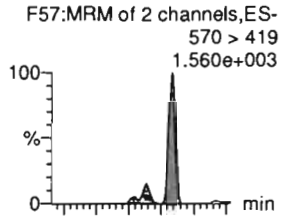
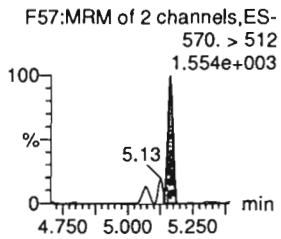
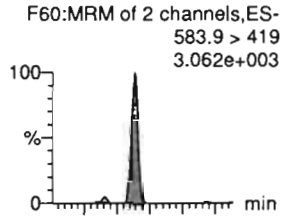
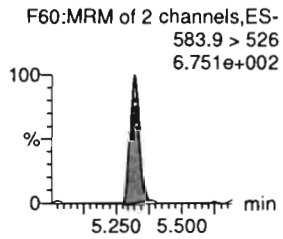




L-EtFOSAA





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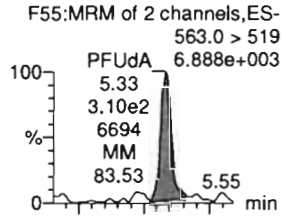

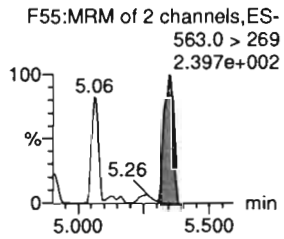

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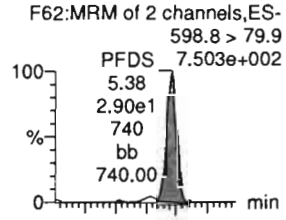

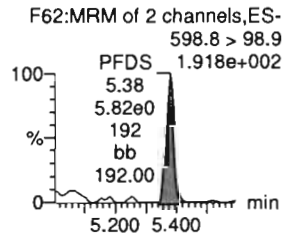

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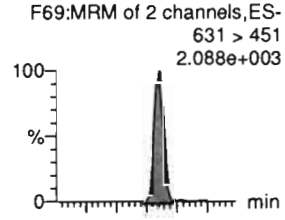
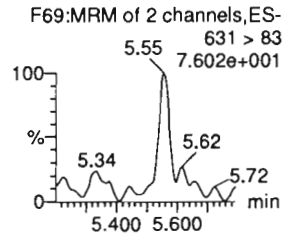
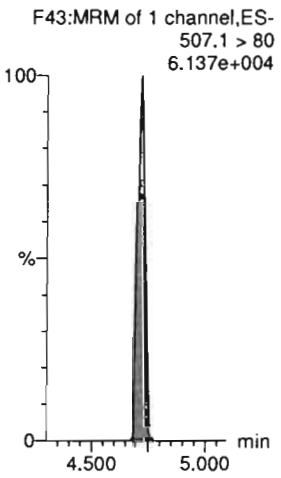
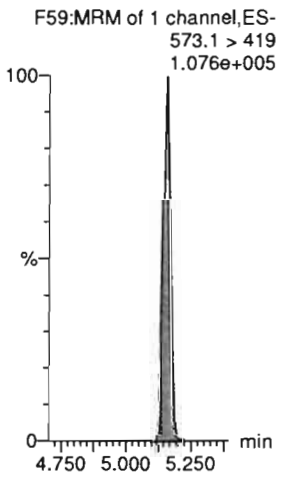




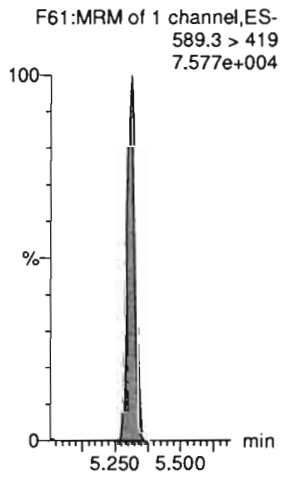
13C8-PFOS-EIS



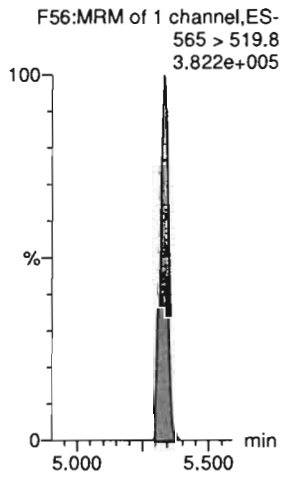
d3-N-MeFOSAA-EIS



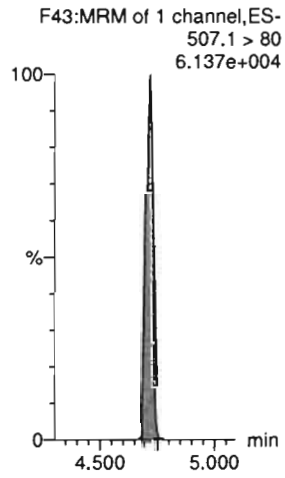
d5-N-EtFOSAA-EIS



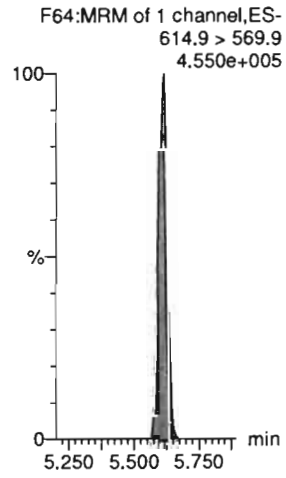
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

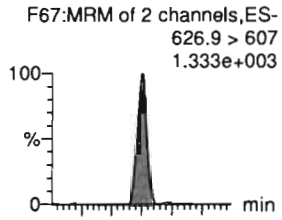


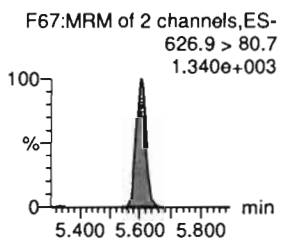
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

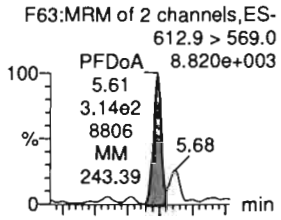
Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ST200720P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

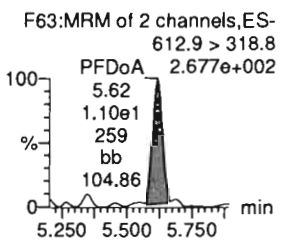
10:2 FTS



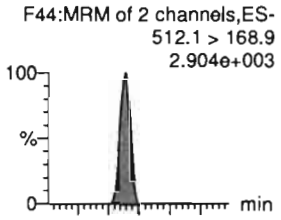


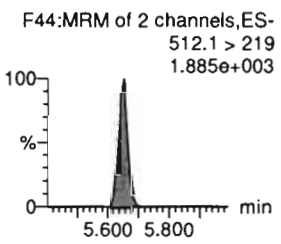
PFDoA



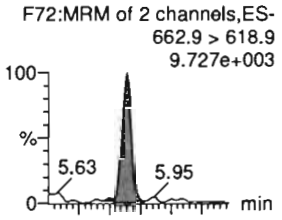


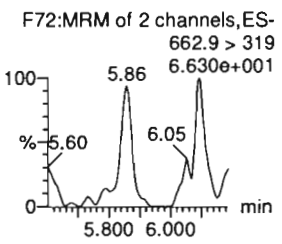
N-MeFOSA



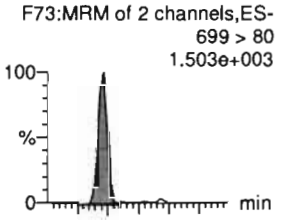


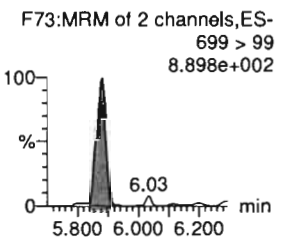
PFTrDA



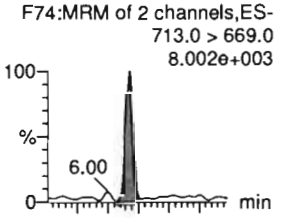


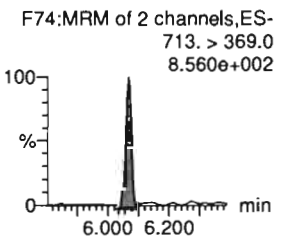
PFDoS



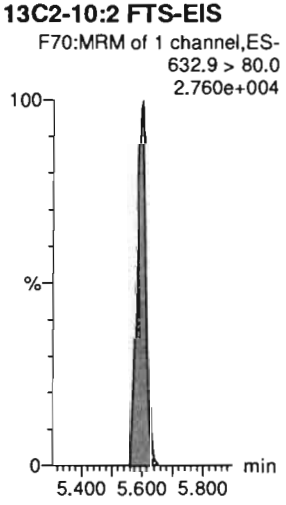


PFTeDA

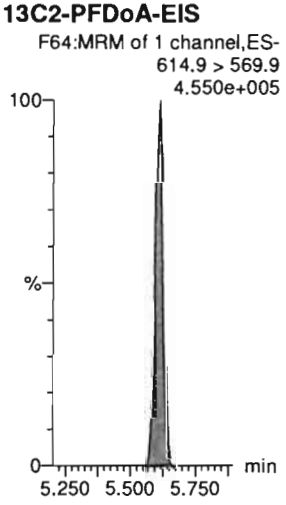




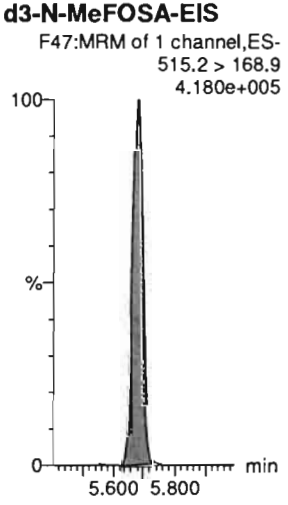
13C2-10:2 FTS-EIS



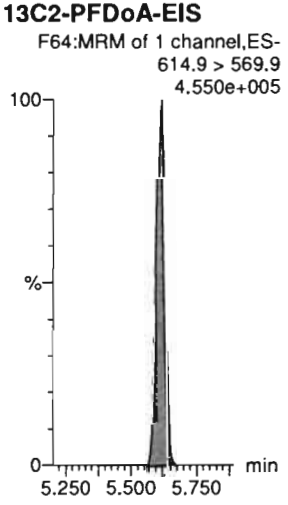
13C2-PFDoA-EIS



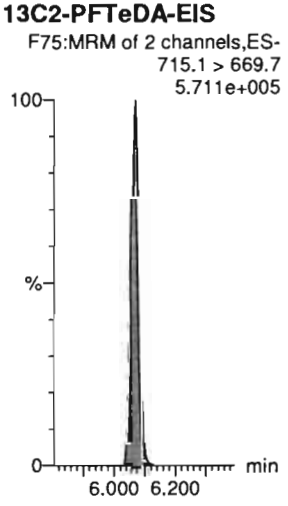
d3-N-MeFOSA-EIS



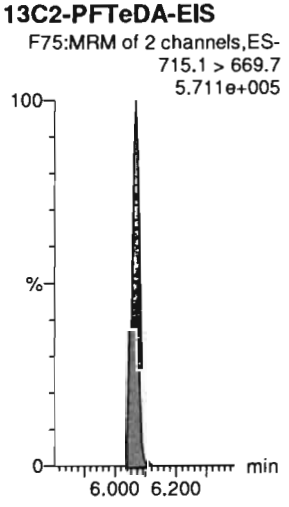
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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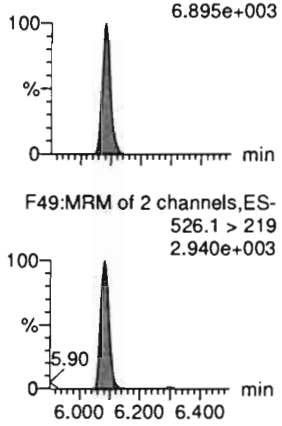
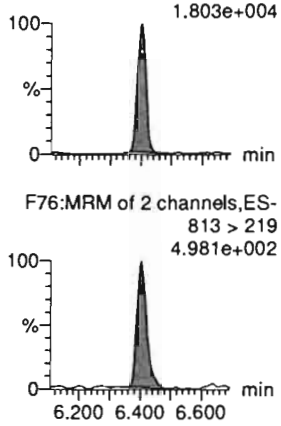
Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ST200720P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

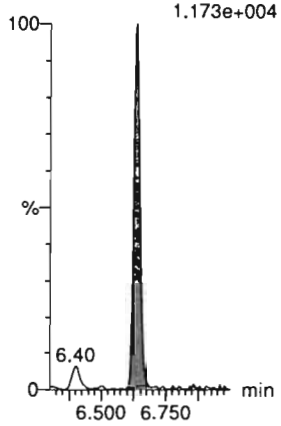
N-EtFOSA



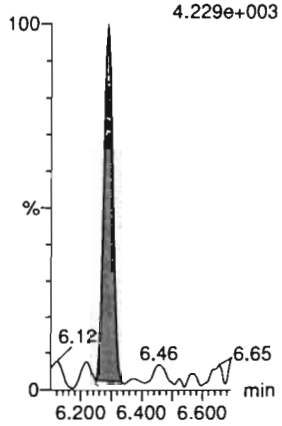
PFHxDA



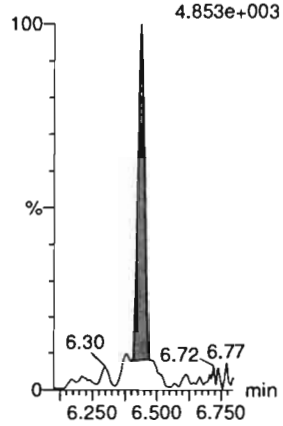
PFODA



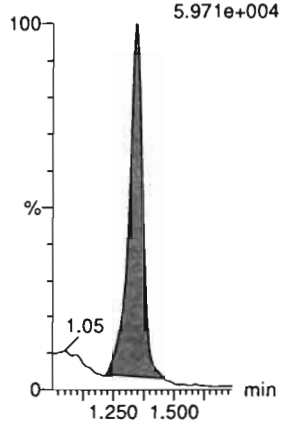
N-MeFOSE



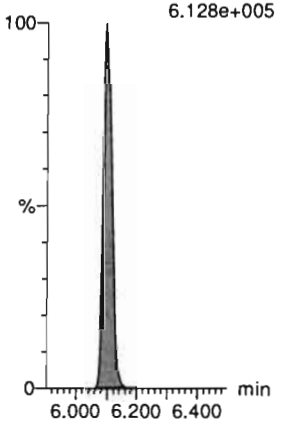
N-EtFOSE



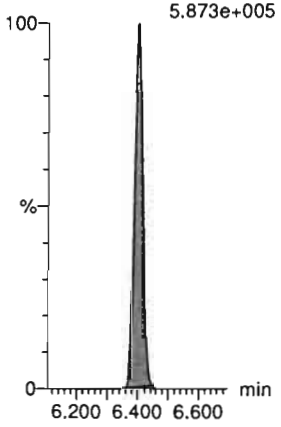
13C3-PFBA-RSD



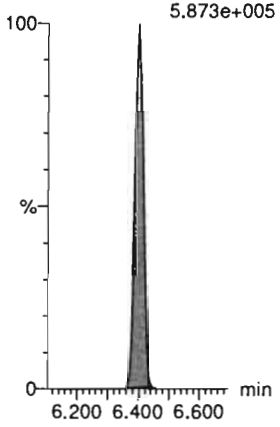
d5-N-ETFOSA-EIS



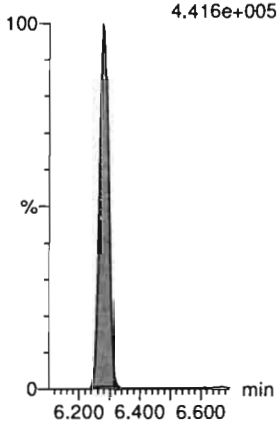
13C2-PFHxDA-EIS



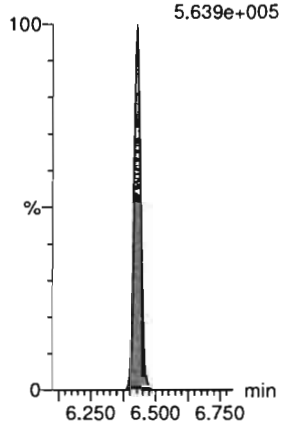
13C2-PFHxDA-EIS



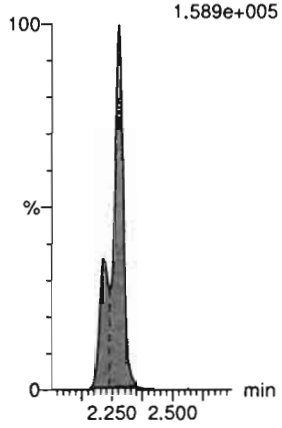
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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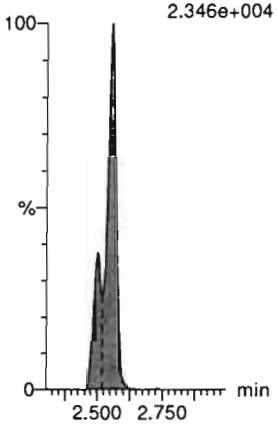
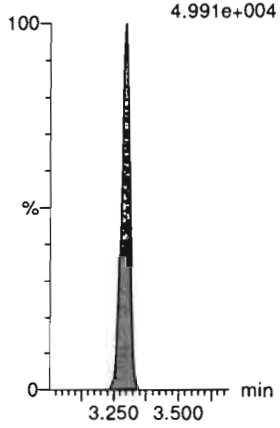
Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ST200720P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

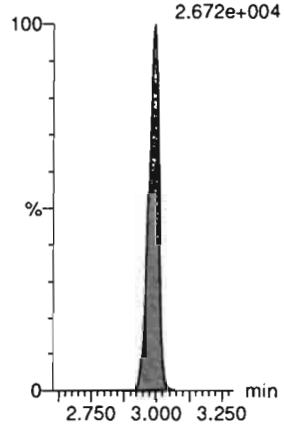
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.346e+004



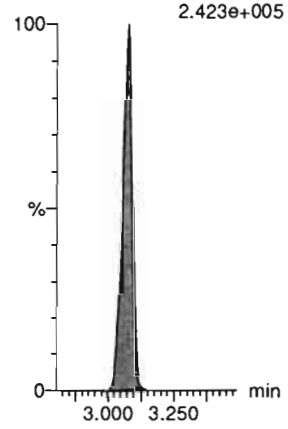
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
4.991e+004



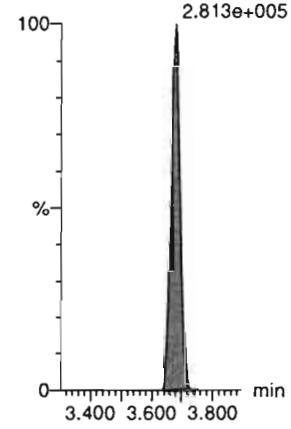
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
2.672e+004



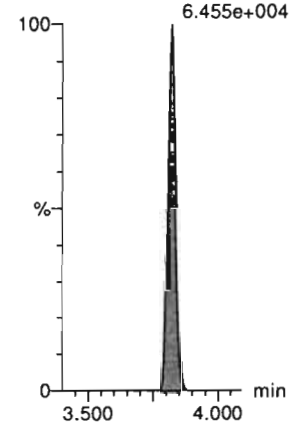
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.423e+005



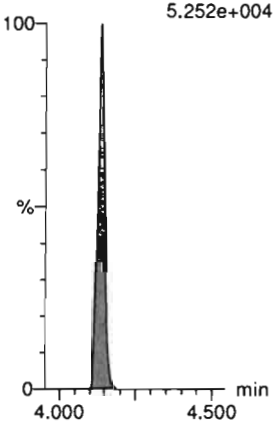
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.813e+005



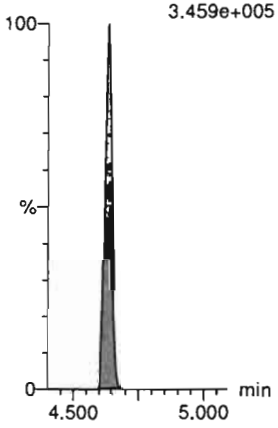
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.455e+004



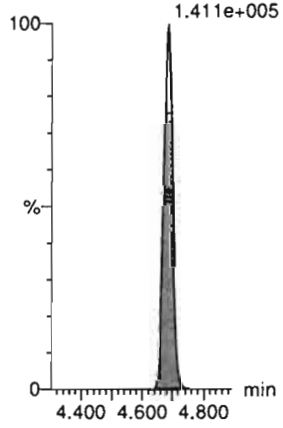
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.252e+004



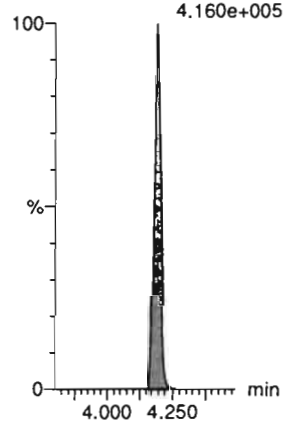
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.459e+005



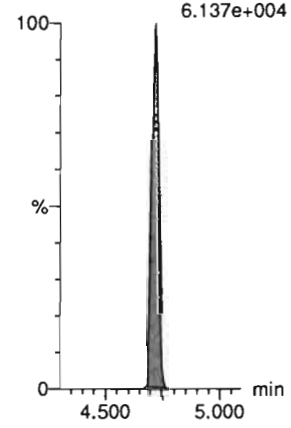
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.411e+005



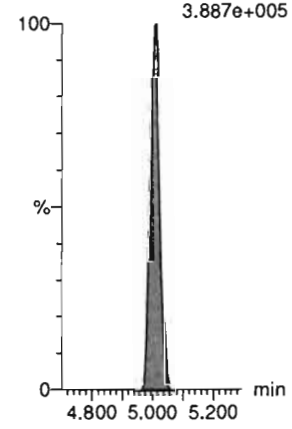
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.160e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.137e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.887e+005



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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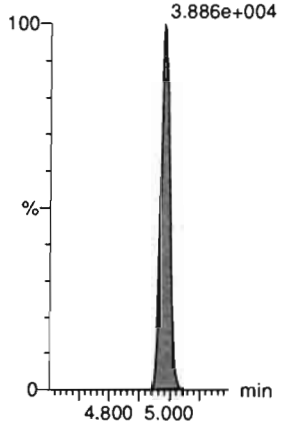
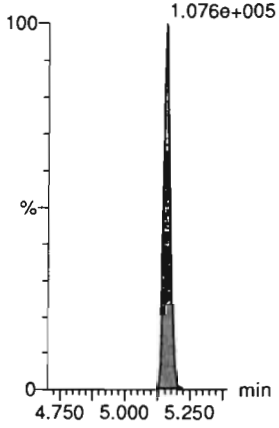
Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ST200720P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

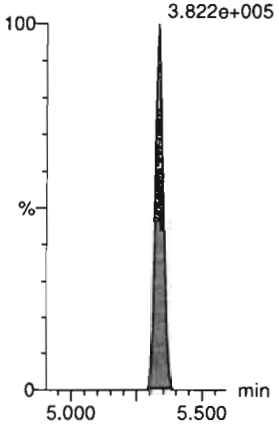
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.886e+004



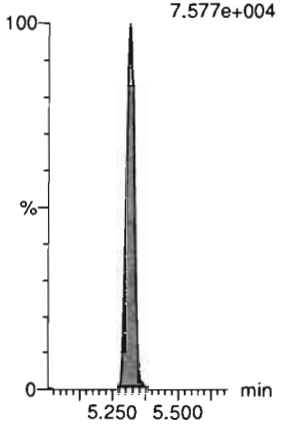
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.076e+005



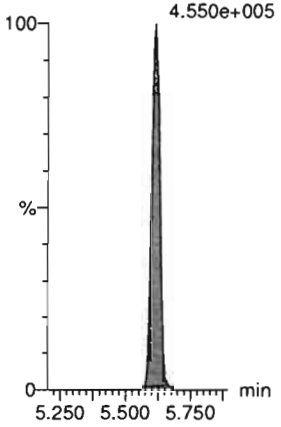
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.822e+005



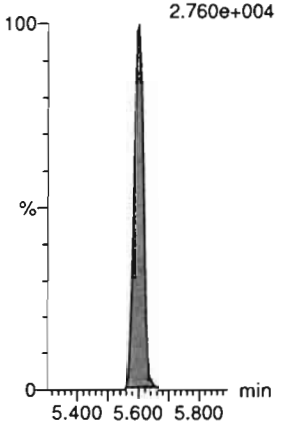
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.577e+004



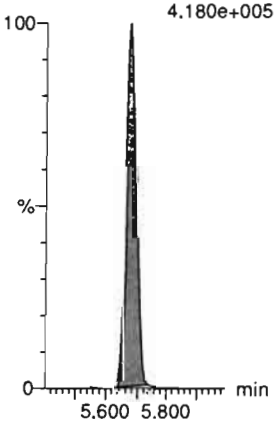
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.550e+005



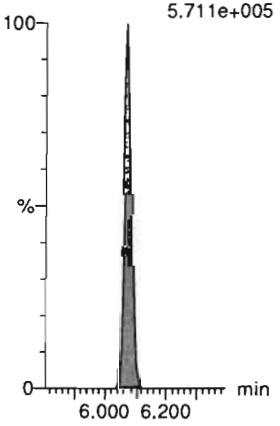
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.760e+004



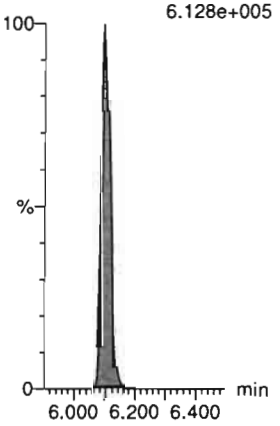
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.180e+005



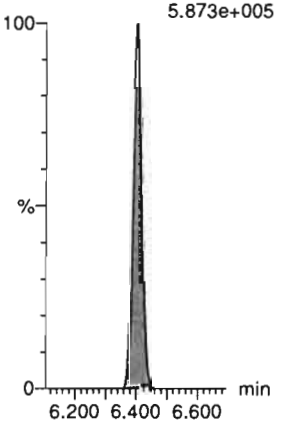
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.711e+005



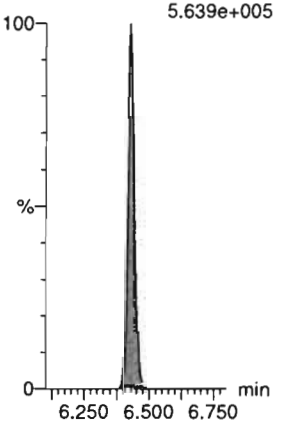
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.128e+005



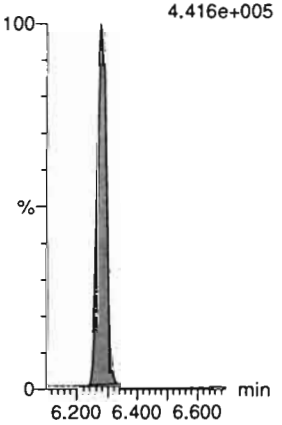
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
5.873e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.639e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.416e+005



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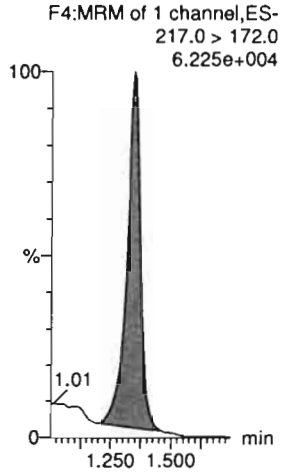
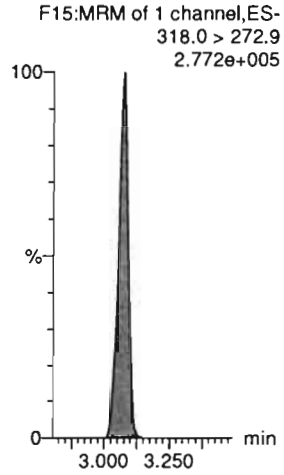
Name: 200721P1-05, Date: 21-Jul-2020, Time: 15:57:37, ID: ST200720P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

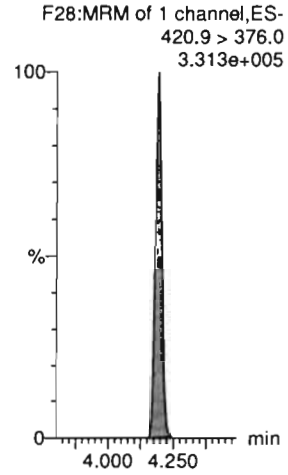
13C4-PFBA



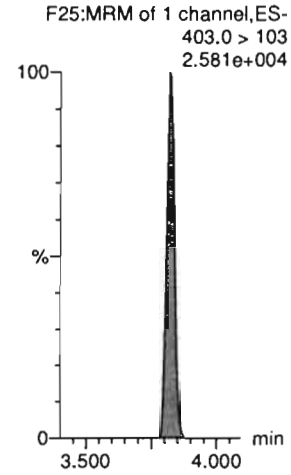
13C5-PFHxA



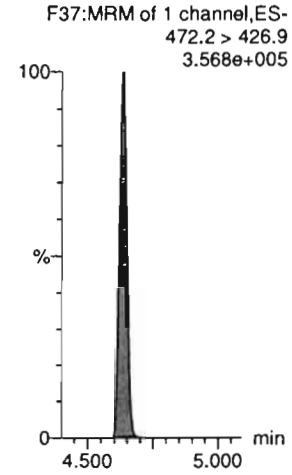
13C8-PFOA



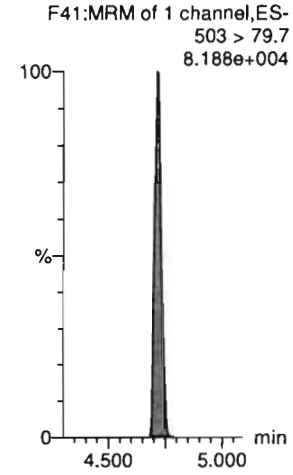
18O2-PFHxS



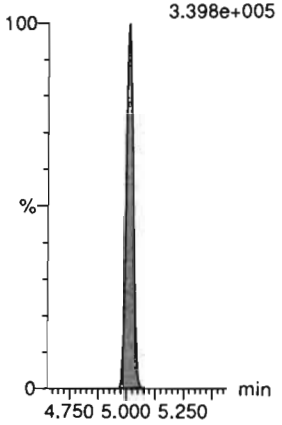
13C9-PFNA



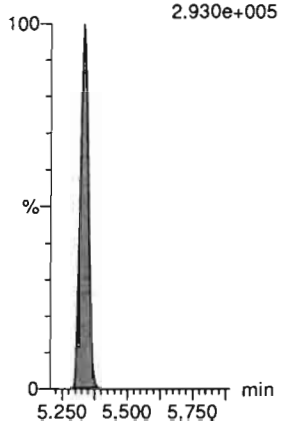
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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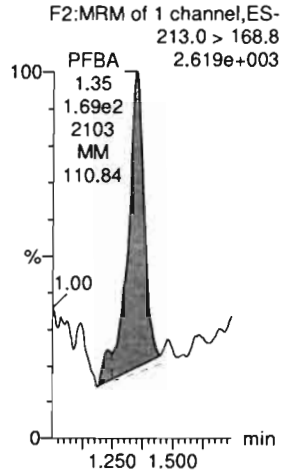
ST200721P1-2 OPV 07/22/20

Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ~~ST200720P1-2~~ PFC CS-1 20G1602, Description: PFC CS-1 20G1602

PFBA



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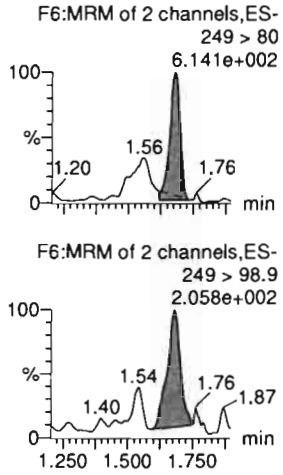
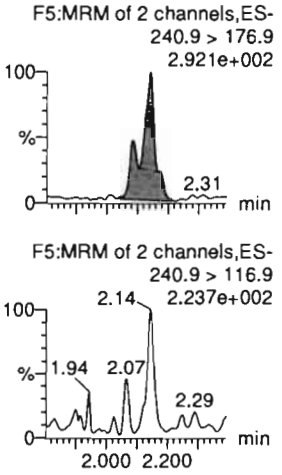
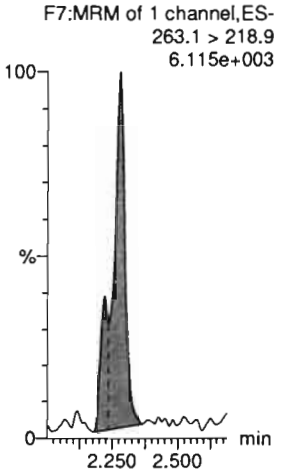


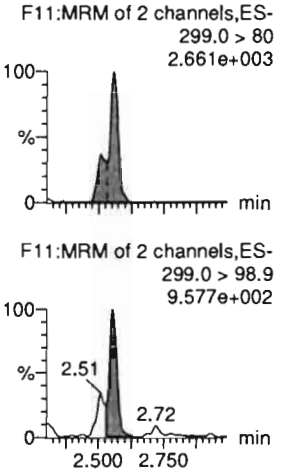
3:3 FTCA



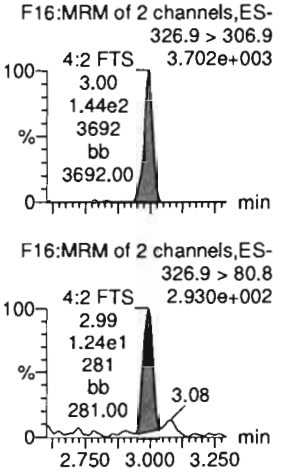
PFPeA



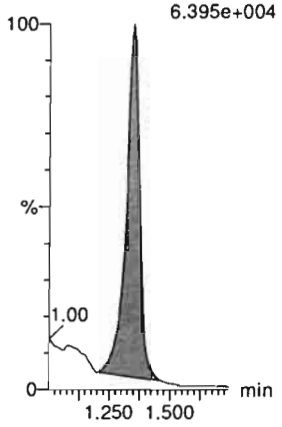
PFBS



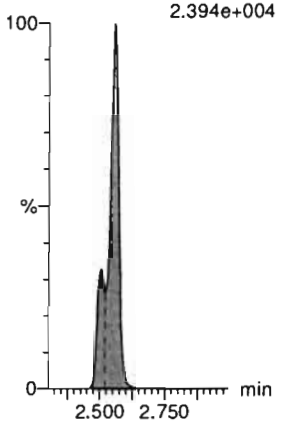
4:2 FTS



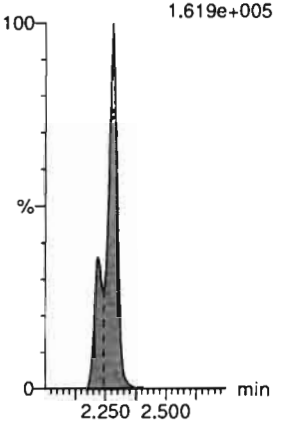
13C3-PFBA-EIS



13C3-PFBS-EIS



13C3-PFPeA-EIS



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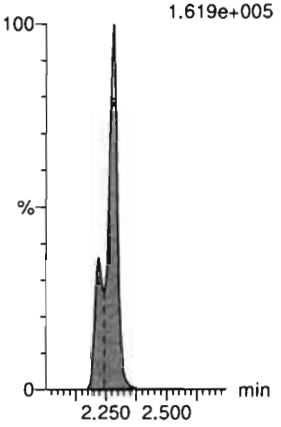

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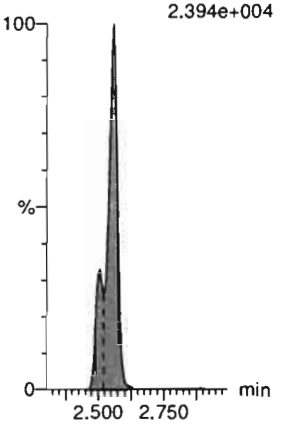
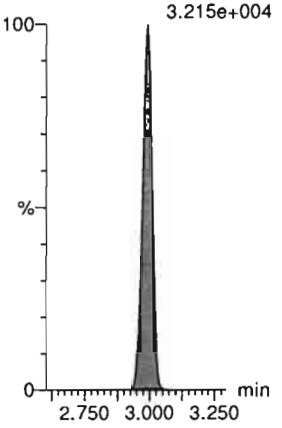


13C2-4:2 FTS-EIS



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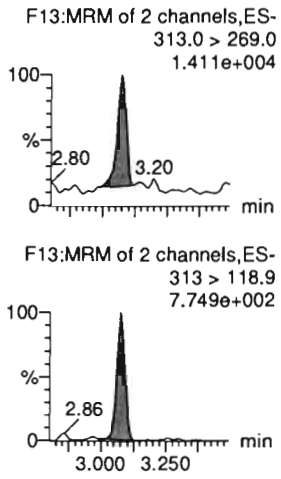
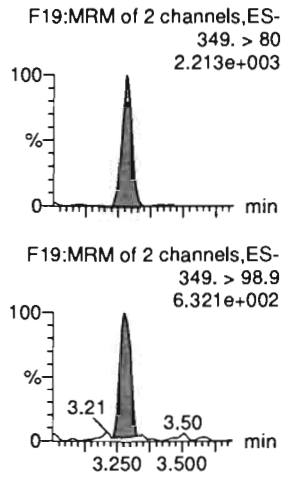
Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ST200720P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

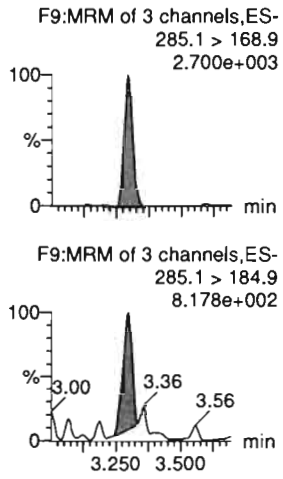
PFHxA



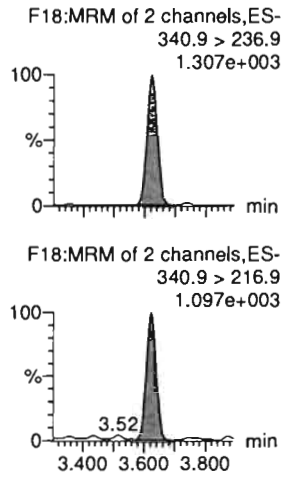
PFPeS



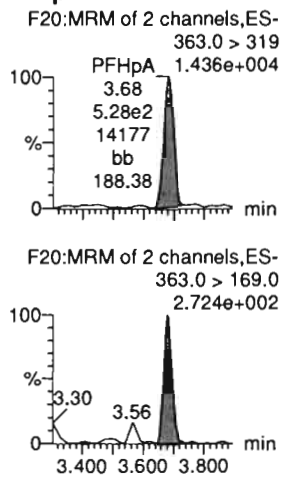
HFPO-DA



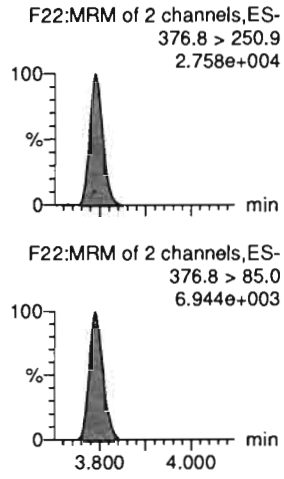
5:3 FTCA



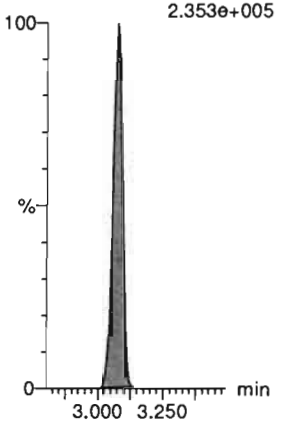
PFHpA



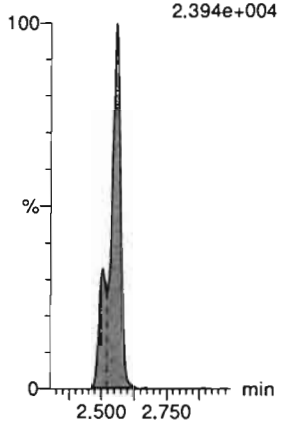
ADONA



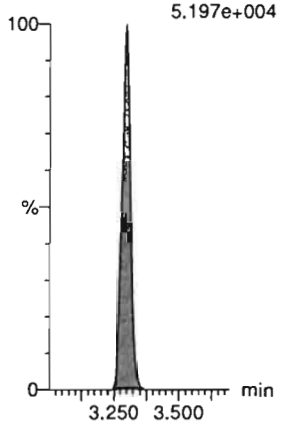
13C2-PFHxA-EIS



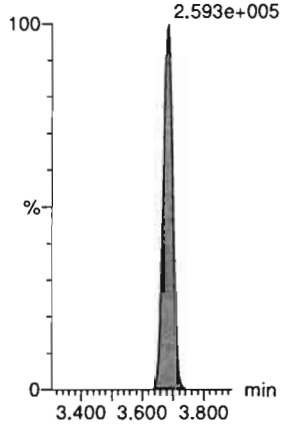
13C3-PFBS-EIS



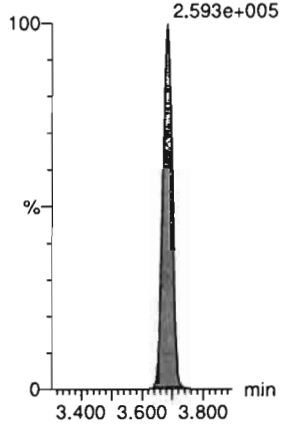
13C3-HFPO-DA-EIS



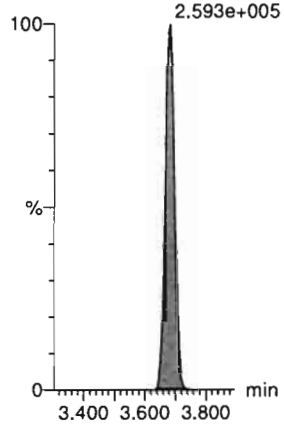
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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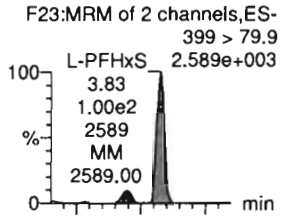
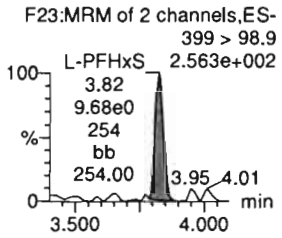
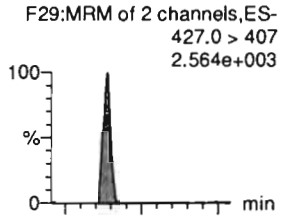
Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ST200720P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

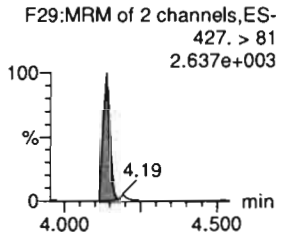
L-PFHxS



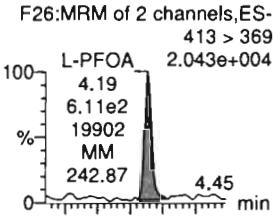


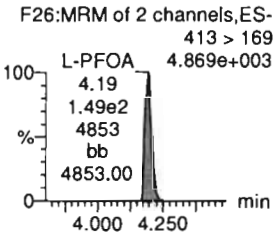
6:2 FTS



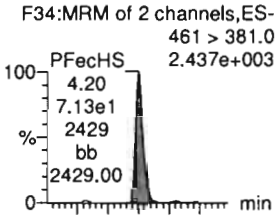


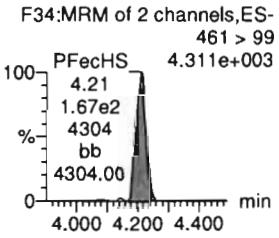
L-PFOA



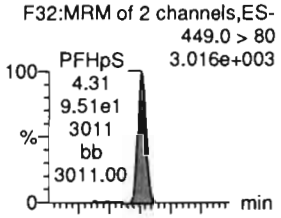


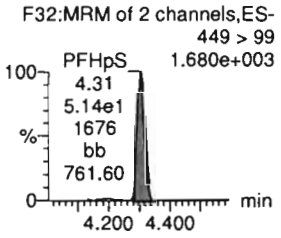
PFEChS



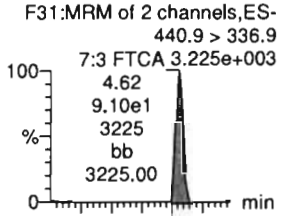


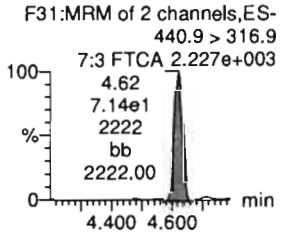
PFHpS



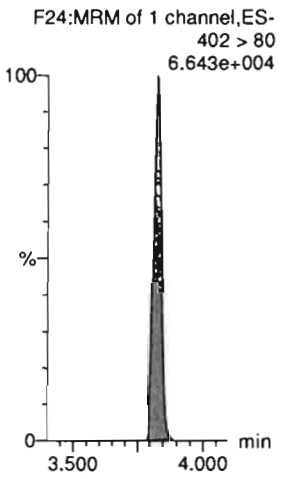


7:3 FTCA

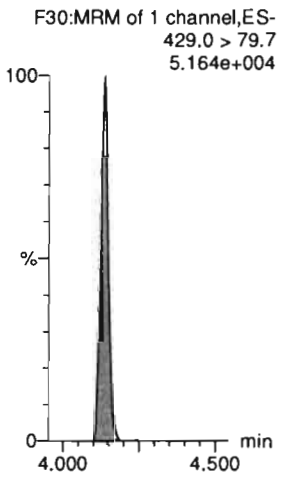




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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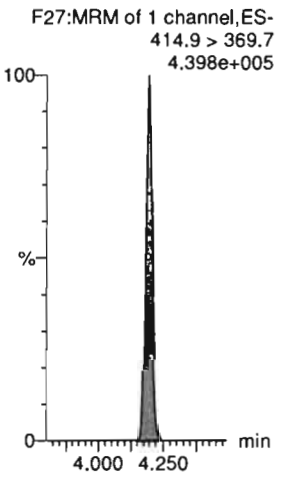

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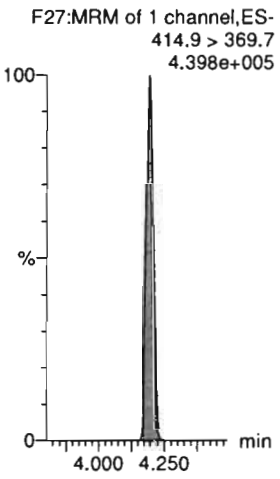

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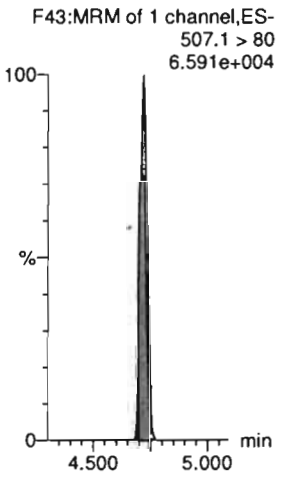
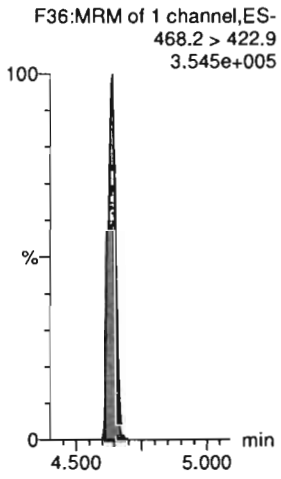


13C5-PFNA-EIS



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Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ST200720P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

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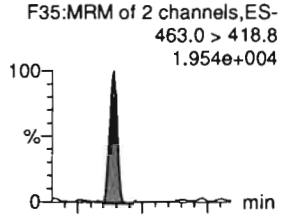

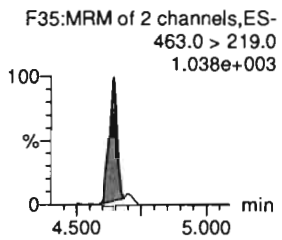

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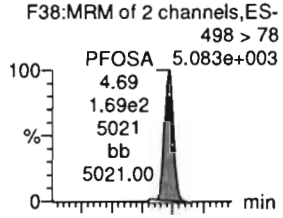

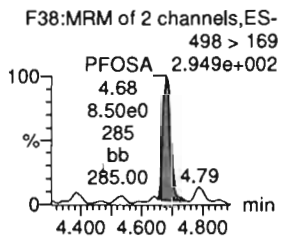

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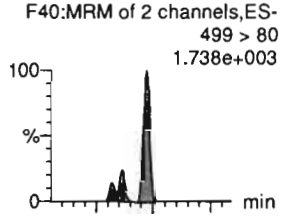
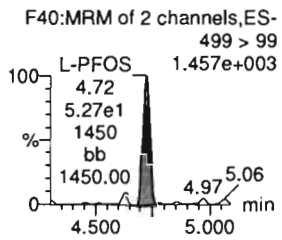
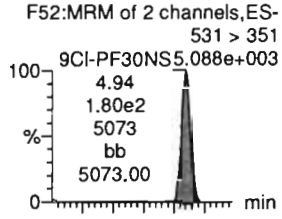
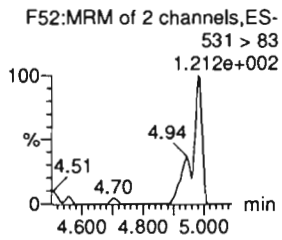




9Cl-PF30NS





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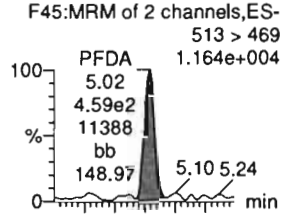
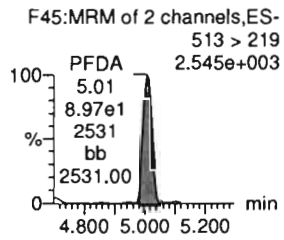
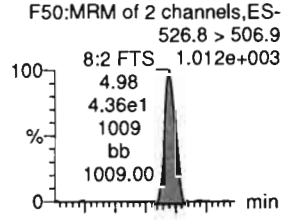
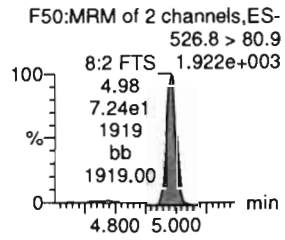


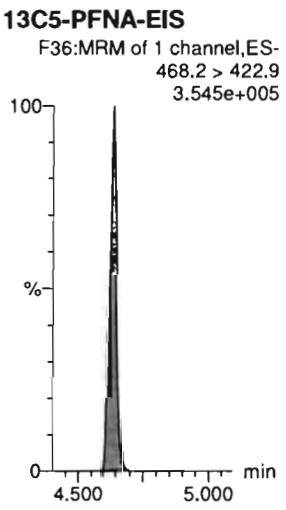


8:2 FTS





13C5-PFNA-EIS



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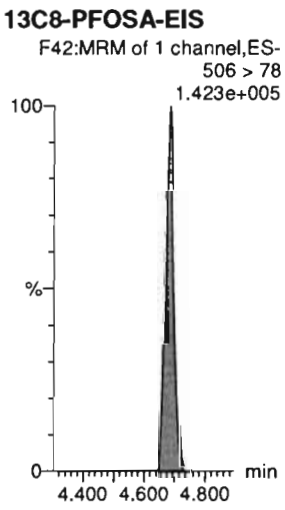

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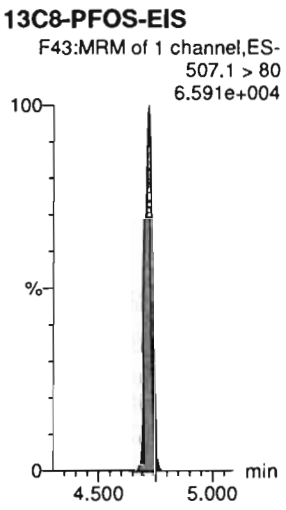

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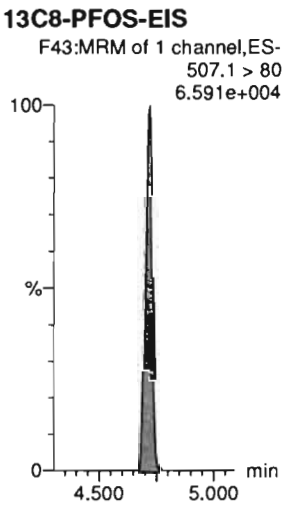

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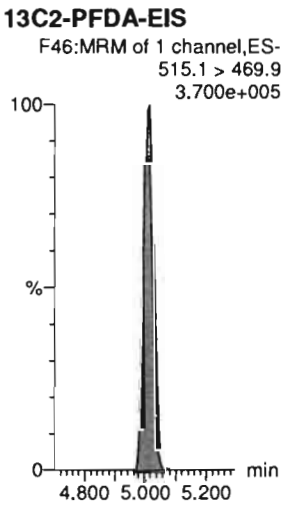

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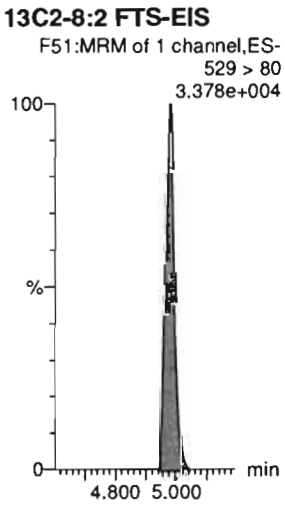

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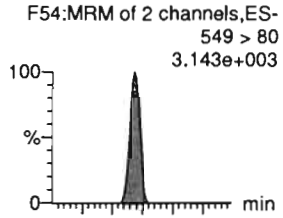

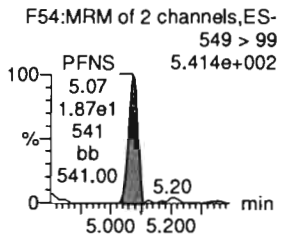

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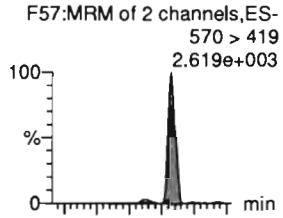

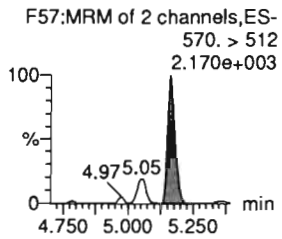

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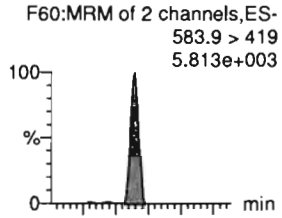

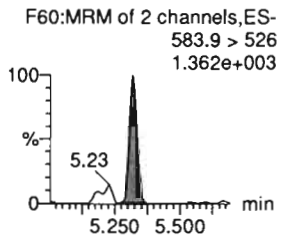

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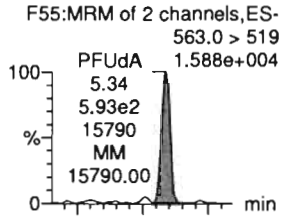

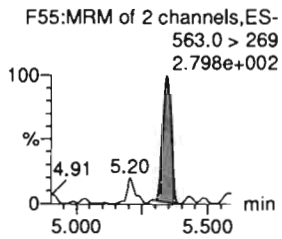

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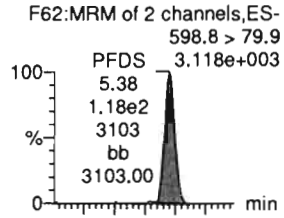

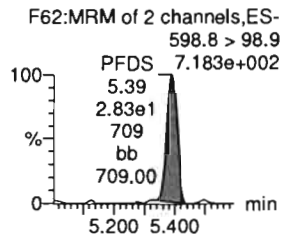

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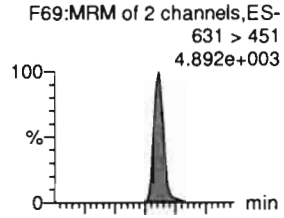

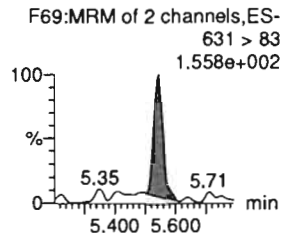

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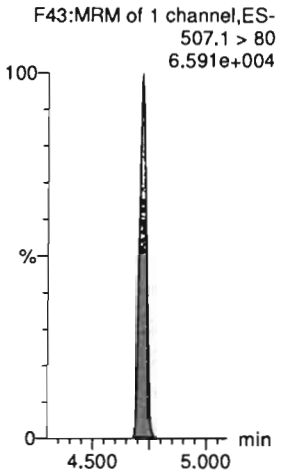
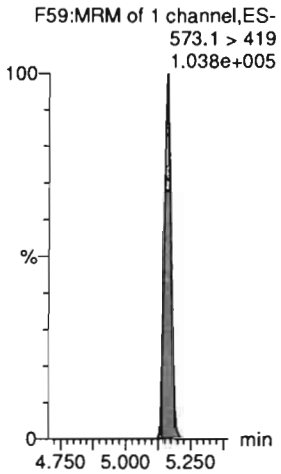


d3-N-MeFOSAA-EIS



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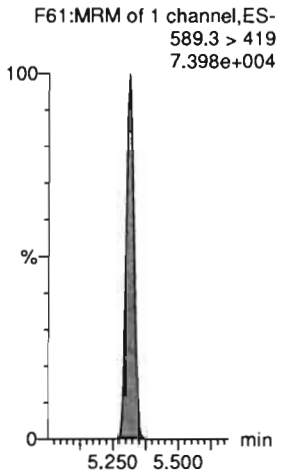

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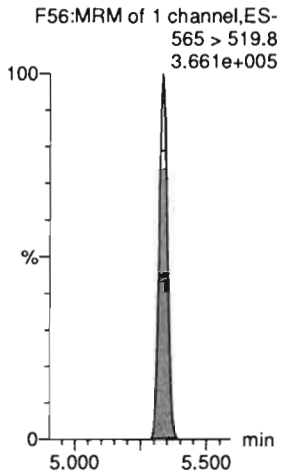

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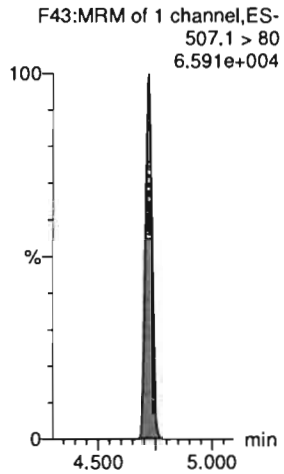

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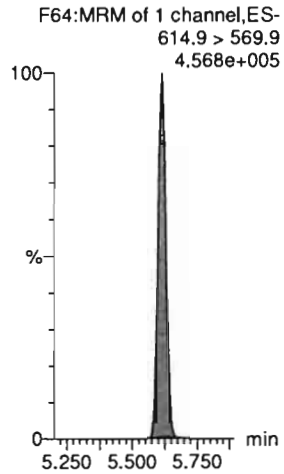

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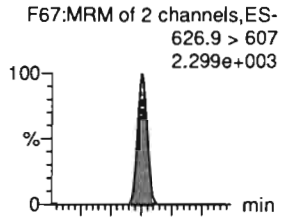
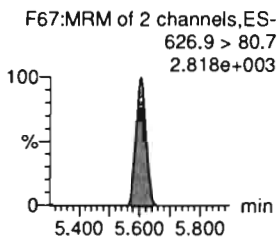
10:2 FTS





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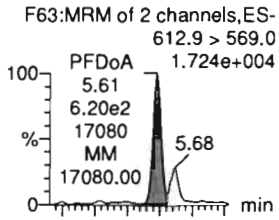
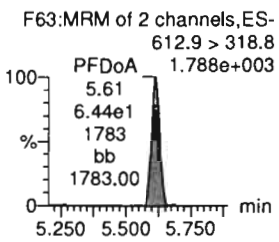
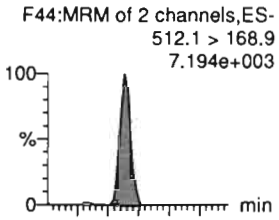
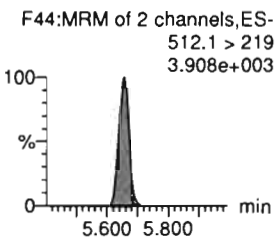




N-MeFOSA





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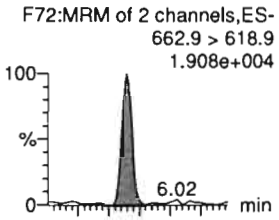
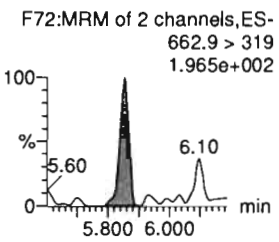
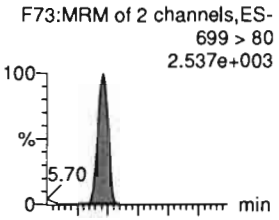
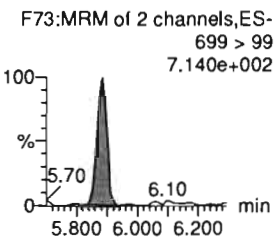


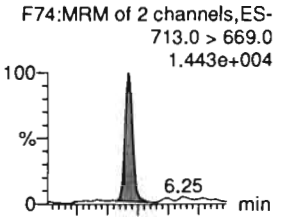


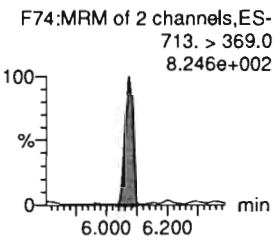
PFDoS



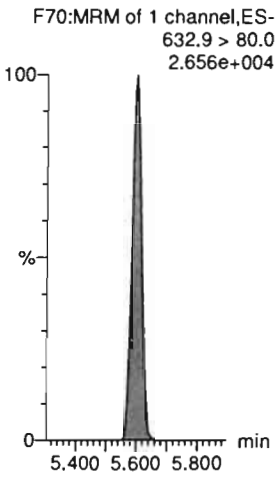


PFTeDA

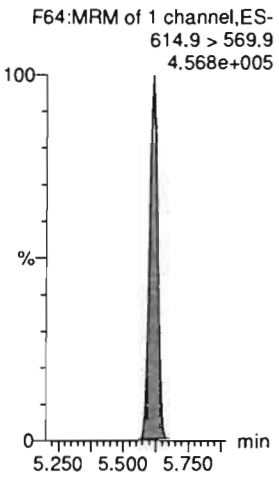




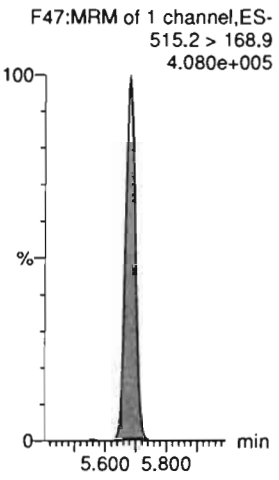
13C2-10:2 FTS-EIS



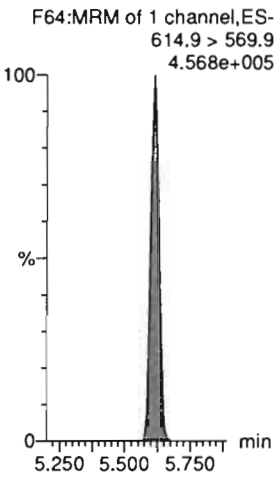
13C2-PFDoA-EIS



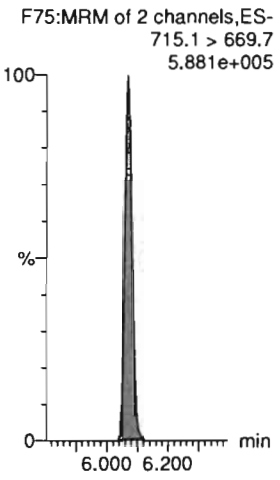
d3-N-MeFOSA-EIS



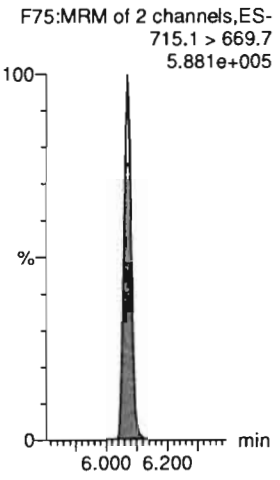
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

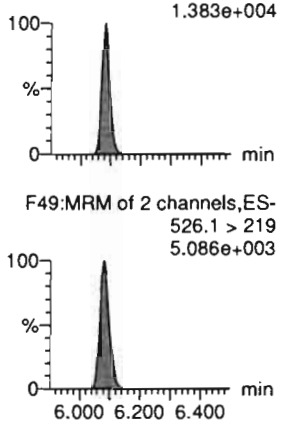


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

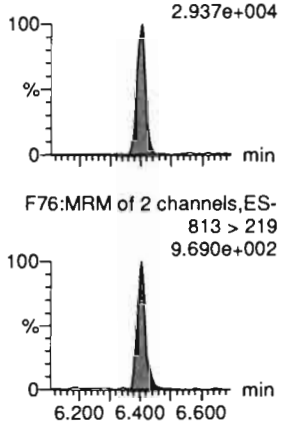
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ST200720P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

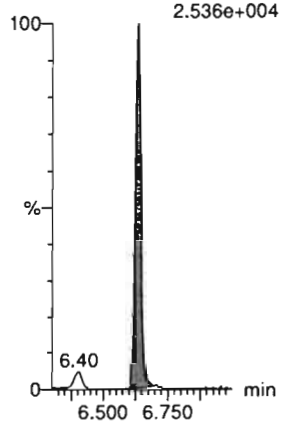
N-EtFOSA



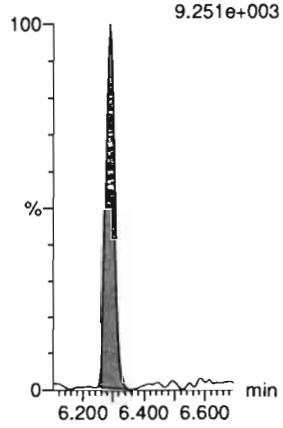
PFHxDA



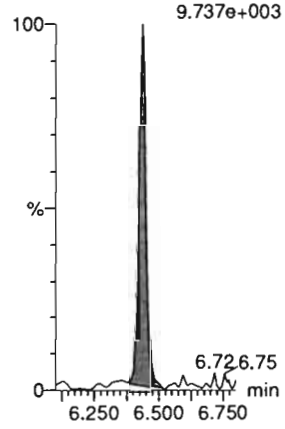
PFODA



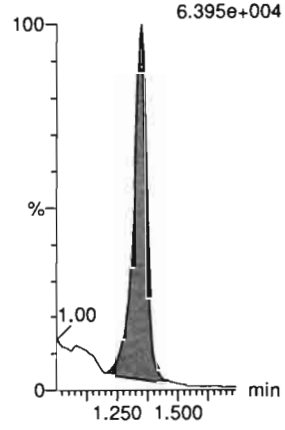
N-MeFOSE



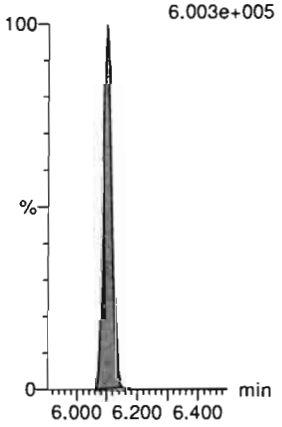
N-EtFOSE



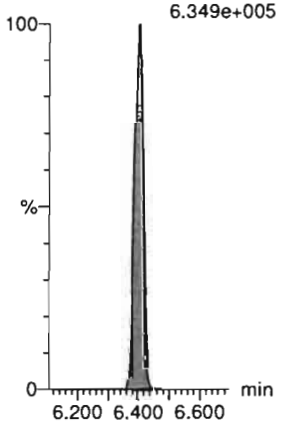
13C3-PFBA-RSD



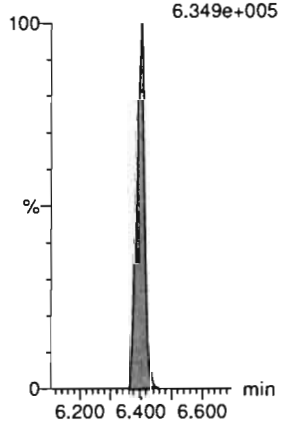
d5-N-ETFOSA-EIS



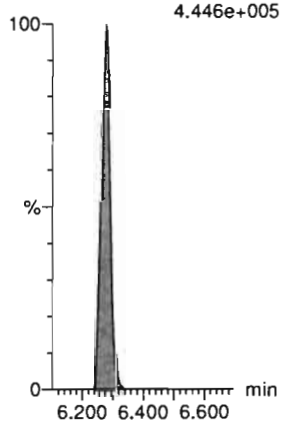
13C2-PFHxDA-EIS



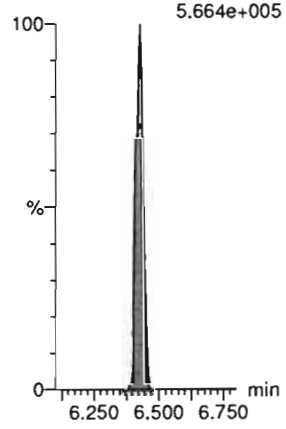
13C2-PFHxDA-EIS



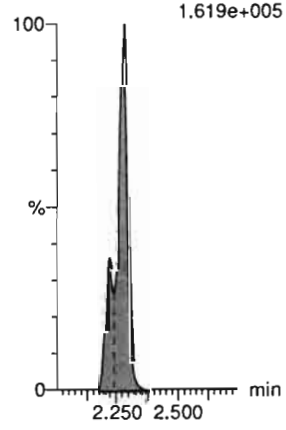
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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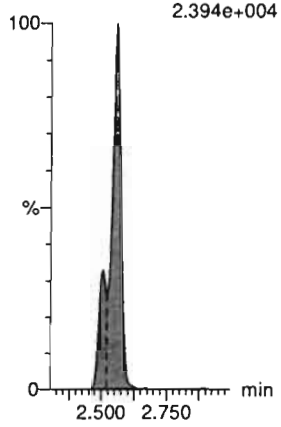
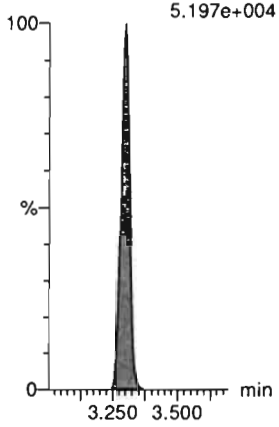
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ST200720P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

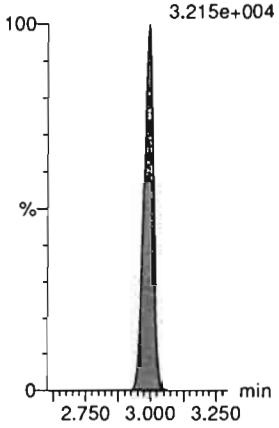
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.394e+004



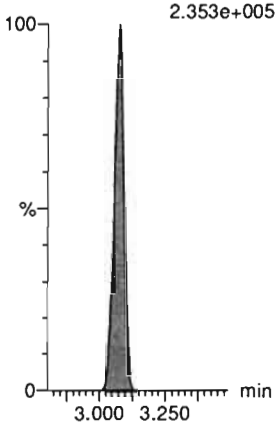
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.197e+004



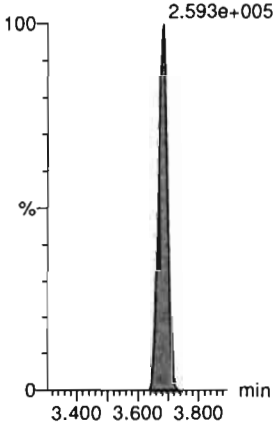
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.215e+004



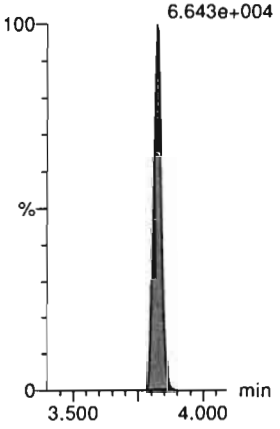
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.353e+005



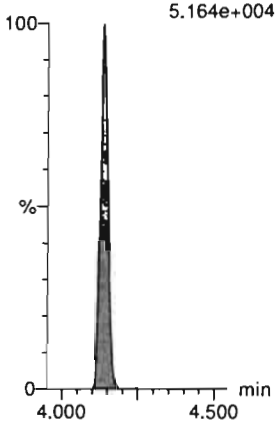
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.593e+005



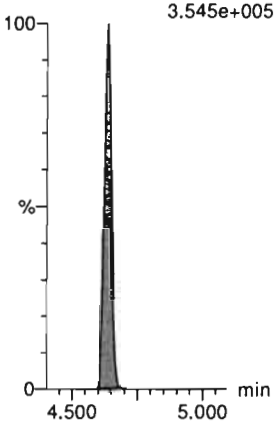
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.643e+004



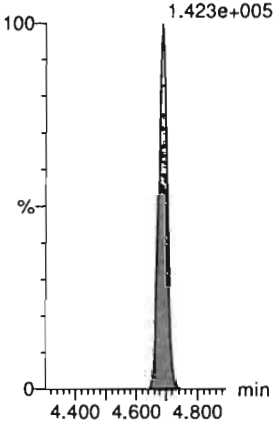
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.164e+004



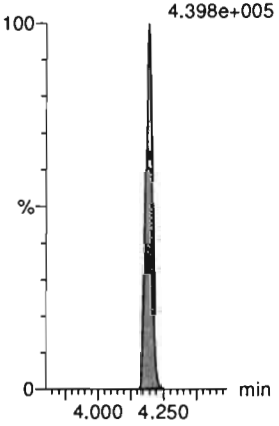
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.545e+005



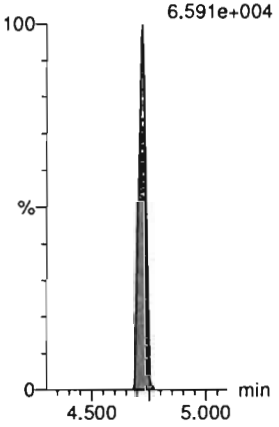
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.423e+005



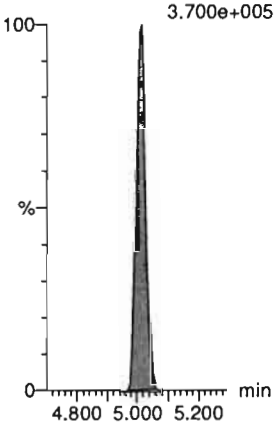
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.398e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.591e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.700e+005

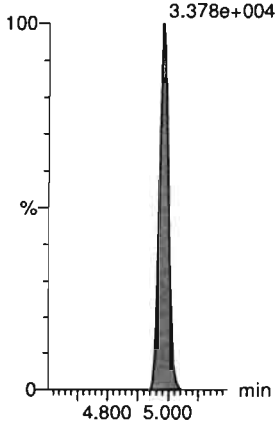


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

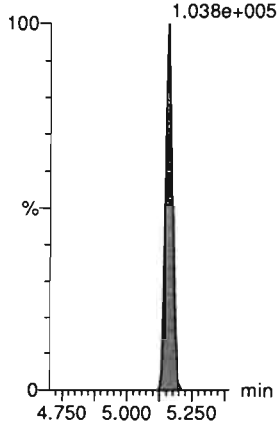
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ST200720P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

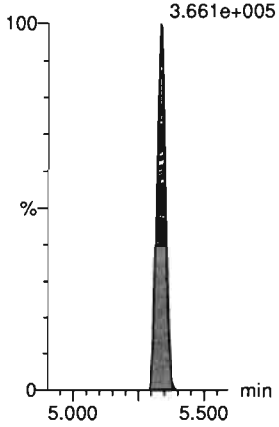
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.378e+004



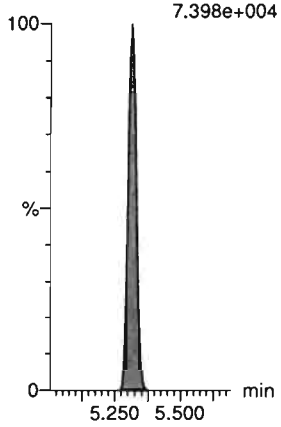
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.038e+005



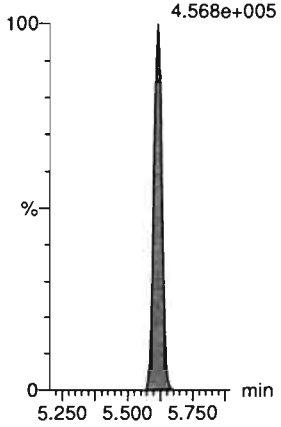
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.661e+005



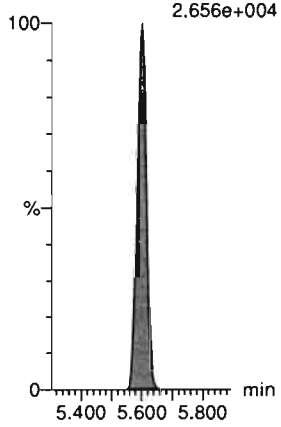
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.398e+004



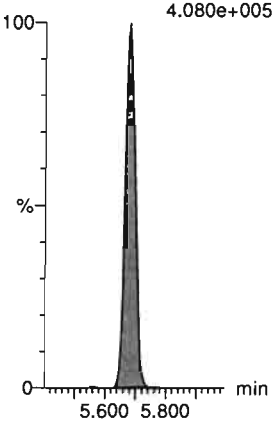
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.568e+005



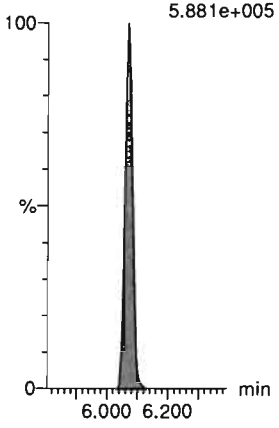
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.656e+004



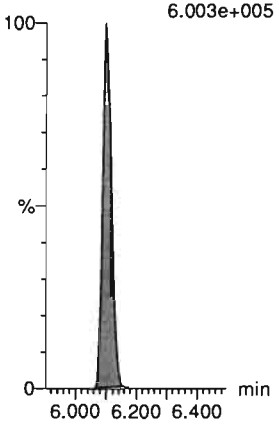
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.080e+005



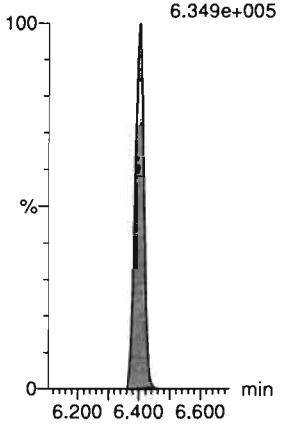
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.881e+005



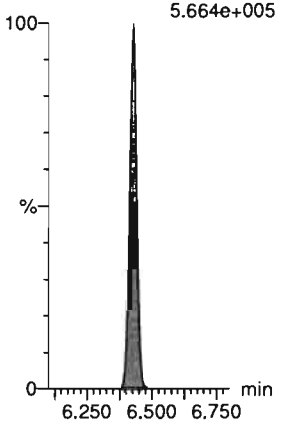
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.003e+005



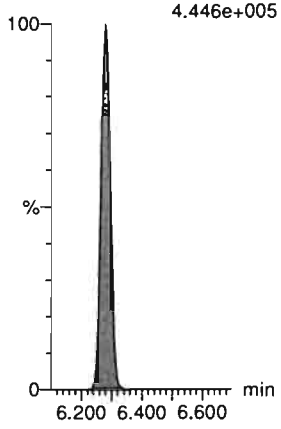
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.349e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.664e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.446e+005



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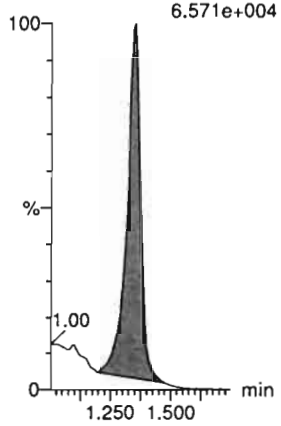
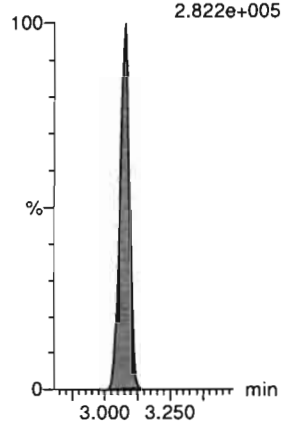
Name: 200721P1-06, Date: 21-Jul-2020, Time: 16:08:14, ID: ST200720P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

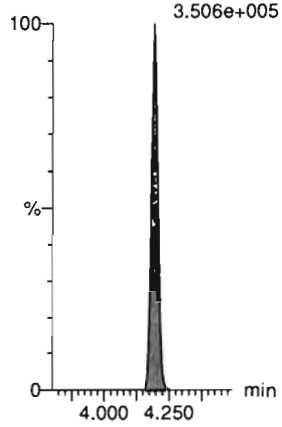
13C4-PFBA



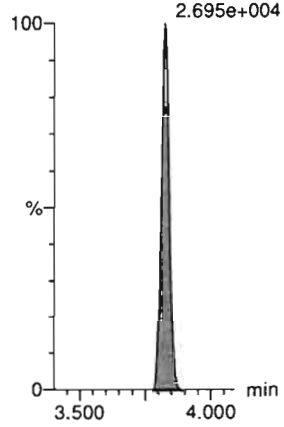
13C5-PFHxA



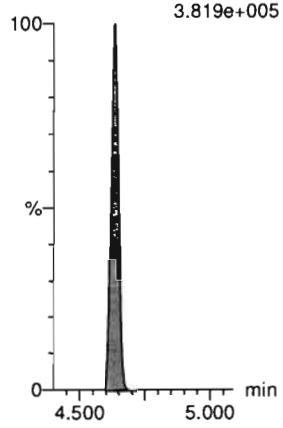
13C8-PFOA



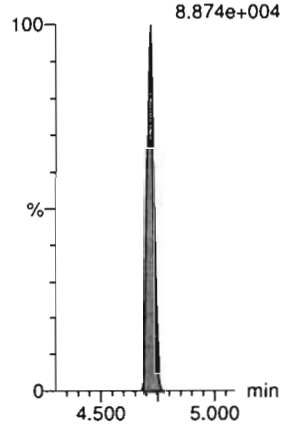
18O2-PFHxS



13C9-PFNA



13C4-PFOS



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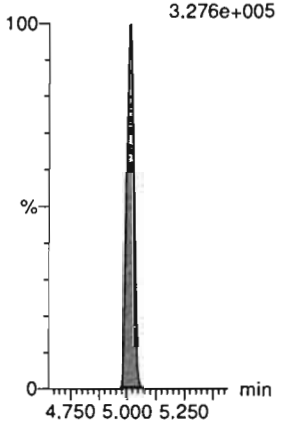

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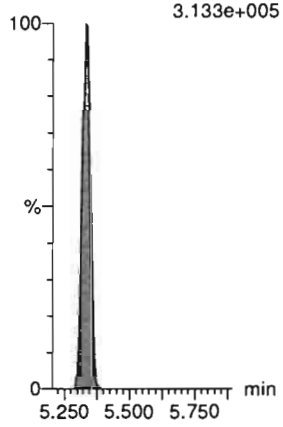

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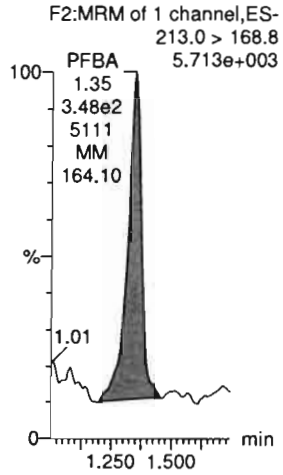
ST200721P1-3 CRV 07/22/20

Name: 200721P1-07, Date: 21-Jul-2020, Time: 16:18:40, ID: ~~ST200720P1-~~3 PFC CS0 20G1603, Description: PFC CS0 20G1603

PFBA



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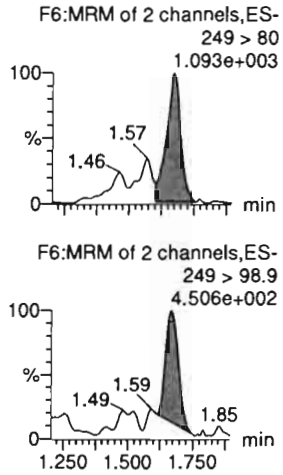
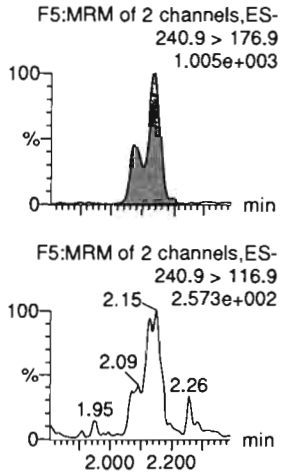


3:3 FTCA



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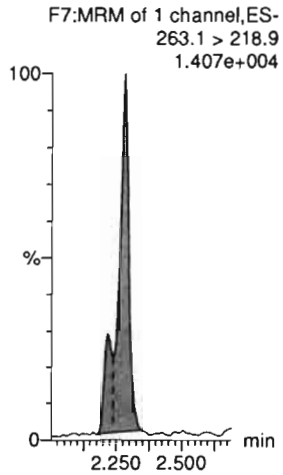

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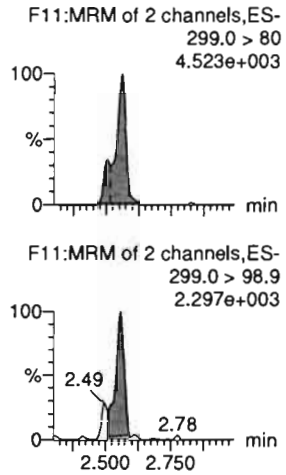
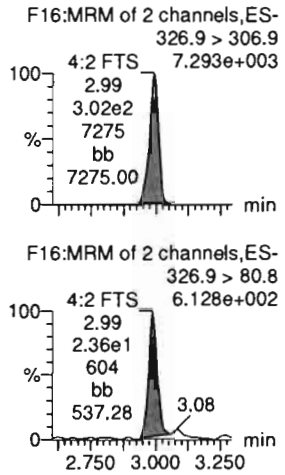
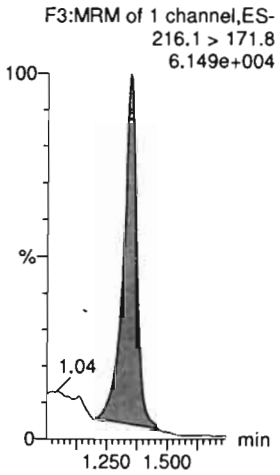


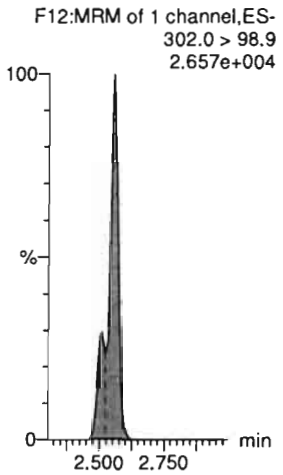
4:2 FTS



13C3-PFBA-EIS



13C3-PFBS-EIS



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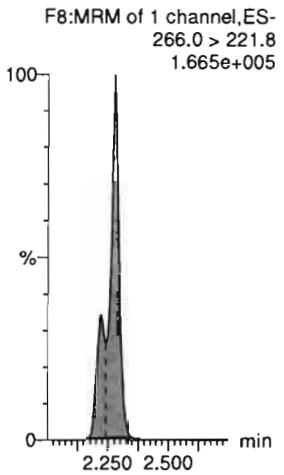

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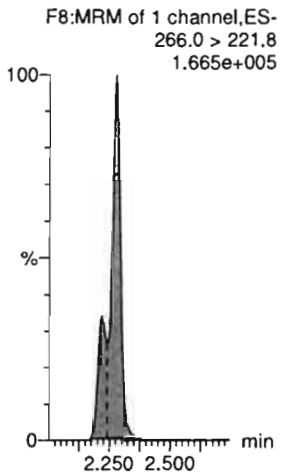

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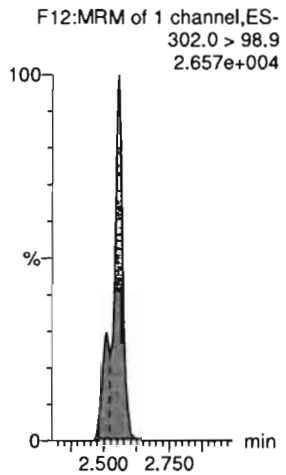
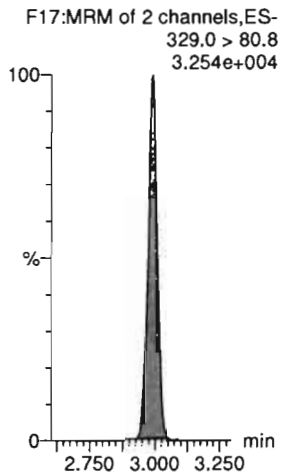


13C2-4:2 FTS-EIS



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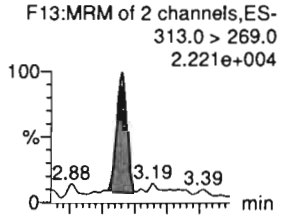
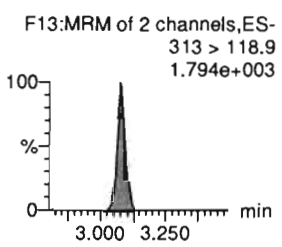
PFHxA





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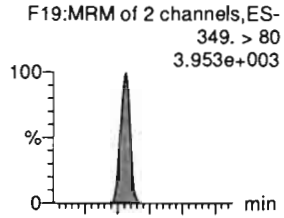

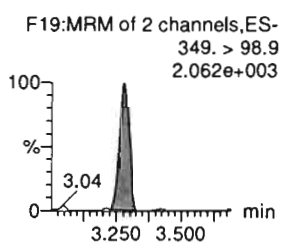

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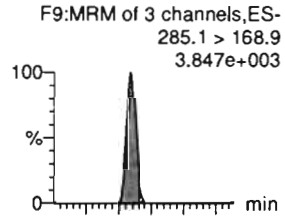

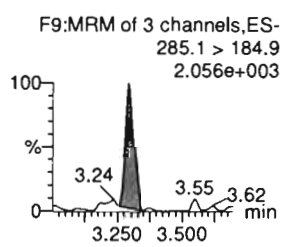

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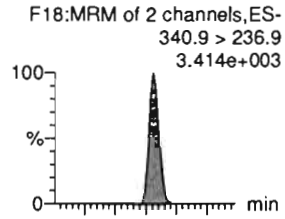
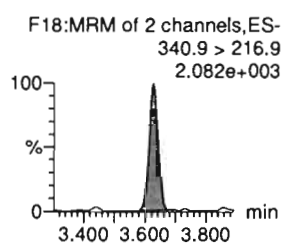
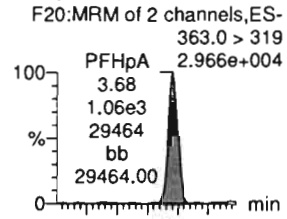
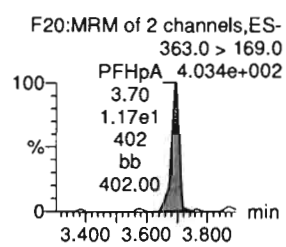


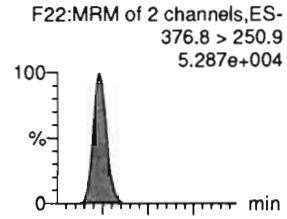


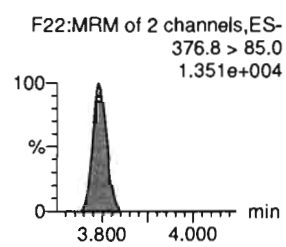
PFHpA



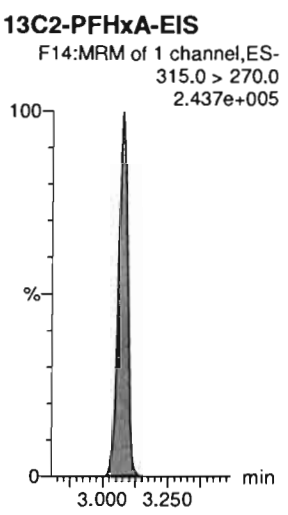


ADONA

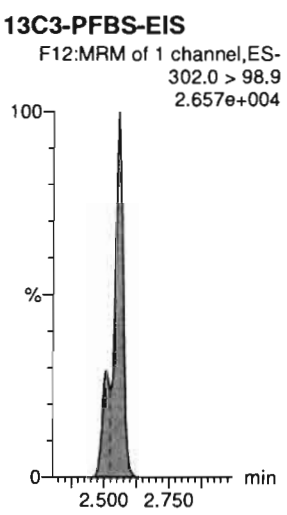




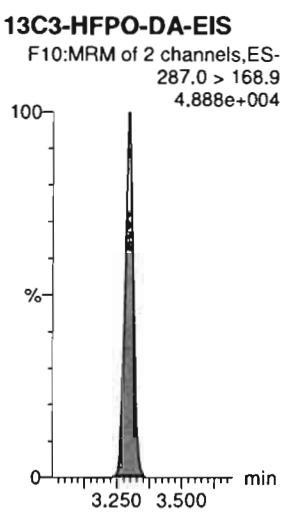
13C2-PFHxA-EIS



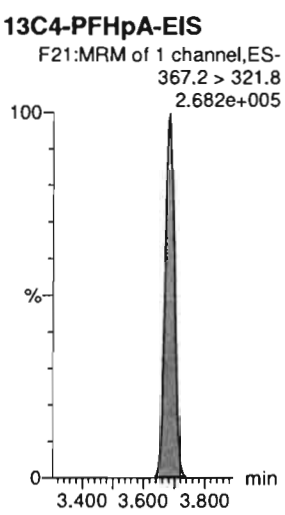
13C3-PFBS-EIS



13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



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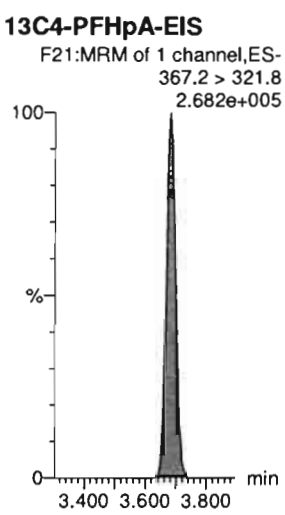

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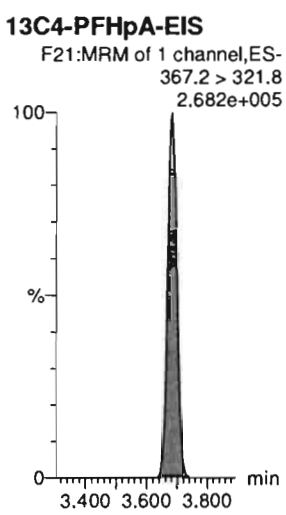

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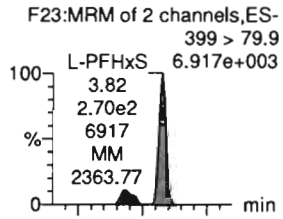
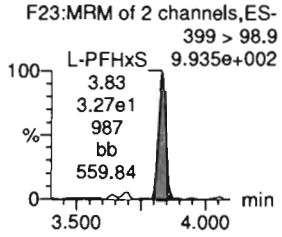
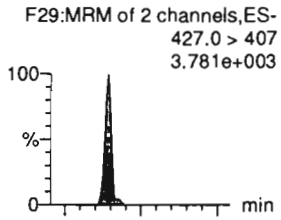
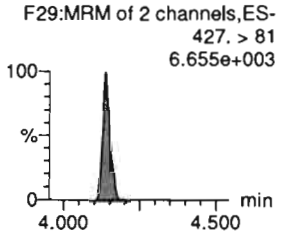
L-PFHxS



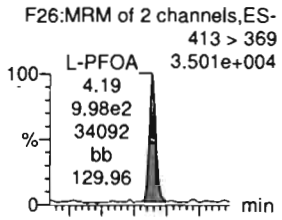


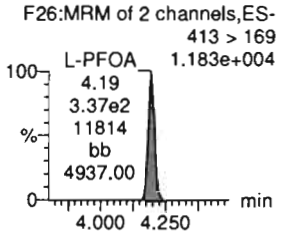
6:2 FTS





L-PFOA





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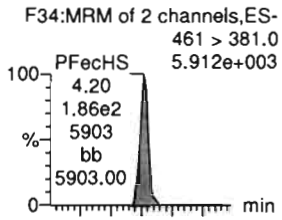

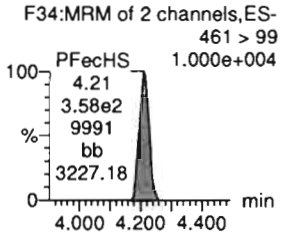

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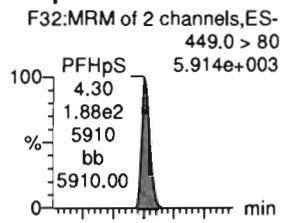
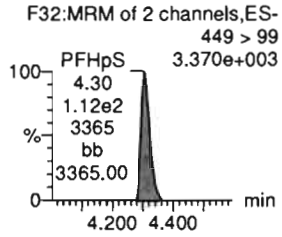
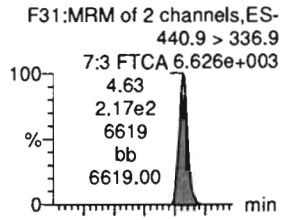
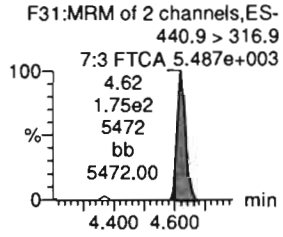


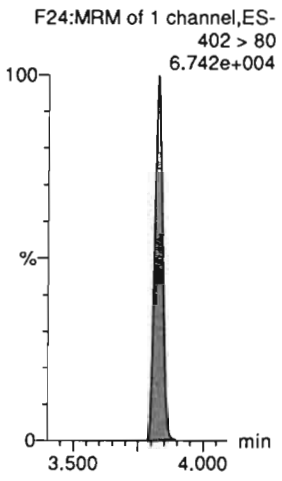


7:3 FTCA

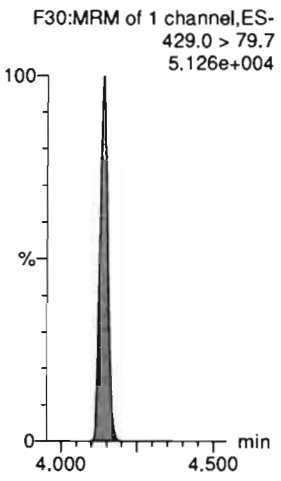




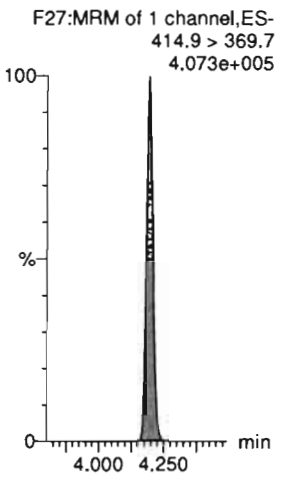
13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



13C2-PFOA-EIS



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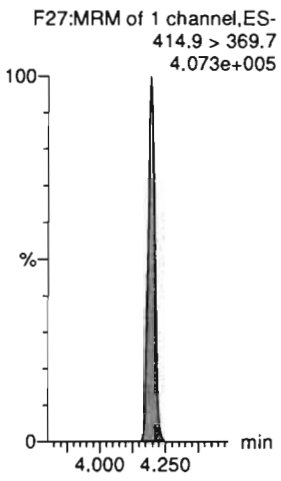
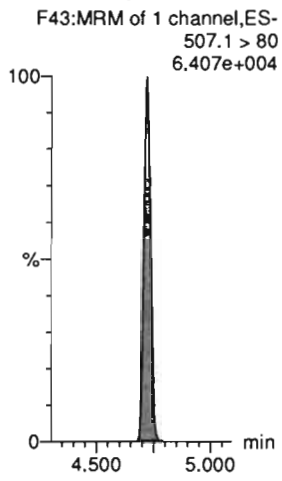
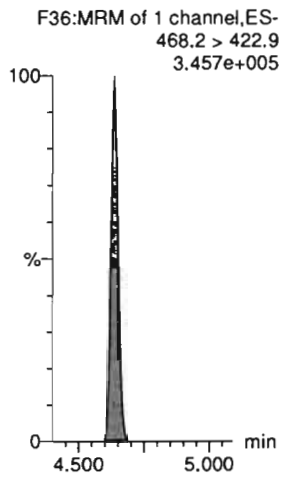


13C8-PFOS-EIS



13C5-PFNA-EIS



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Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-07, Date: 21-Jul-2020, Time: 16:18:40, ID: ST200720P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

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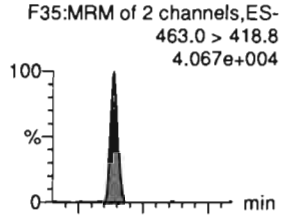

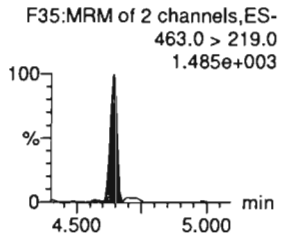

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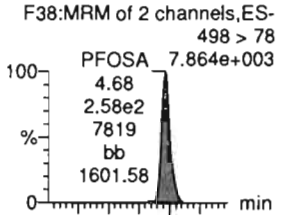

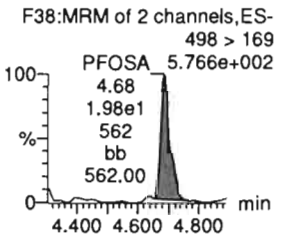

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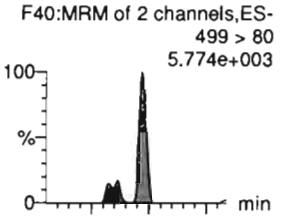
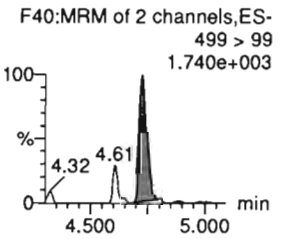
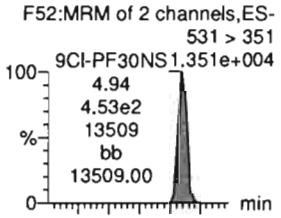
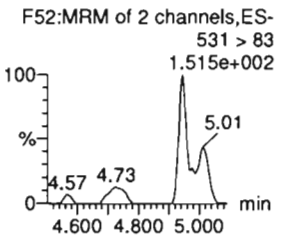




9Cl-PF30NS





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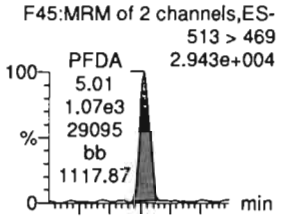
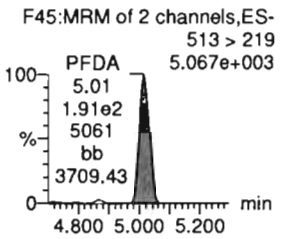
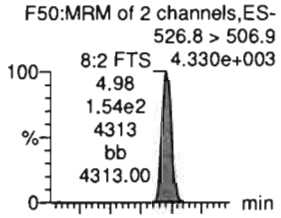
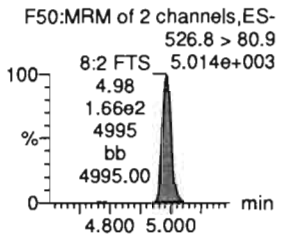


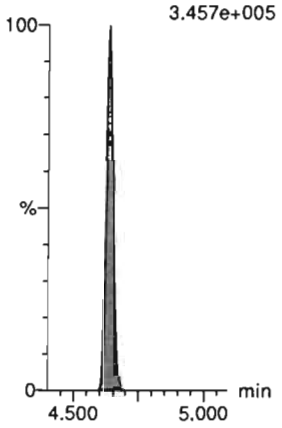


8:2 FTS





13C5-PFNA-EIS



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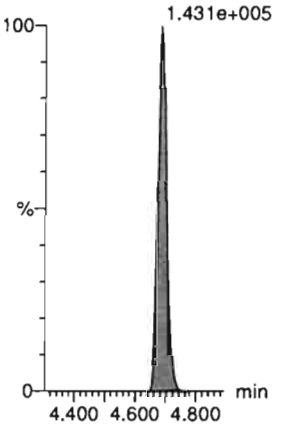

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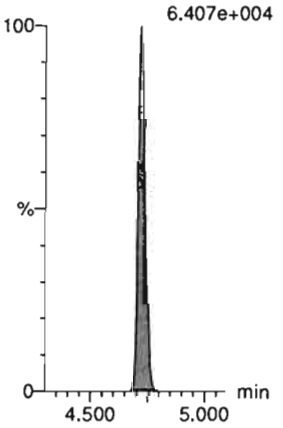

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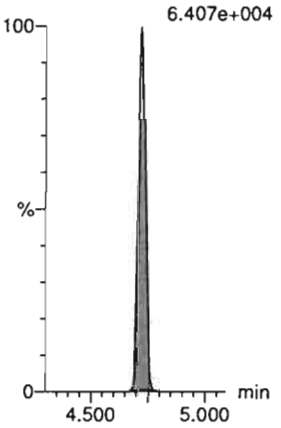
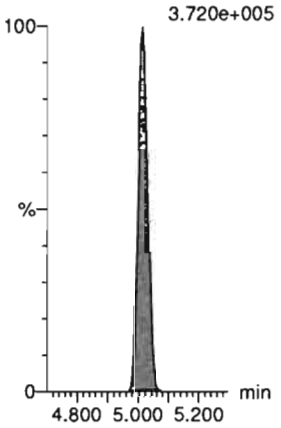
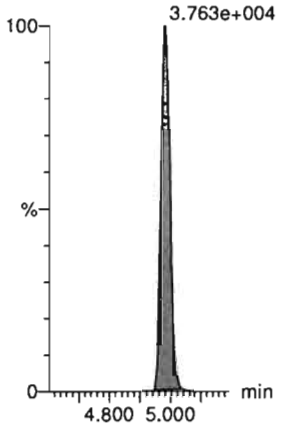


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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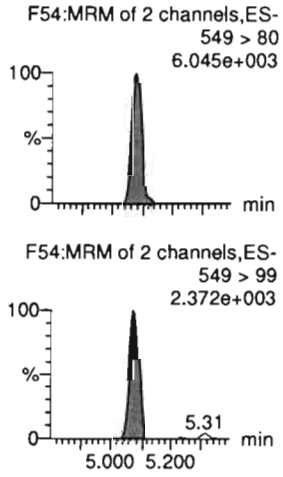
PFNS



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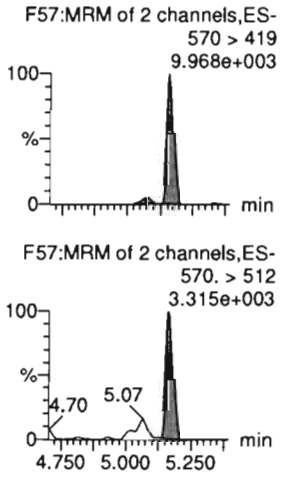

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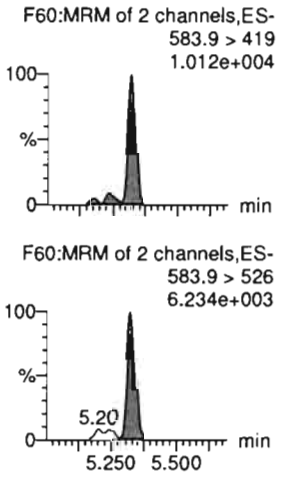

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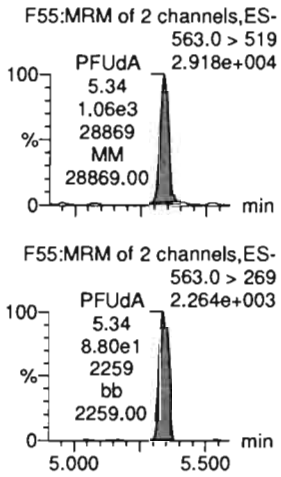

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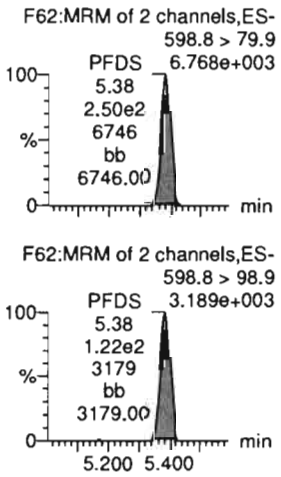
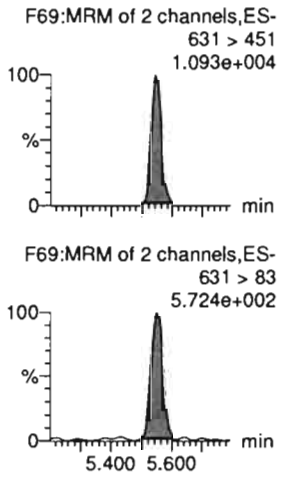
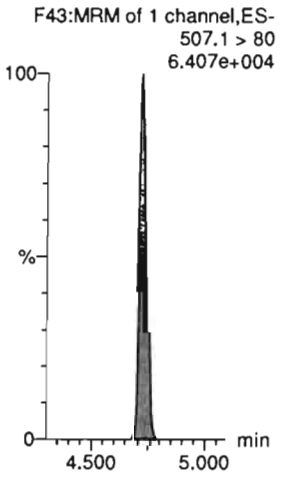


11Cl-PF30UdS



13C8-PFOS-EIS



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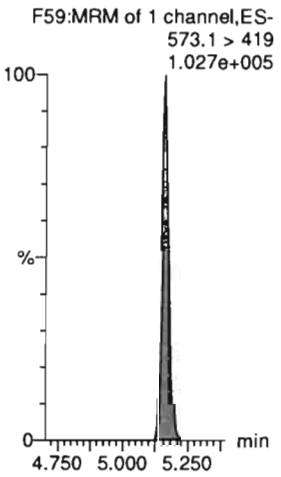
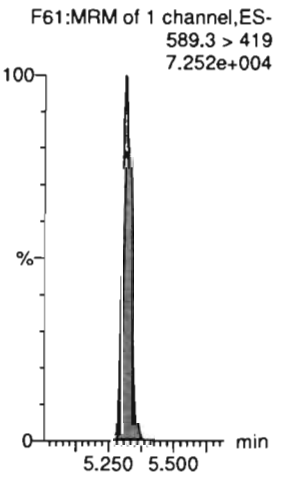


d5-N-EtFOSAA-EIS



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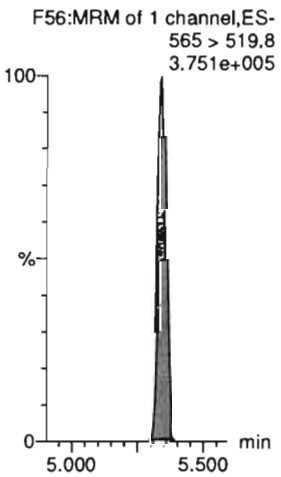

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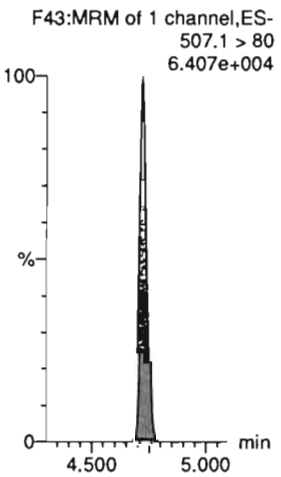

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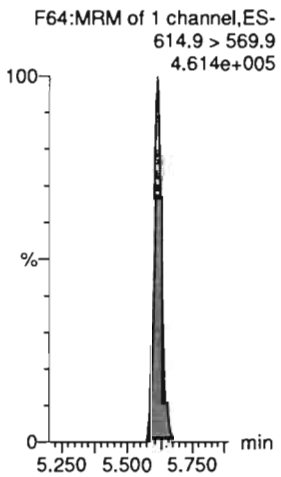

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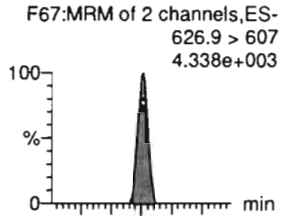
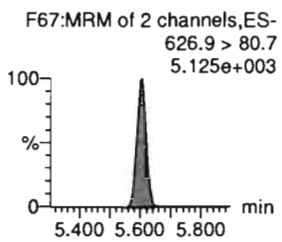
10:2 FTS





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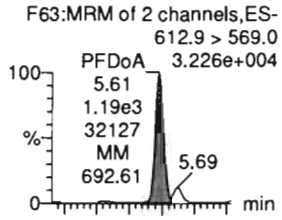
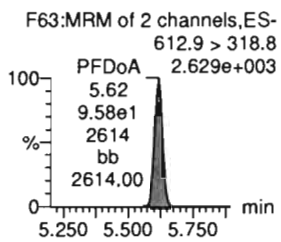
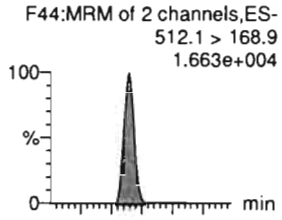
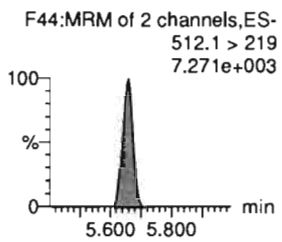




N-MeFOSA





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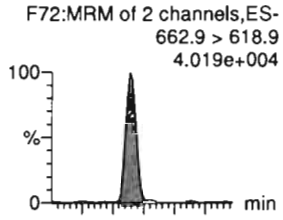

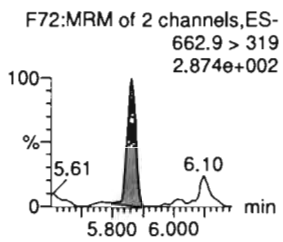

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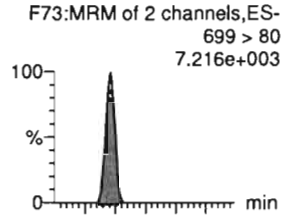

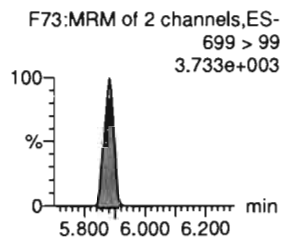

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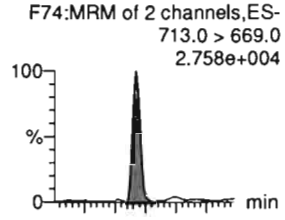
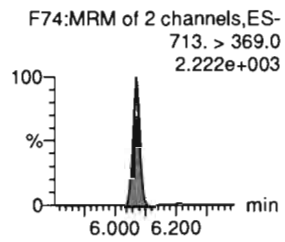
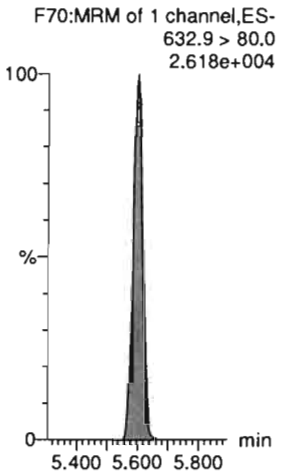
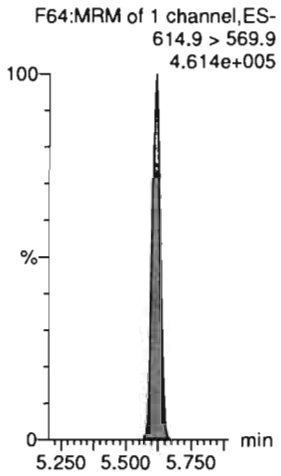




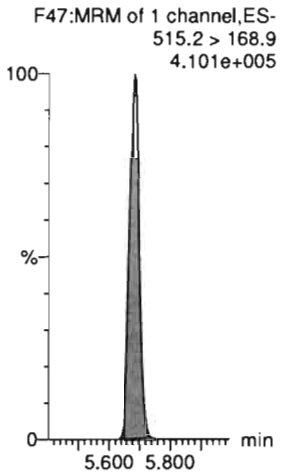
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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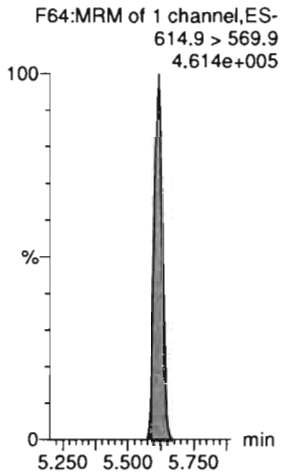

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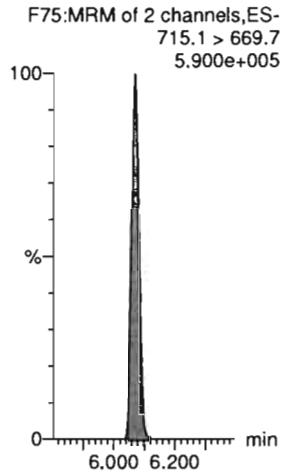
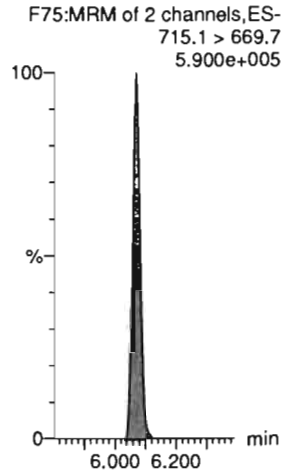


13C2-PFTeDA-EIS



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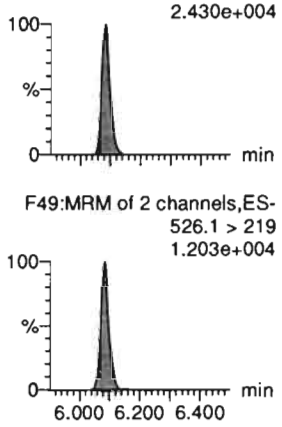
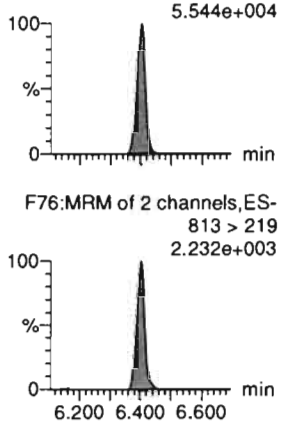
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-07, Date: 21-Jul-2020, Time: 16:18:40, ID: ST200720P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

N-EtFOSA



PFHxDA



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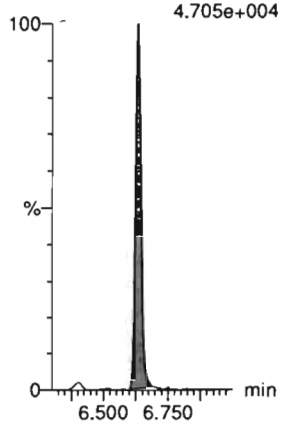
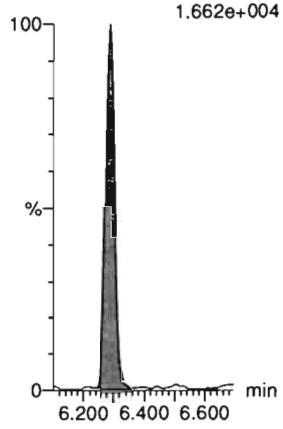


N-MeFOSE



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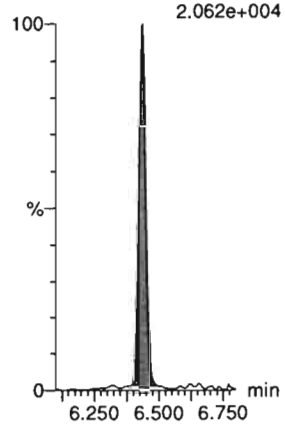
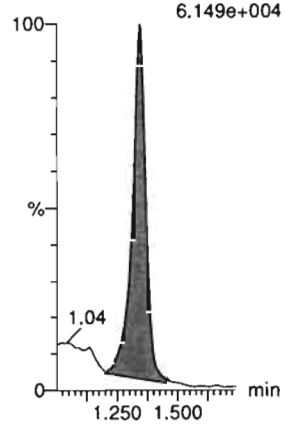
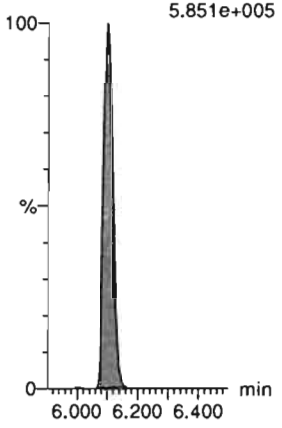


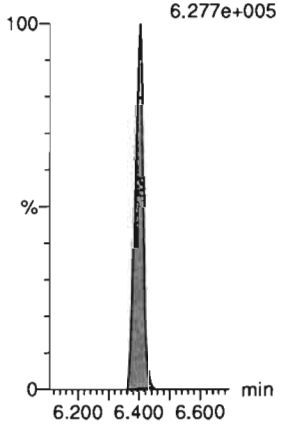
13C3-PFBA-RSD



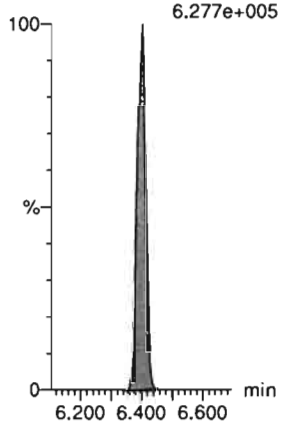
d5-N-ETFOSA-EIS



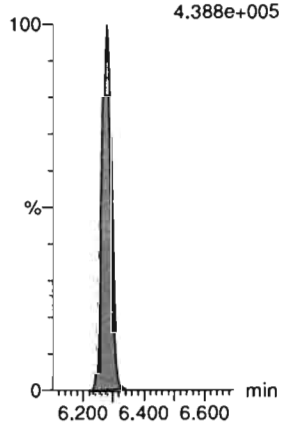
13C2-PFHxDA-EIS



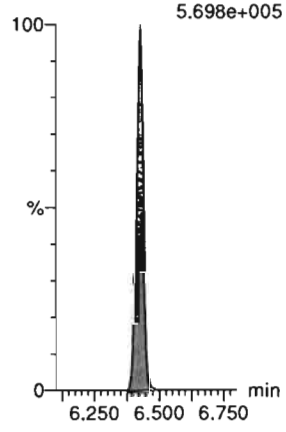
13C2-PFHxDA-EIS



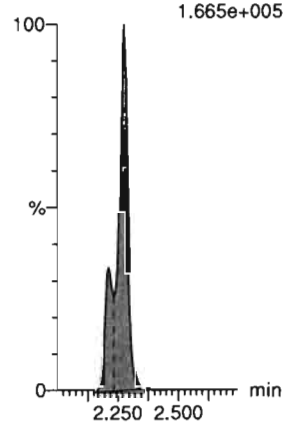
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



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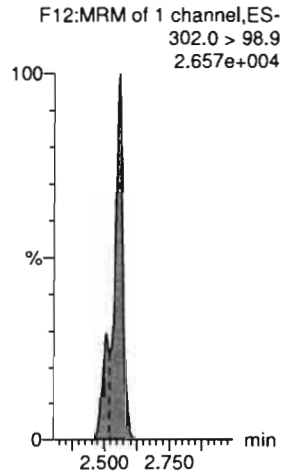
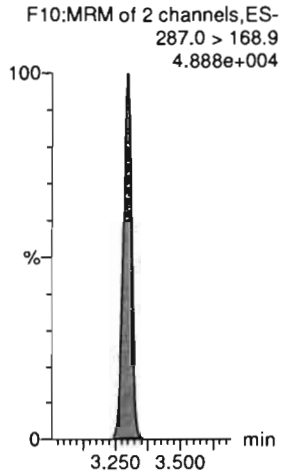
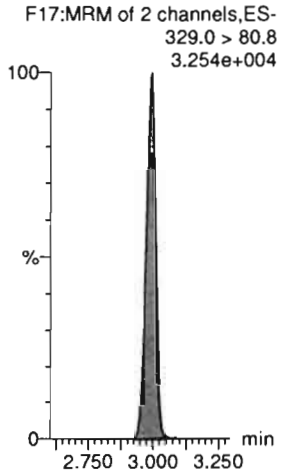
13C3-PFBS-RSD



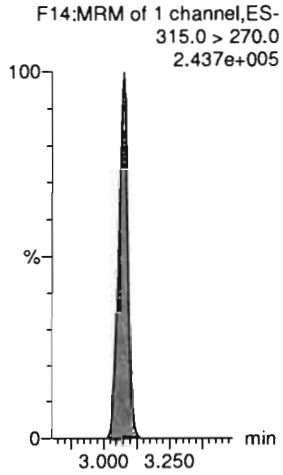
13C3-HFPO-DA-RSD



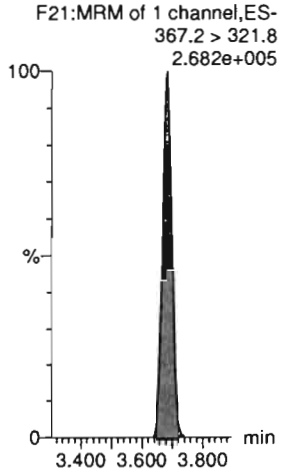
13C2-4:2 FTS-RSD



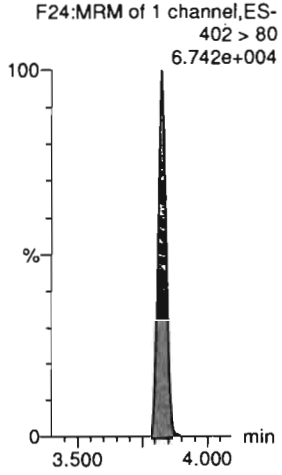
13C2-PFHxA-RSD



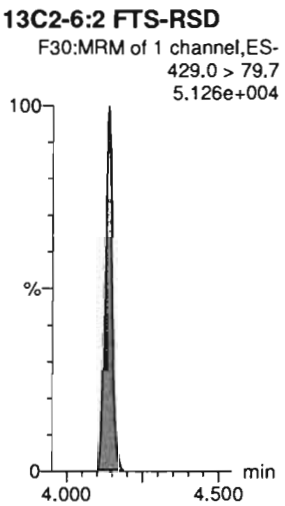
13C4-PFHpA-RSD



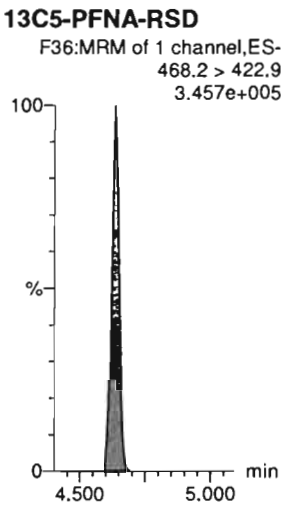
13C3-PFHxS-RSD



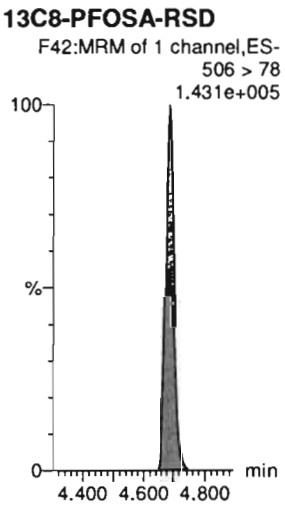
13C2-6:2 FTS-RSD



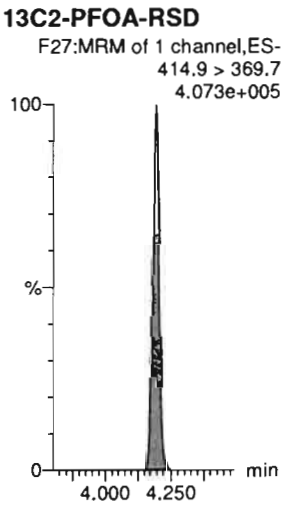
13C5-PFNA-RSD



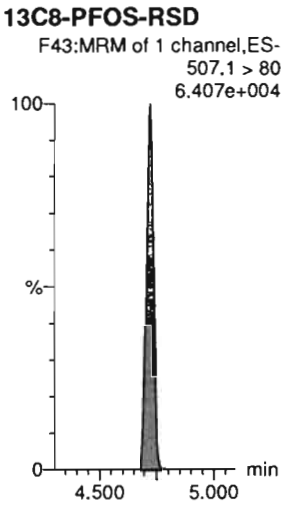
13C8-PFOSA-RSD



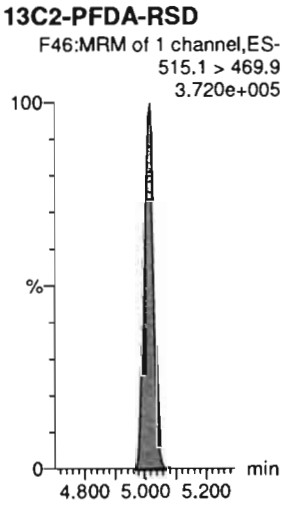
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



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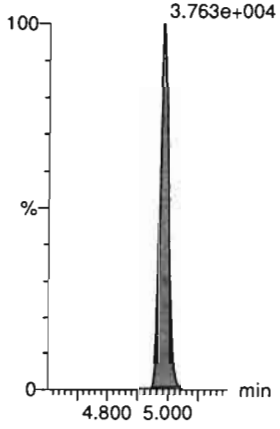
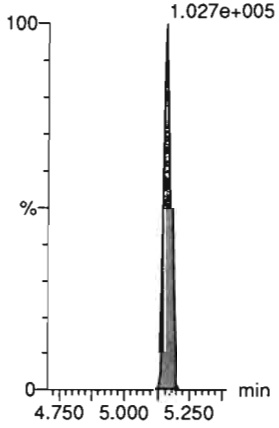
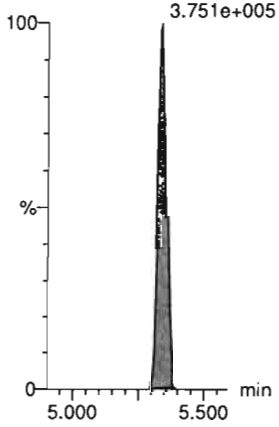
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.763e+004



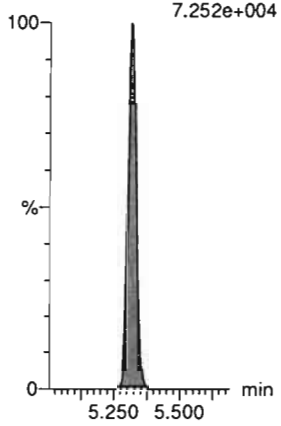
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.027e+005



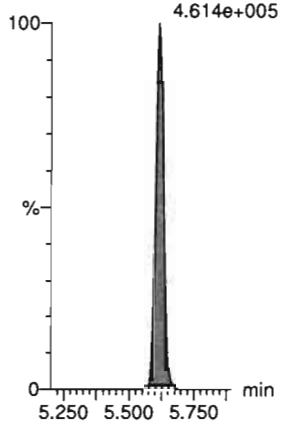
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.751e+005



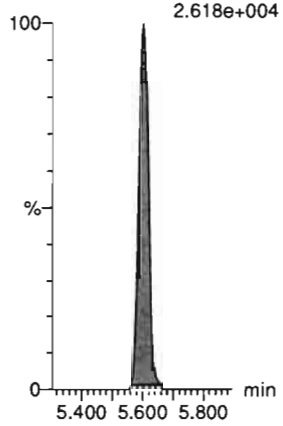
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.252e+004



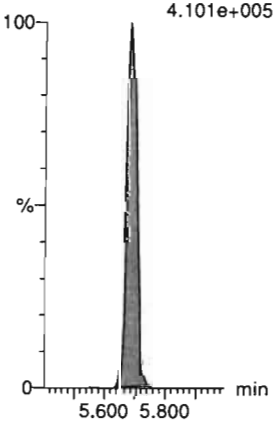
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.614e+005



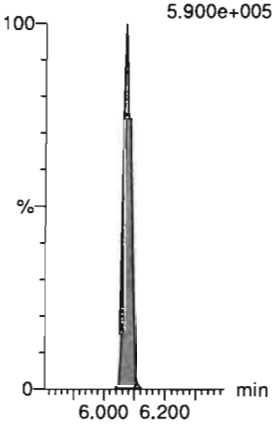
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.618e+004



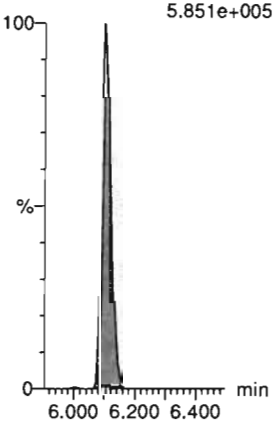
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.101e+005



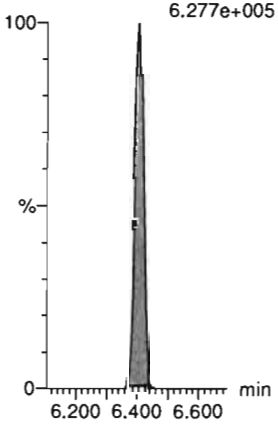
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.900e+005



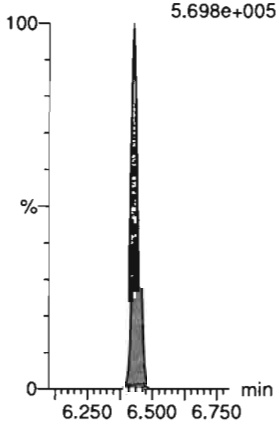
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.851e+005



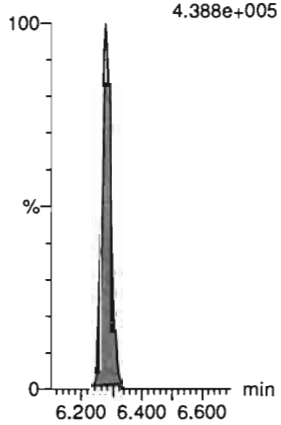
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.277e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.698e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.388e+005



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Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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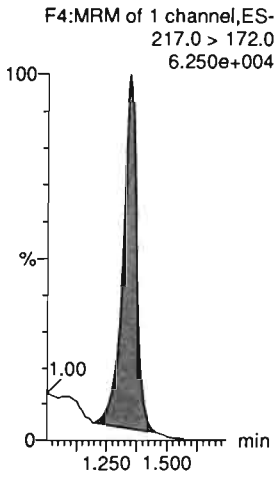
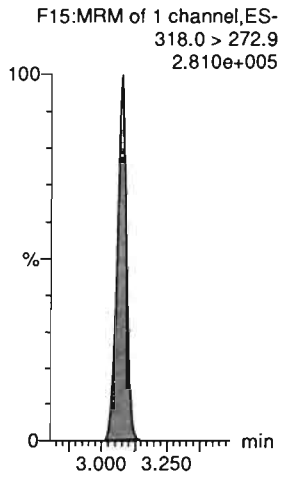
Name: 200721P1-07, Date: 21-Jul-2020, Time: 16:18:40, ID: ST200720P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

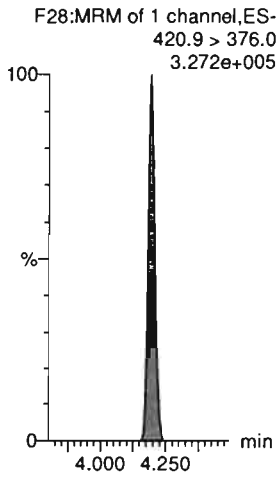
13C4-PFBA



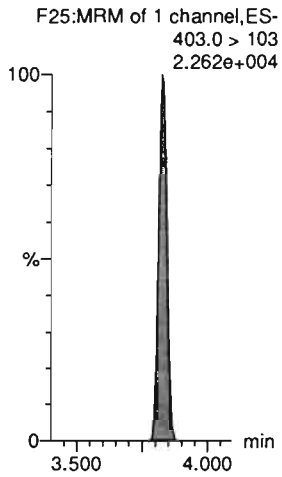
13C5-PFHxA



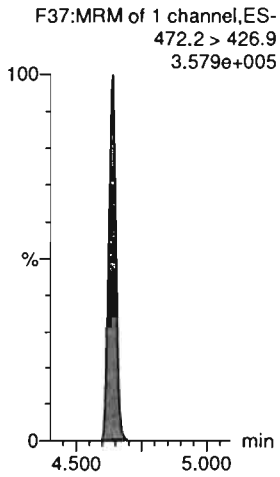
13C8-PFOA



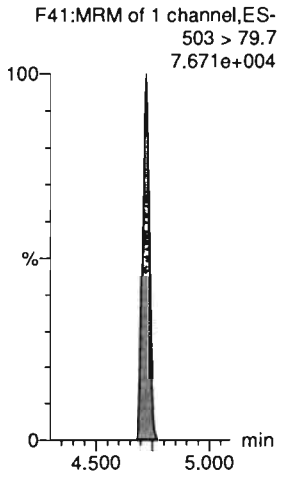
18O2-PFHxS



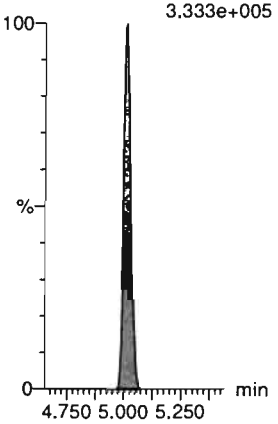
13C9-PFNA



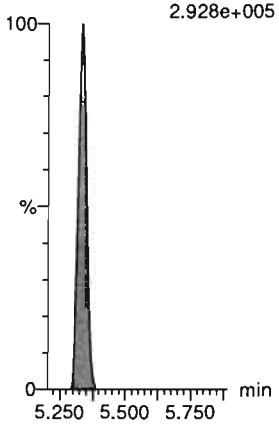
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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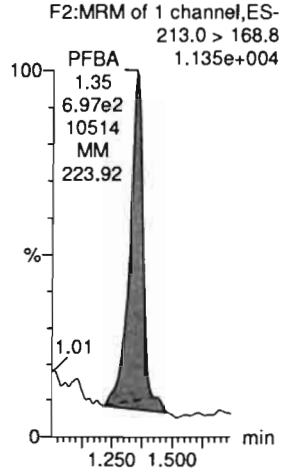
ST200721P1-4 CRV 07/22/20

Name: 200721P1-08, Date: 21-Jul-2020, Time: 16:29:17, ID: ~~ST200720P1-4~~ PFC CS1 20G1604, Description: PFC CS1 20G1604

PFBA



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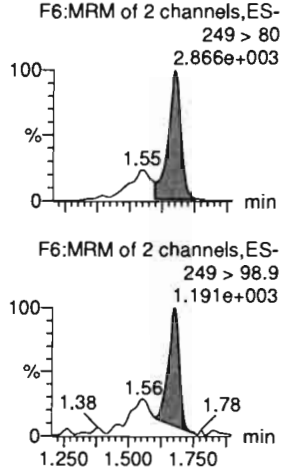
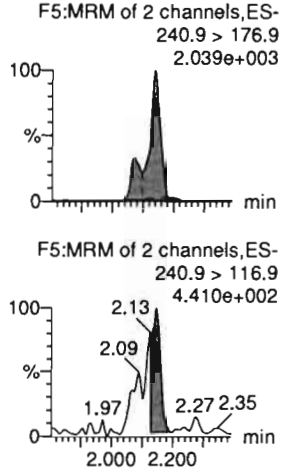
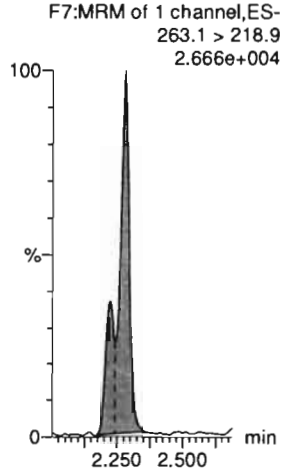


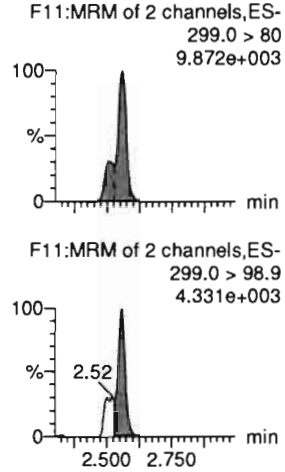
3:3 FTCA



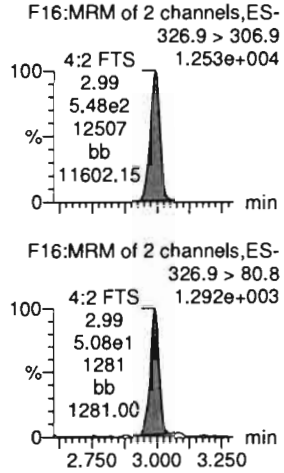
PFPeA



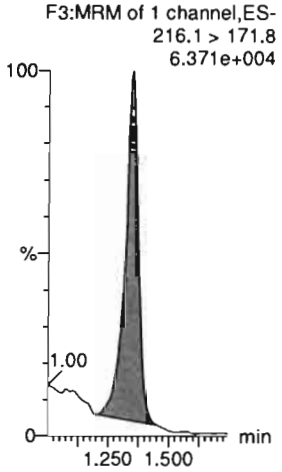
PFBS



4:2 FTS



13C3-PFBA-EIS



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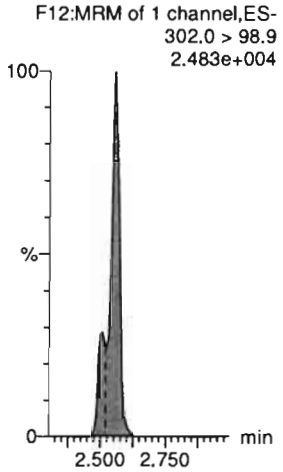

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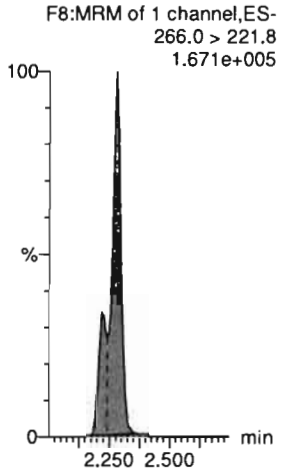

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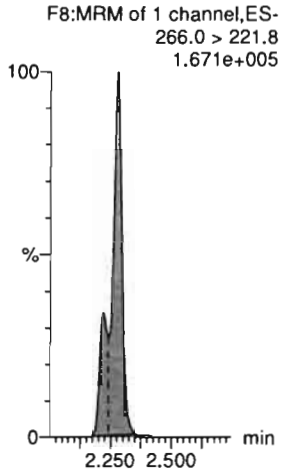

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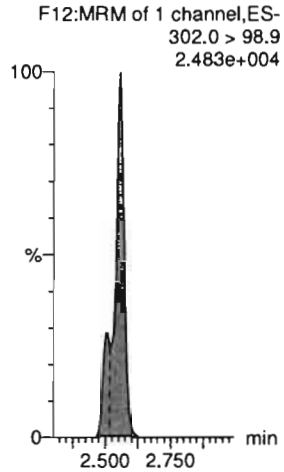
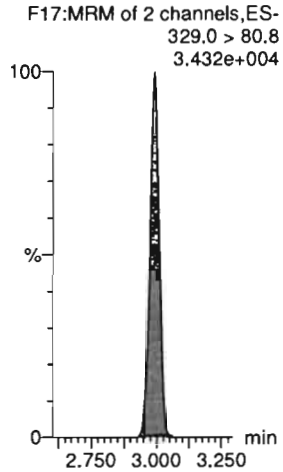


13C2-4:2 FTS-EIS



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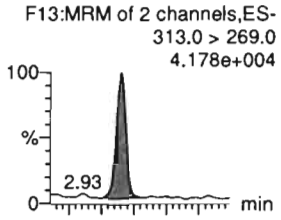
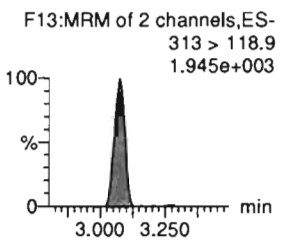
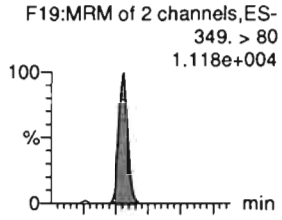
Name: 200721P1-08, Date: 21-Jul-2020, Time: 16:29:17, ID: ST200720P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

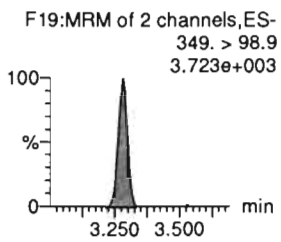
PFHxA



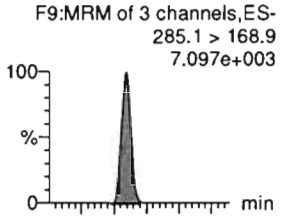


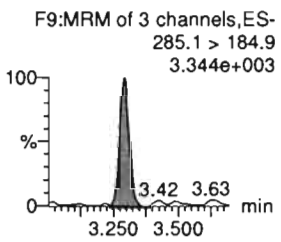
PFPeS



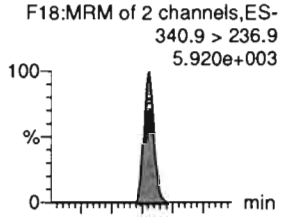


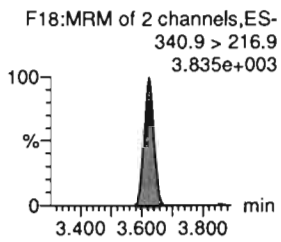
HFPO-DA





5:3 FTCA





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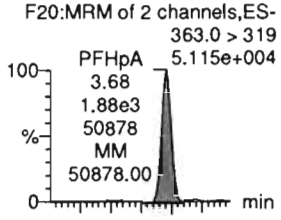
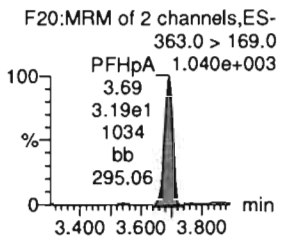
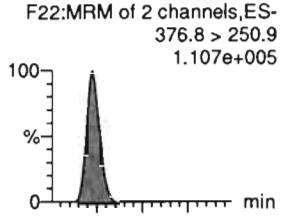
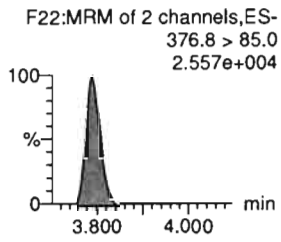


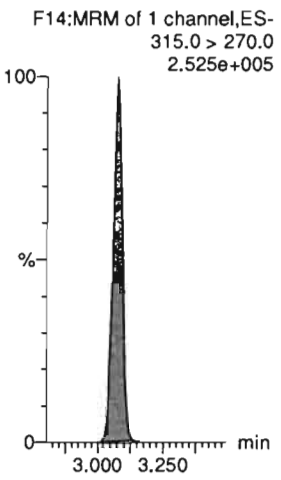


ADONA

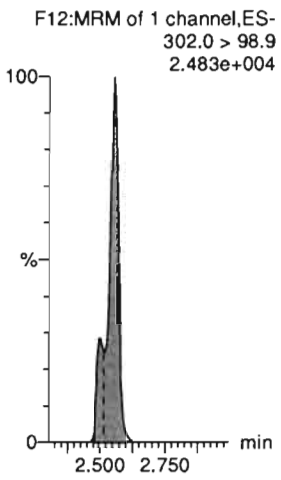




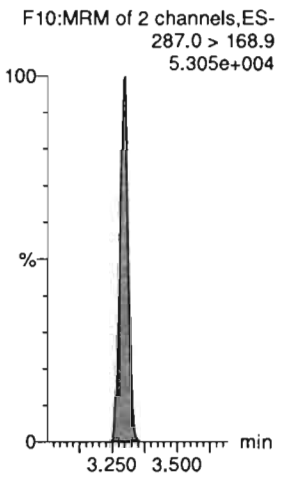
13C2-PFHxA-EIS



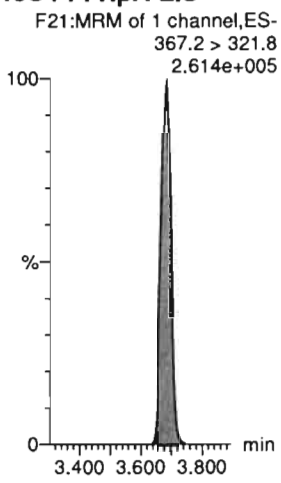
13C3-PFBS-EIS



13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



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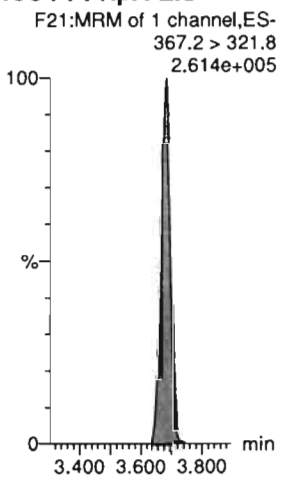

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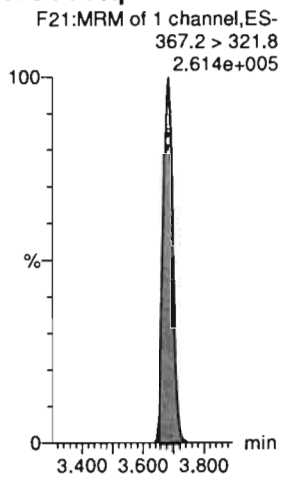

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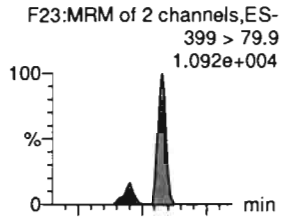
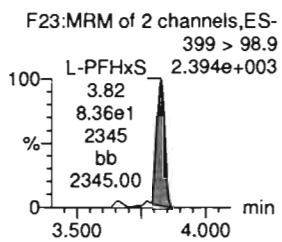
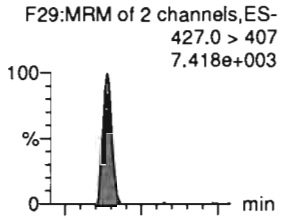
Name: 200721P1-08, Date: 21-Jul-2020, Time: 16:29:17, ID: ST200720P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

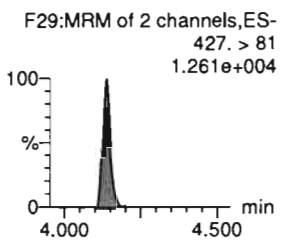
L-PFHxS



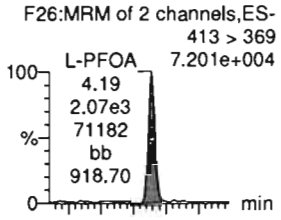


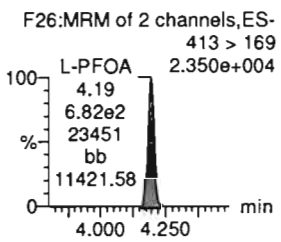
6:2 FTS



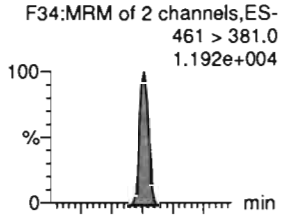


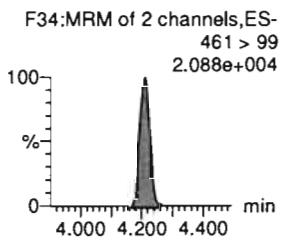
L-PFOA



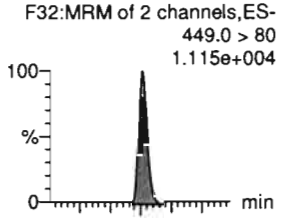


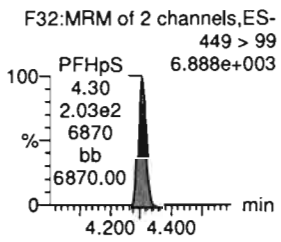
PFEChS



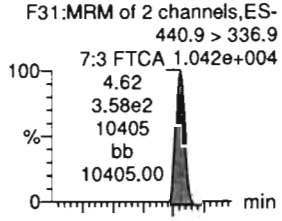


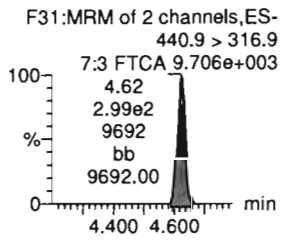
PFHpS



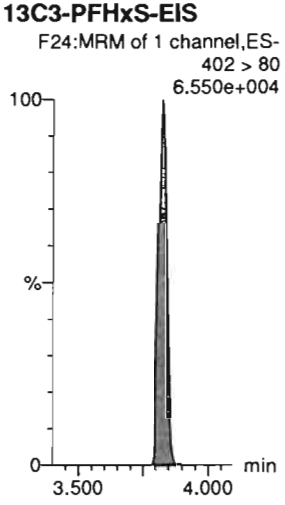


7:3 FTCA

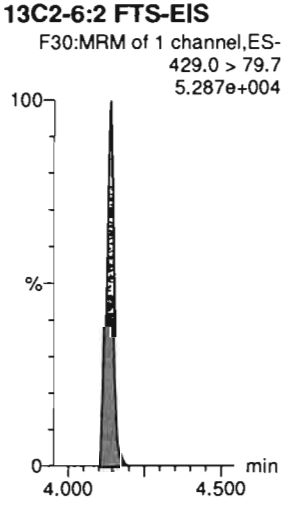




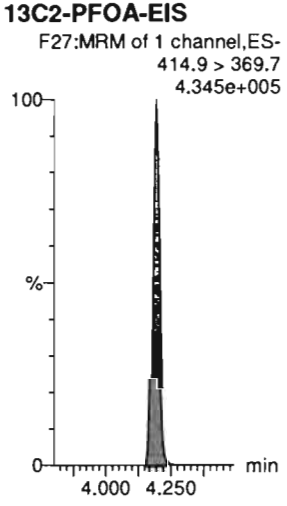
13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



13C2-PFOA-EIS



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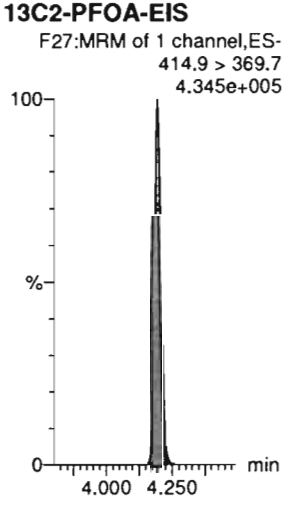
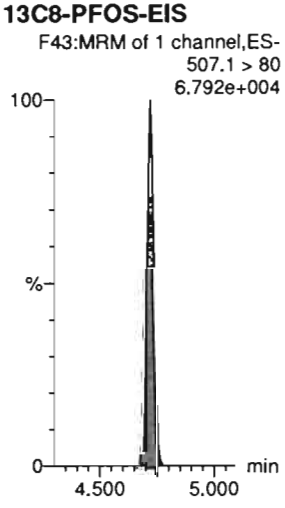
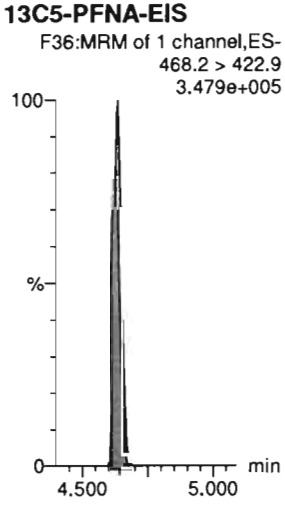


13C8-PFOS-EIS



13C5-PFNA-EIS



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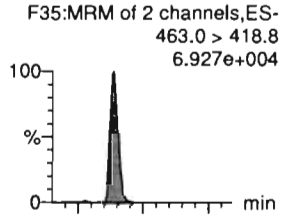
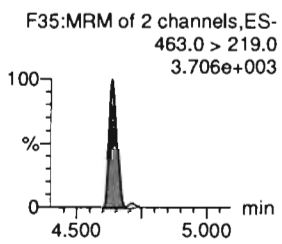
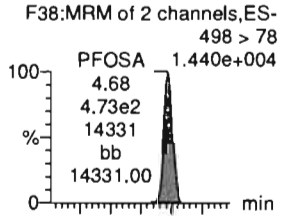
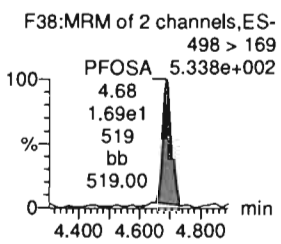


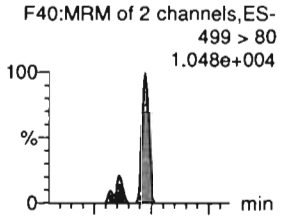


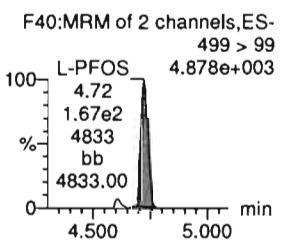
PFOSA



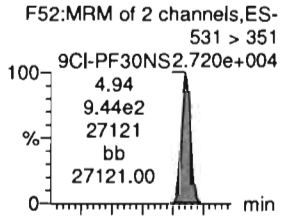


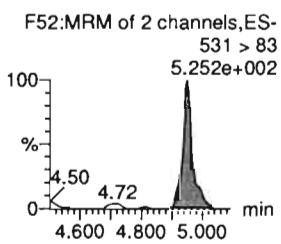
L-PFOS





9Cl-PF30NS





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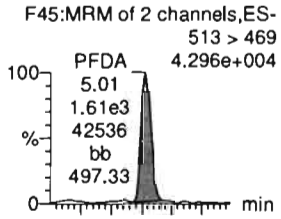
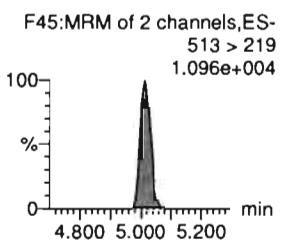
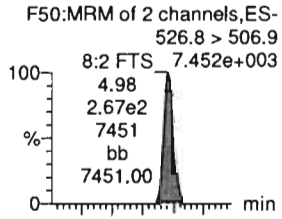
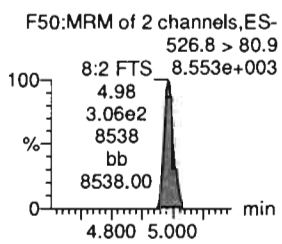


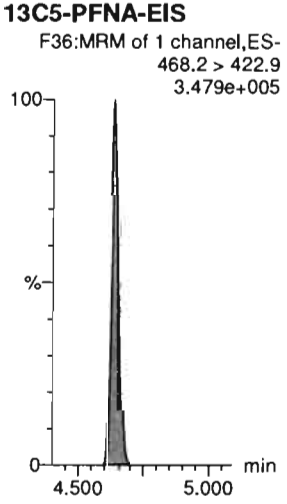


8:2 FTS

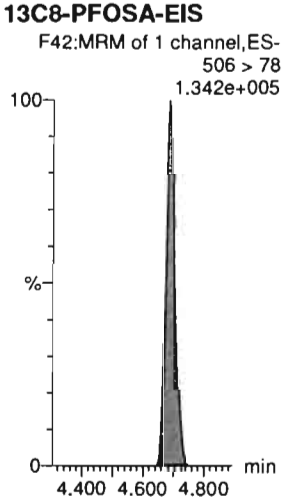




13C5-PFNA-EIS



13C8-PFOSA-EIS



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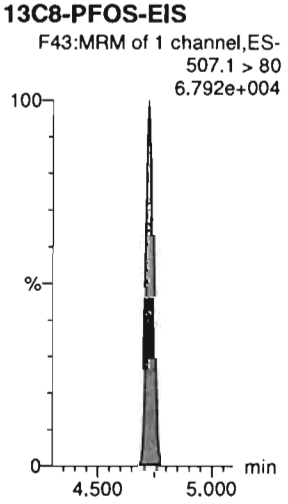

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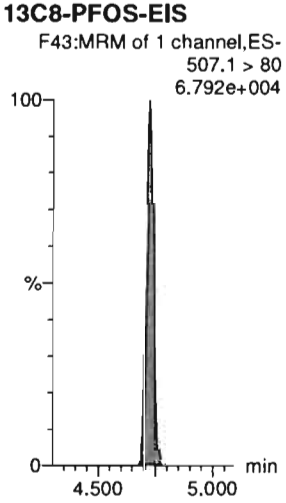

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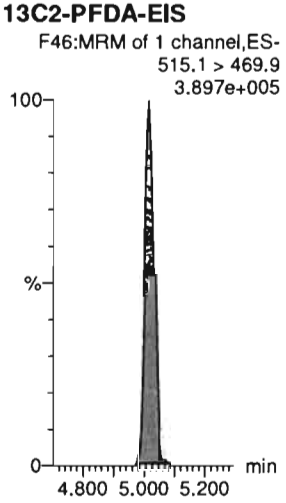
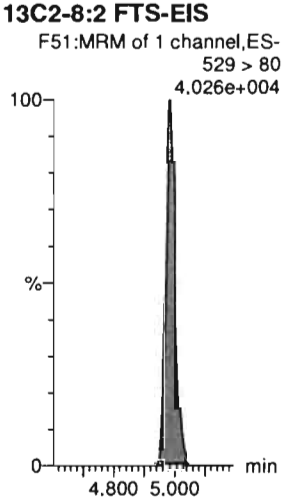


13C2-8:2 FTS-EIS



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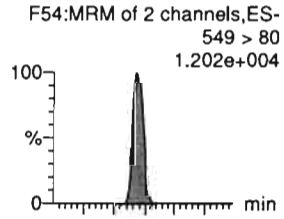
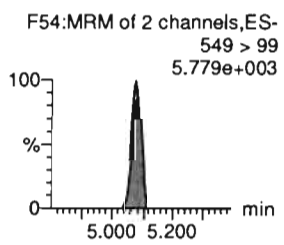
Name: 200721P1-08, Date: 21-Jul-2020, Time: 16:29:17, ID: ST200720P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

PFNS





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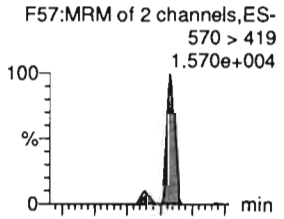

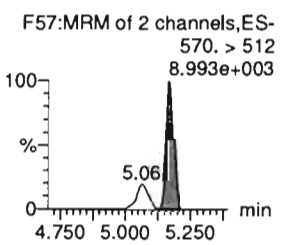

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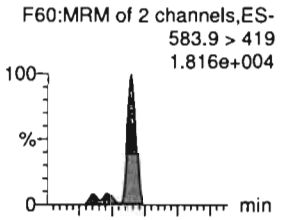

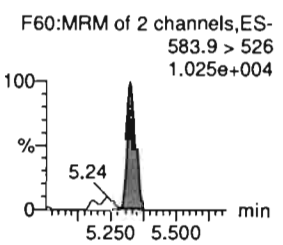

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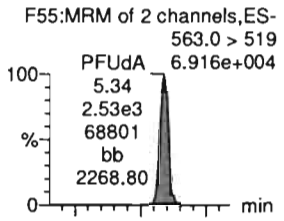

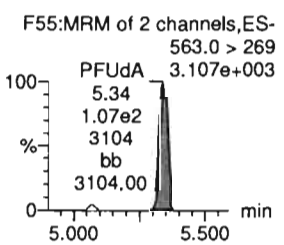

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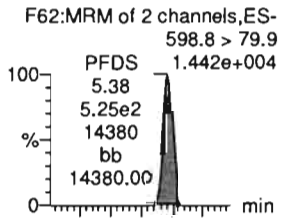

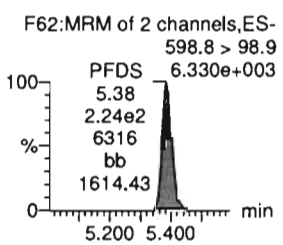

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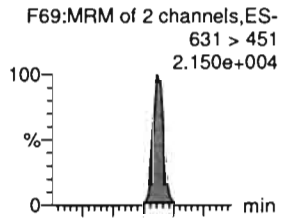
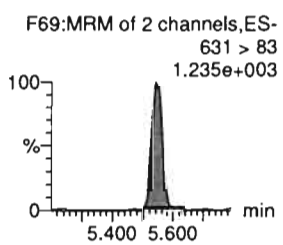
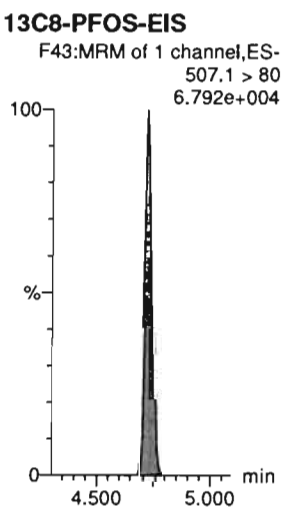
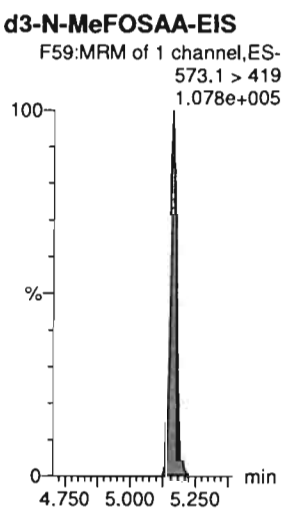




13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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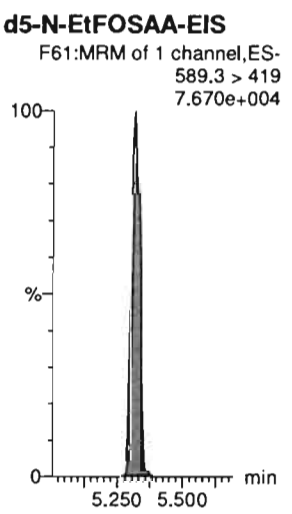

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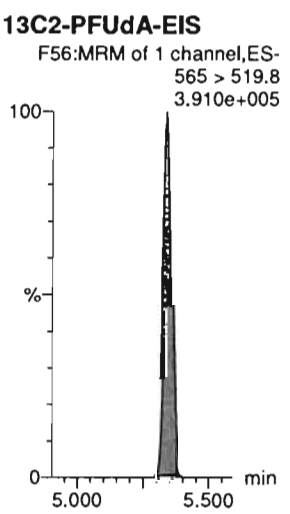

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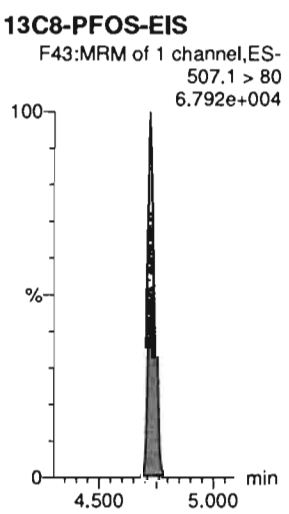

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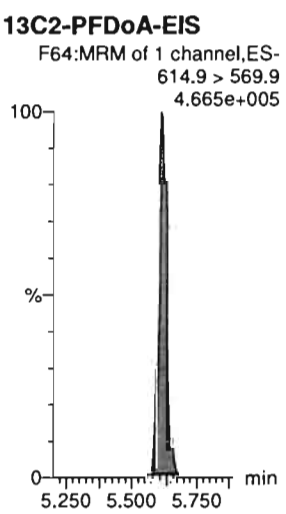

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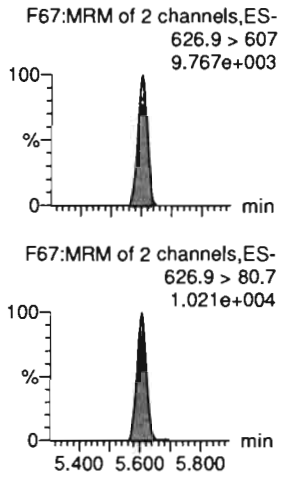
10:2 FTS



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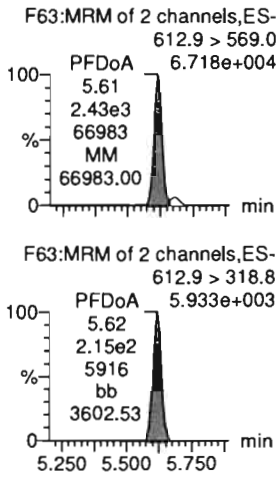

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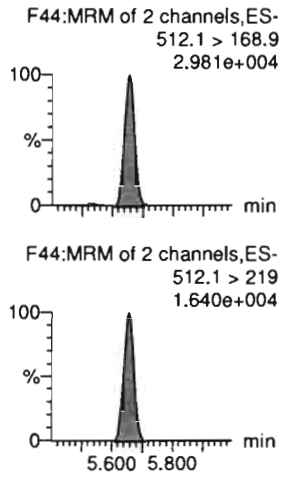

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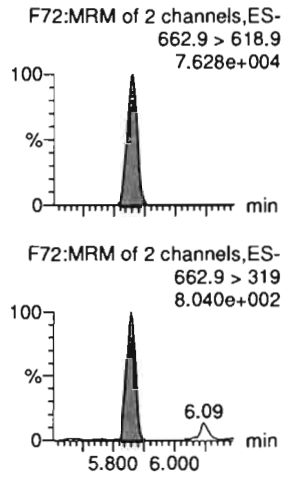

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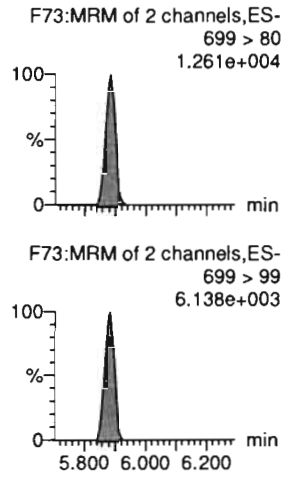
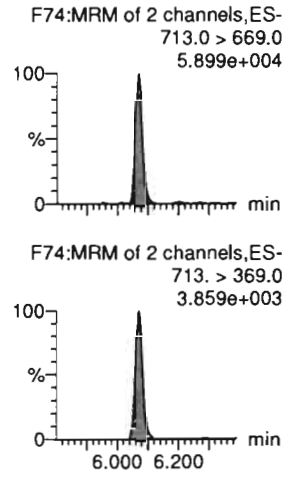


PFTeDA



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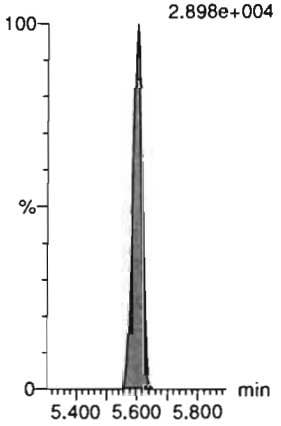
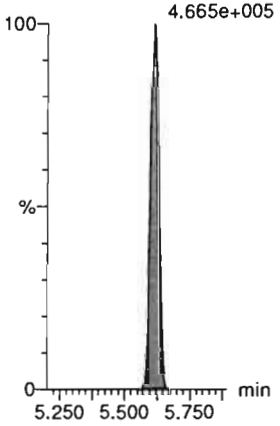
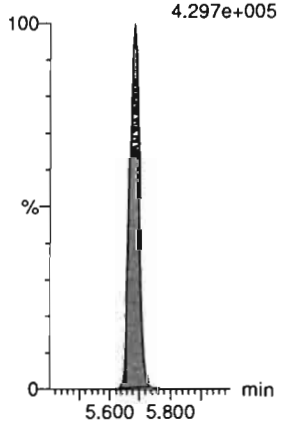


13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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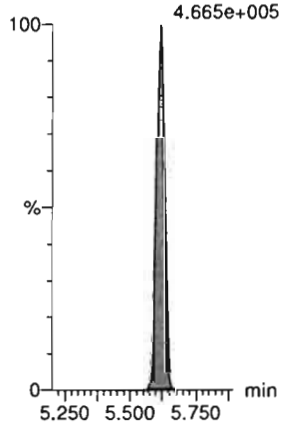

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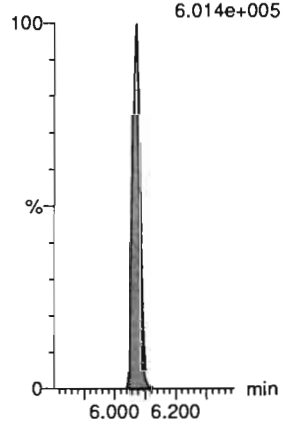

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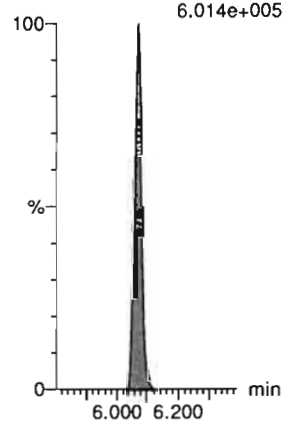

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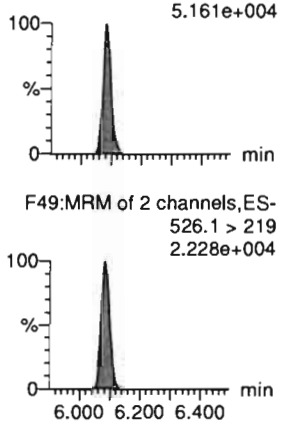
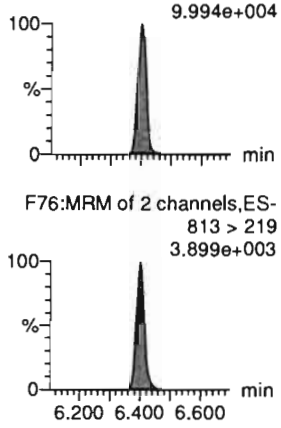
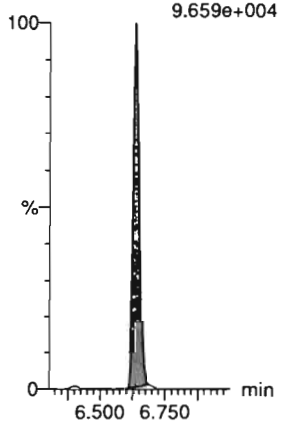
N-EtFOSA



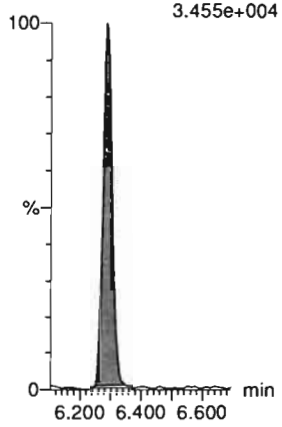
PFHxDA



PFODA



N-MeFOSE



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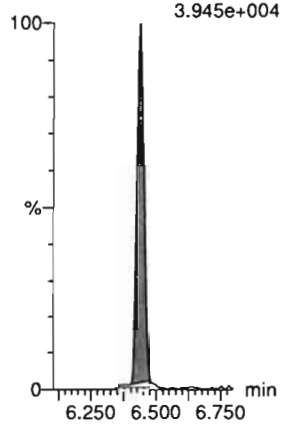
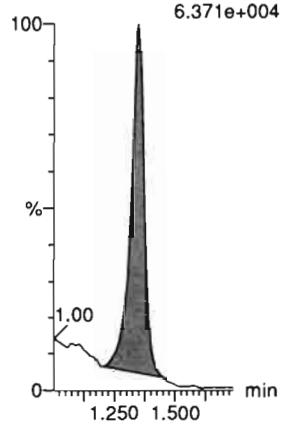
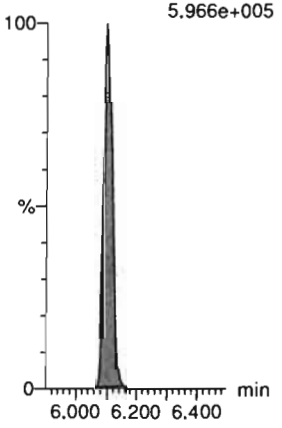


13C3-PFBA-RSD



d5-N-ETFOSA-EIS



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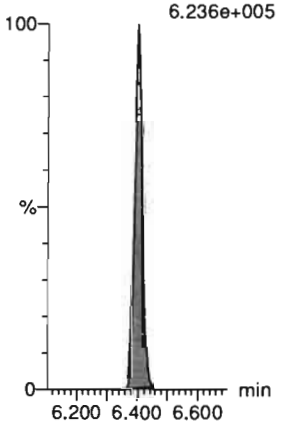

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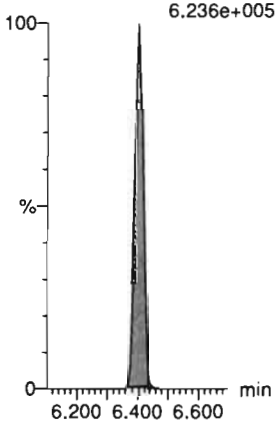
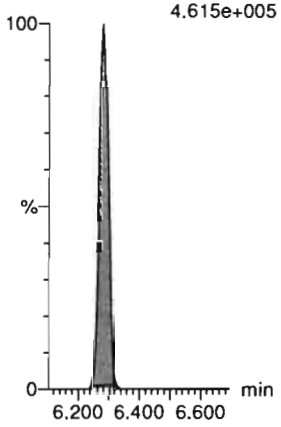
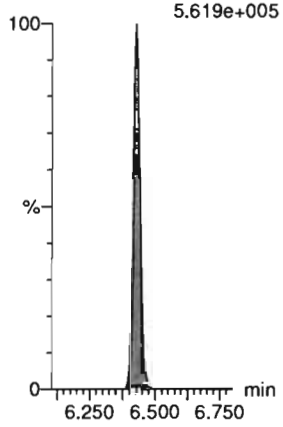


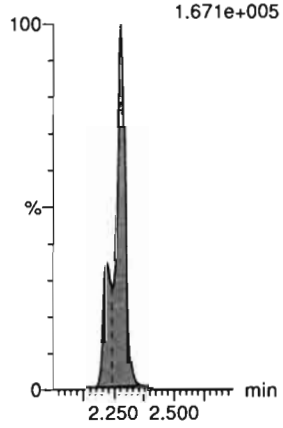
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



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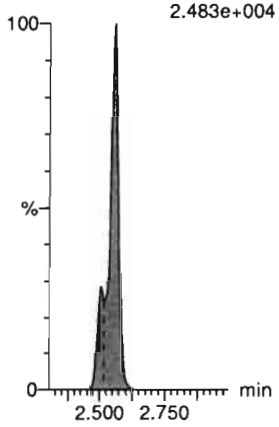
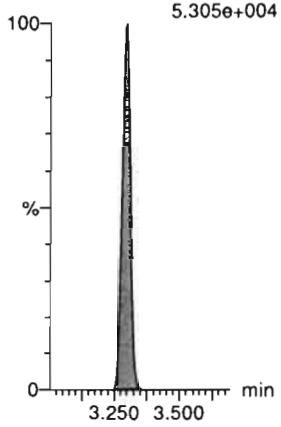
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-08, Date: 21-Jul-2020, Time: 16:29:17, ID: ST200720P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

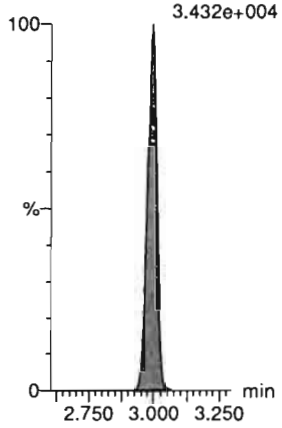
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.483e+004



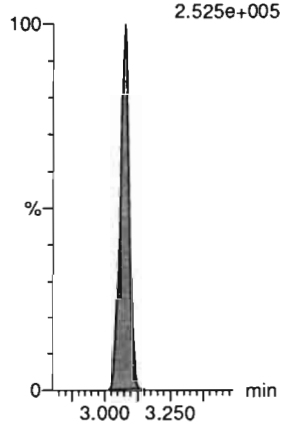
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.305e+004



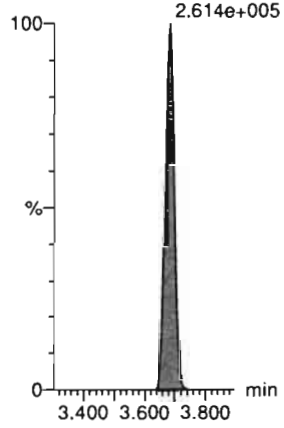
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.432e+004



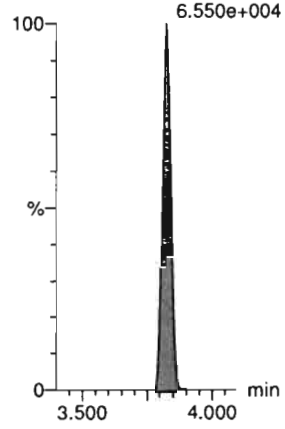
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.525e+005



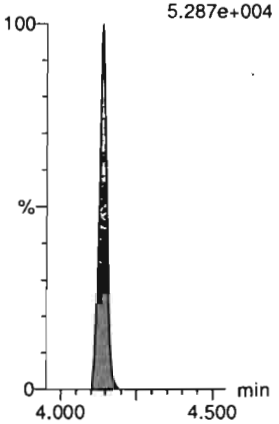
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.614e+005



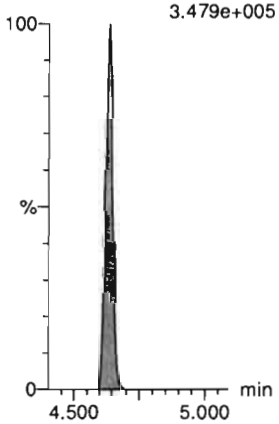
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.550e+004



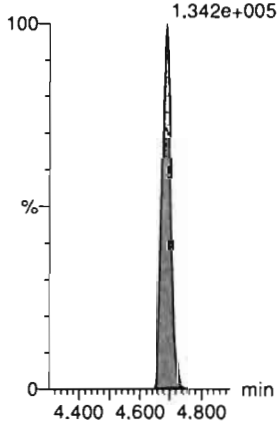
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.287e+004



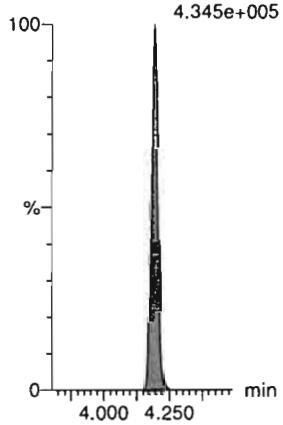
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.479e+005



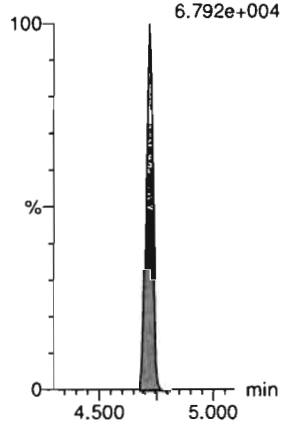
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.342e+005



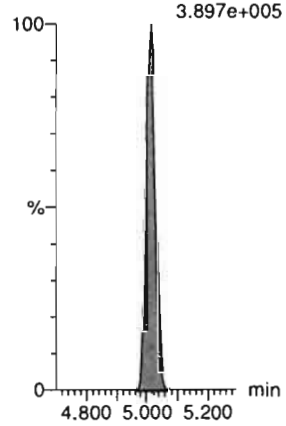
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.345e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.792e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.897e+005



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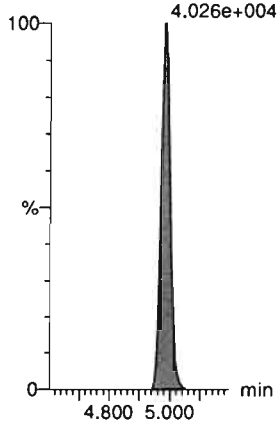
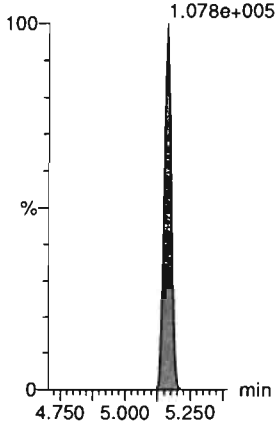
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-08, Date: 21-Jul-2020, Time: 16:29:17, ID: ST200720P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

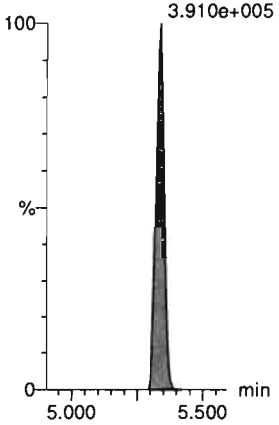
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
4.026e+004



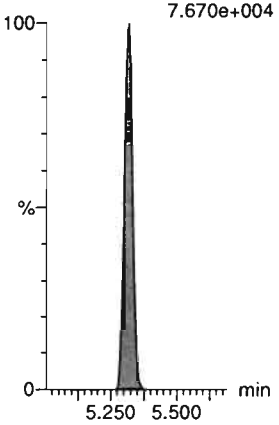
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.078e+005



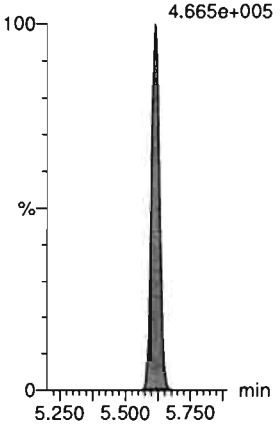
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.910e+005



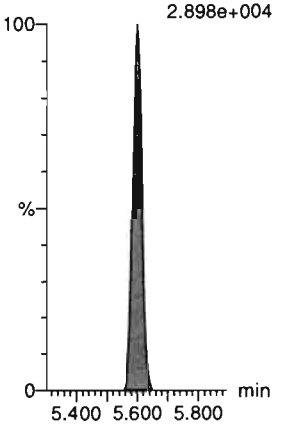
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.670e+004



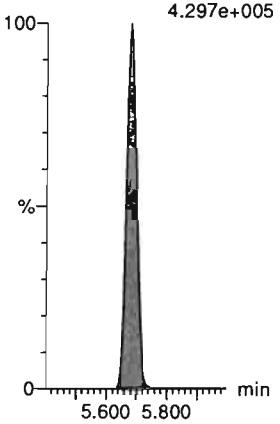
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.665e+005



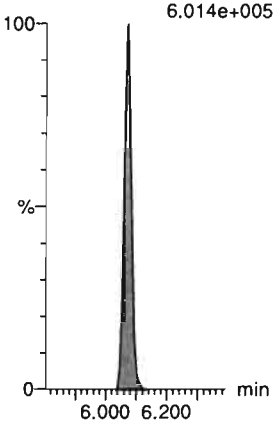
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.898e+004



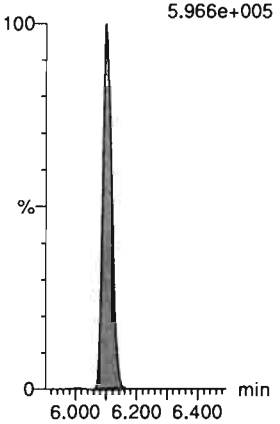
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.297e+005



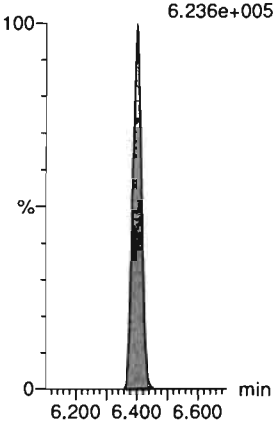
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
6.014e+005



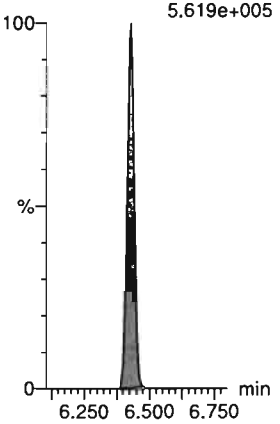
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.966e+005



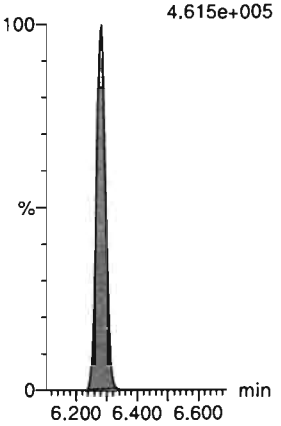
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.236e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.619e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.615e+005



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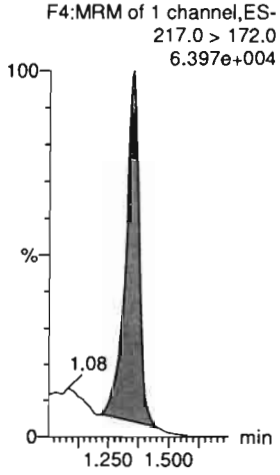
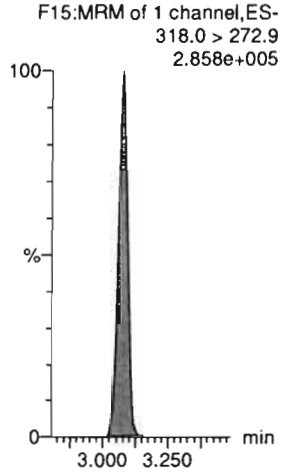
Name: 200721P1-08, Date: 21-Jul-2020, Time: 16:29:17, ID: ST200720P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

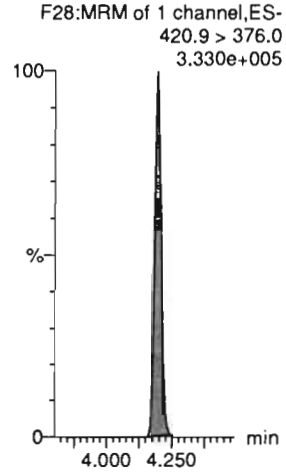
13C4-PFBA



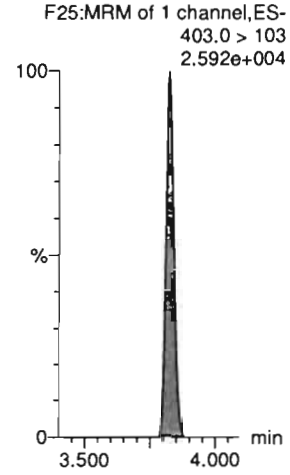
13C5-PFHxA



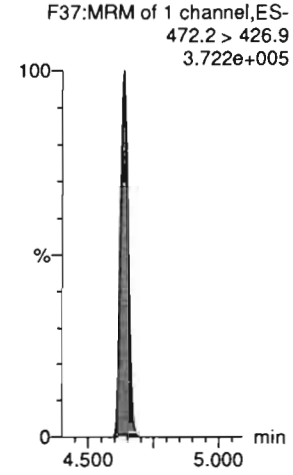
13C8-PFOA



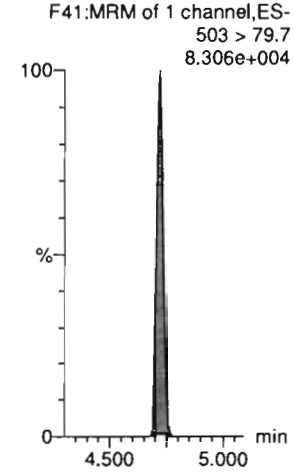
18O2-PFHxS



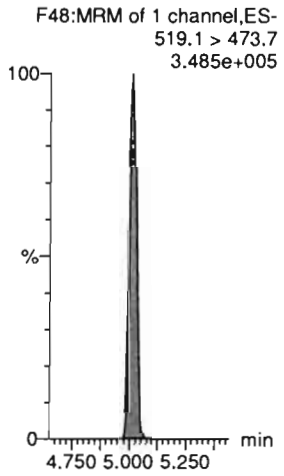
13C9-PFNA



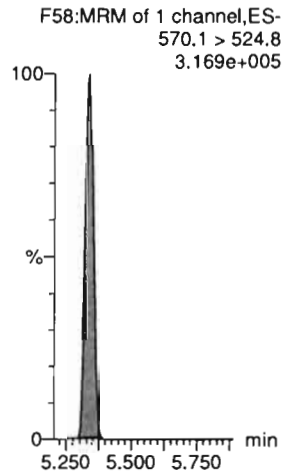
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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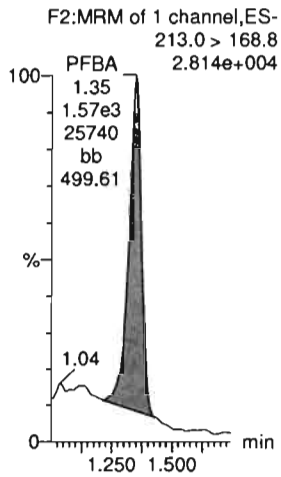
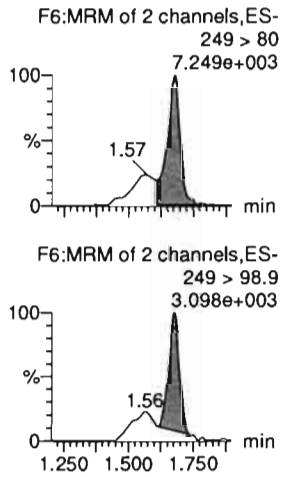
ST200721P1-5 ON 07/22/20

Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ~~ST200720P1-5~~ PFC CS2 20G1605, Description: PFC CS2 20G1605

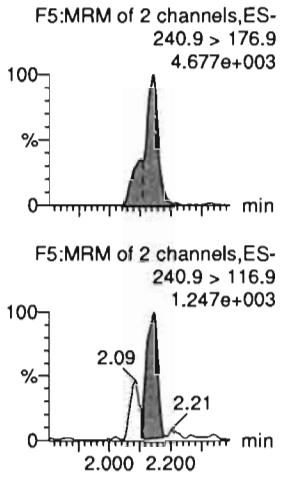
PFBA



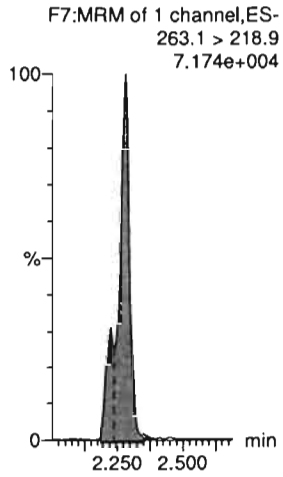
PFPrS



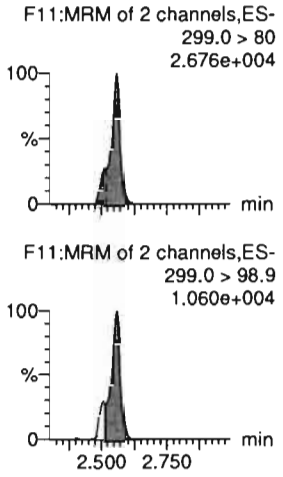
3:3 FTCA



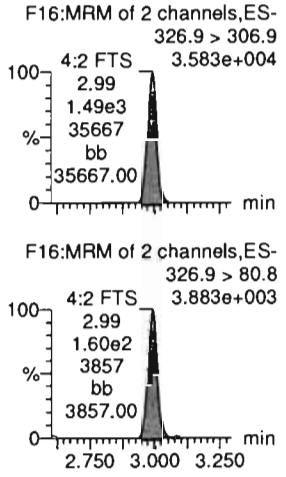
PFPeA



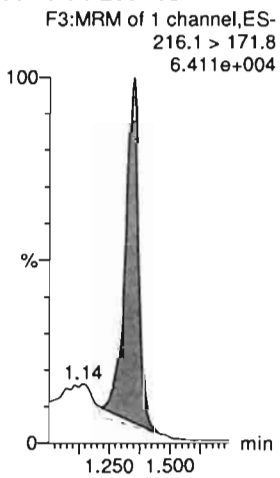
PFBS



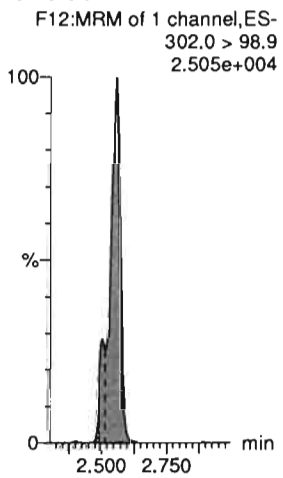
4:2 FTS



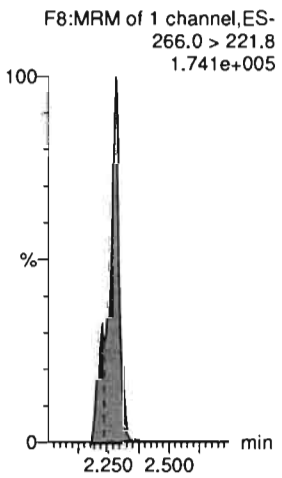
13C3-PFBA-EIS



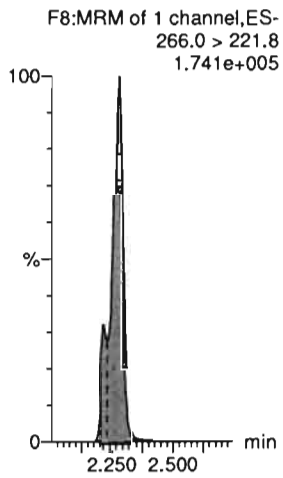
13C3-PFBS-EIS



13C3-PFPeA-EIS



13C3-PFPeA-EIS



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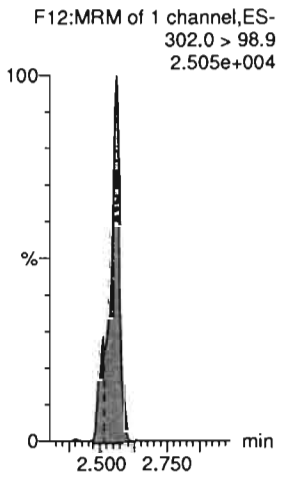
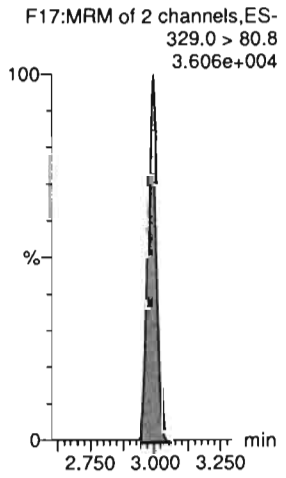


13C2-4:2 FTS-EIS



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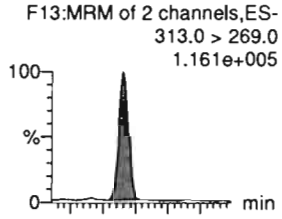
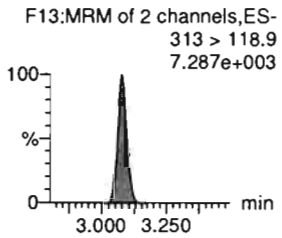
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

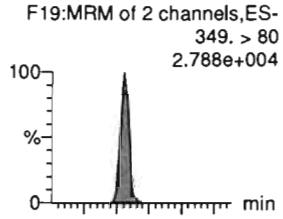
Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

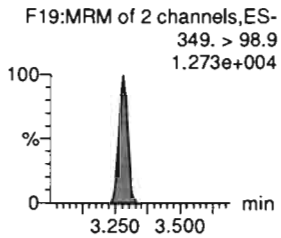
PFHxA



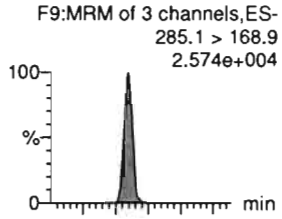


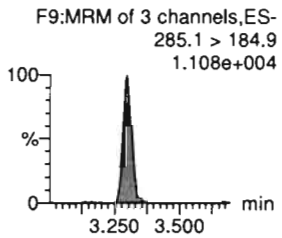
PFPeS



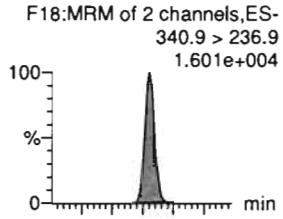


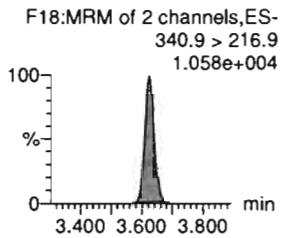
HFPO-DA





5:3 FTCA





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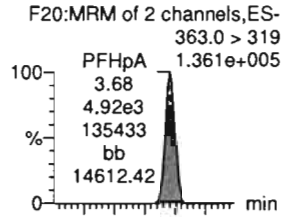

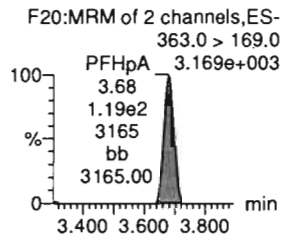

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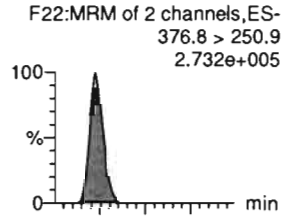
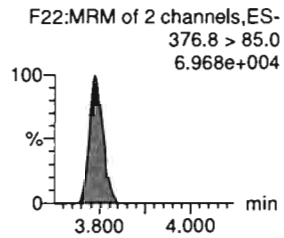
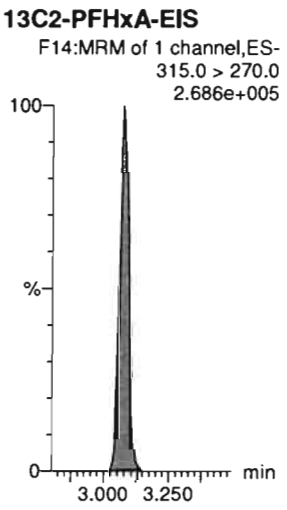
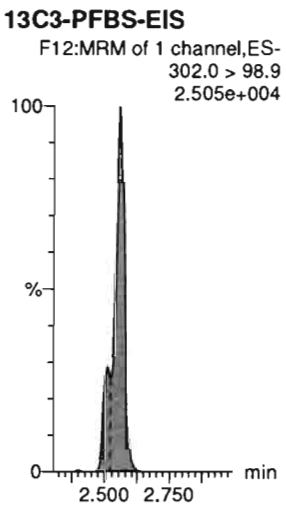




13C2-PFHxA-EIS



13C3-PFBS-EIS



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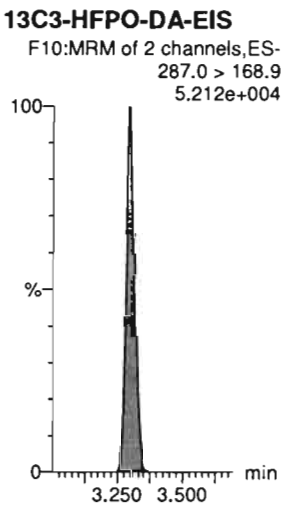
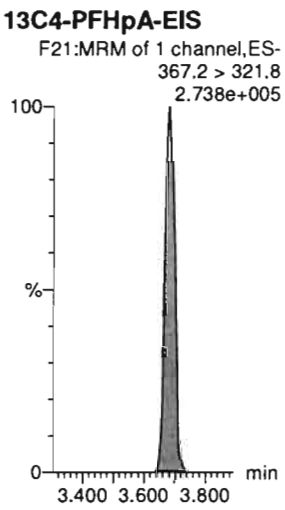


13C4-PFHpA-EIS



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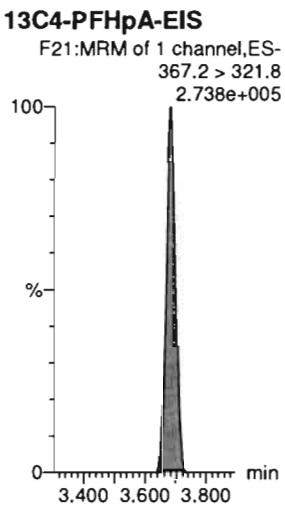

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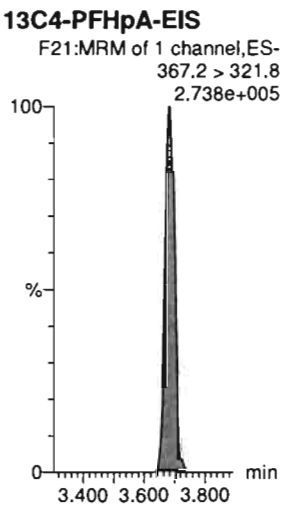

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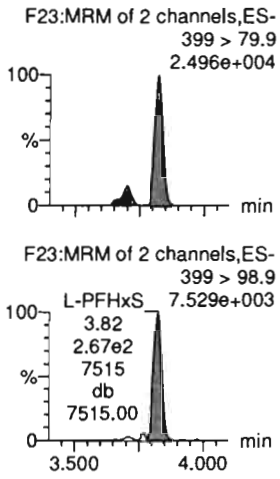
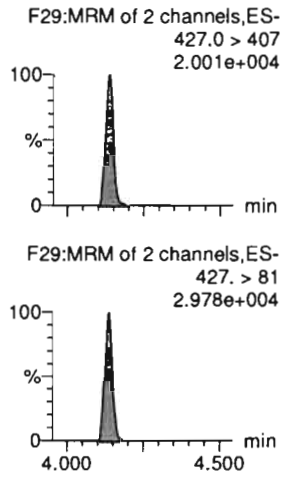
Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

L-PFHxS



6:2 FTS



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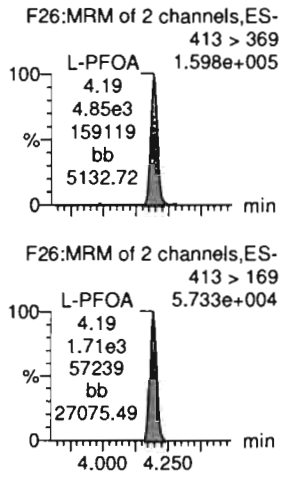

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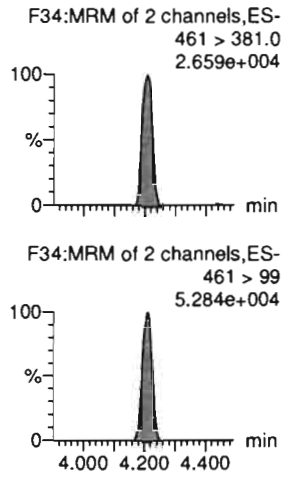

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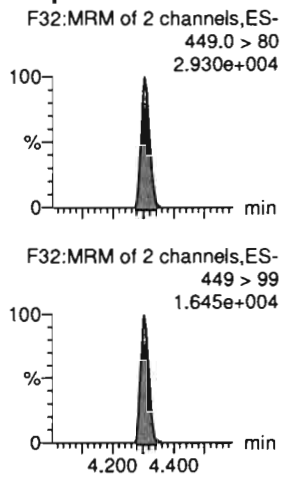
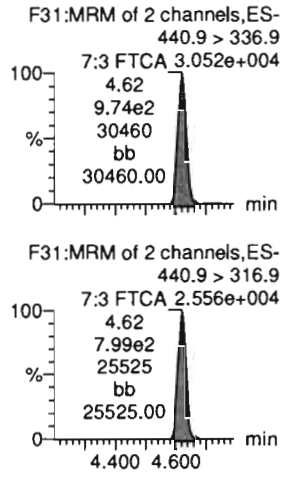


7:3 FTCA



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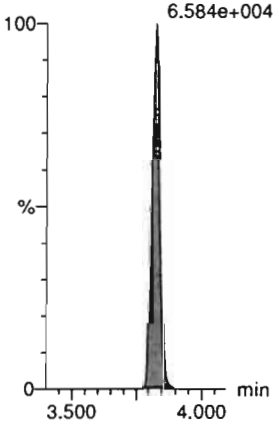
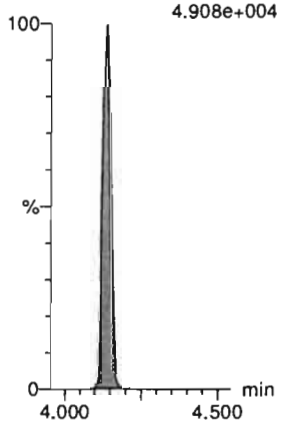


13C2-6:2 FTS-EIS



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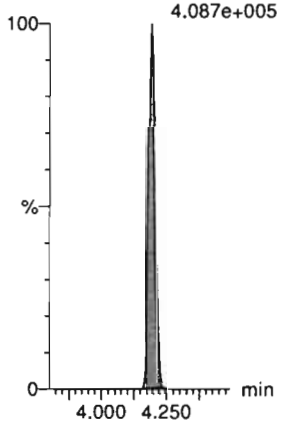

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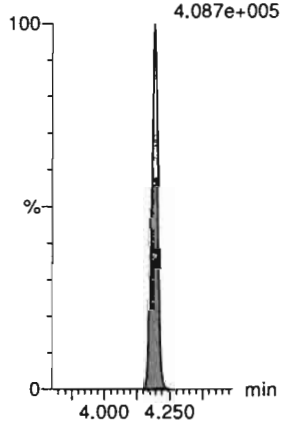
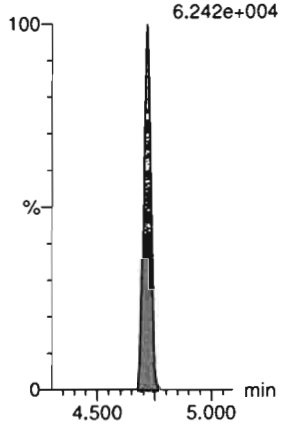
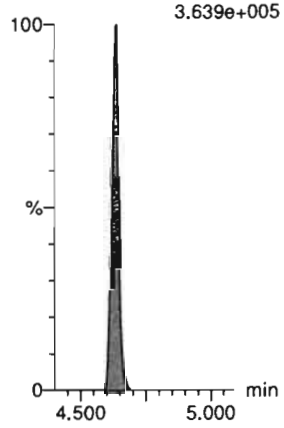


13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

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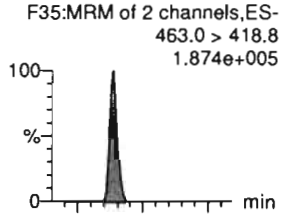
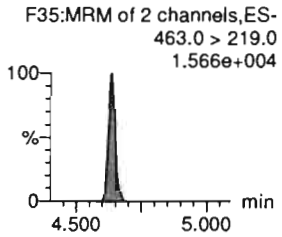
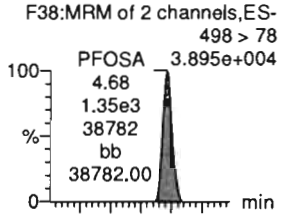
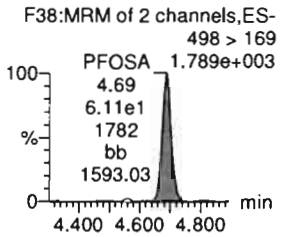


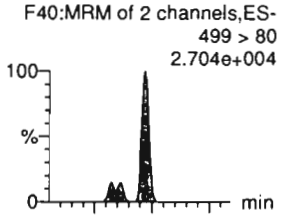


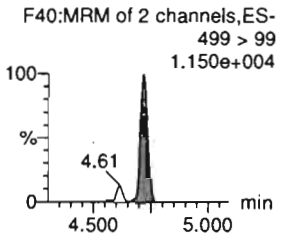
PFOSA





L-PFOS





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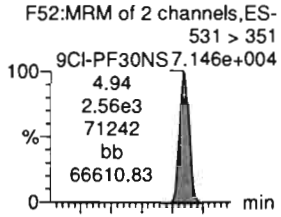

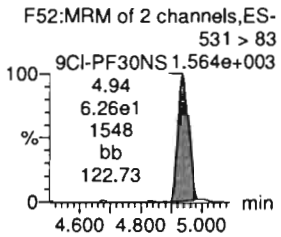

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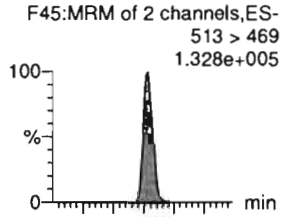

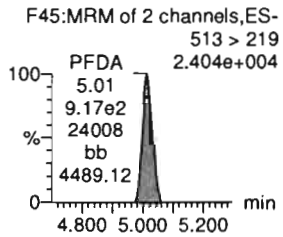

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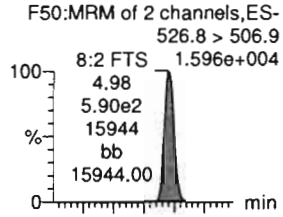
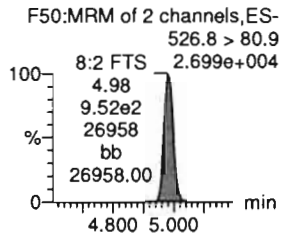
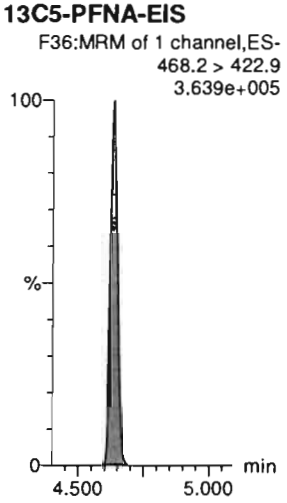
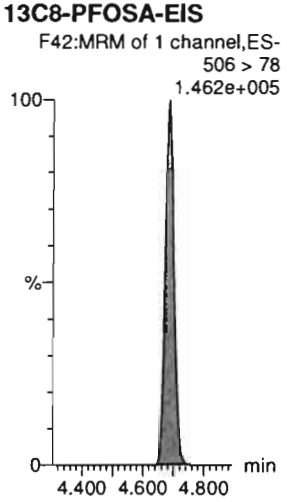




13C5-PFNA-EIS



13C8-PFOSA-EIS



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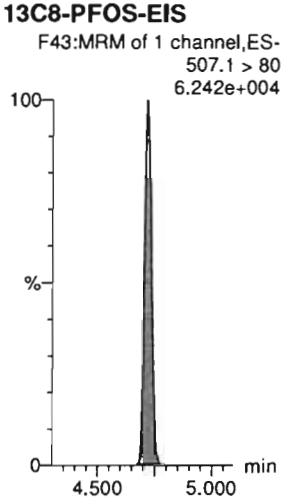

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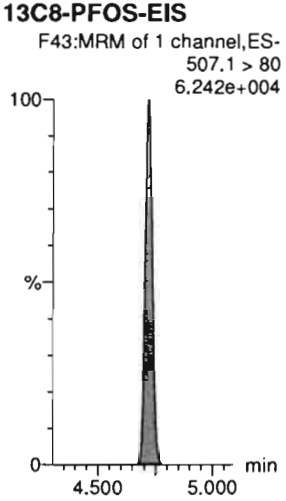

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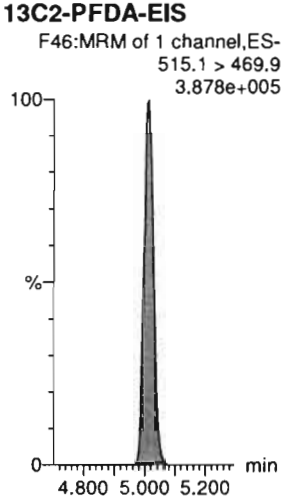
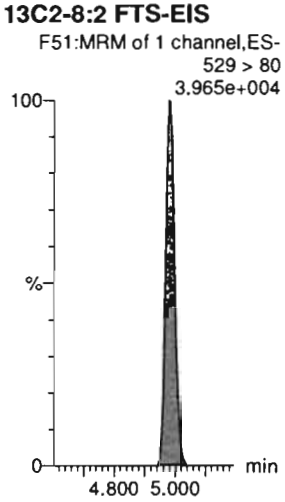


13C2-8:2 FTS-EIS



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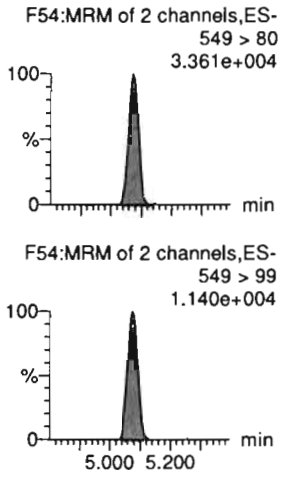
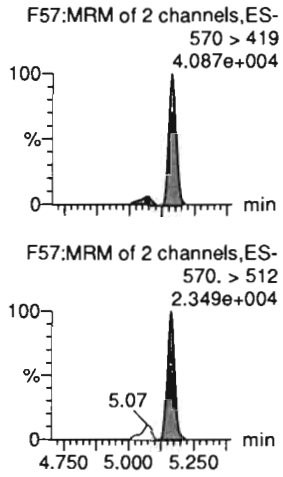
Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

PFNS



L-MeFOSAA



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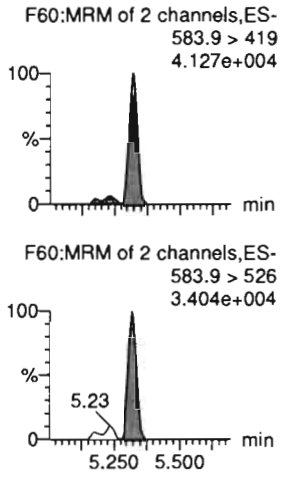
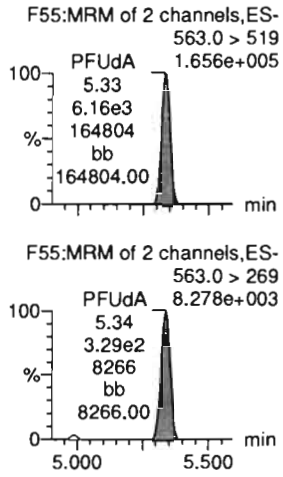


PFUdA



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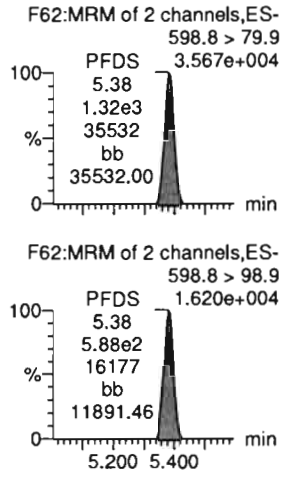
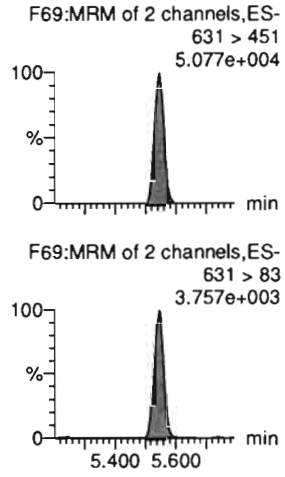
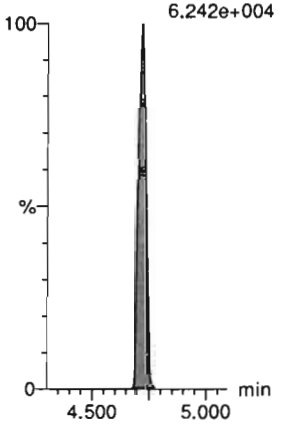


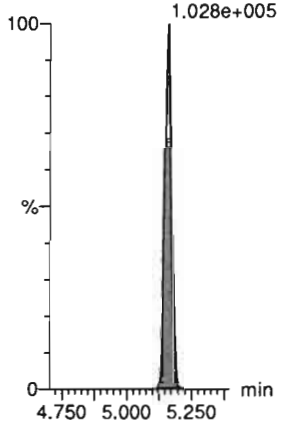
11Cl-PF30UdS



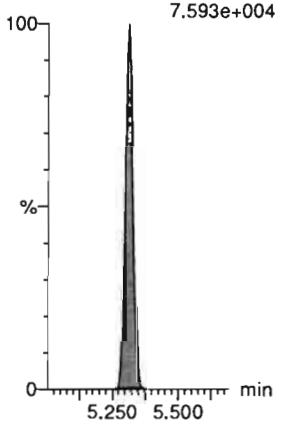
13C8-PFOS-EIS



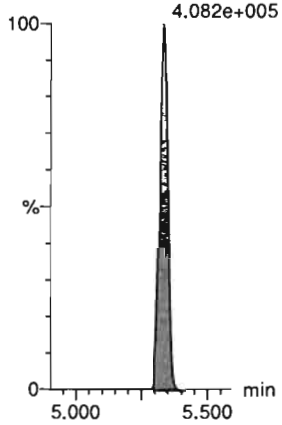
d3-N-MeFOSAA-EIS



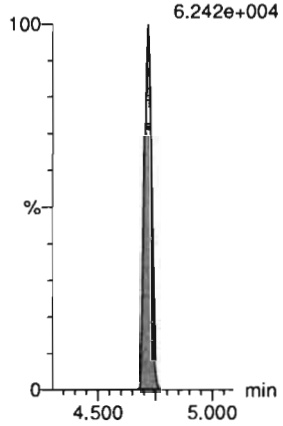
d5-N-EtFOSAA-EIS



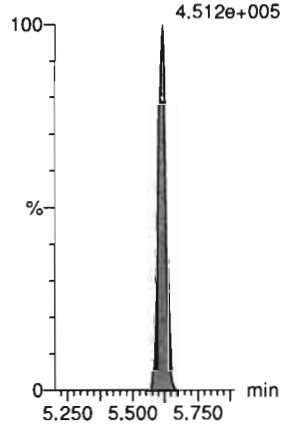
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

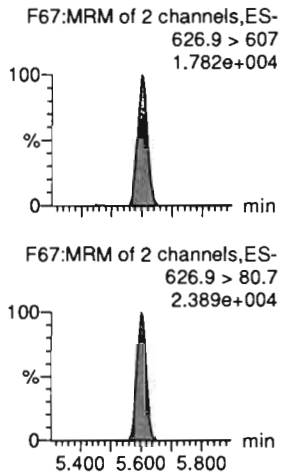


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

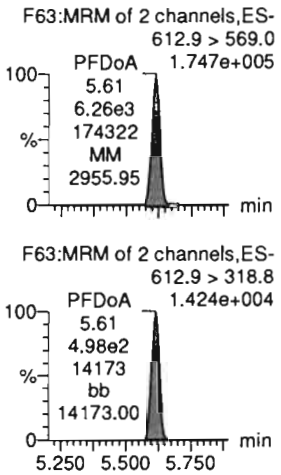
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

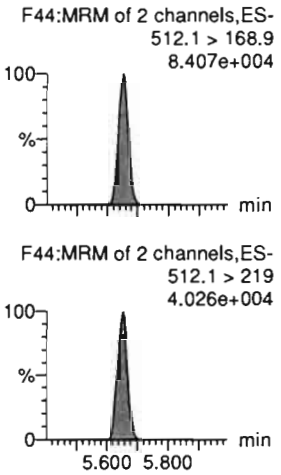
10:2 FTS



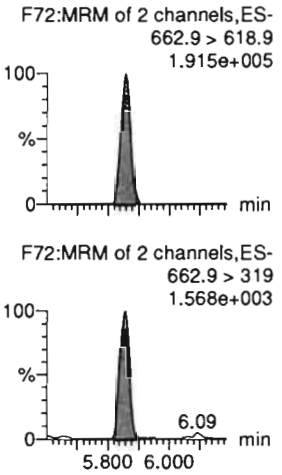
PFDoA



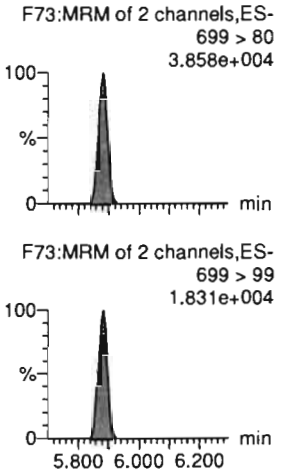
N-MeFOSA



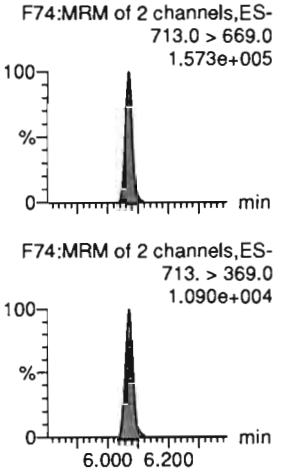
PFTrDA



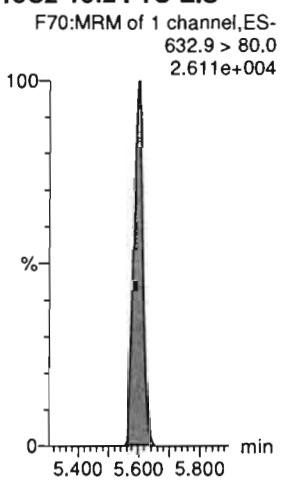
PFDoS



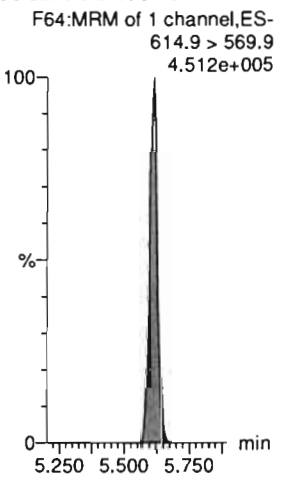
PFTeDA



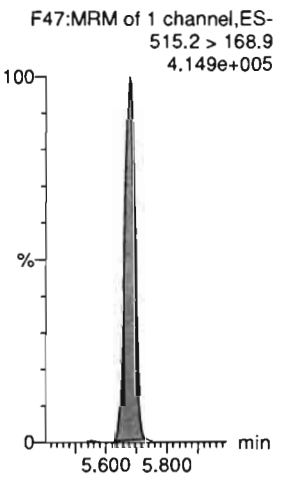
13C2-10:2 FTS-EIS



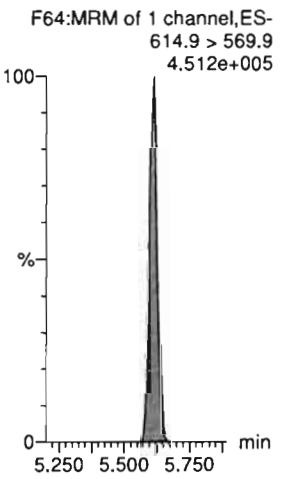
13C2-PFDoA-EIS



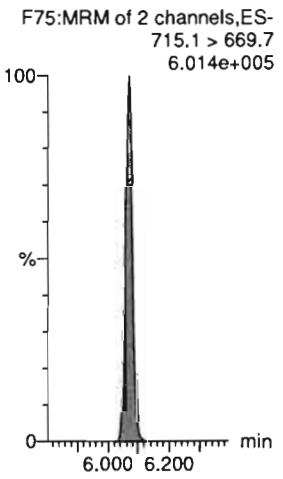
d3-N-MeFOSA-EIS



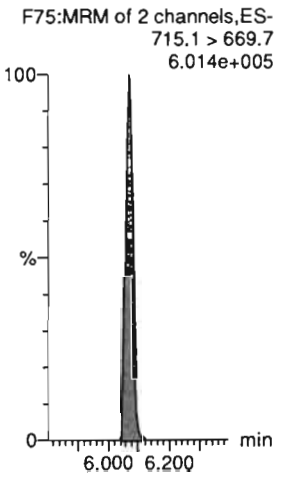
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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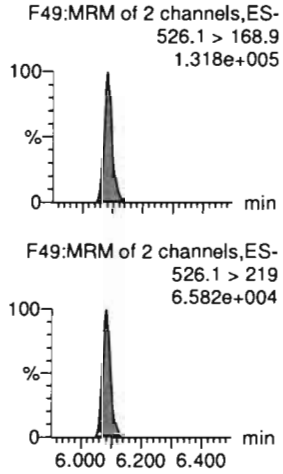
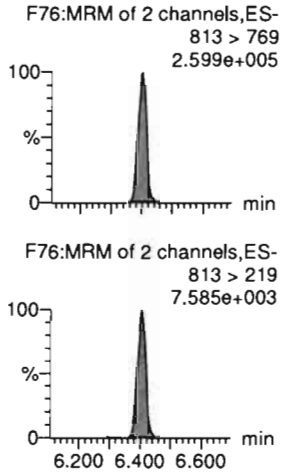
Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

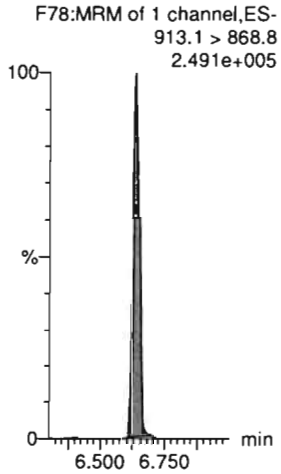
N-EtFOSA



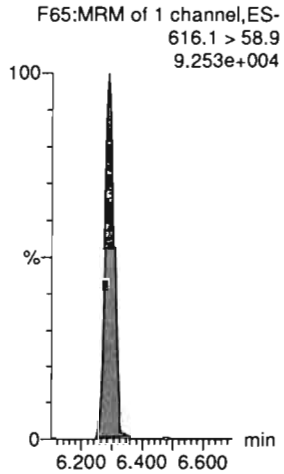
PFHxDA



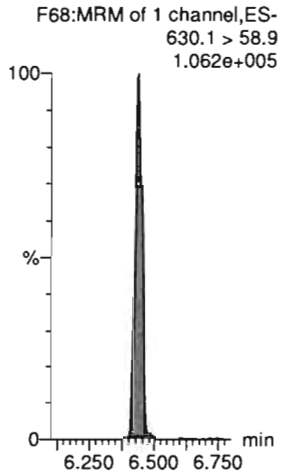
PFODA



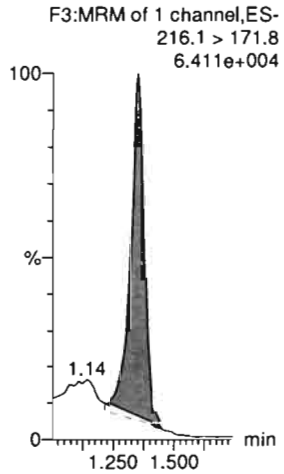
N-MeFOSE



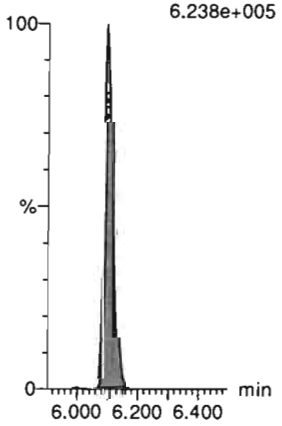
N-EtFOSE



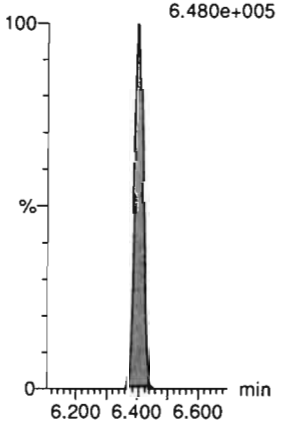
13C3-PFBA-RSD



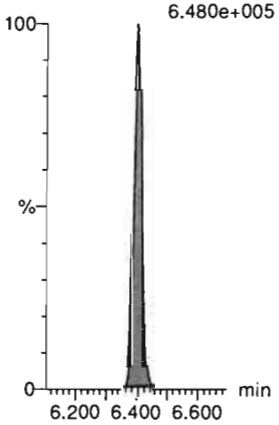
d5-N-ETFOSA-EIS



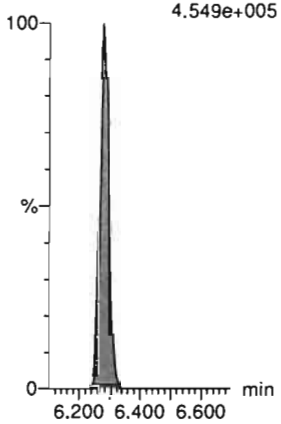
13C2-PFHxDA-EIS



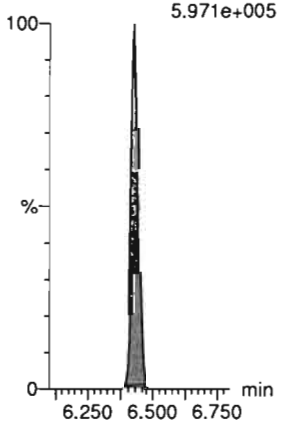
13C2-PFHxDA-EIS



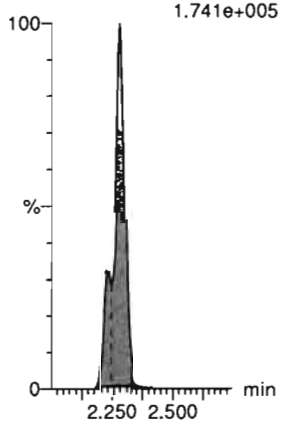
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

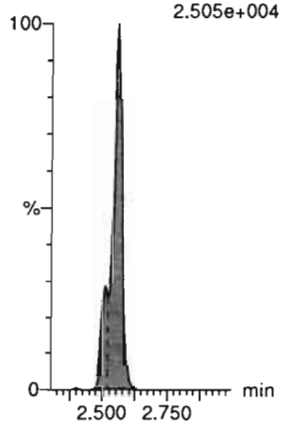


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

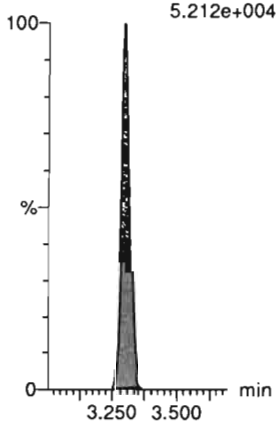
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

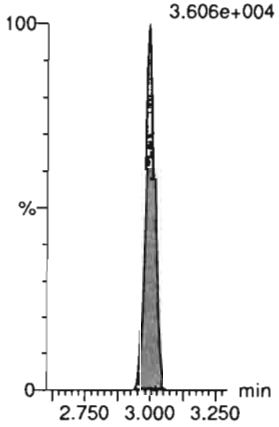
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.505e+004



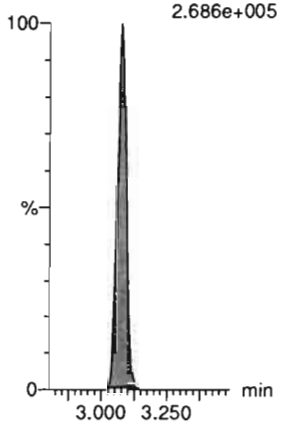
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.212e+004



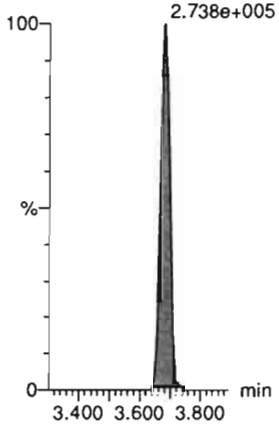
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.606e+004



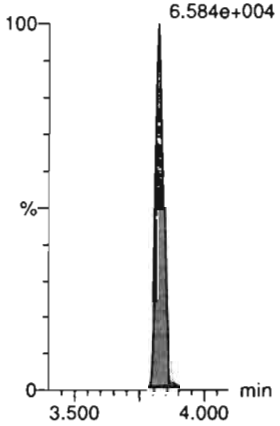
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.686e+005



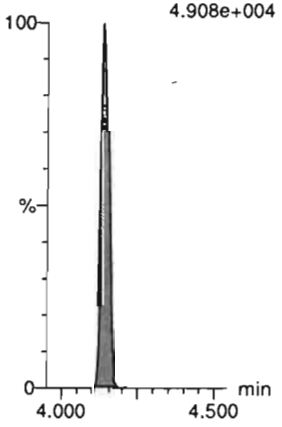
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.738e+005



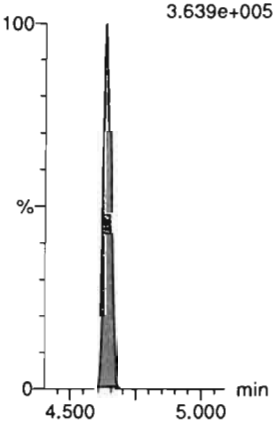
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.584e+004



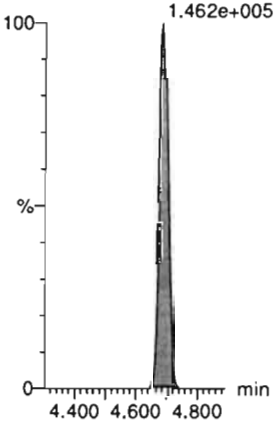
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.908e+004



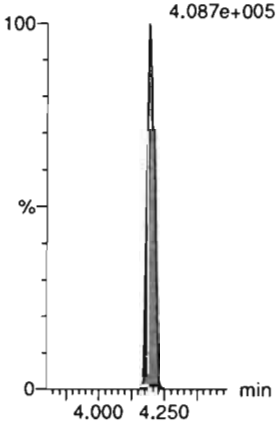
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.639e+005



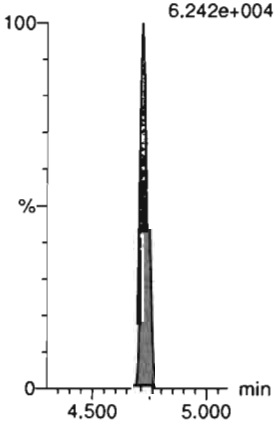
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.462e+005



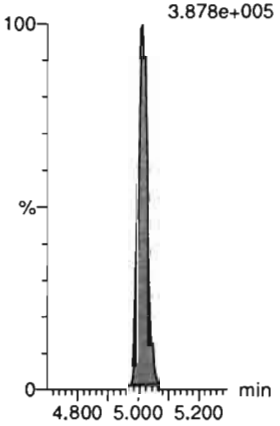
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.087e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.242e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.878e+005

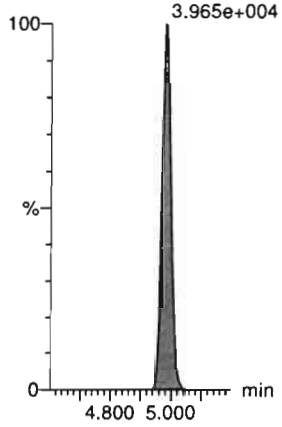


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

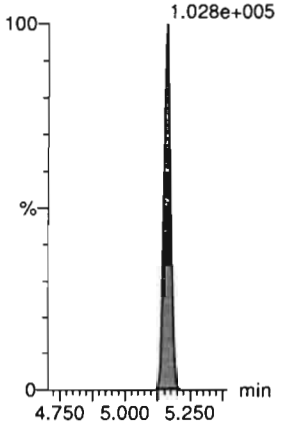
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

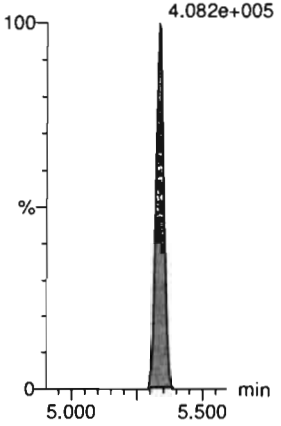
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.965e+004



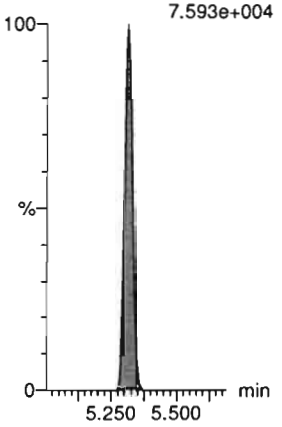
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.028e+005



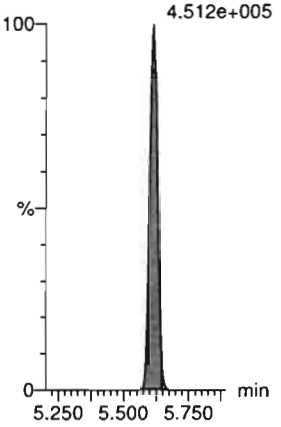
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
4.082e+005



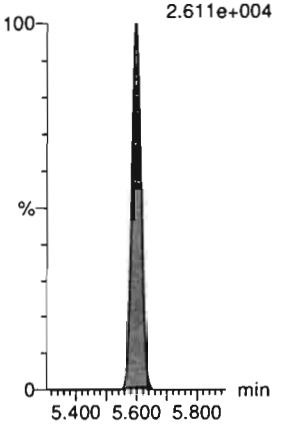
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.593e+004



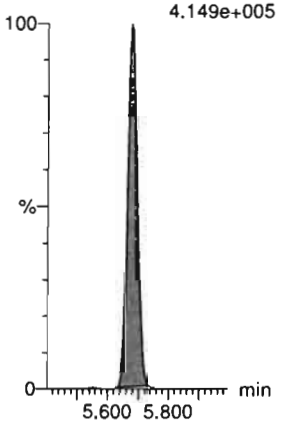
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.512e+005



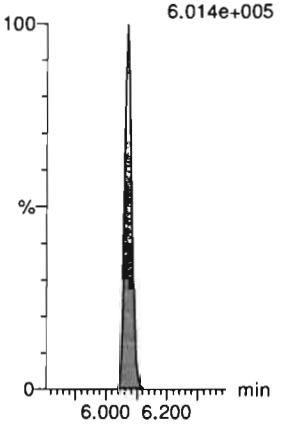
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.611e+004



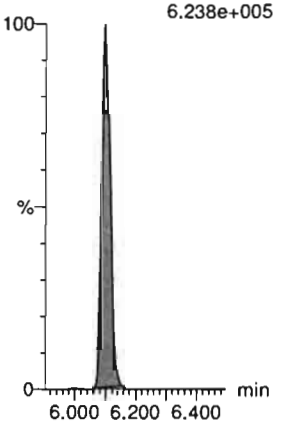
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.149e+005



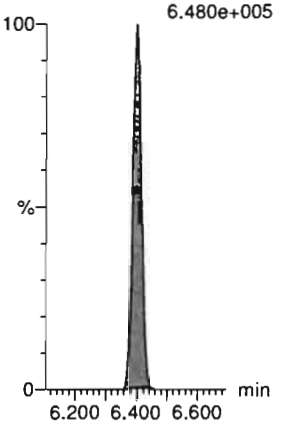
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
6.014e+005



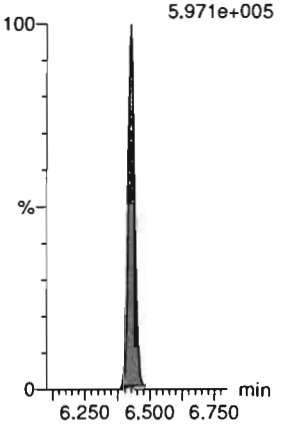
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.238e+005



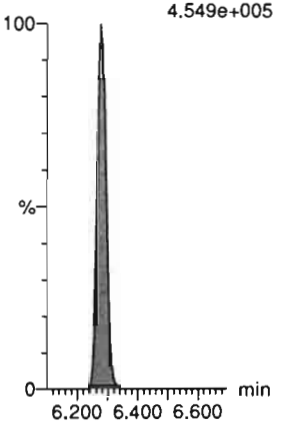
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.480e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.971e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.549e+005



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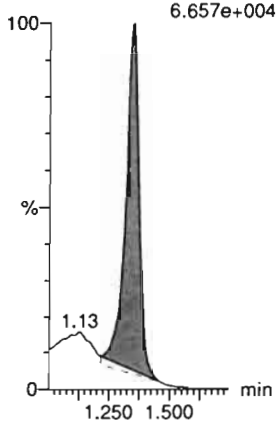
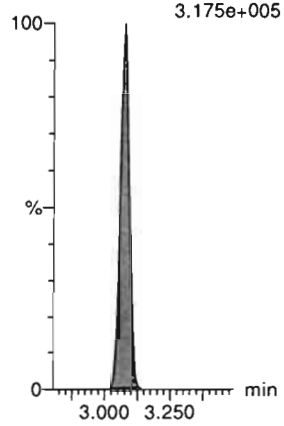
Name: 200721P1-09, Date: 21-Jul-2020, Time: 16:39:53, ID: ST200720P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

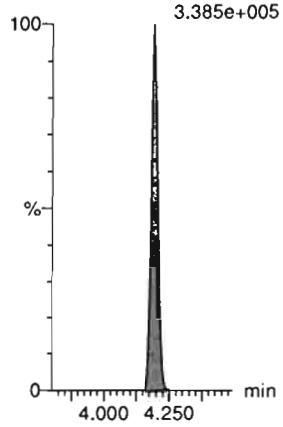
13C4-PFBA



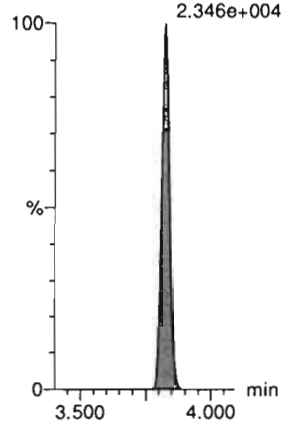
13C5-PFHxA



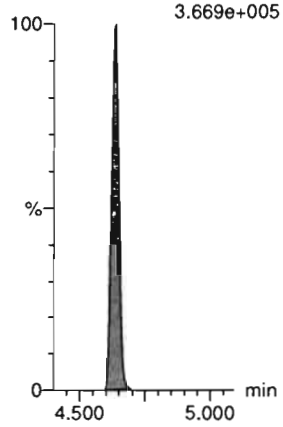
13C8-PFOA



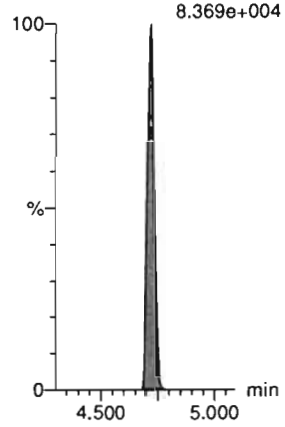
18O2-PFHxS



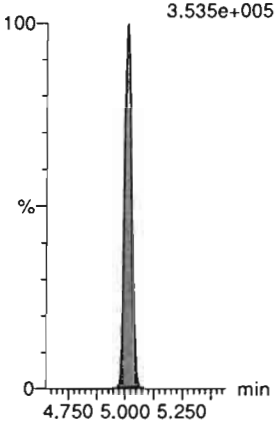
13C9-PFNA



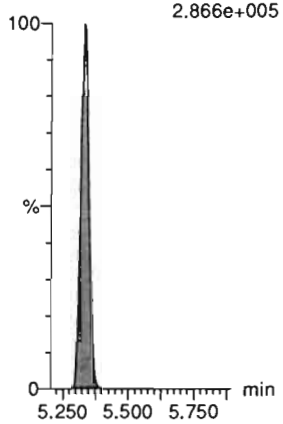
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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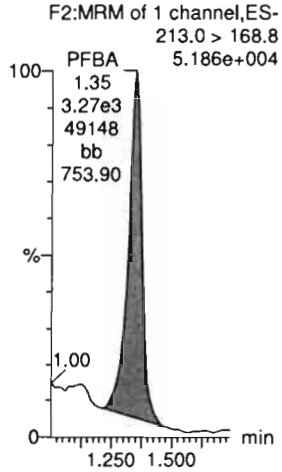
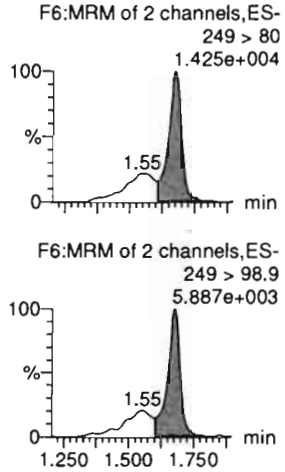
ST200721P1-6

Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ~~ST200720P1-6~~ PFC CS3 20G1606, Description: PFC CS3 20G1606

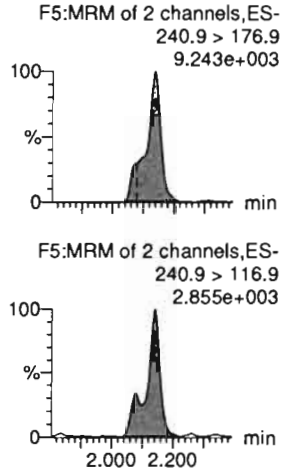
PFBA



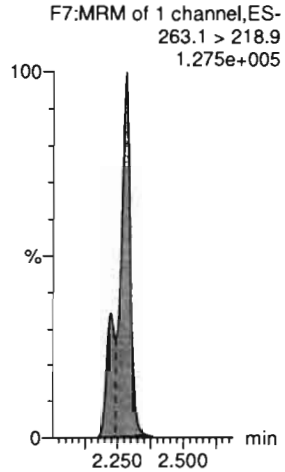
PFPrS



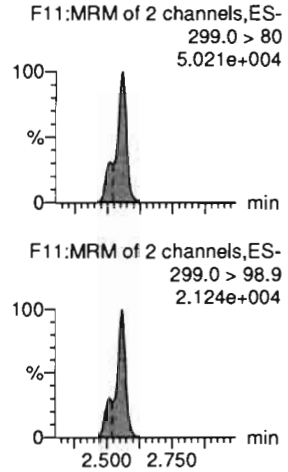
3:3 FTCA



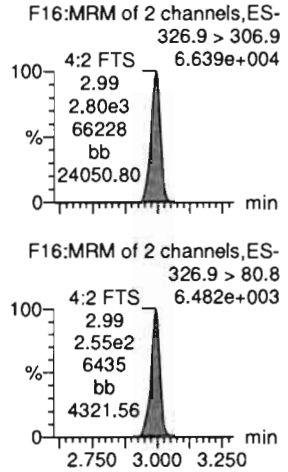
PFPeA



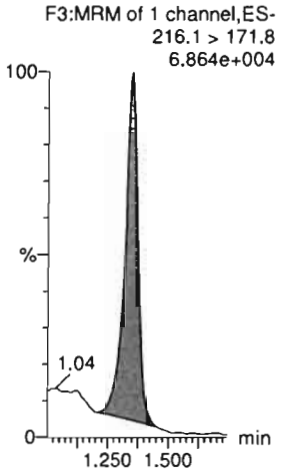
PFBS



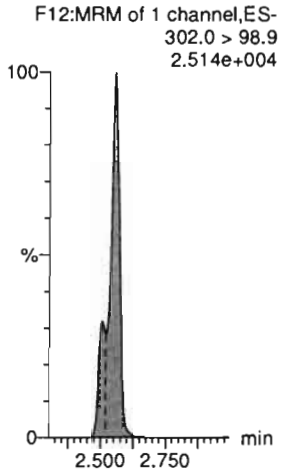
4:2 FTS



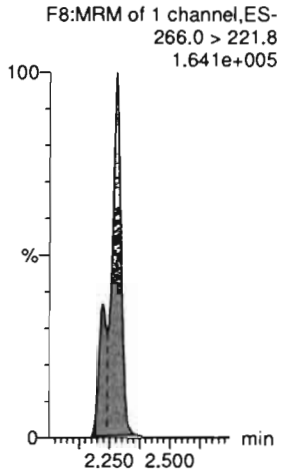
13C3-PFBA-EIS



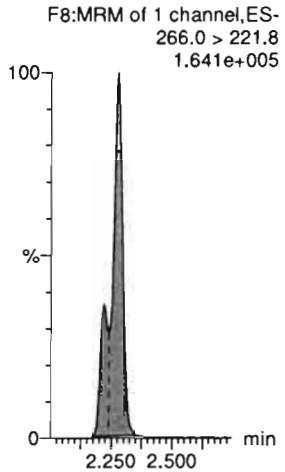
13C3-PFBS-EIS



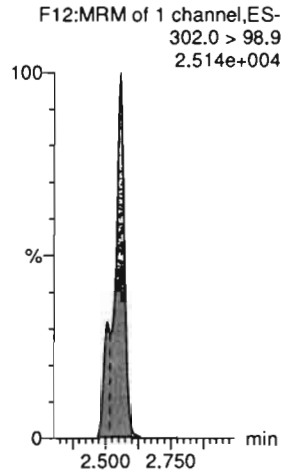
13C3-PFPeA-EIS



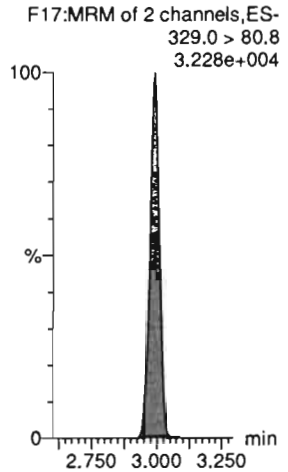
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



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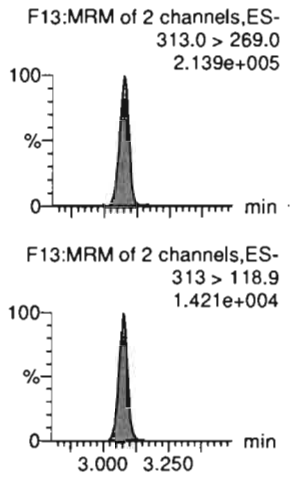
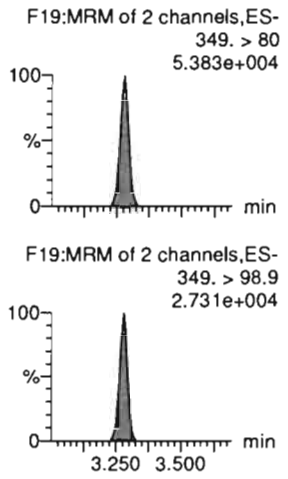
Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ST200720P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

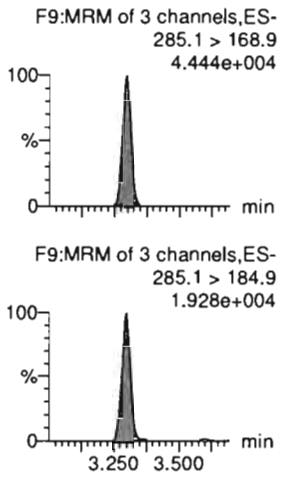
PFHxA



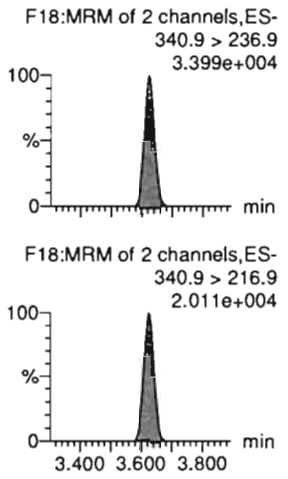
PFPeS



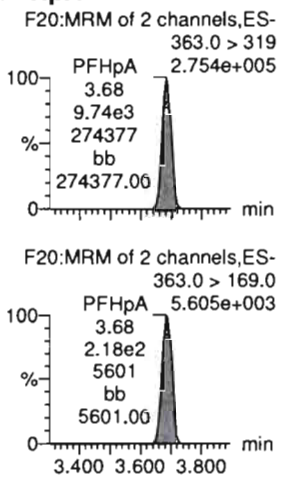
HFPO-DA



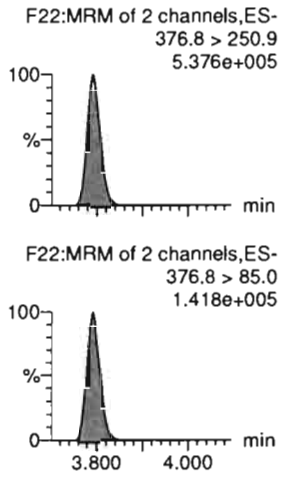
5:3 FTCA



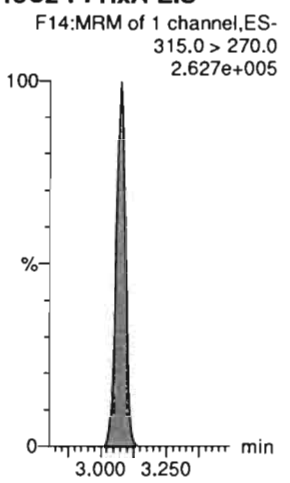
PFHpA



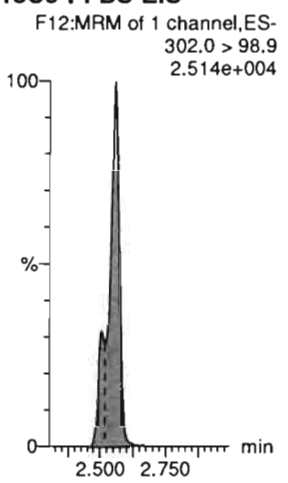
ADONA



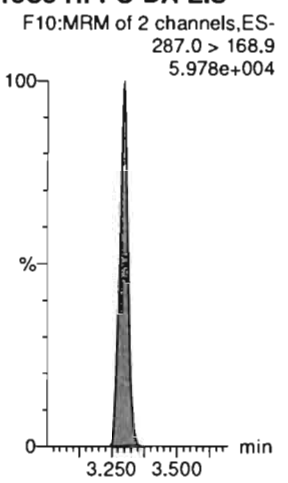
13C2-PFHxA-EIS



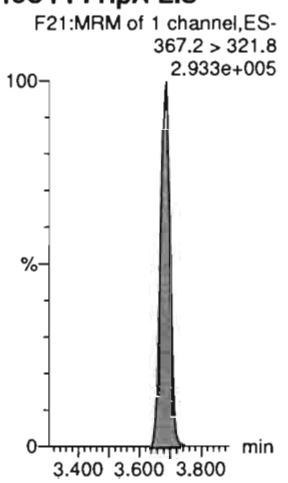
13C3-PFBS-EIS



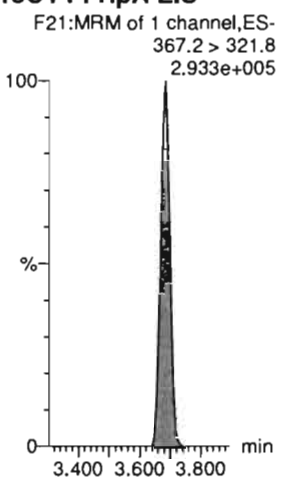
13C3-HFPO-DA-EIS



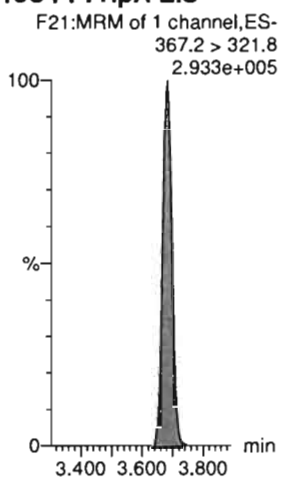
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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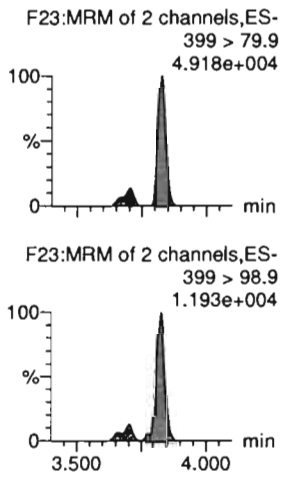
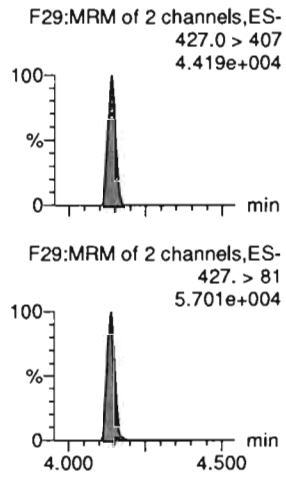
Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ST200720P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

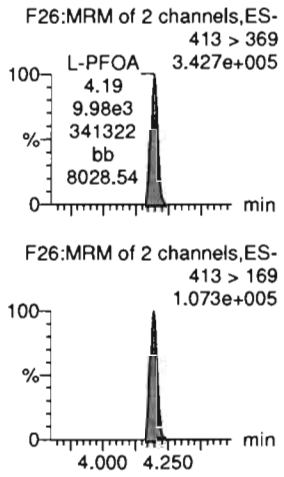
L-PFHxS



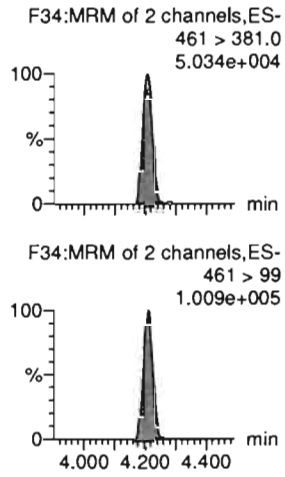
6:2 FTS



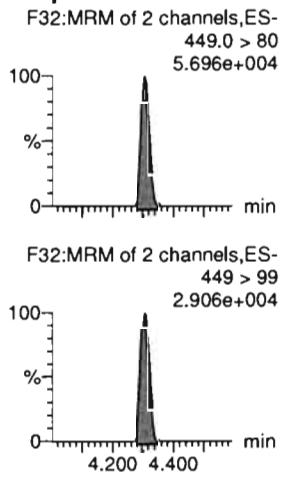
L-PFOA



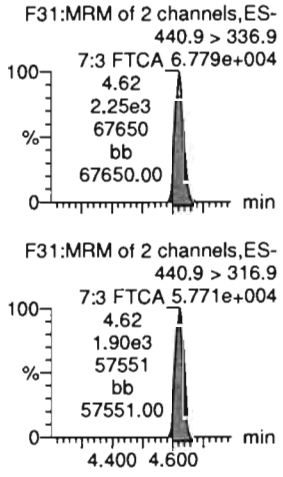
PFEChS



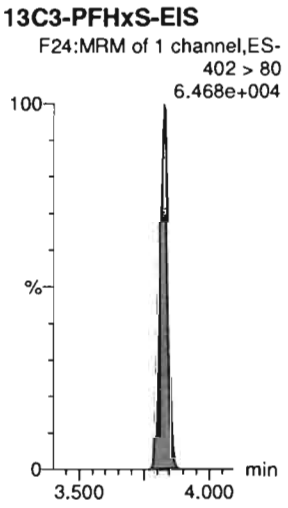
PFHpS



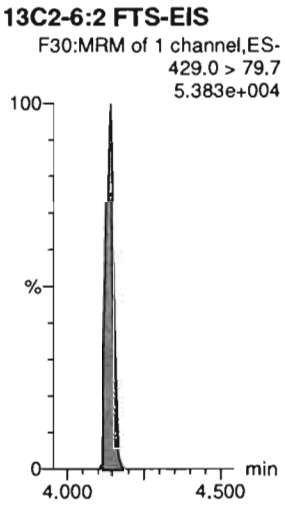
7:3 FTCA



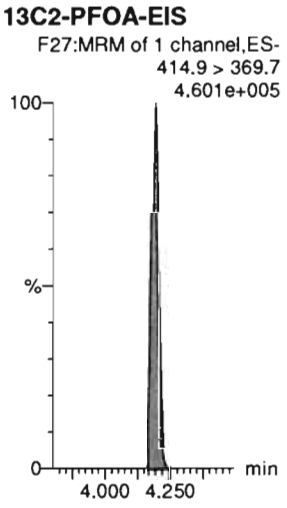
13C3-PFHxS-EIS



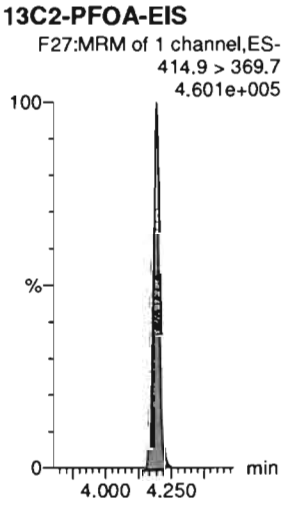
13C2-6:2 FTS-EIS



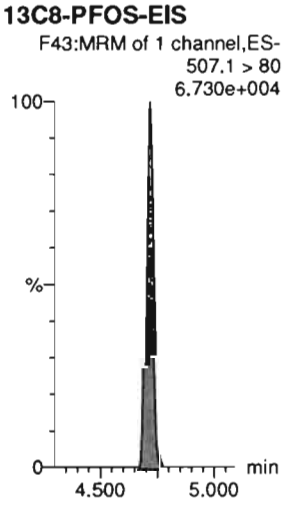
13C2-PFOA-EIS



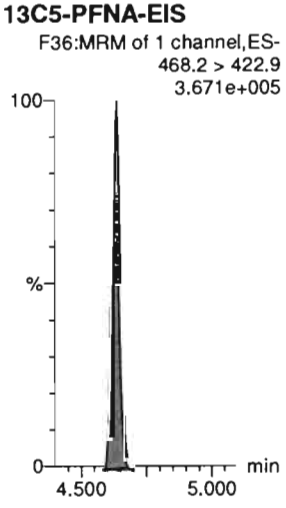
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



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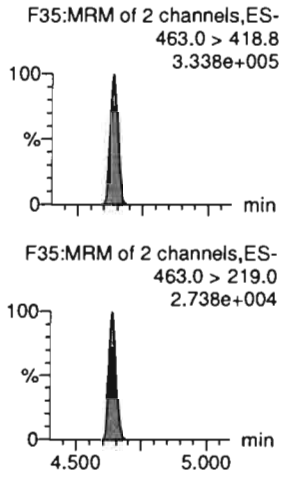
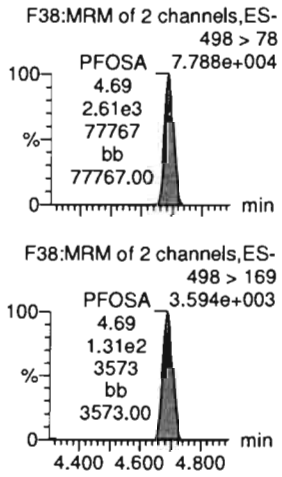
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ST200720P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

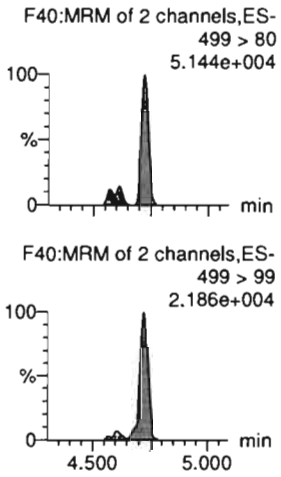
PFNA



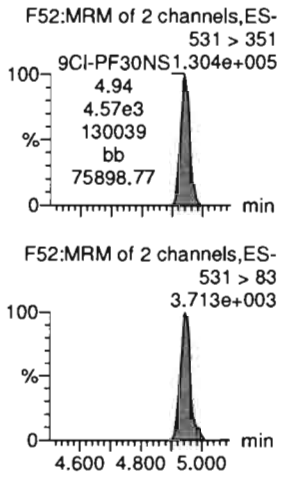
PFOSA



L-PFOS



9Cl-PF30NS



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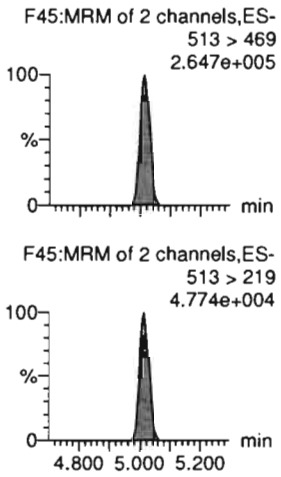
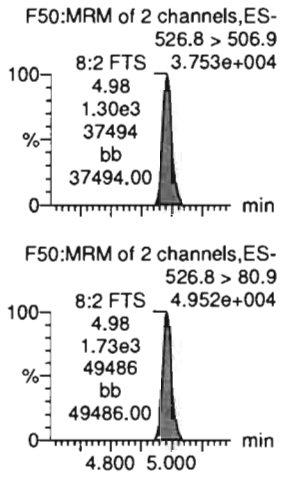


8:2 FTS



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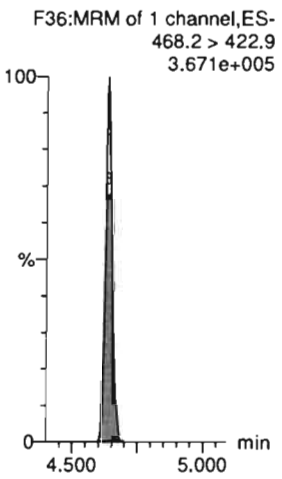

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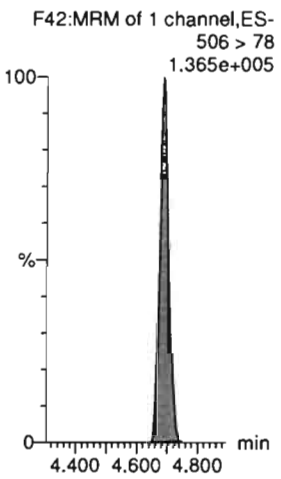

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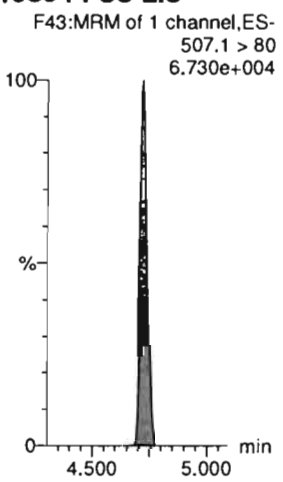

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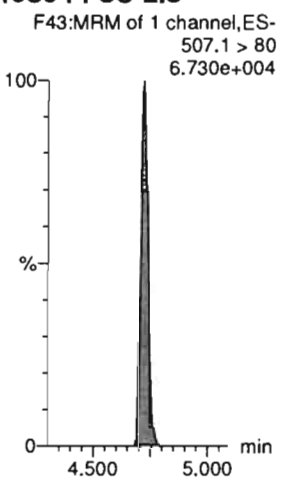

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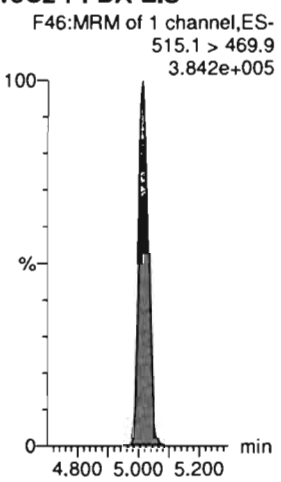
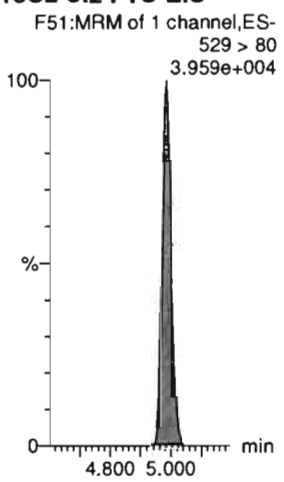


13C2-8:2 FTS-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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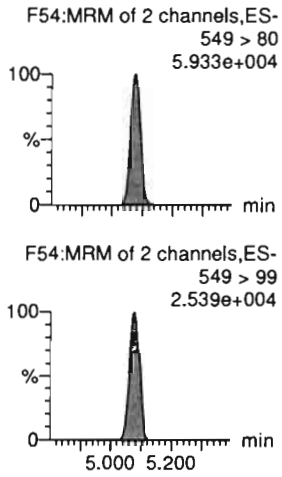
PFNS



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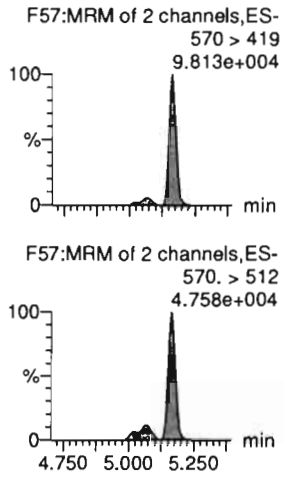

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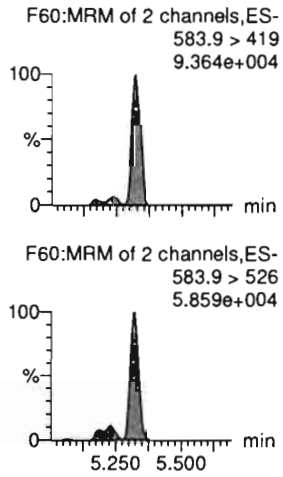
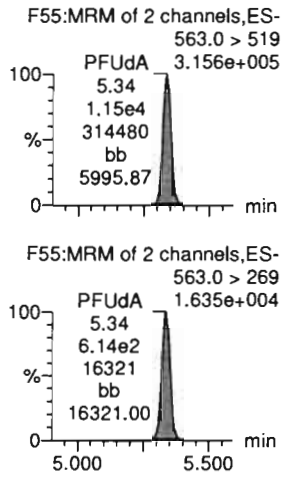


PFUdA



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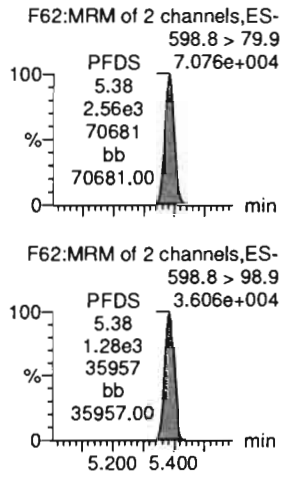
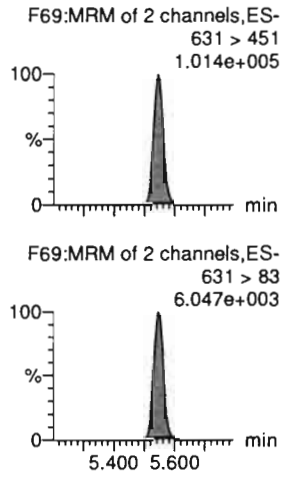
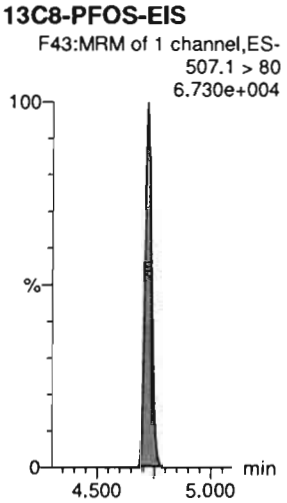


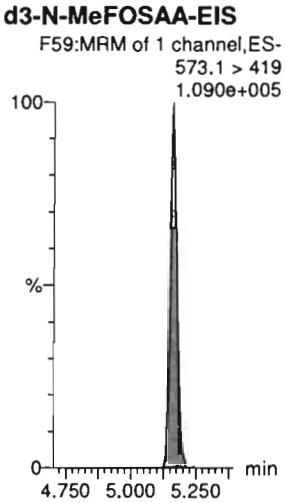
11Cl-PF30UdS



13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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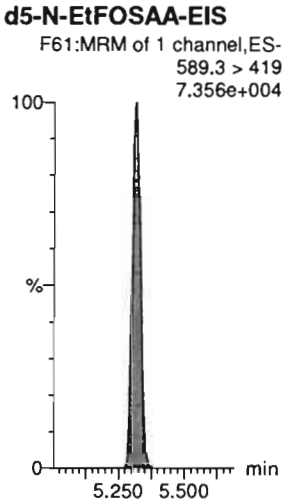

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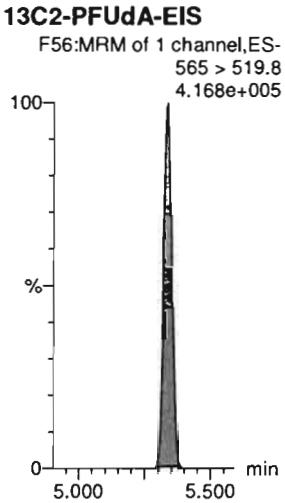

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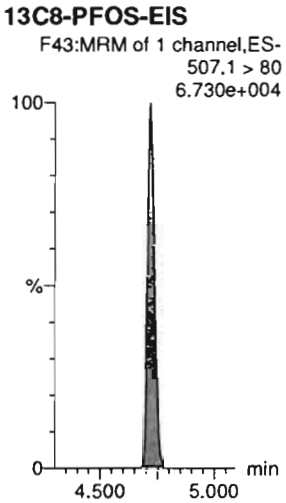

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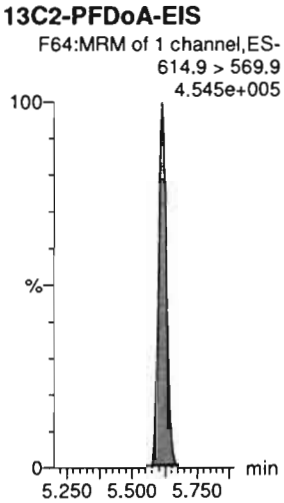

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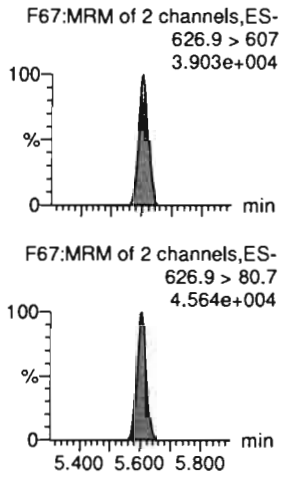
10:2 FTS



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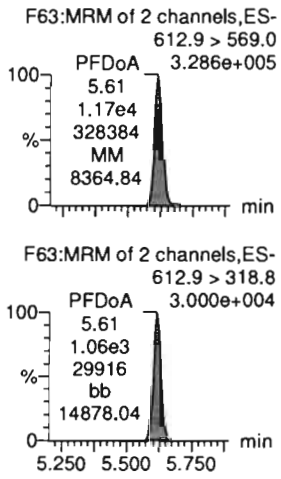
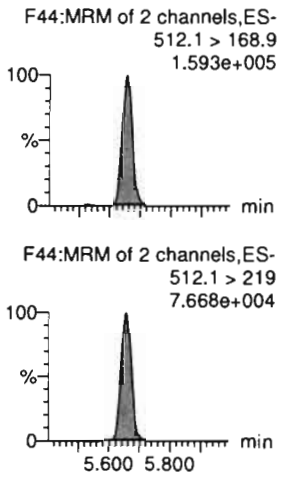


N-MeFOSA



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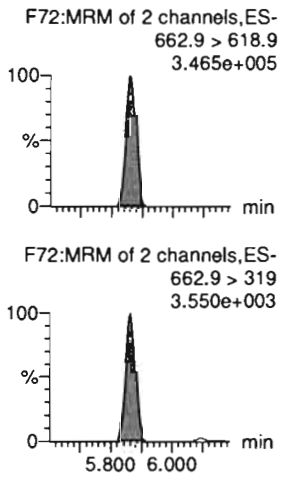

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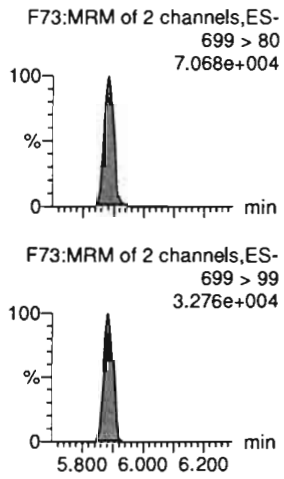
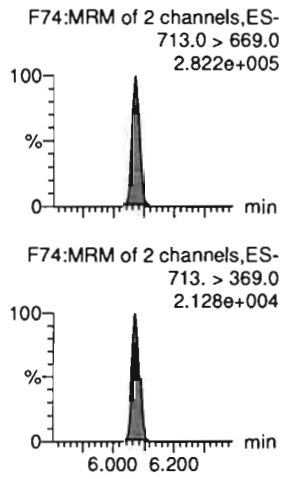


PFTeDA



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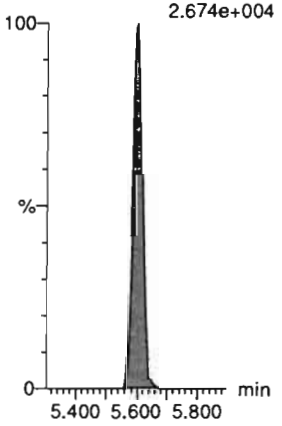

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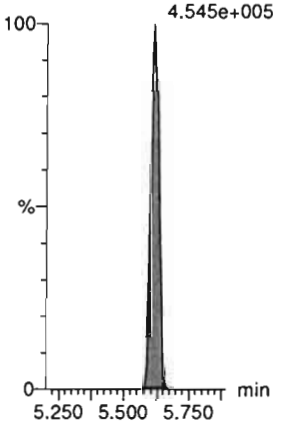
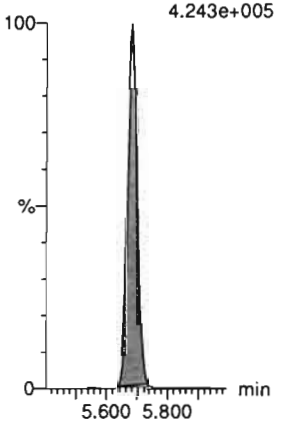


d3-N-MeFOSA-EIS



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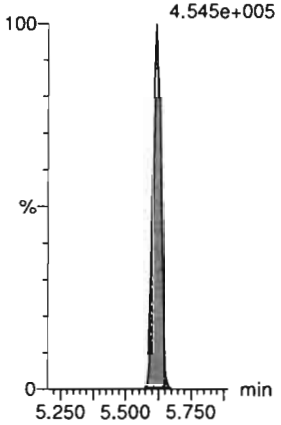

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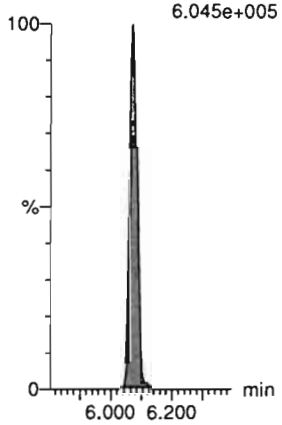

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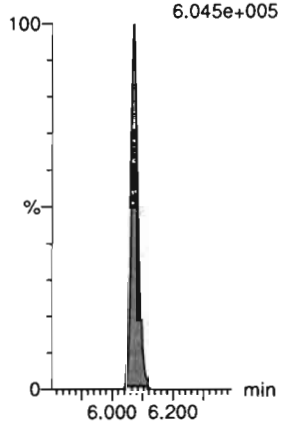

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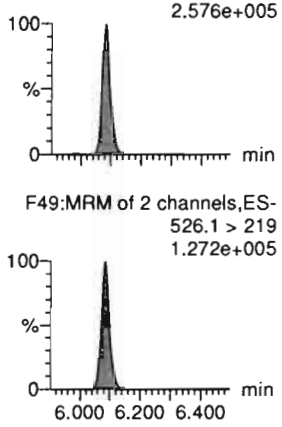
Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ST200720P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

N-EtFOSA



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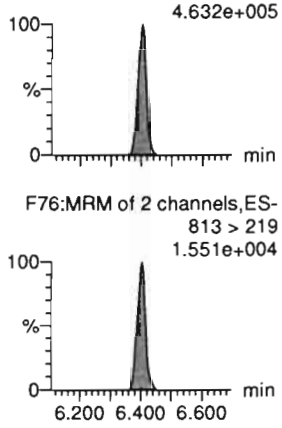
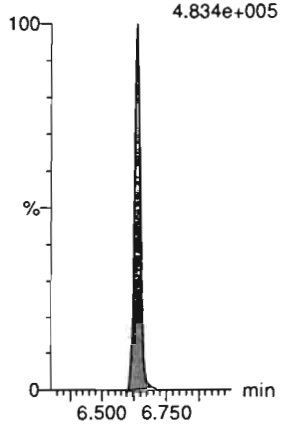
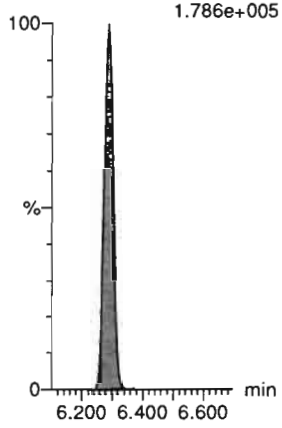


PFODA



N-MeFOSE



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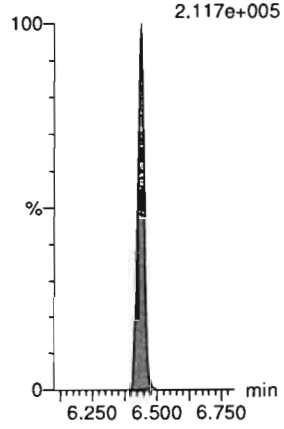

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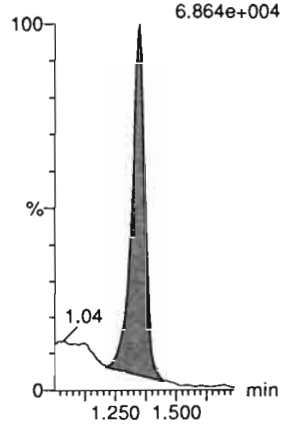
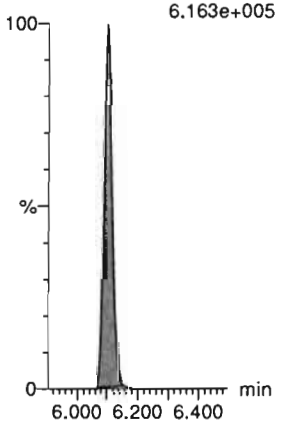
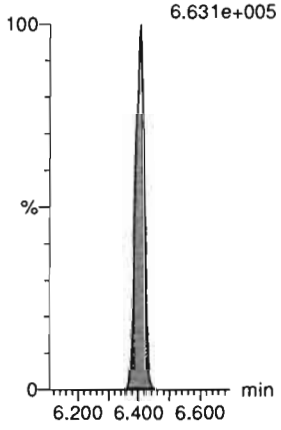


d5-N-ETFOSA-EIS



13C2-PFHxDA-EIS



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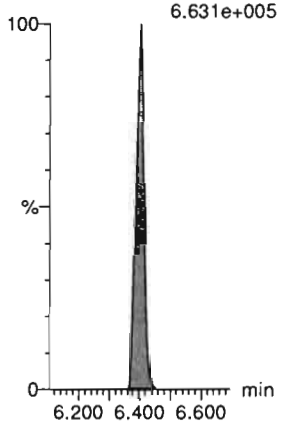

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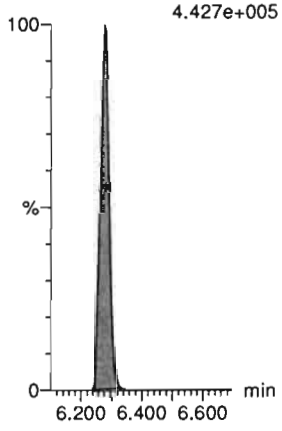
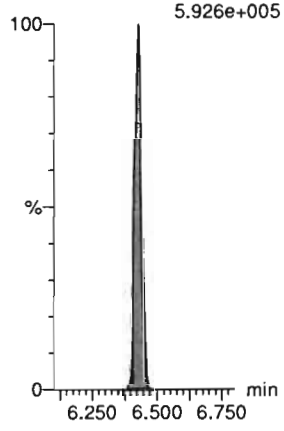


d9-N-EtFOSE-EIS



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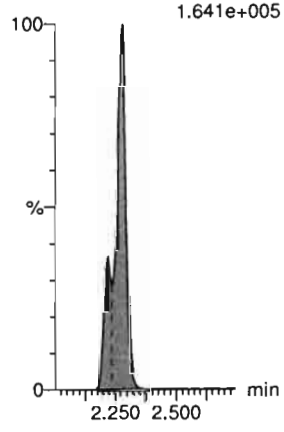

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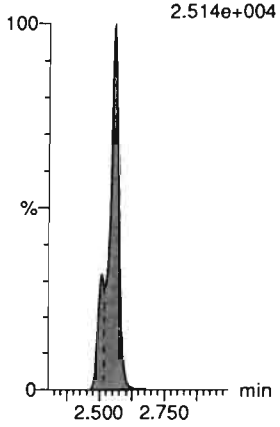
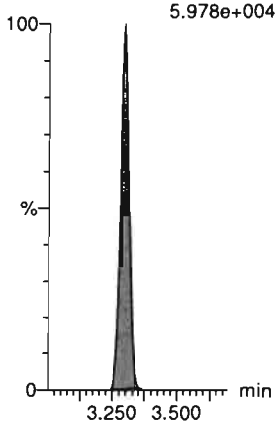
Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ST200720P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

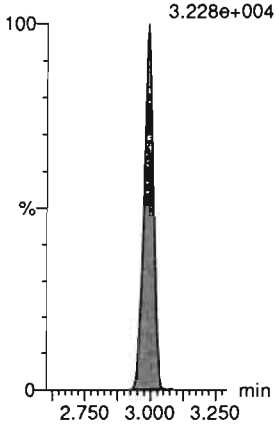
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.514e+004



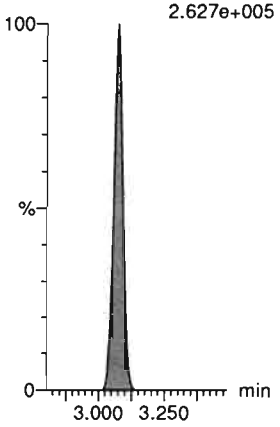
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.978e+004



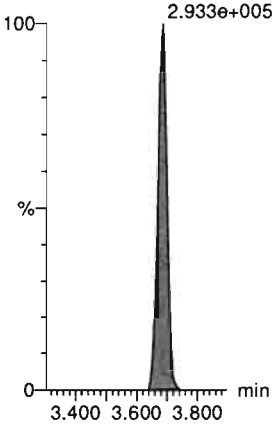
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.228e+004



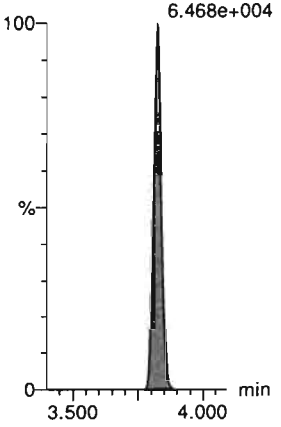
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.627e+005



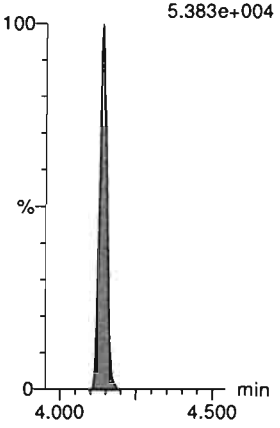
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.933e+005



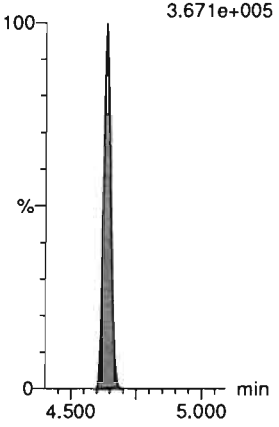
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.468e+004



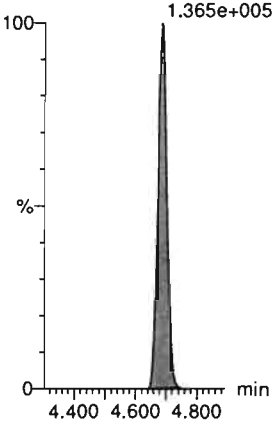
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.383e+004



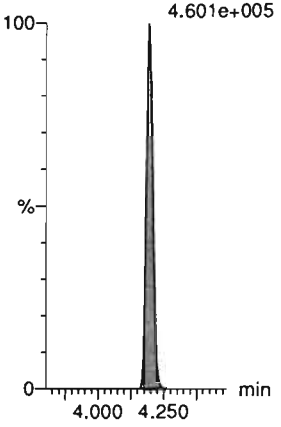
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.671e+005



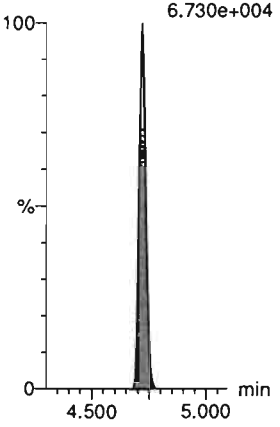
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.365e+005



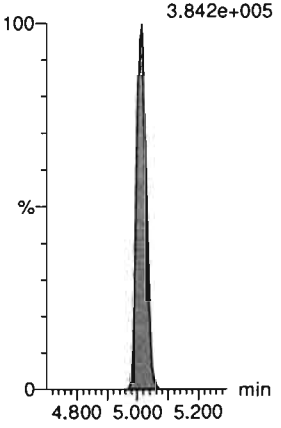
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.601e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.730e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.842e+005

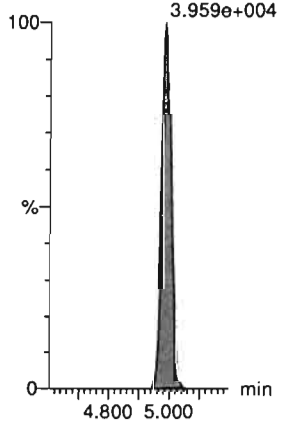


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

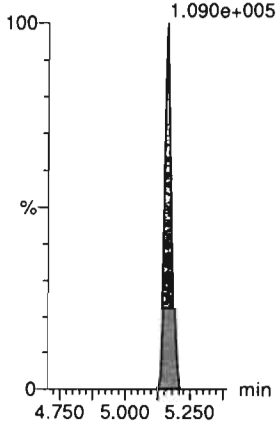
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ST200720P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

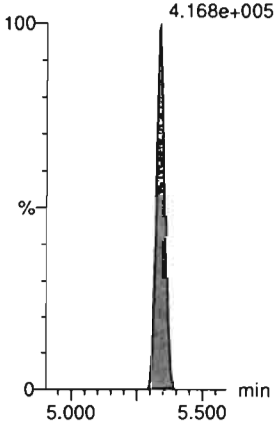
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.959e+004



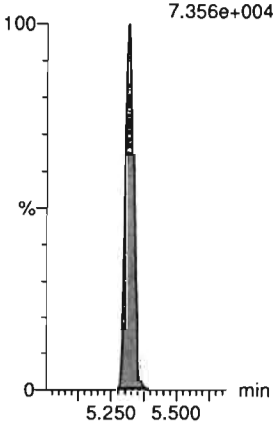
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.090e+005



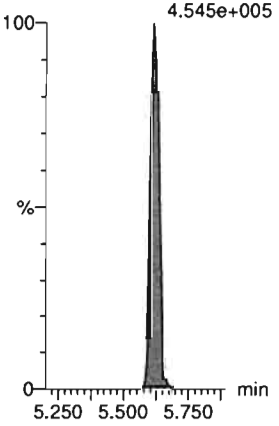
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
4.168e+005



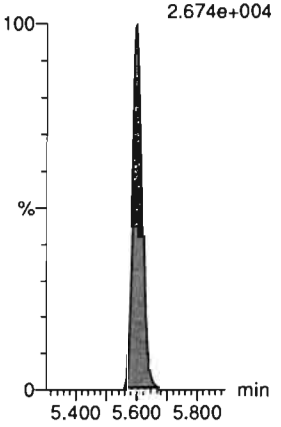
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.356e+004



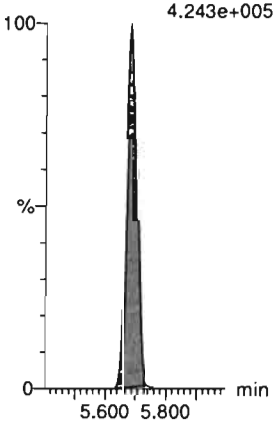
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.545e+005



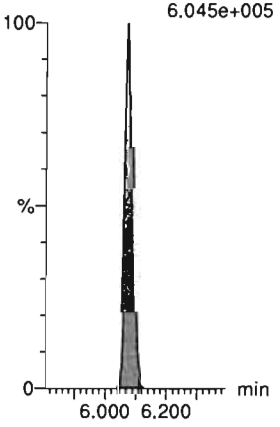
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.674e+004



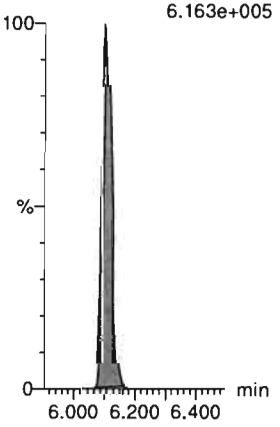
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.243e+005



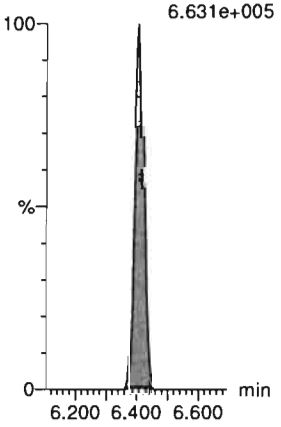
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
6.045e+005



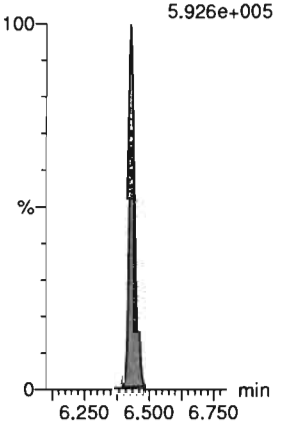
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.163e+005



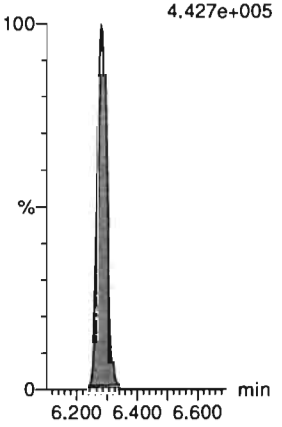
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.631e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.926e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.427e+005



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Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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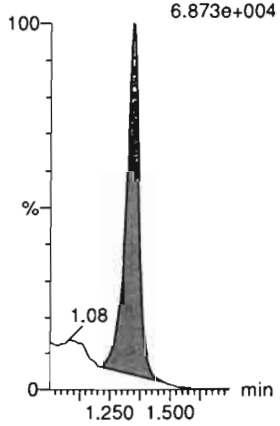
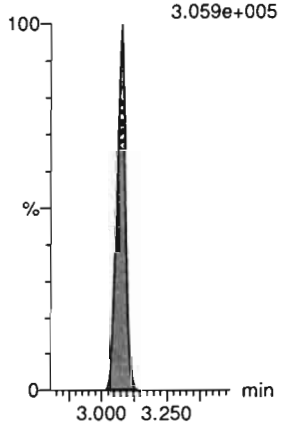
Name: 200721P1-10, Date: 21-Jul-2020, Time: 16:50:30, ID: ST200720P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

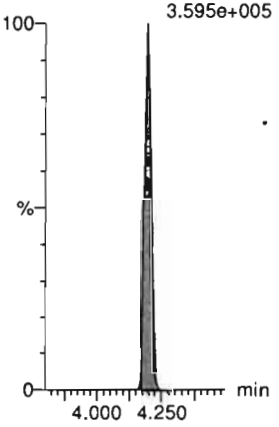
13C4-PFBA



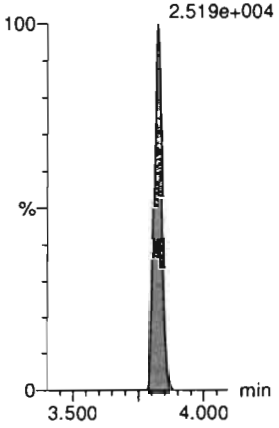
13C5-PFHxA



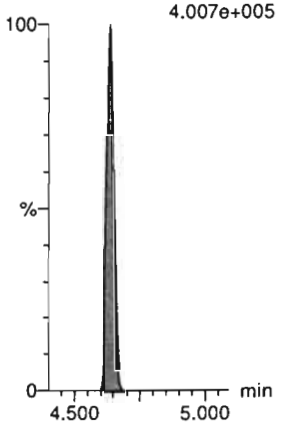
13C8-PFOA



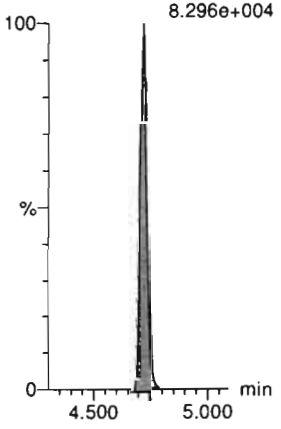
18O2-PFHxS



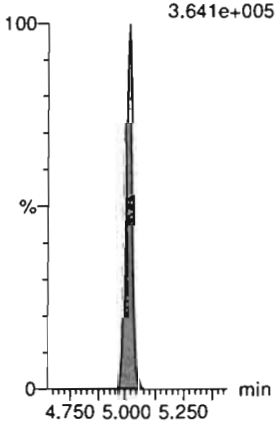
13C9-PFNA



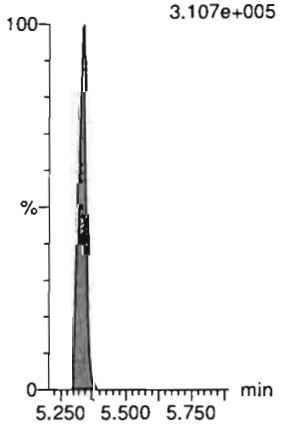
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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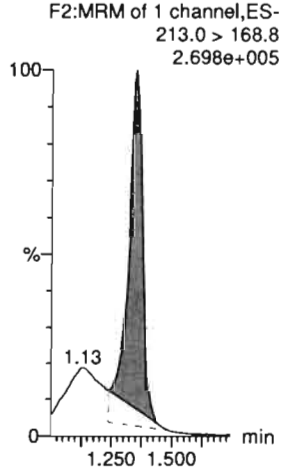
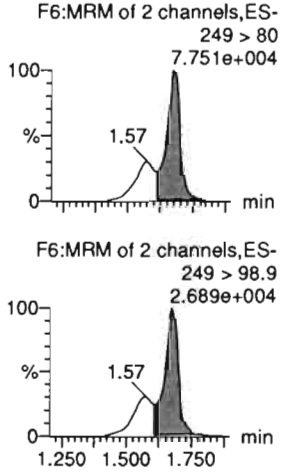
Name: 200721P1-11, Date: 21-Jul-2020, Time: 17:01:05, ID: ~~ST200720P1-7~~ ST200721P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

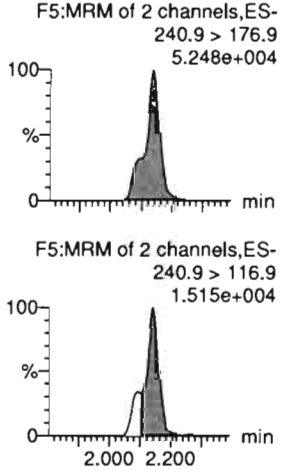
PFBA



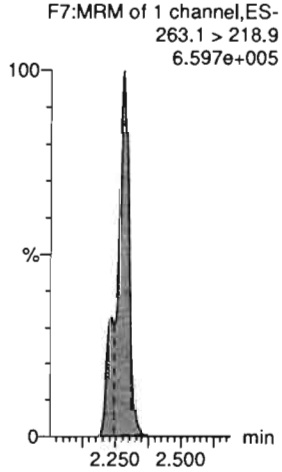
PFPrS



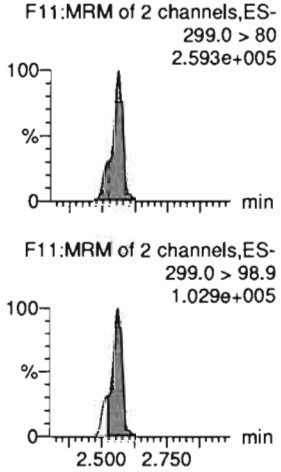
3:3 FTCA



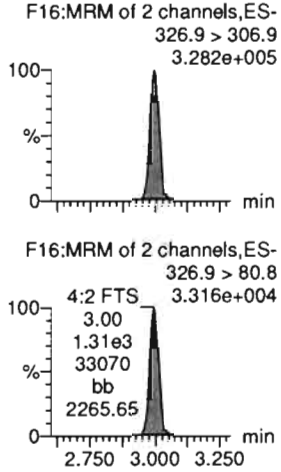
PFPeA



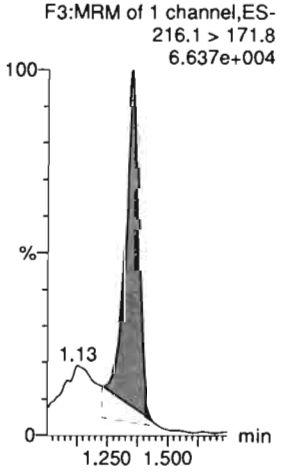
PFBS



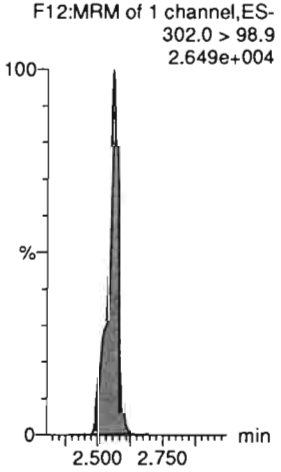
4:2 FTS



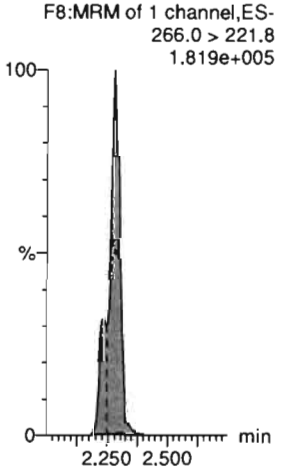
13C3-PFBA-EIS



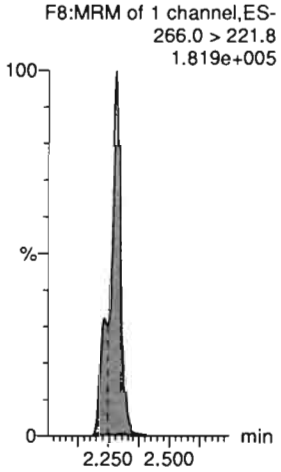
13C3-PFBS-EIS



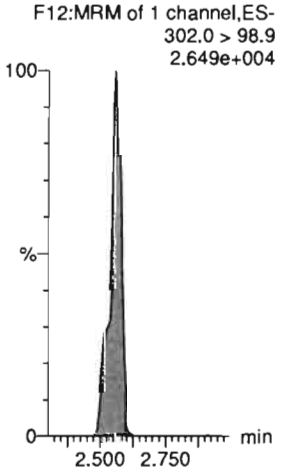
13C3-PFPeA-EIS



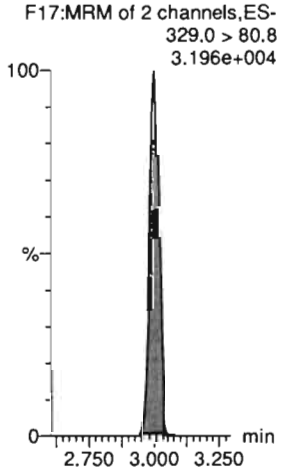
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



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Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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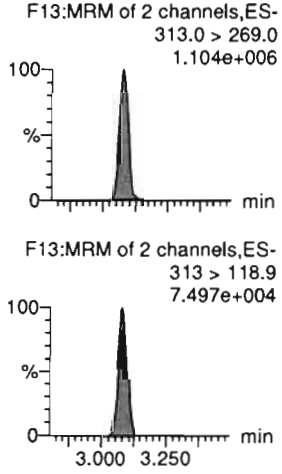
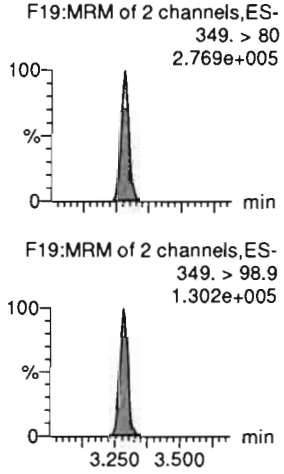
Name: 200721P1-11, Date: 21-Jul-2020, Time: 17:01:05, ID: ST200720P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

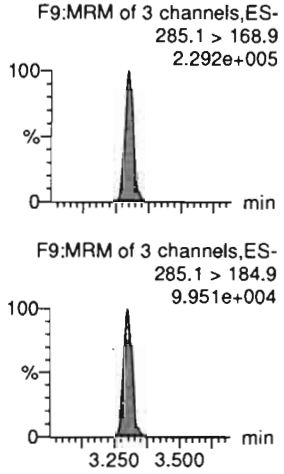
PFHxA



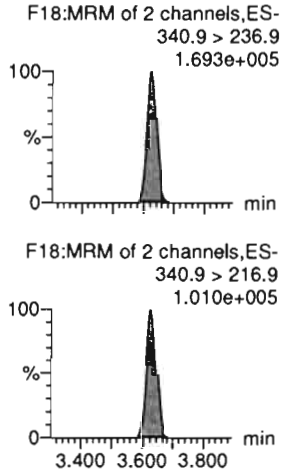
PFPeS



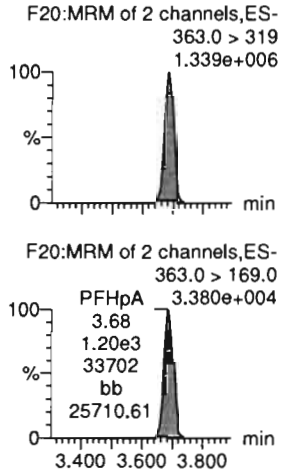
HFPO-DA



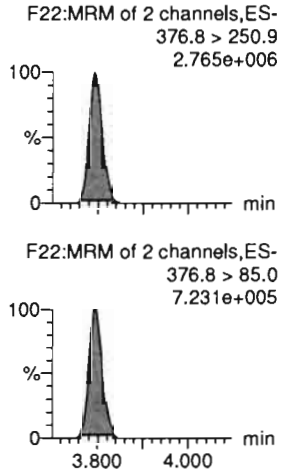
5:3 FTCA



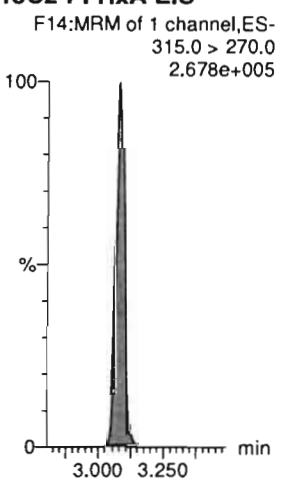
PFHpA



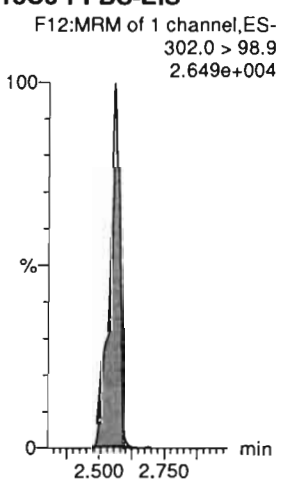
ADONA



13C2-PFHxA-EIS



13C3-PFBS-EIS



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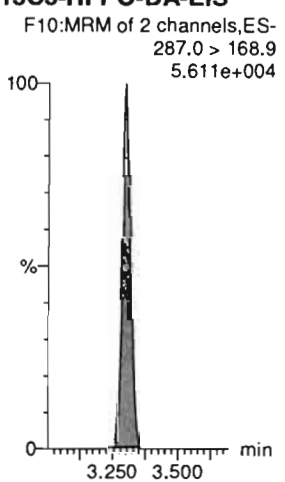
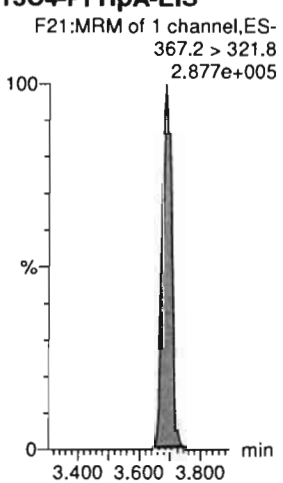


13C4-PFHpA-EIS



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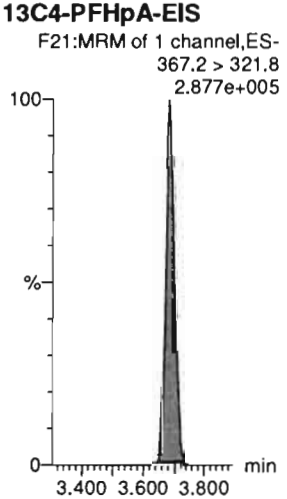

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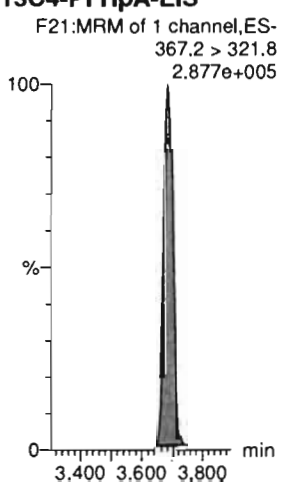

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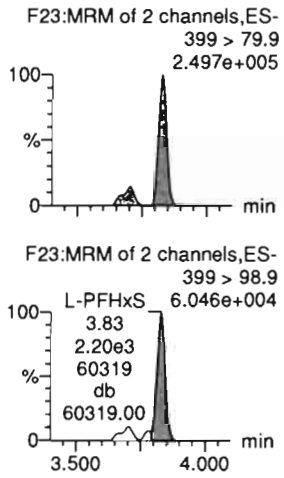
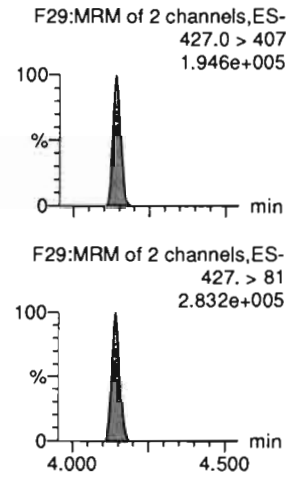
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-11, Date: 21-Jul-2020, Time: 17:01:05, ID: ST200720P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

L-PFHxS



6:2 FTS



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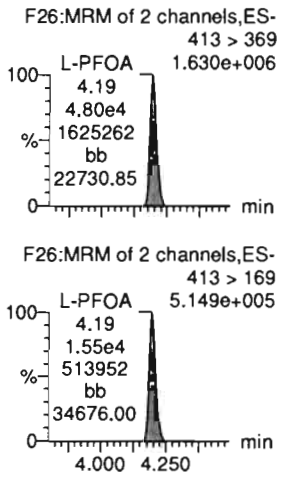

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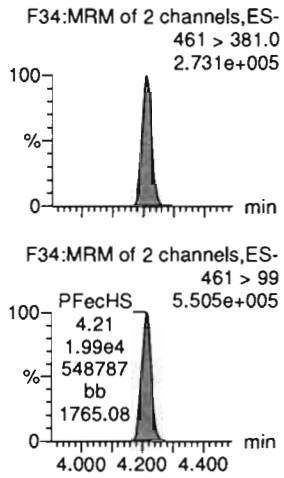

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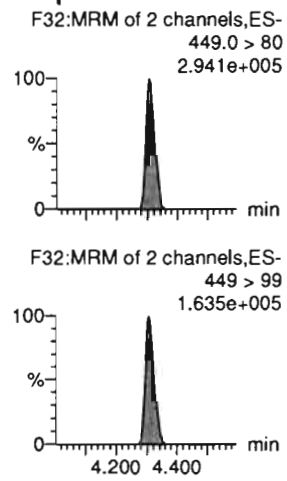
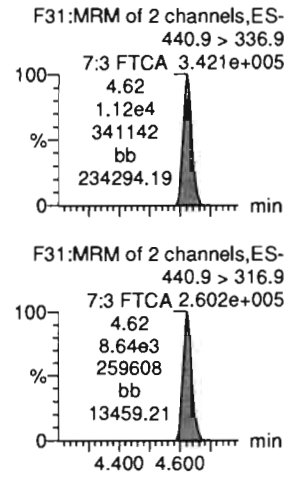
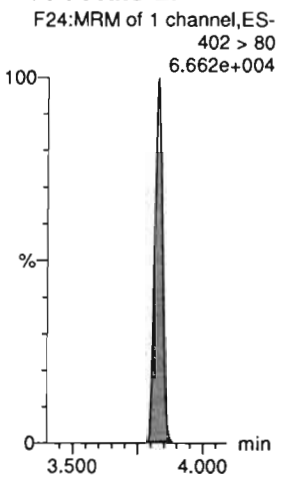


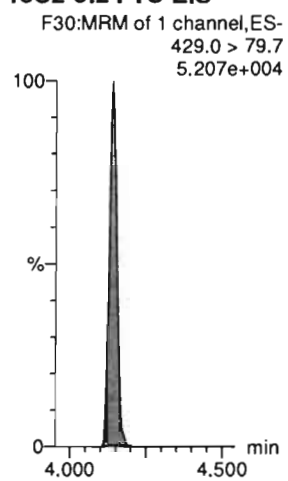
7:3 FTCA



13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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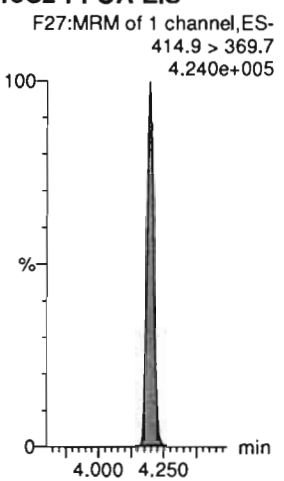

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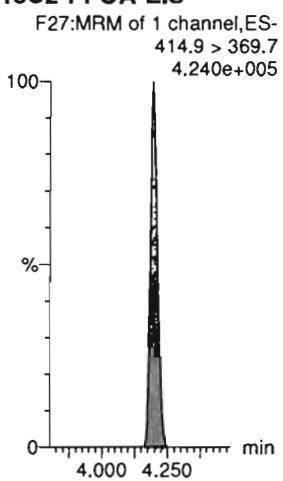
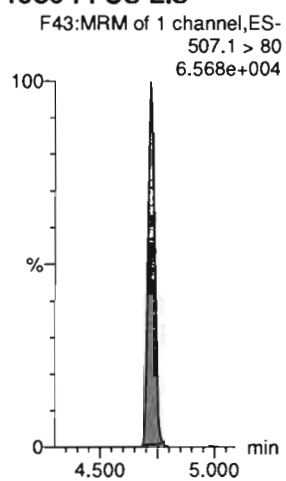
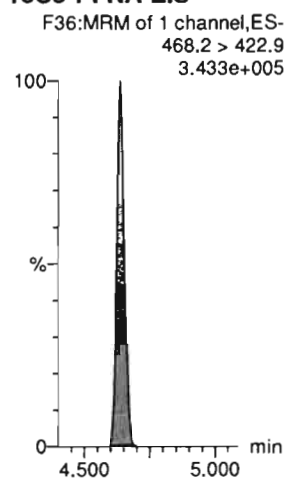


13C8-PFOS-EIS



13C5-PFNA-EIS



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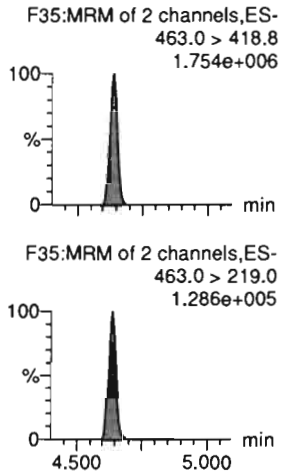
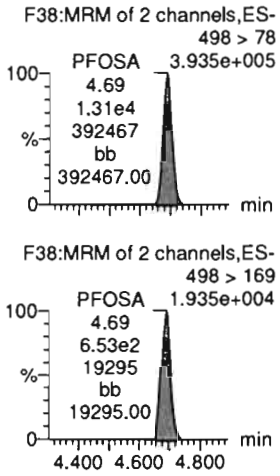
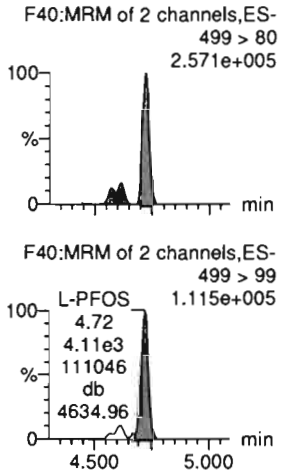


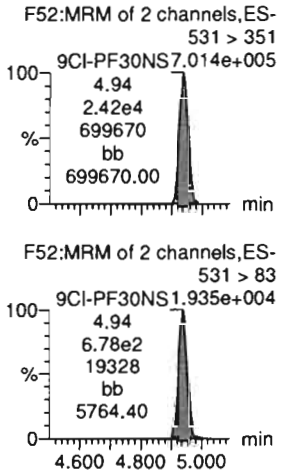
PFOSA



L-PFOS



9Cl-PF30NS



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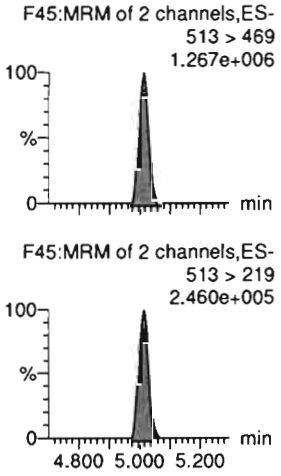
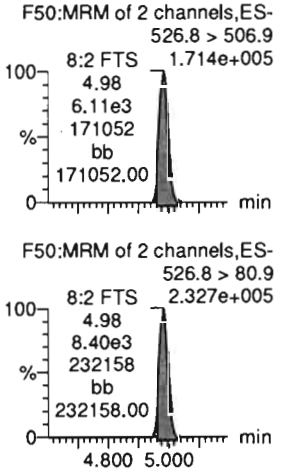


8:2 FTS



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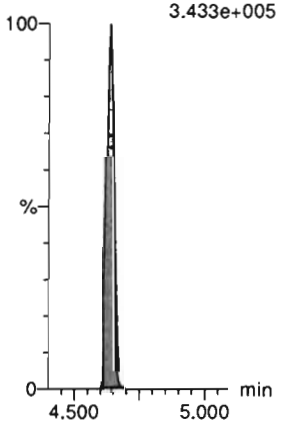
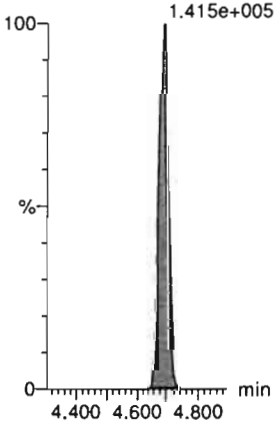


13C8-PFOSA-EIS



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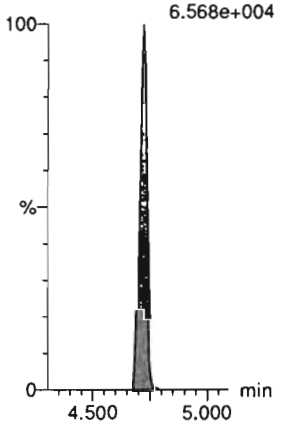

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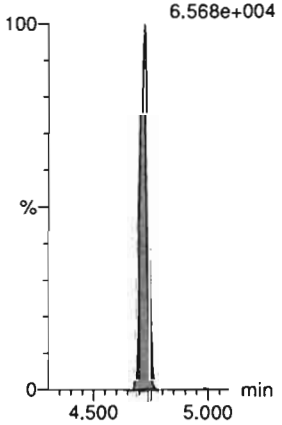
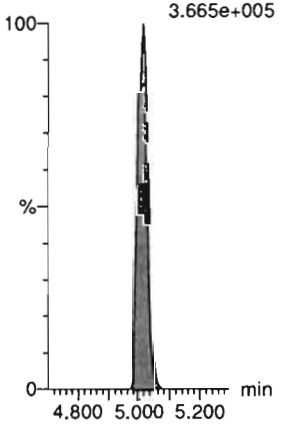
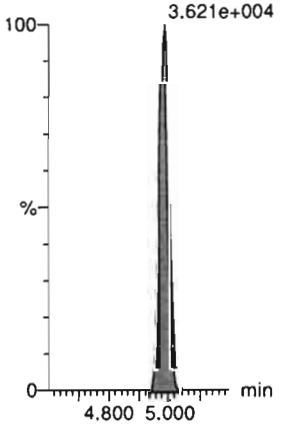


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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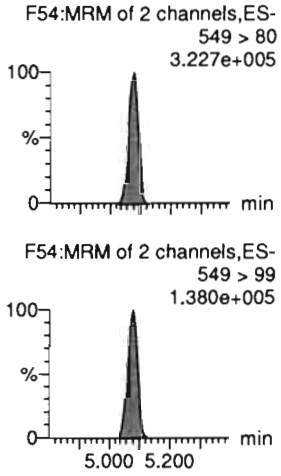
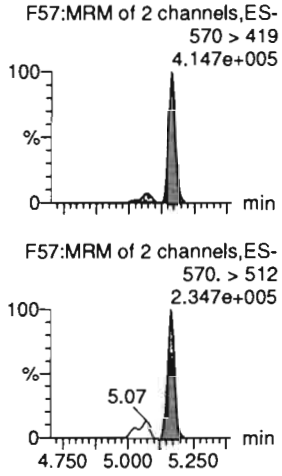
PFNS



L-MeFOSAA



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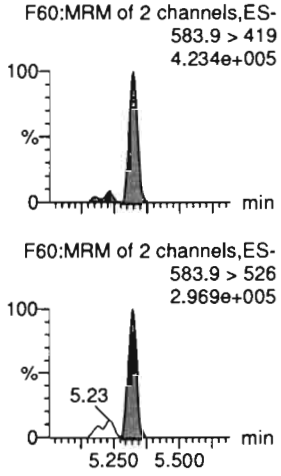
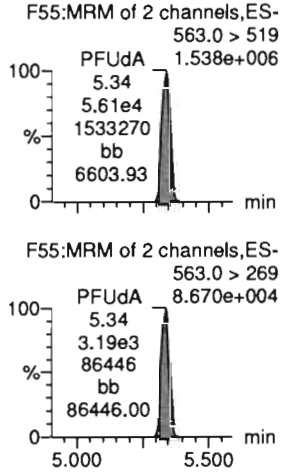
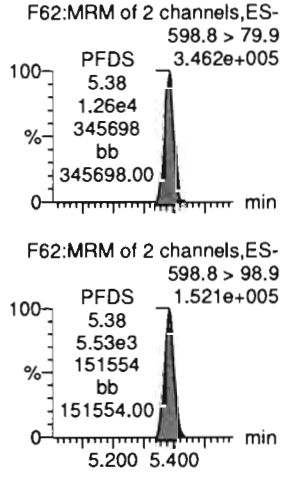


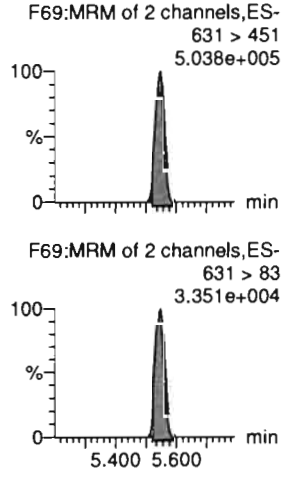
PFUdA



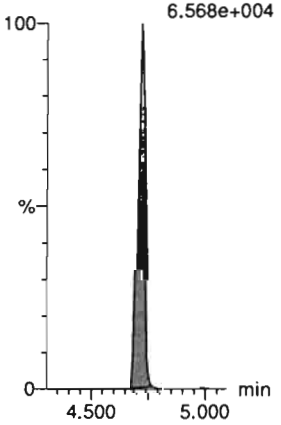
PFDS



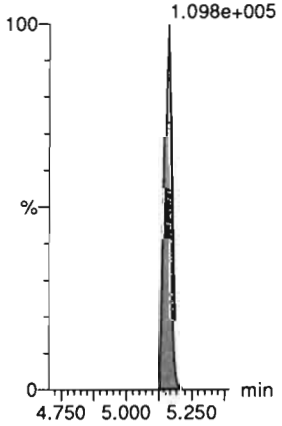
11Cl-PF30UdS



13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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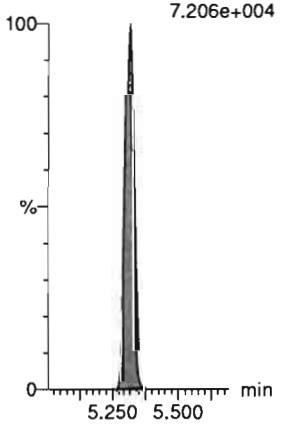

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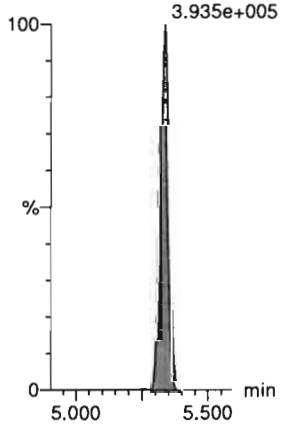
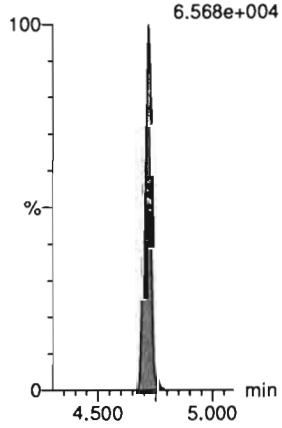
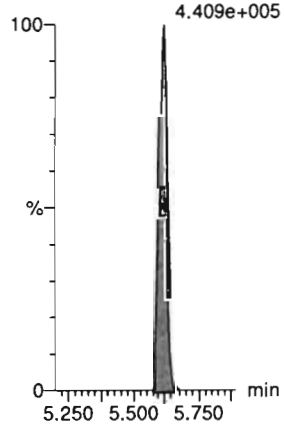


13C8-PFOS-EIS



13C2-PFDoA-EIS



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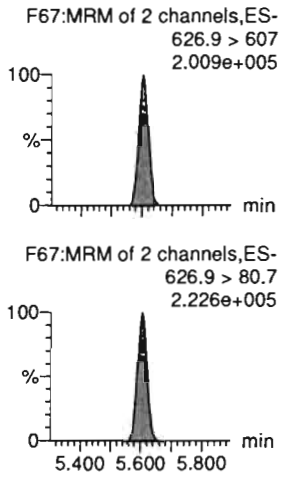
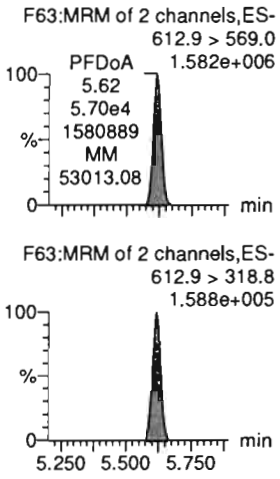
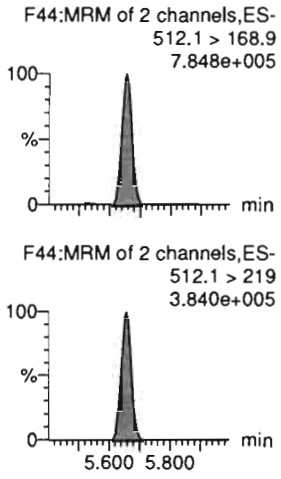
10:2 FTS



PFDoA



N-MeFOSA



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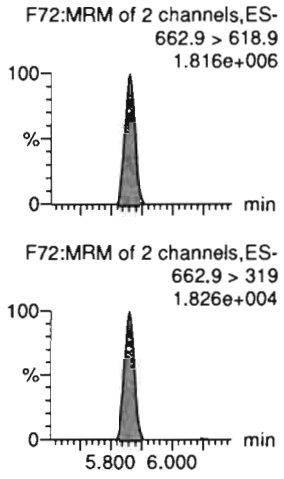
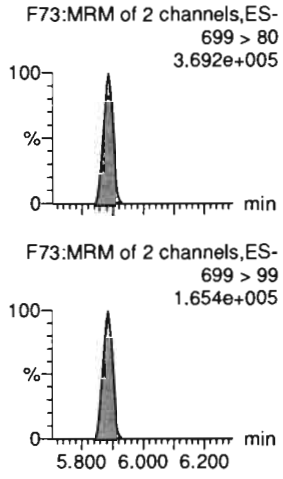
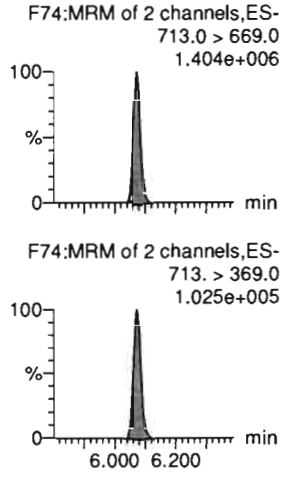


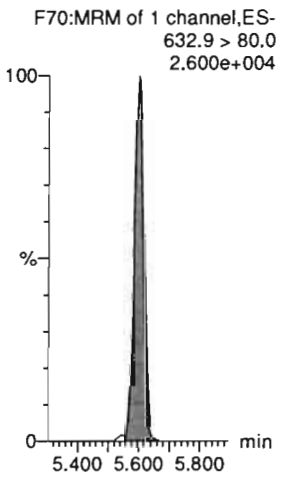
PFDoS



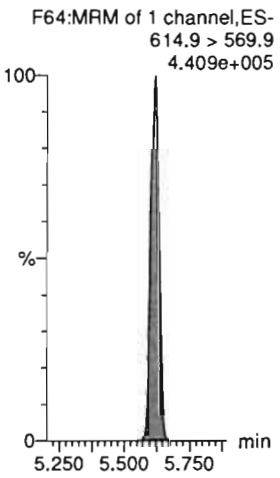
PFTeDA



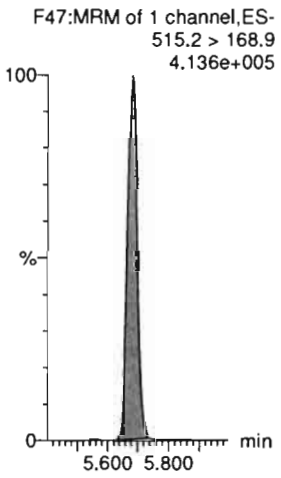
13C2-10:2 FTS-EIS



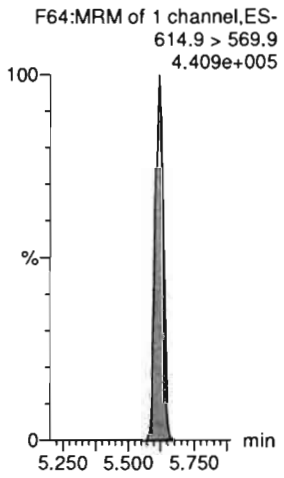
13C2-PFDoA-EIS



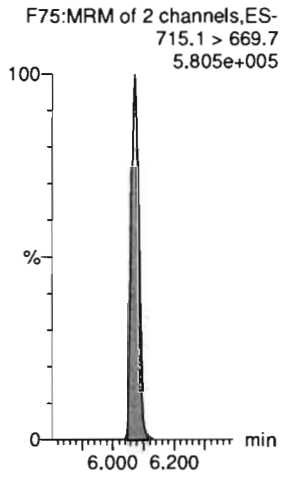
d3-N-MeFOSA-EIS



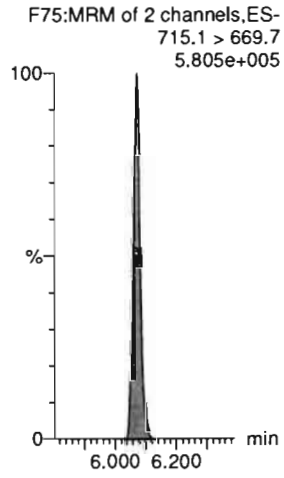
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

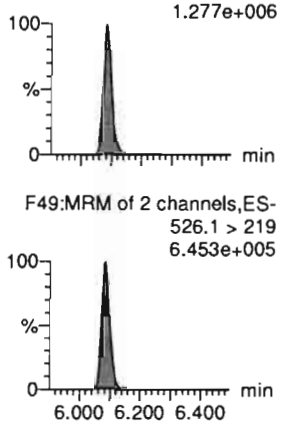


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

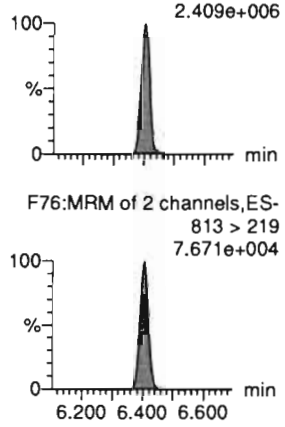
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-11, Date: 21-Jul-2020, Time: 17:01:05, ID: ST200720P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

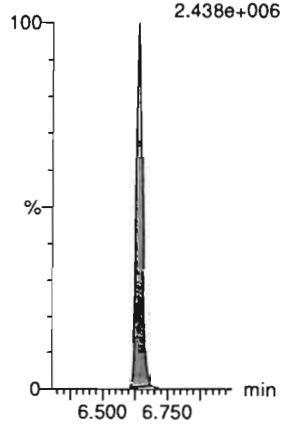
N-EtFOSA



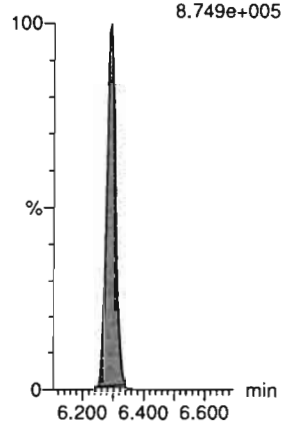
PFHxDA



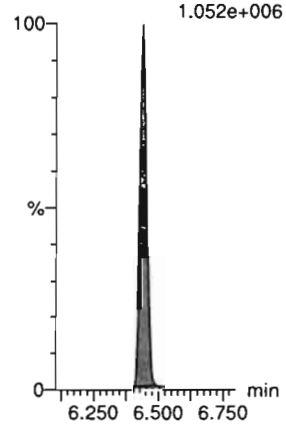
PFODA



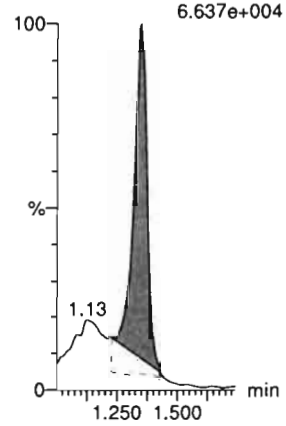
N-MeFOSE



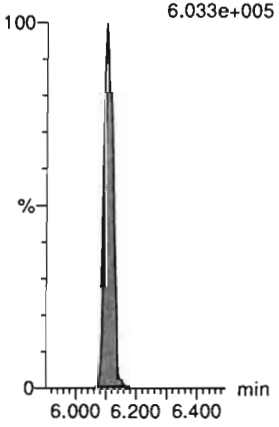
N-EtFOSE



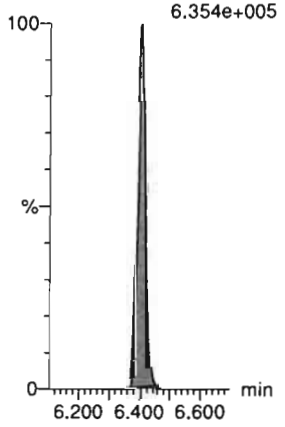
13C3-PFBA-RSD



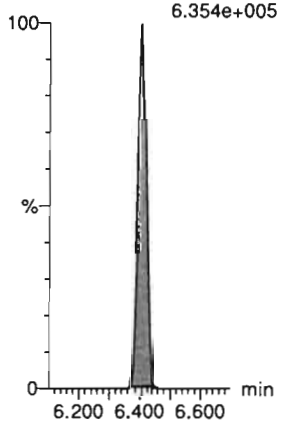
d5-N-ETFOSA-EIS



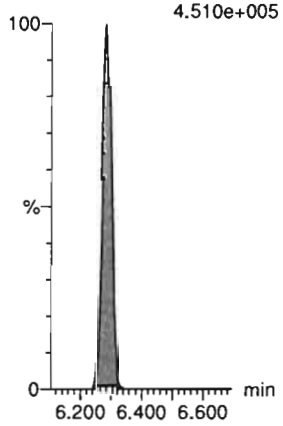
13C2-PFHxDA-EIS



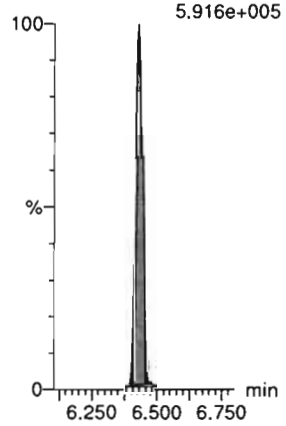
13C2-PFHxDA-EIS



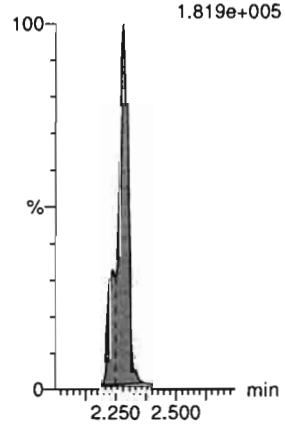
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



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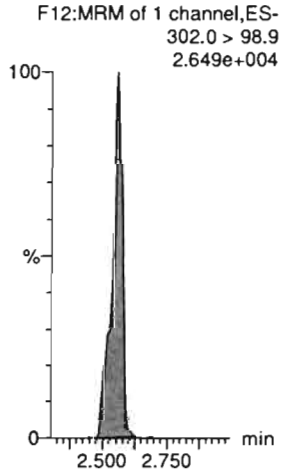
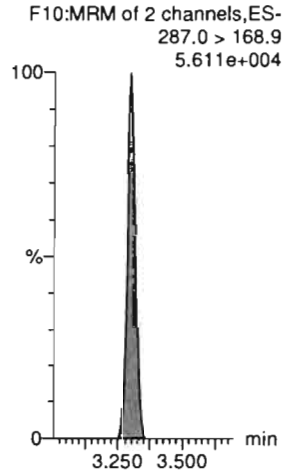
Name: 200721P1-11, Date: 21-Jul-2020, Time: 17:01:05, ID: ST200720P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

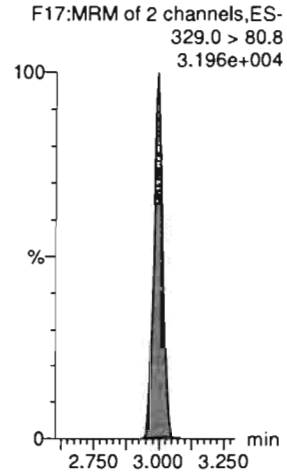
13C3-PFBS-RSD



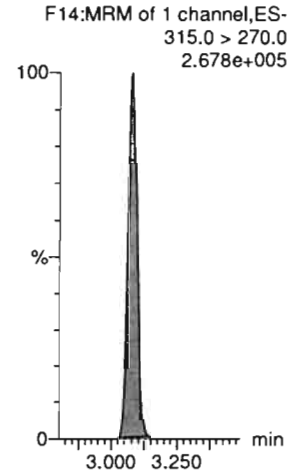
13C3-HFPO-DA-RSD



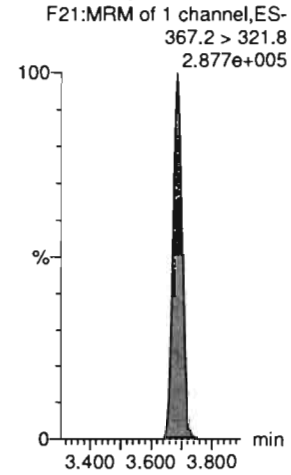
13C2-4:2 FTS-RSD



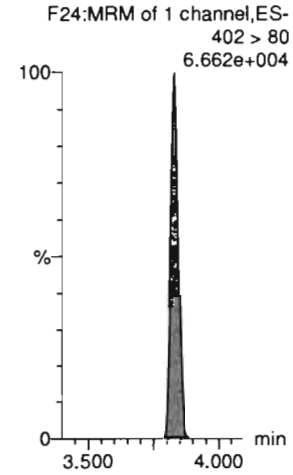
13C2-PFHxA-RSD



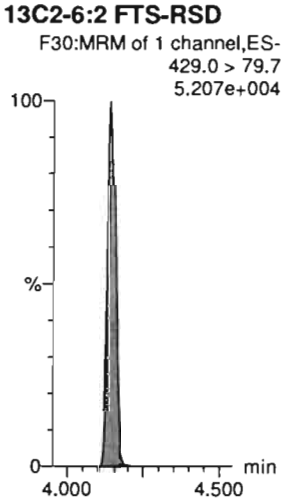
13C4-PFHpA-RSD



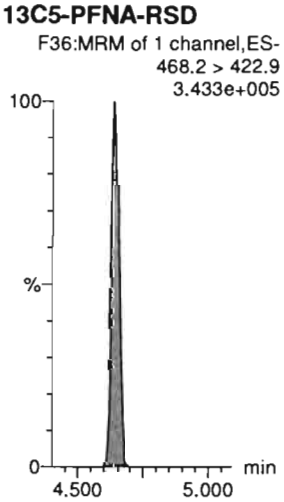
13C3-PFHxS-RSD



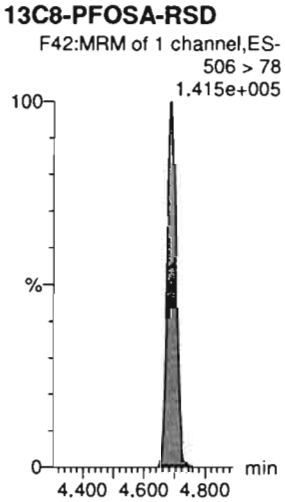
13C2-6:2 FTS-RSD



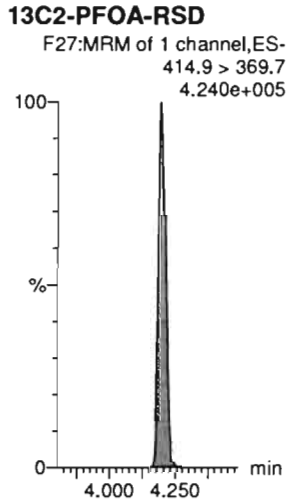
13C5-PFNA-RSD



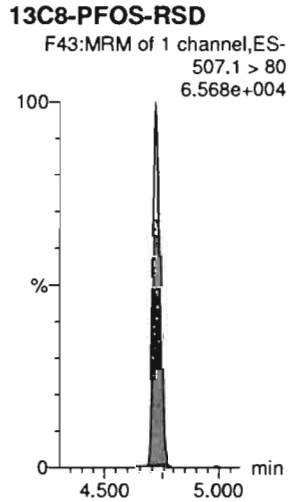
13C8-PFOSA-RSD



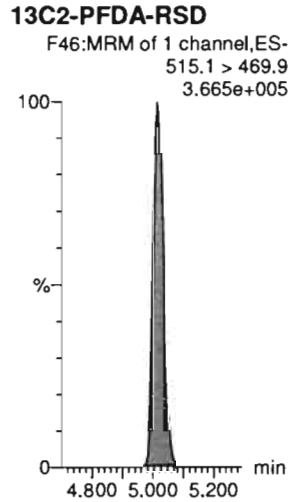
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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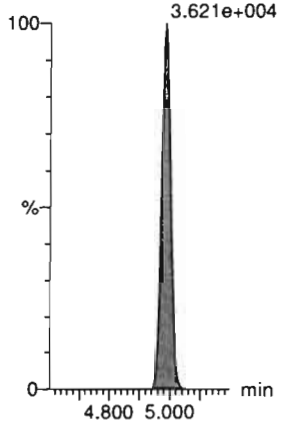
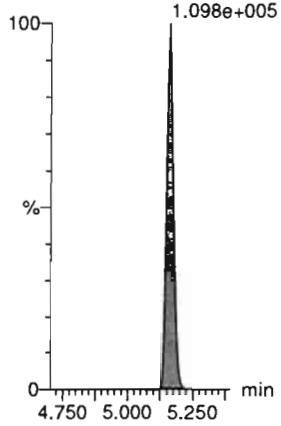
Name: 200721P1-11, Date: 21-Jul-2020, Time: 17:01:05, ID: ST200720P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

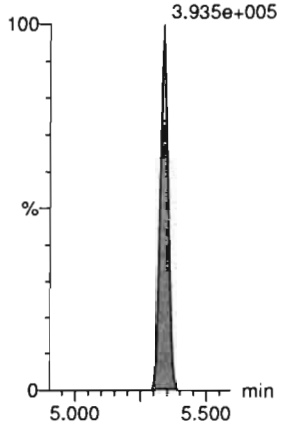
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.621e+004



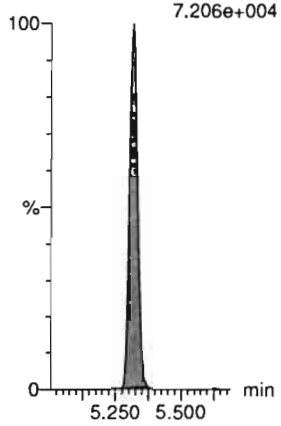
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.098e+005



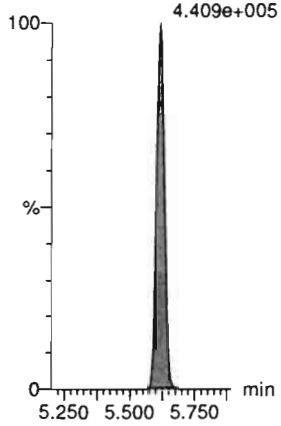
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.935e+005



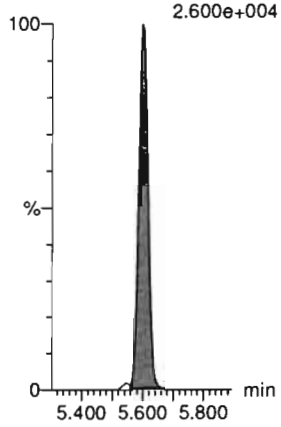
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.206e+004



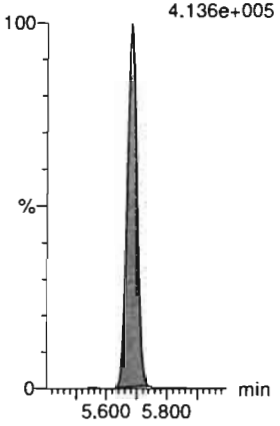
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.409e+005



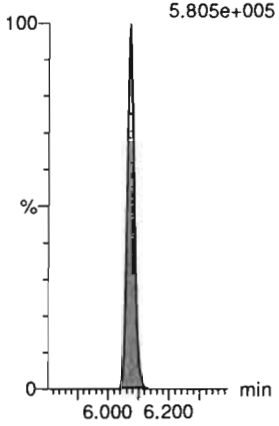
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.600e+004



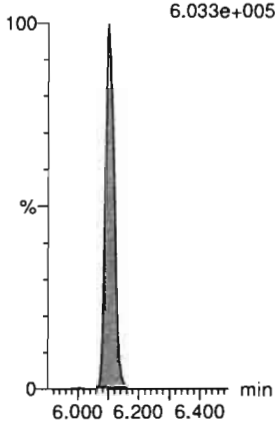
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.136e+005



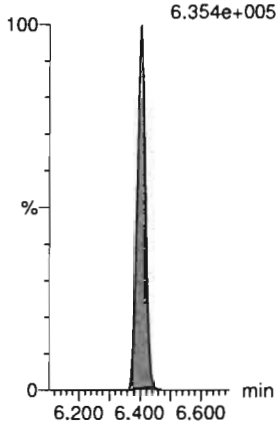
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.805e+005



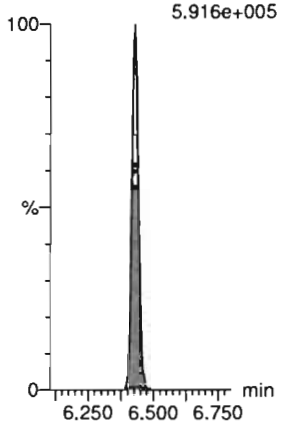
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.033e+005



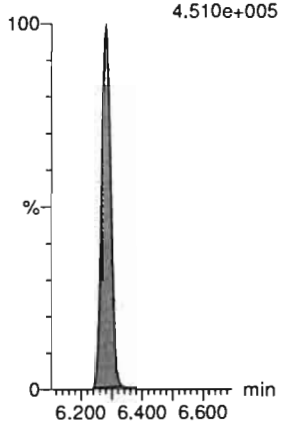
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.354e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.916e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.510e+005



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
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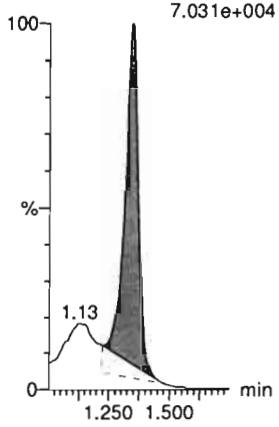
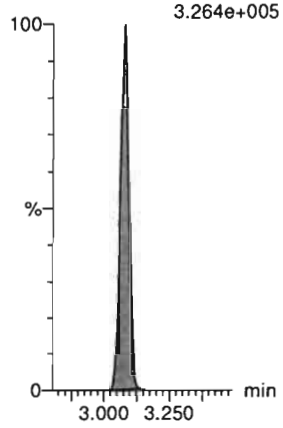
Name: 200721P1-11, Date: 21-Jul-2020, Time: 17:01:05, ID: ST200720P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

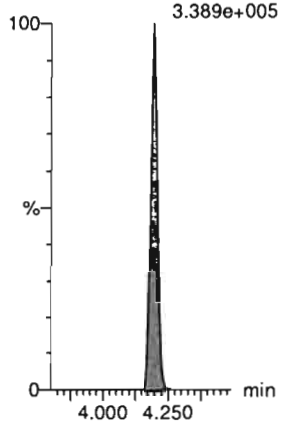
13C4-PFBA



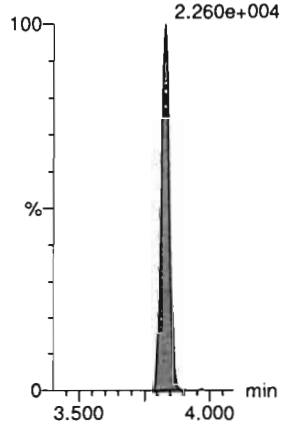
13C5-PFHxA



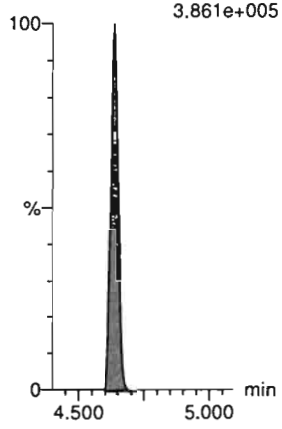
13C8-PFOA



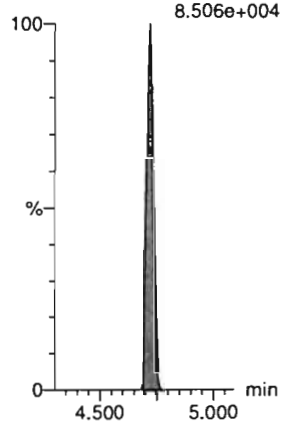
18O2-PFHxS



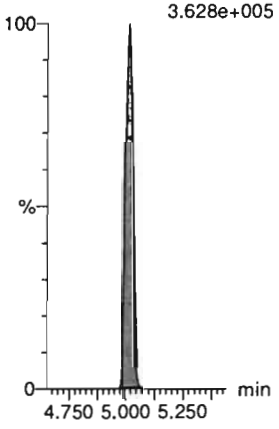
13C9-PFNA



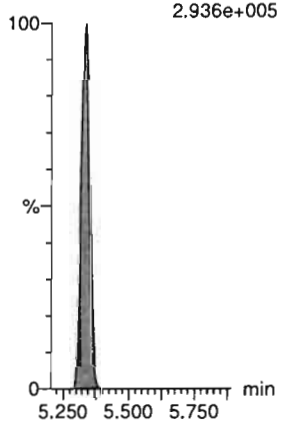
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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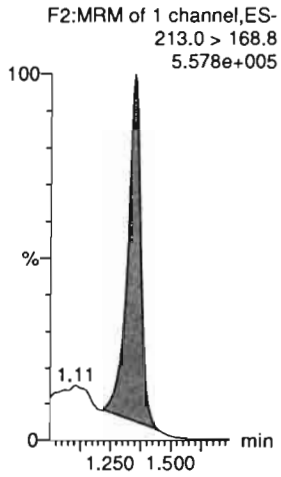
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-12, Date: 21-Jul-2020, Time: 17:11:41, ID: ~~ST200720P1-8~~ ST200721P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

PFBA



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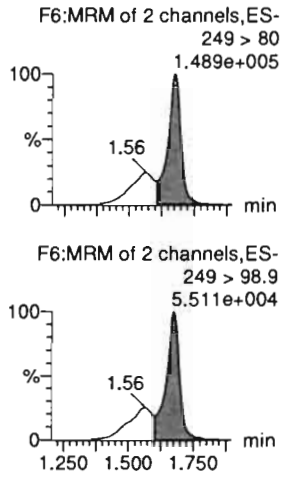
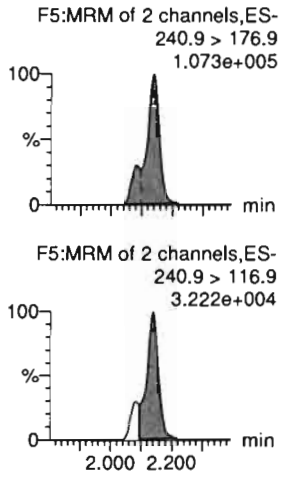


3:3 FTCA



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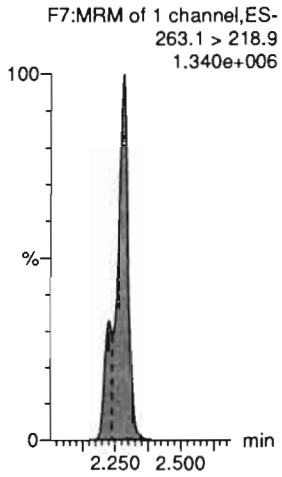

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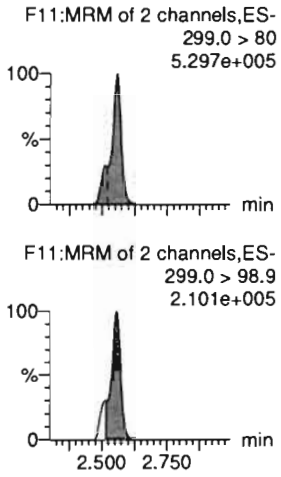
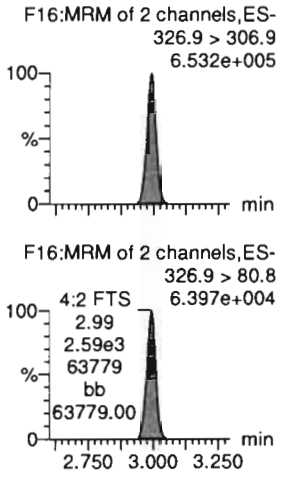


4:2 FTS



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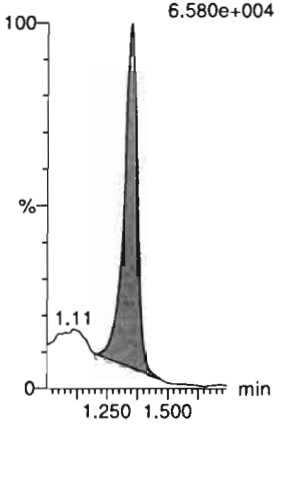

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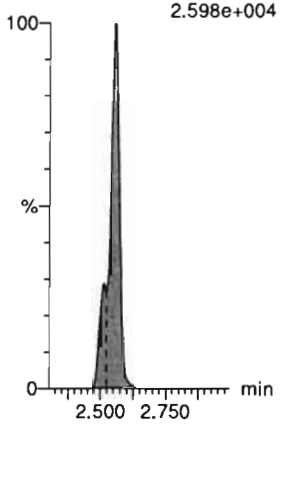

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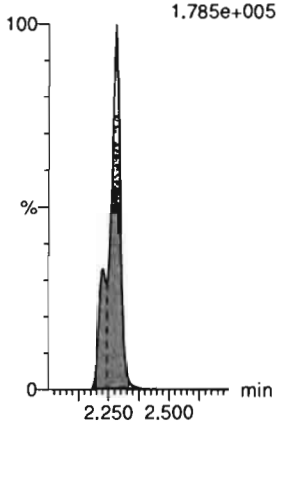

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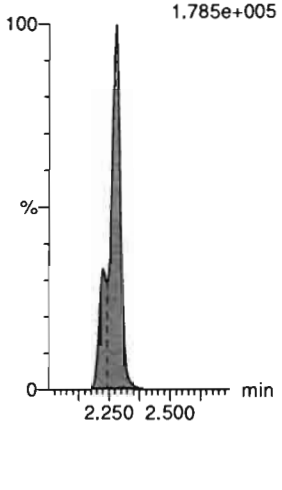

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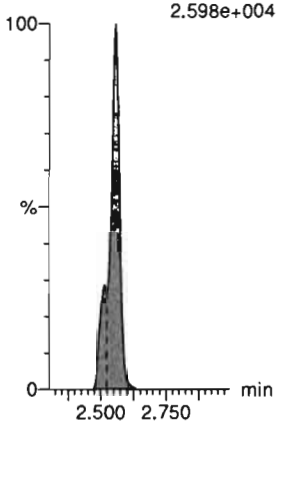
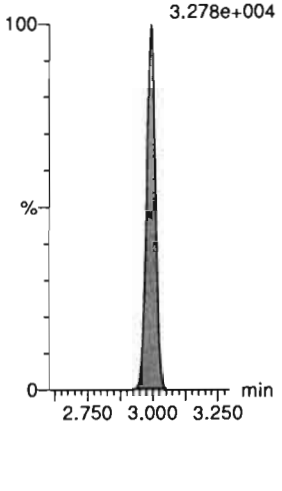


13C2-4:2 FTS-EIS



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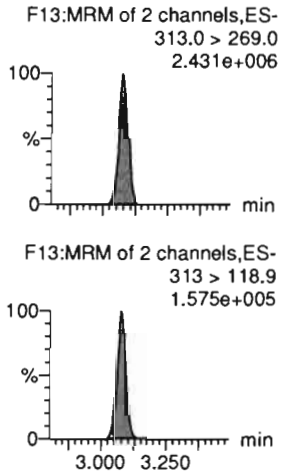
PFHxA



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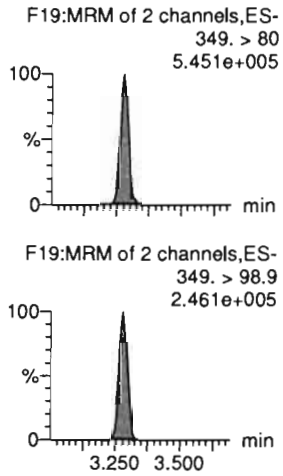
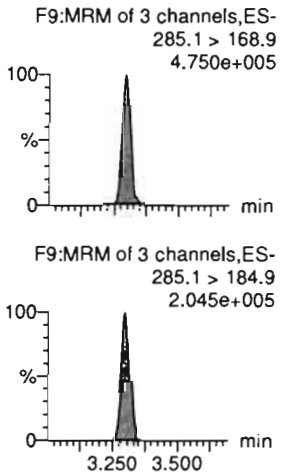
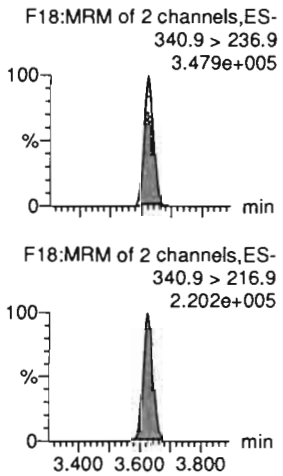


HFPO-DA



5:3 FTCA



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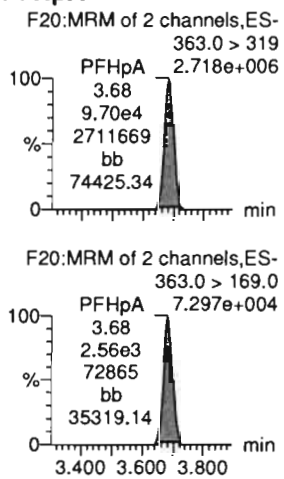
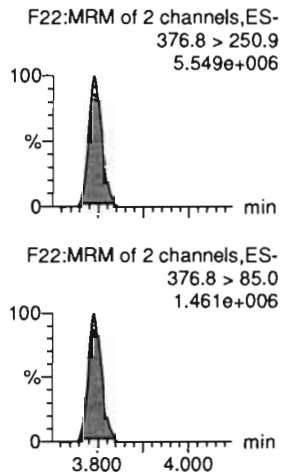


ADONA



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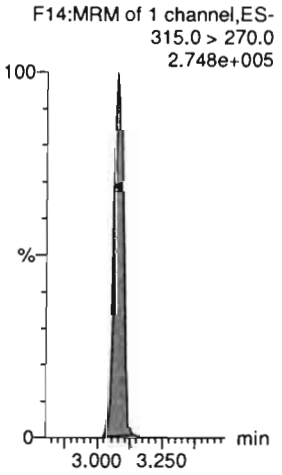
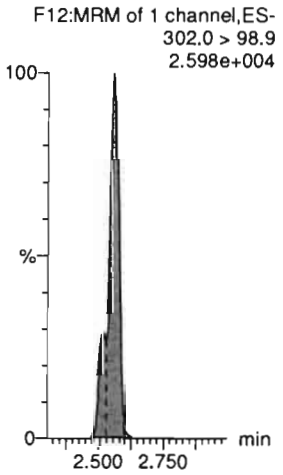


13C3-PFBS-EIS



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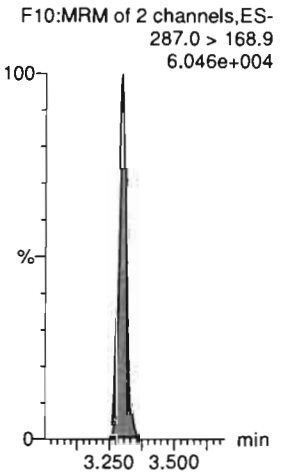
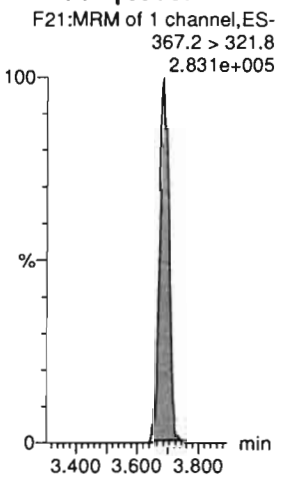


13C4-PFHpA-EIS



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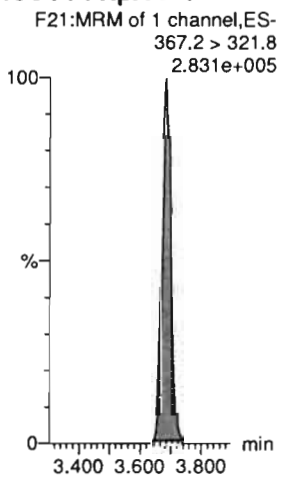

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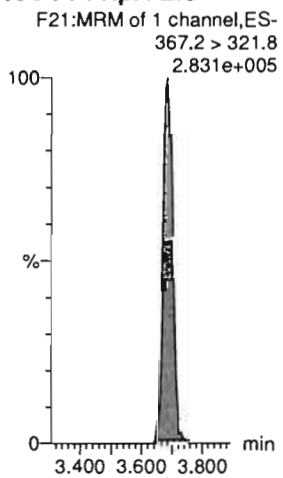

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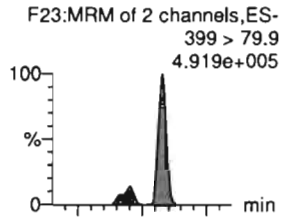
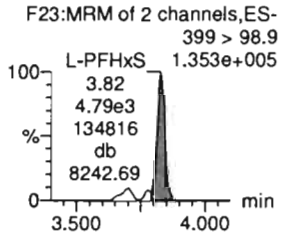
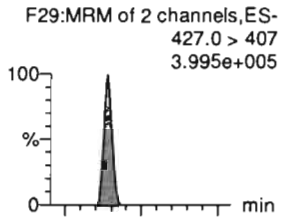
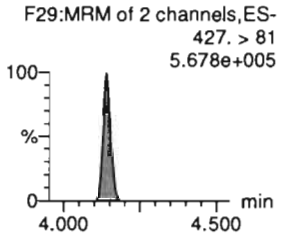
L-PFHxS



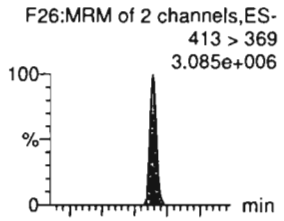


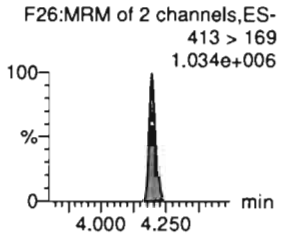
6:2 FTS



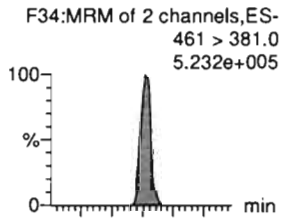


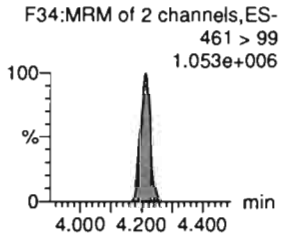
L-PFOA



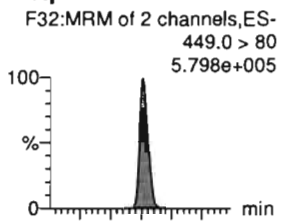


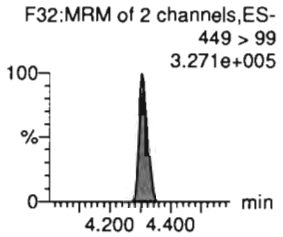
PFEChS



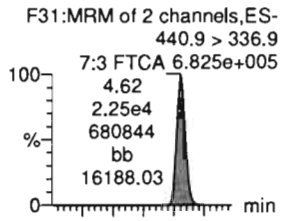


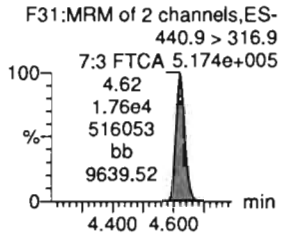
PFHpS





7:3 FTCA





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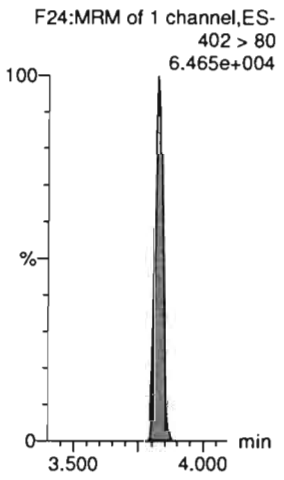
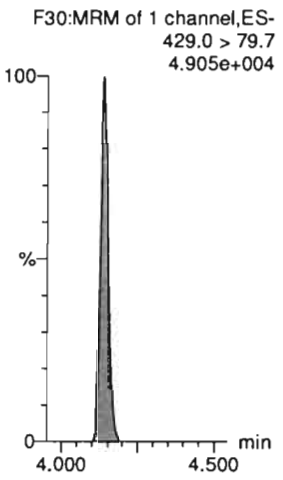
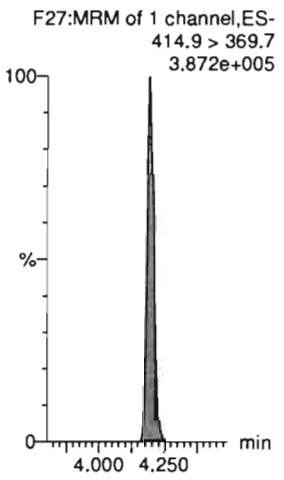


13C2-6:2 FTS-EIS



13C2-PFOA-EIS



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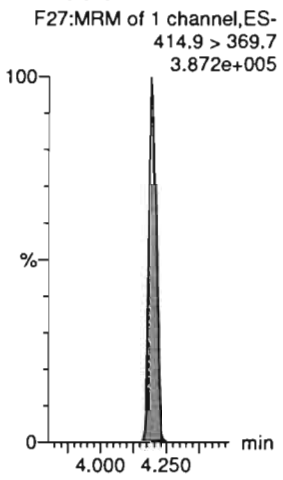
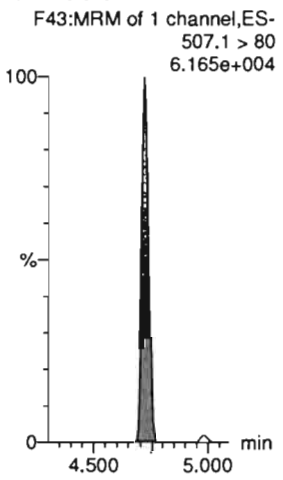
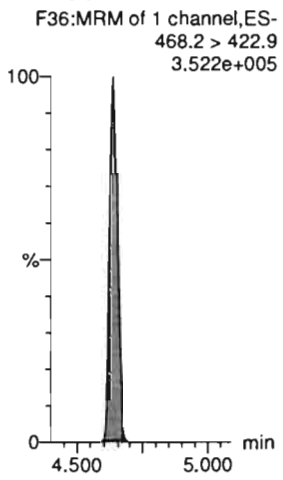


13C8-PFOS-EIS



13C5-PFNA-EIS



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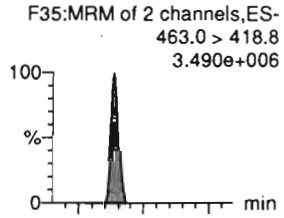
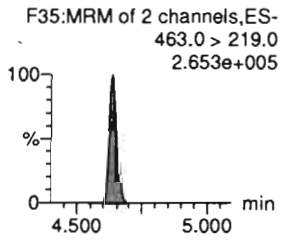
PFNA





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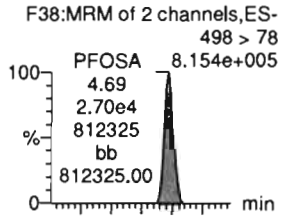
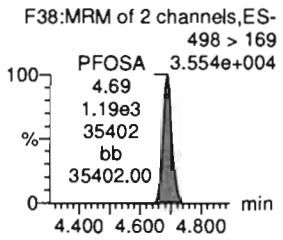
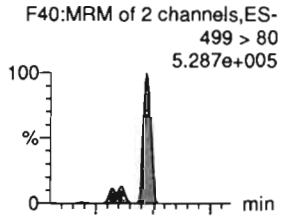
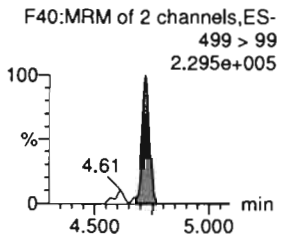


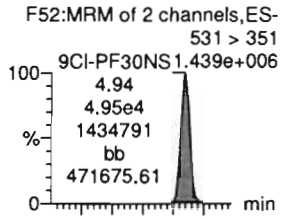


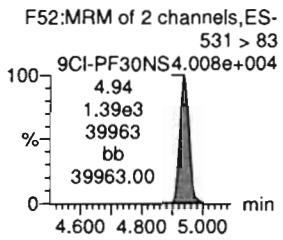
L-PFOS





9Cl-PF30NS





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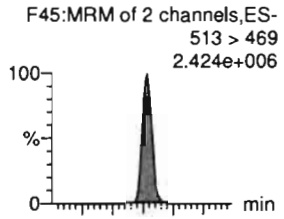
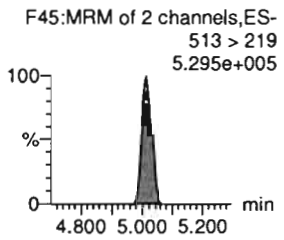
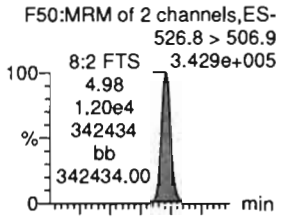
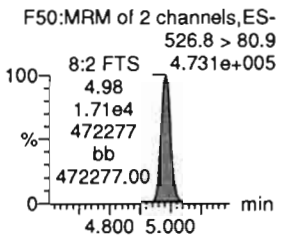


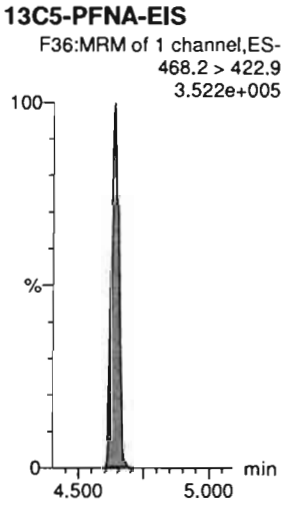


8:2 FTS

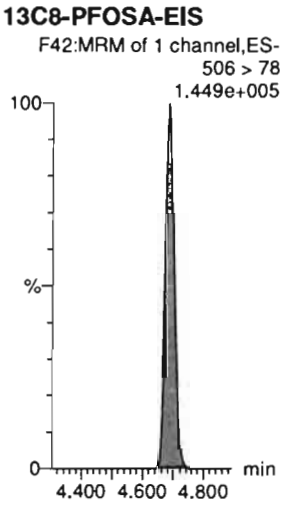




13C5-PFNA-EIS



13C8-PFOSA-EIS



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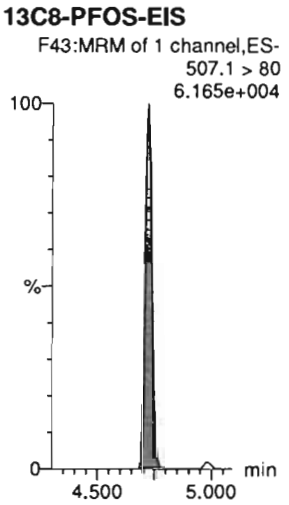

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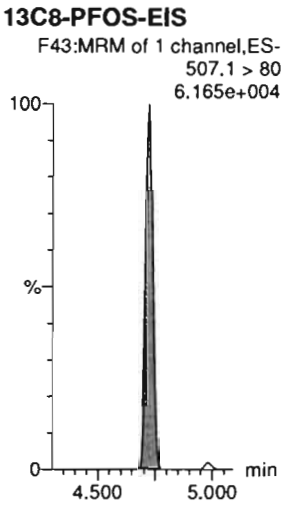

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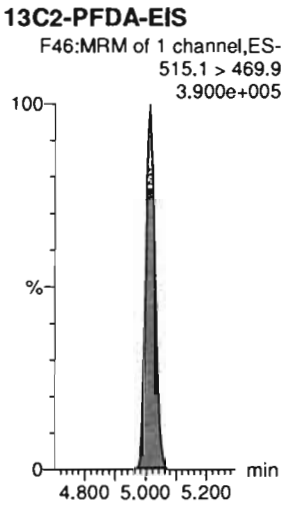
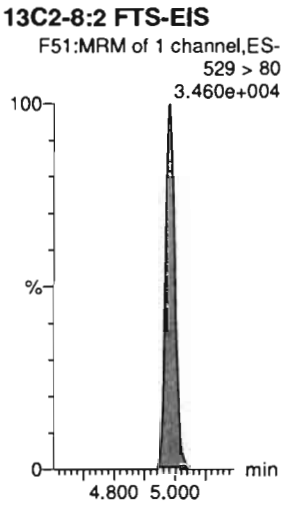


13C2-8:2 FTS-EIS



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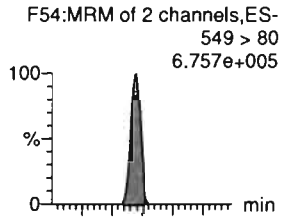
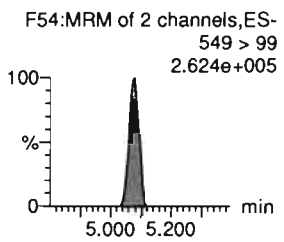
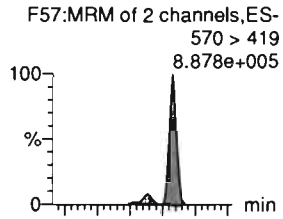
Name: 200721P1-12, Date: 21-Jul-2020, Time: 17:11:41, ID: ST200720P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

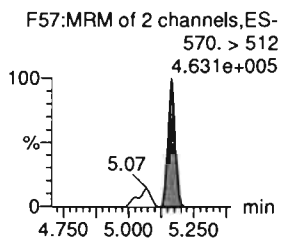
PFNS



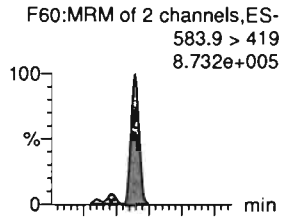


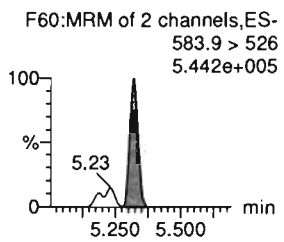
L-MeFOSAA





L-EtFOSAA





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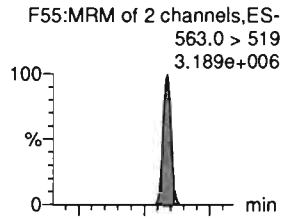

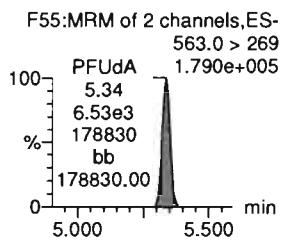

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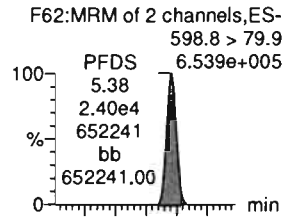

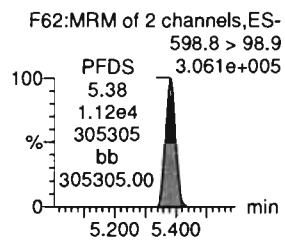

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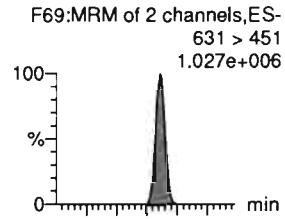
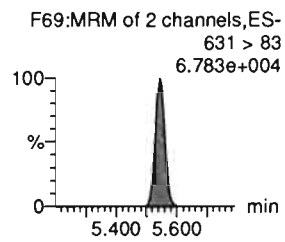
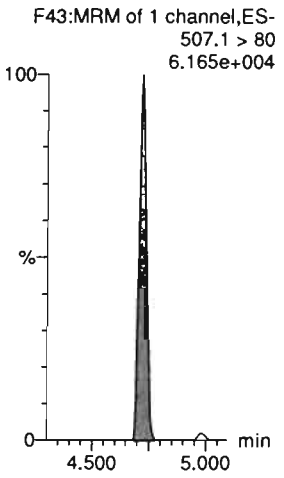
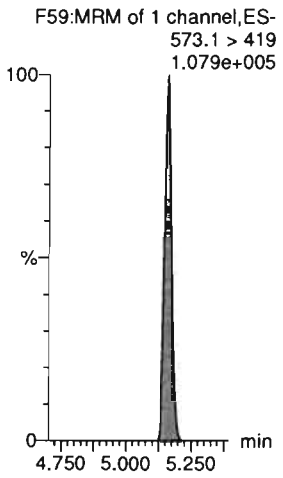




13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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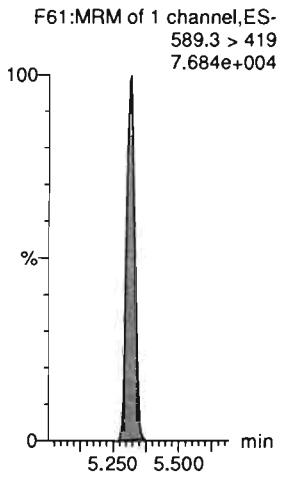

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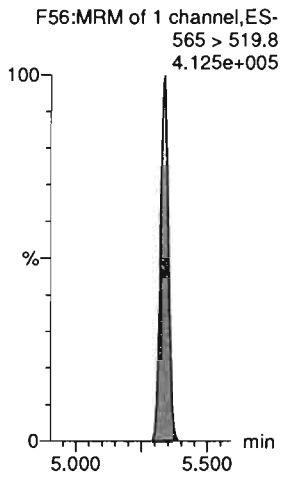

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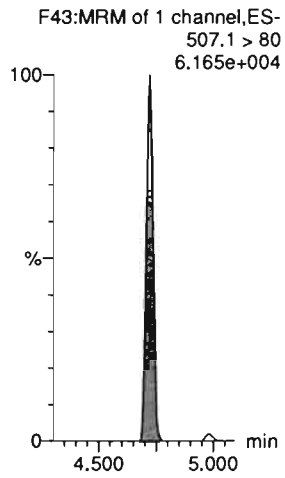

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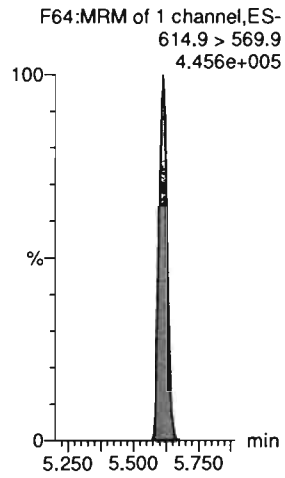

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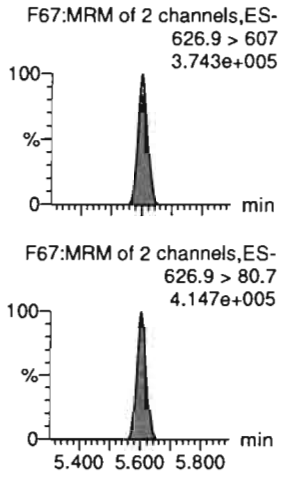
10:2 FTS



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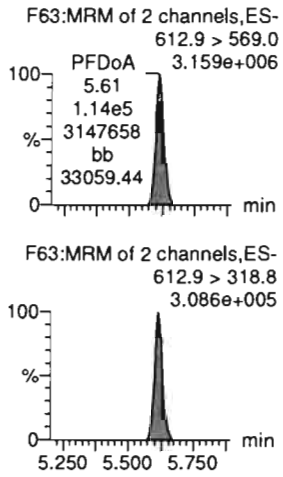

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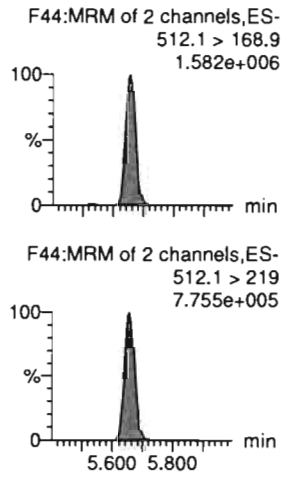

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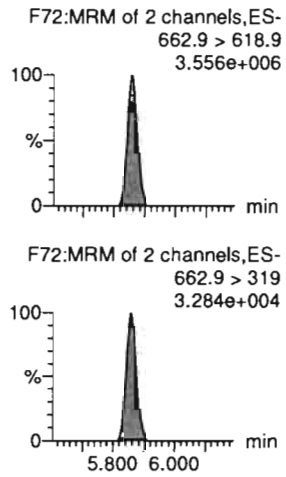

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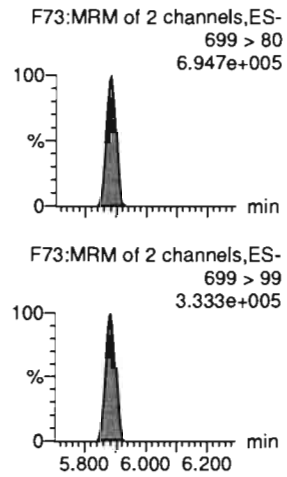
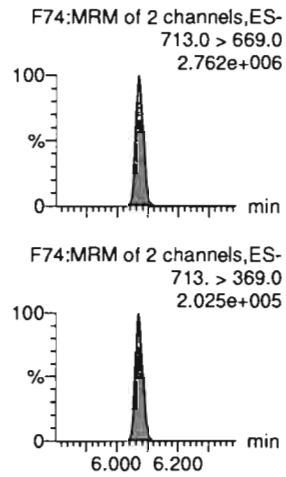


PFTeDA



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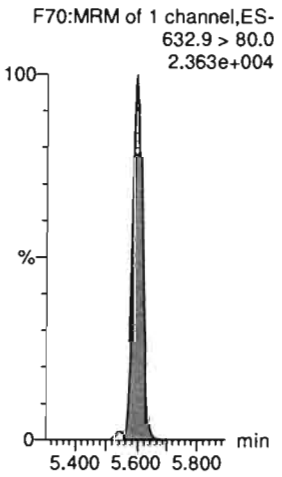
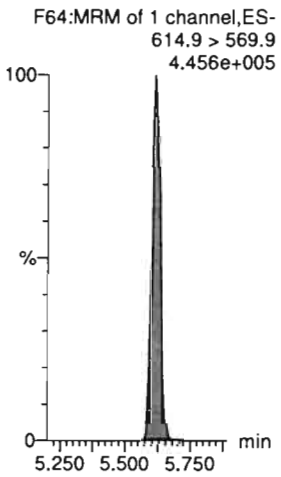


13C2-PFDoA-EIS



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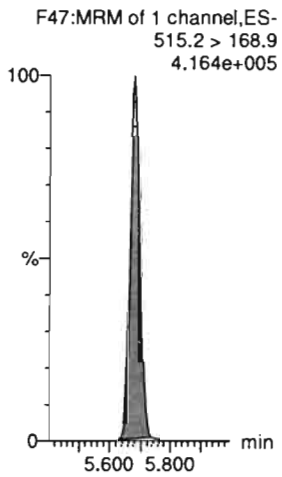

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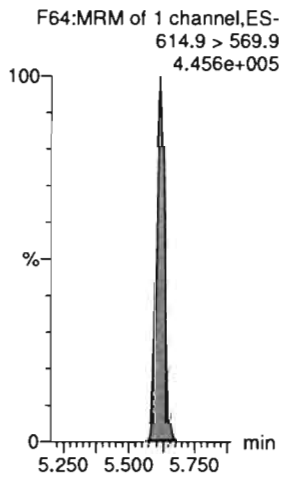

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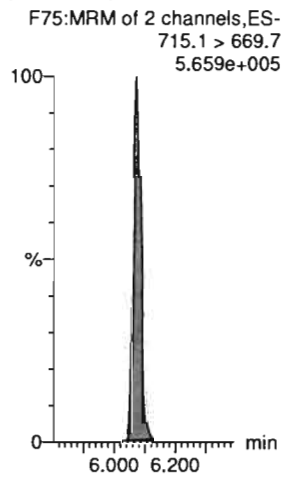

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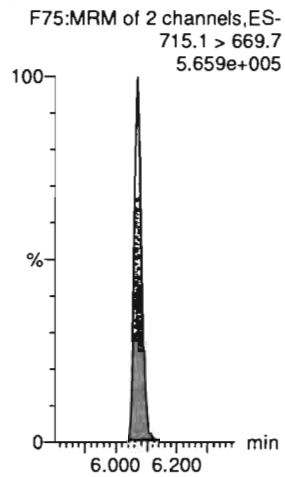

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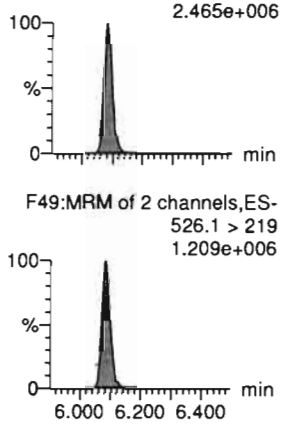
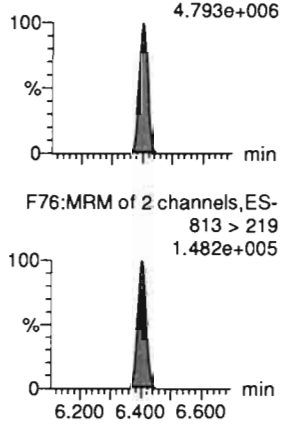
Name: 200721P1-12, Date: 21-Jul-2020, Time: 17:11:41, ID: ST200720P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

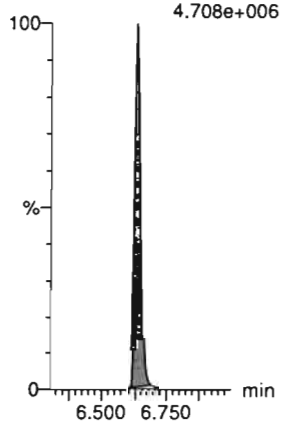
N-EtFOSA



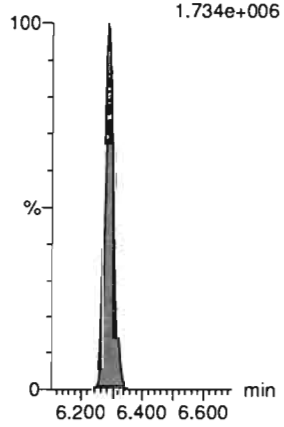
PFHxDA



PFODA



N-MeFOSE



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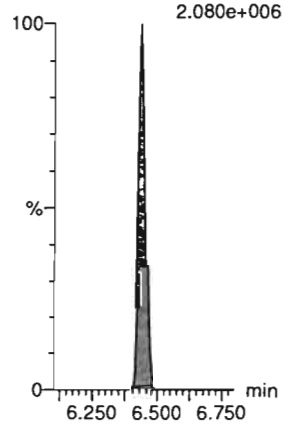

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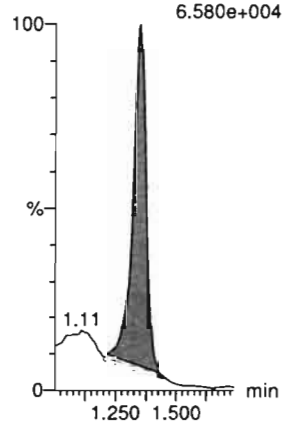
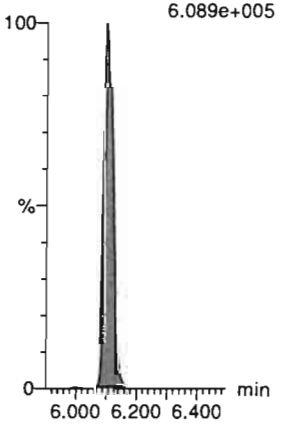
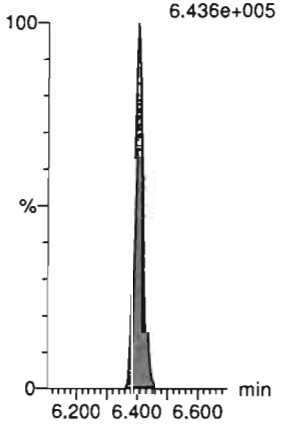


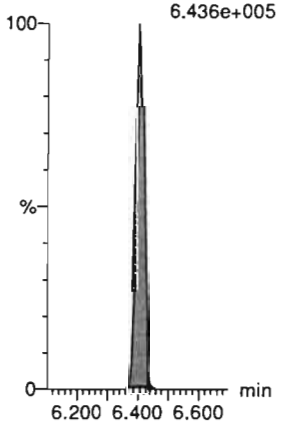
d5-N-ETFOSA-EIS



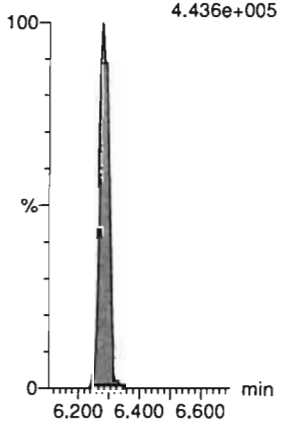
13C2-PFHxDA-EIS



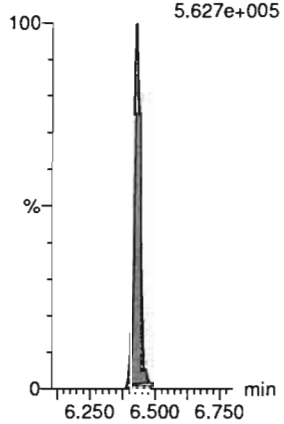
13C2-PFHxDA-EIS



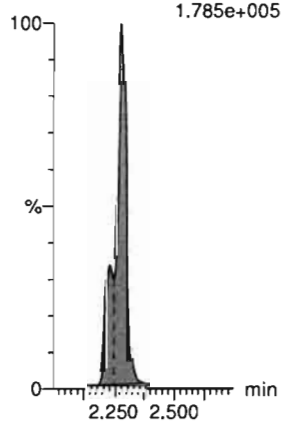
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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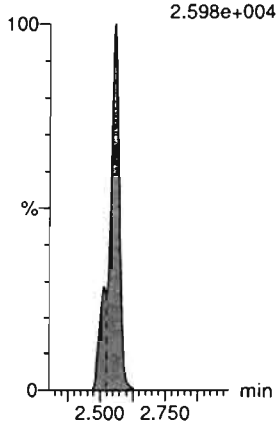
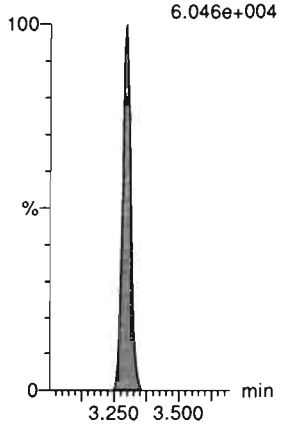
Name: 200721P1-12, Date: 21-Jul-2020, Time: 17:11:41, ID: ST200720P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

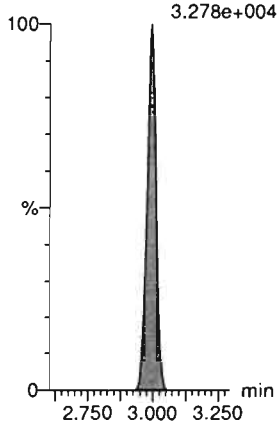
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.598e+004



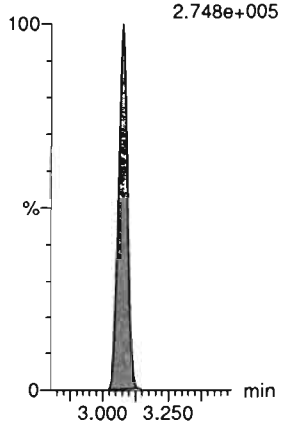
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
6.046e+004



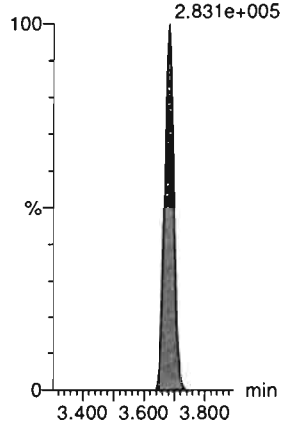
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.278e+004



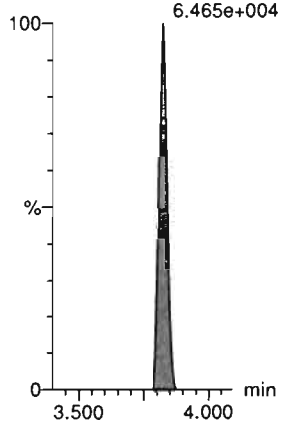
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.748e+005



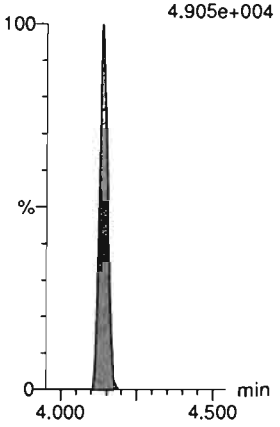
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.831e+005



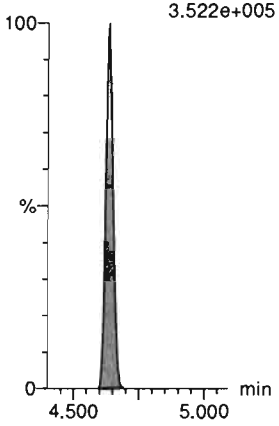
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.465e+004



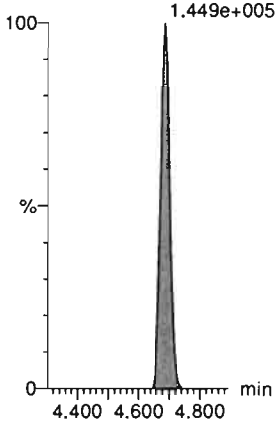
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.905e+004



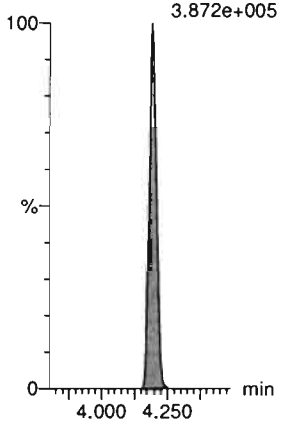
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.522e+005



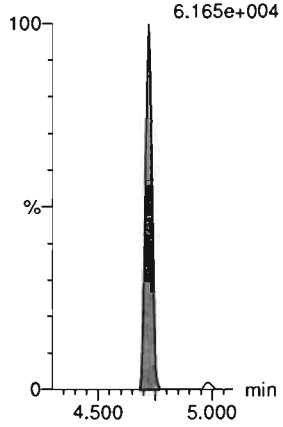
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.449e+005



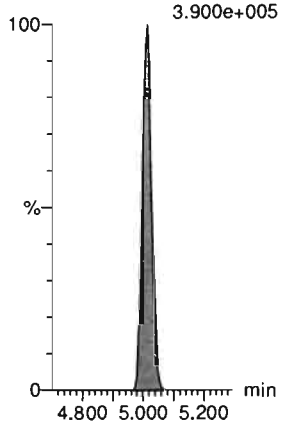
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.872e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.165e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.900e+005



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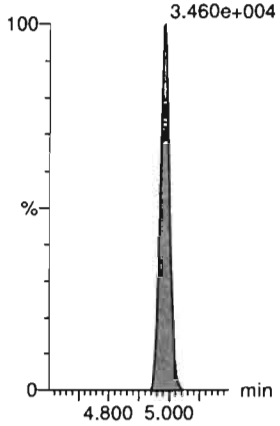
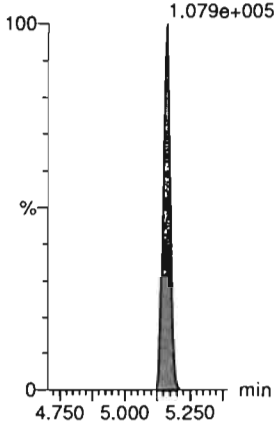
Name: 200721P1-12, Date: 21-Jul-2020, Time: 17:11:41, ID: ST200720P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

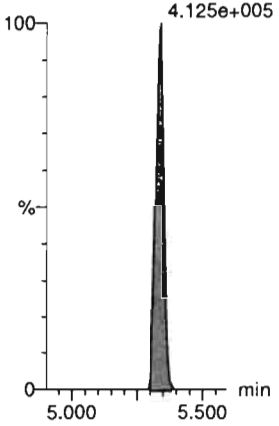
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.460e+004



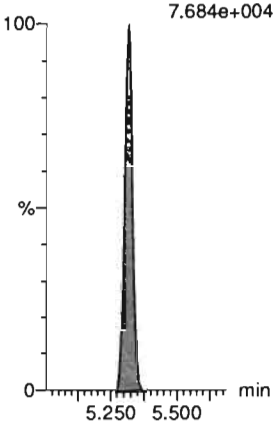
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.079e+005



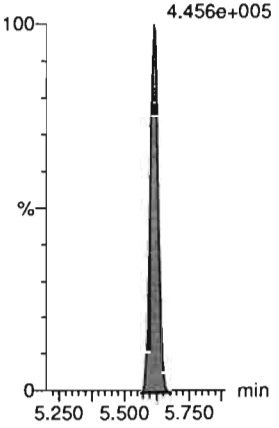
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
4.125e+005



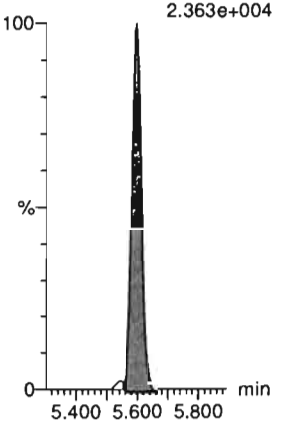
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.684e+004



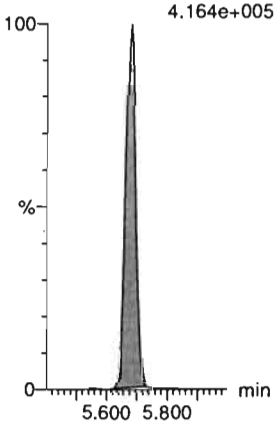
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.456e+005



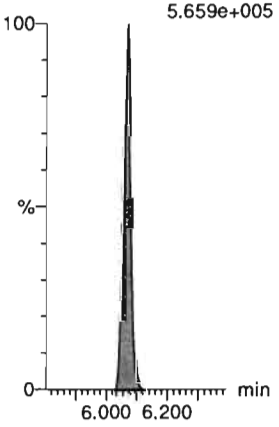
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.363e+004



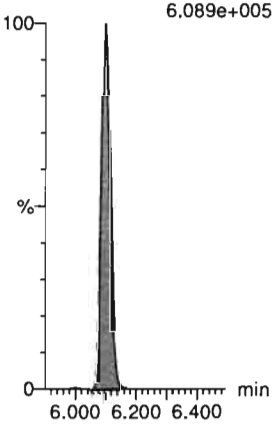
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.164e+005



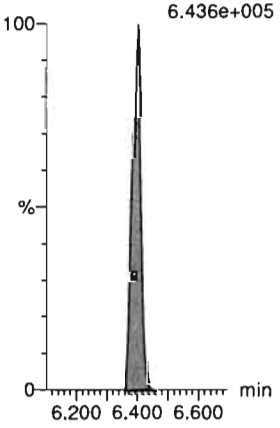
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.659e+005



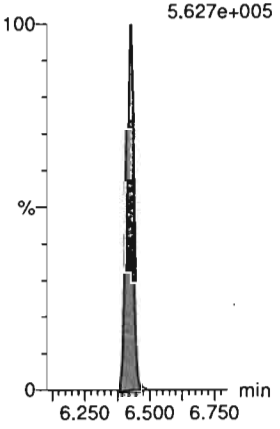
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.089e+005



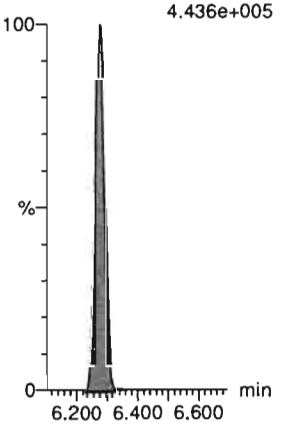
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.436e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.627e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.436e+005



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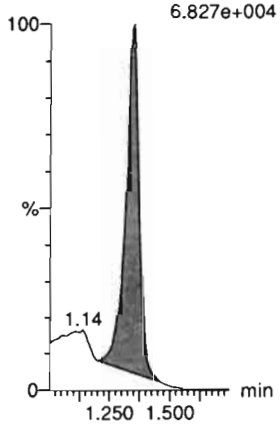
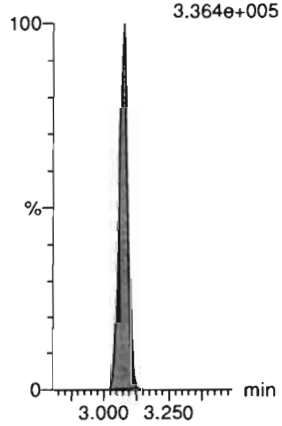
Name: 200721P1-12, Date: 21-Jul-2020, Time: 17:11:41, ID: ST200720P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

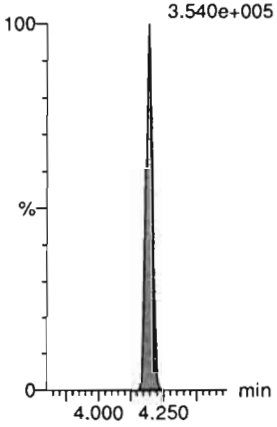
13C4-PFBA



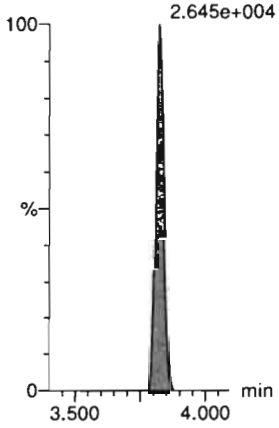
13C5-PFHxA



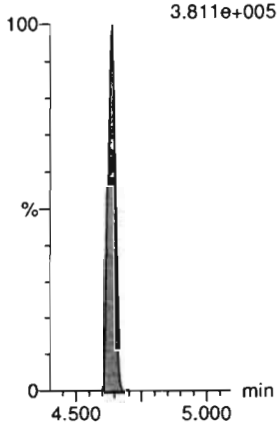
13C8-PFOA



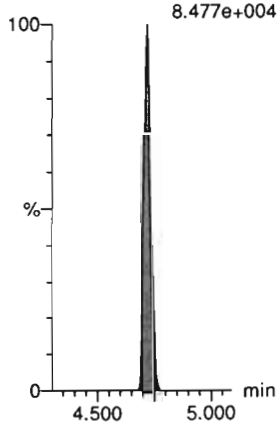
18O2-PFHxS



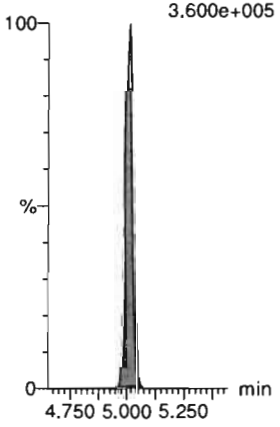
13C9-PFNA



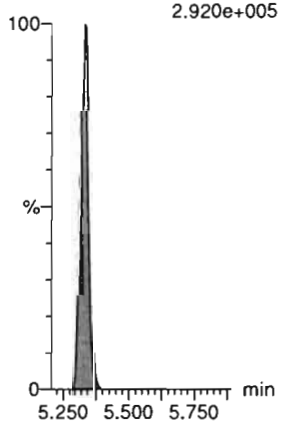
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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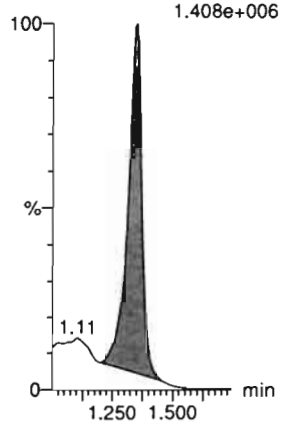
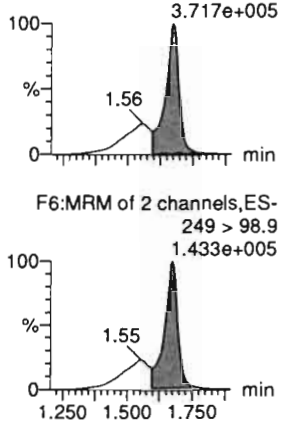
ST200721P1-9 ON 07/22/20

Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ~~ST200720P1-9~~ PFC CS6 20G1609, Description: PFC CS6 20G1609

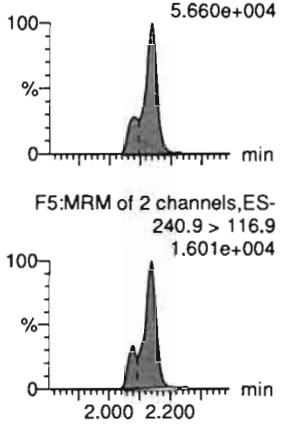
PFBA



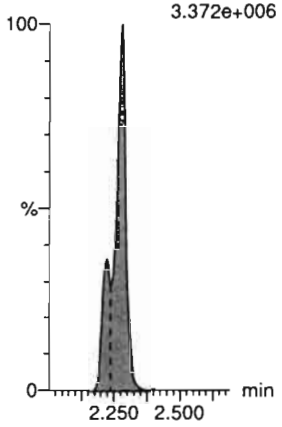
PFPrS



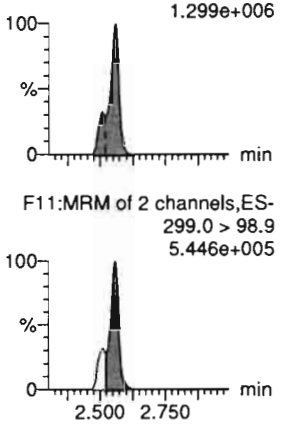
3:3 FTCA



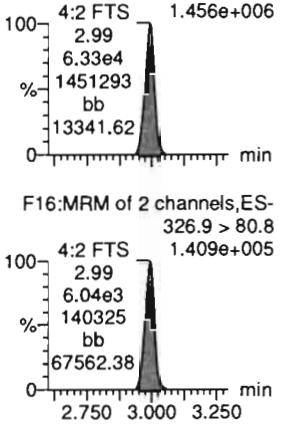
PFPeA



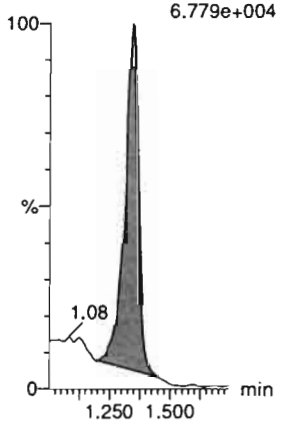
PFBS



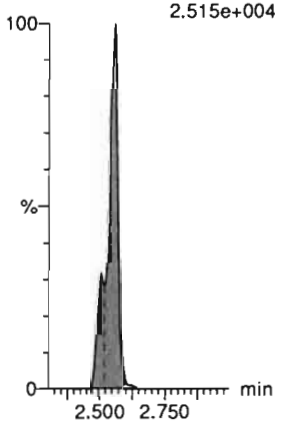
4:2 FTS



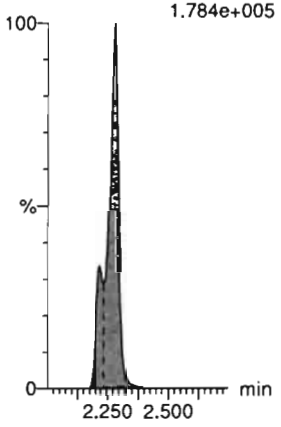
13C3-PFBA-EIS



13C3-PFBS-EIS



13C3-PFPeA-EIS



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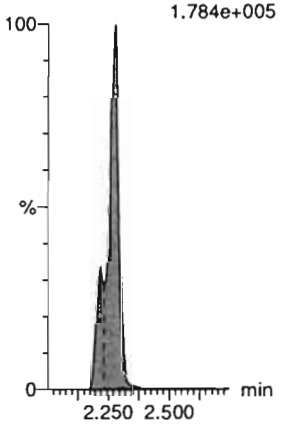

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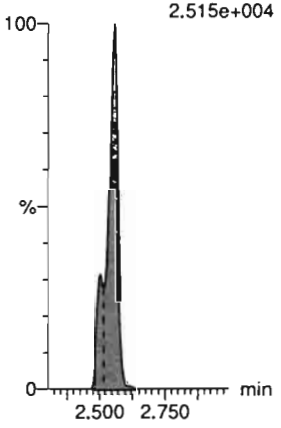
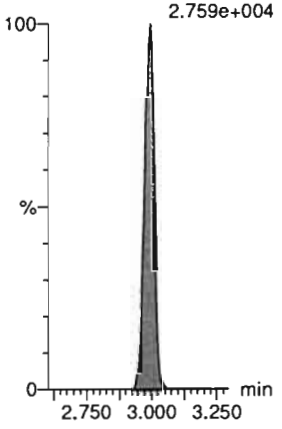


13C2-4:2 FTS-EIS



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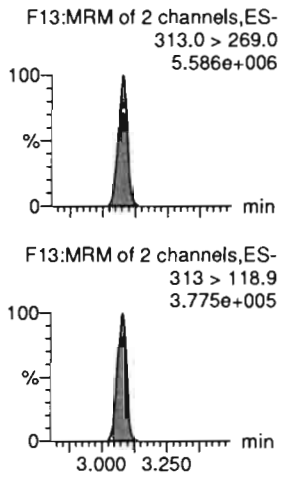
Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

PFHxA



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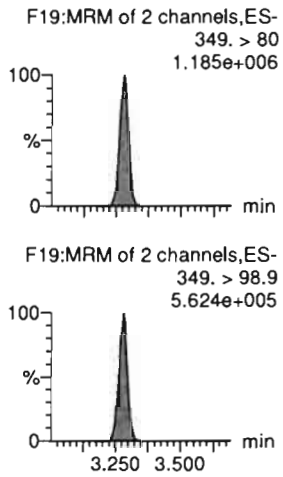

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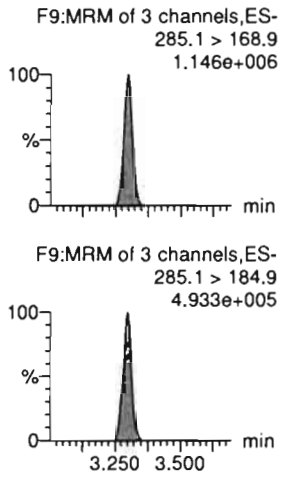
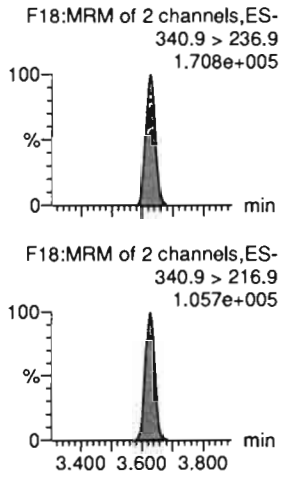
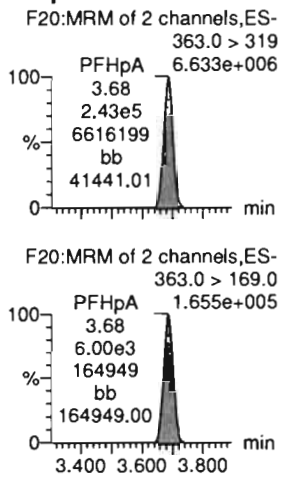


5:3 FTCA



PFHpA



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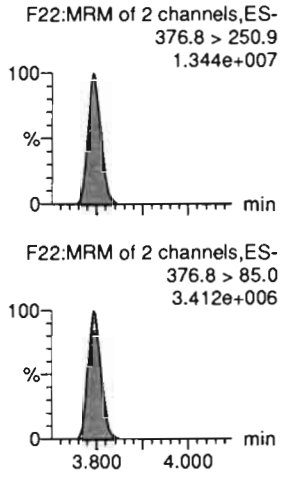
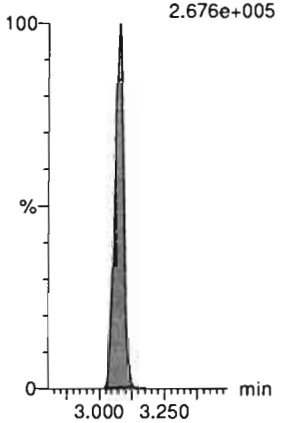
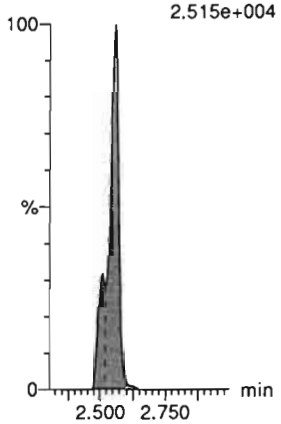


13C2-PFHxA-EIS



13C3-PFBS-EIS



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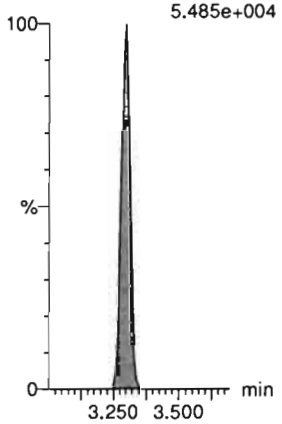
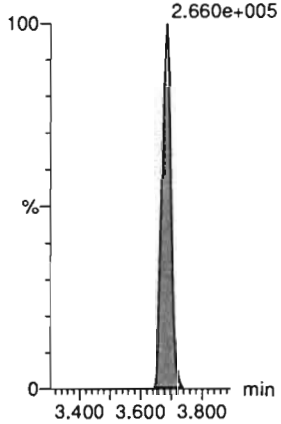


13C4-PFHpA-EIS



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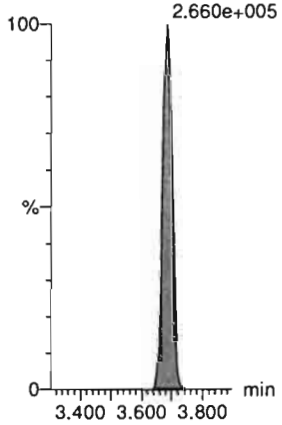

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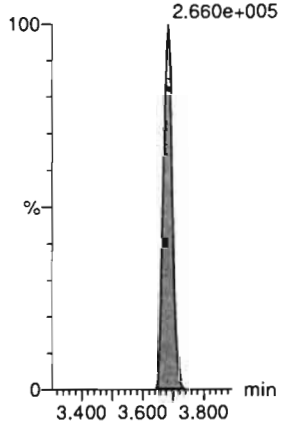

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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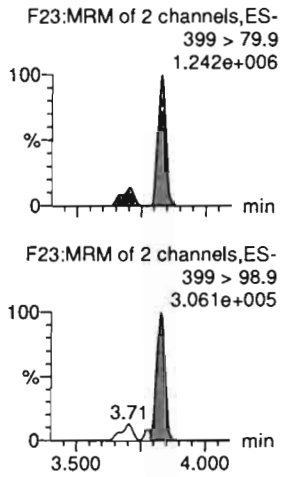
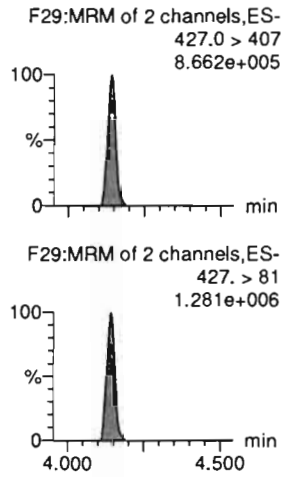
Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

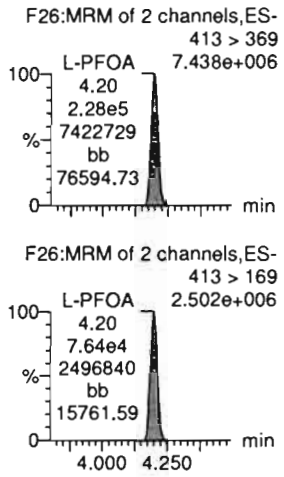
L-PFHxS



6:2 FTS



L-PFOA



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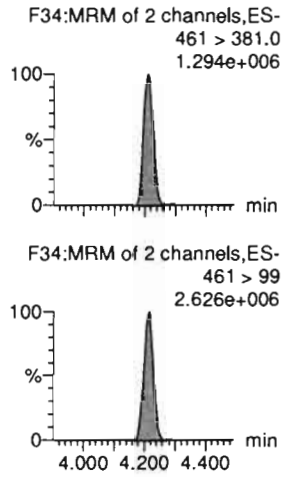

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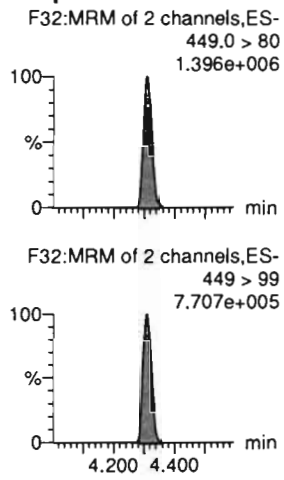
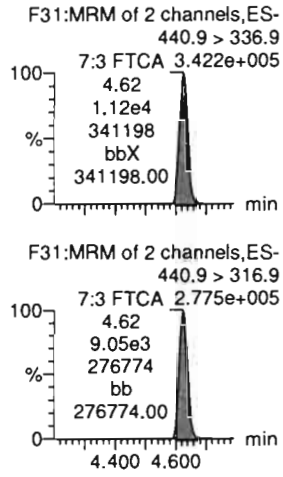


7:3 FTCA



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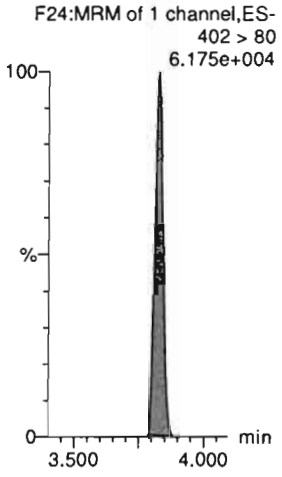
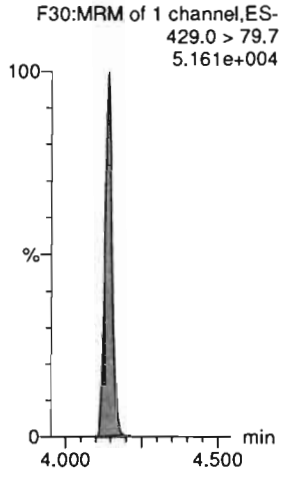


13C2-6:2 FTS-EIS



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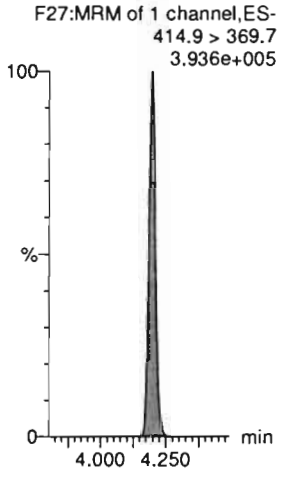

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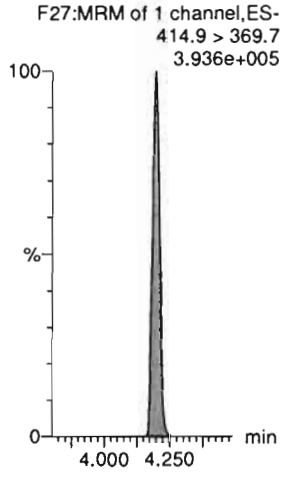
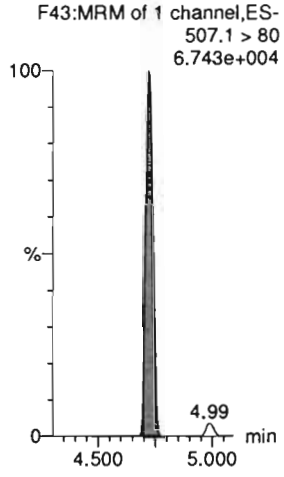
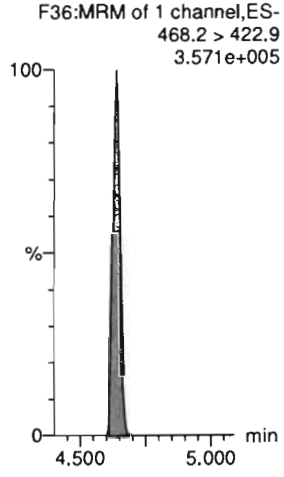


13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

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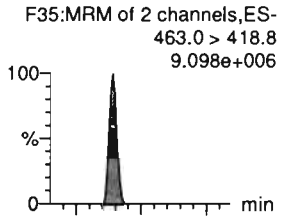

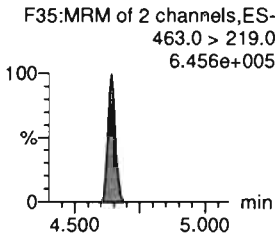

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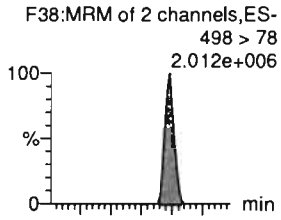
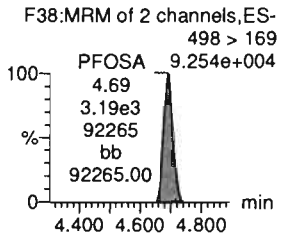
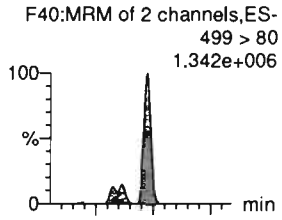
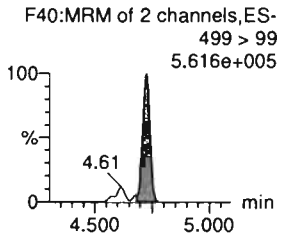




L-PFOS





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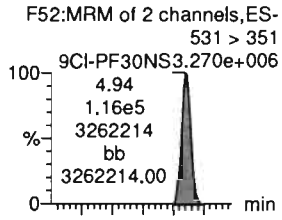

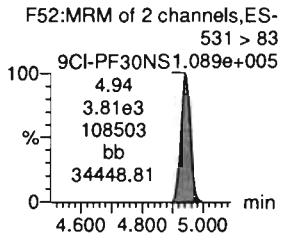

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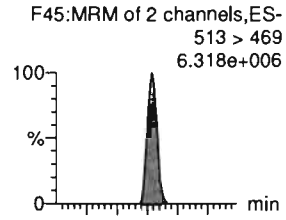
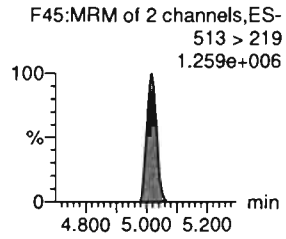
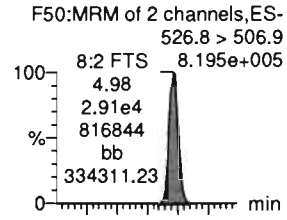
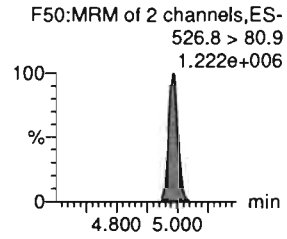


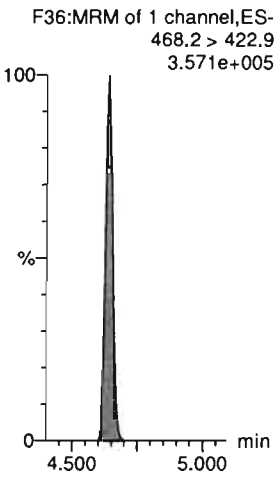


8:2 FTS

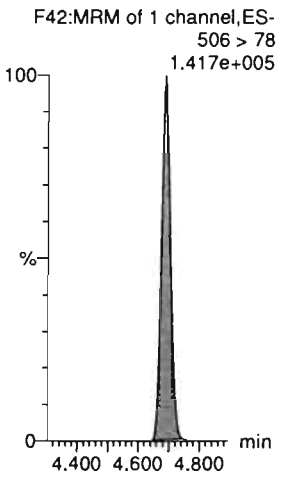




13C5-PFNA-EIS



13C8-PFOSA-EIS



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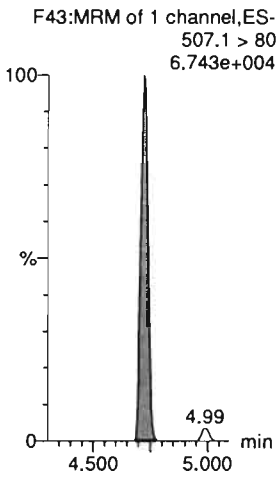

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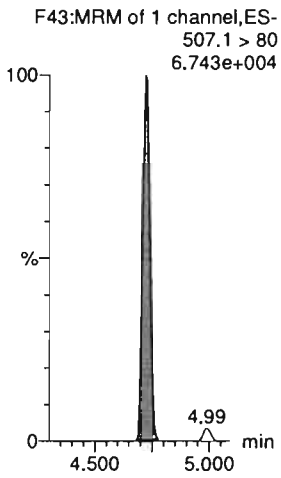
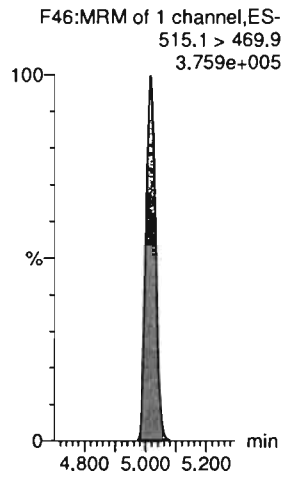
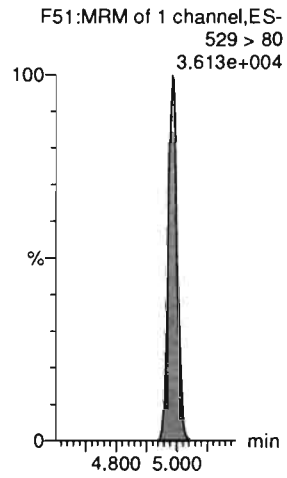


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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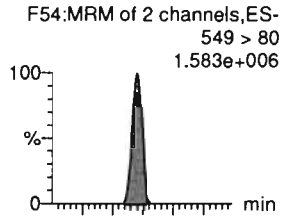
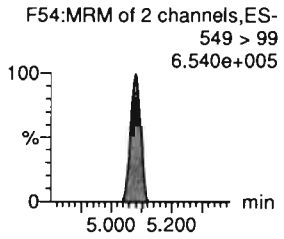
Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

PFNS





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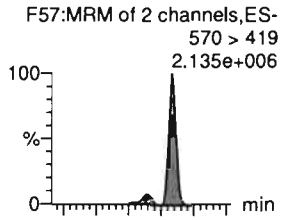

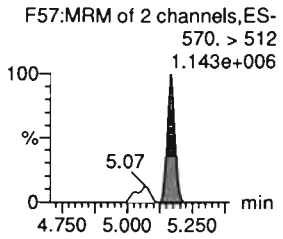

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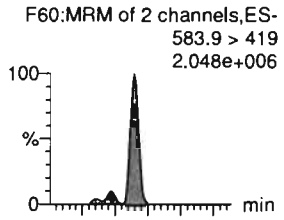

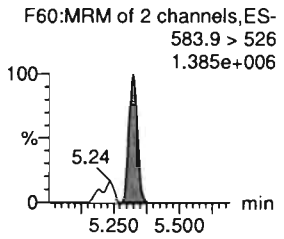

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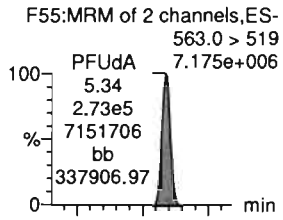
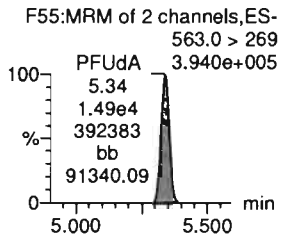
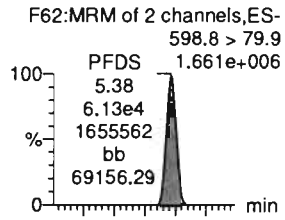
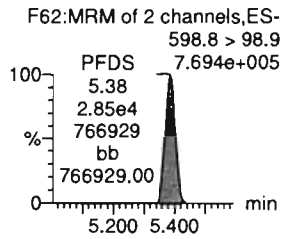


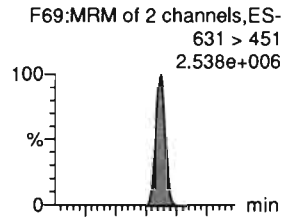


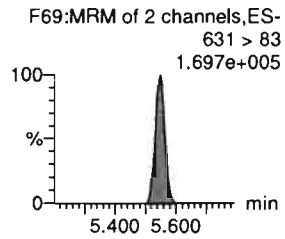
PFDS



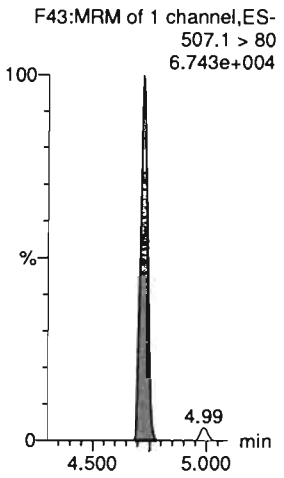


11Cl-PF30UdS

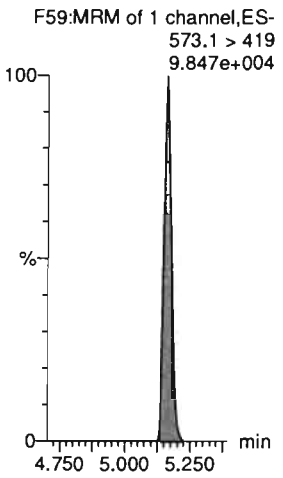




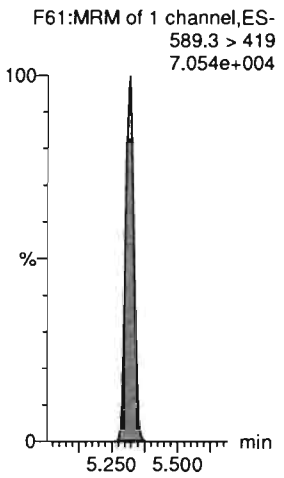
13C8-PFOS-EIS



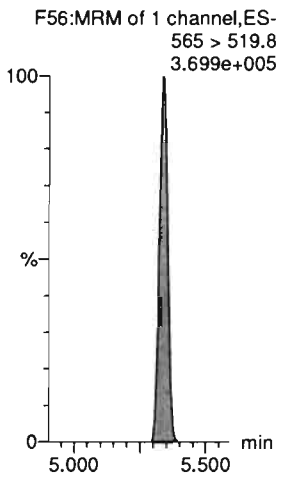
d3-N-MeFOSAA-EIS



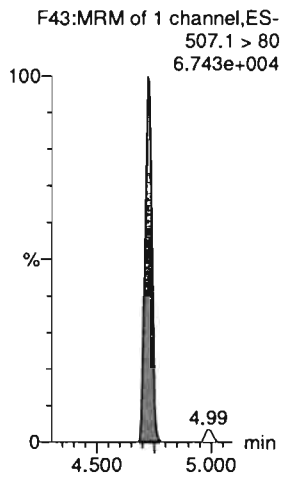
d5-N-EtFOSAA-EIS



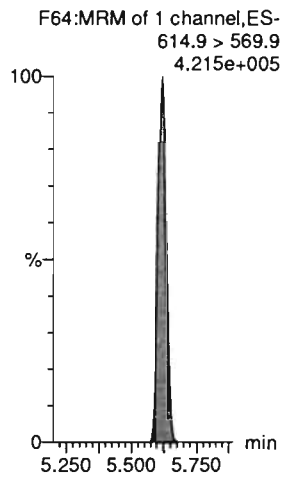
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

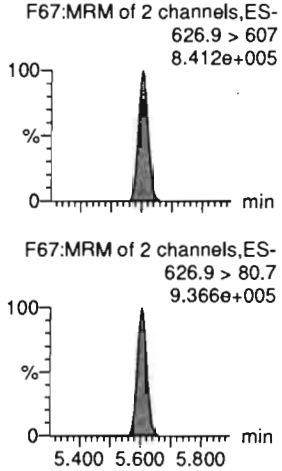


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

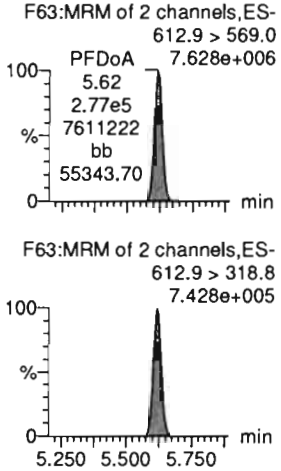
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

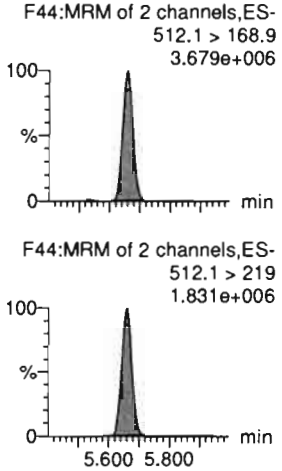
10:2 FTS



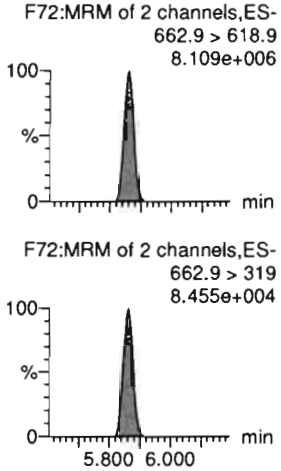
PFDoA



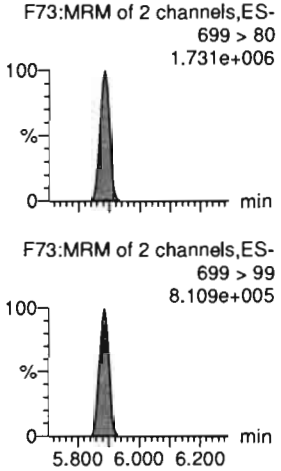
N-MeFOSA



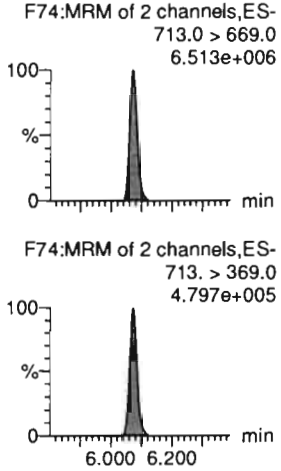
PFTrDA



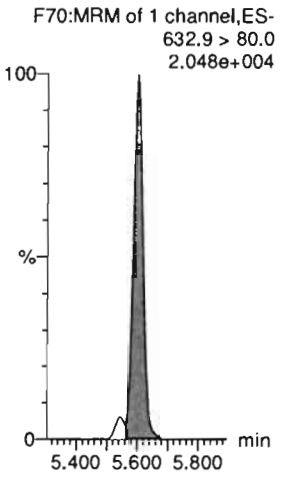
PFDoS



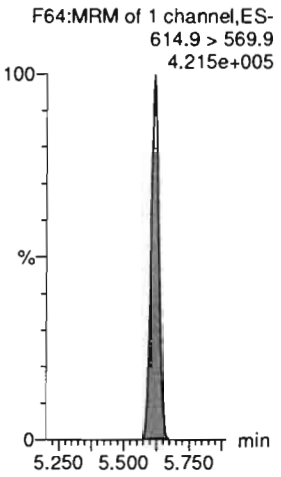
PFTeDA



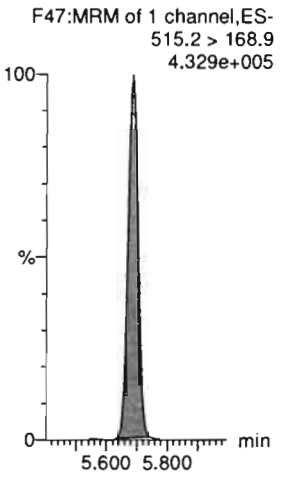
13C2-10:2 FTS-EIS



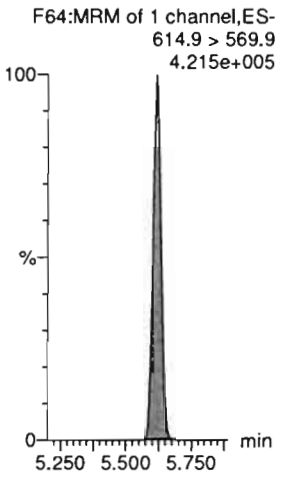
13C2-PFDoA-EIS



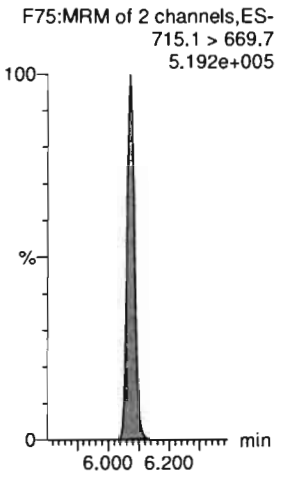
d3-N-MeFOSA-EIS



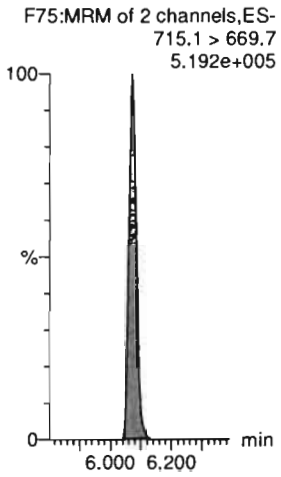
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

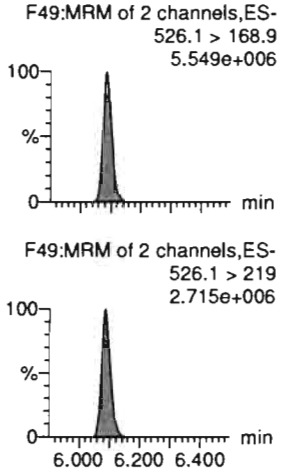


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

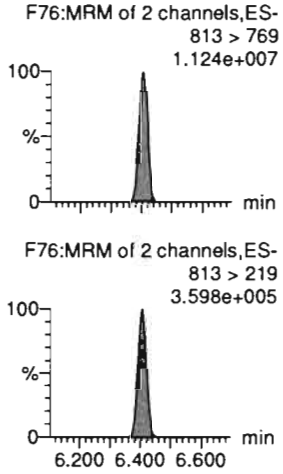
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

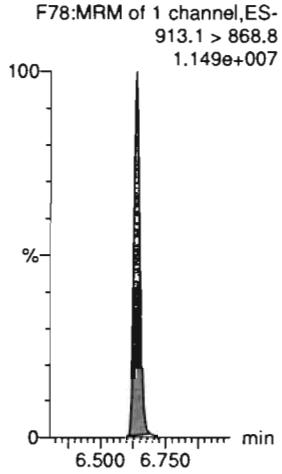
N-EtFOSA



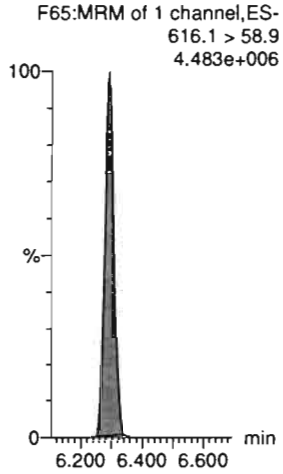
PFHxDA



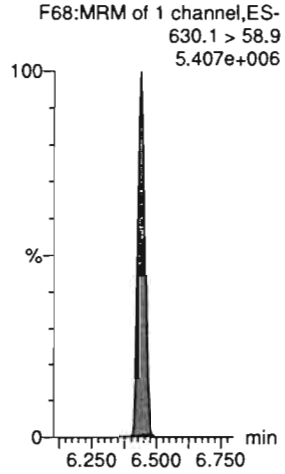
PFODA



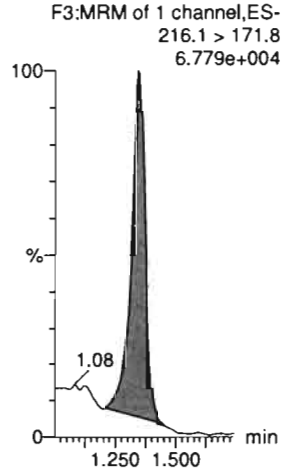
N-MeFOSE



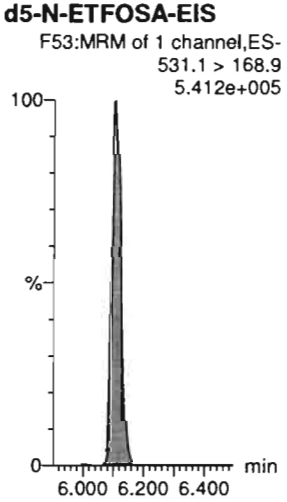
N-EtFOSE



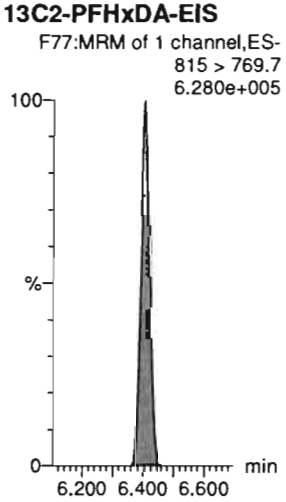
13C3-PFBA-RSD



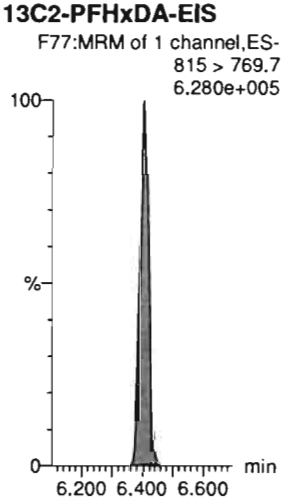
d5-N-ETFOSA-EIS



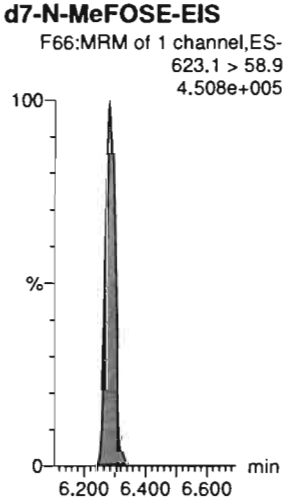
13C2-PFHxDA-EIS



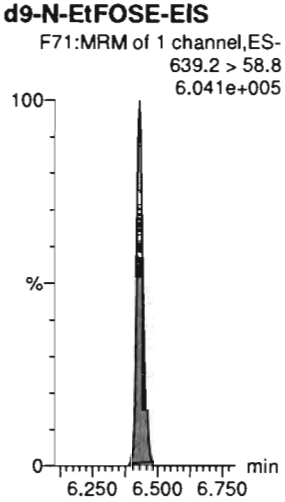
13C2-PFHxDA-EIS



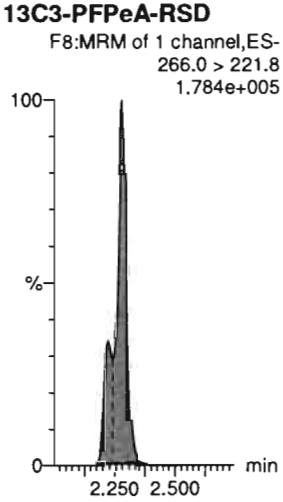
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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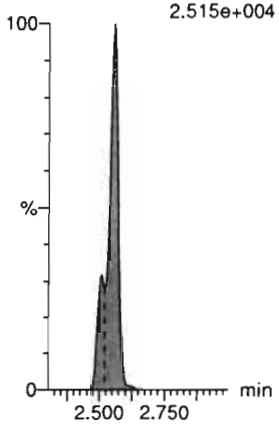
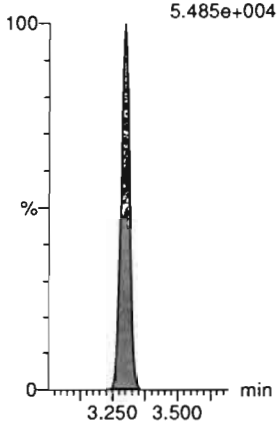
Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

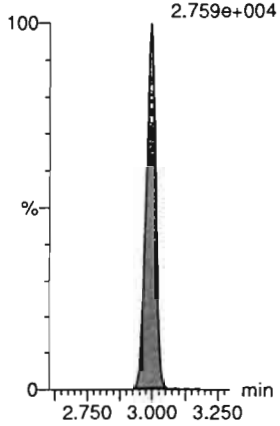
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.515e+004



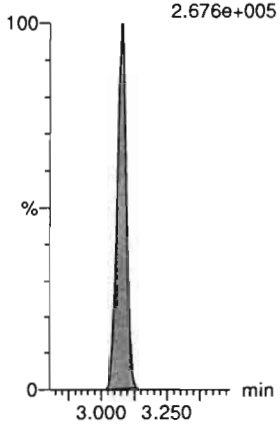
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.485e+004



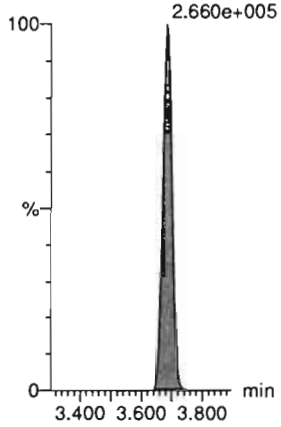
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
2.759e+004



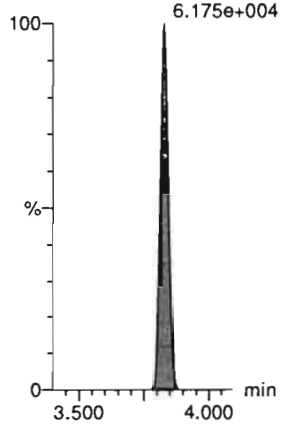
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.676e+005



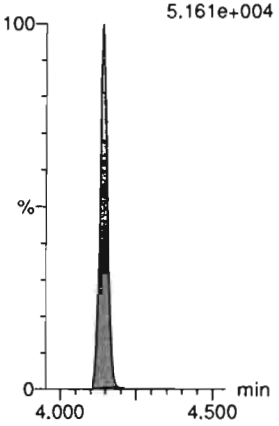
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.660e+005



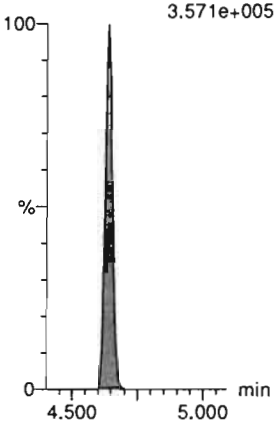
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.175e+004



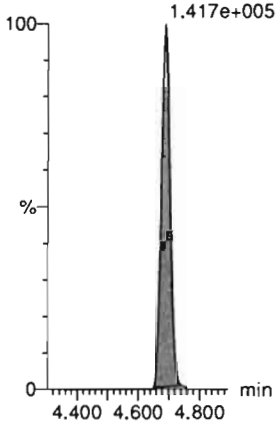
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.161e+004



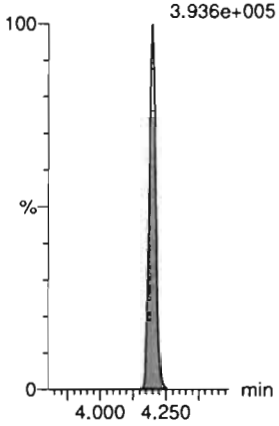
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.571e+005



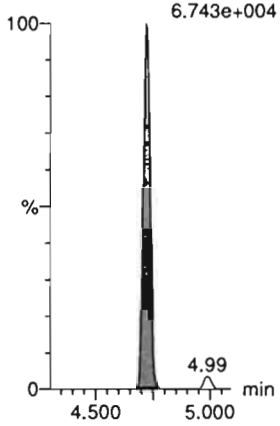
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.417e+005



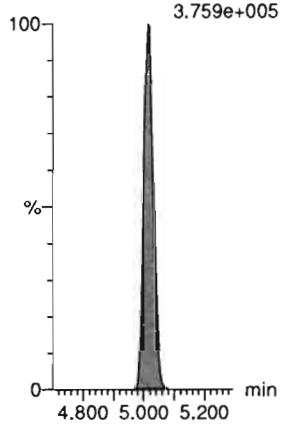
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.936e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.743e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.759e+005

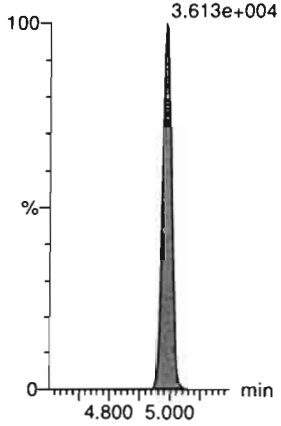


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

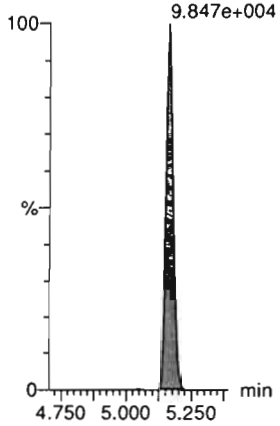
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

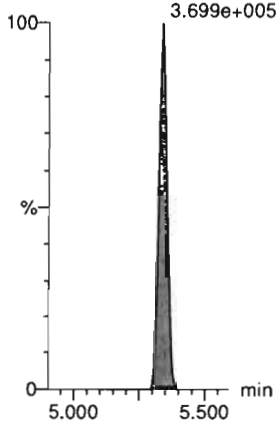
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.613e+004



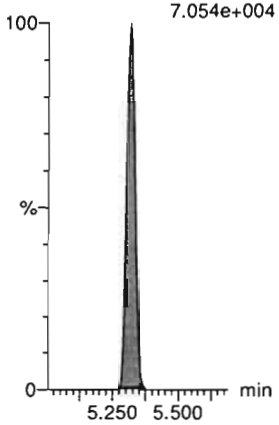
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
9.847e+004



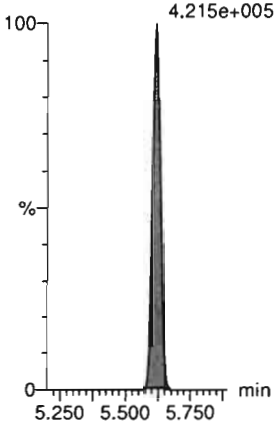
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.699e+005



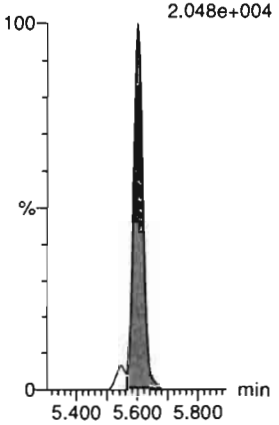
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.054e+004



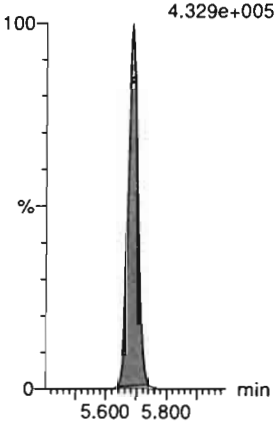
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.215e+005



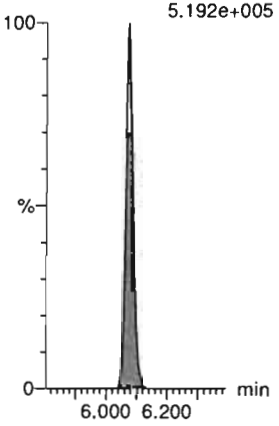
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.048e+004



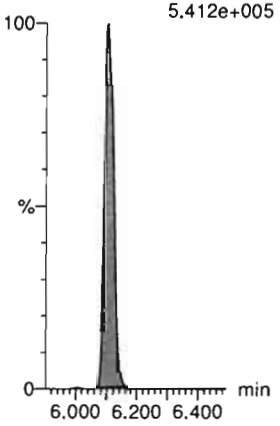
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.329e+005



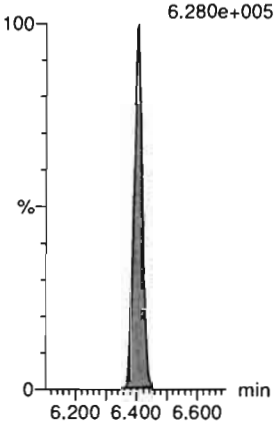
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.192e+005



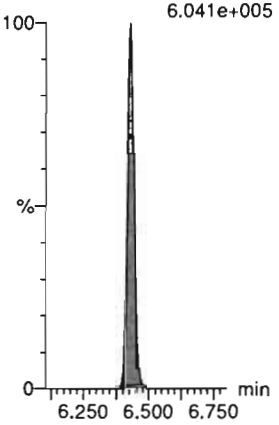
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.412e+005



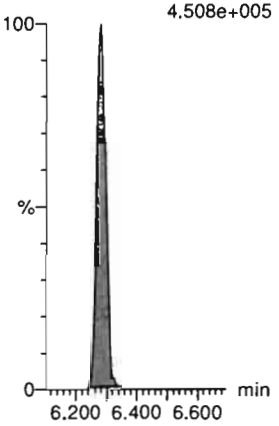
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.280e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
6.041e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.508e+005



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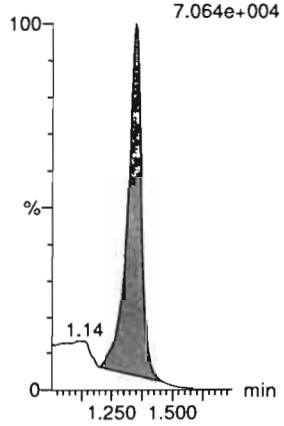
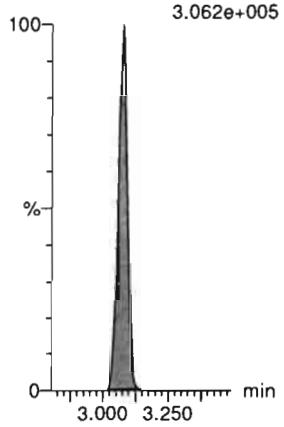
Name: 200721P1-13, Date: 21-Jul-2020, Time: 17:22:17, ID: ST200720P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

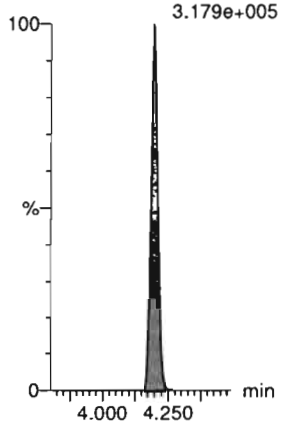
13C4-PFBA



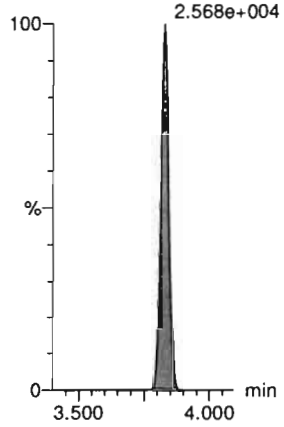
13C5-PFHxA



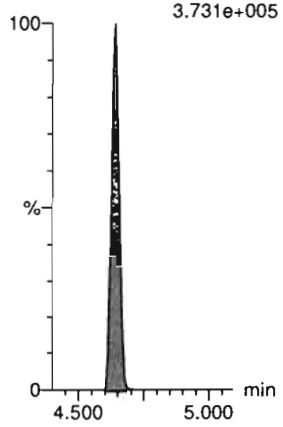
13C8-PFOA



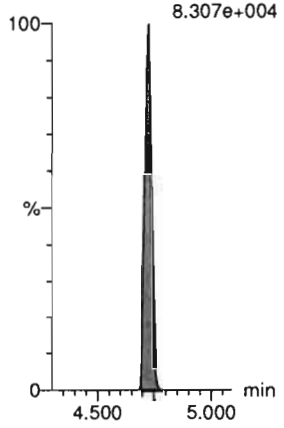
18O2-PFHxS



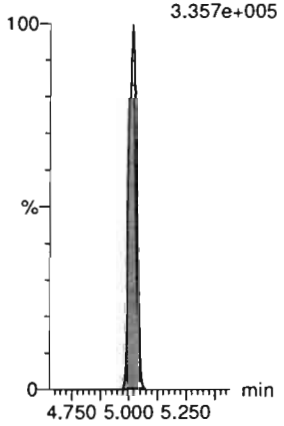
13C9-PFNA



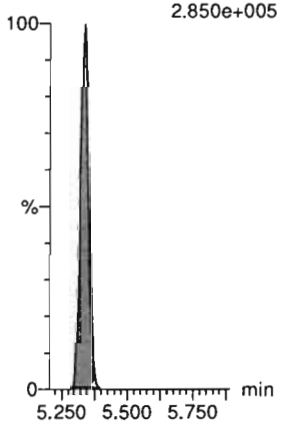
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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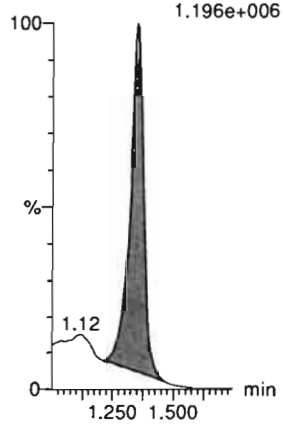
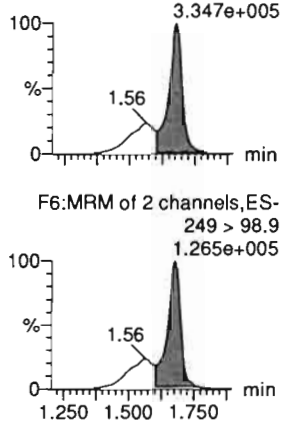
Name: 200721P1-14, Date: 21-Jul-2020, Time: 17:32:52, ID: ~~ST200720P1-10 PFC~~ ST200721P1-10 CS7 20G1610, Description: PFC CS7 20G1610

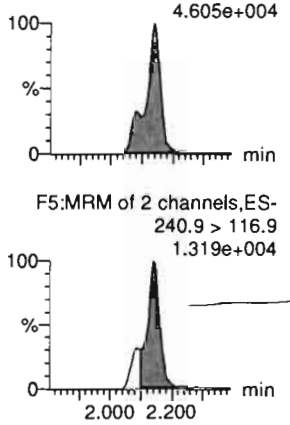
PFBA



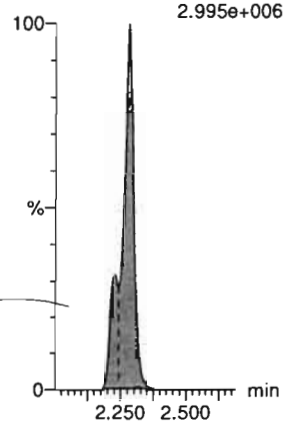
PFPrS



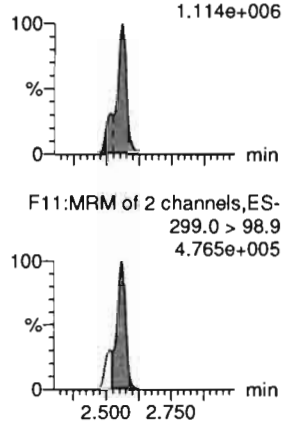
3:3 FTCA



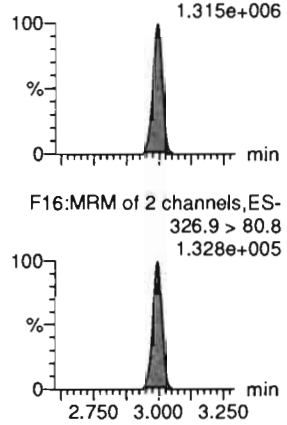
PFPeA



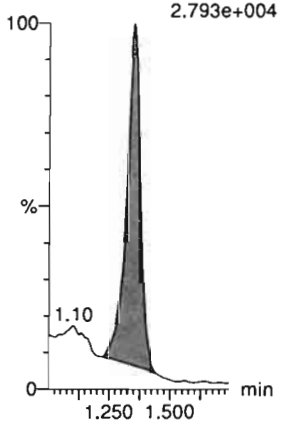
PFBS



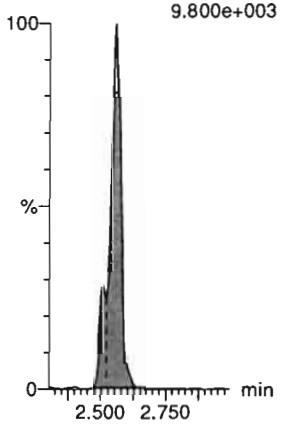
4:2 FTS



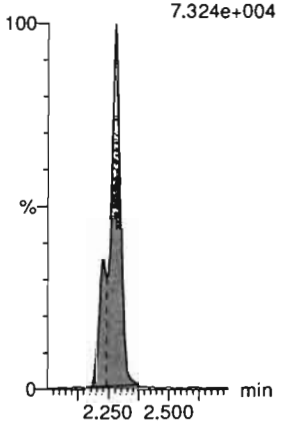
13C3-PFBA-EIS



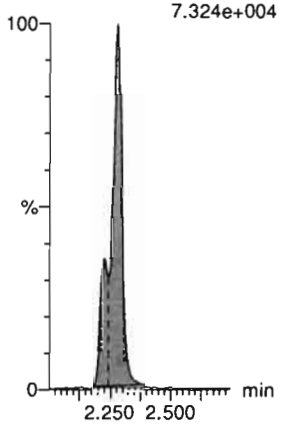
13C3-PFBS-EIS



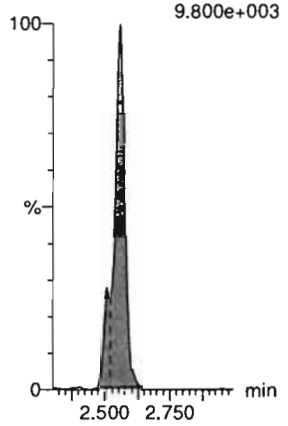
13C3-PFPeA-EIS



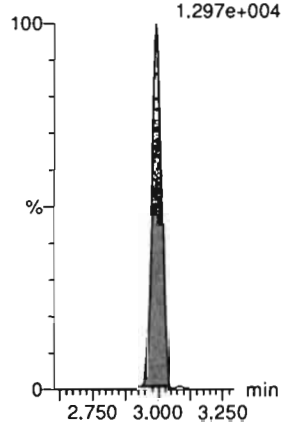
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



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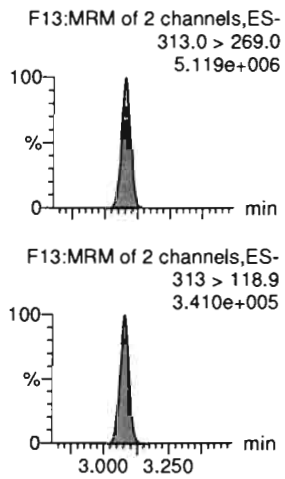
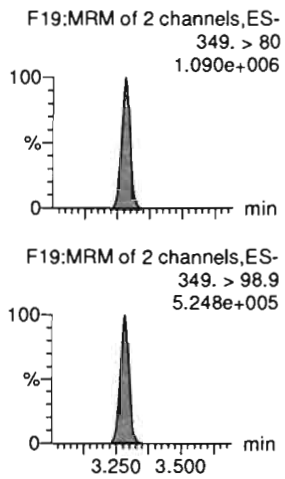
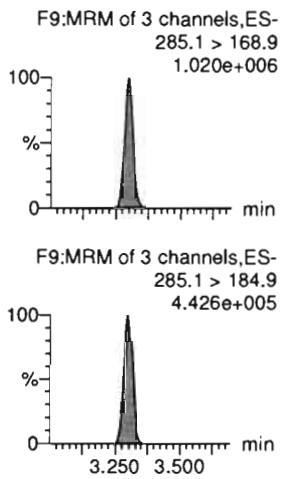
PFHxA



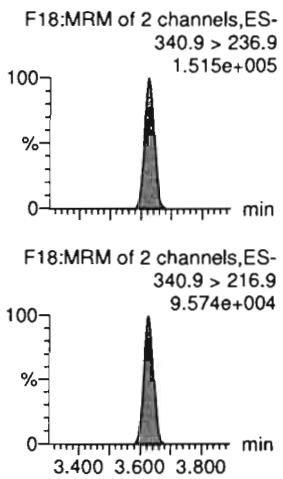
PFPeS



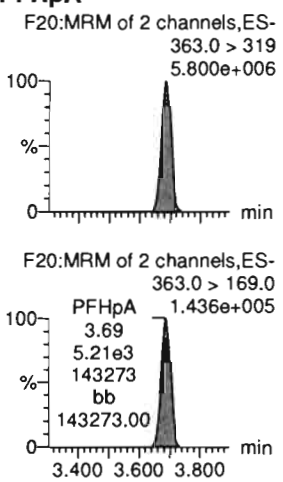
HFPO-DA



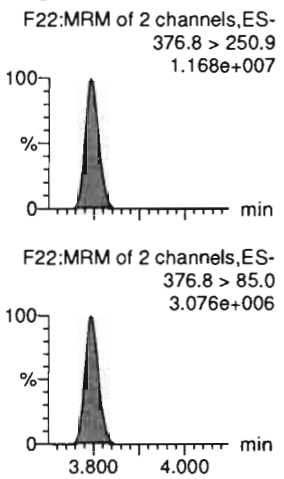
5:3 FTCA



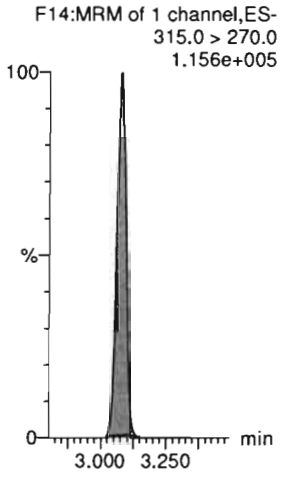
PFHpA



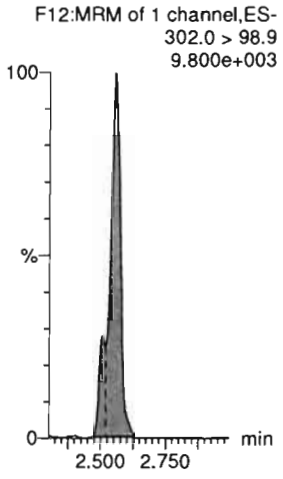
ADONA



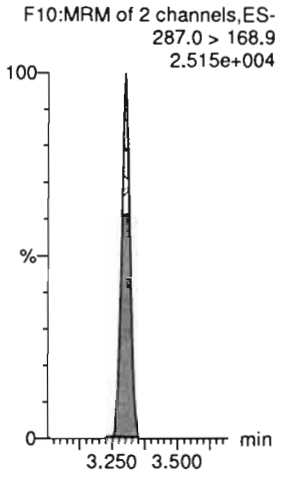
13C2-PFHxA-EIS



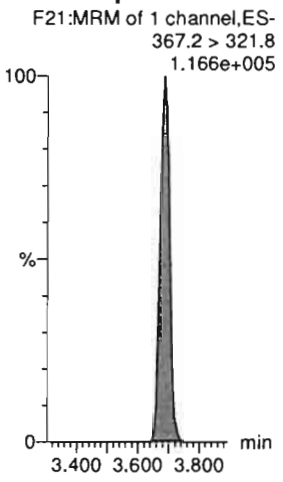
13C3-PFBS-EIS



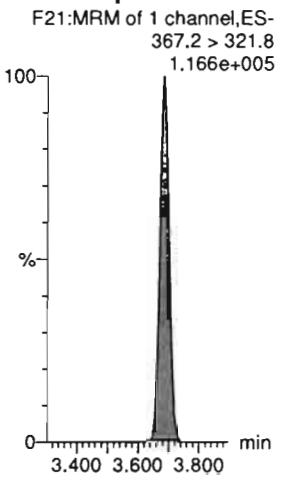
13C3-HFPO-DA-EIS



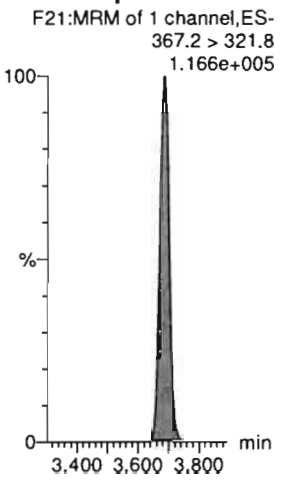
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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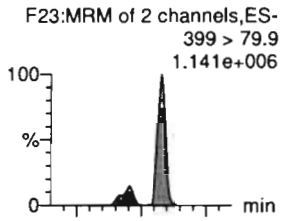
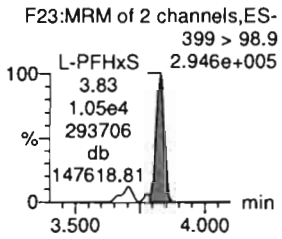
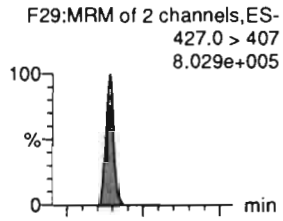
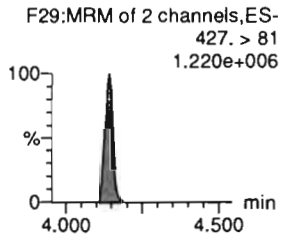
L-PFHxS



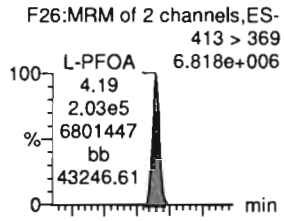


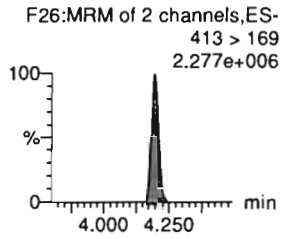
6:2 FTS



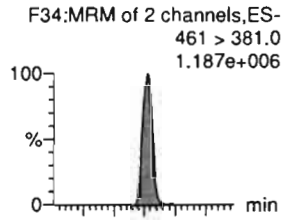


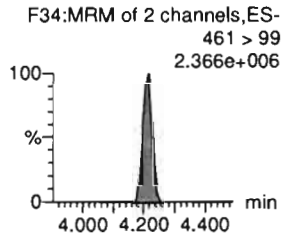
L-PFOA



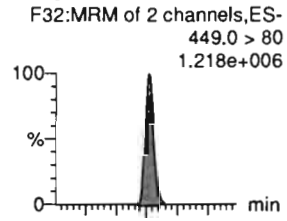


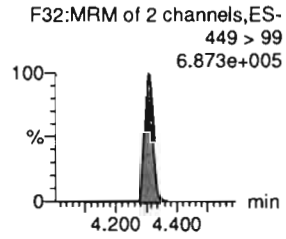
PFEChS



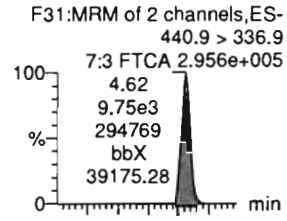


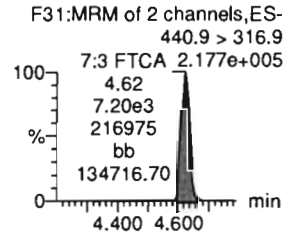
PFHpS



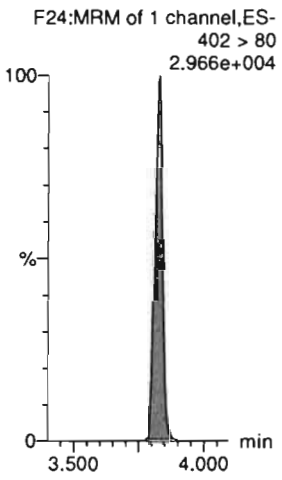


7:3 FTCA

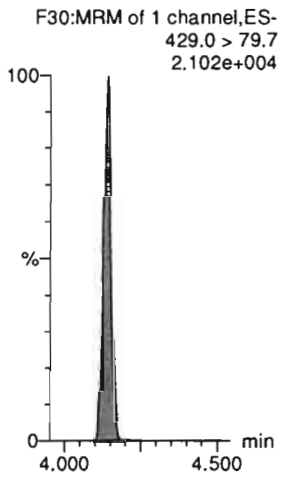




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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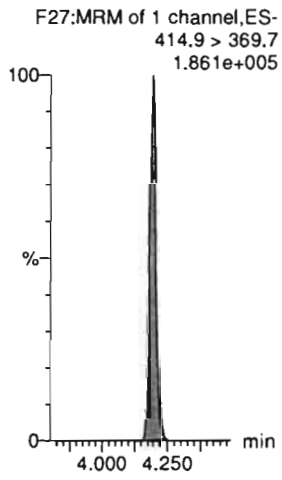

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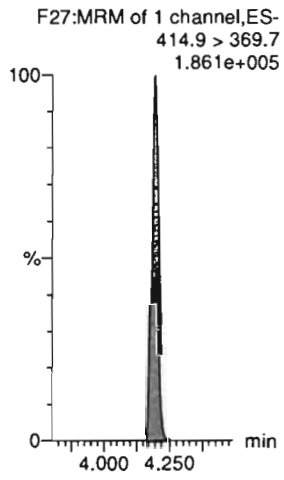
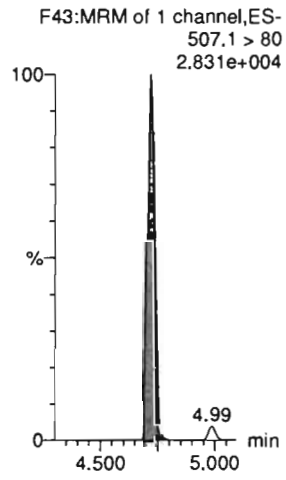
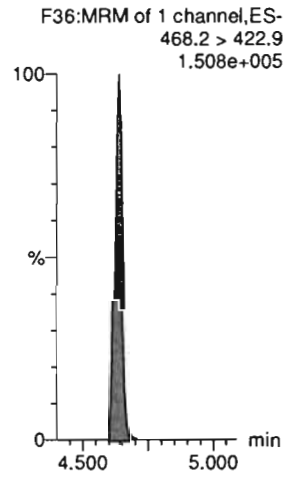


13C8-PFOS-EIS



13C5-PFNA-EIS



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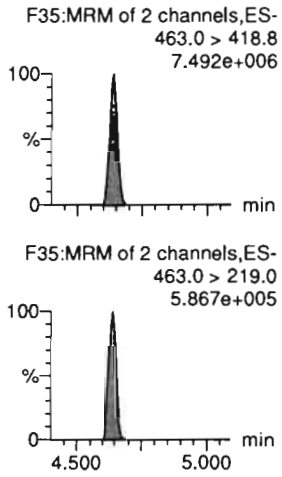
Name: 200721P1-14, Date: 21-Jul-2020, Time: 17:32:52, ID: ST200720P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

PFNA



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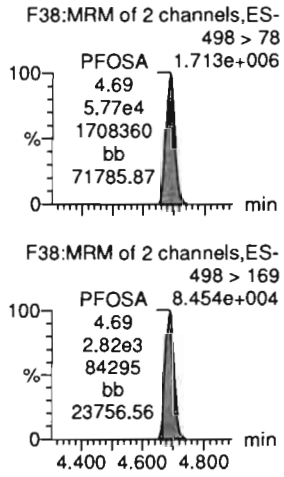

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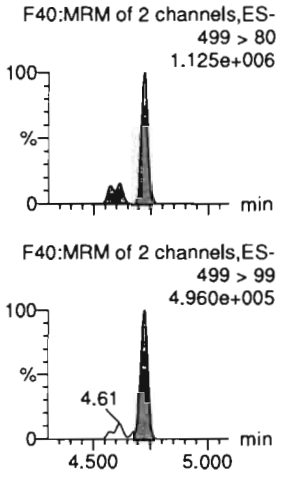
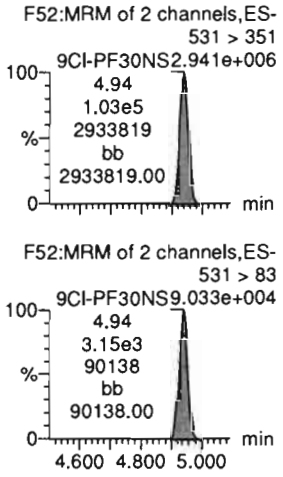


9Cl-PF30NS



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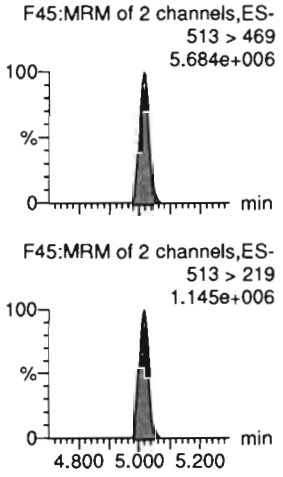
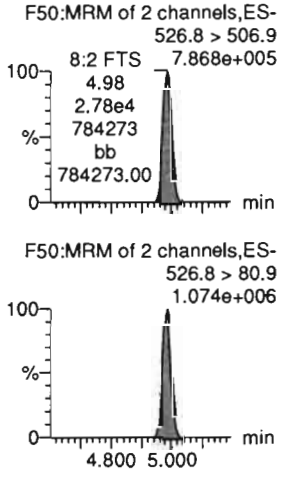
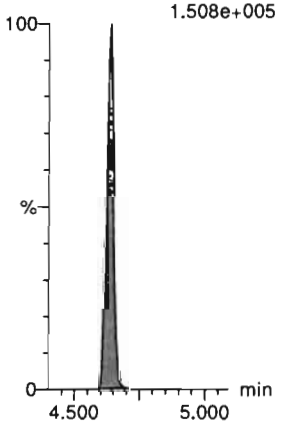


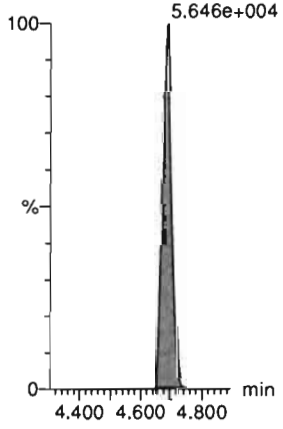
8:2 FTS



13C5-PFNA-EIS



13C8-PFOSA-EIS



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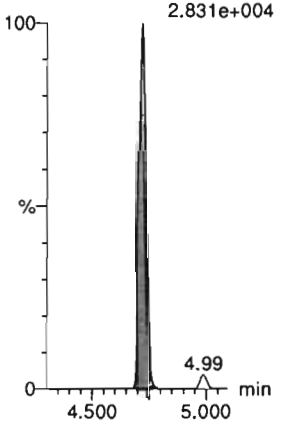

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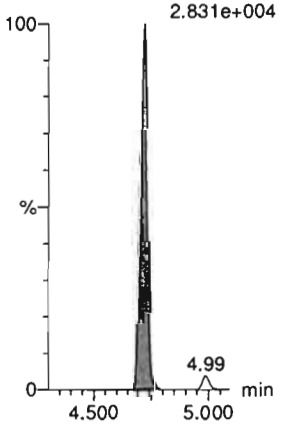

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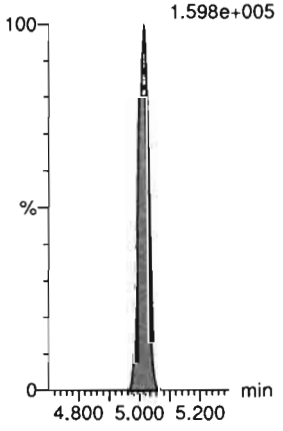
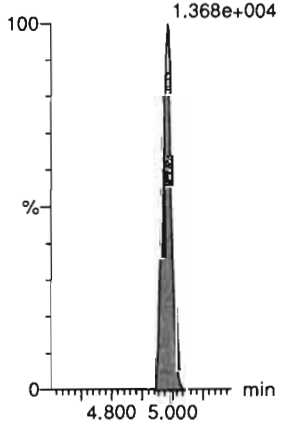


13C2-8:2 FTS-EIS



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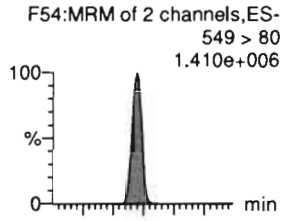
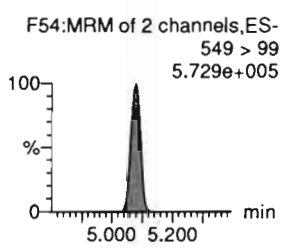
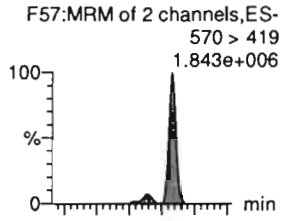
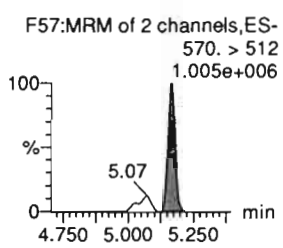
PFNS





L-MeFOSAA





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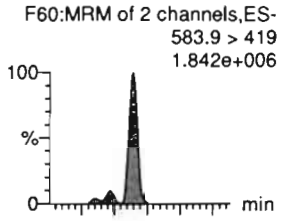

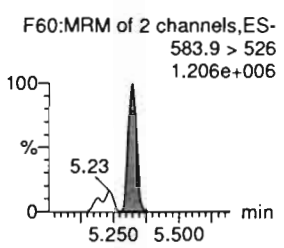

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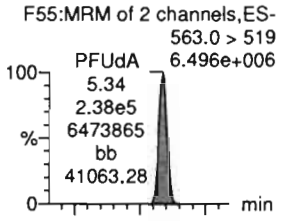

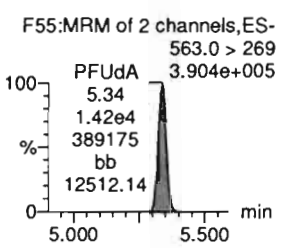

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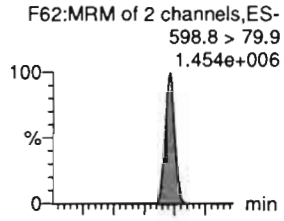
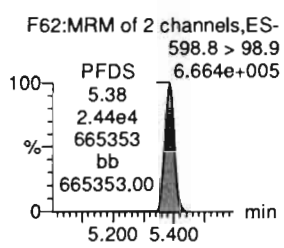
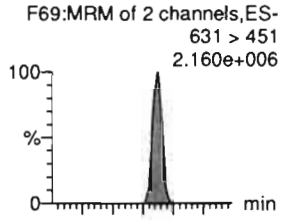
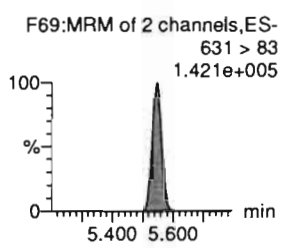


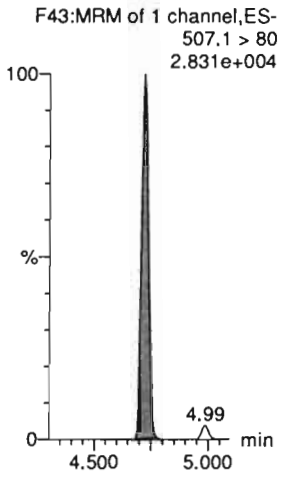


11Cl-PF30UdS

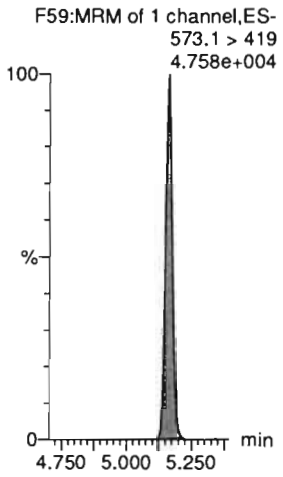




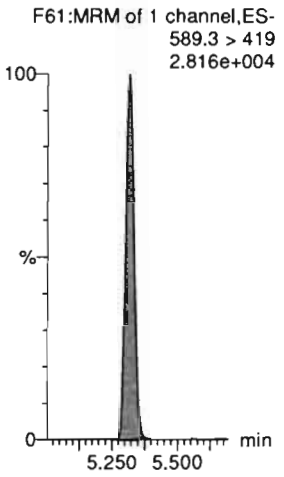
13C8-PFOS-EIS



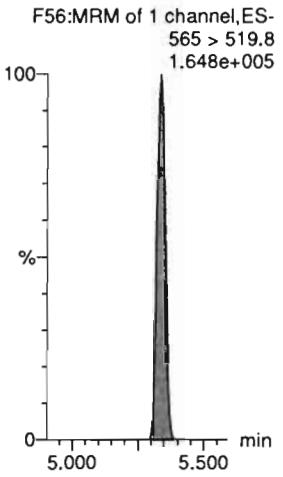
d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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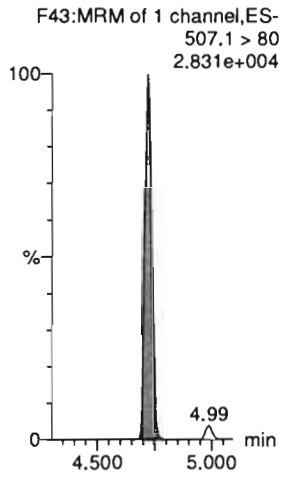
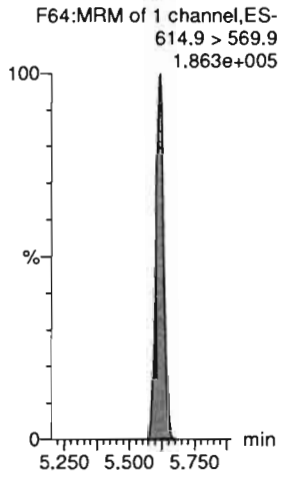


13C2-PFDoA-EIS



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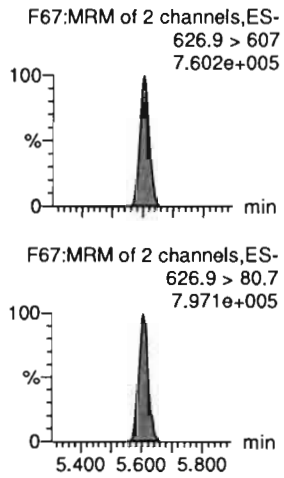
10:2 FTS



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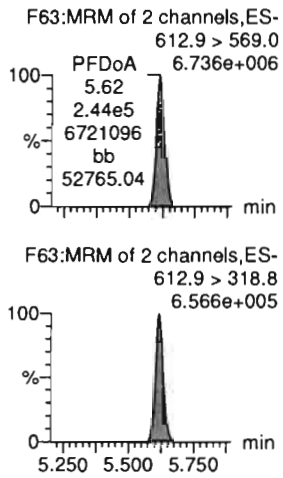
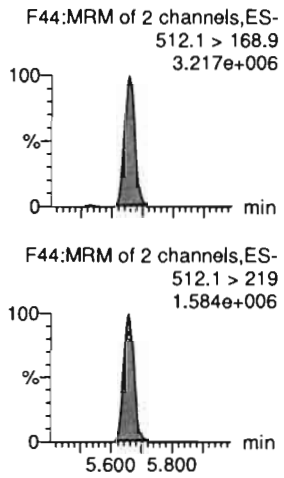


N-MeFOSA



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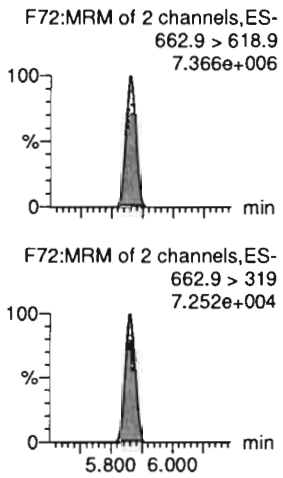

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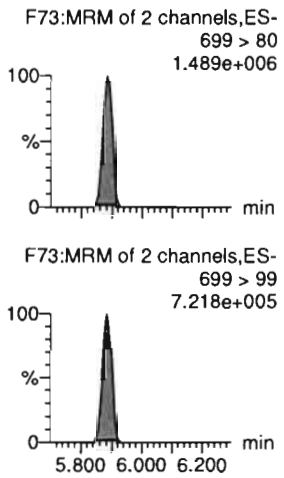
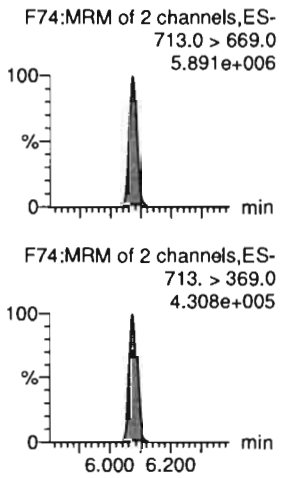
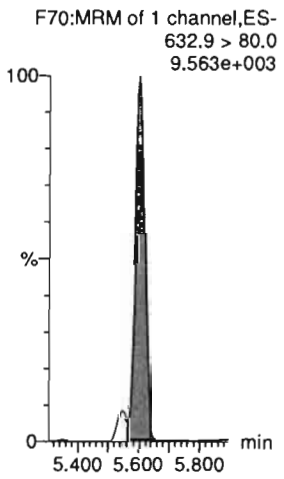


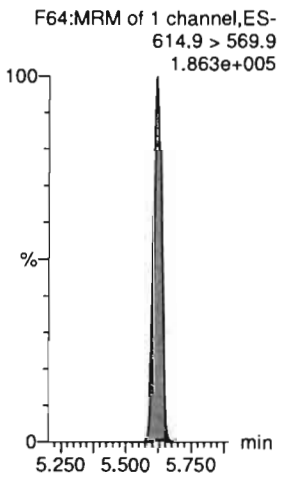
PFTeDA



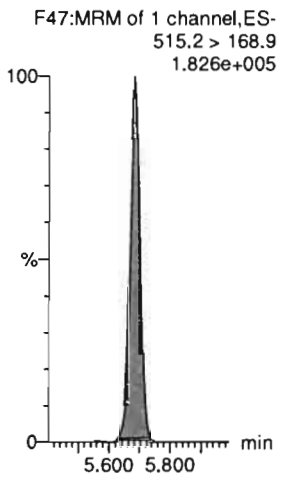
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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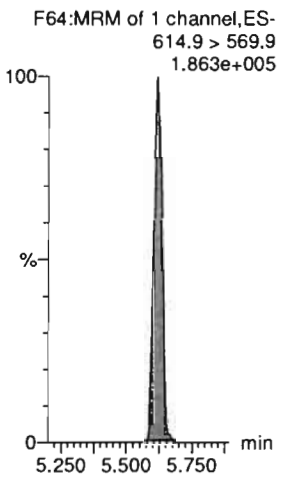

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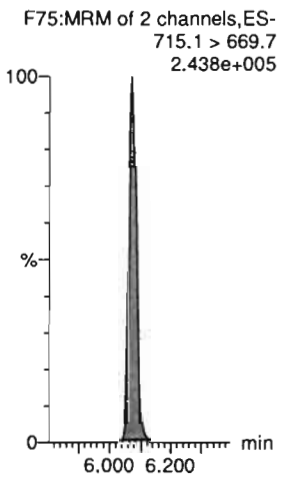

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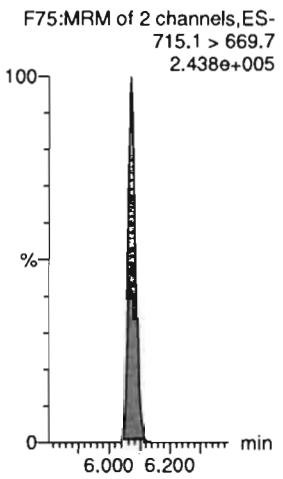

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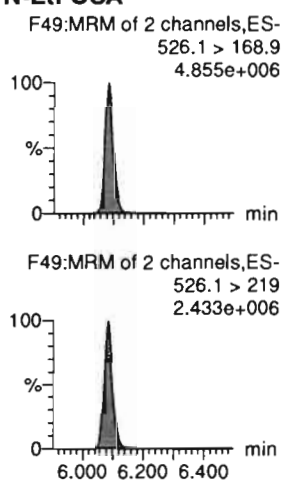
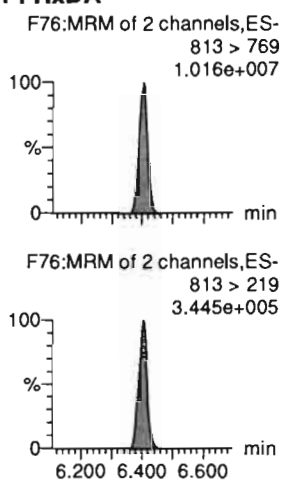
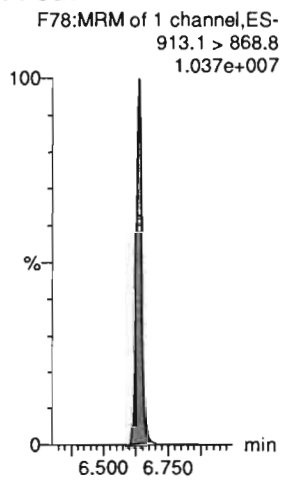
N-EtFOSA



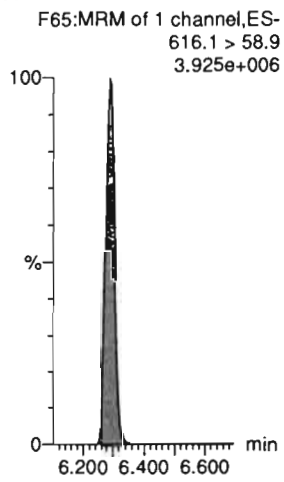
PFHxDA



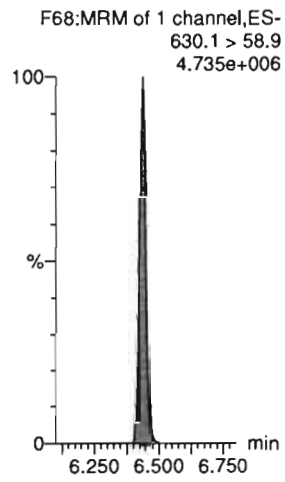
PFODA



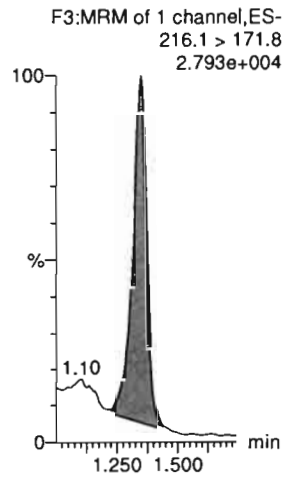
N-MeFOSE



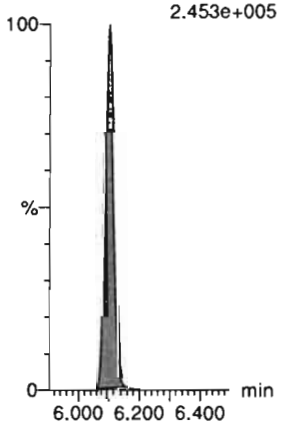
N-EtFOSE



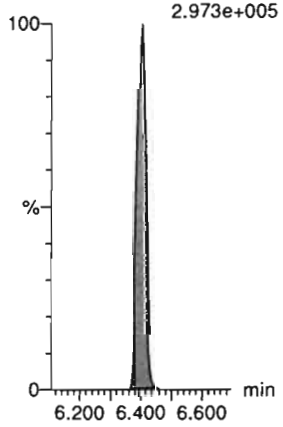
13C3-PFBA-RSD



d5-N-ETFOSA-EIS



13C2-PFHxDA-EIS



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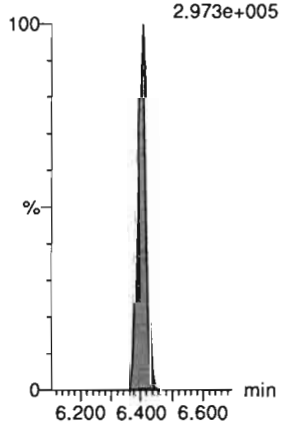
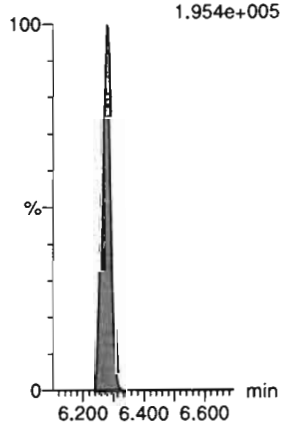
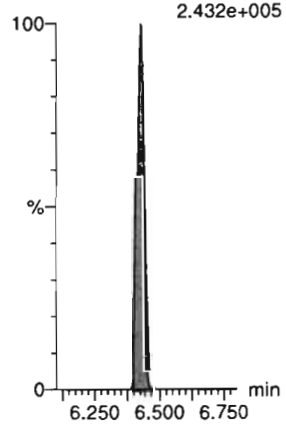


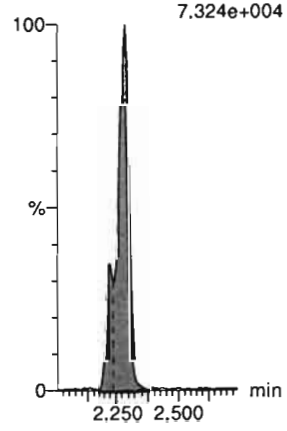
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

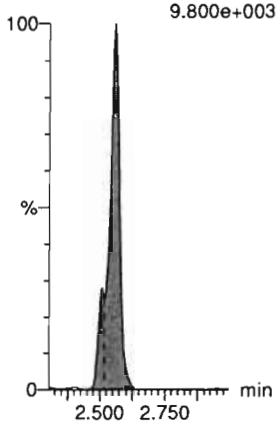


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

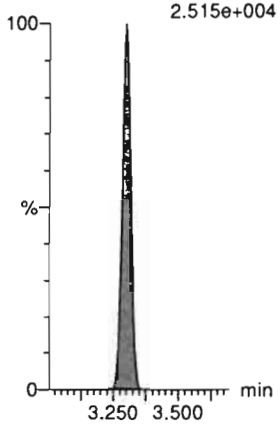
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-14, Date: 21-Jul-2020, Time: 17:32:52, ID: ST200720P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

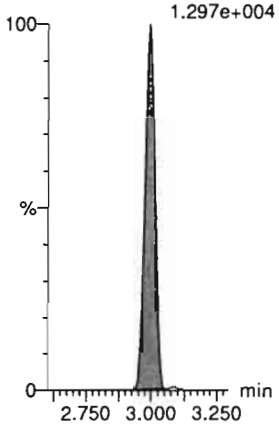
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
9.800e+003



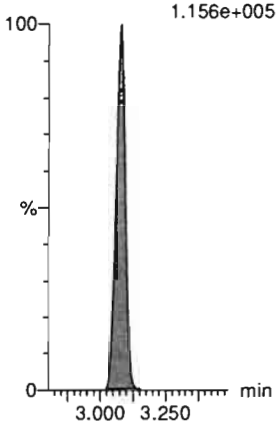
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
2.515e+004



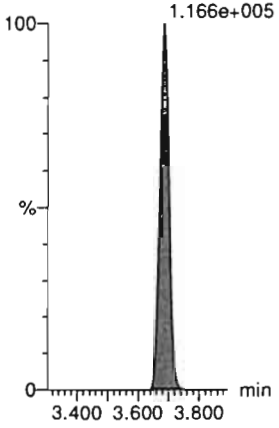
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
1.297e+004



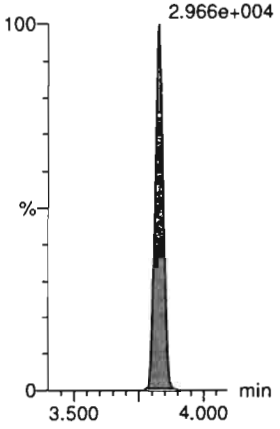
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
1.156e+005



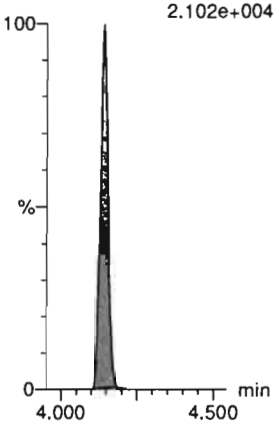
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.166e+005



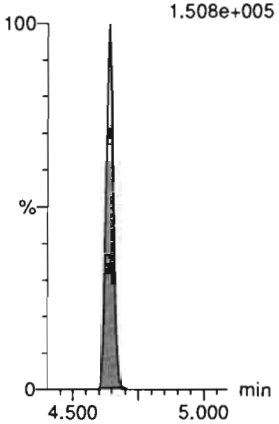
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
2.966e+004



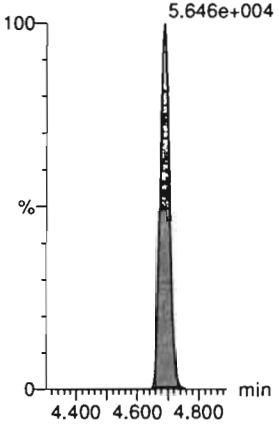
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.102e+004



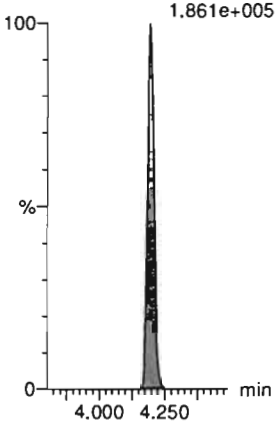
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
1.508e+005



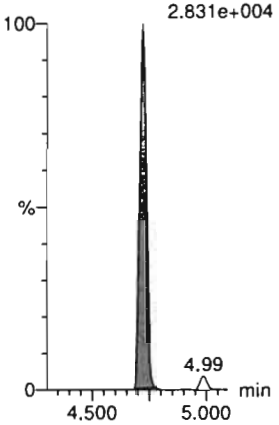
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
5.646e+004



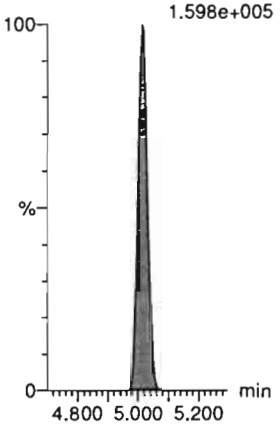
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
1.861e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
2.831e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
1.598e+005



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

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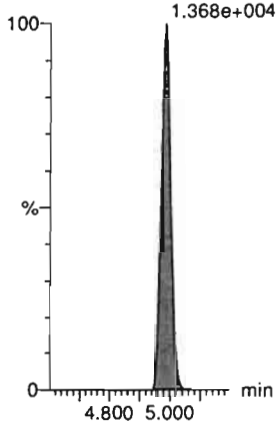
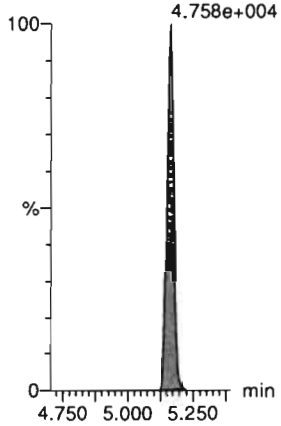
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-14, Date: 21-Jul-2020, Time: 17:32:52, ID: ST200720P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

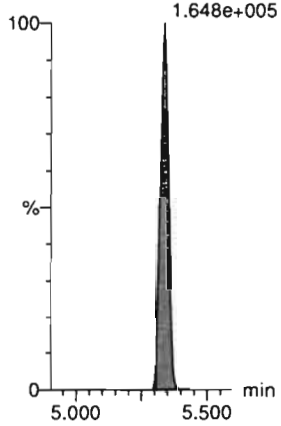
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
1.368e+004



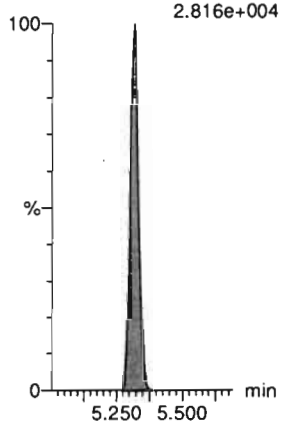
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
4.758e+004



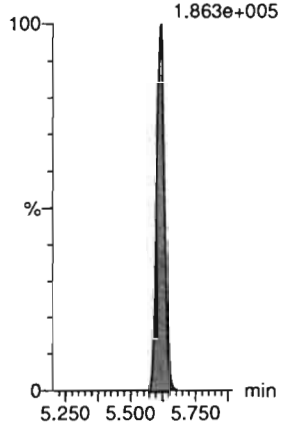
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
1.648e+005



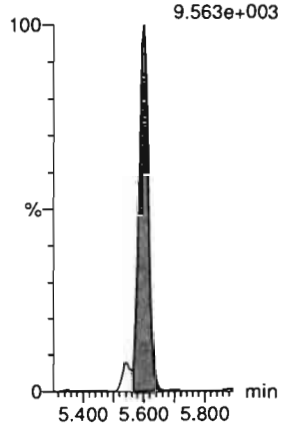
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
2.816e+004



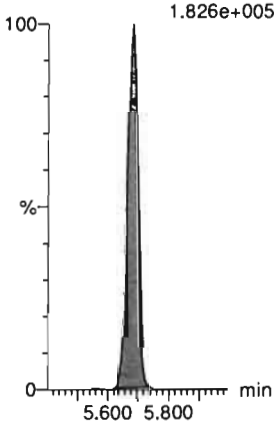
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
1.863e+005



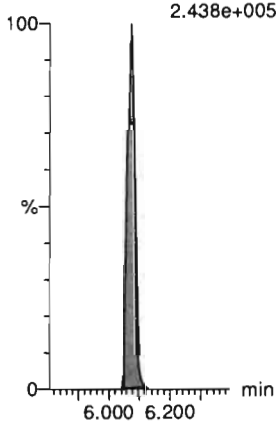
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
9.563e+003



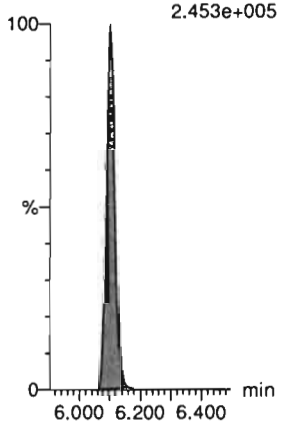
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
1.826e+005



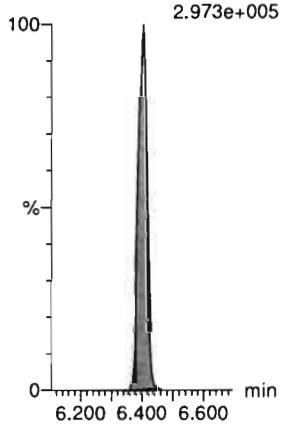
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
2.438e+005



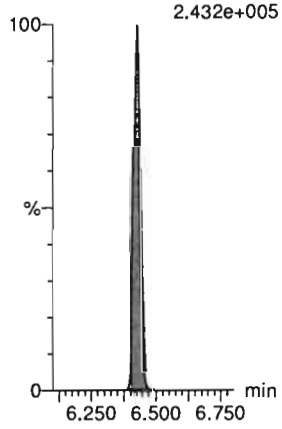
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
2.453e+005



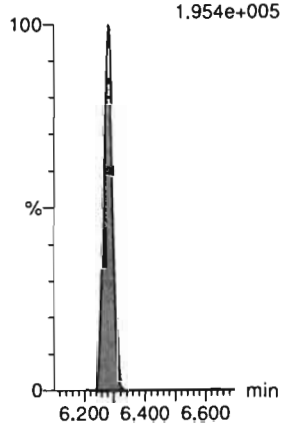
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
2.973e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
2.432e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
1.954e+005

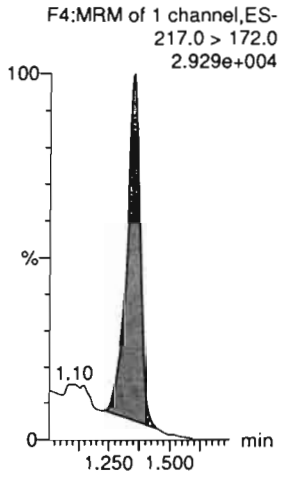


Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-CRV.qld

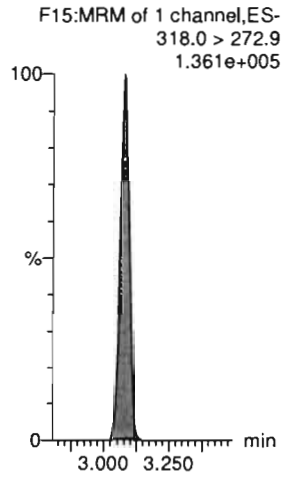
Last Altered: Wednesday, July 22, 2020 11:04:01 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:05:59 Pacific Daylight Time

Name: 200721P1-14, Date: 21-Jul-2020, Time: 17:32:52, ID: ST200720P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

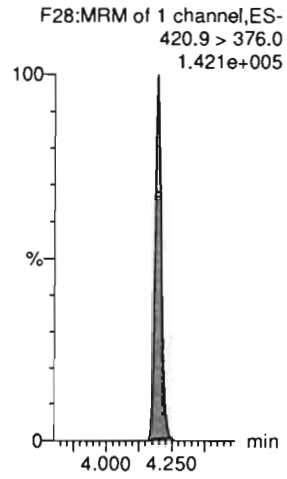
13C4-PFBA



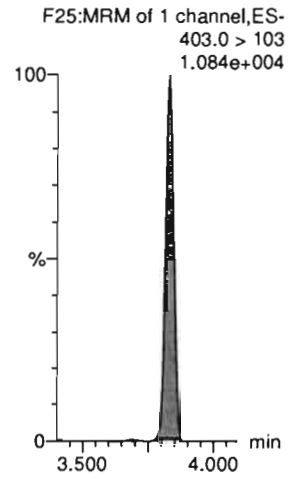
13C5-PFHxA



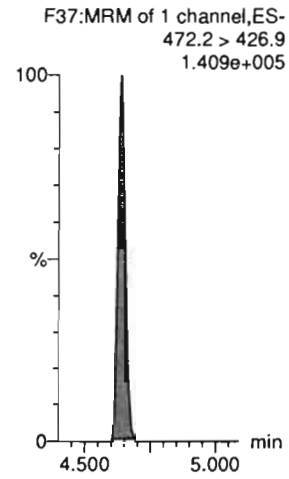
13C8-PFOA



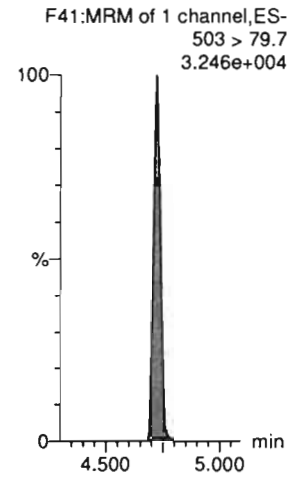
18O2-PFHxS



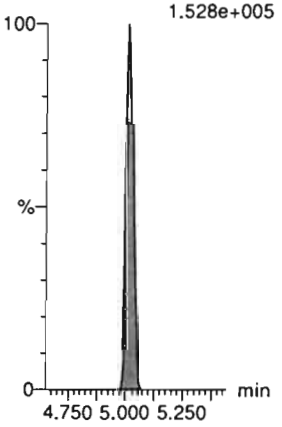
13C9-PFNA



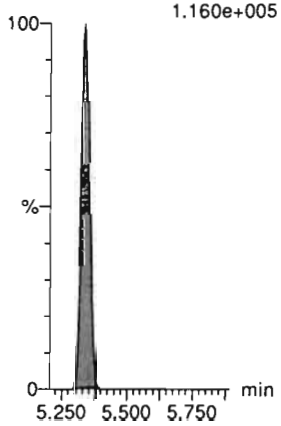
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-ICV.qld

Last Altered: Wednesday, July 22, 2020 11:34:13 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:34:55 Pacific Daylight Time

(A) Not in ICV

J AM 7/22/20

ICV200721P1-1 OPV 07/22/20

Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ~~ICV200720P1-~~1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	3345.031	3980.709	1.00	1.35	10.504	10.000	9.88	98.8	NO		
2	2	PFPrS	249 > 80		1240.248	1.00			10.000		(A)	NO		YES
3	3	3:3 FTCA	240.9 > 176.9		9474.051	1.00			10.000		J	NO		YES
4	4	PFPeA	263.1 > 218.9	7479.792	9474.051	1.00	2.28	9.869	10.000	10.6	105.7	NO		
5	5	PFBS	299.0 > 80	2209.356	1240.248	1.00	2.56	22.267	8.840	8.82	99.7	NO	2.472	NO
6	6	4:2 FTS	326.9 > 306.9	2583.578	1299.375	1.00	3.00	24.854	9.360	9.36	100.0	NO	10.113	YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	3980.709		1.00	1.35	3980.709	12.500	11.9	95.4	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1240.248		1.00	2.56	1240.248	12.500	12.8	102.4	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	9474.051		1.00	2.28	9474.051	12.500	12.8	102.0	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	9474.051		1.00	2.28	9474.051	12.500	12.8	102.0	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1240.248		1.00	2.56	1240.248	12.500	12.8	102.4	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1299.375		1.00	3.00	1299.375	12.500	11.9	95.5	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	9258.545	10167.580	1.00	3.08	11.382	10.000	10.6	106.3	NO	16.809	NO
15	8	PFPeS	349.>80	1762.970	1240.248	1.00	3.28	17.768	9.360	8.60	91.9	NO	2.083	NO
16	9	HFPO-DA	285.1 > 168.9	1732.093	2149.649	1.00	3.30	10.072	10.000	9.79	97.9	NO	2.648	NO
17	10	5:3 FTCA	340.9 > 236.9		10116.359	1.00			10.000		(A)	NO		YES
18	11	PFHpA	363.0 > 319	9511.982	10116.359	1.00	3.68	11.753	10.000	9.60	96.0	NO	36.875	YES
19	12	ADONA	376.8 > 250.9	18263.811	10116.359	1.00	3.79	22.567	9.440	9.82	104.0	NO	4.094	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	10167.580		1.00	3.08	10167.580	12.500	11.9	95.2	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1240.248		1.00	2.56	1240.248	12.500	12.8	102.4	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2149.649		1.00	3.30	2149.649	12.500	12.0	95.8	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	10116.359		1.00	3.68	10116.359	12.500	12.1	97.0	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	10116.359		1.00	3.68	10116.359	12.500	12.1	97.0	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	10116.359		1.00	3.68	10116.359	12.500	12.1	97.0	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9	1947.536	2354.629	1.00	3.83	10.339	9.120	8.71	95.5	NO	4.247	YES
28	15	6:2 FTS	427.0 > 407	1187.247	1448.127	1.00	4.14	10.248	9.480	10.7	112.4	NO	0.718	NO
29	16	L-PFOA	413 > 369	9554.237	13094.542	1.00	4.19	9.120	10.000	9.33	93.3	NO	2.822	NO
30	18	PFecHS	461 > 381.0		13094.542	1.00			10.000		(A)	NO		YES
31	19	PFHpS	449.0 > 80	1815.176	2328.907	1.00	4.31	9.743	9.520	9.65	101.4	NO	1.815	NO
32	20	7:3 FTCA	440.9 > 336.9		11948.640	1.00			10.000		(A)	NO		YES
33	61	13C3-PFHxS-EIS	402 >80	2354.629		1.00	3.83	2354.629	12.500	12.9	103.0	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1448.127		1.00	4.14	1448.127	12.500	11.8	94.5	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	13094.542		1.00	4.20	13094.542	12.500	12.3	98.2	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	13094.542		1.00	4.20	13094.542	12.500	12.3	98.2	NO		

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Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2328.907		1.00	4.72	2328.907	12.500	12.0	96.3	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	11948.640		1.00	4.64	11948.640	12.500	12.7	101.3	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	11551.515	11948.640	1.00	4.64	12.085	10.000	9.57	95.7	NO	15.438	YES
41	22	PFOSA	498 > 78	2523.160	5025.726	1.00	4.69	6.276	10.000	8.87	88.7	NO	17.865	NO
42	23	L-PFOS	499 > 80	2210.661	2328.907	1.00	4.72	11.865	9.280	9.23	99.5	NO	2.518	NO
43	25	9Cl-PF30NS	531 > 351	4471.821	2328.907	1.00	4.94	24.002	9.320	9.35	100.4	NO	38.427	YES
44	26	PFDA	513 > 469	9672.786	14693.810	1.00	5.01	8.229	10.000	10.3	102.6	NO	5.005	NO
45	27	8:2 FTS	526.8> 506.9	1380.934	1348.634	1.00	4.98	12.799	9.600	10.1	105.2	NO	0.797	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	11948.640		1.00	4.64	11948.640	12.500	12.7	101.3	NO		
47	67	13C8-PFOSA-EIS	506 > 78	5025.726		1.00	4.69	5025.726	12.500	13.4	107.1	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2328.907		1.00	4.72	2328.907	12.500	12.0	96.3	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2328.907		1.00	4.72	2328.907	12.500	12.0	96.3	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	14693.810		1.00	5.01	14693.810	12.500	12.8	102.3	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1348.634		1.00	4.98	1348.634	12.500	12.2	97.6	NO		
52	-1													
53	28	PFNS	549 > 80	2390.420	2328.907	1.00	5.08	12.830	9.600	9.87	102.9	NO	2.487	NO
54	29	L-MeFOSAA	570 > 419	3117.393	3330.770	1.00	5.16	11.699	10.000	9.87	98.7	NO	1.810	NO
55	31	L-EtFOSAA	583.9 > 419	3713.480	2924.208	1.00	5.32	15.874	10.000	9.82	98.2	NO	1.512	NO
56	33	PFUdA	563.0 > 519	11334.203	15091.185	1.00	5.34	9.388	10.000	9.54	95.4	NO	19.412	NO
57	34	PFDS	598.8 > 79.9	2302.553	2328.907	1.00	5.38	12.359	9.640	9.36	97.1	NO	2.168	NO
58	35	11Cl-PF30UdS	631 > 451	3496.343	15900.889	1.00	5.55	2.749	9.440	9.27	98.2	NO	16.380	NO
59	71	13C8-PFOS-EIS	507.1 > 80	2328.907		1.00	4.72	2328.907	12.500	12.0	96.3	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	3330.770		1.00	5.16	3330.770	12.500	12.2	97.4	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	2924.208		1.00	5.32	2924.208	12.500	13.6	109.0	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	15091.185		1.00	5.34	15091.185	12.500	12.4	99.1	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2328.907		1.00	4.72	2328.907	12.500	12.0	96.3	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	15900.889		1.00	5.62	15900.889	12.500	12.1	96.6	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		946.295	1.00			10.000		(A)	NO		YES
67	37	PFDoA	612.9 > 569.0	12197.972	15900.889	1.00	5.62	9.589	10.000	10.6	106.1	NO	10.274	NO
68	38	N-MeFOSA	512.1 > 168.9		15683.172	1.00			9.600		(B)	NO		YES
69	39	PFTrDA	662.9 > 618.9	13523.838	15900.889	1.00	5.86	10.631	10.000	10.4	103.9	NO	74.906	NO
70	40	PFDoS	699 > 80		17084.129	1.00			10.000		(B)	NO		YES
71	41	PFTeDA	713.0 > 669.0	8621.088	17084.129	1.00	6.07	6.308	10.000	10.2	102.1	NO	14.015	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	946.295		1.00	5.60	946.295	12.500	12.2	97.2	NO		

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Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	15900.889		1.00	5.62	15900.889	12.500	12.1	96.6	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	15683.172		1.00	5.68	15683.172	149.200	144	96.4	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	15900.889		1.00	5.62	15900.889	12.500	12.1	96.6	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	17084.129		1.00	6.07	17084.129	12.500	12.5	99.9	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	17084.129		1.00	6.07	17084.129	12.500	12.5	99.9	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9		20898.207	1.00			9.600			NO		YES
80	43	PFHxDA	813 > 769		20515.621	1.00			10.000			NO		YES
81	44	PFODA	913.1 > 868.8		20515.621	1.00			10.000			NO		
82	45	N-MeFOSE	616.1 > 58.9		16214.274	1.00			9.600			NO		
83	46	N-EtFOSE	630.1 > 58.9		18126.557	1.00			9.600			NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	3977.790	4327.648	1.00	1.35	11.489	12.500	12.0	96.1	NO		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	20898.207		1.00	6.10	20898.207	149.200	151	101.4	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	20515.621		1.00	6.40	20515.621	12.500	12.1	96.7	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	20515.621		1.00	6.40	20515.621	12.500	12.1	96.7	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	16214.274		1.00	6.28	16214.274	149.200	155	103.8	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	18126.557		1.00	6.42	18126.557	149.200	148	99.0	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8	9478.252	12572.023	1.00	2.28	9.424	12.500	12.5	100.0	NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9	1240.226	1065.365	1.00	2.56	14.552	12.500	11.0	87.8	NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2149.649	12572.023	1.00	3.30	2.137	12.500	12.8	102.0	NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8	1299.375	1065.365	1.00	3.00	15.246	12.500	10.4	82.9	NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0	10167.580	12572.023	1.00	3.08	10.109	12.500	11.9	95.1	NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8	10116.359	12572.023	1.00	3.68	10.058	12.500	12.7	101.9	NO		
97	62	13C3-PFHxS-RSD	402 > 80	2354.629	1065.365	1.00	3.83	27.627	12.500	10.7	85.4	NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1448.127	2874.193	1.00	4.14	6.298	12.500	12.3	98.3	NO		
99	66	13C5-PFNA-RSD	468.2 > 422.9	11948.640	12810.593	1.00	4.64	11.659	12.500	12.2	97.6	NO		
100	68	13C8-PFOSA-RSD	506 > 78	5025.726	11144.981	1.00	4.69	5.637	12.500	12.9	103.3	NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7	13094.542	10828.009	1.00	4.20	15.117	12.500	12.0	96.0	NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2328.907	2874.193	1.00	4.72	10.129	12.500	12.9	103.1	NO		
103	74	13C2-PFDA-RSD	515.1 > 469.9	14693.810	14246.664	1.00	5.01	12.892	12.500	11.8	94.1	NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1348.634	2874.193	1.00	4.98	5.865	12.500	13.3	106.5	NO		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419	3330.770	11144.981	1.00	5.16	3.736	12.500	12.1	96.9	NO		
107	80	13C2-PFUdA-RSD	565 > 519.8	15091.185	11144.981	1.00	5.34	16.926	12.500	12.8	102.8	NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419	2924.208	11144.981	1.00	5.32	3.280	12.500	13.3	106.7	NO		

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Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9	15900.889	14246.664	1.00	5.62	13.951	12.500	11.1	88.9	NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	946.295	2874.193	1.00	5.60	4.115	12.500	13.1	105.1	NO		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9	15683.172	11144.981	1.00	5.68	17.590	149.200	142	95.5	NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7	17084.129	11144.981	1.00	6.07	19.161	12.500	12.6	101.1	NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9	20898.207	11144.981	1.00	6.10	23.439	149.200	152	102.1	NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7	20515.621	11144.981	1.00	6.40	23.010	12.500	12.1	96.5	NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9	16214.274	11144.981	1.00	6.28	18.186	149.200	149	100.0	NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8	18126.557	11144.981	1.00	6.42	20.330	149.200	148	99.3	NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	4327.648	4327.648	1.00	1.35	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9	12572.023	12572.023	1.00	3.08	12.500	12.500	12.5	100.0	NO		
120	1...	13C8-PFOA	420.9 > 376.0	10828.009	10828.009	1.00	4.20	12.500	12.500	12.5	100.0	NO		
121	1...	18O2-PFHxS	403.0 > 103	1065.365	1065.365	1.00	3.83	12.500	12.500	12.5	100.0	NO		
122	1...	13C9-PFNA	472.2 > 426.9	12810.593	12810.593	1.00	4.64	12.500	12.500	12.5	100.0	NO		
123	1...	13C4-PFOS	503 > 79.7	2874.193	2874.193	1.00	4.72	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7	14246.664	14246.664	1.00	5.01	12.500	12.500	12.5	100.0	NO		
125	1...	13C7-PFUdA	570.1 > 524.8	11144.981	11144.981	1.00	5.34	12.500	12.500			NO		

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_071420_ICV.mdb 15 Jul 2020 08:49:27
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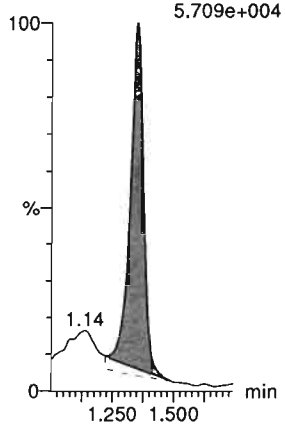
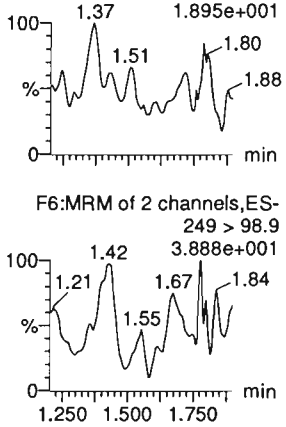
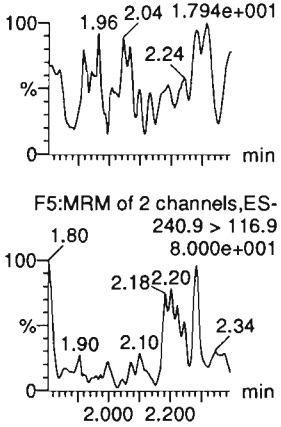
PFBA



PFPrS



3:3 FTCA



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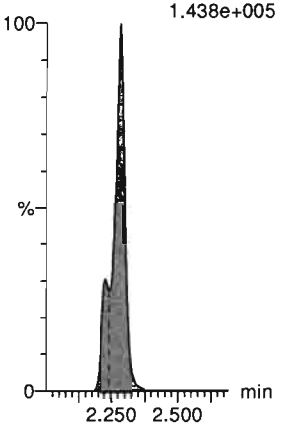

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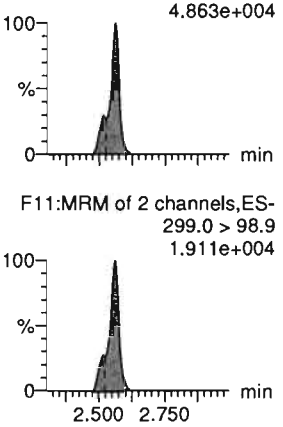

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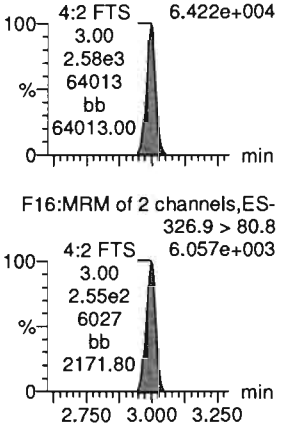
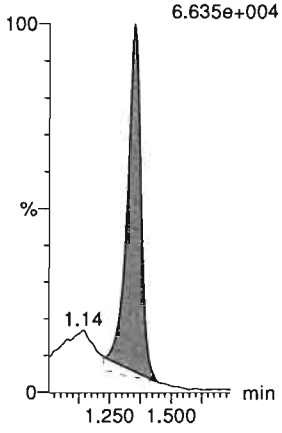


13C3-PFBA-EIS



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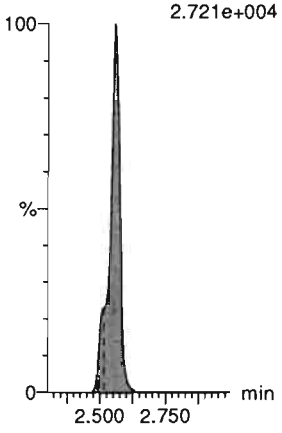

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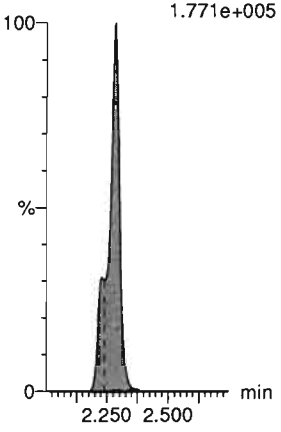

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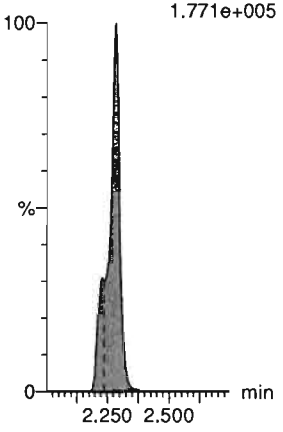

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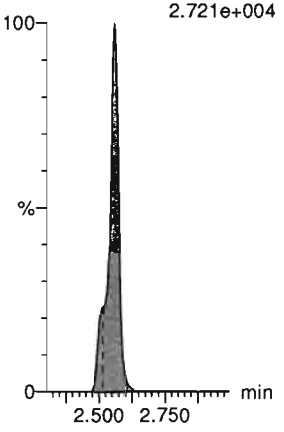

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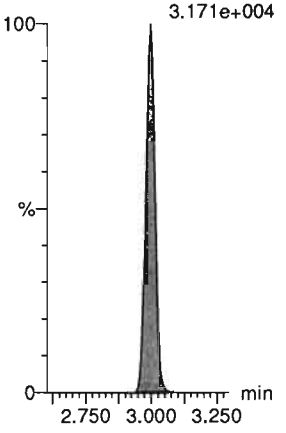

OPV 7/22/2020

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Printed: Wednesday, July 22, 2020 11:34:55 Pacific Daylight Time

Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

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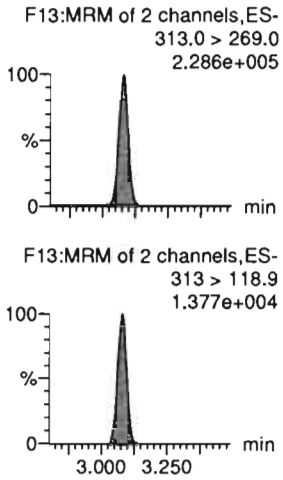

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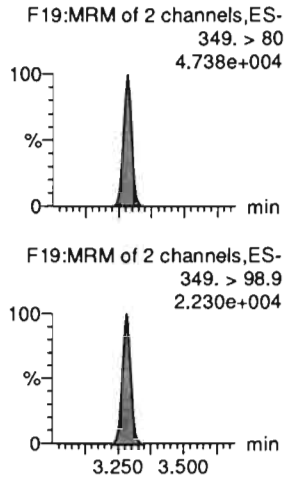

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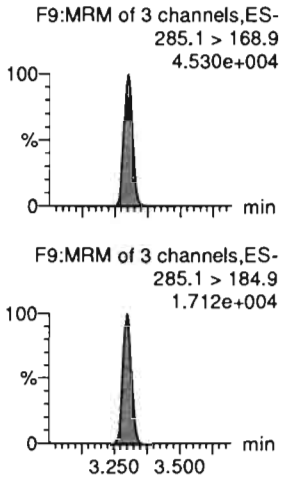
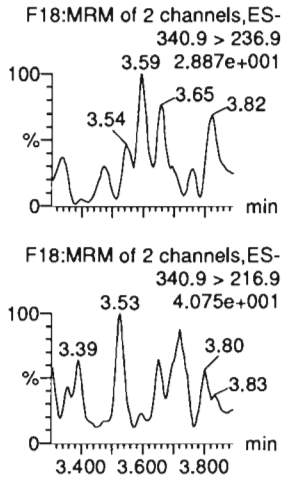


5:3 FTCA



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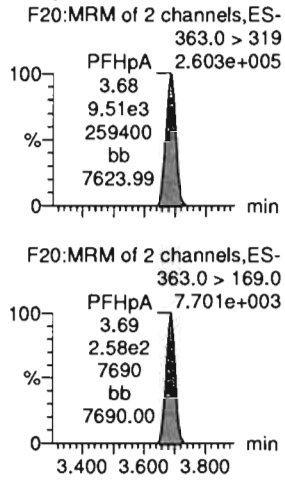

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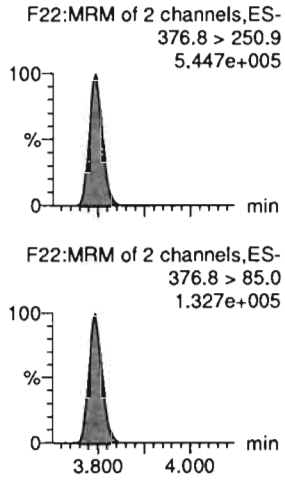

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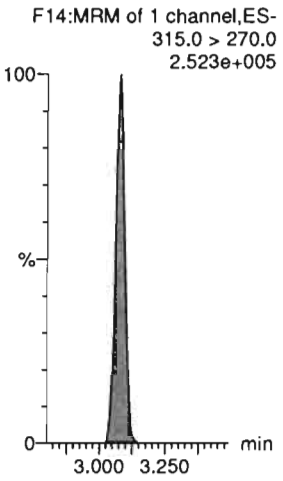

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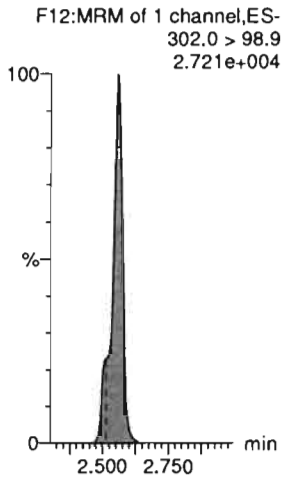

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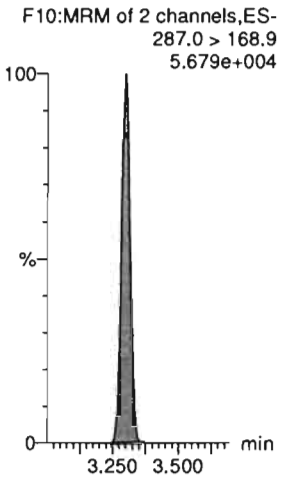

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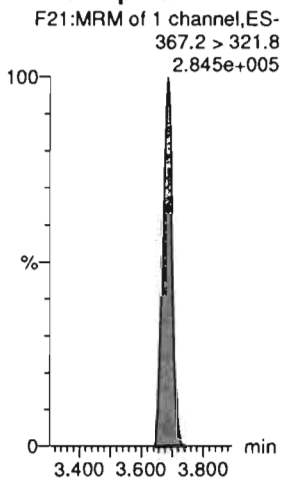

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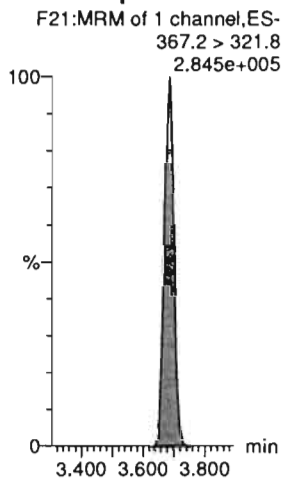

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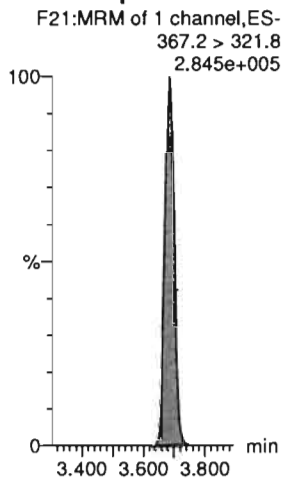

OPV 7/22/2020

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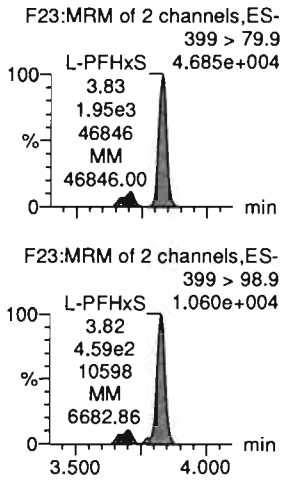
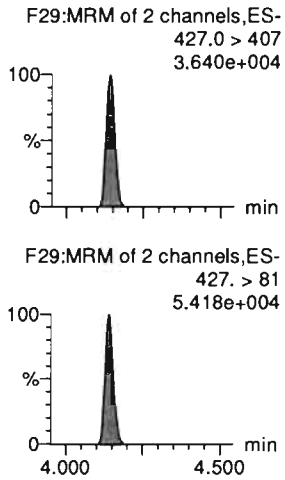
Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

L-PFHxS



6:2 FTS



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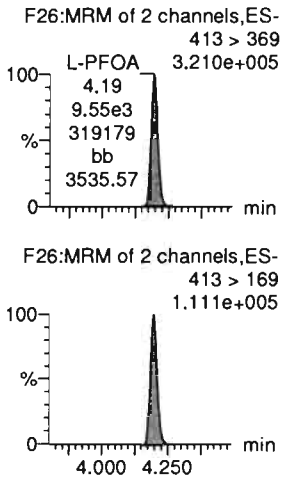

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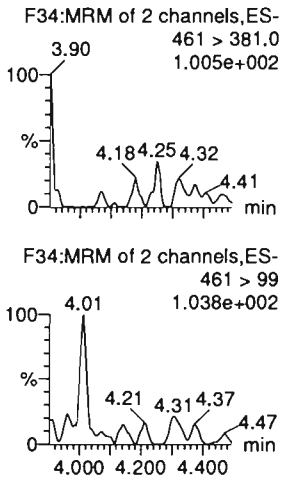

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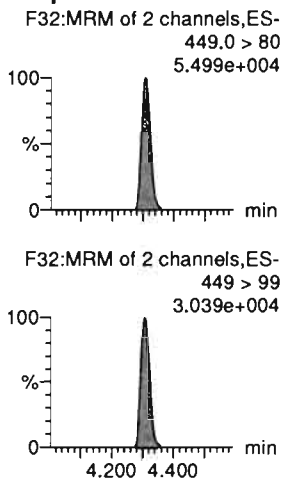

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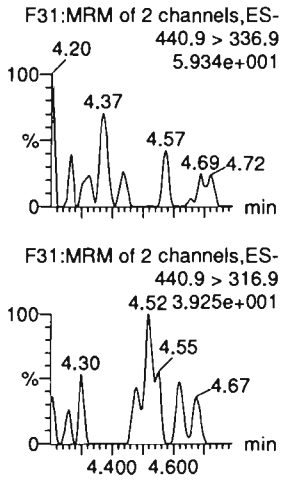

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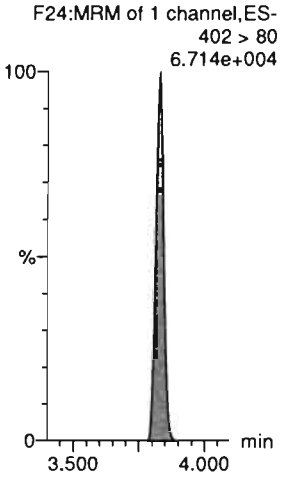

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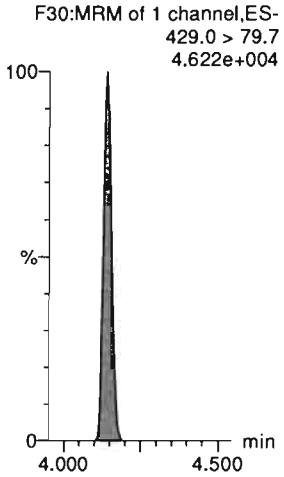

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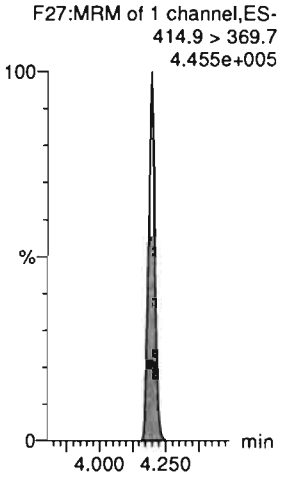

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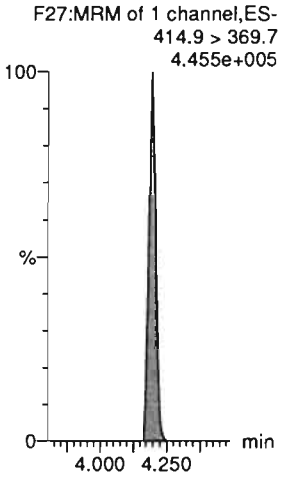

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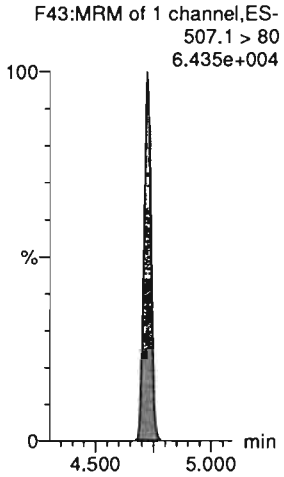
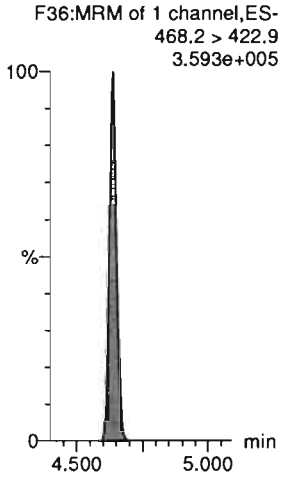


13C5-PFNA-EIS



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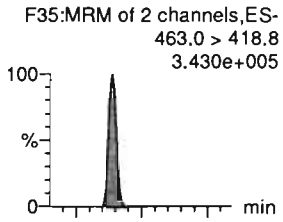

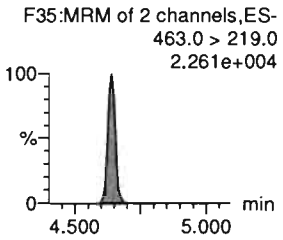

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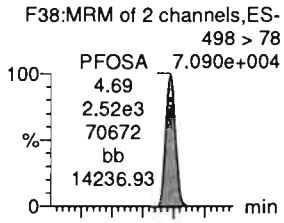
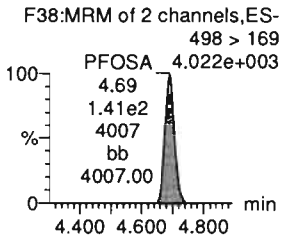
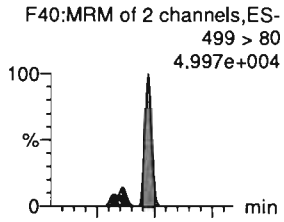
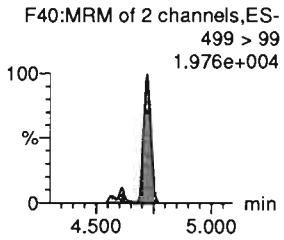




L-PFOS





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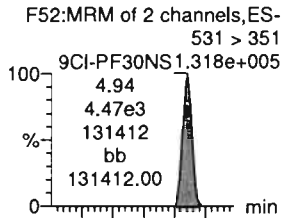

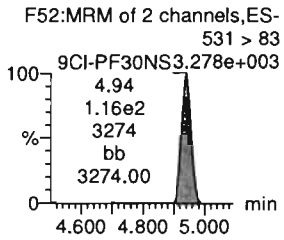

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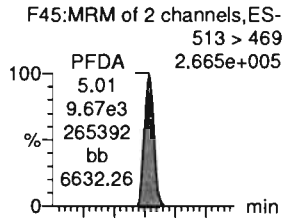

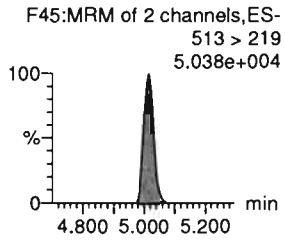

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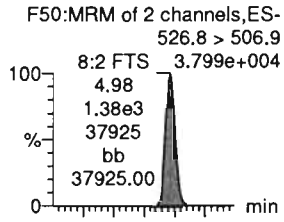

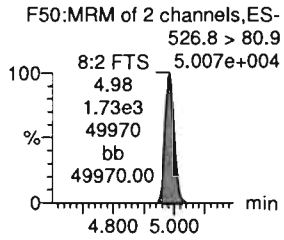

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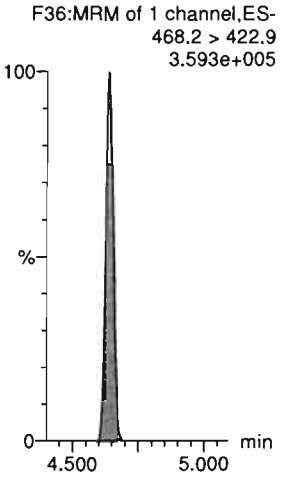

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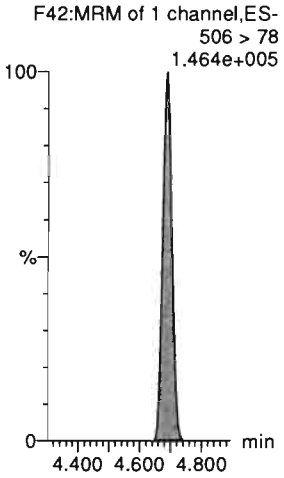

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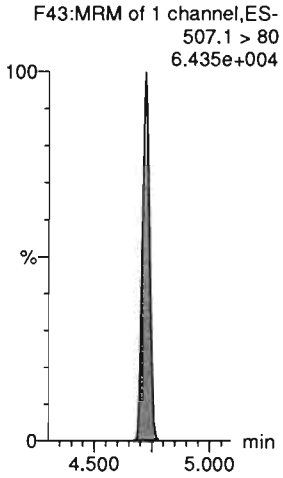

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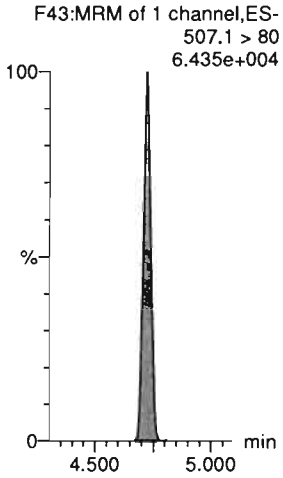

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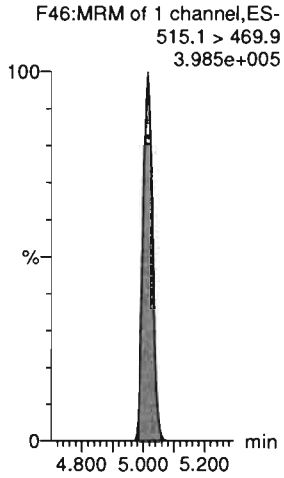

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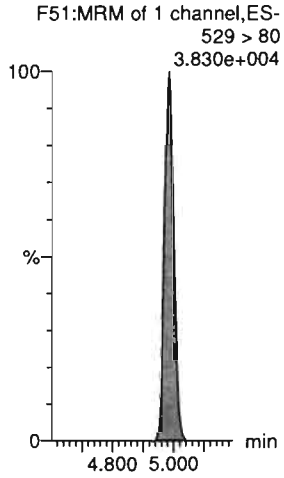

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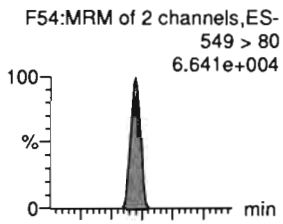
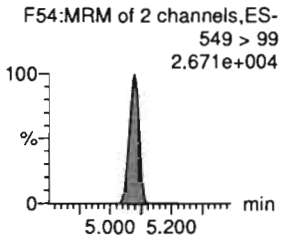
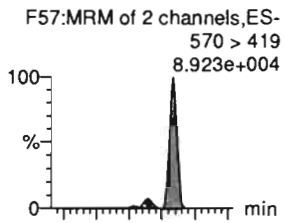
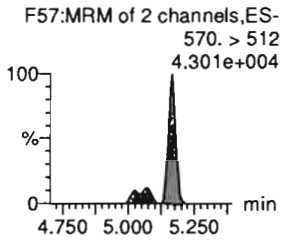
PFNS



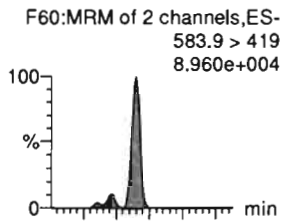


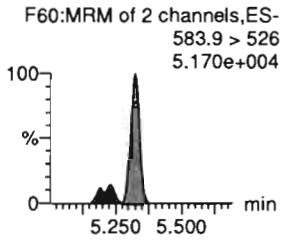
L-MeFOSAA



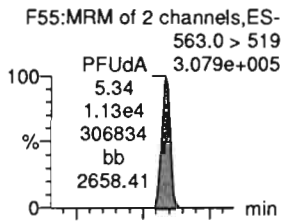


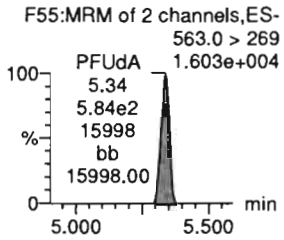
L-EtFOSAA



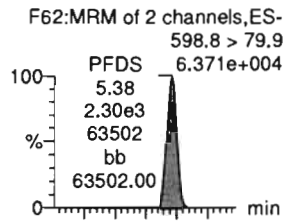


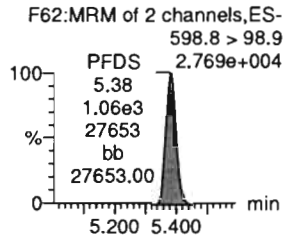
PFUdA



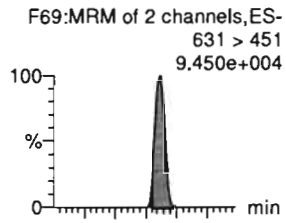


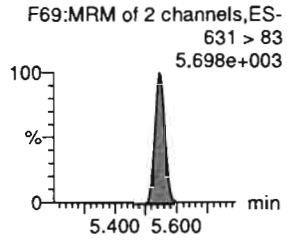
PFDS



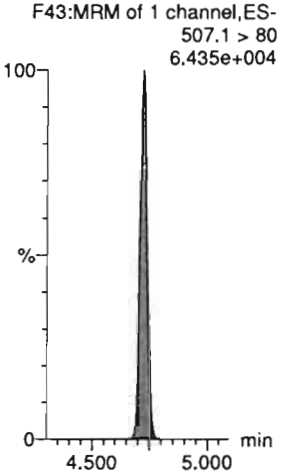


11Cl-PF30UdS

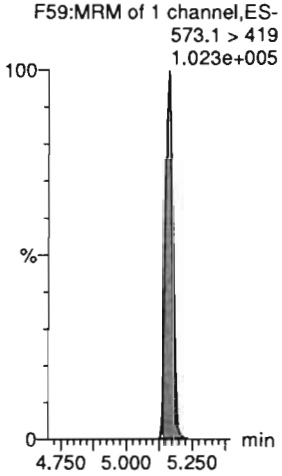




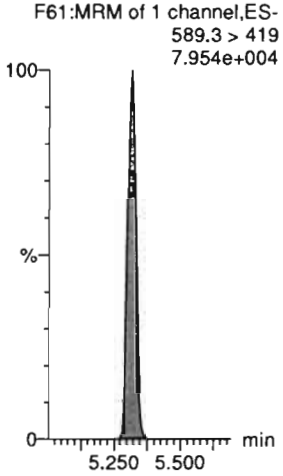
13C8-PFOS-EIS



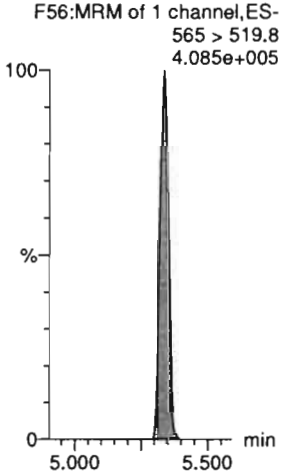
d3-N-MeFOSAA-EIS



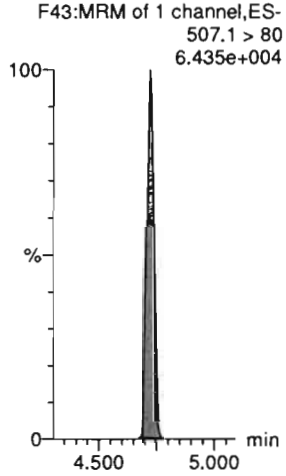
d5-N-EtFOSAA-EIS



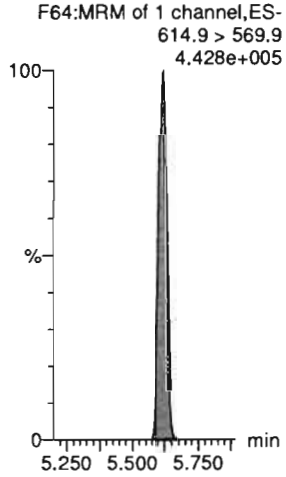
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



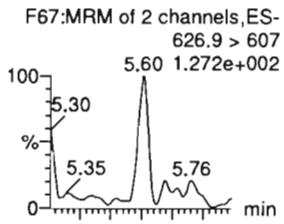
OPV 7/22/2020

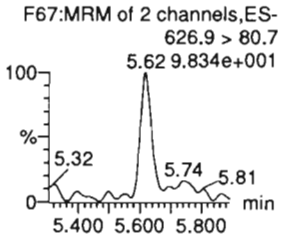
Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-ICV.qld

Last Altered: Wednesday, July 22, 2020 11:34:13 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:34:55 Pacific Daylight Time

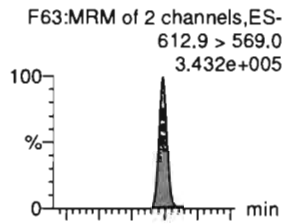
Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

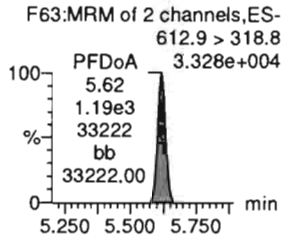
10:2 FTS



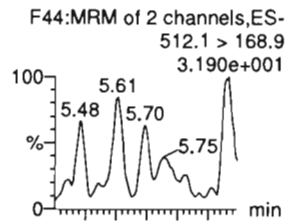


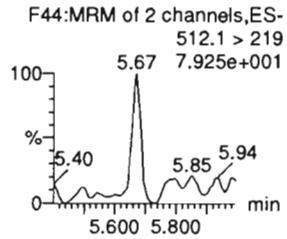
PFDoA



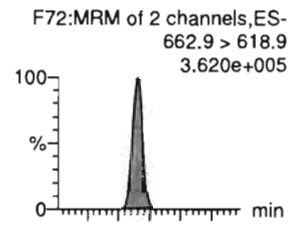


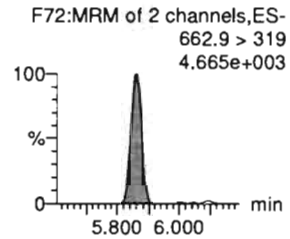
N-MeFOSA



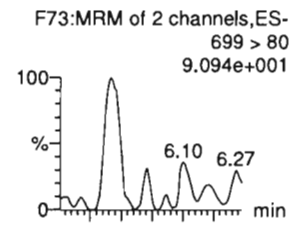


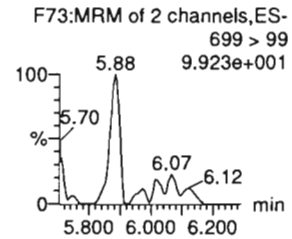
PFTrDA



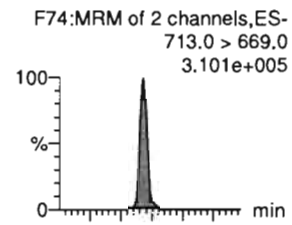


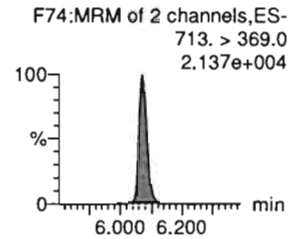
PFDoS



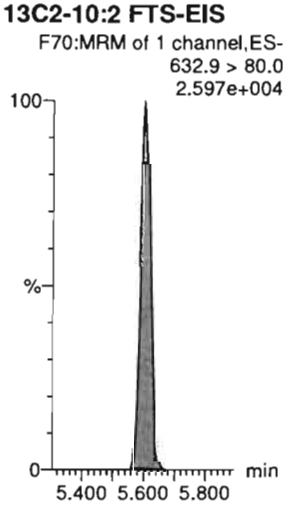


PFTeDA

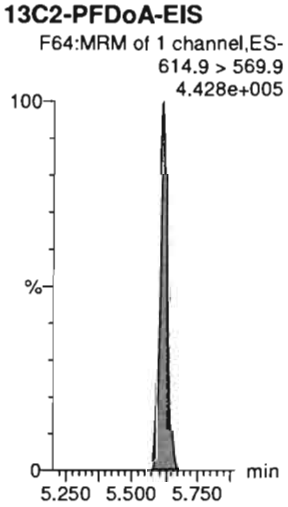




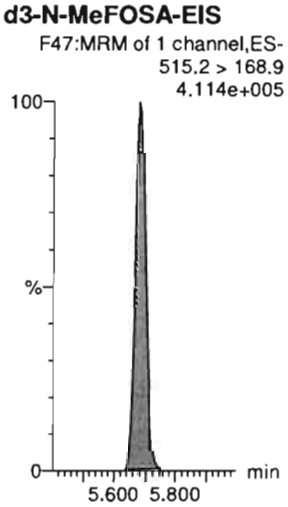
13C2-10:2 FTS-EIS



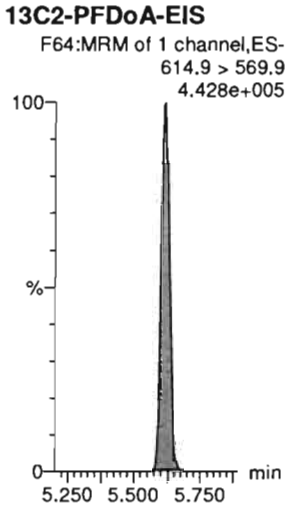
13C2-PFDoA-EIS



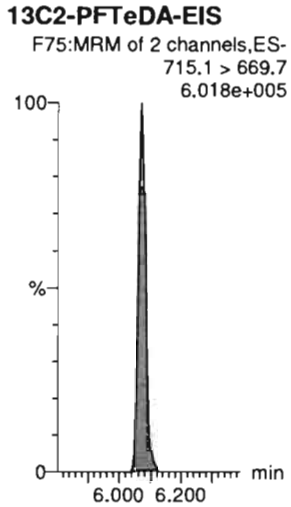
d3-N-MeFOSA-EIS



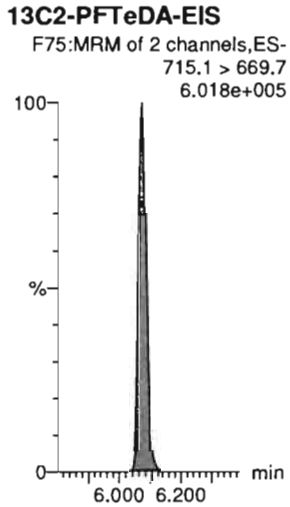
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-ICV.qld

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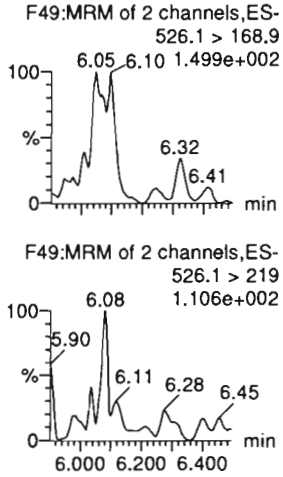
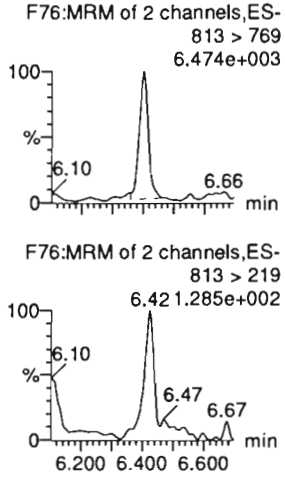
Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

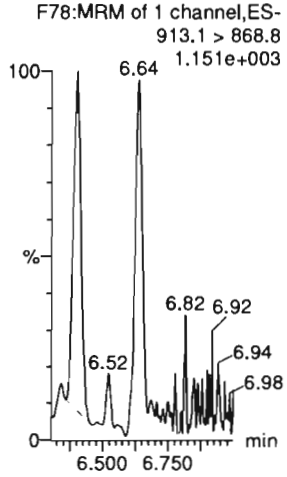
N-EtFOSA



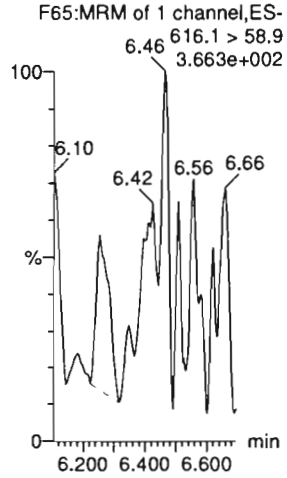
PFHxDA



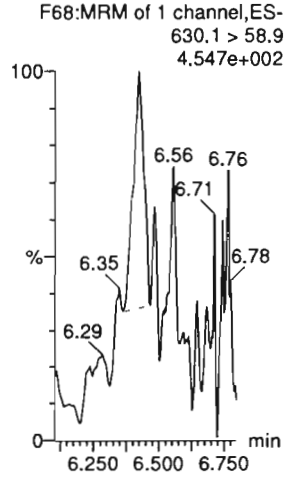
PFODA



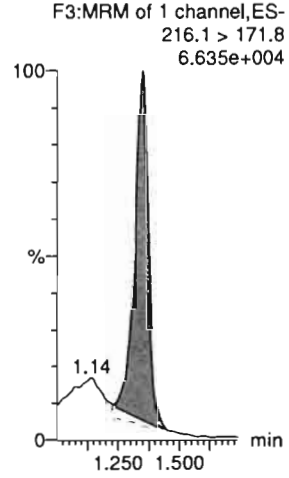
N-MeFOSE



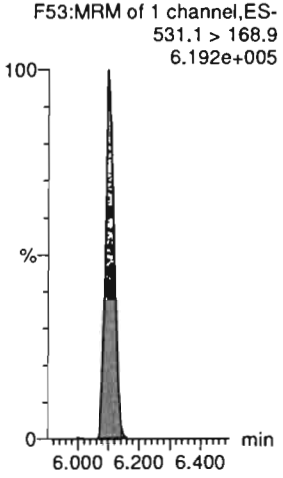
N-EtFOSE



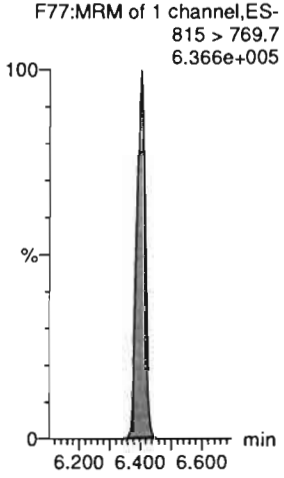
13C3-PFBA-RSD



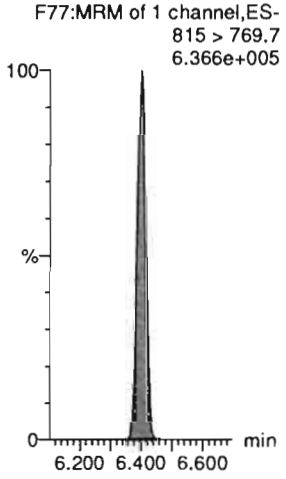
d5-N-ETFOSA-EIS



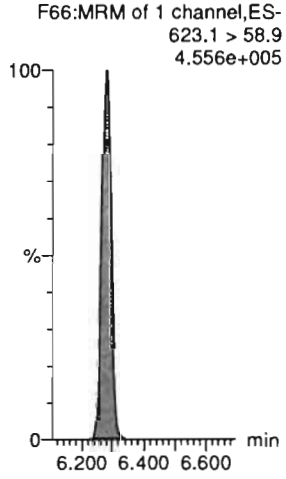
13C2-PFHxDA-EIS



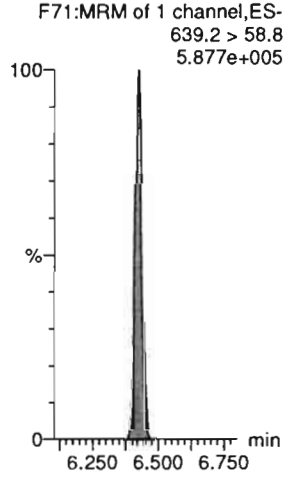
13C2-PFHxDA-EIS



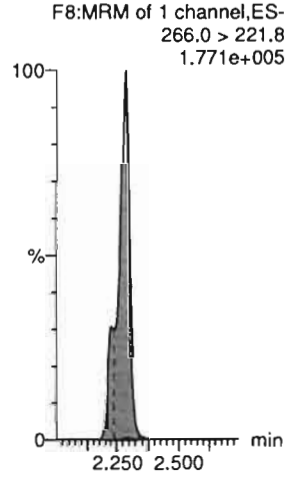
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



OPV 7/22/2020

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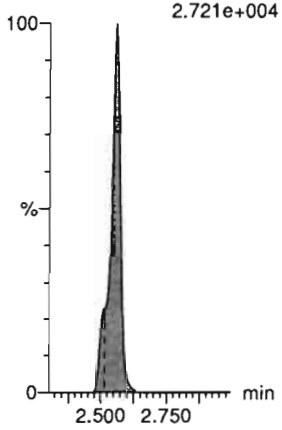
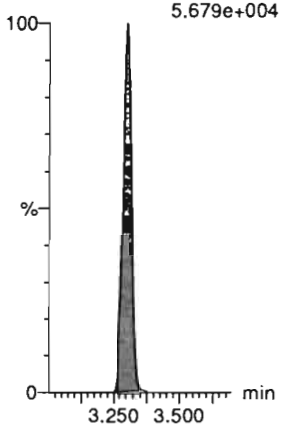
Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

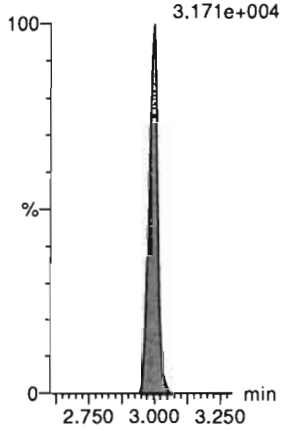
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.721e+004



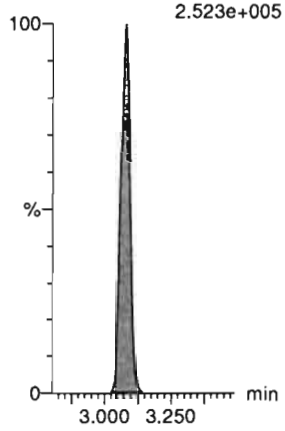
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.679e+004



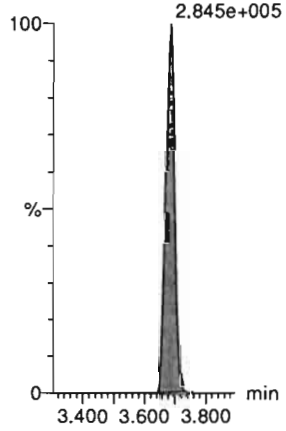
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.171e+004



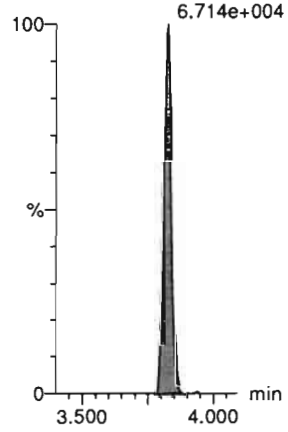
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.523e+005



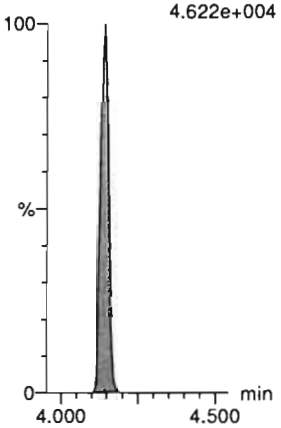
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.845e+005



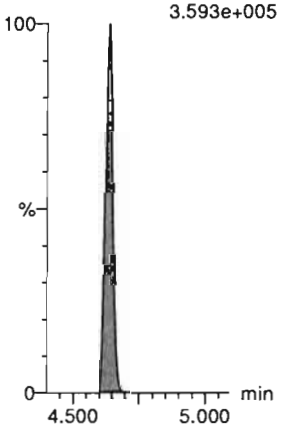
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.714e+004



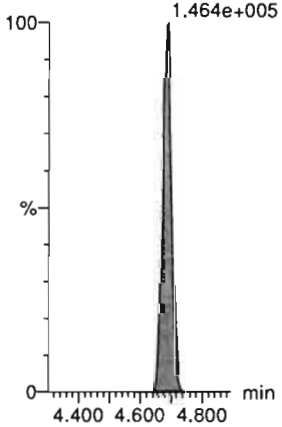
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.622e+004



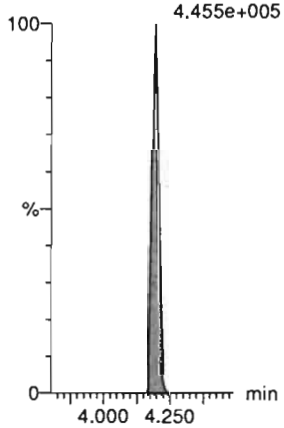
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.593e+005



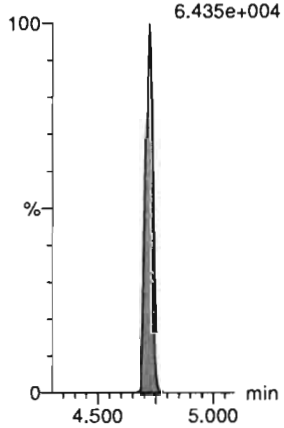
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.464e+005



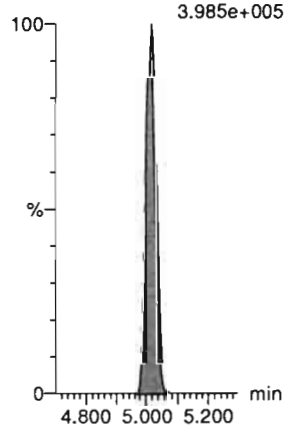
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
4.455e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.435e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.985e+005



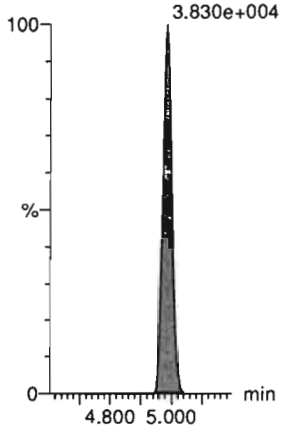
OPV 7/22/2020

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-ICV.qld

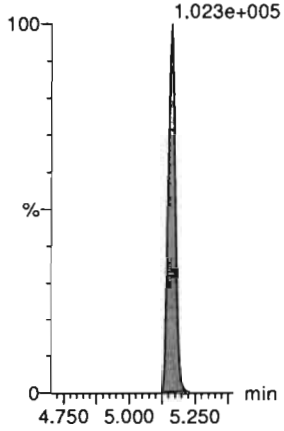
Last Altered: Wednesday, July 22, 2020 11:34:13 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:34:55 Pacific Daylight Time

Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

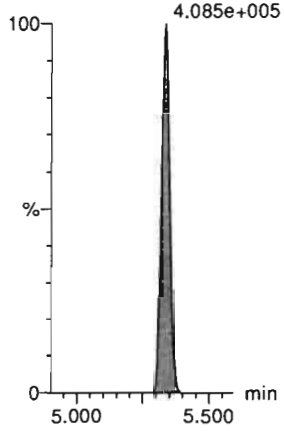
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.830e+004



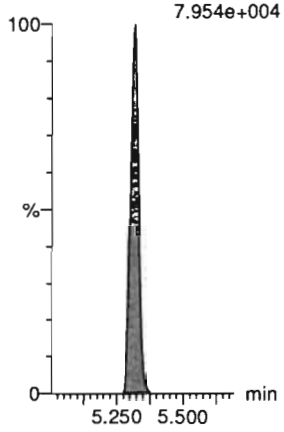
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
1.023e+005



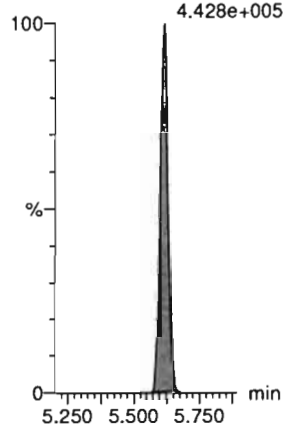
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
4.085e+005



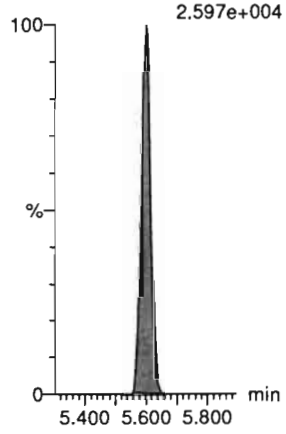
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.954e+004



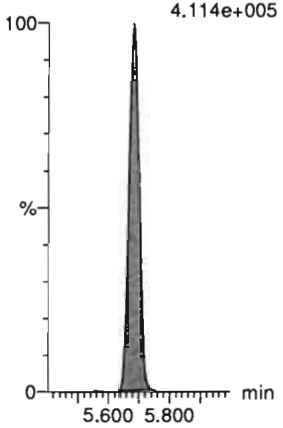
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.428e+005



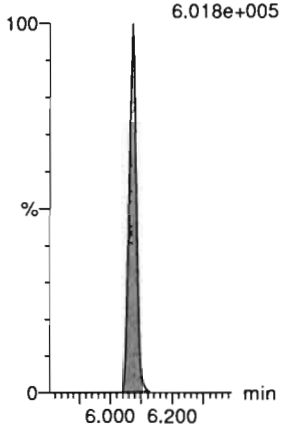
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.597e+004



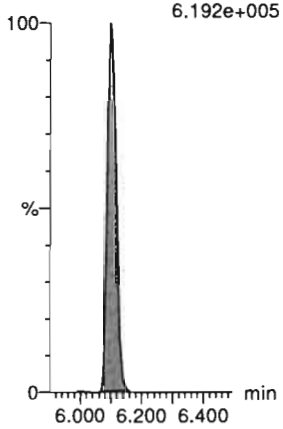
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.114e+005



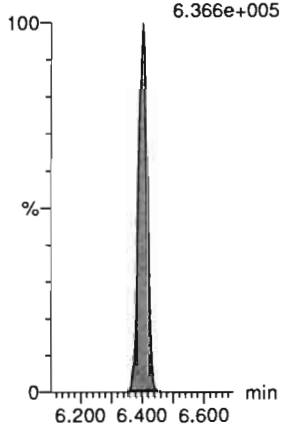
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
6.018e+005



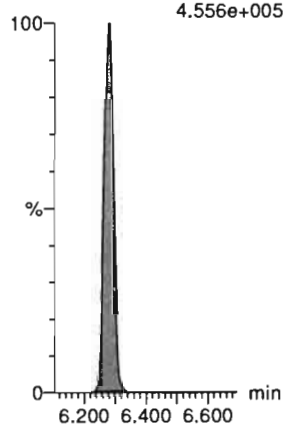
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
6.192e+005



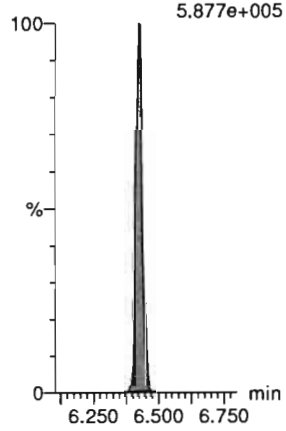
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.366e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.556e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.877e+005



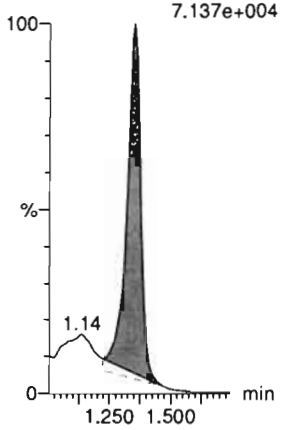
OPV 7/22/2020

Dataset: D:\PFAS5.PRO\RESULTS\200721P1\200721P1-ICV.qld

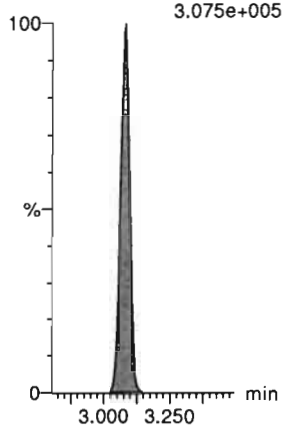
Last Altered: Wednesday, July 22, 2020 11:34:13 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 11:34:55 Pacific Daylight Time

Name: 200721P1-16, Date: 21-Jul-2020, Time: 17:54:04, ID: ICV200720P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

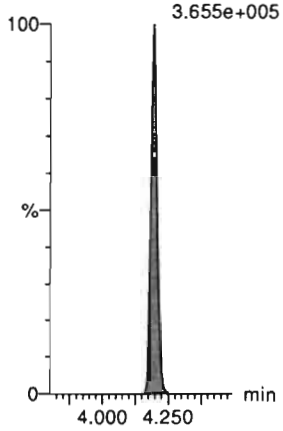
13C4-PFBA



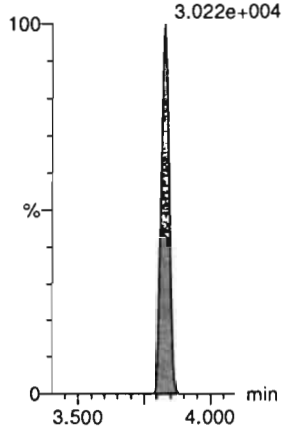
13C5-PFHxA



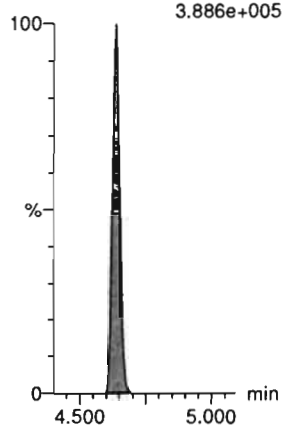
13C8-PFOA



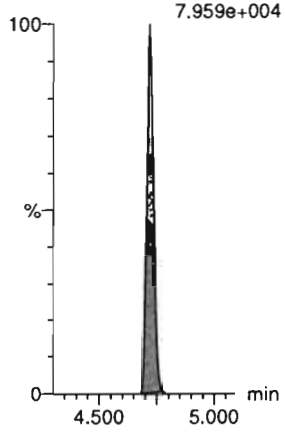
18O2-PFHxS



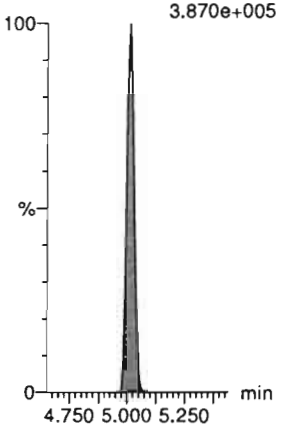
13C9-PFNA



13C4-PFOS



13C6-PFDA



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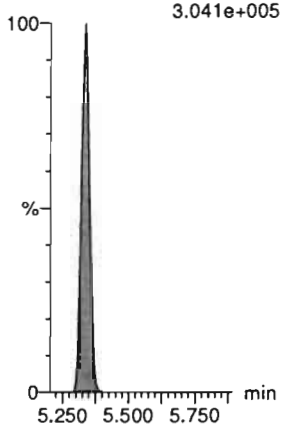

OPV 7/22/2020

Vista Analytical Laboratory

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Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

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Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-21-20.cdb 22 Jul 2020 10:23:03

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

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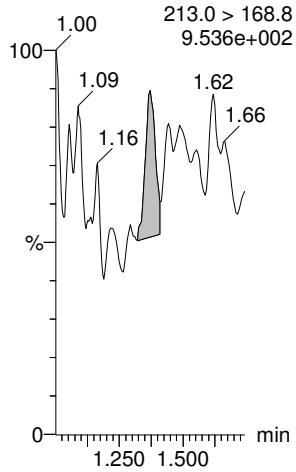
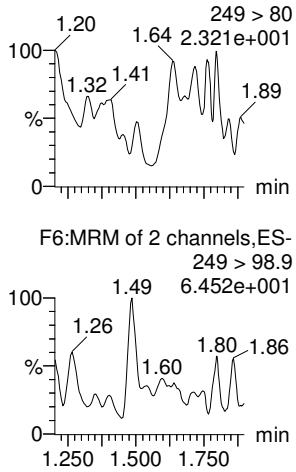
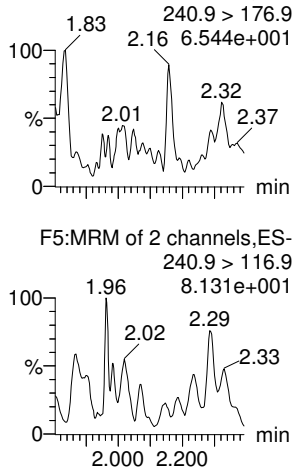


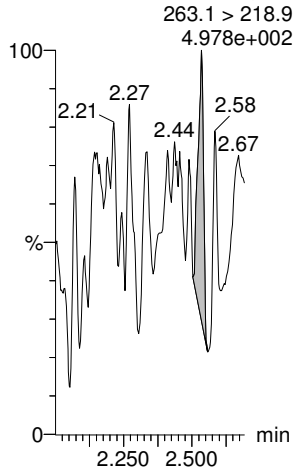
PFPrS



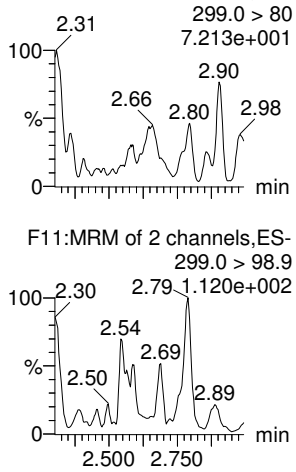
3:3 FTCA



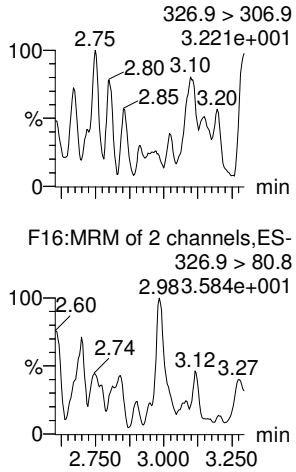
PFPeA



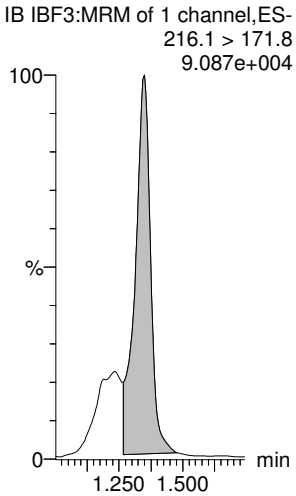
PFBS



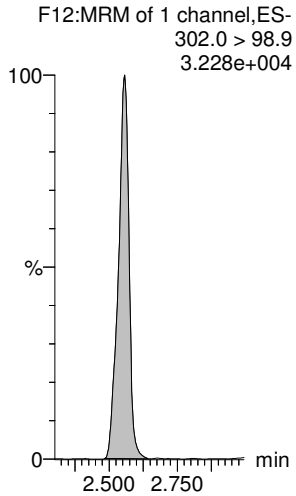
4:2 FTS



13C3-PFBA-EIS



13C3-PFBS-EIS



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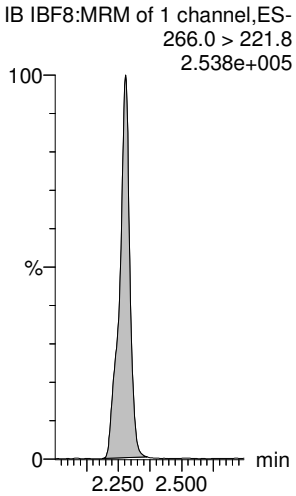

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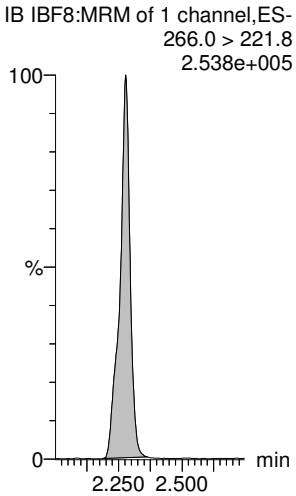

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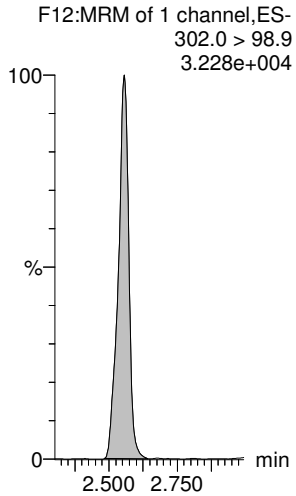
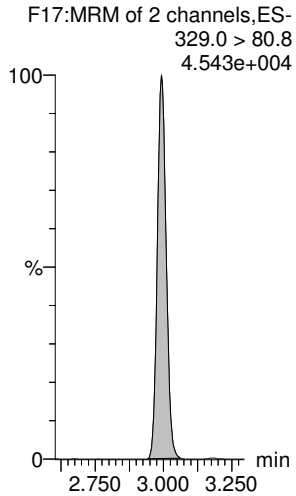


13C2-4:2 FTS-EIS



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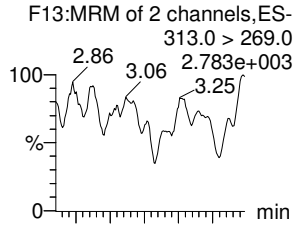
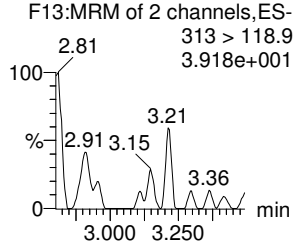
Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

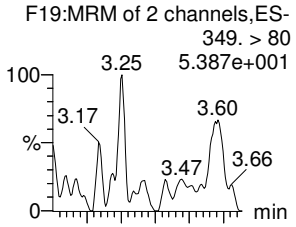
Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

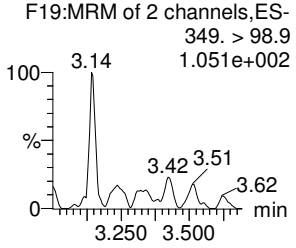
PFHxA



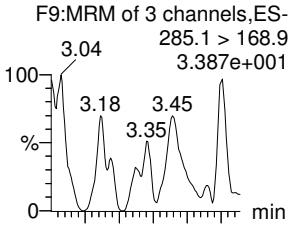


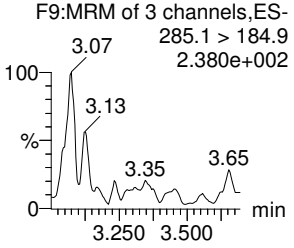
PFPeS



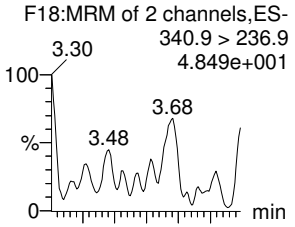


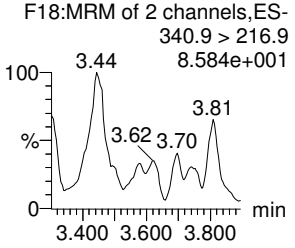
HFPO-DA



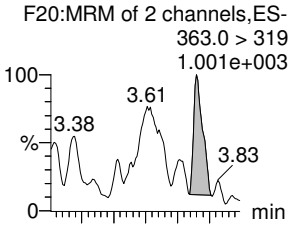


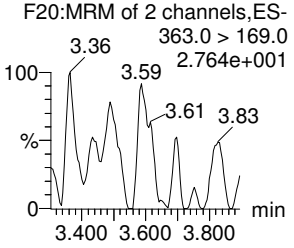
5:3 FTCA



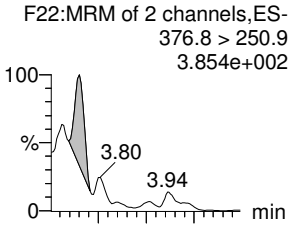


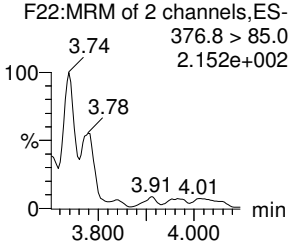
PFHpA



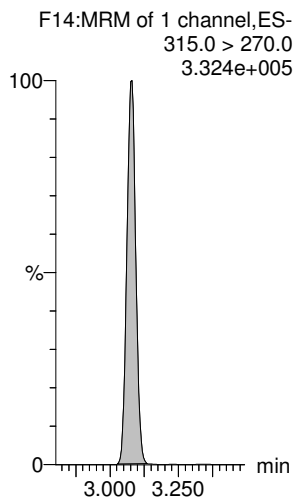


ADONA

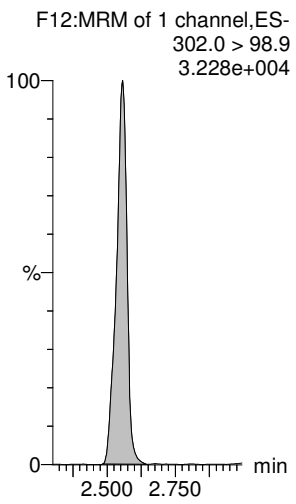




13C2-PFHxA-EIS



13C3-PFBS-EIS



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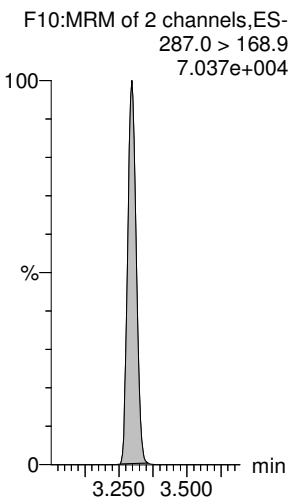

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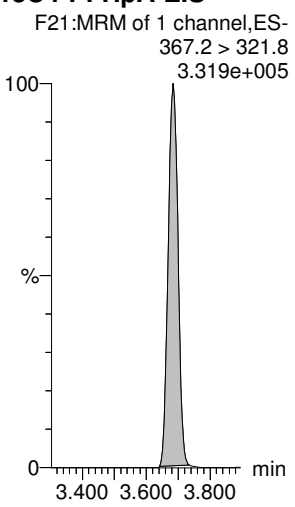

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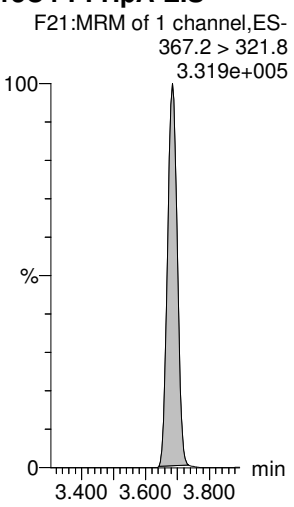

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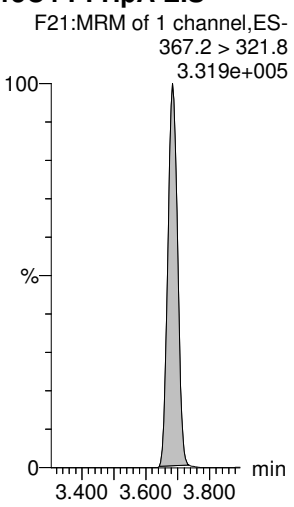

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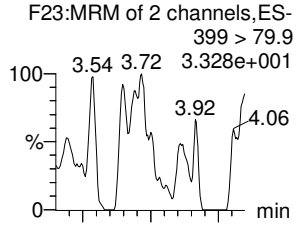
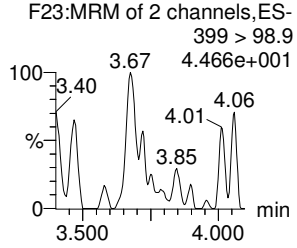
Printed: Wednesday, July 22, 2020 10:42:49 Pacific Daylight Time

Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

L-PFHxS





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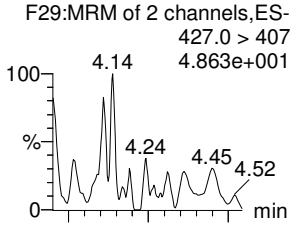

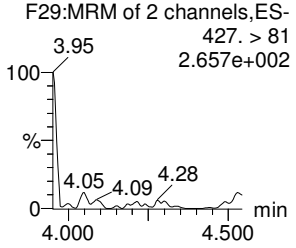

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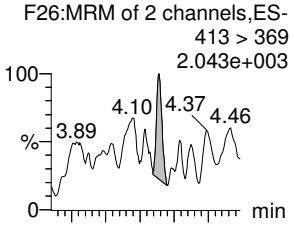

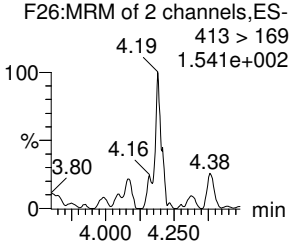

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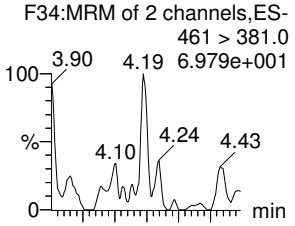

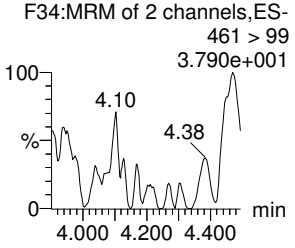

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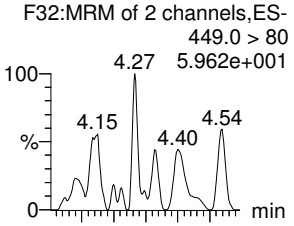
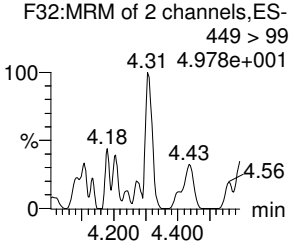
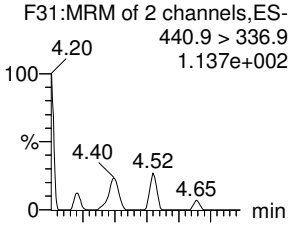
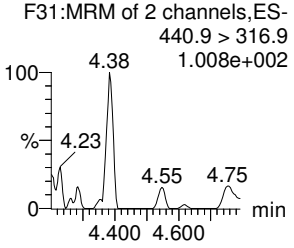


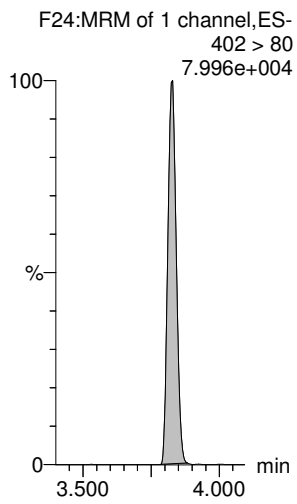


7:3 FTCA

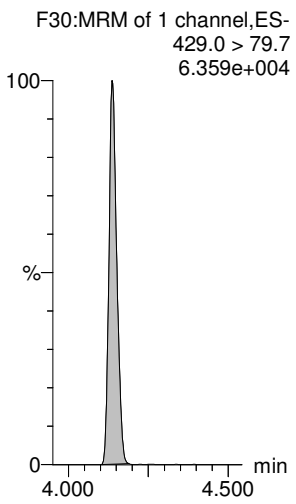




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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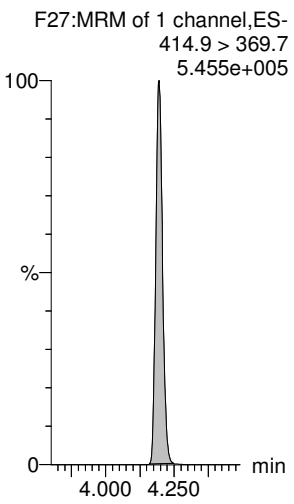

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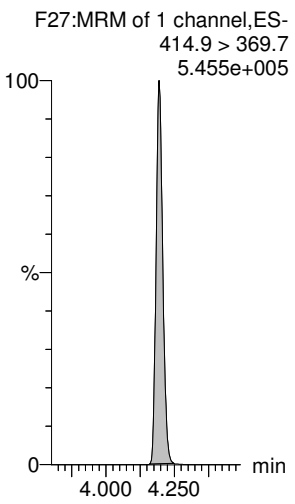
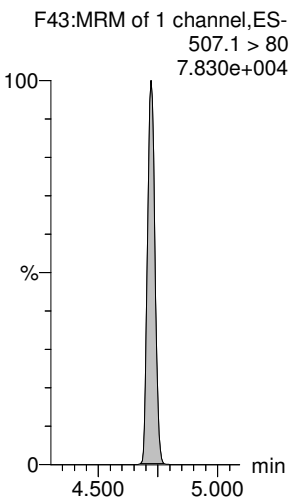
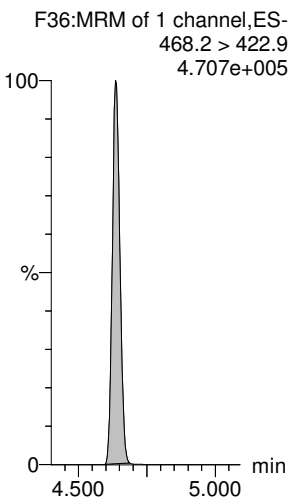


13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

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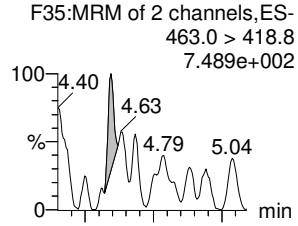

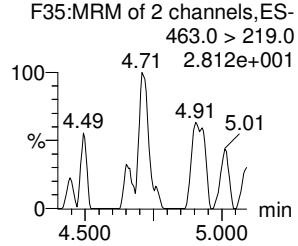

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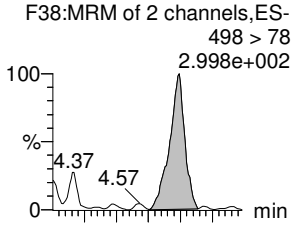
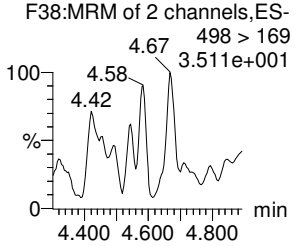
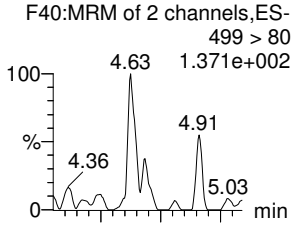
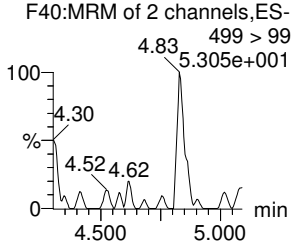




L-PFOS





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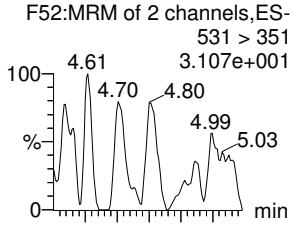

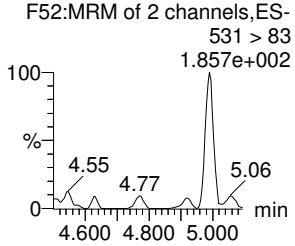

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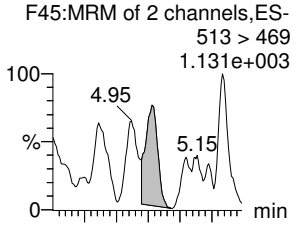
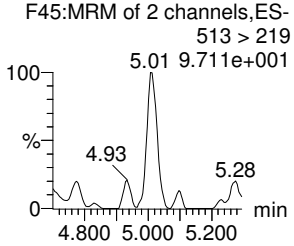
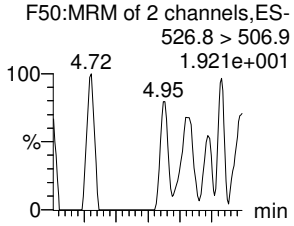
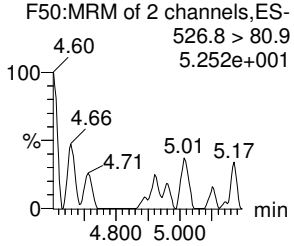




8:2 FTS





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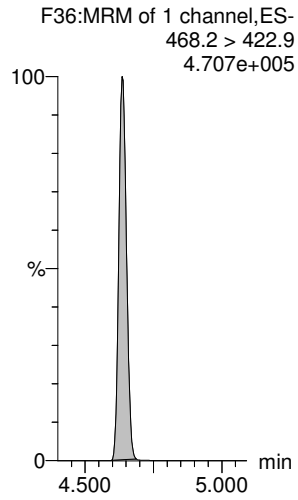

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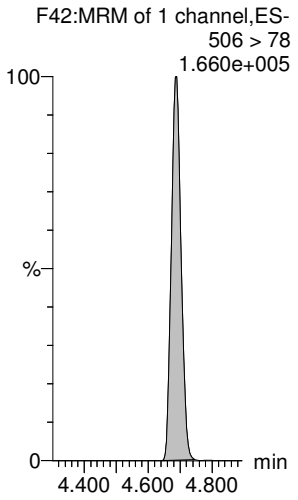

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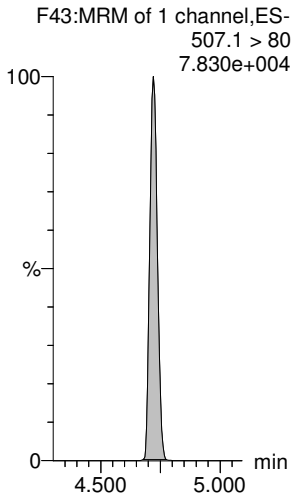

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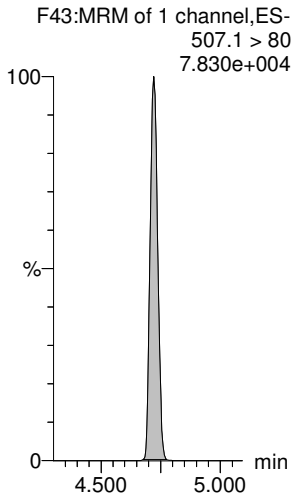

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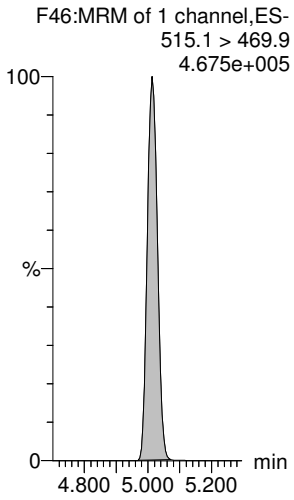

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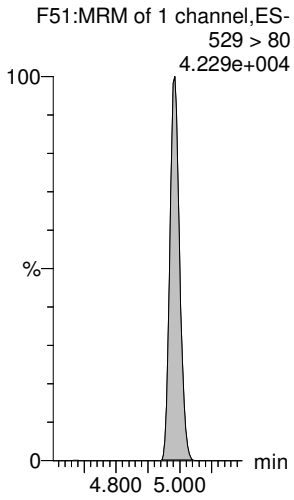

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Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
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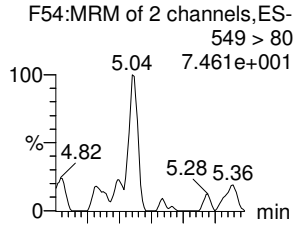
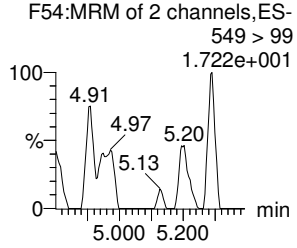
Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

PFNS





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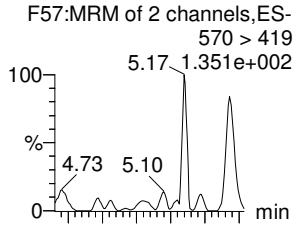
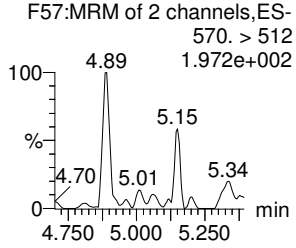
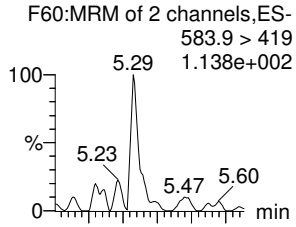
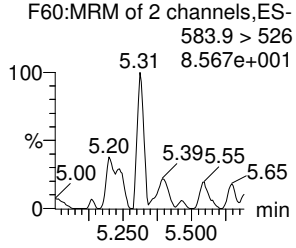




L-EtFOSAA





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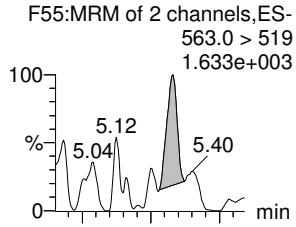

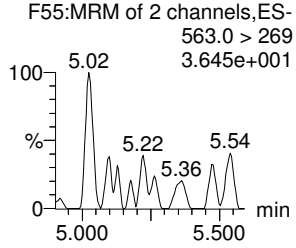

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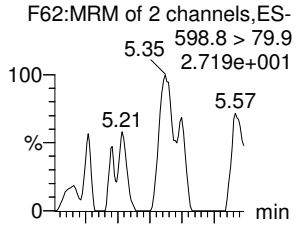

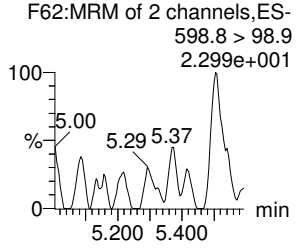

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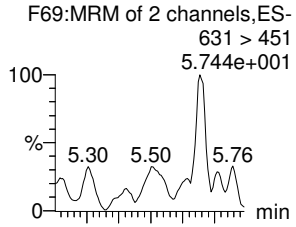

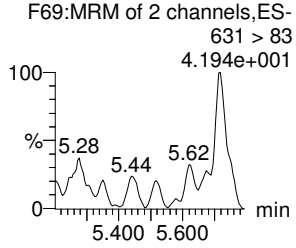

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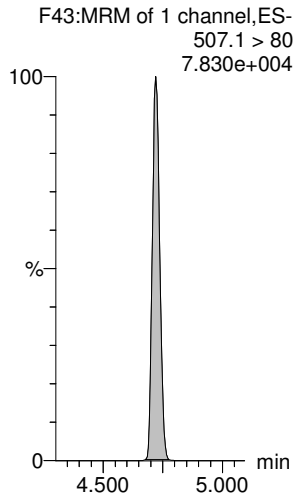

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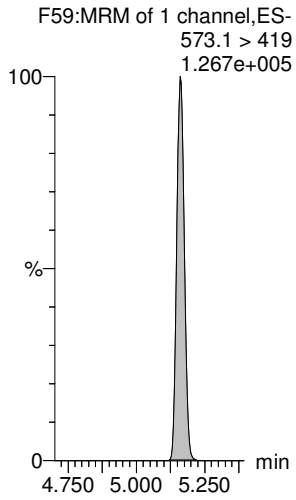

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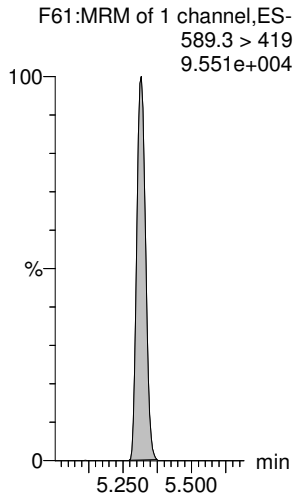

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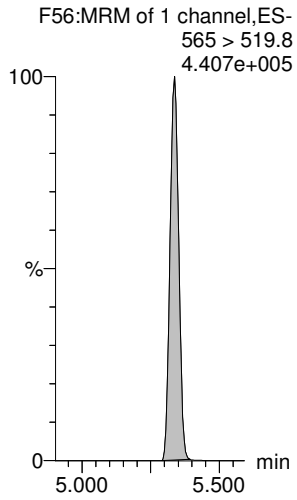

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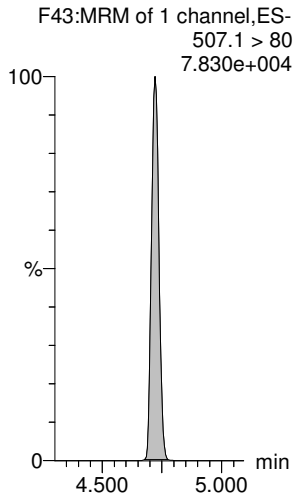

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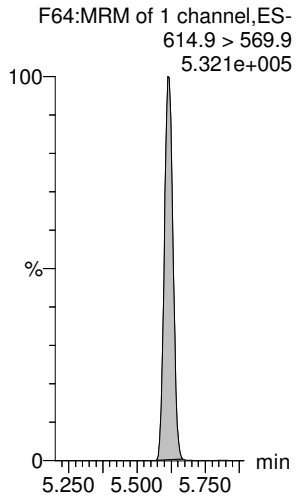

Vista Analytical Laboratory

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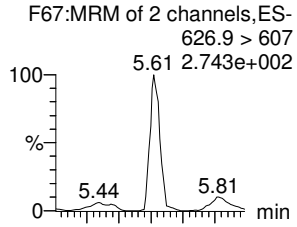
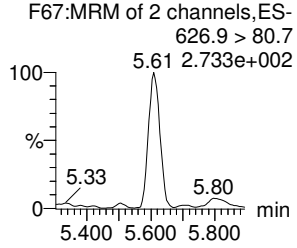
10:2 FTS





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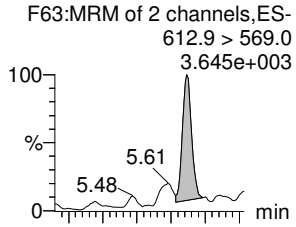

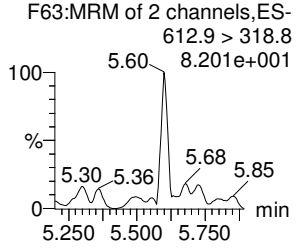

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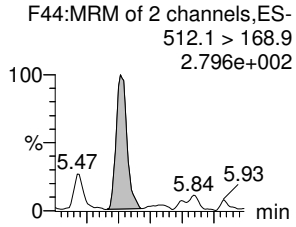

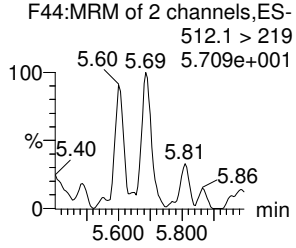

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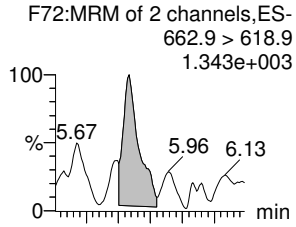

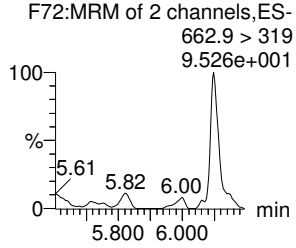

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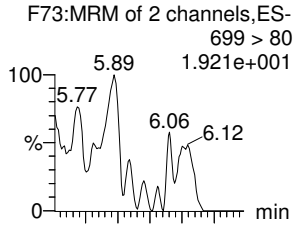

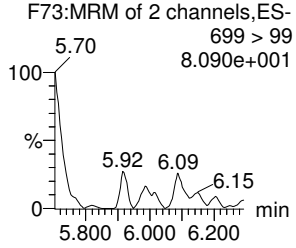

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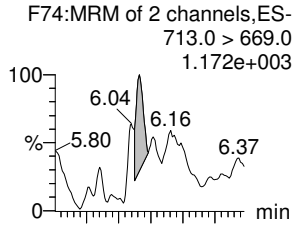

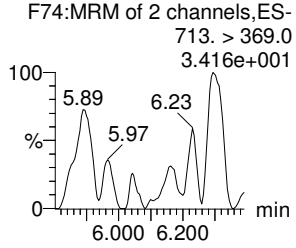

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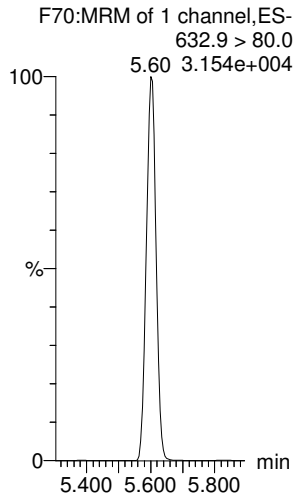

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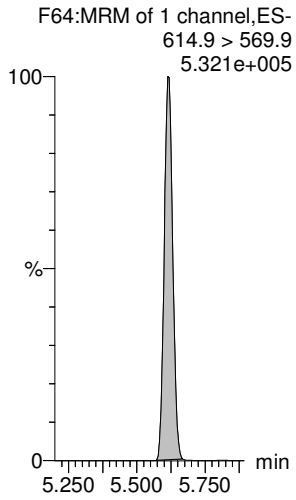

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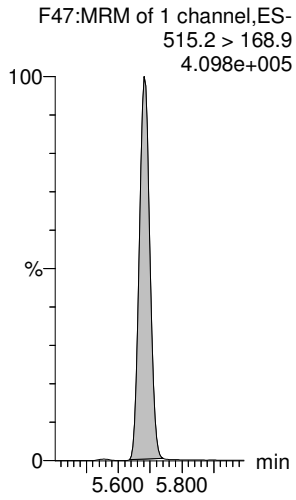

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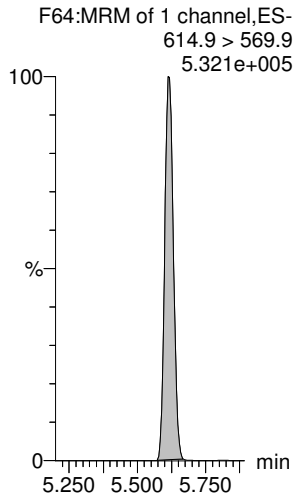

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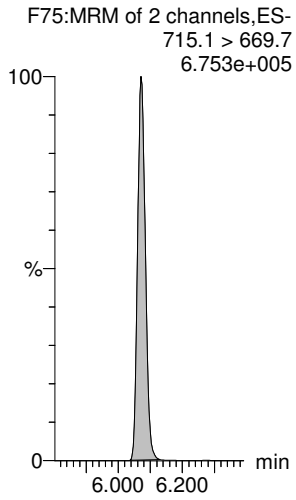

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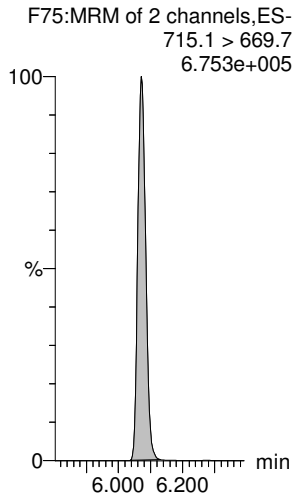

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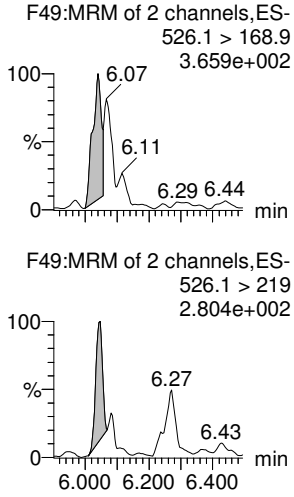

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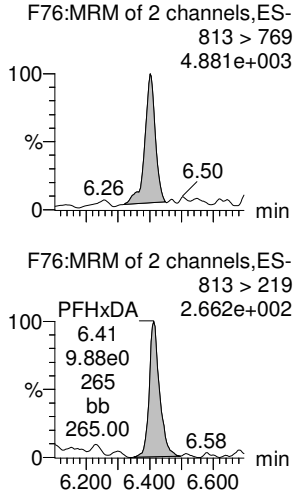

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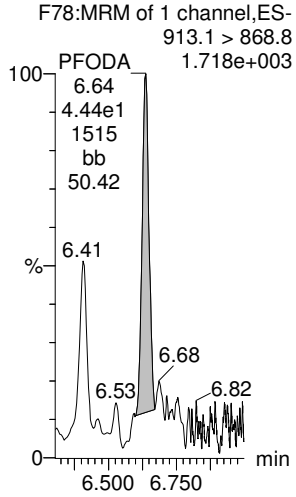

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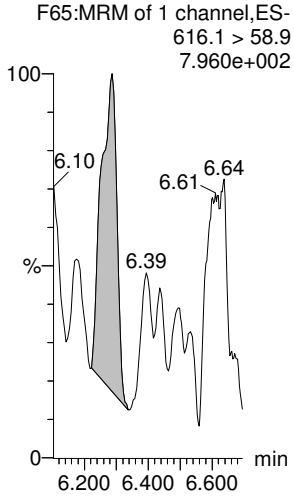

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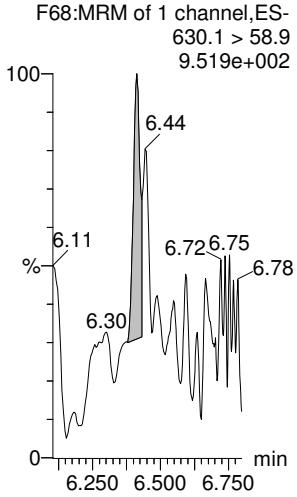

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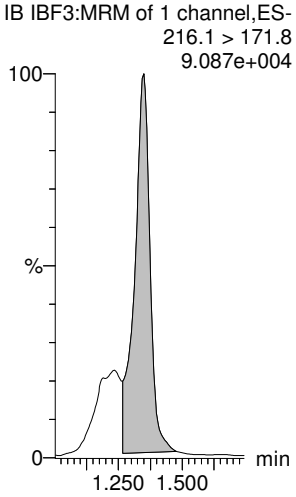

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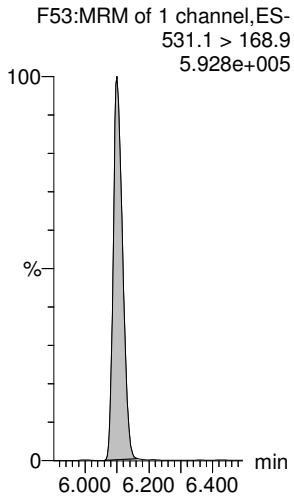

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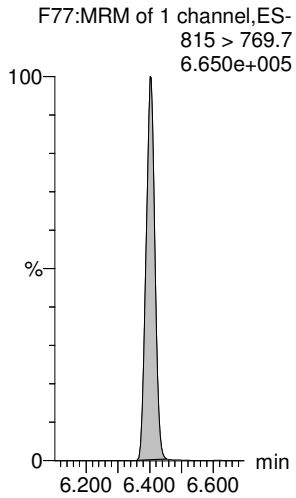

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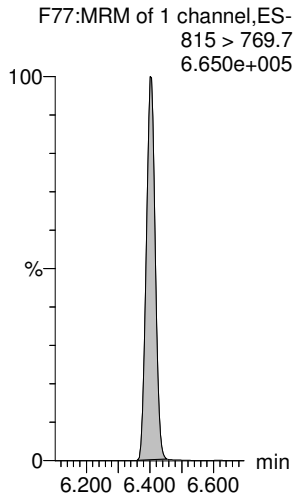

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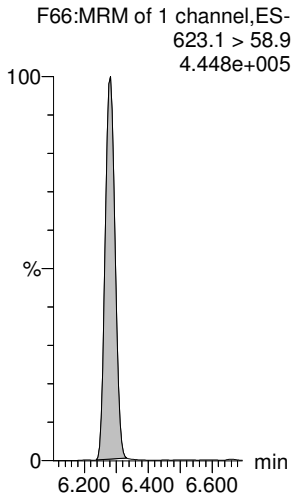

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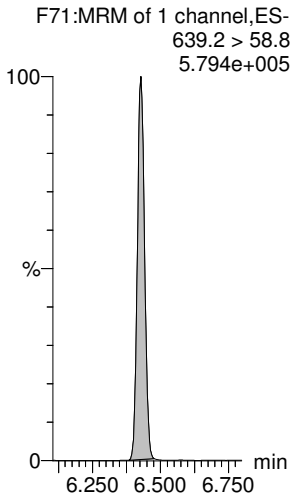

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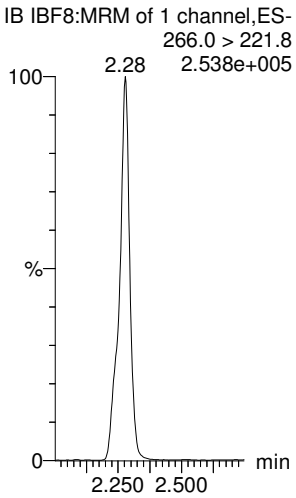

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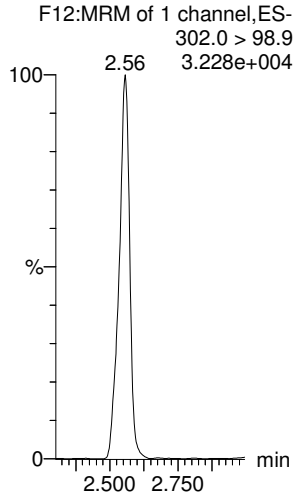

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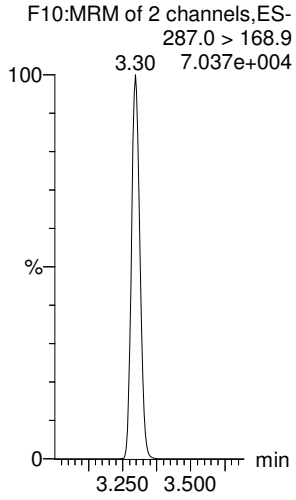

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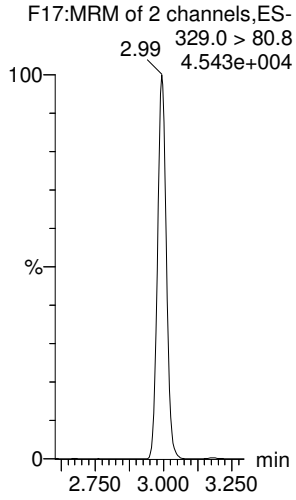

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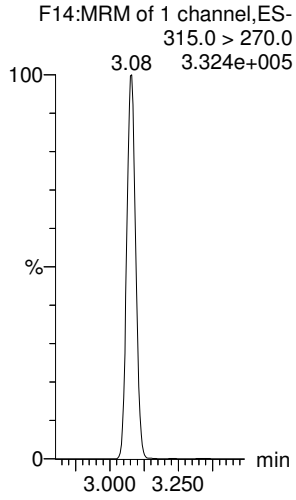

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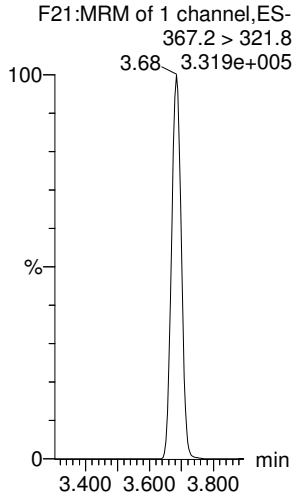

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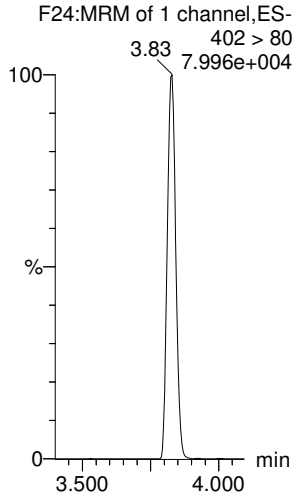

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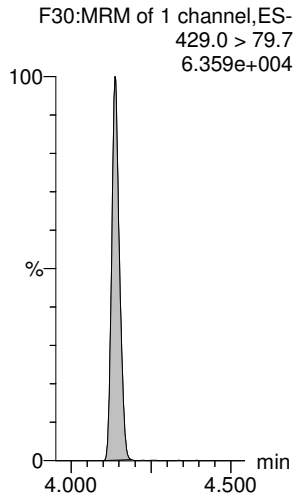

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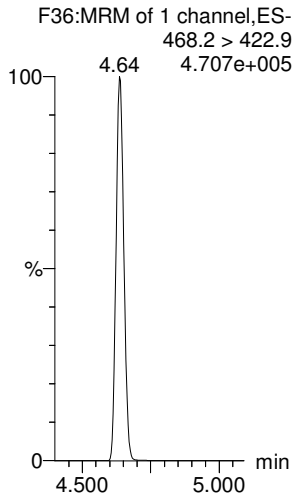

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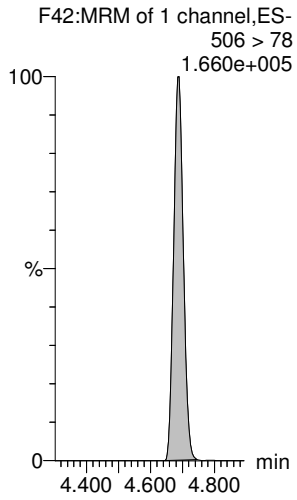

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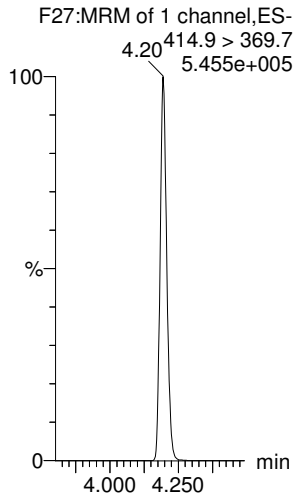

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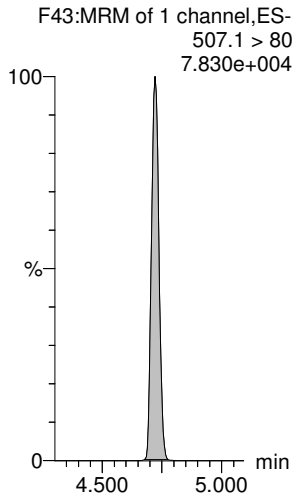

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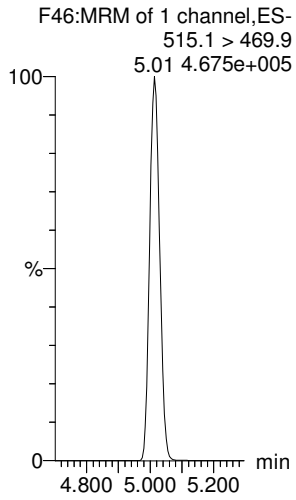

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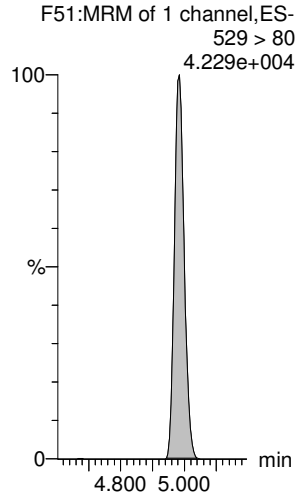
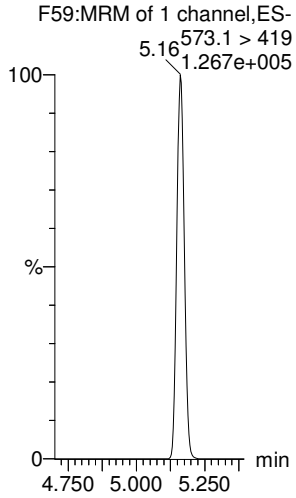
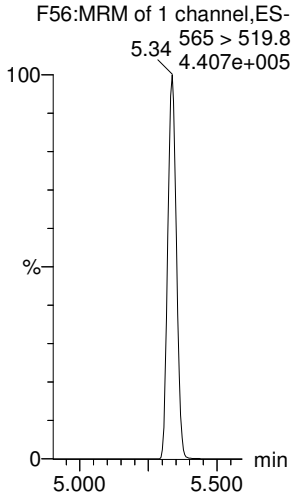
13C2-8:2 FTS-RSD



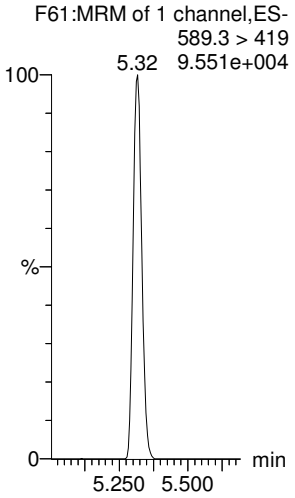
d3-N-MeFOSAA-RSD



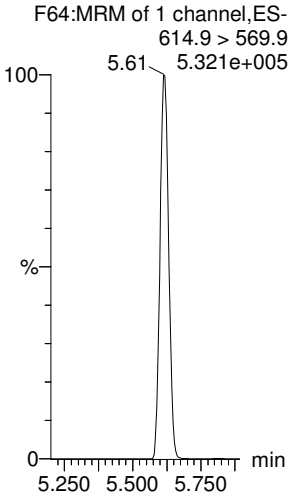
13C2-PFUdA-RSD



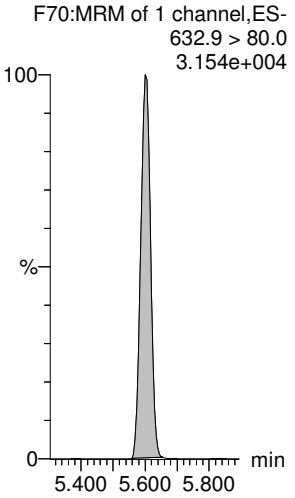
d5-N-EtFOSAA-RSD



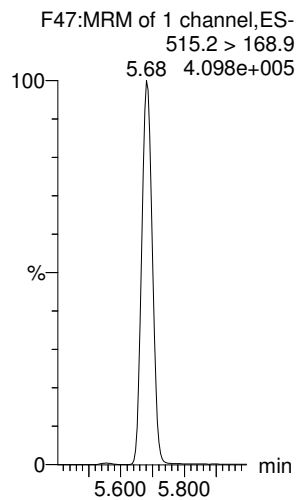
13C2-PFDoA-RSD



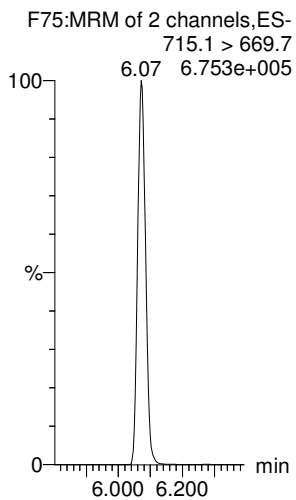
13C2-10:2 FTS-RSD



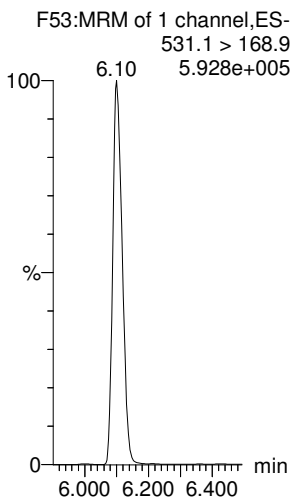
d3-N-MeFOSA-RSD



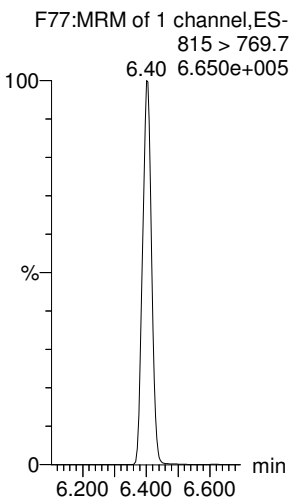
13C2-PFTeDA-RSD



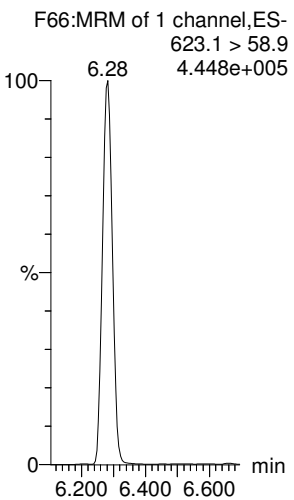
d5-N-ETFOSA-RSD



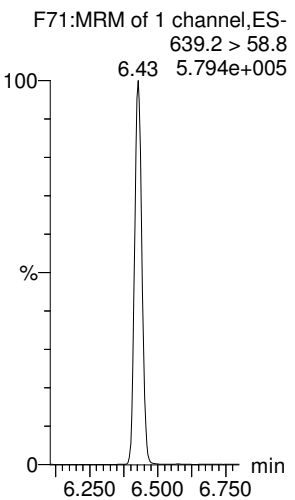
13C2-PFHxDA-RSD



d7-N-MeFOSE-RSD



d9-N-EtFOSE-RSD



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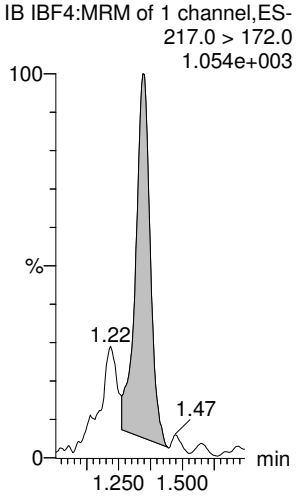
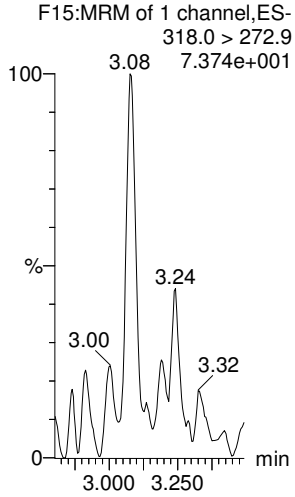
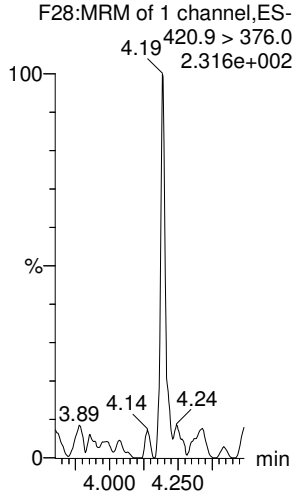
13C4-PFBA



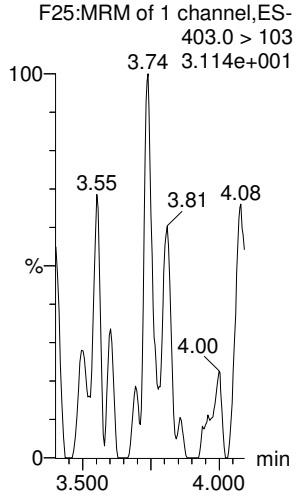
13C5-PFHxA



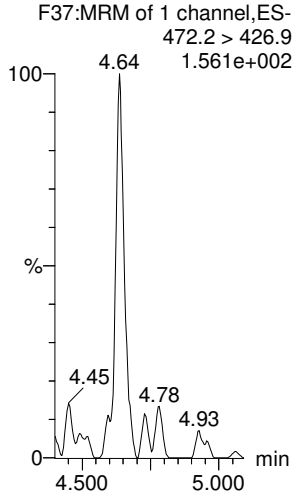
13C8-PFOA



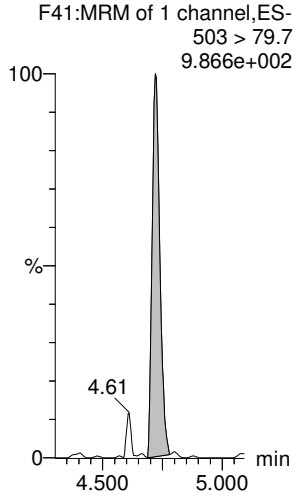
18O2-PFHxS



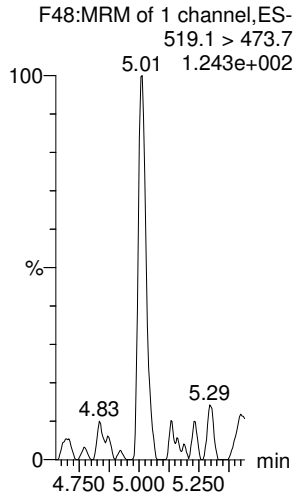
13C9-PFNA



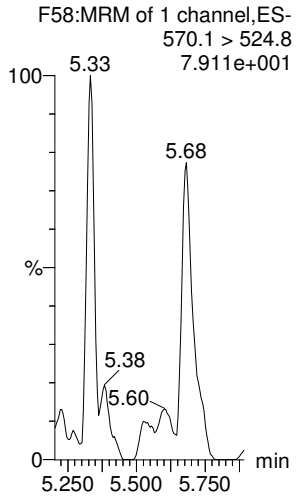
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	16.528	6244.469	1.00	1.37	0.033		0.0294		NO		
2	2	PFPrS	249 > 80		1435.981	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		11763.304	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	8.208	11763.304	1.00	2.54	0.009				NO		
5	5	PFBS	299.0 > 80		1435.981	1.00						NO		YES
6	6	4:2 FTS	326.9 > 306.9		1686.258	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	6244.469		1.00	1.35	6244.469	12.500	18.7	149.7	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1435.981		1.00	2.56	1435.981	12.500	14.8	118.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	11763.304		1.00	2.28	11763.304	12.500	15.8	126.7	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	11763.304		1.00	2.28	11763.304	12.500	15.8	126.7	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1435.981		1.00	2.56	1435.981	12.500	14.8	118.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1686.258		1.00	2.99	1686.258	12.500	15.5	123.9	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0		12385.373	1.00						NO		YES
15	8	PFPeS	349.>80		1435.981	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2521.312	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		11617.181	1.00						NO		YES
18	11	PFHpA	363.0 > 319	28.692	11617.181	1.00	3.76	0.031		0.0134		NO		YES
19	12	ADONA	376.8 > 250.9	5.701	11617.181	1.00	3.76	0.006				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	12385.373		1.00	3.08	12385.373	12.500	14.5	115.9	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1435.981		1.00	2.56	1435.981	12.500	14.8	118.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2521.312		1.00	3.30	2521.312	12.500	14.0	112.3	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	11617.181		1.00	3.68	11617.181	12.500	13.9	111.4	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	11617.181		1.00	3.68	11617.181	12.500	13.9	111.4	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	11617.181		1.00	3.68	11617.181	12.500	13.9	111.4	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9		2828.424	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407		1797.154	1.00						NO		YES
29	16	L-PFOA	413 > 369	36.685	15428.597	1.00	4.19	0.030				NO		YES
30	18	PFecHS	461 > 381.0		15428.597	1.00						NO		YES
31	19	PFHpS	449.0 > 80		2792.300	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		14996.380	1.00						NO		YES
33	61	13C3-PFHxS-EIS	402 > 80	2828.424		1.00	3.83	2828.424	12.500	15.5	123.7	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1797.154		1.00	4.14	1797.154	12.500	14.7	117.3	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	15428.597		1.00	4.20	15428.597	12.500	14.5	115.7	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	15428.597		1.00	4.20	15428.597	12.500	14.5	115.7	NO		

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	14996.380		1.00	4.64	14996.380	12.500	15.9	127.1	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	12.212	14996.380	1.00	4.59	0.010				NO		YES
41	22	PFOSA	498 > 78	16.198	5711.040	1.00	4.70	0.035		0.0279		NO		YES
42	23	L-PFOS	499 > 80		2792.300	1.00						NO		YES
43	25	9Cl-PF30NS	531 > 351		2792.300	1.00						NO		YES
44	26	PFDA	513 > 469	36.956	17054.973	1.00	5.01	0.027				NO		YES
45	27	8:2 FTS	526.8 > 506.9		1489.415	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	14996.380		1.00	4.64	14996.380	12.500	15.9	127.1	NO		
47	67	13C8-PFOSA-EIS	506 > 78	5711.040		1.00	4.69	5711.040	12.500	15.2	121.7	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	17054.973		1.00	5.01	17054.973	12.500	14.8	118.7	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1489.415		1.00	4.98	1489.415	12.500	13.5	107.8	NO		
52	-1													
53	28	PFNS	549 > 80		2792.300	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		3960.501	1.00						NO		YES
55	31	L-EtFOSAA	583.9 > 419		3498.057	1.00						NO		YES
56	33	PFUdA	563.0 > 519	56.648	15892.551	1.00	5.33	0.045		0.00240		NO		YES
57	34	PFDS	598.8 >79.9		2792.300	1.00						NO		YES
58	35	11Cl-PF30UdS	631 > 451		19110.158	1.00						NO		YES
59	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	3960.501		1.00	5.16	3960.501	12.500	14.5	115.8	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3498.057		1.00	5.32	3498.057	12.500	16.3	130.3	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	15892.551		1.00	5.34	15892.551	12.500	13.1	104.4	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2792.300		1.00	4.72	2792.300	12.500	14.4	115.4	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	19110.158		1.00	5.61	19110.158	12.500	14.5	116.1	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607			1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	131.089	19110.158	1.00	5.68	0.086		0.0806		NO		YES
68	38	N-MeFOSA	512.1 > 168.9	10.647	15588.355	1.00	5.61	0.102		0.102		NO		YES
69	39	PFTrDA	662.9 > 618.9	74.206	19110.158	1.00	5.83	0.049		0.00966		NO		YES
70	40	PFDoS	699 > 80		19022.357	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	21.607	19022.357	1.00	6.06	0.014		0.0128		NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0			1.00			12.500			NO		

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	19110.158		1.00	5.61	19110.158	12.500	14.5	116.1	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	15588.355		1.00	5.68	15588.355	149.200	143	95.8	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	19110.158		1.00	5.61	19110.158	12.500	14.5	116.1	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	19022.357		1.00	6.07	19022.357	12.500	13.9	111.2	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	19022.357		1.00	6.07	19022.357	12.500	13.9	111.2	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	10.547	19948.238	1.00	6.04	0.079				NO	1.782	NO
80	43	PFHxDA	813 > 769	177.634	21390.617	1.00	6.40	0.104				NO	17.976	NO
81	44	PFODA	913.1 > 868.8	44.376	21390.617	1.00	6.64	0.026		0.0281		NO		
82	45	N-MeFOSE	616.1 > 58.9	36.498	15629.993	1.00	6.29	0.348		0.355		NO		
83	46	N-EtFOSE	630.1 > 58.9	18.770	17703.230	1.00	6.41	0.158		0.394		NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	6244.469	65.880	1.00	1.35	1184.819	12.500	1240	9907.2	YES		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	19948.238		1.00	6.10	19948.238	149.200	144	96.8	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	21390.617		1.00	6.40	21390.617	12.500	12.6	100.8	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	21390.617		1.00	6.40	21390.617	12.500	12.6	100.8	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	15629.993		1.00	6.28	15629.993	149.200	149	100.1	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	17703.230		1.00	6.43	17703.230	149.200	144	96.6	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8			1.00			12.500			NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9			1.00			12.500			NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9			1.00			12.500			NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8			1.00			12.500			NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0			1.00			12.500			NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8			1.00			12.500			NO		
97	62	13C3-PFHxS-RSD	402 > 80			1.00			12.500			NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1797.154	36.981	1.00	4.14	607.459	12.500	1190	9480.5	YES		
99	66	13C5-PFNA-RSD	468.2 > 422.9			1.00			12.500			NO		
100	68	13C8-PFOSA-RSD	506 > 78	5711.040		1.00	4.69		12.500			NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7			1.00			12.500			NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2792.300	36.981	1.00	4.72	943.829	12.500	1200	9611.0	YES		
103	74	13C2-PFDA-RSD	515.1 > 469.9			1.00			12.500			NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1489.415	36.981	1.00	4.98	503.439	12.500	1140	9143.1	YES		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419			1.00			12.500			NO		
107	80	13C2-PFUdA-RSD	565 > 519.8			1.00			12.500			NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419			1.00			12.500			NO		

Dataset: Untitled

Last Altered: Wednesday, July 22, 2020 10:42:42 Pacific Daylight Time
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Name: 200721P1-15, Date: 21-Jul-2020, Time: 17:43:28, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9			1.00			12.500			NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1097.060	36.981	1.00	5.60	370.819	12.500	1180	9468.6	YES		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9			1.00			149.200			NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7			1.00			12.500			NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9			1.00			149.200			NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7			1.00			12.500			NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9			1.00			149.200			NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8			1.00			149.200			NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	65.880	65.880	1.00	1.35	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9			1.00			12.500			NO		
120	1...	13C8-PFOA	420.9 > 376.0			1.00			12.500			NO		
121	1...	18O2-PFHxS	403.0 > 103			1.00			12.500			NO		
122	1...	13C9-PFNA	472.2 > 426.9			1.00			12.500			NO		
123	1...	13C4-PFOS	503 > 79.7	36.981	36.981	1.00	4.72	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7			1.00			12.500			NO		
125	1...	13C7-PFUdA	570.1 > 524.8			1.00			12.500			NO		

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
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High points
3:3 FTCA: 100
5:3 FTCA: ↓
7:3 FTCA
10:2 FTS: 250

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Compound name: PFBA
Correlation coefficient: r = 0.999586, r^2 = 0.999172
Calibration curve: 1.09155 * x + -0.0361108
Response type: Internal Std (Ref 47), 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 200723P1-05	Standard	0.250	1.31	91.127	4630.349	0.246	0.3	3.4	NO	0.999	NO	MM
2	2 200723P1-06	Standard	0.500	1.32	243.989	5450.429	0.560	0.5	9.1	NO	0.999	NO	MM
3	3 200723P1-07	Standard	1.000	1.31	503.807	5340.806	1.179	1.1	11.3	NO	0.999	NO	MM
4	4 200723P1-08	Standard	2.000	1.31	853.390	5269.994	2.024	1.9	-5.6	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	1.31	2226.526	5322.790	5.229	4.8	-3.5	NO	0.999	NO	MM
6	6 200723P1-10	Standard	10.000	1.31	4450.876	5565.385	9.997	9.2	-8.1	NO	0.999	NO	MM
7	7 200723P1-11	Standard	50.000	1.31	22317.736	5461.841	51.076	46.8	-6.3	NO	0.999	NO	MM
8	8 200723P1-12	Standard	100.000	1.31	47862.262	5687.572	105.190	96.4	-3.6	NO	0.999	NO	MM
9	9 200723P1-13	Standard	250.000	1.31	140687.578	6222.177	282.633	259.0	3.6	NO	0.999	NO	MM
10	10 200723P1-14	Standard	500.000	1.32	106522.328	2446.034	544.362	498.7	-0.3	NO	0.999	NO	MM

Compound name: PFPrS
Coefficient of Determination: R^2 = 0.998558
Calibration curve: 2.05384e-005 * x^2 + 1.32665 * x + -0.121668
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 200723P1-05	Standard	0.250	1.64	25.875	1117.769	0.289	0.3	23.9	NO	0.999	NO	MM
2	2 200723P1-06	Standard	0.500	1.64	45.818	1127.594	0.508	0.5	-5.1	NO	0.999	NO	MM
3	3 200723P1-07	Standard	1.000	1.64	97.544	1157.126	1.054	0.9	-11.4	NO	0.999	NO	MM
4	4 200723P1-08	Standard	2.000	1.64	192.858	1158.753	2.080	1.7	-17.0	NO	0.999	NO	MM
5	5 200723P1-09	Standard	5.000	1.64	541.725	1137.263	5.954	4.6	-8.4	NO	0.999	NO	MM
6	6 200723P1-10	Standard	10.000	1.64	1065.260	1187.870	11.210	8.5	-14.6	NO	0.999	NO	MM
7	7 200723P1-11	Standard	50.000	1.64	5407.356	1092.885	61.847	46.7	-6.6	NO	0.999	NO	MM
8	8 200723P1-12	Standard	100.000	1.64	11520.454	1100.314	130.877	98.6	-1.4	NO	0.999	NO	MM
9	9 200723P1-13	Standard	250.000	1.64	32842.938	1173.703	349.779	262.7	5.1	NO	0.999	NO	MM
10	10 200723P1-14	Standard	500.000	1.64	26499.893	501.341	660.725	494.3	-1.1	NO	0.999	NO	MM

OPV 07/23/20

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Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999723
Calibration curve: 5.62968e-005 * x^2 + 0.0796117 * x + -0.000145462
Response type: Internal Std (Ref 49), 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	200723P1-05	Standard	0.250	2.09	12.681	8468.061	0.019	0.2	-5.2	NO	1.000	NO	MM
2	2	200723P1-06	Standard	0.500	2.09	30.348	8741.019	0.043	0.5	9.3	NO	1.000	NO	bb
3	3	200723P1-07	Standard	1.000	2.10	57.966	8668.089	0.084	1.1	5.1	NO	1.000	NO	bb
4	4	200723P1-08	Standard	2.000	2.11	109.611	8926.078	0.153	1.9	-3.6	NO	1.000	NO	bb
5	5	200723P1-09	Standard	5.000	2.10	251.529	8547.844	0.368	4.6	-7.9	NO	1.000	NO	bb
6	6	200723P1-10	Standard	10.000	2.11	573.873	8889.229	0.807	10.1	0.7	NO	1.000	NO	bb
7	7	200723P1-11	Standard	50.000	2.10	2917.716	8747.545	4.169	50.6	1.1	NO	1.000	NO	bb
8	8	200723P1-12	Standard	100.000	2.11	6216.585	9140.945	8.501	99.7	-0.3	NO	1.000	NO	bb
9	9	200723P1-13	Standard	250.000	2.10	3281.820	9429.117	4.351	52.7	-78.9	YES	1.000	NO	bbX
10	10	200723P1-14	Standard	500.000	2.11	2812.557	3999.898	8.789	102.9	-79.4	YES	1.000	NO	bbX

Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999985
Calibration curve: 2.81636e-005 * x^2 + 0.956634 * x + -0.0071552
Response type: Internal Std (Ref 49), 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	200723P1-05	Standard	0.250	2.24	153.001	8468.061	0.226	0.2	-2.6	NO	1.000	NO	MM
2	2	200723P1-06	Standard	0.500	2.24	312.078	8741.019	0.446	0.5	-5.2	NO	1.000	NO	MM
3	3	200723P1-07	Standard	1.000	2.24	681.622	8668.089	0.983	1.0	3.5	NO	1.000	NO	bb
4	4	200723P1-08	Standard	2.000	2.25	1363.903	8926.078	1.910	2.0	0.2	NO	1.000	NO	bb
5	5	200723P1-09	Standard	5.000	2.24	3304.972	8547.844	4.833	5.1	1.2	NO	1.000	NO	bb
6	6	200723P1-10	Standard	10.000	2.25	6846.020	8889.229	9.627	10.1	0.7	NO	1.000	NO	bb
7	7	200723P1-11	Standard	50.000	2.24	33106.223	8747.545	47.308	49.4	-1.2	NO	1.000	NO	bb
8	8	200723P1-12	Standard	100.000	2.25	70446.820	9140.945	96.334	100.4	0.4	NO	1.000	NO	bb
9	9	200723P1-13	Standard	250.000	2.24	181856.266	9429.117	241.083	250.2	0.1	NO	1.000	NO	bb
10	10	200723P1-14	Standard	500.000	2.25	155273.594	3999.898	485.242	499.9	-0.0	NO	1.000	NO	bb

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Compound name: PFBS
Coefficient of Determination: R^2 = 0.999855
Calibration curve: -0.000157378 * x^2 + 2.68599 * x + -0.106952
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 200723P1-05	Standard	0.250	2.53	54.976	1117.769	0.615	0.3	7.5	NO	1.000	NO	MM
2	2 200723P1-06	Standard	0.500	2.53	98.036	1127.594	1.087	0.4	-11.1	NO	1.000	NO	MM
3	3 200723P1-07	Standard	1.000	2.52	231.101	1157.126	2.496	1.0	-3.1	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	2.53	498.845	1158.753	5.381	2.0	2.2	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	2.53	1131.684	1137.263	12.439	4.7	-6.6	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	2.53	2417.127	1187.870	25.436	9.5	-4.9	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	2.53	11452.507	1092.885	130.989	48.9	-2.1	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	2.53	23988.332	1100.314	272.517	102.1	2.1	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	2.53	62166.426	1173.703	662.076	250.2	0.1	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	2.53	52238.781	501.341	1302.476	499.6	-0.1	NO	1.000	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999843
Calibration curve: 0.00028725 * x^2 + 2.51553 * x + 0.0894213
Response type: Internal Std (Ref 55), 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 200723P1-05	Standard	0.250	2.96	72.153	1242.757	0.726	0.3	1.2	NO	1.000	NO	bb
2	2 200723P1-06	Standard	0.500	2.97	130.202	1273.646	1.278	0.5	-5.5	NO	1.000	NO	bb
3	3 200723P1-07	Standard	1.000	2.96	269.966	1346.996	2.505	1.0	-4.0	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	2.97	563.801	1265.443	5.569	2.2	8.9	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	2.97	1360.366	1206.789	14.091	5.6	11.2	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	2.97	2797.084	1361.526	25.680	10.2	1.6	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	2.97	12518.742	1206.126	129.741	51.2	2.5	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	2.97	24718.979	1227.887	251.641	98.9	-1.1	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	2.97	59767.645	1164.298	641.670	248.0	-0.8	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	2.97	52773.910	495.054	1332.529	501.0	0.2	NO	1.000	NO	bb

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Compound name: PFHxA
Correlation coefficient: r = 0.999745, r^2 = 0.999490
Calibration curve: 1.07757 * x + 0.0183845
Response type: Internal Std (Ref 57), 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 200723P1-05	Standard	0.250	3.05	243.971	10043.935	0.304	0.3	5.9	NO	0.999	NO	bb
2	2 200723P1-06	Standard	0.500	3.05	436.234	10336.493	0.528	0.5	-5.5	NO	0.999	NO	bb
3	3 200723P1-07	Standard	1.000	3.05	914.383	10112.812	1.130	1.0	3.2	NO	0.999	NO	bb
4	4 200723P1-08	Standard	2.000	3.05	1800.244	10122.637	2.223	2.0	2.3	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	3.05	4530.183	9862.095	5.742	5.3	6.2	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	3.05	9286.147	10873.170	10.676	9.9	-1.1	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	3.05	41399.375	10061.887	51.431	47.7	-4.6	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	3.05	89598.227	10605.625	105.602	98.0	-2.0	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	3.05	227544.594	10227.347	278.108	258.1	3.2	NO	0.999	NO	bb
10	10 200723P1-14	Standard	500.000	3.05	187574.344	4387.043	534.456	496.0	-0.8	NO	0.999	NO	bb

Compound name: PFPeS
Coefficient of Determination: R^2 = 0.999715
Calibration curve: -0.000234753 * x^2 + 2.0944 * x + 0.0312771
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 200723P1-05	Standard	0.250	3.26	51.879	1117.769	0.580	0.3	4.8	NO	1.000	NO	MM
2	2 200723P1-06	Standard	0.500	3.25	85.696	1127.594	0.950	0.4	-12.3	NO	1.000	NO	MM
3	3 200723P1-07	Standard	1.000	3.25	193.774	1157.126	2.093	1.0	-1.5	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	3.26	397.255	1158.753	4.285	2.0	1.6	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	3.26	1048.288	1137.263	11.522	5.5	9.8	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	3.26	1930.821	1187.870	20.318	9.7	-3.0	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	3.26	9015.157	1092.885	103.112	49.5	-1.0	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	3.26	18787.400	1100.314	213.432	103.1	3.1	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	3.26	46958.766	1173.703	500.113	245.5	-1.8	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	3.26	39778.961	501.341	991.814	501.8	0.4	NO	1.000	NO	bb

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Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.996168
Calibration curve: -0.000283662 * x^2 + 1.07439 * x + -0.0717294
Response type: Internal Std (Ref 53), 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	200723P1-05	Standard	0.250	3.27	30.619	2018.418	0.190	0.2	-2.7	NO	0.996	NO	bb
2	2	200723P1-06	Standard	0.500	3.27	68.784	1983.289	0.434	0.5	-5.9	NO	0.996	NO	bb
3	3	200723P1-07	Standard	1.000	3.27	189.885	1966.628	1.207	1.2	19.0	NO	0.996	NO	bb
4	4	200723P1-08	Standard	2.000	3.27	270.584	2046.724	1.653	1.6	-19.7	NO	0.996	NO	bb
5	5	200723P1-09	Standard	5.000	3.28	816.172	1945.244	5.245	5.0	-0.9	NO	0.996	NO	bb
6	6	200723P1-10	Standard	10.000	3.27	1704.446	2189.888	9.729	9.1	-8.6	NO	0.996	NO	bb
7	7	200723P1-11	Standard	50.000	3.28	8084.690	2054.461	49.190	46.4	-7.2	NO	0.996	NO	bb
8	8	200723P1-12	Standard	100.000	3.28	16520.574	2142.986	96.364	92.0	-8.0	NO	0.996	NO	bb
9	9	200723P1-13	Standard	250.000	3.27	43855.965	2007.952	273.014	274.0	9.6	NO	0.996	NO	bb
10	10	200723P1-14	Standard	500.000	3.28	37567.980	1027.281	457.129	488.6	-2.3	NO	0.996	NO	bb

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999327
Calibration curve: 0.000190767 * x^2 + 0.159643 * x + -0.00459999
Response type: Internal Std (Ref 59), 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	200723P1-05	Standard	0.250	3.60	20.205	9502.673	0.027	0.2	-21.9	NO	0.999	NO	bb
2	2	200723P1-06	Standard	0.500	3.60	57.056	9967.399	0.072	0.5	-4.7	NO	0.999	NO	bb
3	3	200723P1-07	Standard	1.000	3.60	140.746	9846.714	0.179	1.1	14.6	NO	0.999	NO	bb
4	4	200723P1-08	Standard	2.000	3.60	212.433	9332.160	0.285	1.8	-9.6	NO	0.999	NO	bb
5	5	200723P1-09	Standard	5.000	3.60	652.068	9356.568	0.871	5.5	9.0	NO	0.999	NO	bb
6	6	200723P1-10	Standard	10.000	3.60	1328.134	10046.232	1.653	10.3	2.5	NO	0.999	NO	bb
7	7	200723P1-11	Standard	50.000	3.60	6480.534	9783.003	8.280	49.0	-2.0	NO	0.999	NO	bb
8	8	200723P1-12	Standard	100.000	3.60	13257.849	9233.985	17.947	100.4	0.4	NO	0.999	NO	bb
9	9	200723P1-13	Standard	250.000	3.60	7157.798	9196.343	9.729	57.1	-77.2	YES	0.999	NO	bbX
10	10	200723P1-14	Standard	500.000	3.60	5877.717	3981.883	18.451	102.9	-79.4	YES	0.999	NO	bbX

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Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999760
Calibration curve: 0.000195303 * x^2 + 1.23999 * x + 0.00549607
Response type: Internal Std (Ref 59), 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 200723P1-05	Standard	0.250	3.66	254.162	9502.673	0.334	0.3	6.1	NO	1.000	NO	bb
2	2 200723P1-06	Standard	0.500	3.66	530.790	9967.399	0.666	0.5	6.5	NO	1.000	NO	MM
3	3 200723P1-07	Standard	1.000	3.66	942.404	9846.714	1.196	1.0	-4.0	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	3.66	1780.326	9332.160	2.385	1.9	-4.1	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	3.66	4765.629	9356.568	6.367	5.1	2.5	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	3.66	9769.946	10046.232	12.156	9.8	-2.2	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	3.66	47300.898	9783.003	60.438	48.4	-3.3	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	3.66	91599.305	9233.985	123.998	98.5	-1.5	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	3.66	242376.453	9196.343	329.447	255.4	2.2	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	3.67	212094.406	3981.883	665.811	497.9	-0.4	NO	1.000	NO	bb

Compound name: ADONA
Coefficient of Determination: R^2 = 0.999070
Calibration curve: -0.000104898 * x^2 + 2.36595 * x + -0.101265
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	0.250	3.76	496.989	9502.673	0.654	0.3	27.6	NO	0.999	NO	bb
2	2 200723P1-06	Standard	0.500	3.77	658.333	9967.399	0.826	0.4	-21.6	NO	0.999	NO	bb
3	3 200723P1-07	Standard	1.000	3.77	1550.226	9846.714	1.968	0.9	-12.5	NO	0.999	NO	bb
4	4 200723P1-08	Standard	2.000	3.77	3703.002	9332.160	4.960	2.1	7.0	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	3.77	9208.188	9356.568	12.302	5.2	4.9	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	3.77	19102.609	10046.232	23.768	10.1	0.9	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	3.77	86452.336	9783.003	110.462	46.8	-6.3	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	3.77	168465.359	9233.985	228.051	96.8	-3.2	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	3.77	447794.406	9196.343	608.658	260.3	4.1	NO	0.999	NO	bb
10	10 200723P1-14	Standard	500.000	3.77	365362.438	3981.883	1146.952	495.7	-0.9	NO	0.999	NO	bb

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Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999197
Calibration curve: 0.000196029 * x^2 + 1.15688 * x + -0.0397649
Response type: Internal Std (Ref 61), 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	200723P1-05	Standard	0.250	3.81	44.450	2181.987	0.255	0.3	1.8	NO	0.999	NO	MM
2	2	200723P1-06	Standard	0.500	3.80	122.924	2300.451	0.668	0.6	22.3	NO	0.999	NO	MM
3	3	200723P1-07	Standard	1.000	3.80	213.075	2330.399	1.143	1.0	2.2	NO	0.999	NO	MM
4	4	200723P1-08	Standard	2.000	3.81	360.950	2311.760	1.952	1.7	-14.0	NO	0.999	NO	MM
5	5	200723P1-09	Standard	5.000	3.80	959.943	2271.799	5.282	4.6	-8.1	NO	0.999	NO	MM
6	6	200723P1-10	Standard	10.000	3.80	2032.327	2424.054	10.480	9.1	-9.2	NO	0.999	NO	MM
7	7	200723P1-11	Standard	50.000	3.81	10641.845	2243.081	59.304	50.9	1.7	NO	0.999	NO	MM
8	8	200723P1-12	Standard	100.000	3.80	20227.439	2032.427	124.404	105.7	5.7	NO	0.999	NO	MM
9	9	200723P1-13	Standard	250.000	3.80	53296.281	2280.833	292.088	242.5	-3.0	NO	0.999	NO	MM
10	10	200723P1-14	Standard	500.000	3.80	46163.438	914.999	630.649	502.4	0.5	NO	0.999	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998695
Calibration curve: -1.70851e-005 * x^2 + 1.00987 * x + -0.00523272
Response type: Internal Std (Ref 63), 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	200723P1-05	Standard	0.250	4.12	29.527	1324.852	0.279	0.3	12.4	NO	0.999	NO	bb
2	2	200723P1-06	Standard	0.500	4.11	50.265	1392.563	0.451	0.5	-9.6	NO	0.999	NO	bb
3	3	200723P1-07	Standard	1.000	4.11	90.143	1416.625	0.795	0.8	-20.7	NO	0.999	NO	bb
4	4	200723P1-08	Standard	2.000	4.12	236.606	1445.189	2.046	2.0	1.6	NO	0.999	NO	bb
5	5	200723P1-09	Standard	5.000	4.12	566.089	1300.942	5.439	5.4	7.8	NO	0.999	NO	bb
6	6	200723P1-10	Standard	10.000	4.12	1100.060	1385.772	9.923	9.8	-1.7	NO	0.999	NO	bb
7	7	200723P1-11	Standard	50.000	4.12	5746.342	1274.011	56.380	55.9	11.8	NO	0.999	NO	bb
8	8	200723P1-12	Standard	100.000	4.12	11316.615	1413.782	100.056	99.3	-0.7	NO	0.999	NO	bb
9	9	200723P1-13	Standard	250.000	4.12	28162.383	1455.538	241.855	240.5	-3.8	NO	0.999	NO	bb
10	10	200723P1-14	Standard	500.000	4.12	24399.729	603.971	504.986	504.4	0.9	NO	0.999	NO	bb

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Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999795
Calibration curve: -6.83589e-005 * x^2 + 0.956964 * x + 0.0499833
Response type: Internal Std (Ref 69), 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 200723P1-05	Standard	0.250	4.17	282.519	12157.738	0.290	0.3	0.5	NO	1.000	NO	bb
2	2 200723P1-06	Standard	0.500	4.17	590.698	12769.768	0.578	0.6	10.4	NO	1.000	NO	bb
3	3 200723P1-07	Standard	1.000	4.17	1045.489	12111.942	1.079	1.1	7.5	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	4.18	1952.205	12085.006	2.019	2.1	2.9	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	4.17	4714.427	12087.032	4.876	5.0	0.9	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	4.17	9663.430	12512.399	9.654	10.0	0.4	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	4.18	47481.066	12488.367	47.525	49.8	-0.4	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	4.17	89669.250	12126.722	92.429	97.2	-2.8	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	4.17	234636.203	12267.944	239.074	254.4	1.8	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	4.17	194642.359	5289.660	459.960	498.3	-0.3	NO	1.000	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999692
Calibration curve: 1.77609e-006 * x^2 + 0.20437 * x + -0.011085
Response type: Internal Std (Ref 69), 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 200723P1-05	Standard	0.250	4.19	43.454	12157.738	0.045	0.3	9.1	NO	1.000	NO	bb
2	2 200723P1-06	Standard	0.500	4.19	81.348	12769.768	0.080	0.4	-11.2	NO	1.000	NO	bb
3	3 200723P1-07	Standard	1.000	4.19	175.341	12111.942	0.181	0.9	-6.0	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	4.19	366.075	12085.006	0.379	1.9	-4.7	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	4.19	942.118	12087.032	0.974	4.8	-3.6	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	4.19	1985.240	12512.399	1.983	9.8	-2.4	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	4.19	9771.708	12488.367	9.781	47.9	-4.2	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	4.19	19728.463	12126.722	20.336	99.5	-0.5	NO	1.000	NO	MM
9	9 200723P1-13	Standard	250.000	4.19	51414.031	12267.944	52.387	255.8	2.3	NO	1.000	NO	MM
10	10 200723P1-14	Standard	500.000	4.19	43200.527	5289.660	102.087	497.4	-0.5	NO	1.000	NO	bb

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Compound name: PFHpS
Coefficient of Determination: R^2 = 0.998768
Calibration curve: 0.000443209 * x^2 + 0.935853 * x + -0.0133309
Response type: Internal Std (Ref 71), 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 200723P1-05	Standard	0.250	4.29	29.913	2394.893	0.156	0.2	-27.6	NO	0.999	NO	bb
2	2 200723P1-06	Standard	0.500	4.29	93.606	2361.420	0.495	0.5	8.7	NO	0.999	NO	bb
3	3 200723P1-07	Standard	1.000	4.29	172.649	2339.051	0.923	1.0	-0.0	NO	0.999	NO	bb
4	4 200723P1-08	Standard	2.000	4.29	370.192	2465.428	1.877	2.0	0.9	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	4.29	962.201	2227.155	5.400	5.8	15.4	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	4.29	1841.813	2617.590	8.795	9.4	-6.3	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	4.29	9514.896	2208.597	53.851	56.1	12.1	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	4.29	19005.939	2434.035	97.605	99.6	-0.4	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	4.29	48271.297	2401.077	251.300	241.0	-3.6	NO	0.999	NO	bb
10	10 200723P1-14	Standard	500.000	4.29	41011.270	878.745	583.378	503.4	0.7	NO	0.999	NO	bb

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999385
Calibration curve: -0.000103807 * x^2 + 0.275717 * x + 0.010665
Response type: Internal Std (Ref 65), 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 200723P1-05	Standard	0.250	4.60	64.538	11544.591	0.070	0.2	-14.1	NO	0.999	NO	bb
2	2 200723P1-06	Standard	0.500	4.60	137.669	10414.617	0.165	0.6	12.1	NO	0.999	NO	bb
3	3 200723P1-07	Standard	1.000	4.60	302.750	11679.192	0.324	1.1	13.7	NO	0.999	NO	bb
4	4 200723P1-08	Standard	2.000	4.60	414.084	10820.912	0.478	1.7	-15.1	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	4.60	1246.255	10700.182	1.456	5.3	5.0	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	4.60	2569.971	11870.430	2.706	9.8	-1.9	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	4.60	12565.565	11572.812	13.572	50.1	0.3	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	4.60	25400.971	11968.237	26.530	99.9	-0.1	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	4.60	13064.820	11418.469	14.302	52.9	-78.8	YES	0.999	NO	bbX
10	10 200723P1-14	Standard	500.000	4.60	11764.690	5202.214	28.268	106.8	-78.6	YES	0.999	NO	bbX

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Compound name: PFNA
Coefficient of Determination: R^2 = 0.998662
Calibration curve: -0.00018375 * x^2 + 1.26154 * x + -0.000334913
Response type: Internal Std (Ref 65), 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 200723P1-05	Standard	0.250	4.62	308.460	11544.591	0.334	0.3	6.0	NO	0.999	NO	MM
2	2 200723P1-06	Standard	0.500	4.62	539.692	10414.617	0.648	0.5	2.8	NO	0.999	NO	MM
3	3 200723P1-07	Standard	1.000	4.62	1175.761	11679.192	1.258	1.0	-0.2	NO	0.999	NO	MM
4	4 200723P1-08	Standard	2.000	4.62	2233.161	10820.912	2.580	2.0	2.3	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	4.62	5392.464	10700.182	6.300	5.0	-0.1	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	4.62	11168.075	11870.430	11.760	9.3	-6.6	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	4.62	56566.605	11572.812	61.099	48.8	-2.4	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	4.62	112046.977	11968.237	117.025	94.1	-5.9	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	4.62	292097.031	11418.469	319.764	263.6	5.4	NO	0.999	NO	bb
10	10 200723P1-14	Standard	500.000	4.62	240770.266	5202.214	578.528	494.2	-1.2	NO	0.999	NO	bb

Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999954
Calibration curve: 0.000121326 * x^2 + 0.691721 * x + 0.0205092
Response type: Internal Std (Ref 67), 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 200723P1-05	Standard	0.250	4.67	77.573	5031.740	0.193	0.2	-0.4	NO	1.000	NO	bb
2	2 200723P1-06	Standard	0.500	4.67	151.065	5341.359	0.354	0.5	-3.7	NO	1.000	NO	bb
3	3 200723P1-07	Standard	1.000	4.67	350.539	5399.122	0.812	1.1	14.3	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	4.67	623.785	5460.556	1.428	2.0	1.7	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	4.67	1511.794	5253.971	3.597	5.2	3.3	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	4.67	2974.544	5483.539	6.781	9.8	-2.4	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	4.67	14995.763	5433.563	34.498	49.4	-1.2	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	4.67	29960.713	5318.703	70.414	100.0	0.0	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	4.67	77368.750	5338.721	181.150	250.8	0.3	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	4.67	64658.523	2149.859	375.946	499.7	-0.1	NO	1.000	NO	bb

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Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999249
Calibration curve: 0.000707948 * x^2 + 1.13806 * x + 0.0102665
Response type: Internal Std (Ref 71), 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 200723P1-05	Standard	0.250	4.70	41.795	2394.893	0.218	0.2	-26.9	NO	0.999	NO	MM
2	2 200723P1-06	Standard	0.500	4.70	91.610	2361.420	0.485	0.4	-16.6	NO	0.999	NO	MM
3	3 200723P1-07	Standard	1.000	4.70	242.101	2339.051	1.294	1.1	12.7	NO	0.999	NO	MM
4	4 200723P1-08	Standard	2.000	4.70	510.771	2465.428	2.590	2.3	13.2	NO	0.999	NO	MM
5	5 200723P1-09	Standard	5.000	4.70	1217.266	2227.155	6.832	6.0	19.4	NO	0.999	NO	MM
6	6 200723P1-10	Standard	10.000	4.70	2305.720	2617.590	11.011	9.6	-3.9	NO	0.999	NO	MM
7	7 200723P1-11	Standard	50.000	4.71	11284.285	2208.597	63.866	54.3	8.6	NO	0.999	NO	MM
8	8 200723P1-12	Standard	100.000	4.70	23346.729	2434.035	119.897	99.2	-0.8	NO	0.999	NO	MM
9	9 200723P1-13	Standard	250.000	4.70	61308.895	2401.077	319.174	243.5	-2.6	NO	0.999	NO	MM
10	10 200723P1-14	Standard	500.000	4.70	52760.102	878.745	750.504	502.4	0.5	NO	0.999	NO	MM

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.998185
Calibration curve: 0.0015174 * x^2 + 2.31288 * x + 0.10959
Response type: Internal Std (Ref 71), 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 200723P1-05	Standard	0.250	4.93	116.951	2394.893	0.610	0.2	-13.4	NO	0.998	NO	bb
2	2 200723P1-06	Standard	0.500	4.92	201.420	2361.420	1.066	0.4	-17.3	NO	0.998	NO	bb
3	3 200723P1-07	Standard	1.000	4.92	463.008	2339.051	2.474	1.0	2.2	NO	0.998	NO	bb
4	4 200723P1-08	Standard	2.000	4.92	907.421	2465.428	4.601	1.9	-3.0	NO	0.998	NO	bb
5	5 200723P1-09	Standard	5.000	4.92	2565.140	2227.155	14.397	6.2	23.0	NO	0.998	NO	bb
6	6 200723P1-10	Standard	10.000	4.92	4799.771	2617.590	22.921	9.8	-2.0	NO	0.998	NO	bb
7	7 200723P1-11	Standard	50.000	4.93	23997.729	2208.597	135.820	56.6	13.2	NO	0.998	NO	bb
8	8 200723P1-12	Standard	100.000	4.92	48703.051	2434.035	250.115	101.4	1.4	NO	0.998	NO	bb
9	9 200723P1-13	Standard	250.000	4.92	121887.852	2401.077	634.548	237.3	-5.1	NO	0.998	NO	bb
10	10 200723P1-14	Standard	500.000	4.92	109165.484	878.745	1552.861	504.4	0.9	NO	0.998	NO	bb

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Compound name: PFDA
Coefficient of Determination: R^2 = 0.999916
Calibration curve: -0.000101685 * x^2 + 0.859797 * x + 0.0298355
Response type: Internal Std (Ref 73), 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 200723P1-05	Standard	0.250	4.99	273.014	12873.816	0.265	0.3	9.4	NO	1.000	NO	MM
2	2 200723P1-06	Standard	0.500	4.99	541.746	14062.984	0.482	0.5	5.1	NO	1.000	NO	MM
3	3 200723P1-07	Standard	1.000	5.00	1001.487	14036.273	0.892	1.0	0.3	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	5.00	2084.046	14097.977	1.848	2.1	5.7	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	5.00	4550.875	13238.326	4.297	5.0	-0.7	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	5.00	9689.371	14859.408	8.151	9.5	-5.4	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	5.00	46095.723	13705.416	42.042	49.1	-1.7	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	5.00	96262.477	14034.524	85.737	100.9	0.9	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	5.00	238733.859	14249.542	209.422	251.0	0.4	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	5.00	213144.609	6594.166	404.040	499.4	-0.1	NO	1.000	NO	bb

Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.998244
Calibration curve: -0.000676682 * x^2 + 1.31738 * x + -0.225686
Response type: Internal Std (Ref 75), 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 200723P1-05	Standard	0.250	4.98	13.161	1287.099	0.128	0.3	7.3	NO	0.998	NO	bb
2	2 200723P1-06	Standard	0.500	4.97	53.299	1295.066	0.514	0.6	12.4	NO	0.998	NO	bb
3	3 200723P1-07	Standard	1.000	4.97	114.957	1082.121	1.328	1.2	18.0	NO	0.998	NO	bb
4	4 200723P1-08	Standard	2.000	4.97	231.725	1421.785	2.037	1.7	-14.0	NO	0.998	NO	bb
5	5 200723P1-09	Standard	5.000	4.97	607.535	1328.554	5.716	4.5	-9.6	NO	0.998	NO	bb
6	6 200723P1-10	Standard	10.000	4.97	1085.868	1183.419	11.470	8.9	-10.8	NO	0.998	NO	bb
7	7 200723P1-11	Standard	50.000	4.97	5903.536	1200.285	61.481	48.0	-4.0	NO	0.998	NO	bb
8	8 200723P1-12	Standard	100.000	4.97	11984.995	1247.409	120.099	96.1	-3.9	NO	0.998	NO	bb
9	9 200723P1-13	Standard	250.000	4.97	27762.969	1146.208	302.770	266.5	6.6	NO	0.998	NO	bb
10	10 200723P1-14	Standard	500.000	4.97	28547.531	739.520	482.535	489.6	-2.1	NO	0.998	NO	bb

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Compound name: PFNS
Coefficient of Determination: R^2 = 0.999413
Calibration curve: 0.000467655 * x^2 + 1.21744 * x + 0.0135126
Response type: Internal Std (Ref 71), 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 200723P1-05	Standard	0.250	5.06	62.105	2394.893	0.324	0.3	2.1	NO	0.999	NO	bb
2	2 200723P1-06	Standard	0.500	5.07	91.825	2361.420	0.486	0.4	-22.4	NO	0.999	NO	bb
3	3 200723P1-07	Standard	1.000	5.06	288.029	2339.051	1.539	1.3	25.3	NO	0.999	NO	bb
4	4 200723P1-08	Standard	2.000	5.06	453.538	2465.428	2.299	1.9	-6.2	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	5.06	1158.627	2227.155	6.503	5.3	6.4	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	5.06	2389.001	2617.590	11.408	9.3	-6.7	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	5.07	11816.724	2208.597	66.879	53.8	7.6	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	5.06	24695.205	2434.035	126.822	100.3	0.3	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	5.07	62445.422	2401.077	325.091	244.1	-2.4	NO	0.999	NO	bb
10	10 200723P1-14	Standard	500.000	5.07	51273.563	878.745	729.358	502.2	0.4	NO	0.999	NO	bb

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999178
Calibration curve: 0.000214749 * x^2 + 1.16649 * x + -0.100652
Response type: Internal Std (Ref 77), 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 200723P1-05	Standard	0.250	5.15	64.940	3004.147	0.270	0.3	27.2	NO	0.999	NO	MM
2	2 200723P1-06	Standard	0.500	5.15	74.952	2915.308	0.321	0.4	-27.6	NO	0.999	NO	MM
3	3 200723P1-07	Standard	1.000	5.15	267.233	3002.060	1.113	1.0	4.0	NO	0.999	NO	MM
4	4 200723P1-08	Standard	2.000	5.15	535.929	3193.365	2.098	1.9	-5.8	NO	0.999	NO	MM
5	5 200723P1-09	Standard	5.000	5.15	1305.645	2830.965	5.765	5.0	0.5	NO	0.999	NO	MM
6	6 200723P1-10	Standard	10.000	5.15	2944.893	3273.480	11.245	9.7	-2.9	NO	0.999	NO	MM
7	7 200723P1-11	Standard	50.000	5.15	14778.431	3064.430	60.282	51.3	2.6	NO	0.999	NO	MM
8	8 200723P1-12	Standard	100.000	5.15	30194.959	3019.127	125.015	105.2	5.2	NO	0.999	NO	MM
9	9 200723P1-13	Standard	250.000	5.15	79081.680	3373.283	293.044	240.6	-3.7	NO	0.999	NO	MM
10	10 200723P1-14	Standard	500.000	5.15	69835.914	1361.070	641.370	503.3	0.7	NO	0.999	NO	MM

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.998492, r^2 = 0.996985
Calibration curve: 1.54582 * x + 0.0779236
Response type: Internal Std (Ref 81), 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	200723P1-05	Standard	0.250	5.31	67.694	2358.338	0.359	0.2	-27.3	NO	0.997	NO	MM
2	2	200723P1-06	Standard	0.500	5.30	180.137	2359.347	0.954	0.6	13.4	NO	0.997	NO	MM
3	3	200723P1-07	Standard	1.000	5.30	404.663	2637.756	1.918	1.2	19.0	NO	0.997	NO	MM
4	4	200723P1-08	Standard	2.000	5.31	608.795	2486.401	3.061	1.9	-3.5	NO	0.997	NO	MM
5	5	200723P1-09	Standard	5.000	5.31	1716.575	2486.028	8.631	5.5	10.7	NO	0.997	NO	MM
6	6	200723P1-10	Standard	10.000	5.31	3600.462	2893.223	15.556	10.0	0.1	NO	0.997	NO	MM
7	7	200723P1-11	Standard	50.000	5.31	17358.473	2536.860	85.531	55.3	10.6	NO	0.997	NO	MM
8	8	200723P1-12	Standard	100.000	5.31	35152.992	2753.195	159.601	103.2	3.2	NO	0.997	NO	MM
9	9	200723P1-13	Standard	250.000	5.31	78523.883	2767.310	354.694	229.4	-8.2	NO	0.997	NO	MM
10	10	200723P1-14	Standard	500.000	5.31	75142.281	1187.911	790.698	511.5	2.3	NO	0.997	NO	MM

Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999896
Calibration curve: -5.33746e-005 * x^2 + 0.987627 * x + 0.0424768
Response type: Internal Std (Ref 79), 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	200723P1-05	Standard	0.250	5.32	324.729	13906.884	0.292	0.3	1.0	NO	1.000	NO	MM
2	2	200723P1-06	Standard	0.500	5.32	570.597	14382.965	0.496	0.5	-8.2	NO	1.000	NO	bb
3	3	200723P1-07	Standard	1.000	5.32	1260.677	14026.958	1.123	1.1	9.5	NO	1.000	NO	bb
4	4	200723P1-08	Standard	2.000	5.32	2313.297	14605.491	1.980	2.0	-1.9	NO	1.000	NO	bb
5	5	200723P1-09	Standard	5.000	5.32	5667.860	13915.992	5.091	5.1	2.3	NO	1.000	NO	bb
6	6	200723P1-10	Standard	10.000	5.32	11172.499	14421.859	9.684	9.8	-2.3	NO	1.000	NO	bb
7	7	200723P1-11	Standard	50.000	5.32	53016.879	13342.792	49.668	50.4	0.8	NO	1.000	NO	bb
8	8	200723P1-12	Standard	100.000	5.32	113129.141	14675.905	96.356	98.0	-2.0	NO	1.000	NO	bb
9	9	200723P1-13	Standard	250.000	5.32	267753.219	13594.787	246.191	252.7	1.1	NO	1.000	NO	bb
10	10	200723P1-14	Standard	500.000	5.32	253022.344	6595.001	479.572	499.0	-0.2	NO	1.000	NO	bb

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Compound name: PFDS
Coefficient of Determination: R^2 = 0.998313
Calibration curve: 0.000548825 * x^2 + 1.21731 * x + 0.0746289
Response type: Internal Std (Ref 71), 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 200723P1-05	Standard	0.250	5.37	70.995	2394.893	0.371	0.2	-2.8	NO	0.998	NO	bb
2	2 200723P1-06	Standard	0.500	5.37	129.367	2361.420	0.685	0.5	0.2	NO	0.998	NO	bb
3	3 200723P1-07	Standard	1.000	5.37	241.321	2339.051	1.290	1.0	-0.2	NO	0.998	NO	bb
4	4 200723P1-08	Standard	2.000	5.37	475.922	2465.428	2.413	1.9	-4.0	NO	0.998	NO	bb
5	5 200723P1-09	Standard	5.000	5.37	1293.413	2227.155	7.259	5.9	17.7	NO	0.998	NO	bb
6	6 200723P1-10	Standard	10.000	5.37	2689.863	2617.590	12.845	10.4	4.4	NO	0.998	NO	bb
7	7 200723P1-11	Standard	50.000	5.37	12480.674	2208.597	70.637	56.5	13.1	NO	0.998	NO	bb
8	8 200723P1-12	Standard	100.000	5.37	24771.434	2434.035	127.214	99.9	-0.1	NO	0.998	NO	bb
9	9 200723P1-13	Standard	250.000	5.37	61631.375	2401.077	320.853	238.0	-4.8	NO	0.998	NO	bb
10	10 200723P1-14	Standard	500.000	5.37	53007.563	878.745	754.024	504.6	0.9	NO	0.998	NO	bb

Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.998996, r^2 = 0.997994
Calibration curve: 0.271559 * x + -0.00494639
Response type: Internal Std (Ref 83), 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 200723P1-05	Standard	0.250	5.53	77.836	16843.256	0.058	0.2	-7.6	NO	0.998	NO	bb
2	2 200723P1-06	Standard	0.500	5.53	165.535	17467.725	0.118	0.5	-9.1	NO	0.998	NO	bb
3	3 200723P1-07	Standard	1.000	5.53	366.123	16558.037	0.276	1.0	3.6	NO	0.998	NO	bb
4	4 200723P1-08	Standard	2.000	5.53	798.542	18035.260	0.553	2.1	2.8	NO	0.998	NO	bb
5	5 200723P1-09	Standard	5.000	5.53	1882.739	17138.240	1.373	5.1	1.5	NO	0.998	NO	bb
6	6 200723P1-10	Standard	10.000	5.53	3890.291	18431.949	2.638	9.7	-2.7	NO	0.998	NO	bb
7	7 200723P1-11	Standard	50.000	5.53	18541.373	16007.771	14.478	53.3	6.7	NO	0.998	NO	bb
8	8 200723P1-12	Standard	100.000	5.53	38497.090	17112.410	28.121	103.6	3.6	NO	0.998	NO	bb
9	9 200723P1-13	Standard	250.000	5.53	94568.695	16552.955	71.414	263.0	5.2	NO	0.998	NO	bb
10	10 200723P1-14	Standard	500.000	5.53	83491.070	8002.468	130.415	480.3	-3.9	NO	0.998	NO	bb

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Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.997818
Calibration curve: -0.00057183 * x^2 + 2.04691 * x + 0.00974222
Response type: Internal Std (Ref 85), 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	200723P1-05	Standard	0.250	5.59	52.563	982.800	0.669	0.3	28.8	NO	0.998	NO	MM
2	2	200723P1-06	Standard	0.500	5.60	76.608	932.120	1.027	0.5	-0.6	NO	0.998	NO	MM
3	3	200723P1-07	Standard	1.000	5.59	153.248	961.512	1.992	1.0	-3.1	NO	0.998	NO	MM
4	4	200723P1-08	Standard	2.000	5.59	296.684	1071.260	3.462	1.7	-15.6	NO	0.998	NO	MM
5	5	200723P1-09	Standard	5.000	5.59	752.740	922.918	10.195	5.0	-0.3	NO	0.998	NO	MM
6	6	200723P1-10	Standard	10.000	5.59	1545.169	998.644	19.341	9.5	-5.3	NO	0.998	NO	MM
7	7	200723P1-11	Standard	50.000	5.60	6796.153	912.231	93.125	46.1	-7.8	NO	0.998	NO	MM
8	8	200723P1-12	Standard	100.000	5.59	13507.134	796.045	212.098	106.8	6.8	NO	0.998	NO	MM
9	9	200723P1-13	Standard	250.000	5.59	31009.412	820.594	472.362	247.9	-0.8	NO	0.998	NO	MM
10	10	200723P1-14	Standard	500.000	5.60	27555.314	362.707	949.641	547.8	9.6	NO	0.998	NO	MMX

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999918
Calibration curve: -8.65346e-005 * x^2 + 0.872684 * x + -0.0100482
Response type: Internal Std (Ref 83), 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	200723P1-05	Standard	0.250	5.61	270.658	16843.256	0.201	0.2	-3.3	NO	1.000	NO	MM
2	2	200723P1-06	Standard	0.500	5.61	607.487	17467.725	0.435	0.5	1.9	NO	1.000	NO	MM
3	3	200723P1-07	Standard	1.000	5.61	1151.576	16558.037	0.869	1.0	0.8	NO	1.000	NO	MM
4	4	200723P1-08	Standard	2.000	5.61	2512.527	18035.260	1.741	2.0	0.4	NO	1.000	NO	MM
5	5	200723P1-09	Standard	5.000	5.61	6009.445	17138.240	4.383	5.0	0.7	NO	1.000	NO	MM
6	6	200723P1-10	Standard	10.000	5.61	12026.907	18431.949	8.156	9.4	-6.3	NO	1.000	NO	MM
7	7	200723P1-11	Standard	50.000	5.61	56604.250	16007.771	44.201	50.9	1.8	NO	1.000	NO	bb
8	8	200723P1-12	Standard	100.000	5.61	117218.813	17112.410	85.624	99.1	-0.9	NO	1.000	NO	bb
9	9	200723P1-13	Standard	250.000	5.61	282784.406	16552.955	213.545	251.0	0.4	NO	1.000	NO	bb
10	10	200723P1-14	Standard	500.000	5.61	265289.375	8002.468	414.387	499.6	-0.1	NO	1.000	NO	bb

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Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999712
Calibration curve: -2.32064e-005 * x^2 + 1.09292 * x + 0.139256
Response type: Internal Std (Ref 87), 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 200723P1-05	Standard	1.250	5.63	122.711	15957.310	1.147	0.9	-26.2	NO	1.000	NO	bb
2	2 200723P1-06	Standard	2.500	5.63	336.058	16283.492	3.079	2.7	7.6	NO	1.000	NO	bb
3	3 200723P1-07	Standard	5.000	5.63	631.374	16409.543	5.741	5.1	2.5	NO	1.000	NO	bb
4	4 200723P1-08	Standard	10.000	5.64	1391.359	16726.525	12.411	11.2	12.3	NO	1.000	NO	bb
5	5 200723P1-09	Standard	25.000	5.64	3306.945	16431.668	30.027	27.4	9.5	NO	1.000	NO	bb
6	6 200723P1-10	Standard	50.000	5.64	6583.318	17079.371	57.510	52.6	5.1	NO	1.000	NO	bb
7	7 200723P1-11	Standard	250.000	5.64	30691.406	16996.688	269.415	247.7	-0.9	NO	1.000	NO	bb
8	8 200723P1-12	Standard	500.000	5.64	64059.309	17367.100	550.331	508.9	1.8	NO	1.000	NO	bb
9	9 200723P1-13	Standard	1250.000	5.64	152859.797	17461.912	1306.082	1226.9	-1.9	NO	1.000	NO	bb
10	10 200723P1-14	Standard	2500.000	5.64	135177.969	7764.174	2597.643	2510.5	0.4	NO	1.000	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999815
Calibration curve: -0.000260215 * x^2 + 1.05243 * x + 0.00552452
Response type: Internal Std (Ref 83), 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 200723P1-05	Standard	0.250	5.85	367.601	16843.256	0.273	0.3	1.6	NO	1.000	NO	bb
2	2 200723P1-06	Standard	0.500	5.85	754.619	17467.725	0.540	0.5	1.6	NO	1.000	NO	MM
3	3 200723P1-07	Standard	1.000	5.85	1435.879	16558.037	1.084	1.0	2.5	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	5.85	3099.747	18035.260	2.148	2.0	1.9	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	5.85	7183.708	17138.240	5.240	5.0	-0.4	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	5.85	14246.835	18431.949	9.662	9.2	-8.0	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	5.85	67745.422	16007.771	52.900	50.9	1.8	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	5.85	138055.922	17112.410	100.845	98.2	-1.8	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	5.85	330541.219	16552.955	249.609	253.0	1.2	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	5.85	294538.406	8002.468	460.074	498.6	-0.3	NO	1.000	NO	bb

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Compound name: PFDoS
Coefficient of Determination: R^2 = 0.998557
Calibration curve: -2.86529e-005 * x^2 + 0.208102 * x + -0.0197029
Response type: Internal Std (Ref 89), 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 200723P1-05	Standard	0.250	5.87	45.244	16748.191	0.034	0.3	2.8	NO	0.999	NO	bb
2	2 200723P1-06	Standard	0.500	5.88	127.557	16716.086	0.095	0.6	10.6	NO	0.999	NO	bb
3	3 200723P1-07	Standard	1.000	5.87	256.090	16664.896	0.192	1.0	1.8	NO	0.999	NO	bb
4	4 200723P1-08	Standard	2.000	5.88	530.196	17407.705	0.381	1.9	-3.8	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	5.88	1356.596	16543.875	1.025	5.0	0.5	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	5.88	2764.865	17941.113	1.926	9.4	-6.4	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	5.88	12518.599	15974.042	9.796	47.5	-5.0	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	5.88	26325.891	16876.285	19.499	95.0	-5.0	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	5.88	66972.930	15794.688	53.003	264.4	5.8	NO	0.999	NO	bb
10	10 200723P1-14	Standard	500.000	5.88	57092.242	7454.873	95.730	493.7	-1.3	NO	0.999	NO	bb

Compound name: PFTeDA
Correlation coefficient: r = 0.999589, r^2 = 0.999178
Calibration curve: 0.61197 * x + 0.0341709
Response type: Internal Std (Ref 89), 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 200723P1-05	Standard	0.250	6.06	229.599	16748.191	0.171	0.2	-10.3	NO	0.999	NO	MM
2	2 200723P1-06	Standard	0.500	6.06	434.396	16716.086	0.325	0.5	-5.0	NO	0.999	NO	bb
3	3 200723P1-07	Standard	1.000	6.06	897.785	16664.896	0.673	1.0	4.5	NO	0.999	NO	bb
4	4 200723P1-08	Standard	2.000	6.06	1789.378	17407.705	1.285	2.0	2.2	NO	0.999	NO	bb
5	5 200723P1-09	Standard	5.000	6.06	4312.618	16543.875	3.258	5.3	5.4	NO	0.999	NO	bb
6	6 200723P1-10	Standard	10.000	6.06	8501.592	17941.113	5.923	9.6	-3.8	NO	0.999	NO	bb
7	7 200723P1-11	Standard	50.000	6.06	41559.262	15974.042	32.521	53.1	6.2	NO	0.999	NO	bb
8	8 200723P1-12	Standard	100.000	6.07	82530.641	16876.285	61.129	99.8	-0.2	NO	0.999	NO	bb
9	9 200723P1-13	Standard	250.000	6.06	199744.250	15794.688	158.079	258.3	3.3	NO	0.999	NO	db
10	10 200723P1-14	Standard	500.000	6.06	178454.516	7454.873	299.225	488.9	-2.2	NO	0.999	NO	bb

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Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999783
Calibration curve: 3.79069e-006 * x^2 + 1.11424 * x + 0.132913
Response type: Internal Std (Ref 91), 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 200723P1-05	Standard	1.250	6.08	163.303	19662.707	1.239	1.0	-20.6	NO	1.000	NO	bb
2	2 200723P1-06	Standard	2.500	6.07	387.020	20274.801	2.848	2.4	-2.5	NO	1.000	NO	bb
3	3 200723P1-07	Standard	5.000	6.07	866.182	19913.955	6.490	5.7	14.1	NO	1.000	NO	bb
4	4 200723P1-08	Standard	10.000	6.08	1569.933	20800.512	11.261	10.0	-0.1	NO	1.000	NO	MM
5	5 200723P1-09	Standard	25.000	6.08	4084.495	20230.221	30.124	26.9	7.7	NO	1.000	NO	bb
6	6 200723P1-10	Standard	50.000	6.08	7975.223	21458.047	55.453	49.6	-0.7	NO	1.000	NO	bb
7	7 200723P1-11	Standard	250.000	6.08	38058.492	19788.121	286.956	257.2	2.9	NO	1.000	NO	bb
8	8 200723P1-12	Standard	500.000	6.08	75547.211	20041.271	562.422	503.8	0.8	NO	1.000	NO	bb
9	9 200723P1-13	Standard	1250.000	6.08	178644.875	19407.174	1373.400	1227.3	-1.8	NO	1.000	NO	bb
10	10 200723P1-14	Standard	2500.000	6.08	157326.250	8322.320	2820.497	2509.8	0.4	NO	1.000	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999639
Calibration curve: -0.000238715 * x^2 + 0.978045 * x + 0.088756
Response type: Internal Std (Ref 93), 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 200723P1-05	Standard	0.250	6.40	543.409	20118.813	0.338	0.3	1.8	NO	1.000	NO	MM
2	2 200723P1-06	Standard	0.500	6.40	973.358	20011.482	0.608	0.5	6.2	NO	1.000	NO	bb
3	3 200723P1-07	Standard	1.000	6.40	1785.826	19585.617	1.140	1.1	7.5	NO	1.000	NO	bb
4	4 200723P1-08	Standard	2.000	6.40	3221.803	20610.014	1.954	1.9	-4.6	NO	1.000	NO	bb
5	5 200723P1-09	Standard	5.000	6.40	7829.645	19850.191	4.930	5.0	-0.9	NO	1.000	NO	bb
6	6 200723P1-10	Standard	10.000	6.40	15247.978	20924.604	9.109	9.2	-7.6	NO	1.000	NO	bb
7	7 200723P1-11	Standard	50.000	6.40	74889.648	20157.787	46.440	48.0	-4.1	NO	1.000	NO	bb
8	8 200723P1-12	Standard	100.000	6.40	150653.688	19740.209	95.398	99.9	-0.1	NO	1.000	NO	bb
9	9 200723P1-13	Standard	250.000	6.40	370013.156	19693.021	234.863	256.0	2.4	NO	1.000	NO	bb
10	10 200723P1-14	Standard	500.000	6.40	315596.469	9237.185	427.073	496.8	-0.6	NO	1.000	NO	bb

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Compound name: PFODA
Coefficient of Determination: R^2 = 0.999752
Calibration curve: -0.000110201 * x^2 + 0.79167 * x + -0.0108318
Response type: Internal Std (Ref 93), 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	200723P1-05	Standard	0.250	6.63	321.621	20118.813	0.200	0.3	6.4	NO	1.000	NO	bb
2	2	200723P1-06	Standard	0.500	6.63	618.031	20011.482	0.386	0.5	0.3	NO	1.000	NO	bb
3	3	200723P1-07	Standard	1.000	6.63	1233.083	19585.617	0.787	1.0	0.8	NO	1.000	NO	bb
4	4	200723P1-08	Standard	2.000	6.63	2468.697	20610.014	1.497	1.9	-4.7	NO	1.000	NO	bb
5	5	200723P1-09	Standard	5.000	6.63	6203.999	19850.191	3.907	5.0	-1.0	NO	1.000	NO	bb
6	6	200723P1-10	Standard	10.000	6.63	12573.615	20924.604	7.511	9.5	-4.9	NO	1.000	NO	bb
7	7	200723P1-11	Standard	50.000	6.63	60914.094	20157.787	37.773	48.0	-3.9	NO	1.000	NO	bb
8	8	200723P1-12	Standard	100.000	6.63	123186.914	19740.209	78.005	99.9	-0.1	NO	1.000	NO	bb
9	9	200723P1-13	Standard	250.000	6.63	306859.313	19693.021	194.777	255.1	2.0	NO	1.000	NO	bb
10	10	200723P1-14	Standard	500.000	6.63	270882.938	9237.185	366.566	497.5	-0.5	NO	1.000	NO	bb

Compound name: N-MeFOSE
Correlation coefficient: r = 0.999796, r^2 = 0.999591
Calibration curve: 1.16319 * x + -0.0536356
Response type: Internal Std (Ref 95), 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	200723P1-05	Standard	1.250	6.29	149.854	15690.583	1.425	1.3	1.7	NO	1.000	NO	bb
2	2	200723P1-06	Standard	2.500	6.29	327.253	16176.473	3.018	2.6	5.6	NO	1.000	NO	bb
3	3	200723P1-07	Standard	5.000	6.29	607.944	16696.781	5.432	4.7	-5.7	NO	1.000	NO	bb
4	4	200723P1-08	Standard	10.000	6.29	1380.893	16793.455	12.268	10.6	5.9	NO	1.000	NO	bb
5	5	200723P1-09	Standard	25.000	6.29	3205.874	16553.424	28.895	24.9	-0.5	NO	1.000	NO	bb
6	6	200723P1-10	Standard	50.000	6.29	6299.120	17257.291	54.460	46.9	-6.3	NO	1.000	NO	bb
7	7	200723P1-11	Standard	250.000	6.29	31617.752	16134.915	292.370	251.4	0.6	NO	1.000	NO	bb
8	8	200723P1-12	Standard	500.000	6.29	63936.387	17002.283	561.060	482.4	-3.5	NO	1.000	NO	bb
9	9	200723P1-13	Standard	1250.000	6.29	173895.719	17381.965	1492.653	1283.3	2.7	NO	1.000	NO	bb
10	10	200723P1-14	Standard	2500.000	6.29	144697.719	7466.830	2891.307	2485.7	-0.6	NO	1.000	NO	bb

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Compound name: N-EtFOSE
Correlation coefficient: r = 0.999718, r^2 = 0.999435
Calibration curve: 1.05721 * x + 0.144429
Response type: Internal Std (Ref 97), 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	200723P1-05	Standard	1.250	6.44	145.501	17482.254	1.242	1.0	-17.0	NO	0.999	NO	MM
2	2	200723P1-06	Standard	2.500	6.44	368.544	18200.490	3.021	2.7	8.8	NO	0.999	NO	bb
3	3	200723P1-07	Standard	5.000	6.44	683.520	17963.592	5.677	5.2	4.7	NO	0.999	NO	bb
4	4	200723P1-08	Standard	10.000	6.44	1344.355	18720.969	10.714	10.0	-0.0	NO	0.999	NO	bb
5	5	200723P1-09	Standard	25.000	6.44	3357.334	18049.451	27.752	26.1	4.5	NO	0.999	NO	bb
6	6	200723P1-10	Standard	50.000	6.44	6857.770	19055.910	53.694	50.7	1.3	NO	0.999	NO	bb
7	7	200723P1-11	Standard	250.000	6.44	32873.918	18307.723	267.908	253.3	1.3	NO	0.999	NO	bb
8	8	200723P1-12	Standard	500.000	6.44	67661.617	19523.074	517.086	489.0	-2.2	NO	0.999	NO	bb
9	9	200723P1-13	Standard	1250.000	6.44	176207.547	20554.771	1279.030	1209.7	-3.2	NO	0.999	NO	bb
10	10	200723P1-14	Standard	2500.000	6.44	152890.422	8474.104	2691.878	2546.1	1.8	NO	0.999	NO	bb

Compound name: 13C3-PFBA-EIS
Response Factor: 445.231
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200723P1-05	Standard	12.500	1.31	4630.349		4630.349	10.4	-16.8	NO		NO	MMX
2	2	200723P1-06	Standard	12.500	1.31	5450.429		5450.429	12.2	-2.1	NO		NO	MMX
3	3	200723P1-07	Standard	12.500	1.31	5340.806		5340.806	12.0	-4.0	NO		NO	bbX
4	4	200723P1-08	Standard	12.500	1.31	5269.994		5269.994	11.8	-5.3	NO		NO	MMX
5	5	200723P1-09	Standard	12.500	1.31	5322.790		5322.790	12.0	-4.4	NO		NO	MMX
6	6	200723P1-10	Standard	12.500	1.31	5565.385		5565.385	12.5	0.0	NO		NO	MM
7	7	200723P1-11	Standard	12.500	1.31	5461.841		5461.841	12.3	-1.9	NO		NO	MMX
8	8	200723P1-12	Standard	12.500	1.31	5687.572		5687.572	12.8	2.2	NO		NO	bbX
9	9	200723P1-13	Standard	12.500	1.31	6222.177		6222.177	14.0	11.8	NO		NO	MMX
10	10	200723P1-14	Standard	12.500	1.31	2446.034		2446.034	5.5	-56.0	NO		NO	bbX

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Compound name: 13C3-PFBA-RSD
Response Factor: 0.941868
RRF SD: 0.0355612, Relative SD: 3.7756
Response type: Internal Std (Ref 99), 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 200723P1-05	Standard	12.500	1.31	4892.609	5234.625	11.683	12.4	-0.8	NO		NO	MM
2	2 200723P1-06	Standard	12.500	1.31	5445.283	5653.986	12.039	12.8	2.3	NO		NO	MM
3	3 200723P1-07	Standard	12.500	1.31	5340.806	5246.388	12.725	13.5	8.1	NO		NO	bb
4	4 200723P1-08	Standard	12.500	1.31	5258.060	5628.813	11.677	12.4	-0.8	NO		NO	MM
5	5 200723P1-09	Standard	12.500	1.31	5350.382	5788.886	11.553	12.3	-1.9	NO		NO	db
6	6 200723P1-10	Standard	12.500	1.31	5565.385	6049.874	11.499	12.2	-2.3	NO		NO	MM
7	7 200723P1-11	Standard	12.500	1.31	5461.841	5778.838	11.814	12.5	0.3	NO		NO	MM
8	8 200723P1-12	Standard	12.500	1.31	5687.572	6045.516	11.760	12.5	-0.1	NO		NO	bb
9	9 200723P1-13	Standard	12.500	1.31	6228.973	7083.895	10.991	11.7	-6.6	NO		NO	MM
10	10 200723P1-14	Standard	12.500	1.31	2446.034	2549.589	11.992	12.7	1.9	NO		NO	bb

Compound name: 13C3-PFPeA-EIS
Response Factor: 711.138
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	2.24	8468.061		8468.061	11.9	-4.7	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	2.24	8741.019		8741.019	12.3	-1.7	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	2.24	8668.089		8668.089	12.2	-2.5	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	2.25	8926.078		8926.078	12.6	0.4	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	2.24	8547.844		8547.844	12.0	-3.8	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	2.24	8889.229		8889.229	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	2.24	8747.545		8747.545	12.3	-1.6	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	2.25	9140.945		9140.945	12.9	2.8	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	2.24	9429.117		9429.117	13.3	6.1	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	2.25	3999.898		3999.898	5.6	-55.0	NO		NO	bbX

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Compound name: 13C3-PFPeA-RSD
Response Factor: 0.733412
RRF SD: 0.0431073, Relative SD: 5.87765
Response type: Internal Std (Ref 101), 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	200723P1-05	Standard	12.500	2.24	8468.061	11921.129	8.879	12.1	-3.1	NO		NO	bb
2	2	200723P1-06	Standard	12.500	2.24	8741.019	12548.126	8.707	11.9	-5.0	NO		NO	bb
3	3	200723P1-07	Standard	12.500	2.24	8668.089	12095.057	8.958	12.2	-2.3	NO		NO	bb
4	4	200723P1-08	Standard	12.500	2.25	8926.078	11641.614	9.584	13.1	4.5	NO		NO	bb
5	5	200723P1-09	Standard	12.500	2.24	8547.844	12065.586	8.856	12.1	-3.4	NO		NO	bb
6	6	200723P1-10	Standard	12.500	2.24	8889.229	13054.790	8.511	11.6	-7.2	NO		NO	bb
7	7	200723P1-11	Standard	12.500	2.24	8747.545	11822.812	9.249	12.6	0.9	NO		NO	bb
8	8	200723P1-12	Standard	12.500	2.25	9140.945	12711.153	8.989	12.3	-1.9	NO		NO	bb
9	9	200723P1-13	Standard	12.500	2.24	9429.117	12248.680	9.623	13.1	5.0	NO		NO	bb
10	10	200723P1-14	Standard	12.500	2.25	3999.898	4844.918	10.320	14.1	12.6	NO		NO	bb

Compound name: 13C3-PFBS-EIS
Response Factor: 95.0296
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200723P1-05	Standard	12.500	2.52	1117.769		1117.769	11.8	-5.9	NO		NO	bbX
2	2	200723P1-06	Standard	12.500	2.53	1127.594		1127.594	11.9	-5.1	NO		NO	bbX
3	3	200723P1-07	Standard	12.500	2.52	1157.126		1157.126	12.2	-2.6	NO		NO	MMX
4	4	200723P1-08	Standard	12.500	2.53	1158.753		1158.753	12.2	-2.5	NO		NO	bbX
5	5	200723P1-09	Standard	12.500	2.53	1137.263		1137.263	12.0	-4.3	NO		NO	bbX
6	6	200723P1-10	Standard	12.500	2.53	1187.870		1187.870	12.5	0.0	NO		NO	bb
7	7	200723P1-11	Standard	12.500	2.53	1092.885		1092.885	11.5	-8.0	NO		NO	bbX
8	8	200723P1-12	Standard	12.500	2.53	1100.314		1100.314	11.6	-7.4	NO		NO	bbX
9	9	200723P1-13	Standard	12.500	2.53	1173.703		1173.703	12.4	-1.2	NO		NO	bbX
10	10	200723P1-14	Standard	12.500	2.53	501.341		501.341	5.3	-57.8	NO		NO	bbX

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Compound name: 13C3-PFBS-RSD
Response Factor: 1.26545
RRF SD: 0.0666874, Relative SD: 5.26987
Response type: Internal Std (Ref 102), 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 200723P1-05	Standard	12.500	2.52	1117.769	821.556	17.007	13.4	7.5	NO		NO	bb
2	2 200723P1-06	Standard	12.500	2.53	1127.594	971.182	14.513	11.5	-8.2	NO		NO	bb
3	3 200723P1-07	Standard	12.500	2.52	1156.805	856.432	16.884	13.3	6.7	NO		NO	MM
4	4 200723P1-08	Standard	12.500	2.53	1158.753	910.477	15.909	12.6	0.6	NO		NO	bb
5	5 200723P1-09	Standard	12.500	2.53	1137.263	917.599	15.492	12.2	-2.1	NO		NO	bb
6	6 200723P1-10	Standard	12.500	2.53	1187.870	915.766	16.214	12.8	2.5	NO		NO	bb
7	7 200723P1-11	Standard	12.500	2.53	1092.885	925.305	14.764	11.7	-6.7	NO		NO	bb
8	8 200723P1-12	Standard	12.500	2.53	1100.314	836.956	16.433	13.0	3.9	NO		NO	bb
9	9 200723P1-13	Standard	12.500	2.53	1173.703	952.950	15.396	12.2	-2.7	NO		NO	bb
10	10 200723P1-14	Standard	12.500	2.53	501.341	402.514	15.569	12.3	-1.6	NO		NO	bb

Compound name: 13C3-HFPO-DA-EIS
Response Factor: 175.191
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	3.27	2018.418		2018.418	11.5	-7.8	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	3.27	1983.289		1983.289	11.3	-9.4	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	3.27	1966.628		1966.628	11.2	-10.2	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	3.27	2046.724		2046.724	11.7	-6.5	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	3.27	1945.244		1945.244	11.1	-11.2	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	3.27	2189.888		2189.888	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.27	2054.461		2054.461	11.7	-6.2	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	3.28	2142.986		2142.986	12.2	-2.1	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	3.27	2007.952		2007.952	11.5	-8.3	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	3.28	1027.281		1027.281	5.9	-53.1	NO		NO	bbX

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Compound name: 13C3-HFPO-DA-RSD
Response Factor: 0.171307
RRF SD: 0.0153353, Relative SD: 8.9519
Response type: Internal Std (Ref 101), 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 200723P1-05	Standard	12.500	3.27	2018.418	11921.129	2.116	12.4	-1.2	NO		NO	bb
2	2 200723P1-06	Standard	12.500	3.27	1983.289	12548.126	1.976	11.5	-7.7	NO		NO	bb
3	3 200723P1-07	Standard	12.500	3.27	1966.628	12095.057	2.032	11.9	-5.1	NO		NO	bb
4	4 200723P1-08	Standard	12.500	3.27	2046.724	11641.614	2.198	12.8	2.6	NO		NO	bb
5	5 200723P1-09	Standard	12.500	3.27	1945.244	12065.586	2.015	11.8	-5.9	NO		NO	bb
6	6 200723P1-10	Standard	12.500	3.27	2189.888	13054.790	2.097	12.2	-2.1	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.27	2054.461	11822.812	2.172	12.7	1.4	NO		NO	bb
8	8 200723P1-12	Standard	12.500	3.28	2142.986	12711.153	2.107	12.3	-1.6	NO		NO	bb
9	9 200723P1-13	Standard	12.500	3.27	2007.952	12248.680	2.049	12.0	-4.3	NO		NO	bb
10	10 200723P1-14	Standard	12.500	3.28	1027.281	4844.918	2.650	15.5	23.8	NO		NO	bb

Compound name: 13C2-4:2 FTS-EIS
Response Factor: 108.922
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	2.96	1242.757		1242.757	11.4	-8.7	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	2.96	1273.646		1273.646	11.7	-6.5	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	2.96	1346.996		1346.996	12.4	-1.1	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	2.97	1265.443		1265.443	11.6	-7.1	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	2.97	1206.789		1206.789	11.1	-11.4	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	2.96	1361.526		1361.526	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	2.97	1206.126		1206.126	11.1	-11.4	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	2.97	1227.887		1227.887	11.3	-9.8	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	2.97	1164.298		1164.298	10.7	-14.5	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	2.97	495.054		495.054	4.5	-63.6	NO		NO	bbX

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Compound name: 13C2-4:2 FTS-RSD
Response Factor: 1.3811
RRF SD: 0.123002, Relative SD: 8.90608
Response type: Internal Std (Ref 102), 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 200723P1-05	Standard	12.500	2.96	1242.757	821.556	18.909	13.7	9.5	NO		NO	bb
2	2 200723P1-06	Standard	12.500	2.96	1273.646	971.182	16.393	11.9	-5.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	2.96	1346.996	856.432	19.660	14.2	13.9	NO		NO	bb
4	4 200723P1-08	Standard	12.500	2.97	1265.443	910.477	17.373	12.6	0.6	NO		NO	bb
5	5 200723P1-09	Standard	12.500	2.97	1206.789	917.599	16.439	11.9	-4.8	NO		NO	bb
6	6 200723P1-10	Standard	12.500	2.96	1361.526	915.766	18.585	13.5	7.7	NO		NO	bb
7	7 200723P1-11	Standard	12.500	2.97	1206.126	925.305	16.294	11.8	-5.6	NO		NO	bb
8	8 200723P1-12	Standard	12.500	2.97	1227.887	836.956	18.339	13.3	6.2	NO		NO	bb
9	9 200723P1-13	Standard	12.500	2.97	1164.298	952.950	15.272	11.1	-11.5	NO		NO	bb
10	10 200723P1-14	Standard	12.500	2.97	495.054	402.514	15.374	11.1	-10.9	NO		NO	bb

Compound name: 13C2-PFHxA-EIS
Response Factor: 869.854
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	3.05	10043.935		10043.935	11.5	-7.6	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	3.05	10336.493		10336.493	11.9	-4.9	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	3.05	10112.812		10112.812	11.6	-7.0	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	3.05	10122.637		10122.637	11.6	-6.9	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	3.05	9862.095		9862.095	11.3	-9.3	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	3.05	10873.170		10873.170	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.05	10061.887		10061.887	11.6	-7.5	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	3.05	10605.625		10605.625	12.2	-2.5	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	3.05	10227.347		10227.347	11.8	-5.9	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	3.05	4387.043		4387.043	5.0	-59.7	NO		NO	bbX

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Compound name: 13C2-PFHxA-RSD
Response Factor: 0.844806
RRF SD: 0.0257285, Relative SD: 3.04549
Response type: Internal Std (Ref 101), 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	200723P1-05	Standard	12.500	3.05	10043.935	11921.129	10.532	12.5	-0.3	NO		NO	bb
2	2	200723P1-06	Standard	12.500	3.05	10336.493	12548.126	10.297	12.2	-2.5	NO		NO	bb
3	3	200723P1-07	Standard	12.500	3.05	10112.812	12095.057	10.451	12.4	-1.0	NO		NO	bb
4	4	200723P1-08	Standard	12.500	3.05	10122.637	11641.614	10.869	12.9	2.9	NO		NO	bb
5	5	200723P1-09	Standard	12.500	3.05	9862.095	12065.586	10.217	12.1	-3.2	NO		NO	bb
6	6	200723P1-10	Standard	12.500	3.05	10873.170	13054.790	10.411	12.3	-1.4	NO		NO	bb
7	7	200723P1-11	Standard	12.500	3.05	10061.887	11822.812	10.638	12.6	0.7	NO		NO	bb
8	8	200723P1-12	Standard	12.500	3.05	10605.625	12711.153	10.429	12.3	-1.2	NO		NO	bb
9	9	200723P1-13	Standard	12.500	3.05	10227.347	12248.680	10.437	12.4	-1.2	NO		NO	bb
10	10	200723P1-14	Standard	12.500	3.05	4387.043	4844.918	11.319	13.4	7.2	NO		NO	bb

Compound name: 13C4-PFHpA-EIS
Response Factor: 803.699
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200723P1-05	Standard	12.500	3.66	9502.673		9502.673	11.8	-5.4	NO		NO	bbX
2	2	200723P1-06	Standard	12.500	3.66	9967.399		9967.399	12.4	-0.8	NO		NO	bbX
3	3	200723P1-07	Standard	12.500	3.66	9846.714		9846.714	12.3	-2.0	NO		NO	bbX
4	4	200723P1-08	Standard	12.500	3.66	9332.160		9332.160	11.6	-7.1	NO		NO	bbX
5	5	200723P1-09	Standard	12.500	3.66	9356.568		9356.568	11.6	-6.9	NO		NO	bbX
6	6	200723P1-10	Standard	12.500	3.66	10046.232		10046.232	12.5	0.0	NO		NO	bb
7	7	200723P1-11	Standard	12.500	3.66	9783.003		9783.003	12.2	-2.6	NO		NO	bbX
8	8	200723P1-12	Standard	12.500	3.66	9233.985		9233.985	11.5	-8.1	NO		NO	bbX
9	9	200723P1-13	Standard	12.500	3.66	9196.343		9196.343	11.4	-8.5	NO		NO	bbX
10	10	200723P1-14	Standard	12.500	3.66	3981.883		3981.883	5.0	-60.4	NO		NO	bbX

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Compound name: 13C4-PFHpA-RSD
Response Factor: 0.78788
RRF SD: 0.032258, Relative SD: 4.09428
Response type: Internal Std (Ref 101), 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 200723P1-05	Standard	12.500	3.66	9502.673	11921.129	9.964	12.6	1.2	NO		NO	bb
2	2 200723P1-06	Standard	12.500	3.66	9967.399	12548.126	9.929	12.6	0.8	NO		NO	bb
3	3 200723P1-07	Standard	12.500	3.66	9846.714	12095.057	10.176	12.9	3.3	NO		NO	bb
4	4 200723P1-08	Standard	12.500	3.66	9332.160	11641.614	10.020	12.7	1.7	NO		NO	bb
5	5 200723P1-09	Standard	12.500	3.66	9356.568	12065.586	9.693	12.3	-1.6	NO		NO	bb
6	6 200723P1-10	Standard	12.500	3.66	10046.232	13054.790	9.619	12.2	-2.3	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.66	9783.003	11822.812	10.343	13.1	5.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	3.66	9233.985	12711.153	9.081	11.5	-7.8	NO		NO	bb
9	9 200723P1-13	Standard	12.500	3.66	9196.343	12248.680	9.385	11.9	-4.7	NO		NO	bb
10	10 200723P1-14	Standard	12.500	3.66	3981.883	4844.918	10.273	13.0	4.3	NO		NO	bb

Compound name: 13C3-PFHxS-EIS
Response Factor: 193.924
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	3.80	2181.987		2181.987	11.3	-10.0	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	3.80	2300.451		2300.451	11.9	-5.1	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	3.80	2330.399		2330.399	12.0	-3.9	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	3.80	2311.760		2311.760	11.9	-4.6	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	3.80	2271.799		2271.799	11.7	-6.3	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	3.80	2424.054		2424.054	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.81	2243.081		2243.081	11.6	-7.5	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	3.81	2032.427		2032.427	10.5	-16.2	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	3.80	2280.833		2280.833	11.8	-5.9	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	3.81	914.999		914.999	4.7	-62.3	NO		NO	bbX

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Compound name: 13C3-PFHxS-RSD
Response Factor: 2.49267
RRF SD: 0.144252, Relative SD: 5.78702
Response type: Internal Std (Ref 102), 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 200723P1-05	Standard	12.500	3.80	2181.987	821.556	33.199	13.3	6.5	NO		NO	bb
2	2 200723P1-06	Standard	12.500	3.80	2300.451	971.182	29.609	11.9	-5.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	3.80	2330.399	856.432	34.013	13.6	9.2	NO		NO	bb
4	4 200723P1-08	Standard	12.500	3.80	2311.760	910.477	31.738	12.7	1.9	NO		NO	bb
5	5 200723P1-09	Standard	12.500	3.80	2271.799	917.599	30.948	12.4	-0.7	NO		NO	bb
6	6 200723P1-10	Standard	12.500	3.80	2424.054	915.766	33.088	13.3	6.2	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.81	2243.081	925.305	30.302	12.2	-2.7	NO		NO	bb
8	8 200723P1-12	Standard	12.500	3.81	2032.427	836.956	30.354	12.2	-2.6	NO		NO	bb
9	9 200723P1-13	Standard	12.500	3.80	2280.833	952.950	29.918	12.0	-4.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	3.81	914.999	402.514	28.415	11.4	-8.8	NO		NO	bb

Compound name: 13C2-6:2 FTS-EIS
Response Factor: 110.862
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	4.11	1324.852		1324.852	12.0	-4.4	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	4.11	1392.563		1392.563	12.6	0.5	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	4.11	1416.625		1416.625	12.8	2.2	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	4.12	1445.189		1445.189	13.0	4.3	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	4.12	1300.942		1300.942	11.7	-6.1	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	4.12	1385.772		1385.772	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.12	1274.011		1274.011	11.5	-8.1	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	4.12	1413.782		1413.782	12.8	2.0	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	4.12	1455.538		1455.538	13.1	5.0	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	4.12	603.971		603.971	5.4	-56.4	NO		NO	bbX

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Compound name: 13C2-6:2 FTS-RSD
Response Factor: 0.466888
RRF SD: 0.0242119, Relative SD: 5.18581
Response type: Internal Std (Ref 105), 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 200723P1-05	Standard	12.500	4.11	1324.852	2980.806	5.556	11.9	-4.8	NO		NO	bb
2	2 200723P1-06	Standard	12.500	4.11	1392.563	3058.962	5.691	12.2	-2.5	NO		NO	bb
3	3 200723P1-07	Standard	12.500	4.11	1416.625	2806.338	6.310	13.5	8.1	NO		NO	bb
4	4 200723P1-08	Standard	12.500	4.12	1445.189	3128.815	5.774	12.4	-1.1	NO		NO	bb
5	5 200723P1-09	Standard	12.500	4.12	1300.942	2886.086	5.635	12.1	-3.5	NO		NO	bb
6	6 200723P1-10	Standard	12.500	4.12	1385.772	2939.910	5.892	12.6	1.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.12	1274.011	2900.231	5.491	11.8	-5.9	NO		NO	bb
8	8 200723P1-12	Standard	12.500	4.12	1413.782	3109.738	5.683	12.2	-2.6	NO		NO	bb
9	9 200723P1-13	Standard	12.500	4.12	1455.538	3058.094	5.950	12.7	1.9	NO		NO	bb
10	10 200723P1-14	Standard	12.500	4.12	603.971	1183.135	6.381	13.7	9.3	NO		NO	bb

Compound name: 13C5-PFNA-EIS
Response Factor: 949.634
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	4.62	11544.591		11544.591	12.2	-2.7	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	4.62	10414.617		10414.617	11.0	-12.3	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	4.62	11679.192		11679.192	12.3	-1.6	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	4.62	10820.912		10820.912	11.4	-8.8	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	4.62	10700.182		10700.182	11.3	-9.9	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	4.62	11870.430		11870.430	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.62	11572.812		11572.812	12.2	-2.5	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	4.62	11968.237		11968.237	12.6	0.8	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	4.62	11418.469		11418.469	12.0	-3.8	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	4.62	5202.214		5202.214	5.5	-56.2	NO		NO	bbX

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Compound name: 13C5-PFNA-RSD
Response Factor: 0.956682
RRF SD: 0.0500183, Relative SD: 5.22831
Response type: Internal Std (Ref 104), 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 200723P1-05	Standard	12.500	4.62	11544.591	11931.173	12.095	12.6	1.1	NO		NO	bb
2	2 200723P1-06	Standard	12.500	4.62	10414.617	11686.816	11.139	11.6	-6.9	NO		NO	bb
3	3 200723P1-07	Standard	12.500	4.62	11679.192	11391.841	12.815	13.4	7.2	NO		NO	bb
4	4 200723P1-08	Standard	12.500	4.62	10820.912	12238.771	11.052	11.6	-7.6	NO		NO	bb
5	5 200723P1-09	Standard	12.500	4.62	10700.182	11871.955	11.266	11.8	-5.8	NO		NO	bb
6	6 200723P1-10	Standard	12.500	4.62	11870.430	12047.941	12.316	12.9	3.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.62	11572.812	12016.639	12.038	12.6	0.7	NO		NO	bb
8	8 200723P1-12	Standard	12.500	4.62	11968.237	11777.754	12.702	13.3	6.2	NO		NO	bb
9	9 200723P1-13	Standard	12.500	4.62	11418.469	12008.870	11.885	12.4	-0.6	NO		NO	bb
10	10 200723P1-14	Standard	12.500	4.62	5202.214	5297.200	12.276	12.8	2.7	NO		NO	bb

Compound name: 13C8-PFOSA-EIS
Response Factor: 438.683
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	4.66	5031.740		5031.740	11.5	-8.2	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	4.66	5341.359		5341.359	12.2	-2.6	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	4.66	5399.122		5399.122	12.3	-1.5	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	4.67	5460.556		5460.556	12.4	-0.4	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	4.67	5253.971		5253.971	12.0	-4.2	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	4.67	5483.539		5483.539	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.67	5433.563		5433.563	12.4	-0.9	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	4.67	5318.703		5318.703	12.1	-3.0	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	4.67	5338.721		5338.721	12.2	-2.6	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	4.67	2149.859		2149.859	4.9	-60.8	NO		NO	bbX

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Compound name: 13C8-PFOSA-RSD
Response Factor: 0.479138
RRF SD: 0.0201943, Relative SD: 4.21472
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	12.500	4.66	5031.740	10664.384	5.898	12.3	-1.5	NO		NO	bb
2	2 200723P1-06	Standard	12.500	4.66	5341.359	11123.791	6.002	12.5	0.2	NO		NO	bb
3	3 200723P1-07	Standard	12.500	4.66	5399.122	10645.929	6.339	13.2	5.8	NO		NO	bb
4	4 200723P1-08	Standard	12.500	4.67	5460.556	11006.099	6.202	12.9	3.5	NO		NO	bb
5	5 200723P1-09	Standard	12.500	4.67	5253.971	11191.078	5.868	12.2	-2.0	NO		NO	bb
6	6 200723P1-10	Standard	12.500	4.67	5483.539	11463.493	5.979	12.5	-0.2	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.67	5433.563	11019.938	6.163	12.9	2.9	NO		NO	bb
8	8 200723P1-12	Standard	12.500	4.67	5318.703	11426.870	5.818	12.1	-2.9	NO		NO	bb
9	9 200723P1-13	Standard	12.500	4.67	5338.721	10814.276	6.171	12.9	3.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	4.67	2149.859	4930.153	5.451	11.4	-9.0	NO		NO	bb

Compound name: 13C2-PFOA-EIS
Response Factor: 1000.99
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	4.17	12157.738		12157.738	12.1	-2.8	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	4.17	12769.768		12769.768	12.8	2.1	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	4.17	12111.942		12111.942	12.1	-3.2	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	4.17	12085.006		12085.006	12.1	-3.4	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	4.17	12087.032		12087.032	12.1	-3.4	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	4.17	12512.399		12512.399	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.18	12488.367		12488.367	12.5	-0.2	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	4.17	12126.722		12126.722	12.1	-3.1	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	4.17	12267.944		12267.944	12.3	-2.0	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	4.17	5289.660		5289.660	5.3	-57.7	NO		NO	bbX

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Compound name: 13C2-PFOA-RSD
Response Factor: 1.2563
RRF SD: 0.0373627, Relative SD: 2.97404
Response type: Internal Std (Ref 103), 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 200723P1-05	Standard	12.500	4.17	12157.738	9512.587	15.976	12.7	1.7	NO		NO	bb
2	2 200723P1-06	Standard	12.500	4.17	12769.768	10194.197	15.658	12.5	-0.3	NO		NO	bb
3	3 200723P1-07	Standard	12.500	4.17	12111.942	9216.238	16.427	13.1	4.6	NO		NO	bb
4	4 200723P1-08	Standard	12.500	4.17	12085.006	9785.649	15.437	12.3	-1.7	NO		NO	bb
5	5 200723P1-09	Standard	12.500	4.17	12087.032	9404.991	16.065	12.8	2.3	NO		NO	bb
6	6 200723P1-10	Standard	12.500	4.17	12512.399	10171.877	15.376	12.2	-2.1	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.18	12488.367	10088.385	15.474	12.3	-1.5	NO		NO	bb
8	8 200723P1-12	Standard	12.500	4.17	12126.722	10030.643	15.112	12.0	-3.8	NO		NO	bb
9	9 200723P1-13	Standard	12.500	4.17	12267.944	10097.096	15.187	12.1	-3.3	NO		NO	bb
10	10 200723P1-14	Standard	12.500	4.17	5289.660	4050.447	16.324	13.0	4.0	NO		NO	bb

Compound name: 13C8-PFOS-EIS
Response Factor: 209.407
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	4.70	2394.893		2394.893	11.4	-8.5	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	4.70	2361.420		2361.420	11.3	-9.8	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	4.70	2339.051		2339.051	11.2	-10.6	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	4.70	2465.428		2465.428	11.8	-5.8	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	4.70	2227.155		2227.155	10.6	-14.9	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	4.70	2617.590		2617.590	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.70	2208.597		2208.597	10.5	-15.6	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	4.71	2434.035		2434.035	11.6	-7.0	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	4.70	2401.077		2401.077	11.5	-8.3	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	4.71	878.745		878.745	4.2	-66.4	NO		NO	bbX

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Compound name: 13C8-PFOS-RSD
Response Factor: 0.793104
RRF SD: 0.0419462, Relative SD: 5.28886
Response type: Internal Std (Ref 105), 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	200723P1-05	Standard	12.500	4.70	2394.893	2980.806	10.043	12.7	1.3	NO		NO	bb
2	2	200723P1-06	Standard	12.500	4.70	2361.420	3058.962	9.650	12.2	-2.7	NO		NO	bb
3	3	200723P1-07	Standard	12.500	4.70	2339.051	2806.338	10.419	13.1	5.1	NO		NO	bb
4	4	200723P1-08	Standard	12.500	4.70	2465.428	3128.815	9.850	12.4	-0.6	NO		NO	bb
5	5	200723P1-09	Standard	12.500	4.70	2227.155	2886.086	9.646	12.2	-2.7	NO		NO	bb
6	6	200723P1-10	Standard	12.500	4.70	2617.590	2939.910	11.130	14.0	12.3	NO		NO	bb
7	7	200723P1-11	Standard	12.500	4.70	2208.597	2900.231	9.519	12.0	-4.0	NO		NO	bb
8	8	200723P1-12	Standard	12.500	4.71	2434.035	3109.738	9.784	12.3	-1.3	NO		NO	bb
9	9	200723P1-13	Standard	12.500	4.70	2401.077	3058.094	9.814	12.4	-1.0	NO		NO	bb
10	10	200723P1-14	Standard	12.500	4.71	878.745	1183.135	9.284	11.7	-6.4	NO		NO	bb

Compound name: 13C2-PFDA-EIS
Response Factor: 1188.75
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200723P1-05	Standard	12.500	4.99	12873.816		12873.816	10.8	-13.4	NO		NO	bbX
2	2	200723P1-06	Standard	12.500	4.99	14062.984		14062.984	11.8	-5.4	NO		NO	bbX
3	3	200723P1-07	Standard	12.500	4.99	14036.273		14036.273	11.8	-5.5	NO		NO	bbX
4	4	200723P1-08	Standard	12.500	5.00	14097.977		14097.977	11.9	-5.1	NO		NO	bbX
5	5	200723P1-09	Standard	12.500	5.00	13238.326		13238.326	11.1	-10.9	NO		NO	bbX
6	6	200723P1-10	Standard	12.500	5.00	14859.408		14859.408	12.5	0.0	NO		NO	bb
7	7	200723P1-11	Standard	12.500	5.00	13705.416		13705.416	11.5	-7.8	NO		NO	bbX
8	8	200723P1-12	Standard	12.500	5.00	14034.524		14034.524	11.8	-5.6	NO		NO	bbX
9	9	200723P1-13	Standard	12.500	5.00	14249.542		14249.542	12.0	-4.1	NO		NO	bbX
10	10	200723P1-14	Standard	12.500	5.00	6594.166		6594.166	5.5	-55.6	NO		NO	bbX

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Compound name: 13C2-PFDA-RSD
Response Factor: 1.10019
RRF SD: 0.0471081, Relative SD: 4.2818
Response type: Internal Std (Ref 106), 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	200723P1-05	Standard	12.500	4.99	12873.816	11363.676	14.161	12.9	3.0	NO		NO	bb
2	2	200723P1-06	Standard	12.500	4.99	14062.984	12724.128	13.815	12.6	0.5	NO		NO	bb
3	3	200723P1-07	Standard	12.500	4.99	14036.273	12176.568	14.409	13.1	4.8	NO		NO	bb
4	4	200723P1-08	Standard	12.500	5.00	14097.977	12906.174	13.654	12.4	-0.7	NO		NO	bb
5	5	200723P1-09	Standard	12.500	5.00	13238.326	12821.073	12.907	11.7	-6.1	NO		NO	bb
6	6	200723P1-10	Standard	12.500	5.00	14859.408	13286.976	13.979	12.7	1.6	NO		NO	bb
7	7	200723P1-11	Standard	12.500	5.00	13705.416	13231.647	12.948	11.8	-5.9	NO		NO	bb
8	8	200723P1-12	Standard	12.500	5.00	14034.524	13046.282	13.447	12.2	-2.2	NO		NO	bb
9	9	200723P1-13	Standard	12.500	5.00	14249.542	13206.953	13.487	12.3	-1.9	NO		NO	bb
10	10	200723P1-14	Standard	12.500	5.00	6594.166	5600.771	14.717	13.4	7.0	NO		NO	bb

Compound name: 13C2-8:2 FTS-EIS
Response Factor: 94.6735
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200723P1-05	Standard	12.500	4.97	1287.099		1287.099	13.6	8.8	NO		NO	bbX
2	2	200723P1-06	Standard	12.500	4.97	1295.066		1295.066	13.7	9.4	NO		NO	bbX
3	3	200723P1-07	Standard	12.500	4.97	1082.121		1082.121	11.4	-8.6	NO		NO	bbX
4	4	200723P1-08	Standard	12.500	4.97	1421.785		1421.785	15.0	20.1	NO		NO	bbX
5	5	200723P1-09	Standard	12.500	4.97	1328.554		1328.554	14.0	12.3	NO		NO	bbX
6	6	200723P1-10	Standard	12.500	4.97	1183.419		1183.419	12.5	0.0	NO		NO	bb
7	7	200723P1-11	Standard	12.500	4.97	1200.285		1200.285	12.7	1.4	NO		NO	bbX
8	8	200723P1-12	Standard	12.500	4.97	1247.409		1247.409	13.2	5.4	NO		NO	bbX
9	9	200723P1-13	Standard	12.500	4.97	1146.208		1146.208	12.1	-3.1	NO		NO	bbX
10	10	200723P1-14	Standard	12.500	4.97	739.520		739.520	7.8	-37.5	NO		NO	bbX

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Compound name: 13C2-8:2 FTS-RSD
Response Factor: 0.43729
RRF SD: 0.0714473, Relative SD: 16.3387
Response type: Internal Std (Ref 105), 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 200723P1-05	Standard	12.500	4.97	1287.099	2980.806	5.397	12.3	-1.3	NO		NO	bb
2	2 200723P1-06	Standard	12.500	4.97	1295.066	3058.962	5.292	12.1	-3.2	NO		NO	bb
3	3 200723P1-07	Standard	12.500	4.97	1082.121	2806.338	4.820	11.0	-11.8	NO		NO	bb
4	4 200723P1-08	Standard	12.500	4.97	1421.785	3128.815	5.680	13.0	3.9	NO		NO	bb
5	5 200723P1-09	Standard	12.500	4.97	1328.554	2886.086	5.754	13.2	5.3	NO		NO	bb
6	6 200723P1-10	Standard	12.500	4.97	1183.419	2939.910	5.032	11.5	-7.9	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.97	1200.285	2900.231	5.173	11.8	-5.4	NO		NO	bb
8	8 200723P1-12	Standard	12.500	4.97	1247.409	3109.738	5.014	11.5	-8.3	NO		NO	bb
9	9 200723P1-13	Standard	12.500	4.97	1146.208	3058.094	4.685	10.7	-14.3	NO		NO	bb
10	10 200723P1-14	Standard	12.500	4.97	739.520	1183.135	7.813	17.9	42.9	NO		NO	bb

Compound name: d3-N-MeFOSAA-EIS
Response Factor: 261.878
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	5.15	3004.147		3004.147	11.5	-8.2	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	5.15	2915.308		2915.308	11.1	-10.9	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	5.15	3002.060		3002.060	11.5	-8.3	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	5.15	3193.365		3193.365	12.2	-2.4	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	5.15	2830.965		2830.965	10.8	-13.5	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	5.15	3273.480		3273.480	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.15	3064.430		3064.430	11.7	-6.4	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	5.15	3019.127		3019.127	11.5	-7.8	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	5.15	3373.283		3373.283	12.9	3.0	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	5.15	1361.070		1361.070	5.2	-58.4	NO		NO	bbX

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Compound name: d3-N-MeFOSAA-RSD
Response Factor: 0.278473
RRF SD: 0.0165232, Relative SD: 5.93349
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	12.500	5.15	3004.147	10664.384	3.521	12.6	1.2	NO		NO	bb
2	2 200723P1-06	Standard	12.500	5.15	2915.308	11123.791	3.276	11.8	-5.9	NO		NO	bb
3	3 200723P1-07	Standard	12.500	5.15	3002.060	10645.929	3.525	12.7	1.3	NO		NO	bb
4	4 200723P1-08	Standard	12.500	5.15	3193.365	11006.099	3.627	13.0	4.2	NO		NO	bb
5	5 200723P1-09	Standard	12.500	5.15	2830.965	11191.078	3.162	11.4	-9.2	NO		NO	bb
6	6 200723P1-10	Standard	12.500	5.15	3273.480	11463.493	3.569	12.8	2.5	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.15	3064.430	11019.938	3.476	12.5	-0.1	NO		NO	bb
8	8 200723P1-12	Standard	12.500	5.15	3019.127	11426.870	3.303	11.9	-5.1	NO		NO	bb
9	9 200723P1-13	Standard	12.500	5.15	3373.283	10814.276	3.899	14.0	12.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	5.15	1361.070	4930.153	3.451	12.4	-0.9	NO		NO	bb

Compound name: 13C2-PFUdA-EIS
Response Factor: 1153.75
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	5.32	13906.884		13906.884	12.1	-3.6	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	5.32	14382.965		14382.965	12.5	-0.3	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	5.32	14026.958		14026.958	12.2	-2.7	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	5.32	14605.491		14605.491	12.7	1.3	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	5.32	13915.992		13915.992	12.1	-3.5	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	5.32	14421.859		14421.859	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.32	13342.792		13342.792	11.6	-7.5	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	5.32	14675.905		14675.905	12.7	1.8	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	5.32	13594.787		13594.787	11.8	-5.7	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	5.32	6595.001		6595.001	5.7	-54.3	NO		NO	bbX

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Compound name: 13C2-PFUdA-RSD
Response Factor: 1.28331
RRF SD: 0.0404659, Relative SD: 3.15323
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	12.500	5.32	13906.884	10664.384	16.301	12.7	1.6	NO		NO	bb
2	2 200723P1-06	Standard	12.500	5.32	14382.965	11123.791	16.162	12.6	0.8	NO		NO	bb
3	3 200723P1-07	Standard	12.500	5.32	14026.958	10645.929	16.470	12.8	2.7	NO		NO	bb
4	4 200723P1-08	Standard	12.500	5.32	14605.491	11006.099	16.588	12.9	3.4	NO		NO	bb
5	5 200723P1-09	Standard	12.500	5.32	13915.992	11191.078	15.544	12.1	-3.1	NO		NO	bb
6	6 200723P1-10	Standard	12.500	5.32	14421.859	11463.493	15.726	12.3	-2.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.32	13342.792	11019.938	15.135	11.8	-5.7	NO		NO	bb
8	8 200723P1-12	Standard	12.500	5.32	14675.905	11426.870	16.054	12.5	0.1	NO		NO	bb
9	9 200723P1-13	Standard	12.500	5.32	13594.787	10814.276	15.714	12.2	-2.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	5.32	6595.001	4930.153	16.721	13.0	4.2	NO		NO	bb

Compound name: d5-N-EtFOSAA-EIS
Response Factor: 231.458
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	5.30	2358.338		2358.338	10.2	-18.5	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	5.30	2359.347		2359.347	10.2	-18.5	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	5.30	2637.756		2637.756	11.4	-8.8	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	5.30	2486.401		2486.401	10.7	-14.1	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	5.30	2486.028		2486.028	10.7	-14.1	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	5.30	2893.223		2893.223	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.30	2536.860		2536.860	11.0	-12.3	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	5.30	2753.195		2753.195	11.9	-4.8	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	5.30	2767.310		2767.310	12.0	-4.4	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	5.30	1187.911		1187.911	5.1	-58.9	NO		NO	bbX

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Compound name: d5-N-EtFOSAA-RSD
Response Factor: 0.234944
RRF SD: 0.0147571, Relative SD: 6.28111
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	12.500	5.30	2358.338	10664.384	2.764	11.8	-5.9	NO		NO	bb
2	2 200723P1-06	Standard	12.500	5.30	2359.347	11123.791	2.651	11.3	-9.7	NO		NO	bb
3	3 200723P1-07	Standard	12.500	5.30	2637.756	10645.929	3.097	13.2	5.5	NO		NO	bb
4	4 200723P1-08	Standard	12.500	5.30	2486.401	11006.099	2.824	12.0	-3.8	NO		NO	bb
5	5 200723P1-09	Standard	12.500	5.30	2486.028	11191.078	2.777	11.8	-5.4	NO		NO	bb
6	6 200723P1-10	Standard	12.500	5.30	2893.223	11463.493	3.155	13.4	7.4	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.30	2536.860	11019.938	2.878	12.2	-2.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	5.30	2753.195	11426.870	3.012	12.8	2.6	NO		NO	bb
9	9 200723P1-13	Standard	12.500	5.30	2767.310	10814.276	3.199	13.6	8.9	NO		NO	bb
10	10 200723P1-14	Standard	12.500	5.30	1187.911	4930.153	3.012	12.8	2.6	NO		NO	bb

Compound name: 13C2-PFDoA-EIS
Response Factor: 1474.56
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	5.60	16843.256		16843.256	11.4	-8.6	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	5.60	17467.725		17467.725	11.8	-5.2	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	5.60	16558.037		16558.037	11.2	-10.2	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	5.60	18035.260		18035.260	12.2	-2.2	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	5.60	17138.240		17138.240	11.6	-7.0	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	5.60	18431.949		18431.949	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.61	16007.771		16007.771	10.9	-13.2	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	5.61	17112.410		17112.410	11.6	-7.2	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	5.61	16552.955		16552.955	11.2	-10.2	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	5.61	8002.468		8002.468	5.4	-56.6	NO		NO	bbX

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Compound name: 13C2-PFDoA-RSD
Response Factor: 1.35398
RRF SD: 0.0805675, Relative SD: 5.9504
Response type: Internal Std (Ref 106), 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 200723P1-05	Standard	12.500	5.60	16843.256	11363.676	18.528	13.7	9.5	NO		NO	bb
2	2 200723P1-06	Standard	12.500	5.60	17467.725	12724.128	17.160	12.7	1.4	NO		NO	bb
3	3 200723P1-07	Standard	12.500	5.60	16558.037	12176.568	16.998	12.6	0.4	NO		NO	bb
4	4 200723P1-08	Standard	12.500	5.60	18035.260	12906.174	17.468	12.9	3.2	NO		NO	bb
5	5 200723P1-09	Standard	12.500	5.60	17138.240	12821.073	16.709	12.3	-1.3	NO		NO	bb
6	6 200723P1-10	Standard	12.500	5.60	18431.949	13286.976	17.340	12.8	2.5	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.61	16007.771	13231.647	15.123	11.2	-10.6	NO		NO	bb
8	8 200723P1-12	Standard	12.500	5.61	17112.410	13046.282	16.396	12.1	-3.1	NO		NO	bb
9	9 200723P1-13	Standard	12.500	5.61	16552.955	13206.953	15.667	11.6	-7.4	NO		NO	bb
10	10 200723P1-14	Standard	12.500	5.61	8002.468	5600.771	17.860	13.2	5.5	NO		NO	bb

Compound name: 13C2-10:2 FTS-EIS
Response Factor: 79.8915
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	5.59	982.800		982.800	12.3	-1.6	NO		NO	MMX
2	2 200723P1-06	Standard	12.500	5.59	932.120		932.120	11.7	-6.7	NO		NO	MMX
3	3 200723P1-07	Standard	12.500	5.59	961.512		961.512	12.0	-3.7	NO		NO	MMX
4	4 200723P1-08	Standard	12.500	5.59	1071.260		1071.260	13.4	7.3	NO		NO	MMX
5	5 200723P1-09	Standard	12.500	5.59	922.918		922.918	11.6	-7.6	NO		NO	MMX
6	6 200723P1-10	Standard	12.500	5.59	998.644		998.644	12.5	0.0	NO		NO	MM
7	7 200723P1-11	Standard	12.500	5.59	912.231		912.231	11.4	-8.7	NO		NO	MMX
8	8 200723P1-12	Standard	12.500	5.59	796.045		796.045	10.0	-20.3	NO		NO	MMX
9	9 200723P1-13	Standard	12.500	5.59	820.594		820.594	10.3	-17.8	NO		NO	MMX
10	10 200723P1-14	Standard	12.500	5.59	362.707		362.707	4.5	-63.7	YES		NO	MMX

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Compound name: 13C2-10:2 FTS-RSD
Response Factor: 0.312951
RRF SD: 0.0309821, Relative SD: 9.89998
Response type: Internal Std (Ref 105), 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 200723P1-05	Standard	12.500	5.59	976.748	2980.806	4.096	13.1	4.7	NO		NO	bb
2	2 200723P1-06	Standard	12.500	5.59	926.167	3058.962	3.785	12.1	-3.3	NO		NO	bb
3	3 200723P1-07	Standard	12.500	5.59	958.448	2806.338	4.269	13.6	9.1	NO		NO	bb
4	4 200723P1-08	Standard	12.500	5.59	1065.117	3128.815	4.255	13.6	8.8	NO		NO	bb
5	5 200723P1-09	Standard	12.500	5.59	916.148	2886.086	3.968	12.7	1.4	NO		NO	bb
6	6 200723P1-10	Standard	12.500	5.59	998.594	2939.910	4.246	13.6	8.5	NO		NO	MM
7	7 200723P1-11	Standard	12.500	5.59	928.882	2900.231	4.003	12.8	2.3	NO		NO	MM
8	8 200723P1-12	Standard	12.500	5.59	798.632	3109.738	3.210	10.3	-17.9	NO		NO	MM
9	9 200723P1-13	Standard	12.500	5.59	825.554	3058.094	3.374	10.8	-13.7	NO		NO	MM
10	10 200723P1-14	Standard	12.500	5.59	361.650	1183.135	3.821	12.2	-2.3	NO		NO	dbX

Compound name: d3-N-MeFOSA-EIS
Response Factor: 114.473
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	149.200	5.66	15957.310		15957.310	139.4	-6.6	NO		NO	bbX
2	2 200723P1-06	Standard	149.200	5.66	16283.492		16283.492	142.2	-4.7	NO		NO	bbX
3	3 200723P1-07	Standard	149.200	5.66	16409.543		16409.543	143.3	-3.9	NO		NO	bbX
4	4 200723P1-08	Standard	149.200	5.66	16726.525		16726.525	146.1	-2.1	NO		NO	bbX
5	5 200723P1-09	Standard	149.200	5.66	16431.668		16431.668	143.5	-3.8	NO		NO	bbX
6	6 200723P1-10	Standard	149.200	5.66	17079.371		17079.371	149.2	0.0	NO		NO	bb
7	7 200723P1-11	Standard	149.200	5.67	16996.688		16996.688	148.5	-0.5	NO		NO	bbX
8	8 200723P1-12	Standard	149.200	5.66	17367.100		17367.100	151.7	1.7	NO		NO	bbX
9	9 200723P1-13	Standard	149.200	5.66	17461.912		17461.912	152.5	2.2	NO		NO	bbX
10	10 200723P1-14	Standard	149.200	5.66	7764.174		7764.174	67.8	-54.5	NO		NO	bbX

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Compound name: d3-N-MeFOSA-RSD
Response Factor: 0.127607
RRF SD: 0.00396246, Relative SD: 3.1052
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	149.200	5.66	15957.310	10664.384	18.704	146.6	-1.8	NO		NO	bb
2	2 200723P1-06	Standard	149.200	5.66	16283.492	11123.791	18.298	143.4	-3.9	NO		NO	bb
3	3 200723P1-07	Standard	149.200	5.66	16409.543	10645.929	19.267	151.0	1.2	NO		NO	bb
4	4 200723P1-08	Standard	149.200	5.66	16726.525	11006.099	18.997	148.9	-0.2	NO		NO	bb
5	5 200723P1-09	Standard	149.200	5.66	16431.668	11191.078	18.354	143.8	-3.6	NO		NO	bb
6	6 200723P1-10	Standard	149.200	5.66	17079.371	11463.493	18.624	145.9	-2.2	NO		NO	bb
7	7 200723P1-11	Standard	149.200	5.67	16996.688	11019.938	19.279	151.1	1.3	NO		NO	bb
8	8 200723P1-12	Standard	149.200	5.66	17367.100	11426.870	18.998	148.9	-0.2	NO		NO	bb
9	9 200723P1-13	Standard	149.200	5.66	17461.912	10814.276	20.184	158.2	6.0	NO		NO	bb
10	10 200723P1-14	Standard	149.200	5.66	7764.174	4930.153	19.685	154.3	3.4	NO		NO	bb

Compound name: 13C2-PFTeDA-EIS
Response Factor: 1435.29
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	6.06	16748.191		16748.191	11.7	-6.6	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	6.06	16716.086		16716.086	11.6	-6.8	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	6.06	16664.896		16664.896	11.6	-7.1	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	6.06	17407.705		17407.705	12.1	-3.0	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	6.06	16543.875		16543.875	11.5	-7.8	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	6.06	17941.113		17941.113	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	6.06	15974.042		15974.042	11.1	-11.0	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	6.06	16876.285		16876.285	11.8	-5.9	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	6.06	15794.688		15794.688	11.0	-12.0	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	6.06	7454.873		7454.873	5.2	-58.4	NO		NO	bbX

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Compound name: 13C2-PFTeDA-RSD
Response Factor: 1.51627
RRF SD: 0.0502802, Relative SD: 3.31605
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	12.500	6.06	16748.191	10664.384	19.631	12.9	3.6	NO		NO	bb
2	2 200723P1-06	Standard	12.500	6.06	16716.086	11123.791	18.784	12.4	-0.9	NO		NO	bb
3	3 200723P1-07	Standard	12.500	6.06	16664.896	10645.929	19.567	12.9	3.2	NO		NO	bb
4	4 200723P1-08	Standard	12.500	6.06	17407.705	11006.099	19.771	13.0	4.3	NO		NO	bb
5	5 200723P1-09	Standard	12.500	6.06	16543.875	11191.078	18.479	12.2	-2.5	NO		NO	bb
6	6 200723P1-10	Standard	12.500	6.06	17941.113	11463.493	19.563	12.9	3.2	NO		NO	bb
7	7 200723P1-11	Standard	12.500	6.06	15974.042	11019.938	18.119	12.0	-4.4	NO		NO	bb
8	8 200723P1-12	Standard	12.500	6.06	16876.285	11426.870	18.461	12.2	-2.6	NO		NO	bb
9	9 200723P1-13	Standard	12.500	6.06	15794.688	10814.276	18.257	12.0	-3.7	NO		NO	bb
10	10 200723P1-14	Standard	12.500	6.06	7454.873	4930.153	18.901	12.5	-0.3	NO		NO	bb

Compound name: d5-N-ETFOSA-EIS
Response Factor: 143.821
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	149.200	6.09	19662.707		19662.707	136.7	-8.4	NO		NO	bbX
2	2 200723P1-06	Standard	149.200	6.09	20274.801		20274.801	141.0	-5.5	NO		NO	bbX
3	3 200723P1-07	Standard	149.200	6.09	19913.955		19913.955	138.5	-7.2	NO		NO	bbX
4	4 200723P1-08	Standard	149.200	6.10	20800.512		20800.512	144.6	-3.1	NO		NO	bbX
5	5 200723P1-09	Standard	149.200	6.09	20230.221		20230.221	140.7	-5.7	NO		NO	bbX
6	6 200723P1-10	Standard	149.200	6.09	21458.047		21458.047	149.2	0.0	NO		NO	bb
7	7 200723P1-11	Standard	149.200	6.10	19788.121		19788.121	137.6	-7.8	NO		NO	bbX
8	8 200723P1-12	Standard	149.200	6.09	20041.271		20041.271	139.3	-6.6	NO		NO	bbX
9	9 200723P1-13	Standard	149.200	6.10	19407.174		19407.174	134.9	-9.6	NO		NO	bbX
10	10 200723P1-14	Standard	149.200	6.10	8322.320		8322.320	57.9	-61.2	NO		NO	bbX

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Compound name: d5-N-ETFOSA-RSD
Response Factor: 0.151966
RRF SD: 0.0051117, Relative SD: 3.36372
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	149.200	6.09	19662.707	10664.384	23.047	151.7	1.6	NO		NO	bb
2	2 200723P1-06	Standard	149.200	6.09	20274.801	11123.791	22.783	149.9	0.5	NO		NO	bb
3	3 200723P1-07	Standard	149.200	6.09	19913.955	10645.929	23.382	153.9	3.1	NO		NO	bb
4	4 200723P1-08	Standard	149.200	6.10	20800.512	11006.099	23.624	155.5	4.2	NO		NO	bb
5	5 200723P1-09	Standard	149.200	6.09	20230.221	11191.078	22.596	148.7	-0.3	NO		NO	bb
6	6 200723P1-10	Standard	149.200	6.09	21458.047	11463.493	23.398	154.0	3.2	NO		NO	bb
7	7 200723P1-11	Standard	149.200	6.10	19788.121	11019.938	22.446	147.7	-1.0	NO		NO	bb
8	8 200723P1-12	Standard	149.200	6.09	20041.271	11426.870	21.923	144.3	-3.3	NO		NO	bb
9	9 200723P1-13	Standard	149.200	6.10	19407.174	10814.276	22.432	147.6	-1.1	NO		NO	bb
10	10 200723P1-14	Standard	149.200	6.10	8322.320	4930.153	21.101	138.9	-6.9	NO		NO	bb

Compound name: 13C2-PFHxDA-EIS
Response Factor: 1673.97
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	12.500	6.40	20118.813		20118.813	12.0	-3.9	NO		NO	bbX
2	2 200723P1-06	Standard	12.500	6.40	20011.482		20011.482	12.0	-4.4	NO		NO	bbX
3	3 200723P1-07	Standard	12.500	6.40	19585.617		19585.617	11.7	-6.4	NO		NO	bbX
4	4 200723P1-08	Standard	12.500	6.40	20610.014		20610.014	12.3	-1.5	NO		NO	bbX
5	5 200723P1-09	Standard	12.500	6.40	19850.191		19850.191	11.9	-5.1	NO		NO	bbX
6	6 200723P1-10	Standard	12.500	6.40	20924.604		20924.604	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	6.40	20157.787		20157.787	12.0	-3.7	NO		NO	bbX
8	8 200723P1-12	Standard	12.500	6.40	19740.209		19740.209	11.8	-5.7	NO		NO	bbX
9	9 200723P1-13	Standard	12.500	6.40	19693.021		19693.021	11.8	-5.9	NO		NO	bbX
10	10 200723P1-14	Standard	12.500	6.40	9237.185		9237.185	5.5	-55.9	NO		NO	bbX

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Compound name: 13C2-PFHxDA-RSD
Response Factor: 1.82483
RRF SD: 0.0488434, Relative SD: 2.6766
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	12.500	6.40	20118.813	10664.384	23.582	12.9	3.4	NO		NO	bb
2	2 200723P1-06	Standard	12.500	6.40	20011.482	11123.791	22.487	12.3	-1.4	NO		NO	bb
3	3 200723P1-07	Standard	12.500	6.40	19585.617	10645.929	22.997	12.6	0.8	NO		NO	bb
4	4 200723P1-08	Standard	12.500	6.40	20610.014	11006.099	23.407	12.8	2.6	NO		NO	bb
5	5 200723P1-09	Standard	12.500	6.40	19850.191	11191.078	22.172	12.2	-2.8	NO		NO	bb
6	6 200723P1-10	Standard	12.500	6.40	20924.604	11463.493	22.817	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	6.40	20157.787	11019.938	22.865	12.5	0.2	NO		NO	bb
8	8 200723P1-12	Standard	12.500	6.40	19740.209	11426.870	21.594	11.8	-5.3	NO		NO	bb
9	9 200723P1-13	Standard	12.500	6.40	19693.021	10814.276	22.763	12.5	-0.2	NO		NO	bb
10	10 200723P1-14	Standard	12.500	6.40	9237.185	4930.153	23.420	12.8	2.7	NO		NO	bb

Compound name: d7-N-MeFOSE-EIS
Response Factor: 115.665
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	149.200	6.28	15690.583		15690.583	135.7	-9.1	NO		NO	bbX
2	2 200723P1-06	Standard	149.200	6.28	16176.473		16176.473	139.9	-6.3	NO		NO	bbX
3	3 200723P1-07	Standard	149.200	6.28	16696.781		16696.781	144.4	-3.2	NO		NO	bbX
4	4 200723P1-08	Standard	149.200	6.28	16793.455		16793.455	145.2	-2.7	NO		NO	bbX
5	5 200723P1-09	Standard	149.200	6.28	16553.424		16553.424	143.1	-4.1	NO		NO	bbX
6	6 200723P1-10	Standard	149.200	6.28	17257.291		17257.291	149.2	0.0	NO		NO	bb
7	7 200723P1-11	Standard	149.200	6.28	16134.915		16134.915	139.5	-6.5	NO		NO	bbX
8	8 200723P1-12	Standard	149.200	6.28	17002.283		17002.283	147.0	-1.5	NO		NO	bbX
9	9 200723P1-13	Standard	149.200	6.28	17381.965		17381.965	150.3	0.7	NO		NO	bbX
10	10 200723P1-14	Standard	149.200	6.28	7466.830		7466.830	64.6	-56.7	NO		NO	bbX

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Compound name: d7-N-MeFOSE-RSD
Response Factor: 0.126326
RRF SD: 0.00407298, Relative SD: 3.22419
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	149.200	6.28	15690.583	10664.384	18.391	145.6	-2.4	NO		NO	bb
2	2 200723P1-06	Standard	149.200	6.28	16176.473	11123.791	18.178	143.9	-3.6	NO		NO	bb
3	3 200723P1-07	Standard	149.200	6.28	16696.781	10645.929	19.605	155.2	4.0	NO		NO	bb
4	4 200723P1-08	Standard	149.200	6.28	16793.455	11006.099	19.073	151.0	1.2	NO		NO	bb
5	5 200723P1-09	Standard	149.200	6.28	16553.424	11191.078	18.490	146.4	-1.9	NO		NO	bb
6	6 200723P1-10	Standard	149.200	6.28	17257.291	11463.493	18.818	149.0	-0.2	NO		NO	bb
7	7 200723P1-11	Standard	149.200	6.28	16134.915	11019.938	18.302	144.9	-2.9	NO		NO	bb
8	8 200723P1-12	Standard	149.200	6.28	17002.283	11426.870	18.599	147.2	-1.3	NO		NO	bb
9	9 200723P1-13	Standard	149.200	6.28	17381.965	10814.276	20.091	159.0	6.6	NO		NO	bb
10	10 200723P1-14	Standard	149.200	6.28	7466.830	4930.153	18.932	149.9	0.4	NO		NO	bb

Compound name: d9-N-EtFOSE-EIS
Response Factor: 127.721
RRF SD: 0, Relative SD: 0
Response type: External Std, Area
Curve type: RF

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200723P1-05	Standard	149.200	6.43	17482.254		17482.254	136.9	-8.3	NO		NO	bbX
2	2 200723P1-06	Standard	149.200	6.43	18200.490		18200.490	142.5	-4.5	NO		NO	bbX
3	3 200723P1-07	Standard	149.200	6.43	17963.592		17963.592	140.6	-5.7	NO		NO	bbX
4	4 200723P1-08	Standard	149.200	6.43	18720.969		18720.969	146.6	-1.8	NO		NO	bbX
5	5 200723P1-09	Standard	149.200	6.43	18049.451		18049.451	141.3	-5.3	NO		NO	bbX
6	6 200723P1-10	Standard	149.200	6.43	19055.910		19055.910	149.2	0.0	NO		NO	bb
7	7 200723P1-11	Standard	149.200	6.43	18307.723		18307.723	143.3	-3.9	NO		NO	bbX
8	8 200723P1-12	Standard	149.200	6.43	19523.074		19523.074	152.9	2.5	NO		NO	bbX
9	9 200723P1-13	Standard	149.200	6.43	20554.771		20554.771	160.9	7.9	NO		NO	bbX
10	10 200723P1-14	Standard	149.200	6.43	8474.104		8474.104	66.3	-55.5	NO		NO	bbX

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Compound name: d9-N-EtFOSE-RSD
Response Factor: 0.141826
RRF SD: 0.00676188, Relative SD: 4.76773
Response type: Internal Std (Ref 107), 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 200723P1-05	Standard	149.200	6.43	17482.254	10664.384	20.491	144.5	-3.2	NO		NO	bb
2	2 200723P1-06	Standard	149.200	6.43	18200.490	11123.791	20.452	144.2	-3.3	NO		NO	bb
3	3 200723P1-07	Standard	149.200	6.43	17963.592	10645.929	21.092	148.7	-0.3	NO		NO	bb
4	4 200723P1-08	Standard	149.200	6.43	18720.969	11006.099	21.262	149.9	0.5	NO		NO	bb
5	5 200723P1-09	Standard	149.200	6.43	18049.451	11191.078	20.161	142.1	-4.7	NO		NO	bb
6	6 200723P1-10	Standard	149.200	6.43	19055.910	11463.493	20.779	146.5	-1.8	NO		NO	bb
7	7 200723P1-11	Standard	149.200	6.43	18307.723	11019.938	20.767	146.4	-1.9	NO		NO	bb
8	8 200723P1-12	Standard	149.200	6.43	19523.074	11426.870	21.357	150.6	0.9	NO		NO	bb
9	9 200723P1-13	Standard	149.200	6.43	20554.771	10814.276	23.759	167.5	12.3	NO		NO	bb
10	10 200723P1-14	Standard	149.200	6.43	8474.104	4930.153	21.485	151.5	1.5	NO		NO	bb

Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 3.70074e-017, Relative SD: 3.70074e-015
Response type: Internal Std (Ref 99), 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 200723P1-05	Standard	12.500	1.30	5234.625	5234.625	12.500	12.5	0.0	NO		NO	MM
2	2 200723P1-06	Standard	12.500	1.31	5653.986	5653.986	12.500	12.5	0.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	1.31	5246.388	5246.388	12.500	12.5	0.0	NO		NO	MM
4	4 200723P1-08	Standard	12.500	1.31	5628.813	5628.813	12.500	12.5	0.0	NO		NO	MM
5	5 200723P1-09	Standard	12.500	1.31	5788.886	5788.886	12.500	12.5	0.0	NO		NO	MM
6	6 200723P1-10	Standard	12.500	1.31	6049.874	6049.874	12.500	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	1.31	5778.838	5778.838	12.500	12.5	0.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	1.31	6045.516	6045.516	12.500	12.5	0.0	NO		NO	MM
9	9 200723P1-13	Standard	12.500	1.31	7083.895	7083.895	12.500	12.5	0.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	1.31	2549.589	2549.589	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 7.40149e-017, Relative SD: 7.40149e-015
Response type: Internal Std (Ref 101), 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 200723P1-05	Standard	12.500	3.05	11921.129	11921.129	12.500	12.5	0.0	NO		NO	bb
2	2 200723P1-06	Standard	12.500	3.05	12548.126	12548.126	12.500	12.5	0.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	3.05	12095.057	12095.057	12.500	12.5	0.0	NO		NO	bb
4	4 200723P1-08	Standard	12.500	3.05	11641.614	11641.614	12.500	12.5	0.0	NO		NO	bb
5	5 200723P1-09	Standard	12.500	3.05	12065.586	12065.586	12.500	12.5	0.0	NO		NO	bb
6	6 200723P1-10	Standard	12.500	3.05	13054.790	13054.790	12.500	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.05	11822.812	11822.812	12.500	12.5	0.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	3.05	12711.153	12711.153	12.500	12.5	0.0	NO		NO	bb
9	9 200723P1-13	Standard	12.500	3.05	12248.680	12248.680	12.500	12.5	0.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	3.05	4844.918	4844.918	12.500	12.5	0.0	NO		NO	bb

Compound name: 18O2-PFHxS
Response Factor: 1
RRF SD: 7.40149e-017, Relative SD: 7.40149e-015
Response type: Internal Std (Ref 102), 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 200723P1-05	Standard	12.500	3.80	821.556	821.556	12.500	12.5	0.0	NO		NO	bb
2	2 200723P1-06	Standard	12.500	3.80	971.182	971.182	12.500	12.5	0.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	3.80	856.432	856.432	12.500	12.5	0.0	NO		NO	bb
4	4 200723P1-08	Standard	12.500	3.80	910.477	910.477	12.500	12.5	0.0	NO		NO	bb
5	5 200723P1-09	Standard	12.500	3.80	917.599	917.599	12.500	12.5	0.0	NO		NO	bb
6	6 200723P1-10	Standard	12.500	3.80	915.766	915.766	12.500	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	3.81	925.305	925.305	12.500	12.5	0.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	3.81	836.956	836.956	12.500	12.5	0.0	NO		NO	bb
9	9 200723P1-13	Standard	12.500	3.80	952.950	952.950	12.500	12.5	0.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	3.81	402.514	402.514	12.500	12.5	0.0	NO		NO	bb

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Compound name: 13C8-PFOA
Response Factor: 1
RRF SD: 7.40149e-017, Relative SD: 7.40149e-015
Response type: Internal Std (Ref 103), 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	200723P1-05	Standard	12.500	4.17	9512.587	9512.587	12.500	12.5	0.0	NO		NO	bb
2	2	200723P1-06	Standard	12.500	4.17	10194.197	10194.197	12.500	12.5	0.0	NO		NO	bb
3	3	200723P1-07	Standard	12.500	4.17	9216.238	9216.238	12.500	12.5	0.0	NO		NO	bb
4	4	200723P1-08	Standard	12.500	4.17	9785.649	9785.649	12.500	12.5	0.0	NO		NO	bb
5	5	200723P1-09	Standard	12.500	4.17	9404.991	9404.991	12.500	12.5	0.0	NO		NO	bb
6	6	200723P1-10	Standard	12.500	4.17	10171.877	10171.877	12.500	12.5	0.0	NO		NO	bb
7	7	200723P1-11	Standard	12.500	4.18	10088.385	10088.385	12.500	12.5	0.0	NO		NO	bb
8	8	200723P1-12	Standard	12.500	4.17	10030.643	10030.643	12.500	12.5	0.0	NO		NO	bb
9	9	200723P1-13	Standard	12.500	4.17	10097.096	10097.096	12.500	12.5	0.0	NO		NO	bb
10	10	200723P1-14	Standard	12.500	4.18	4050.447	4050.447	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 104), 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	200723P1-05	Standard	12.500	4.62	11931.173	11931.173	12.500	12.5	0.0	NO		NO	bb
2	2	200723P1-06	Standard	12.500	4.62	11686.816	11686.816	12.500	12.5	0.0	NO		NO	bb
3	3	200723P1-07	Standard	12.500	4.62	11391.841	11391.841	12.500	12.5	0.0	NO		NO	bb
4	4	200723P1-08	Standard	12.500	4.62	12238.771	12238.771	12.500	12.5	0.0	NO		NO	bb
5	5	200723P1-09	Standard	12.500	4.62	11871.955	11871.955	12.500	12.5	0.0	NO		NO	bb
6	6	200723P1-10	Standard	12.500	4.62	12047.941	12047.941	12.500	12.5	0.0	NO		NO	bb
7	7	200723P1-11	Standard	12.500	4.62	12016.639	12016.639	12.500	12.5	0.0	NO		NO	bb
8	8	200723P1-12	Standard	12.500	4.62	11777.754	11777.754	12.500	12.5	0.0	NO		NO	bb
9	9	200723P1-13	Standard	12.500	4.62	12008.870	12008.870	12.500	12.5	0.0	NO		NO	bb
10	10	200723P1-14	Standard	12.500	4.62	5297.200	5297.200	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 105), 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 200723P1-05	Standard	12.500	4.70	2980.806	2980.806	12.500	12.5	0.0	NO		NO	bb
2	2 200723P1-06	Standard	12.500	4.70	3058.962	3058.962	12.500	12.5	0.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	4.70	2806.338	2806.338	12.500	12.5	0.0	NO		NO	bb
4	4 200723P1-08	Standard	12.500	4.70	3128.815	3128.815	12.500	12.5	0.0	NO		NO	bb
5	5 200723P1-09	Standard	12.500	4.70	2886.086	2886.086	12.500	12.5	0.0	NO		NO	bb
6	6 200723P1-10	Standard	12.500	4.70	2939.910	2939.910	12.500	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	4.70	2900.231	2900.231	12.500	12.5	0.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	4.70	3109.738	3109.738	12.500	12.5	0.0	NO		NO	bb
9	9 200723P1-13	Standard	12.500	4.70	3058.094	3058.094	12.500	12.5	0.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	4.70	1183.135	1183.135	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 106), 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 200723P1-05	Standard	12.500	4.99	11363.676	11363.676	12.500	12.5	0.0	NO		NO	bb
2	2 200723P1-06	Standard	12.500	4.99	12724.128	12724.128	12.500	12.5	0.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	4.99	12176.568	12176.568	12.500	12.5	0.0	NO		NO	bb
4	4 200723P1-08	Standard	12.500	5.00	12906.174	12906.174	12.500	12.5	0.0	NO		NO	bb
5	5 200723P1-09	Standard	12.500	5.00	12821.073	12821.073	12.500	12.5	0.0	NO		NO	bb
6	6 200723P1-10	Standard	12.500	5.00	13286.976	13286.976	12.500	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.00	13231.647	13231.647	12.500	12.5	0.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	5.00	13046.282	13046.282	12.500	12.5	0.0	NO		NO	bb
9	9 200723P1-13	Standard	12.500	5.00	13206.953	13206.953	12.500	12.5	0.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	5.00	5600.771	5600.771	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 107), 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 200723P1-05	Standard	12.500	5.32	10664.384	10664.384	12.500	12.5	0.0	NO		NO	bb
2	2 200723P1-06	Standard	12.500	5.32	11123.791	11123.791	12.500	12.5	0.0	NO		NO	bb
3	3 200723P1-07	Standard	12.500	5.32	10645.929	10645.929	12.500	12.5	0.0	NO		NO	bb
4	4 200723P1-08	Standard	12.500	5.32	11006.099	11006.099	12.500	12.5	0.0	NO		NO	bb
5	5 200723P1-09	Standard	12.500	5.32	11191.078	11191.078	12.500	12.5	0.0	NO		NO	bb
6	6 200723P1-10	Standard	12.500	5.32	11463.493	11463.493	12.500	12.5	0.0	NO		NO	bb
7	7 200723P1-11	Standard	12.500	5.32	11019.938	11019.938	12.500	12.5	0.0	NO		NO	bb
8	8 200723P1-12	Standard	12.500	5.32	11426.870	11426.870	12.500	12.5	0.0	NO		NO	bb
9	9 200723P1-13	Standard	12.500	5.32	10814.276	10814.276	12.500	12.5	0.0	NO		NO	bb
10	10 200723P1-14	Standard	12.500	5.32	4930.153	4930.153	12.500	12.5	0.0	NO		NO	bb

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	47	0.9992	NO	
2	2	PFPrS	51	0.9986	NO	
3	3	3:3 FTCA	49	0.9997	NO	
4	4	PFPeA	49	1.0000	NO	
5	5	PFBS	51	0.9999	NO	
6	6	4:2 FTS	55	0.9998	NO	
7	7	PFHxA	57	0.9995	NO	
8	8	PFPeS	51	0.9997	NO	
9	9	HFPO-DA	53	0.9962	NO	
10	10	5:3 FTCA	59	0.9993	NO	
11	11	PFHpA	59	0.9998	NO	
12	12	ADONA	59	0.9991	NO	
13	13	L-PFHxS	61	0.9992	NO	
14	15	6:2 FTS	63	0.9987	NO	
15	16	L-PFOA	69	0.9998	NO	
16	18	PFecHS	69	0.9997	NO	
17	19	PFHpS	71	0.9988	NO	
18	20	7:3 FTCA	65	0.9994	NO	
19	21	PFNA	65	0.9987	NO	
20	22	PFOSA	67	1.0000	NO	
21	23	L-PFOS	71	0.9992	NO	
22	25	9Cl-PF30NS	71	0.9982	NO	
23	26	PFDA	73	0.9999	NO	
24	27	8:2 FTS	75	0.9982	NO	
25	28	PFNS	71	0.9994	NO	
26	29	L-MeFOSAA	77	0.9992	NO	

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Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	81	0.9970	NO	
2	33	PFUdA	79	0.9999	NO	
3	34	PFDS	71	0.9983	NO	
4	35	11Cl-PF30UdS	83	0.9980	NO	
5	36	10:2 FTS	85	0.9978	NO	
6	37	PFDoA	83	0.9999	NO	
7	38	N-MeFOSA	87	0.9997	NO	
8	39	PFTrDA	83	0.9998	NO	
9	40	PFDoS	89	0.9986	NO	
10	41	PFTeDA	89	0.9992	NO	
11	42	N-EtFOSA	91	0.9998	NO	
12	43	PFHxDA	93	0.9996	NO	
13	44	PFODA	93	0.9998	NO	
14	45	N-MeFOSE	95	0.9996	NO	
15	46	N-EtFOSE	97	0.9994	NO	
16	47	13C3-PFBA-EIS			NO	0.000
17	48	13C3-PFBA-RSD	99		NO	3.776
18	49	13C3-PFPeA-EIS			NO	0.000
19	50	13C3-PFPeA-RSD	101		NO	5.878
20	51	13C3-PFBS-EIS			NO	0.000
21	52	13C3-PFBS-RSD	102		NO	5.270
22	53	13C3-HFPO-DA-EIS			NO	0.000
23	54	13C3-HFPO-DA-RSD	101		NO	8.952
24	55	13C2-4:2 FTS-EIS			NO	0.000
25	56	13C2-4:2 FTS-RSD	102		NO	8.906
26	57	13C2-PFHxA-EIS			NO	0.000
27	58	13C2-PFHxA-RSD	101		NO	3.045
28	59	13C4-PFHpA-EIS			NO	0.000
29	60	13C4-PFHpA-RSD	101		NO	4.094
30	61	13C3-PFHxS-EIS			NO	0.000
31	62	13C3-PFHxS-RSD	102		NO	5.787
32	63	13C2-6:2 FTS-EIS			NO	0.000

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Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	13C2-6:2 FTS-RSD	105		NO	5.186
34	65	13C5-PFNA-EIS			NO	0.000
35	66	13C5-PFNA-RSD	104		NO	5.228
36	67	13C8-PFOSA-EIS			NO	0.000
37	68	13C8-PFOSA-RSD	107		NO	4.215
38	69	13C2-PFOA-EIS			NO	0.000
39	70	13C2-PFOA-RSD	103		NO	2.974
40	71	13C8-PFOS-EIS			NO	0.000
41	72	13C8-PFOS-RSD	105		NO	5.289
42	73	13C2-PFDA-EIS			NO	0.000
43	74	13C2-PFDA-RSD	106		NO	4.282
44	75	13C2-8:2 FTS-EIS			NO	0.000
45	76	13C2-8:2 FTS-RSD	105		NO	16.339
46	77	d3-N-MeFOSAA-EIS			NO	0.000
47	78	d3-N-MeFOSAA-RSD	107		NO	5.933
48	79	13C2-PFUdA-EIS			NO	0.000
49	80	13C2-PFUdA-RSD	107		NO	3.153
50	81	d5-N-EtFOSAA-EIS			NO	0.000
51	82	d5-N-EtFOSAA-RSD	107		NO	6.281
52	83	13C2-PFDoA-EIS			NO	0.000
53	84	13C2-PFDoA-RSD	106		NO	5.950
54	85	13C2-10:2 FTS-EIS			NO	0.000
55	86	13C2-10:2 FTS-RSD	105		NO	9.900
56	87	d3-N-MeFOSA-EIS			NO	0.000
57	88	d3-N-MeFOSA-RSD	107		NO	3.105
58	89	13C2-PFTeDA-EIS			NO	0.000
59	90	13C2-PFTeDA-RSD	107		NO	3.316
60	91	d5-N-ETFOSA-EIS			NO	0.000
61	92	d5-N-ETFOSA-RSD	107		NO	3.364
62	93	13C2-PFHxDA-EIS			NO	0.000
63	94	13C2-PFHxDA-RSD	107		NO	2.677
64	95	d7-N-MeFOSE-EIS			NO	0.000
65	96	d7-N-MeFOSE-RSD	107		NO	3.224
66	97	d9-N-EtFOSE-EIS			NO	0.000
67	98	d9-N-EtFOSE-RSD	107		NO	4.768
68	99	13C4-PFBA	99		NO	0.000

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Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

	#	Name	IS#	CoD	CoD Flag	%RSD
69	1...	13C5-PFHxA	101		NO	0.000
70	1...	18O2-PFHxS	102		NO	0.000
71	1...	13C8-PFOA	103		NO	0.000
72	1...	13C9-PFNA	104		NO	0.000
73	1...	13C4-PFOS	105		NO	0.000
74	1...	13C6-PFDA	106		NO	0.000
75	1...	13C7-PFUdA	107		NO	0.000

Dataset: P:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:22:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 17:27:12 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 14:22:43
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio Out?
1	1	PFBA	1.31	1.31			
2	2	PFPrS	1.67	1.64	2.870	2.870	NO
3	3	3:3 FTCA	2.10	2.11	3.526	3.526	NO
4	4	PFPeA	2.24	2.25			
5	5	PFBS	2.53	2.53	2.580	2.580	NO
6	6	4:2 FTS	2.96	2.97	11.702	11.702	NO
7	7	PFHxA	3.05	3.05	16.870	16.870	NO
8	8	PFPeS	3.24	3.26	2.236	2.236	NO
9	9	HFPO-DA	3.27	3.27	2.245	2.245	NO
10	10	5:3 FTCA	3.62	3.60	1.594	1.594	NO
11	11	PFHpA	3.66	3.66	56.143	56.143	NO
12	12	ADONA	3.75	3.77	4.026	4.026	NO
13	13	L-PFHxS	3.80	3.80	3.804	3.804	NO
14	15	6:2 FTS	4.12	4.12	0.647	0.647	NO
15	16	L-PFOA	4.17	4.17	3.195	3.195	NO
16	18	PFecHS	4.19	4.19	0.516	0.516	NO
17	19	PFHpS	4.27	4.29	1.681	1.681	NO
18	20	7:3 FTCA	4.61	4.60	1.303	1.303	NO
19	21	PFNA	4.62	4.62	12.962	12.962	NO
20	22	PFOSA	4.67	4.67	21.527	21.527	NO
21	23	L-PFOS	4.70	4.70	2.470	2.470	NO
22	25	9Cl-PF30NS	4.91	4.92	30.256	30.256	NO
23	26	PFDA	5.00	5.00	4.390	4.390	NO
24	27	8:2 FTS	4.97	4.97	0.592	0.592	NO
25	28	PFNS	5.05	5.06	2.369	2.369	NO
26	29	L-MeFOSAA	5.15	5.15	1.743	1.743	NO

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:22:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:27:05 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 14:22:43
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

	#	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio Out?
1	31	L-EtFOSAA	5.30	5.31	1.351	1.351	NO
2	33	PFUdA	5.32	5.32	16.747	16.747	NO
3	34	PFDS	5.34	5.37	2.153	2.153	NO
4	35	11Cl-PF30UdS	5.55	5.53	16.211	16.211	NO
5	36	10:2 FTS	5.59	5.59	0.942	0.942	NO
6	37	PFDoA	5.60	5.61	10.668	10.668	NO
7	38	N-MeFOSA	5.65	5.64	2.041	2.041	NO
8	39	PFTrDA	5.84	5.85	105.411	105.411	NO
9	40	PFDoS	5.87	5.88	2.187	2.187	NO
10	41	PFTeDA	6.06	6.06	14.378	14.378	NO
11	42	N-EtFOSA	6.07	6.08	1.969	1.969	NO
12	43	PFHxDA	6.40	6.40	29.471	29.471	NO
13	44	PFODA	6.61	6.63			
14	45	N-MeFOSE	6.28	6.29			
15	46	N-EtFOSE	6.43	6.44			

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, July 23, 2020 14:29:16 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:29:42 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200723P1-01	IPA	23-Jul-20	09:57:35
2	2	200723P1-02	IPA	23-Jul-20	10:08:02
3	3	200723P1-03	TESTER	23-Jul-20	10:18:40
4	4	200723P1-04	IPA	23-Jul-20	10:29:16
5	5	200723P1-05	ST200723P1-1 PFC CS-2 20G1601	23-Jul-20	10:39:51
6	6	200723P1-06	ST200723P1-2 PFC CS-1 20G1602	23-Jul-20	10:50:27
7	7	200723P1-07	ST200723P1-3 PFC CS0 20G1603	23-Jul-20	11:01:03
8	8	200723P1-08	ST200723P1-4 PFC CS1 20G1604	23-Jul-20	11:11:38
9	9	200723P1-09	ST200723P1-5 PFC CS2 20G1605	23-Jul-20	11:22:14
10	10	200723P1-10	ST200723P1-6 PFC CS3 20G1606	23-Jul-20	11:32:50
11	11	200723P1-11	ST200723P1-7 PFC CS4 20G1607	23-Jul-20	11:43:26
12	12	200723P1-12	ST200723P1-8 PFC CS5 20G1608	23-Jul-20	11:54:02
13	13	200723P1-13	ST200723P1-9 PFC CS6 20G1609	23-Jul-20	12:04:37
14	14	200723P1-14	ST200723P1-10 PFC CS7 20G1610	23-Jul-20	12:15:13
15	15	200723P1-15	IB	23-Jul-20	12:25:49
16	16	200723P1-16	ICV200723P1-1 PFC ICV 20G1611	23-Jul-20	12:36:25
17	17	200723P1-17	IB	23-Jul-20	12:47:00

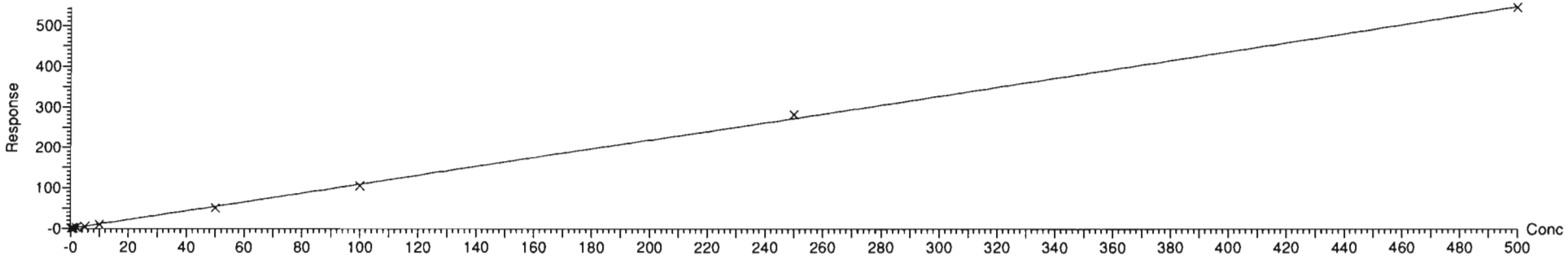
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

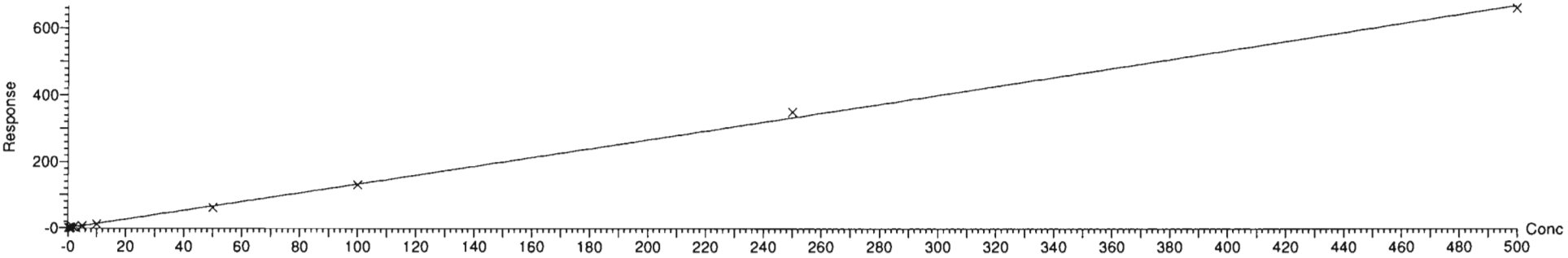
Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Compound name: PFBA
Correlation coefficient: r = 0.999586, r^2 = 0.999172
Calibration curve: 1.09155 * x + -0.0361108
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



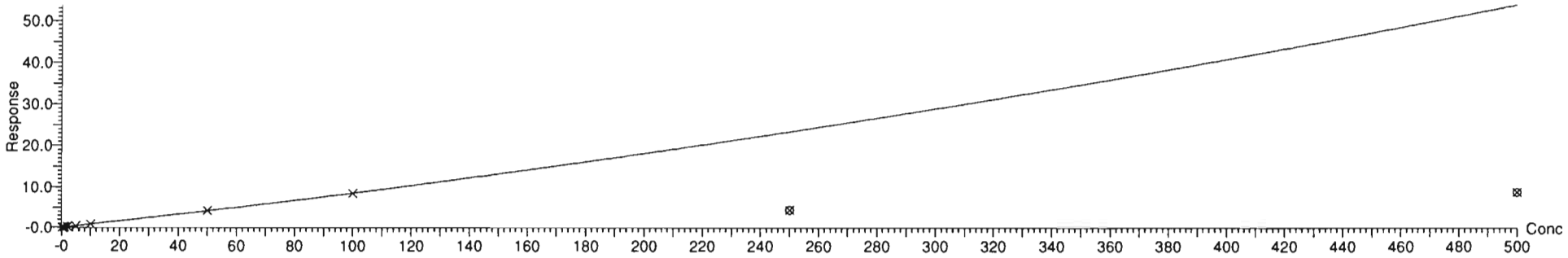
Compound name: PFPrS
Coefficient of Determination: R^2 = 0.998558
Calibration curve: 2.05384e-005 * x^2 + 1.32665 * x + -0.121668
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



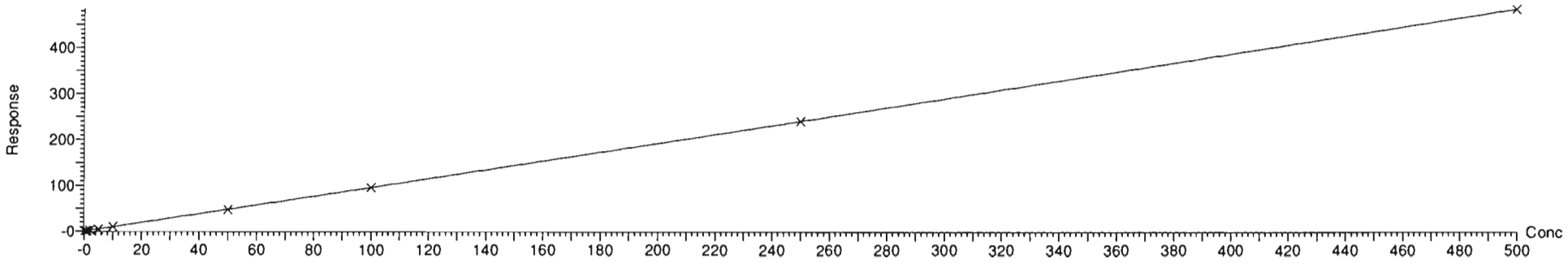
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999723
Calibration curve: 5.62968e-005 * x^2 + 0.0796117 * x + -0.000145462
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999985
Calibration curve: 2.81636e-005 * x^2 + 0.956634 * x + -0.0071552
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
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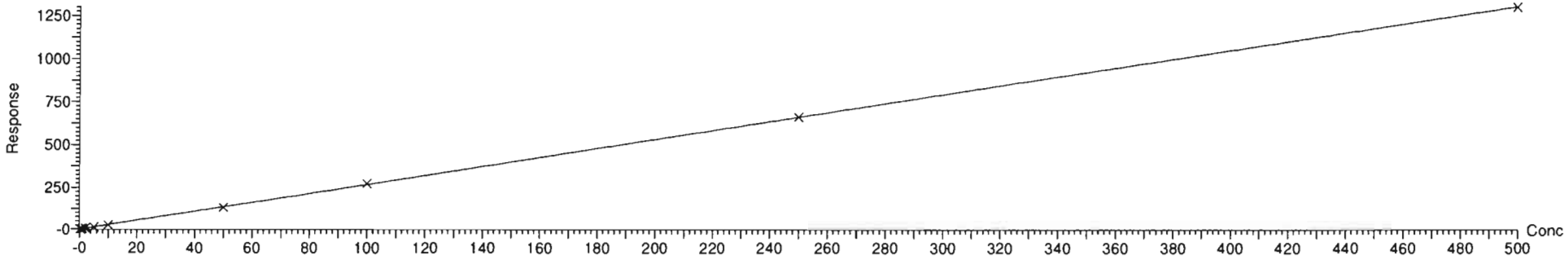
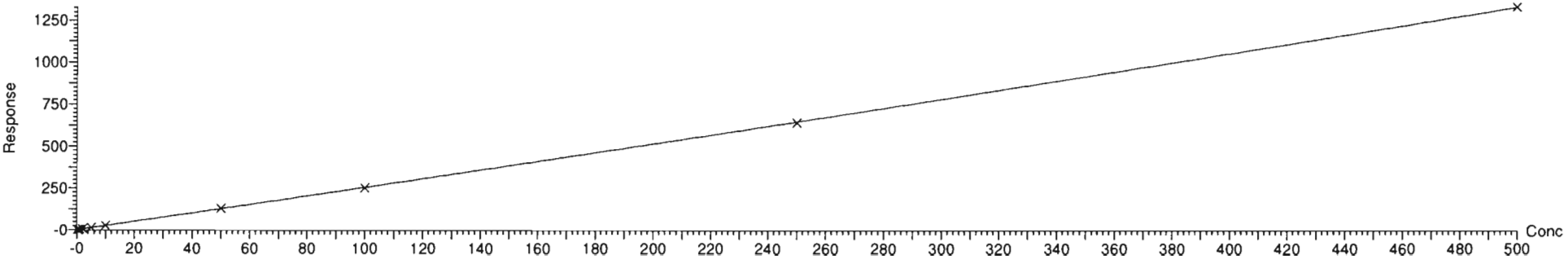
Compound name: PFBS
Coefficient of Determination: R^2 = 0.999855
Calibration curve: -0.000157378 * x^2 + 2.68599 * x + -0.106952
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



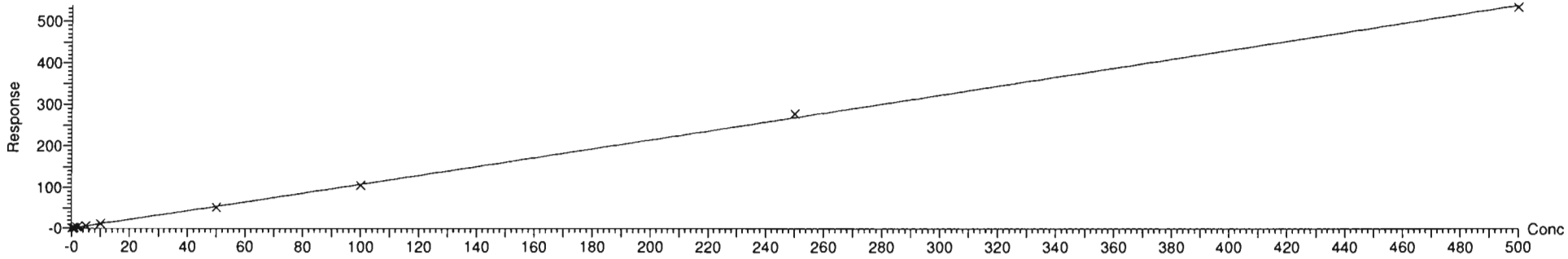
Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999843
Calibration curve: 0.00028725 * x^2 + 2.51553 * x + 0.0894213
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



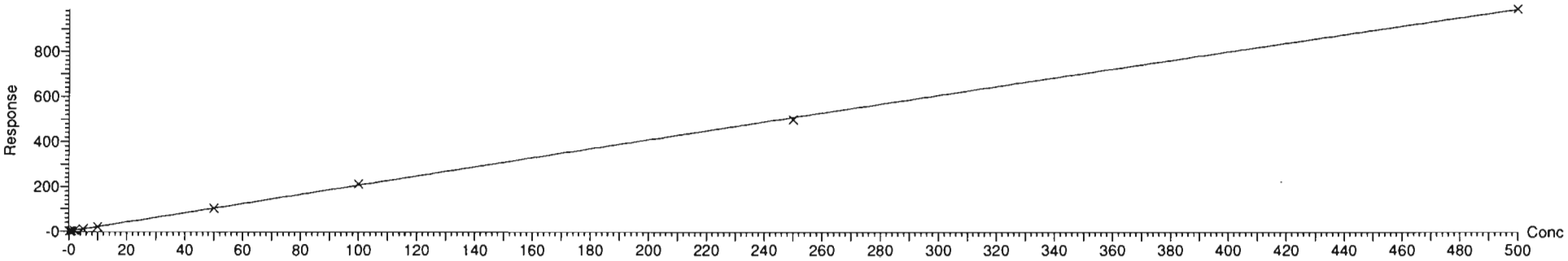
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Compound name: PFHxA
Correlation coefficient: r = 0.999745, r^2 = 0.999490
Calibration curve: 1.07757 * x + 0.0183845
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: PFPeS
Coefficient of Determination: R^2 = 0.999715
Calibration curve: -0.000234753 * x^2 + 2.0944 * x + 0.0312771
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
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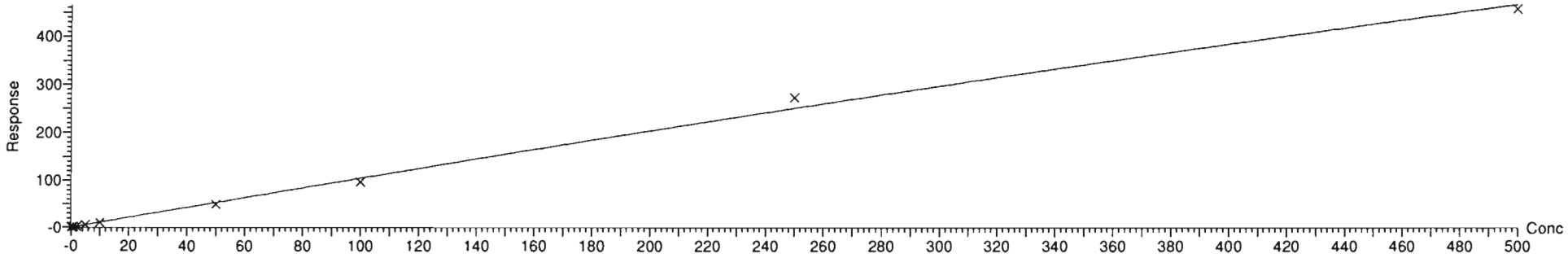
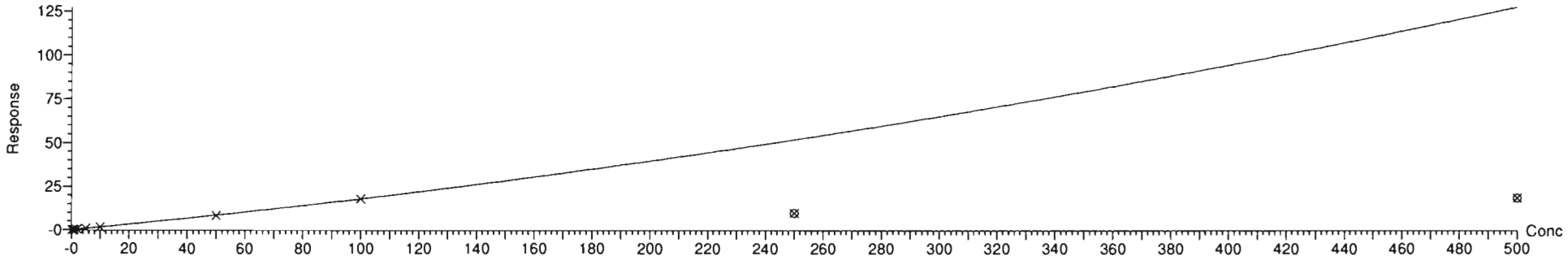
Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.996168
Calibration curve: -0.000283662 * x^2 + 1.07439 * x + -0.0717294
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999327
Calibration curve: 0.000190767 * x^2 + 0.159643 * x + -0.00459999
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
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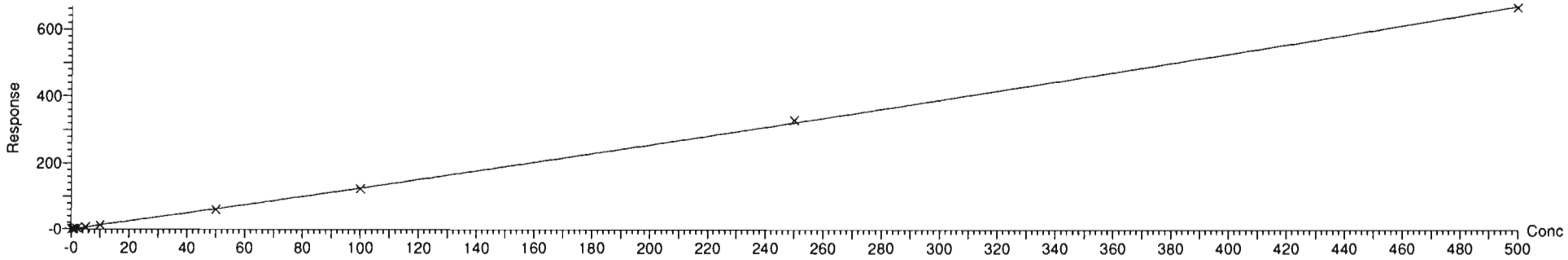
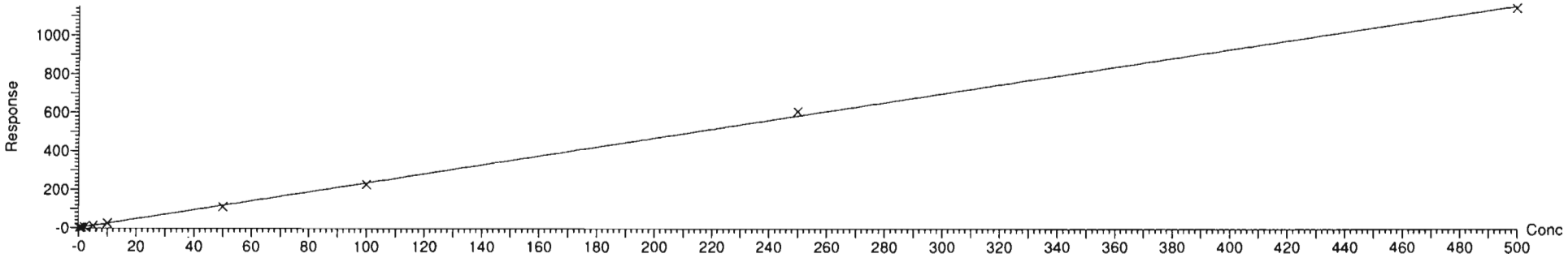
Compound name: PFHpA
Coefficient of Determination: R^2 = 0.999760
Calibration curve: 0.000195303 * x^2 + 1.23999 * x + 0.00549607
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



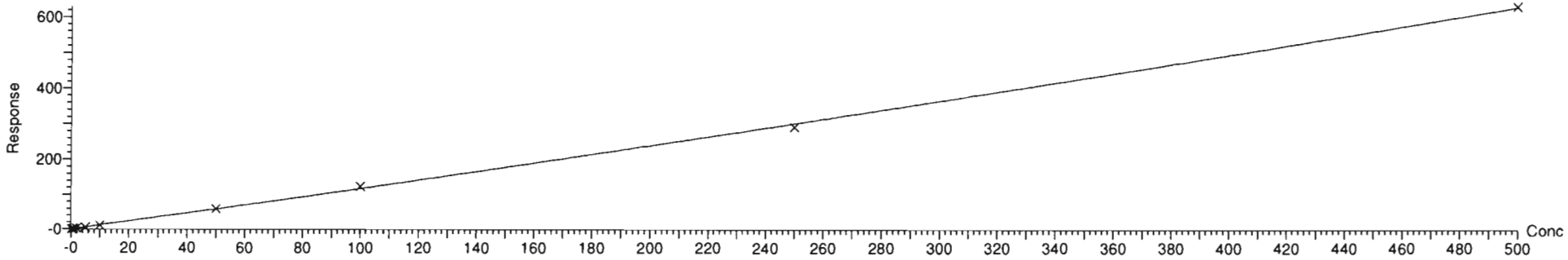
Compound name: ADONA
Coefficient of Determination: R^2 = 0.999070
Calibration curve: -0.000104898 * x^2 + 2.36595 * x + -0.101265
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



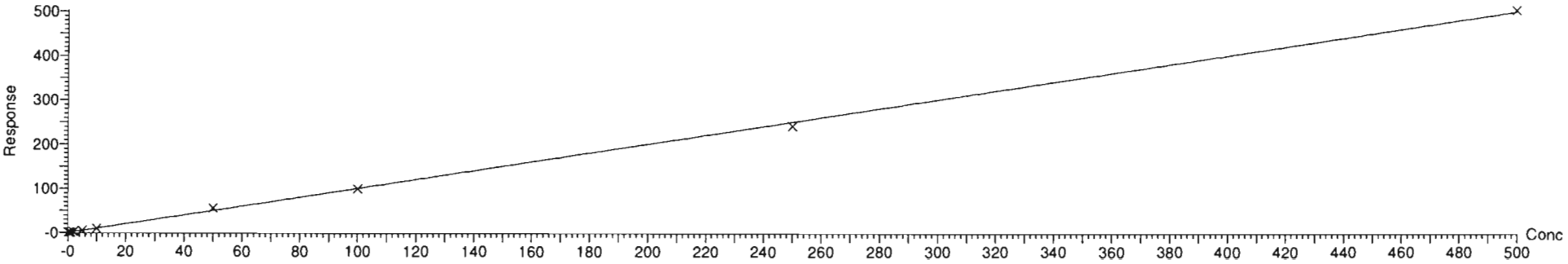
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.999197
Calibration curve: 0.000196029 * x^2 + 1.15688 * x + -0.0397649
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



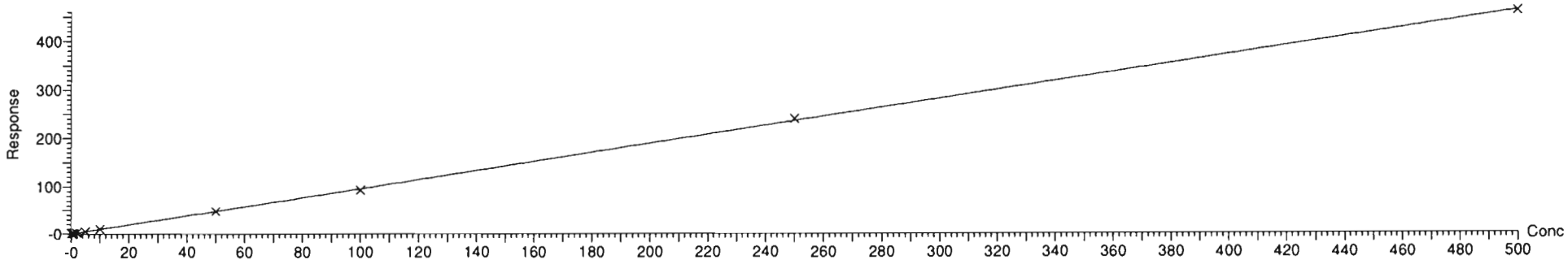
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998695
Calibration curve: -1.70851e-005 * x^2 + 1.00987 * x + -0.00523272
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



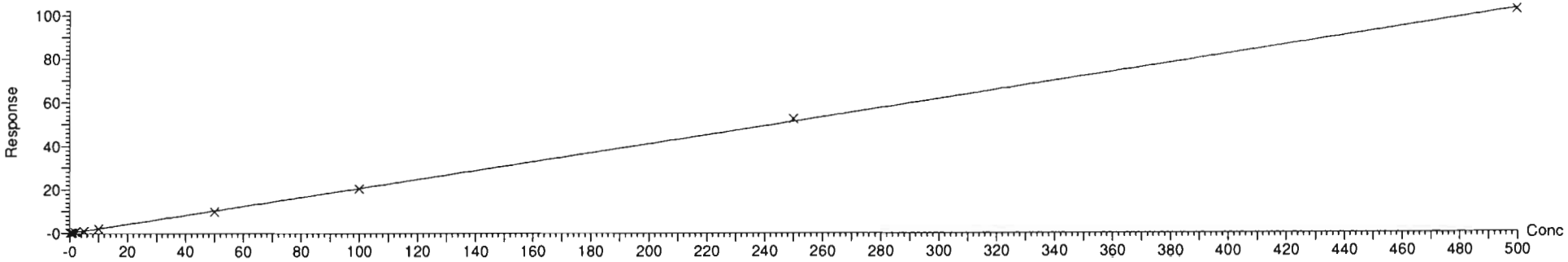
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999795
Calibration curve: -6.83589e-005 * x^2 + 0.956964 * x + 0.0499833
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



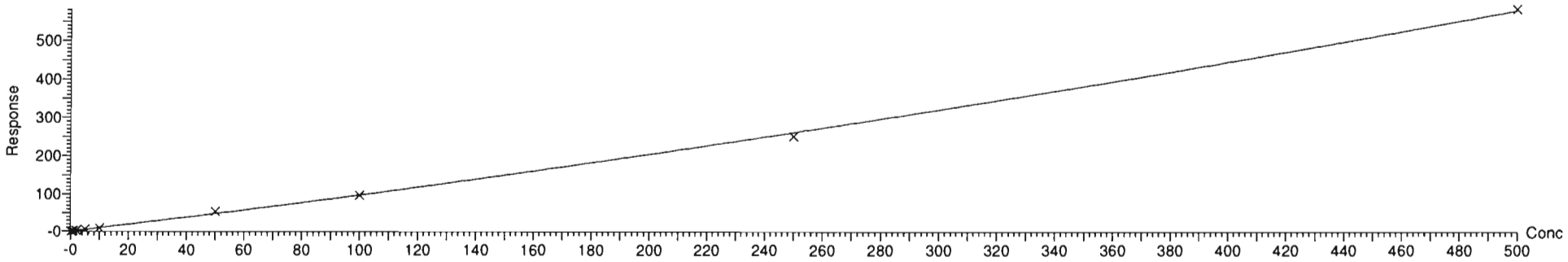
Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999692
Calibration curve: 1.77609e-006 * x^2 + 0.20437 * x + -0.011085
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



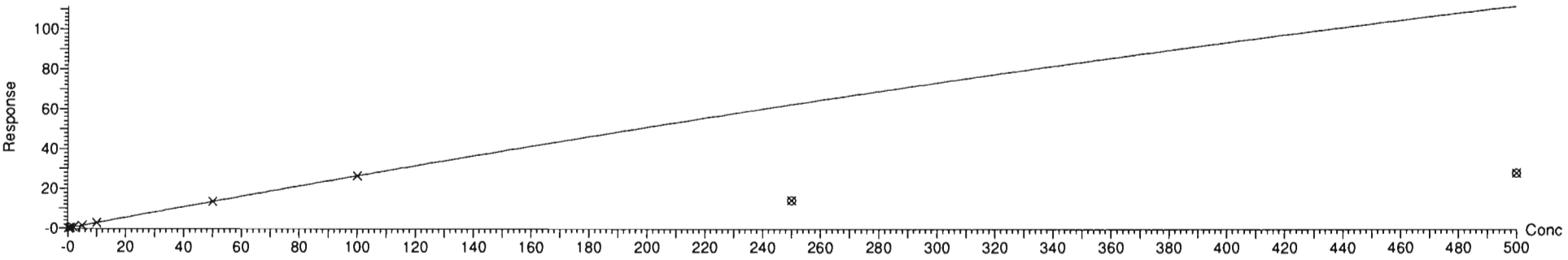
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.998768
Calibration curve: 0.000443209 * x^2 + 0.935853 * x + -0.0133309
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999385
Calibration curve: -0.000103807 * x^2 + 0.275717 * x + 0.010665
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
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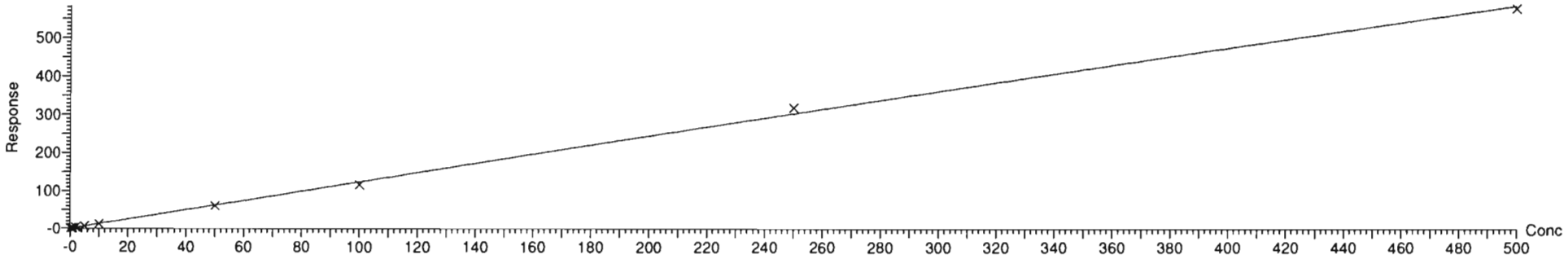
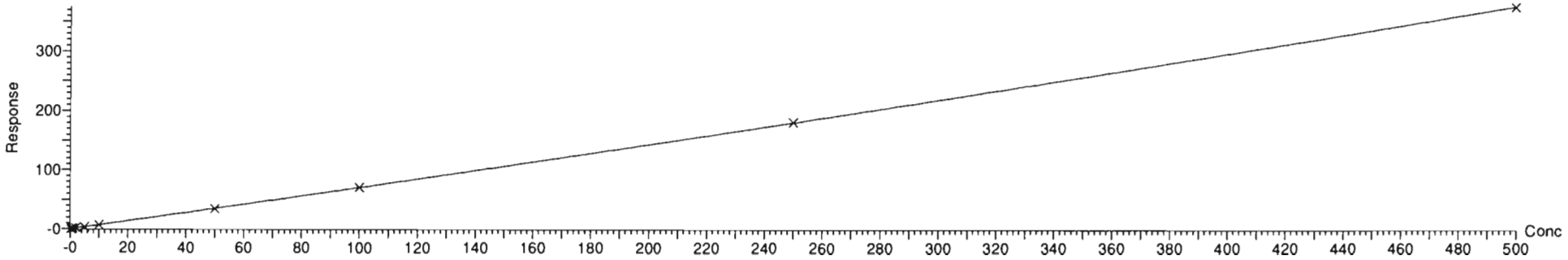
Compound name: PFNA
Coefficient of Determination: R^2 = 0.998662
Calibration curve: -0.00018375 * x^2 + 1.26154 * x + -0.000334913
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999954
Calibration curve: 0.000121326 * x^2 + 0.691721 * x + 0.0205092
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
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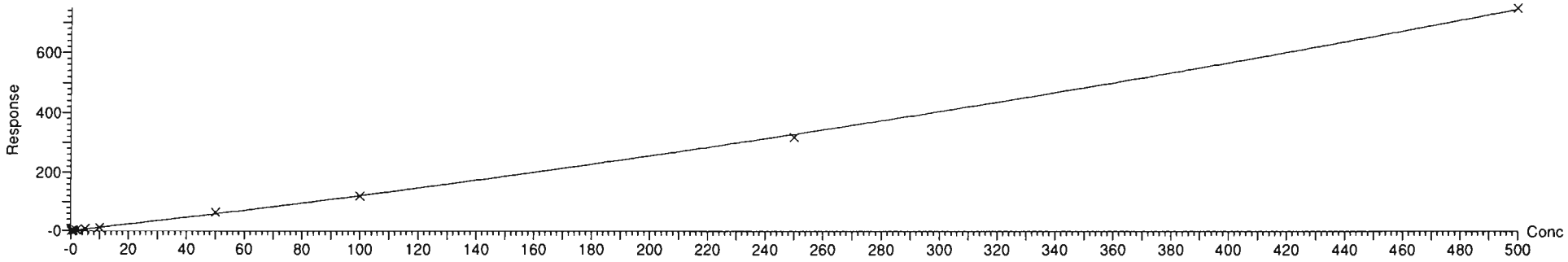
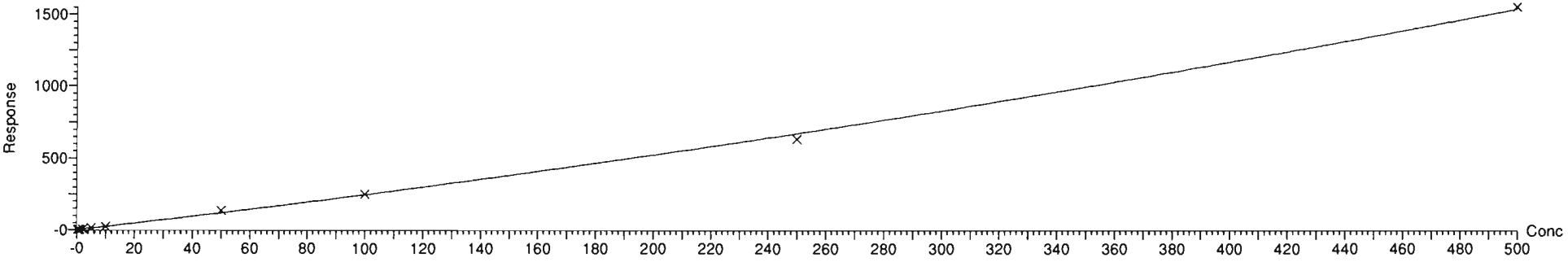
Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999249
Calibration curve: 0.000707948 * x^2 + 1.13806 * x + 0.0102665
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



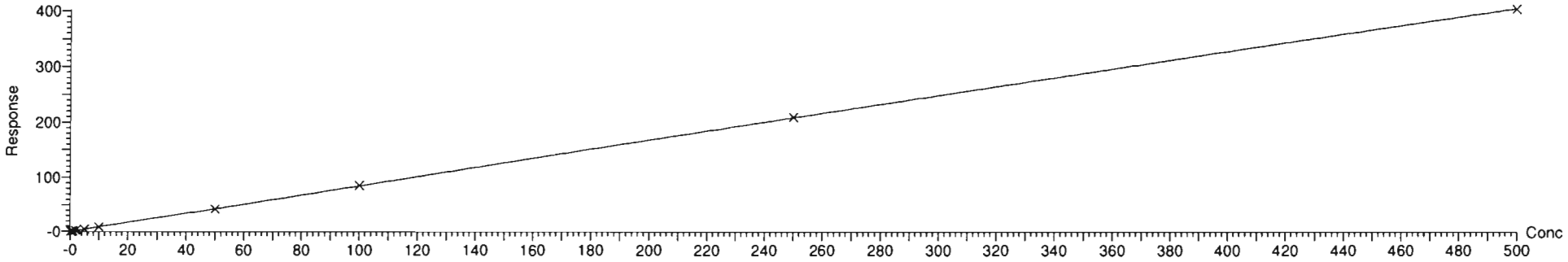
Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.998185
Calibration curve: 0.0015174 * x^2 + 2.31288 * x + 0.10959
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



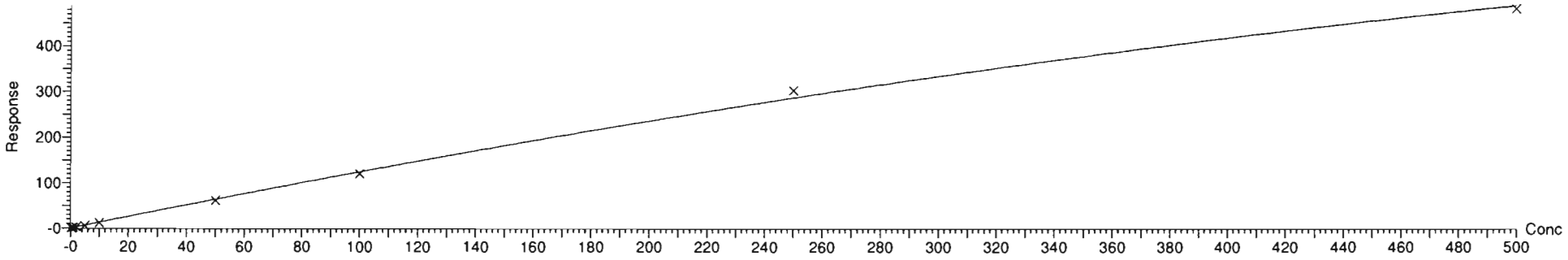
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999916
Calibration curve: -0.000101685 * x^2 + 0.859797 * x + 0.0298355
Response type: Internal Std (Ref 73), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



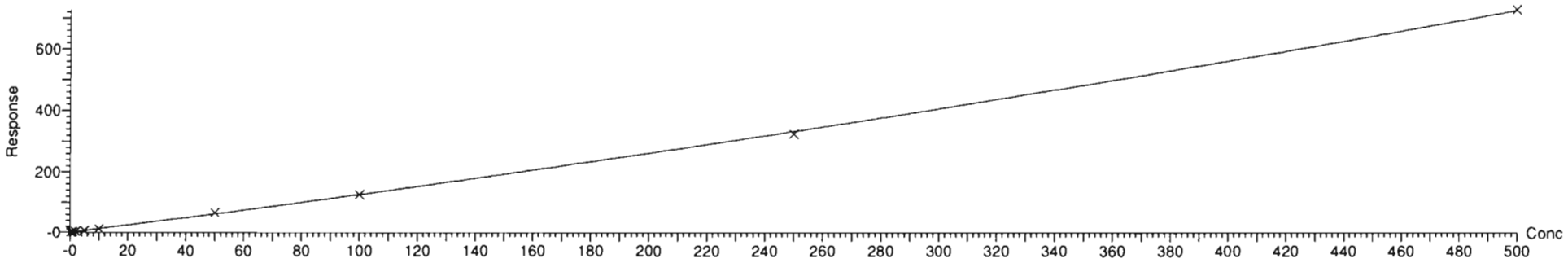
Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.998244
Calibration curve: -0.000676682 * x^2 + 1.31738 * x + -0.225686
Response type: Internal Std (Ref 75), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



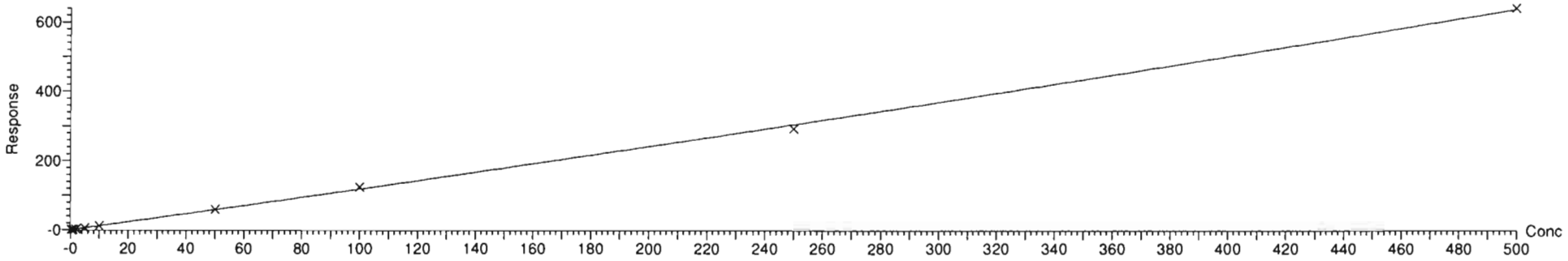
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:18:57 Pacific Daylight Time

Compound name: PFNS
Coefficient of Determination: R^2 = 0.999413
Calibration curve: 0.000467655 * x^2 + 1.21744 * x + 0.0135126
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.999178
Calibration curve: 0.000214749 * x^2 + 1.16649 * x + -0.100652
Response type: Internal Std (Ref 77), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



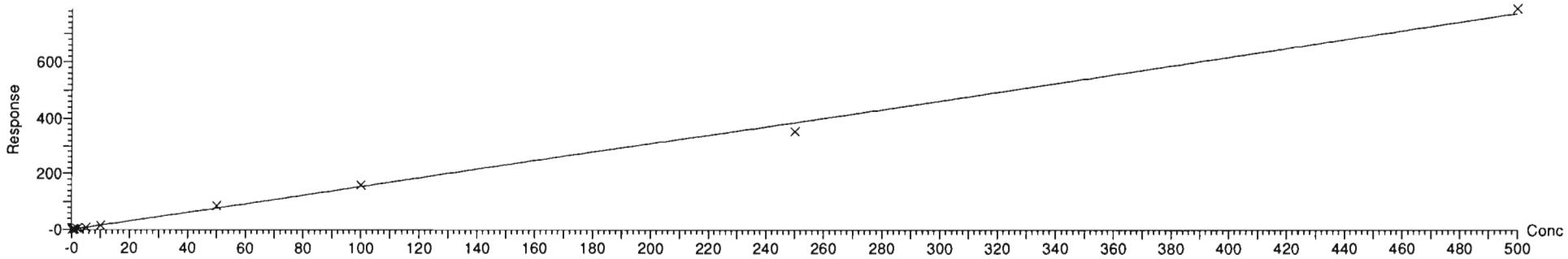
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

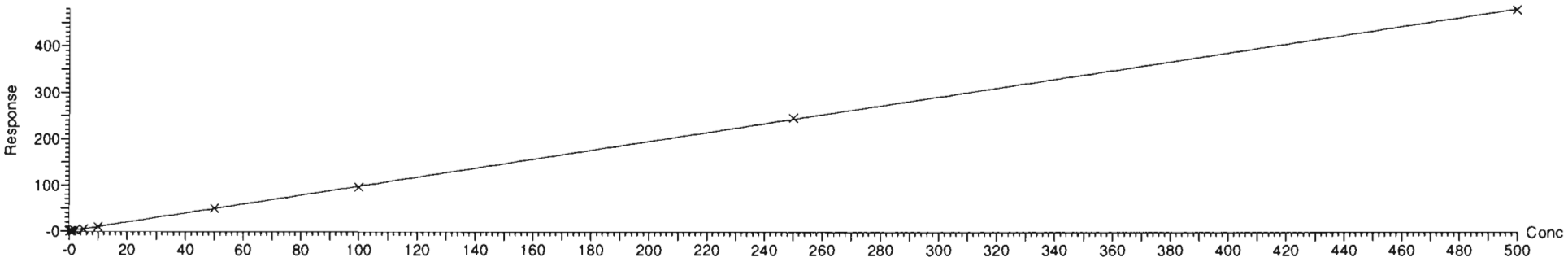
Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_072320.mdb 23 Jul 2020 12:40:58
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.998492, r^2 = 0.996985
Calibration curve: 1.54582 * x + 0.0779236
Response type: Internal Std (Ref 81), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



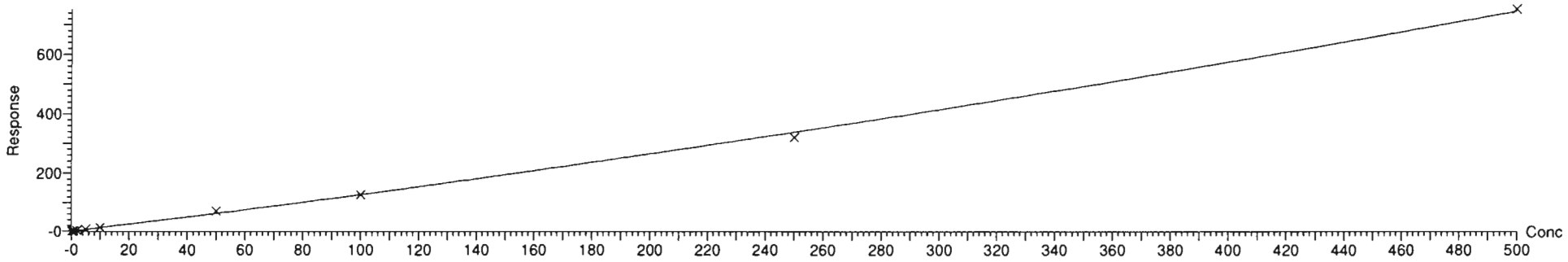
Compound name: PFUdA
Coefficient of Determination: R^2 = 0.999896
Calibration curve: -5.33746e-005 * x^2 + 0.987627 * x + 0.0424768
Response type: Internal Std (Ref 79), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



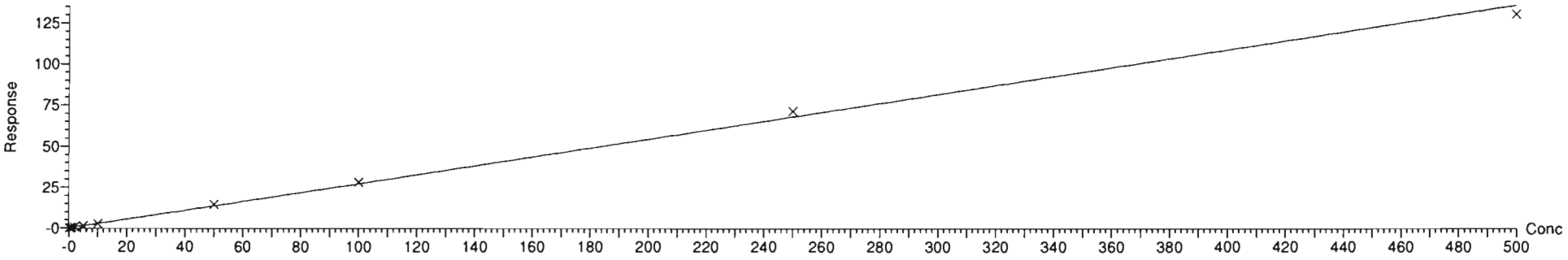
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Compound name: PFDS
Coefficient of Determination: R^2 = 0.998313
Calibration curve: 0.000548825 * x^2 + 1.21731 * x + 0.0746289
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



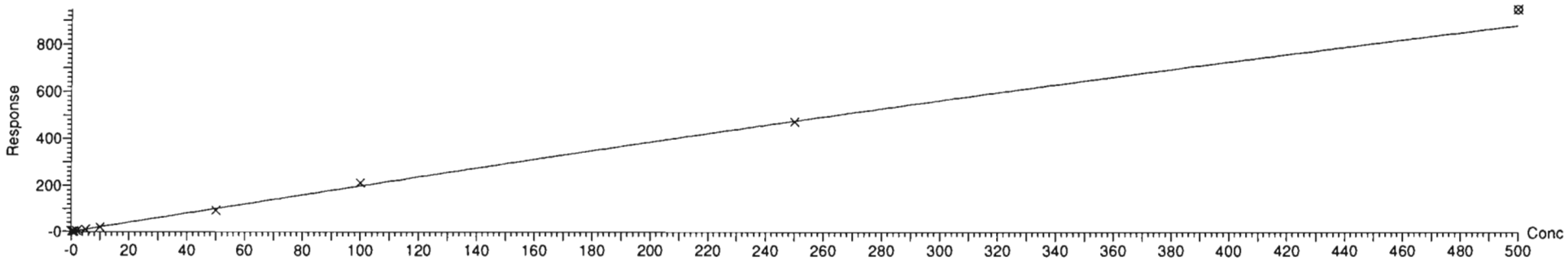
Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.998996, r^2 = 0.997994
Calibration curve: 0.271559 * x + -0.00494639
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



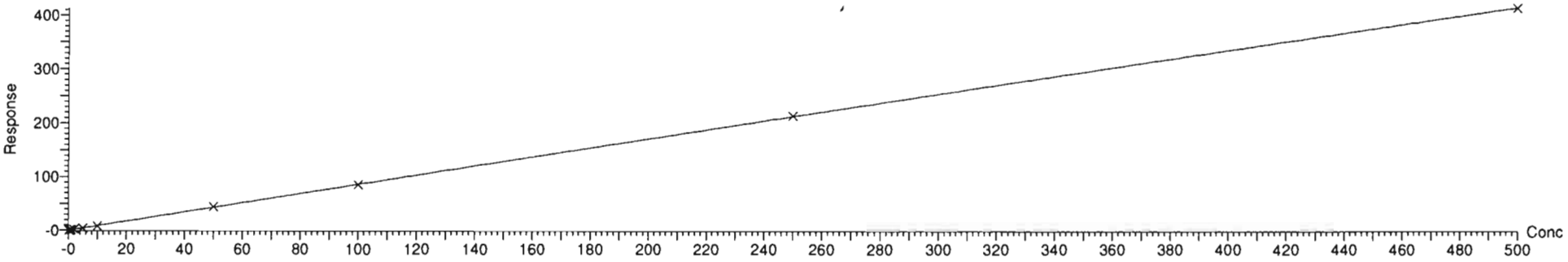
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.997818
Calibration curve: -0.00057183 * x^2 + 2.04691 * x + 0.00974222
Response type: Internal Std (Ref 85), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



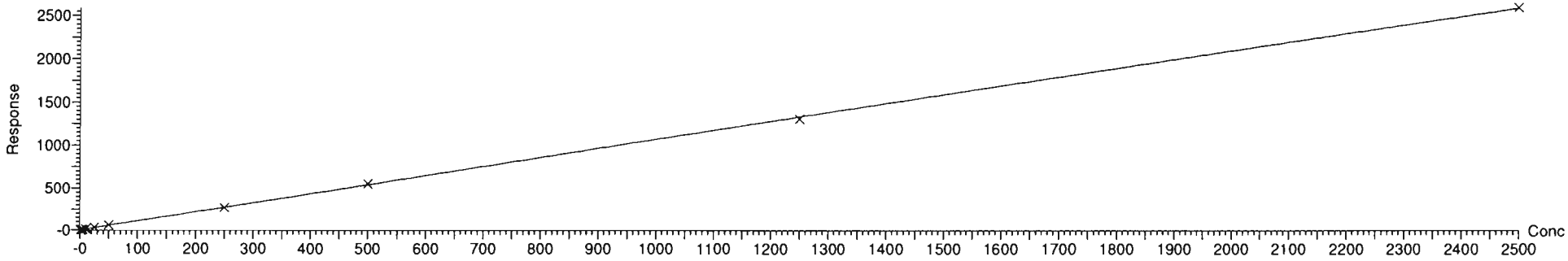
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999918
Calibration curve: -8.65346e-005 * x^2 + 0.872684 * x + -0.0100482
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



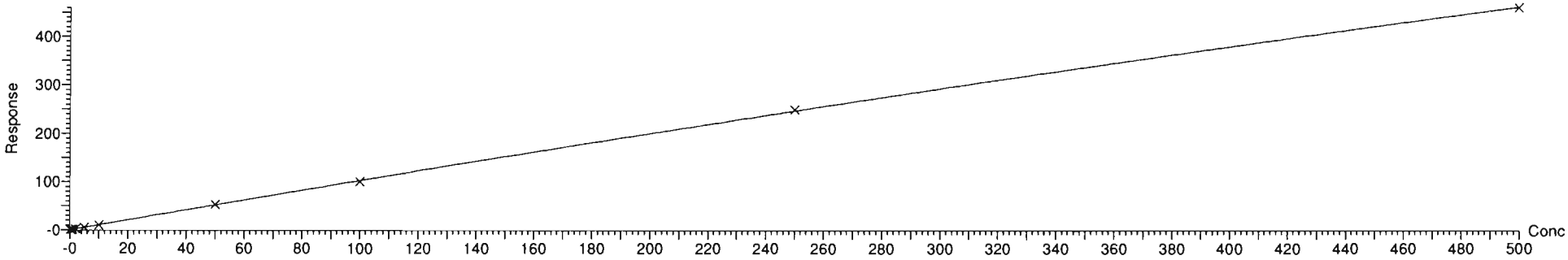
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999712
Calibration curve: -2.32064e-005 * x^2 + 1.09292 * x + 0.139256
Response type: Internal Std (Ref 87), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



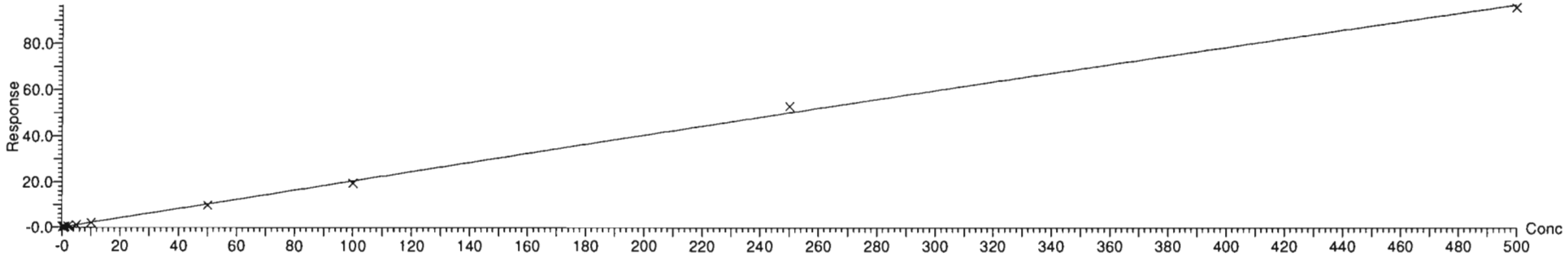
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999815
Calibration curve: -0.000260215 * x^2 + 1.05243 * x + 0.00552452
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



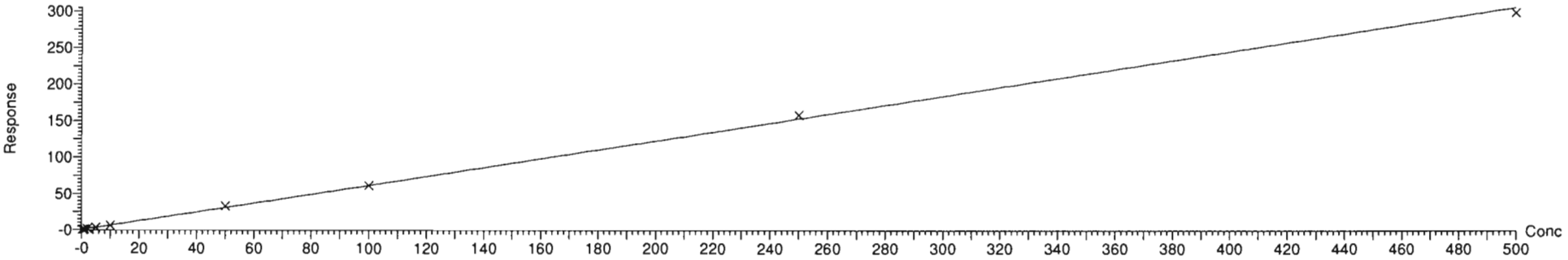
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.998557
Calibration curve: -2.86529e-005 * x^2 + 0.208102 * x + -0.0197029
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



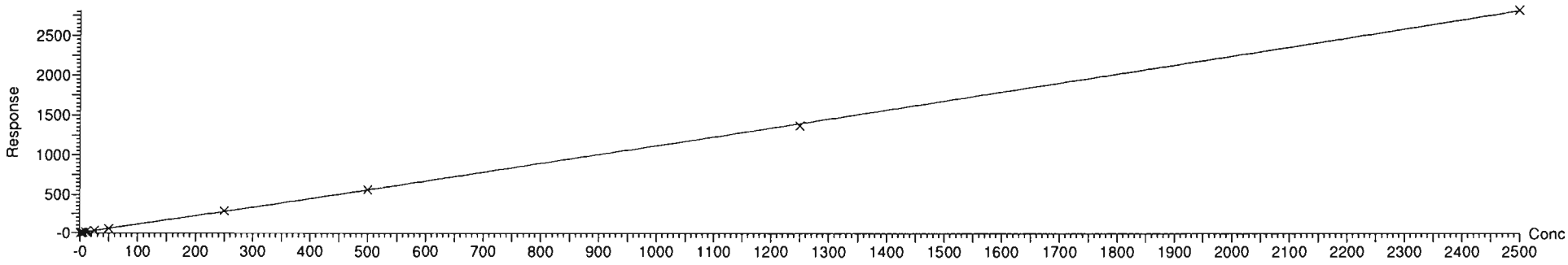
Compound name: PFTeDA
Correlation coefficient: r = 0.999589, r^2 = 0.999178
Calibration curve: 0.61197 * x + 0.0341709
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



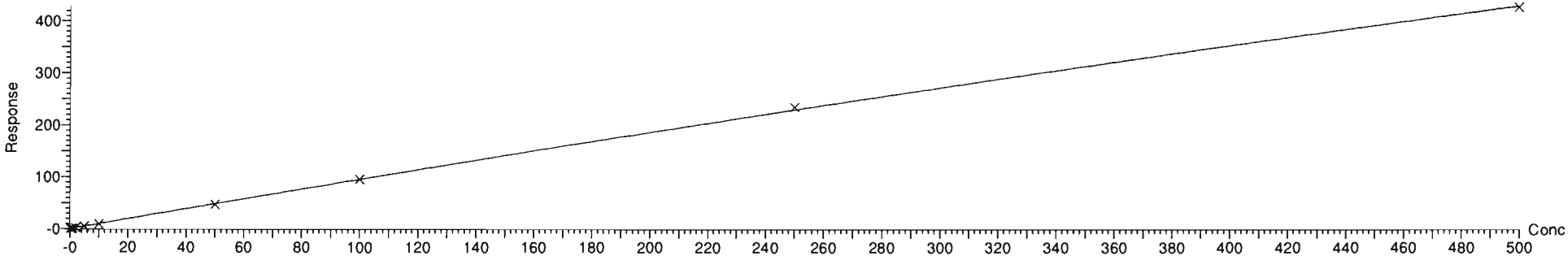
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999783
Calibration curve: 3.79069e-006 * x^2 + 1.11424 * x + 0.132913
Response type: Internal Std (Ref 91), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



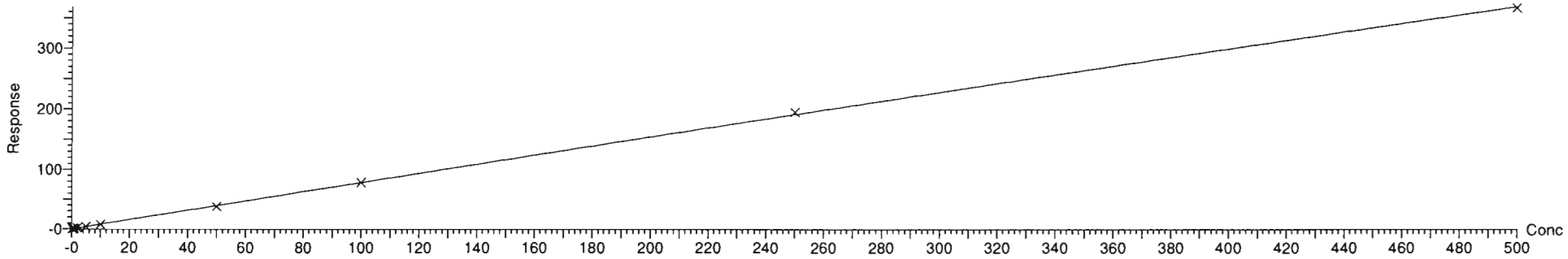
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999639
Calibration curve: -0.000238715 * x^2 + 0.978045 * x + 0.088756
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



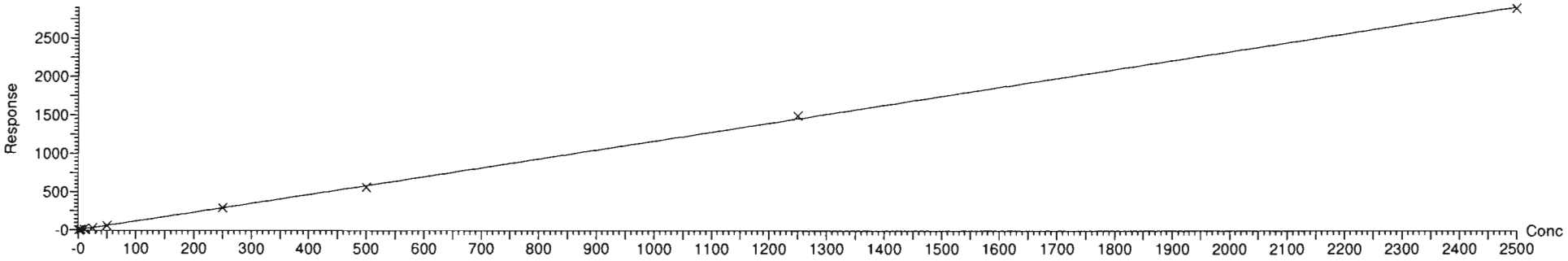
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.999752
Calibration curve: -0.000110201 * x^2 + 0.79167 * x + -0.0108318
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



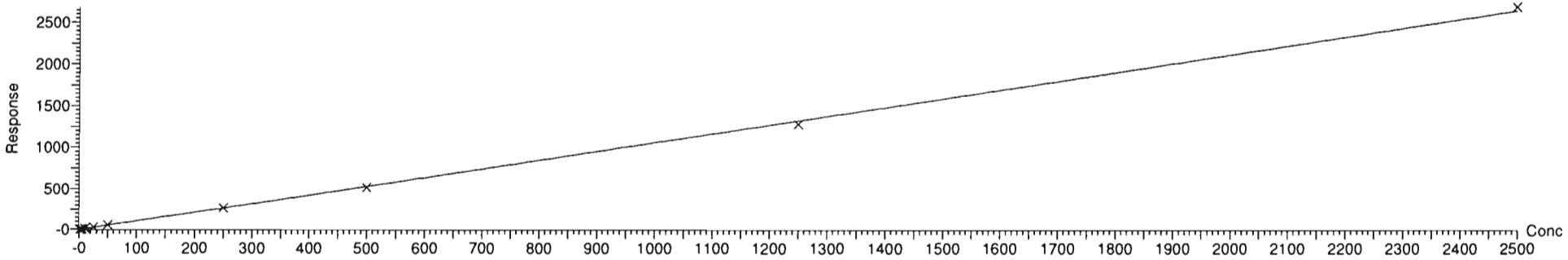
Compound name: N-MeFOSE
Correlation coefficient: r = 0.999796, r^2 = 0.999591
Calibration curve: 1.16319 * x + -0.0536356
Response type: Internal Std (Ref 95), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 14:05:33 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:20:41 Pacific Daylight Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999718, r^2 = 0.999435
Calibration curve: 1.05721 * x + 0.144429
Response type: Internal Std (Ref 97), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:51:37 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:00:36 Pacific Daylight Time

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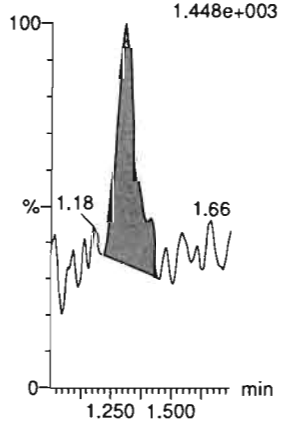
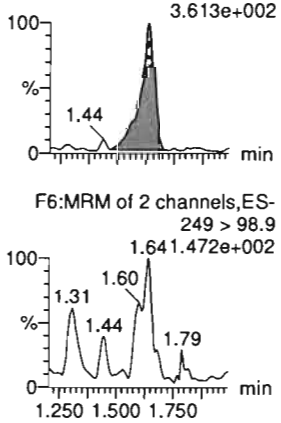
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 13:51:37

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

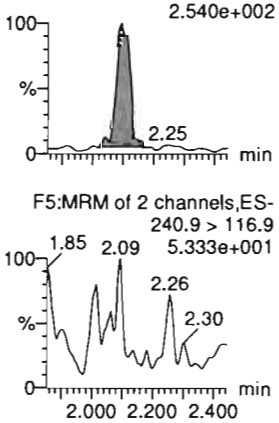
PFBA



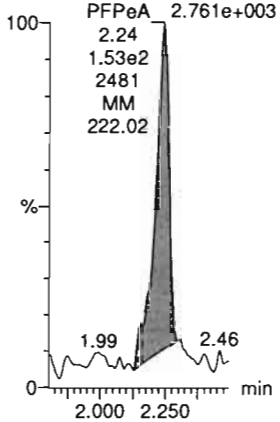
PFPrS



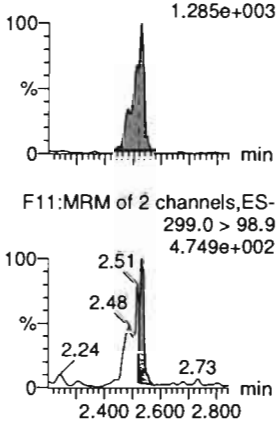
3:3 FTCA



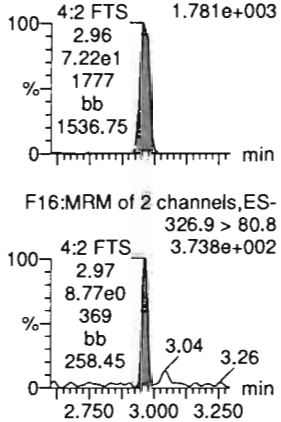
PFPeA



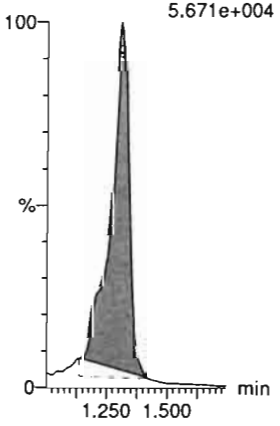
PFBS



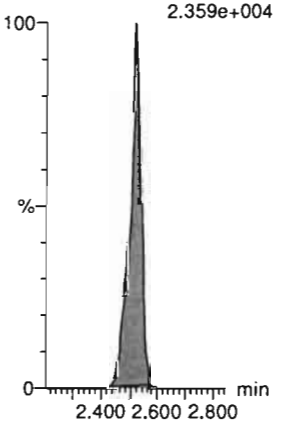
4:2 FTS



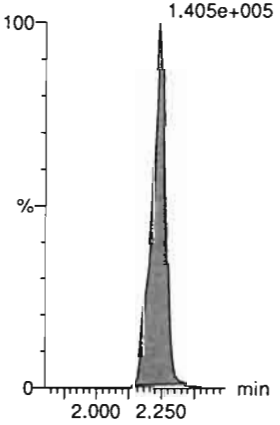
13C3-PFBA-EIS



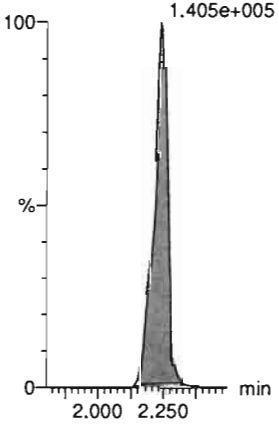
13C3-PFBS-EIS



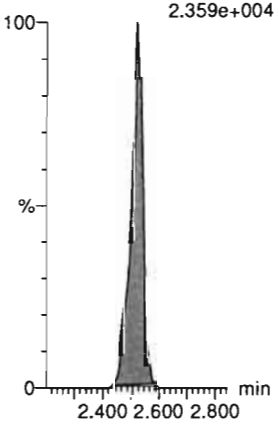
13C3-PFPeA-EIS



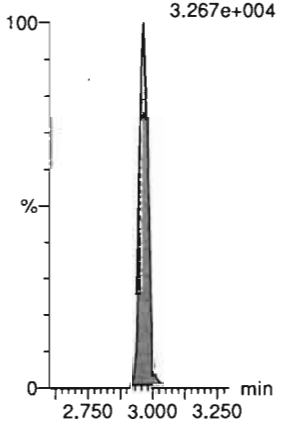
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

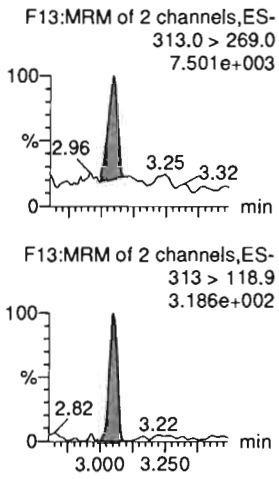


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

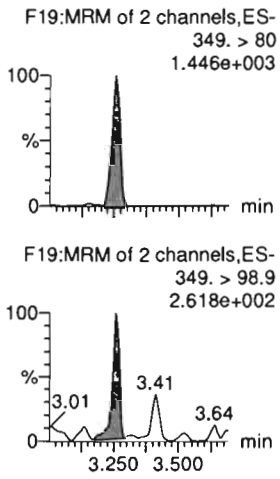
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

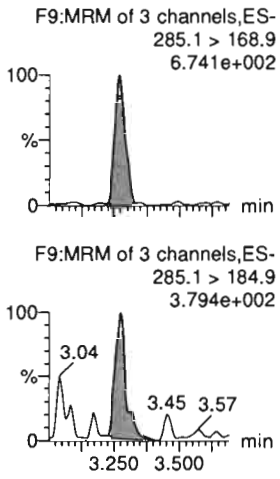
PFHxA



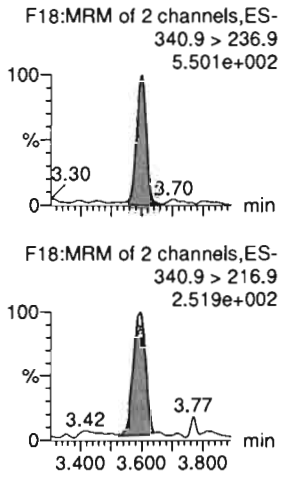
PFPeS



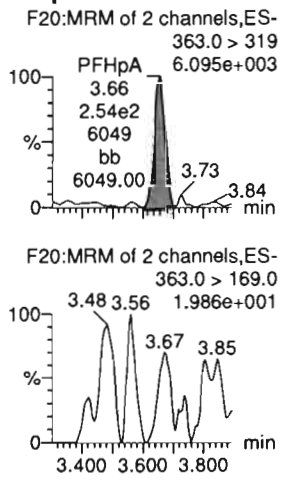
HFPO-DA



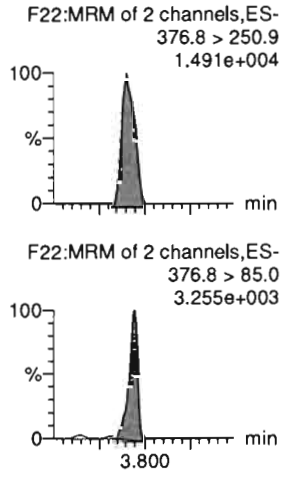
5:3 FTCA



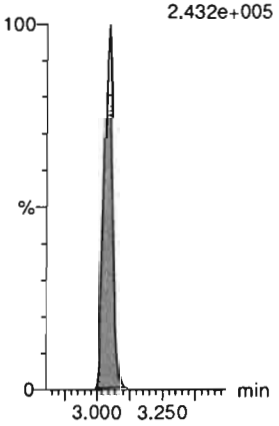
PFHpA



ADONA



13C2-PFHxA-EIS



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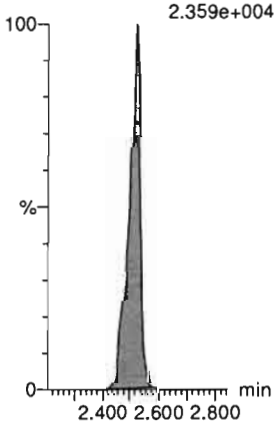

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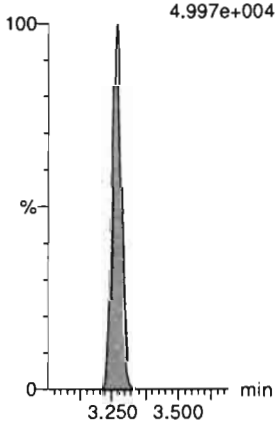
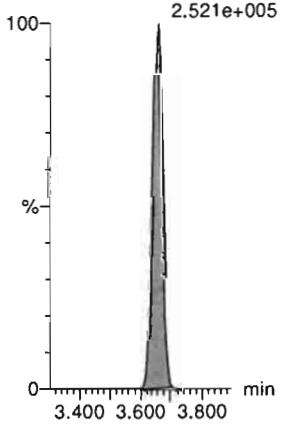


13C4-PFHpA-EIS



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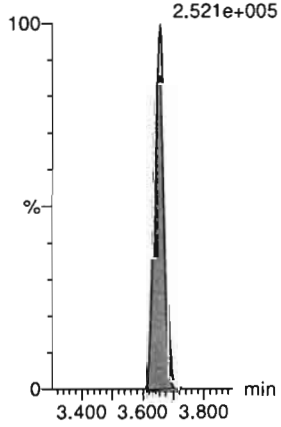

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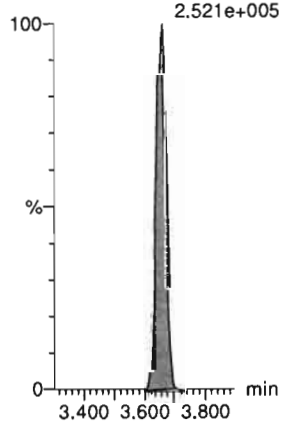

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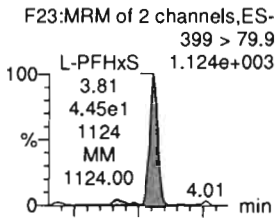
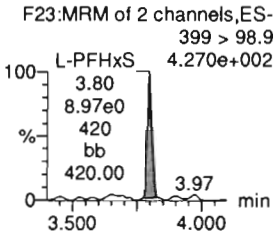
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

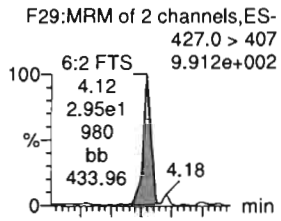
Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

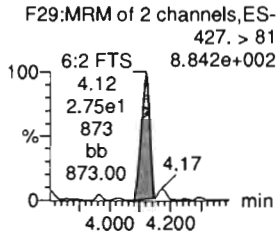
L-PFHxS



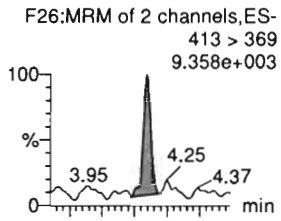


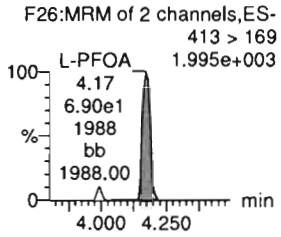
6:2 FTS



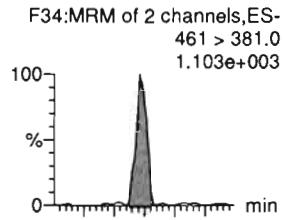


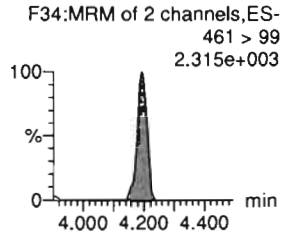
L-PFOA





PFEChS





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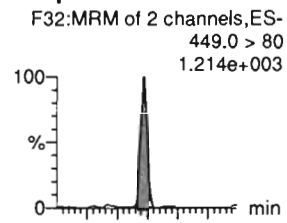
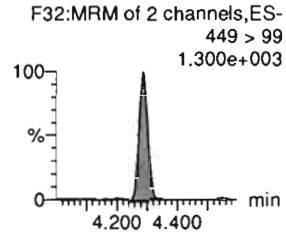
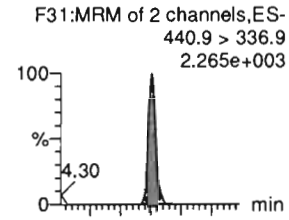
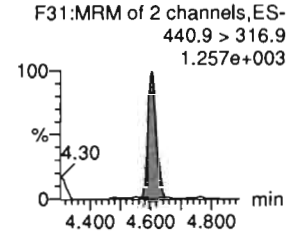


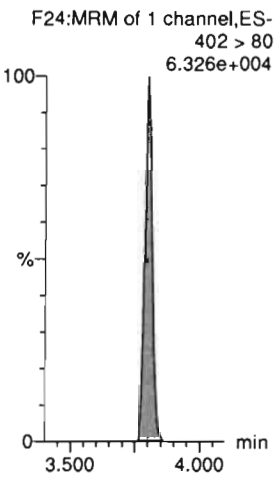


7:3 FTCA

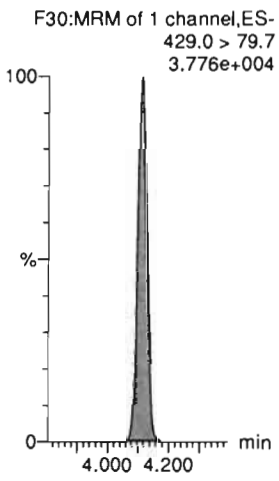




13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



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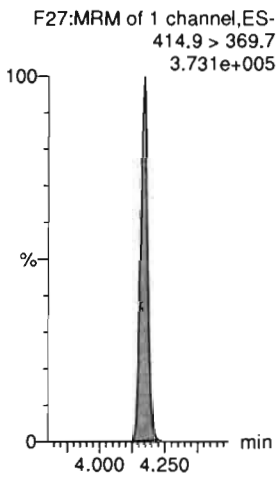
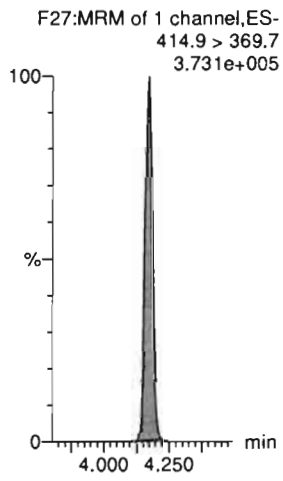
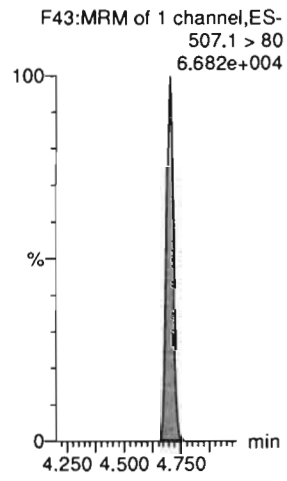


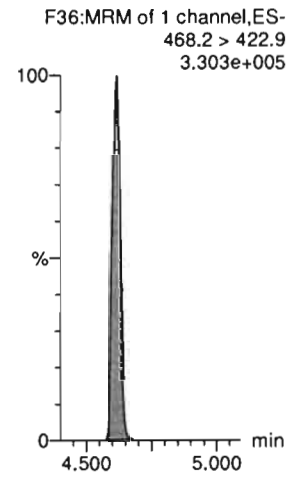
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

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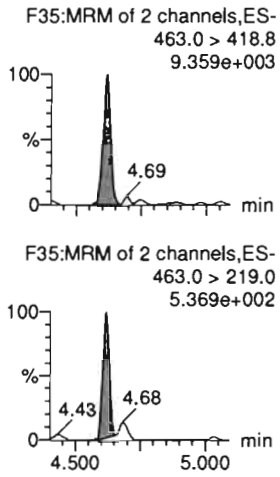
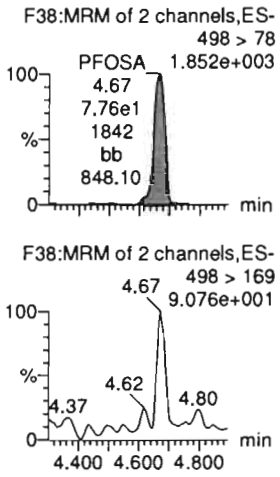
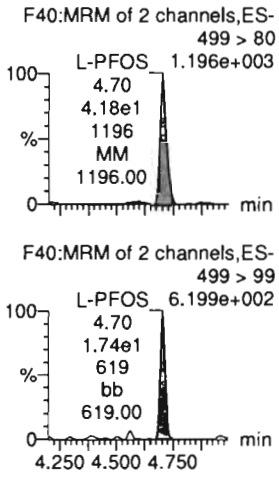


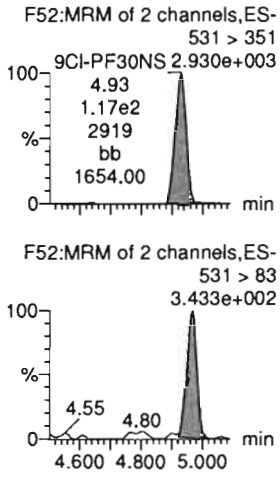
PFOSA



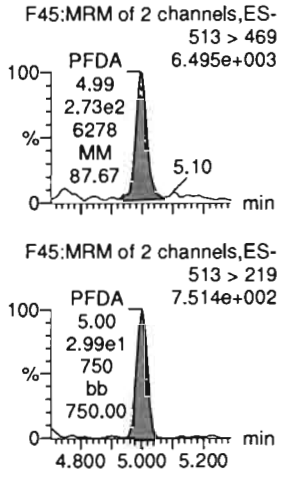
L-PFOS



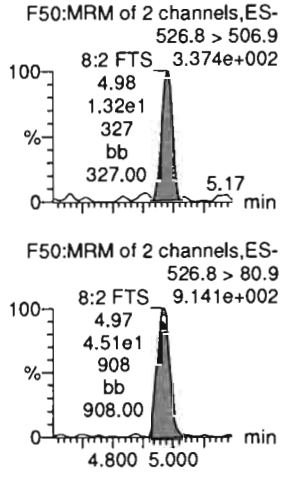
9Cl-PF30NS



PFDA



8:2 FTS



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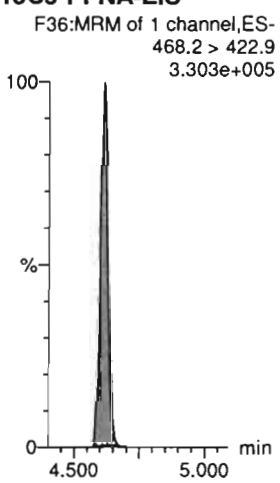
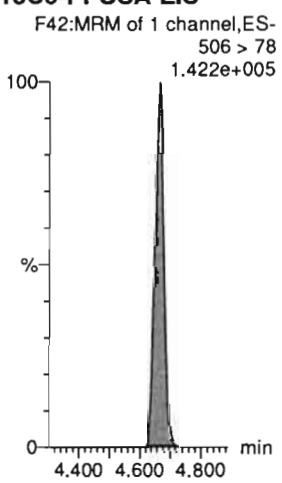


13C8-PFOSA-EIS



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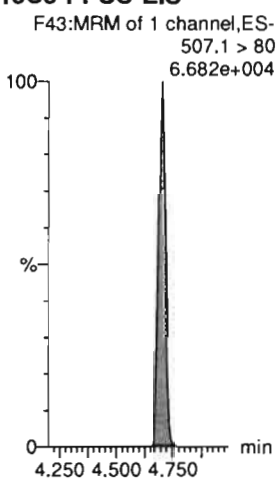

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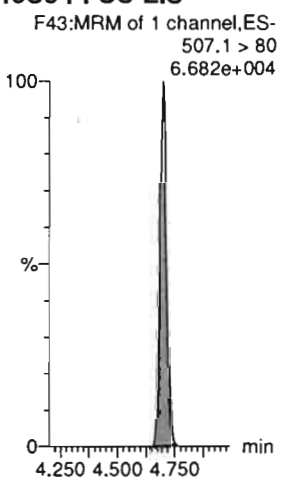
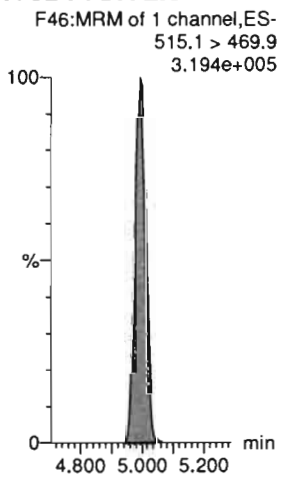
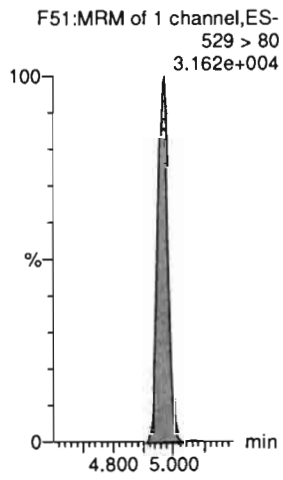


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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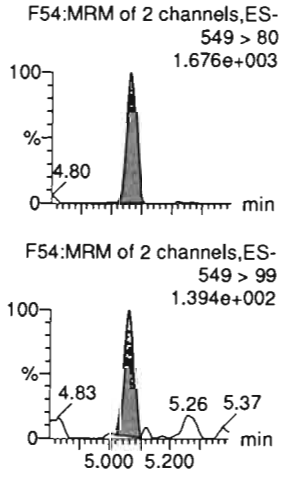
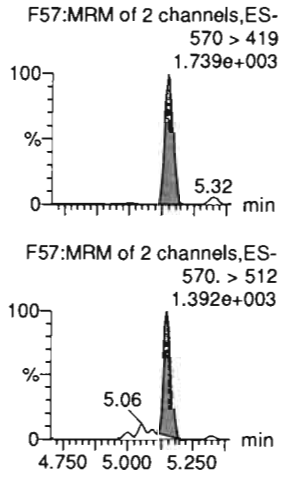
Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

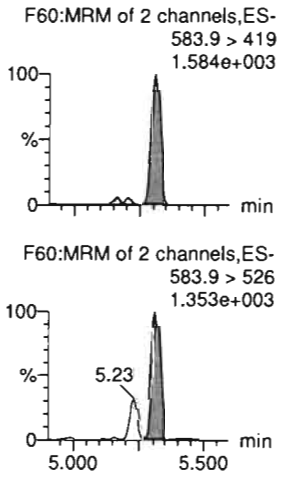
PFNS



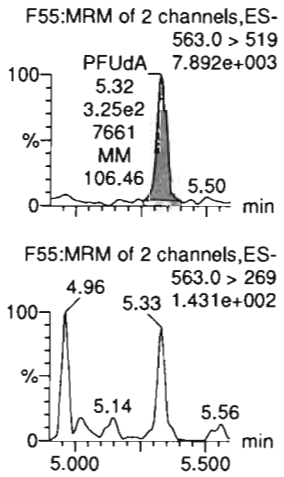
L-MeFOSAA



L-EtFOSAA



PFUdA



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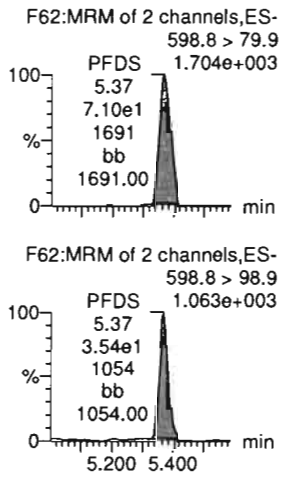
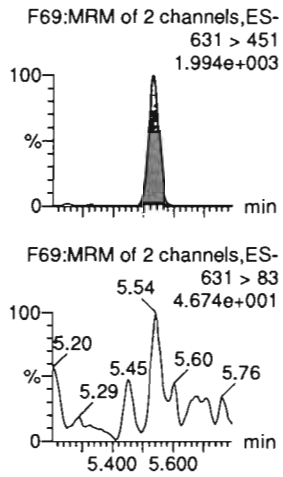


11Cl-PF30UdS



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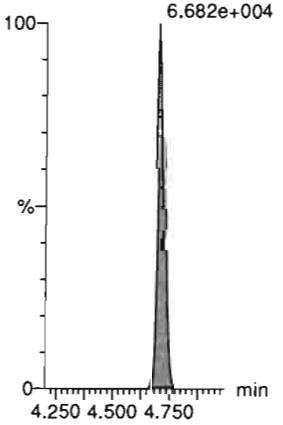
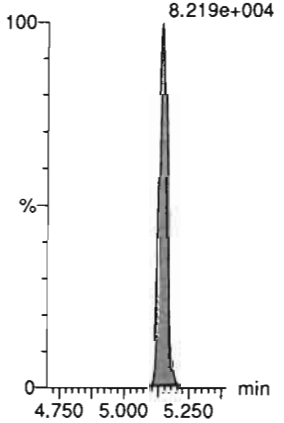
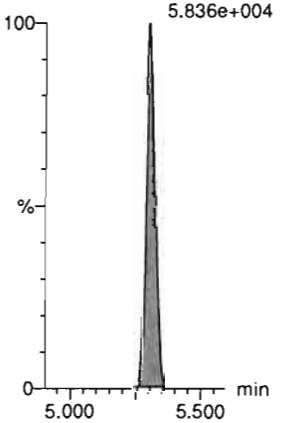


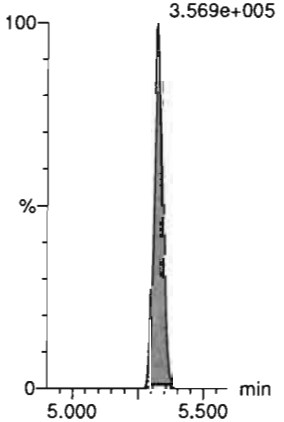
d3-N-MeFOSAA-EIS



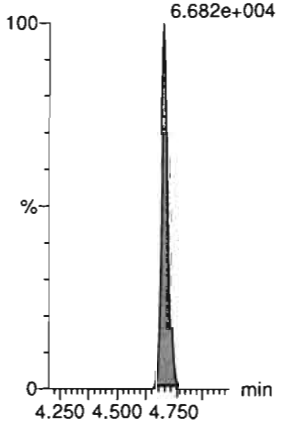
d5-N-EtFOSAA-EIS



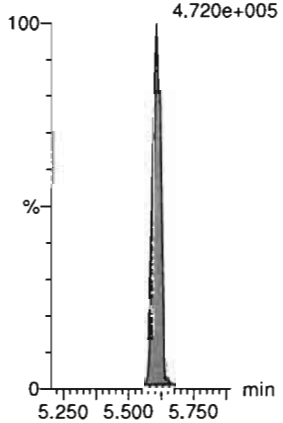
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

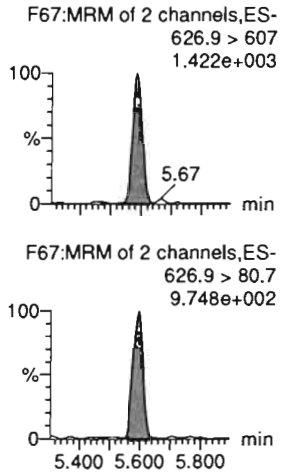


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

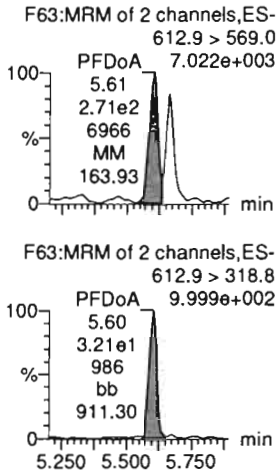
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

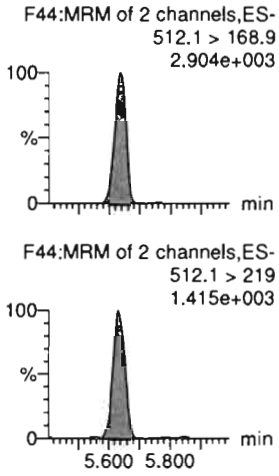
10:2 FTS



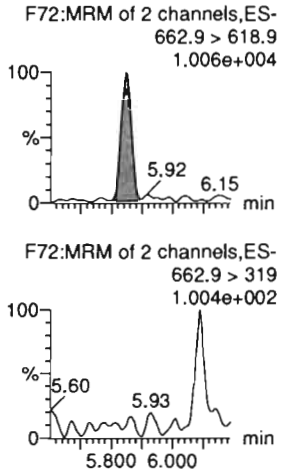
PFDoA



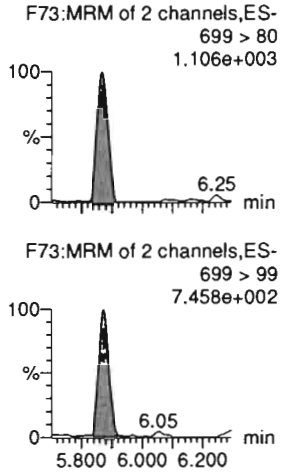
N-MeFOSA



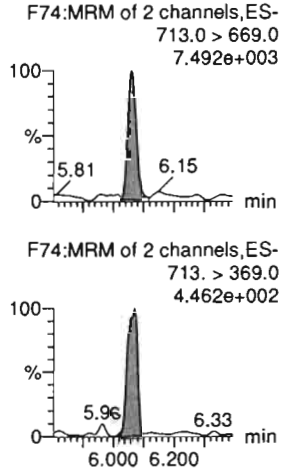
PFTrDA



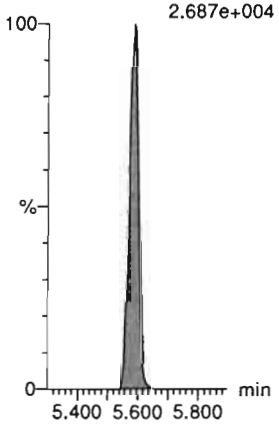
PFDoS



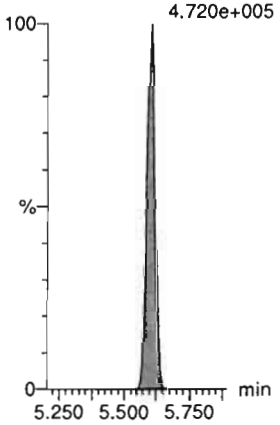
PFTeDA



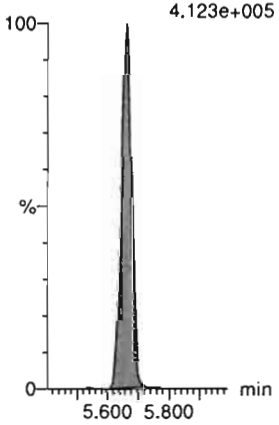
13C2-10:2 FTS-EIS



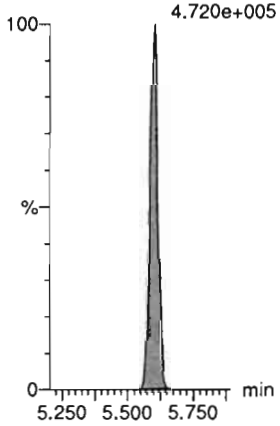
13C2-PFDoA-EIS



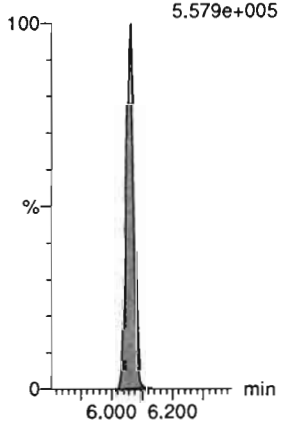
d3-N-MeFOSA-EIS



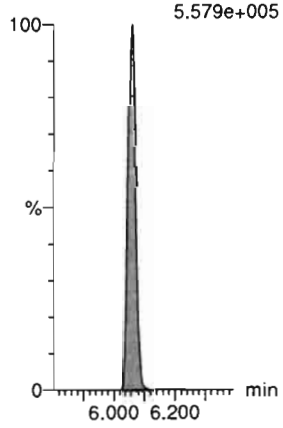
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

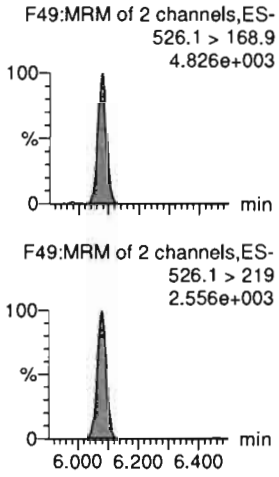


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

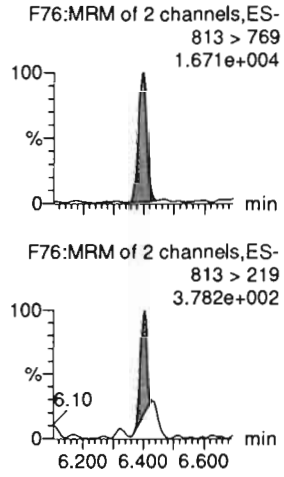
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

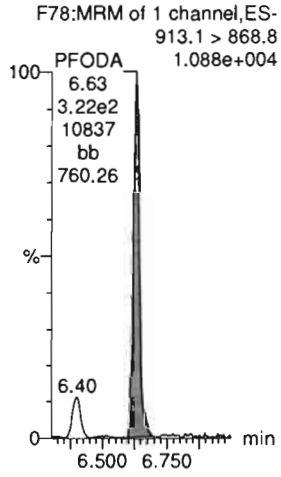
N-EtFOSA



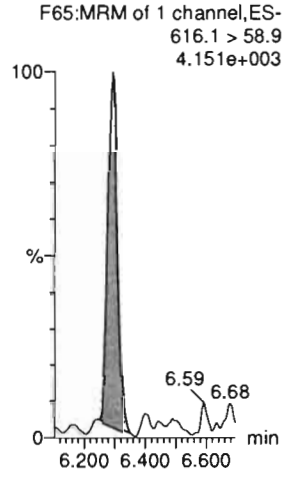
PFHxDA



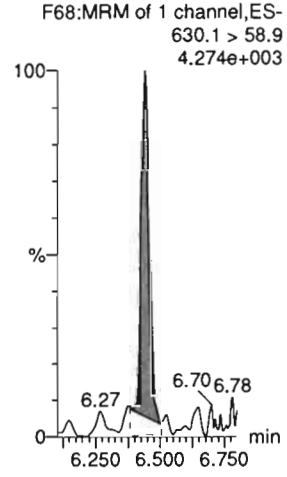
PFODA



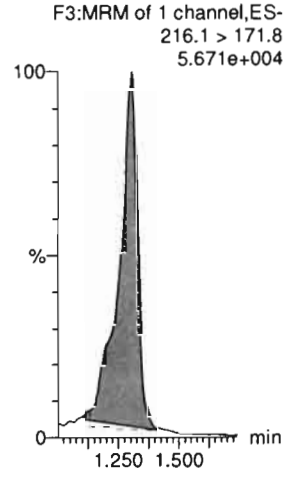
N-MeFOSE



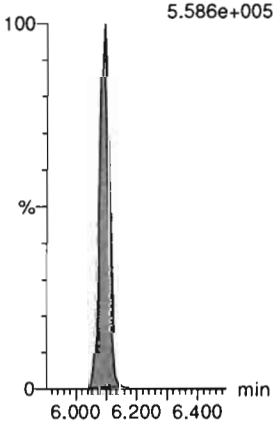
N-EtFOSE



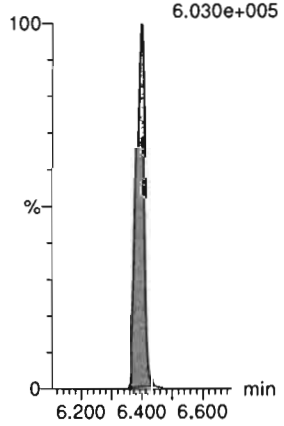
13C3-PFBA-RSD



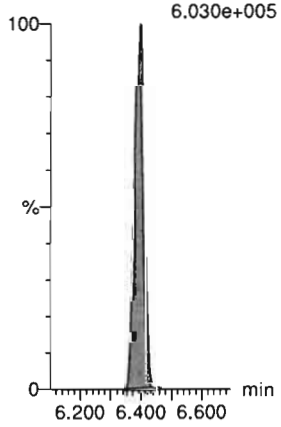
d5-N-ETFOSA-EIS



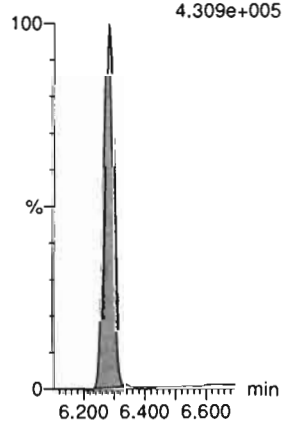
13C2-PFHxDA-EIS



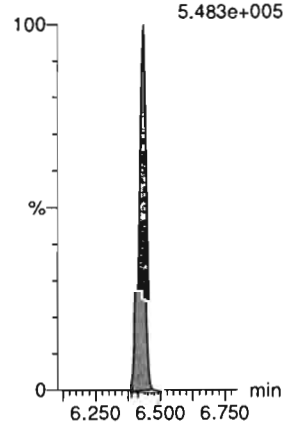
13C2-PFHxDA-EIS



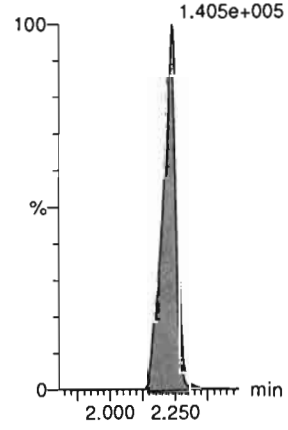
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

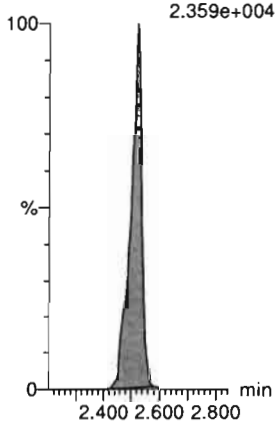


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

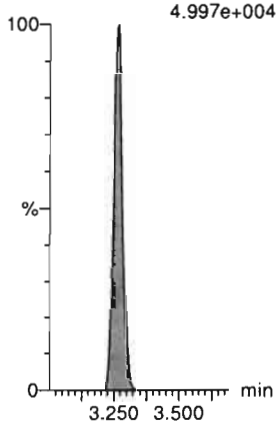
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

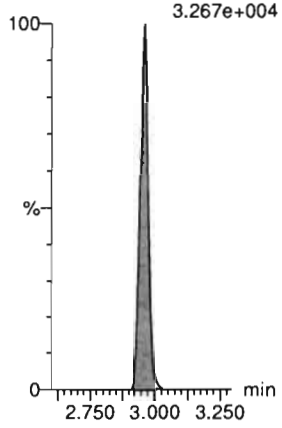
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.359e+004



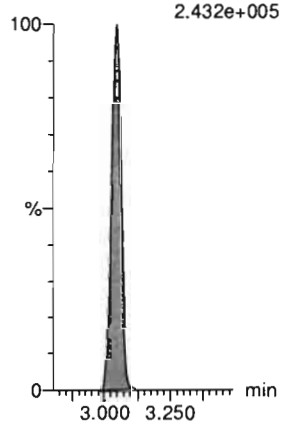
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
4.997e+004



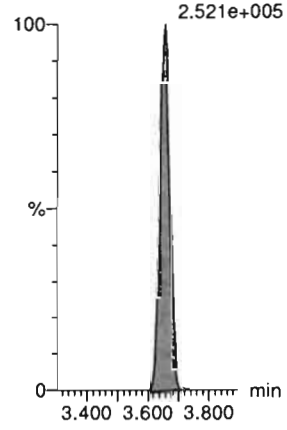
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.267e+004



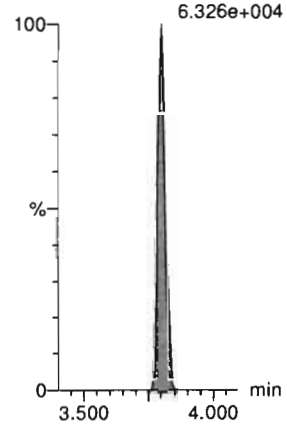
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.432e+005



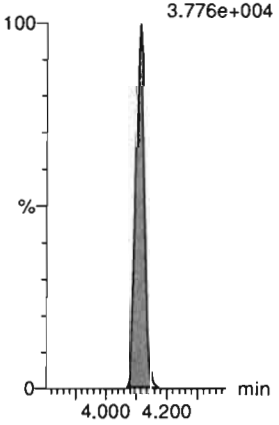
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.521e+005



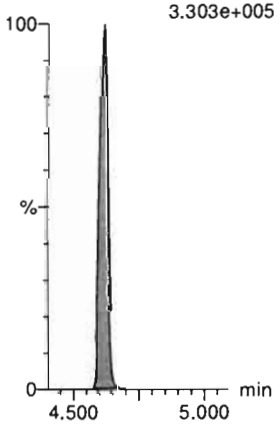
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.326e+004



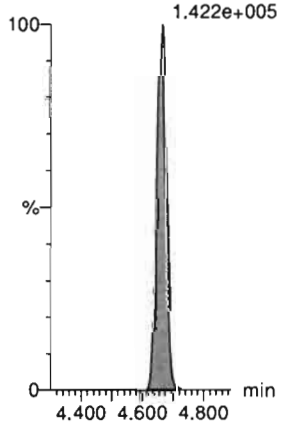
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.776e+004



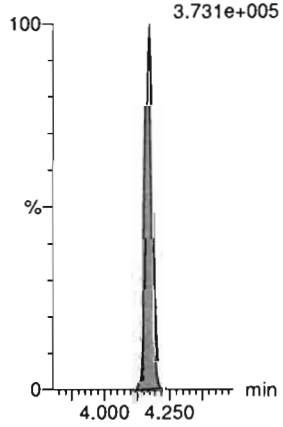
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.303e+005



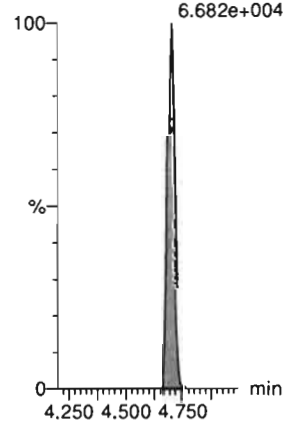
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.422e+005



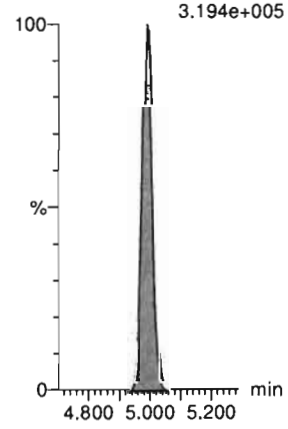
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.731e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.682e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.194e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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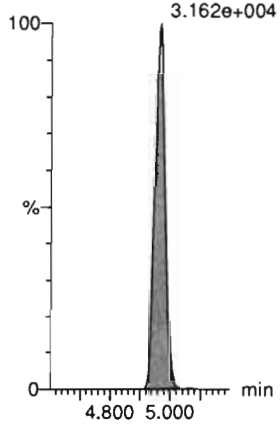
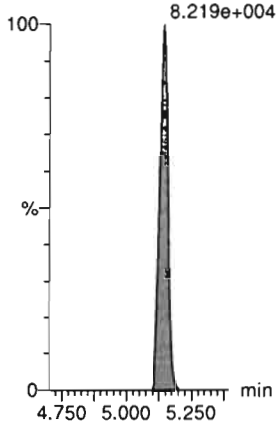
Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

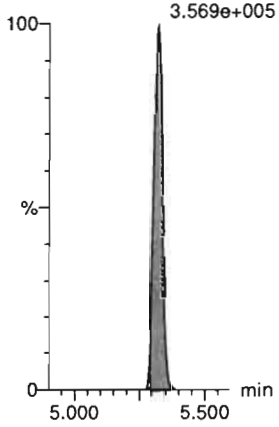
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.162e+004



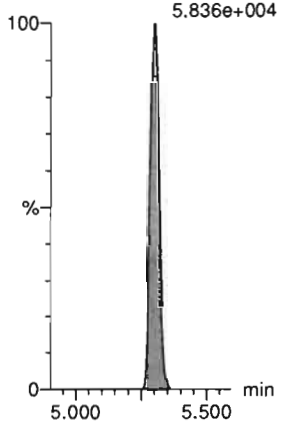
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
8.219e+004



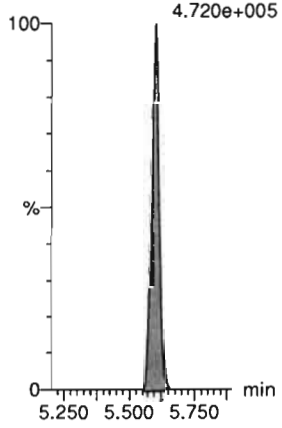
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.569e+005



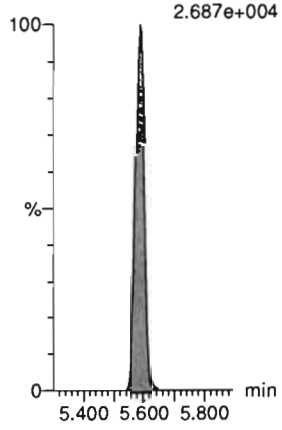
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
5.836e+004



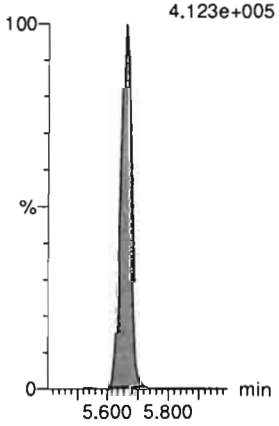
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.720e+005



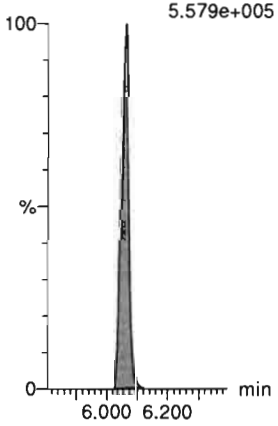
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.687e+004



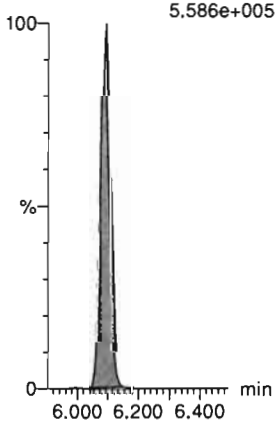
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.123e+005



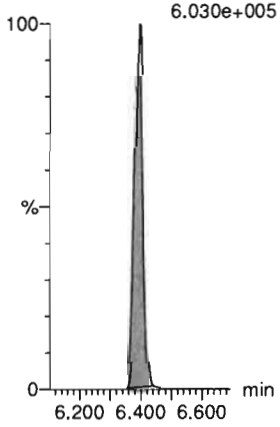
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.579e+005



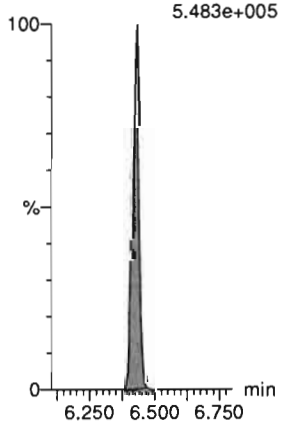
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.586e+005



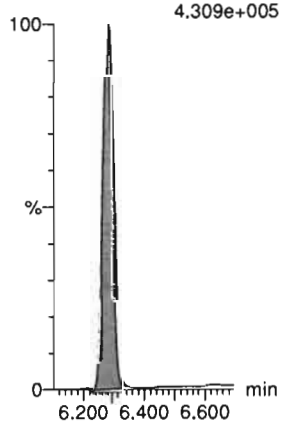
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.030e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.483e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.309e+005

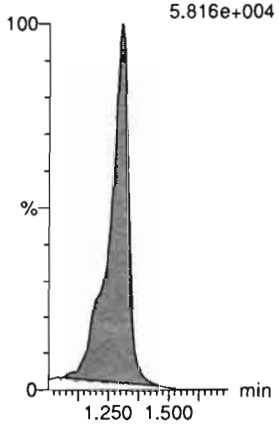


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

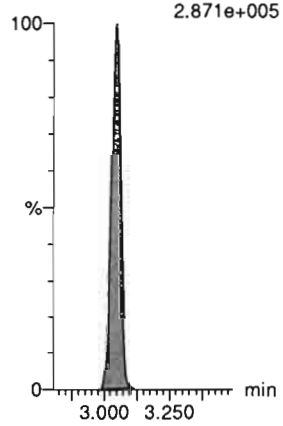
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-05, Date: 23-Jul-2020, Time: 10:39:51, ID: ST200723P1-1 PFC CS-2 20G1601, Description: PFC CS-2 20G1601

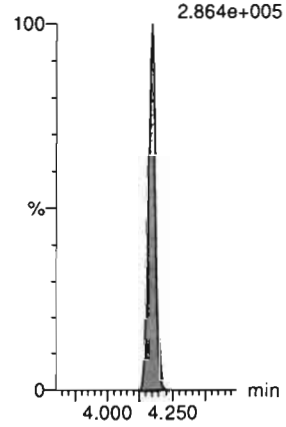
13C4-PFBA



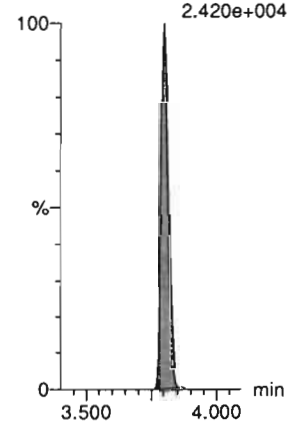
13C5-PFHxA



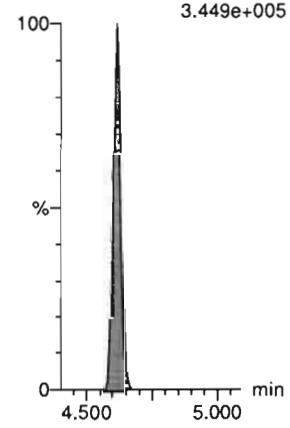
13C8-PFOA



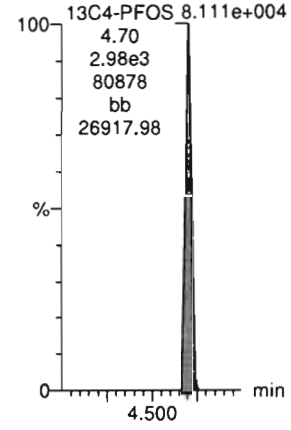
18O2-PFHxS



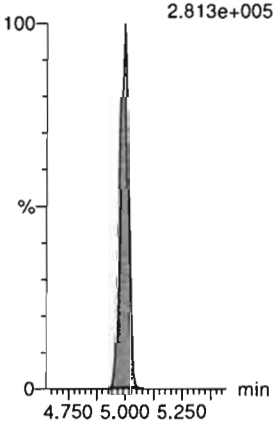
13C9-PFNA



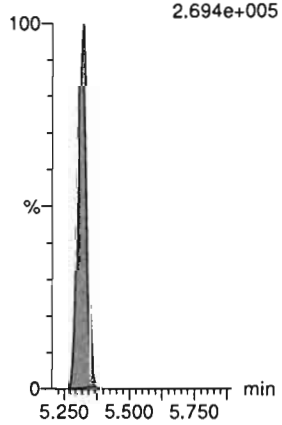
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Last Altered: Thursday, July 23, 2020 13:51:37 Pacific Daylight Time
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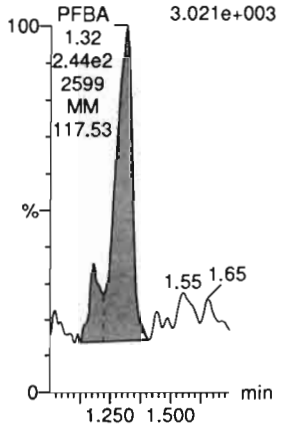
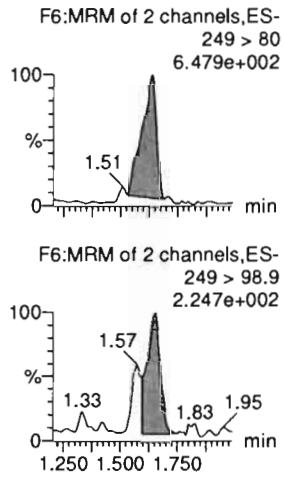
Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

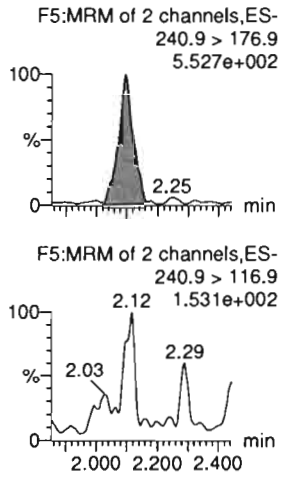
PFBA



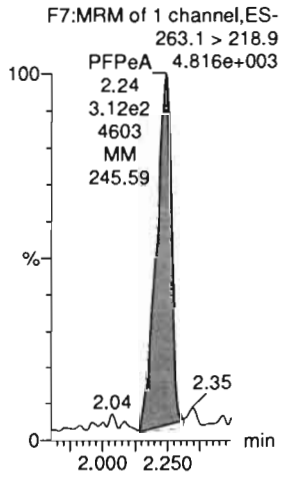
PFPrS



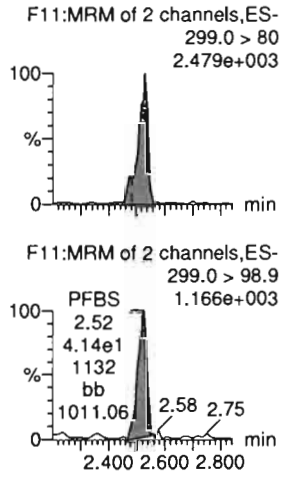
3:3 FTCA



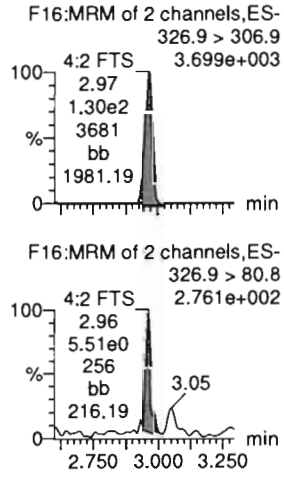
PFPeA



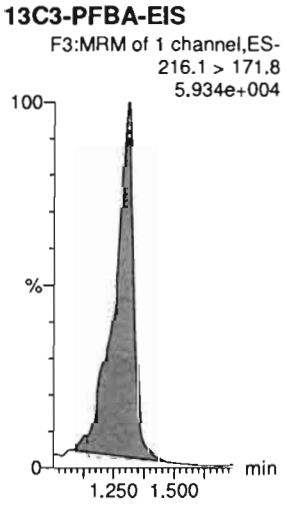
PFBS



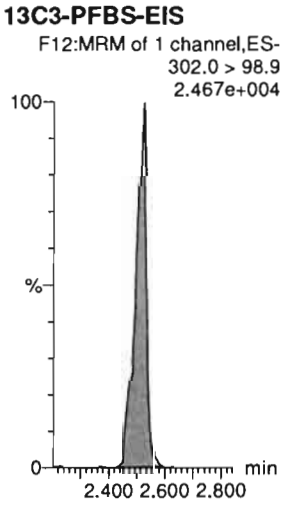
4:2 FTS



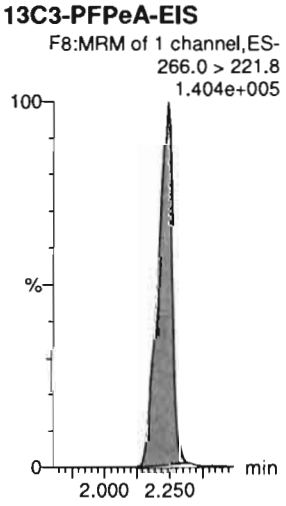
13C3-PFBA-EIS



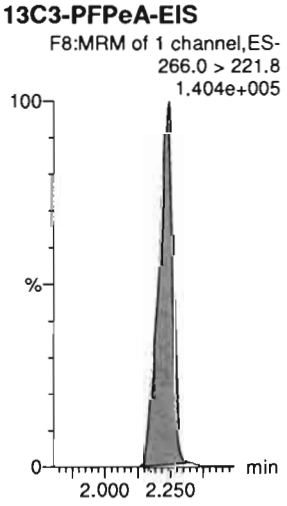
13C3-PFBS-EIS



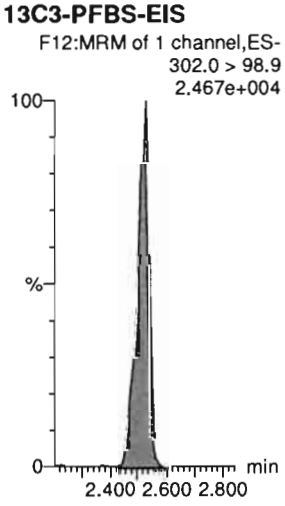
13C3-PFPeA-EIS



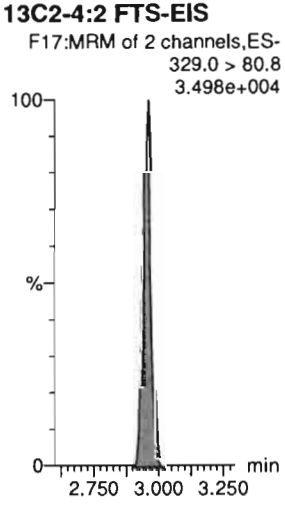
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

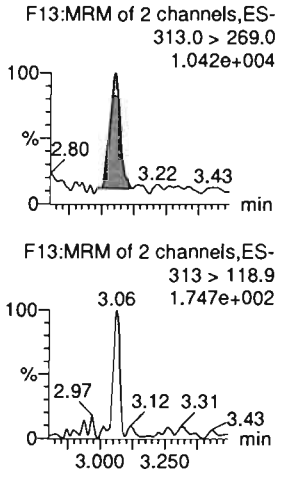


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

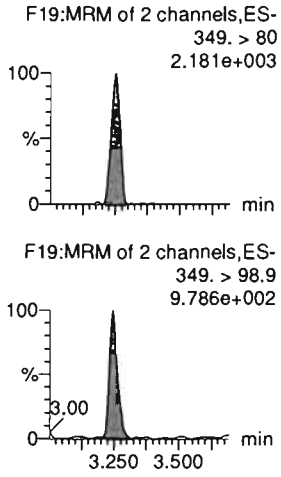
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

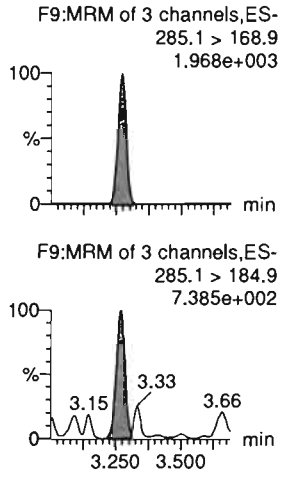
PFHxA



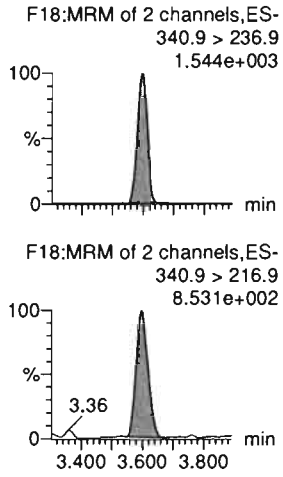
PFPeS



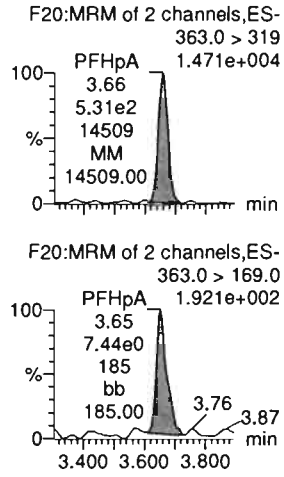
HFPO-DA



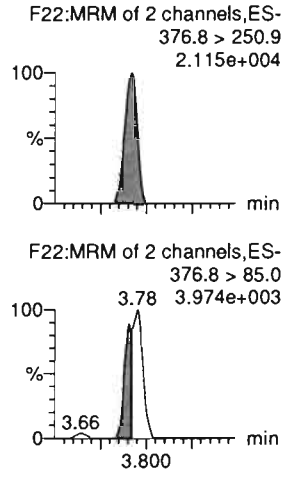
5:3 FTCA



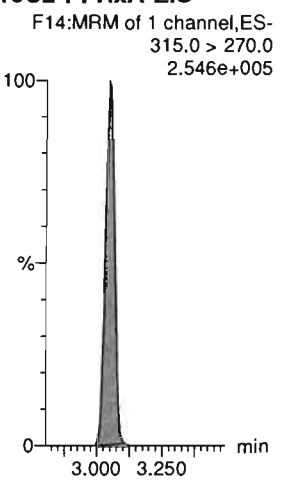
PFHpA



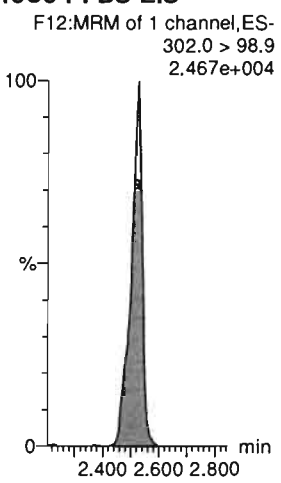
ADONA



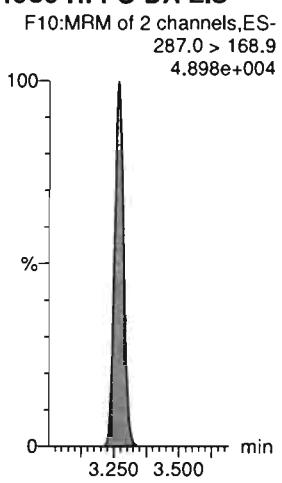
13C2-PFHxA-EIS



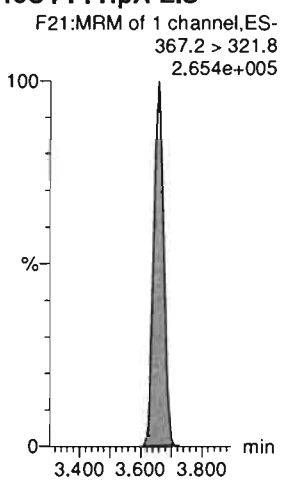
13C3-PFBS-EIS



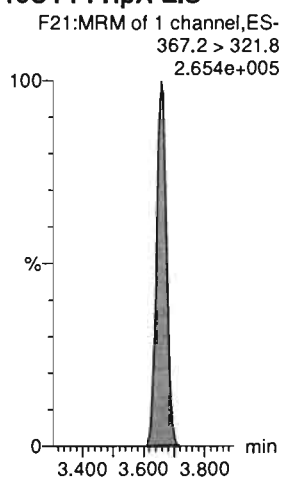
13C3-HFPO-DA-EIS



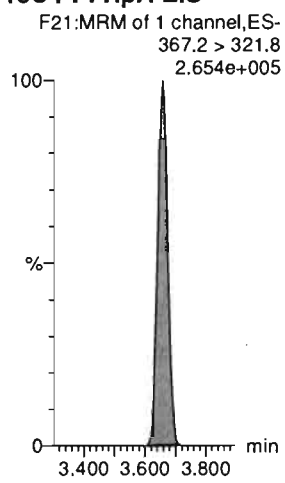
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

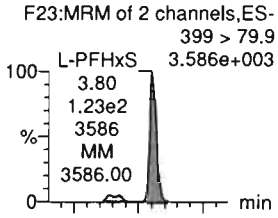


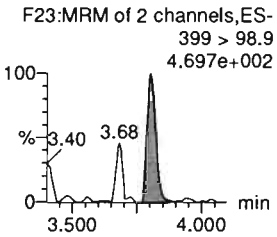
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

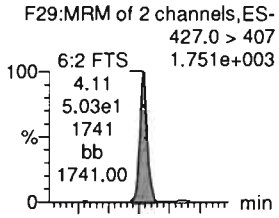
Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

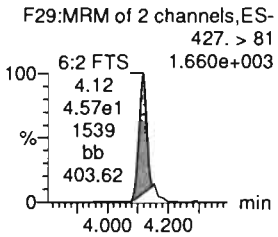
L-PFHxS



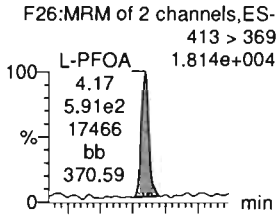


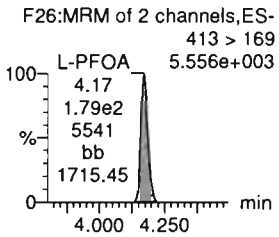
6:2 FTS



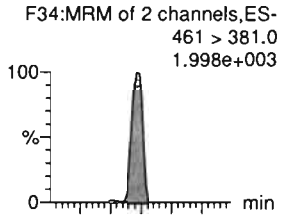


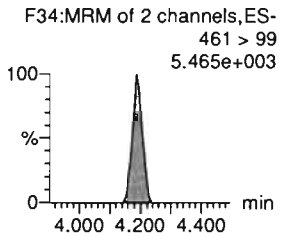
L-PFOA



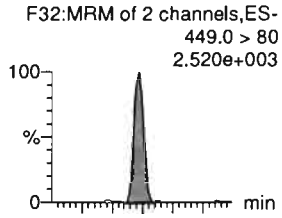


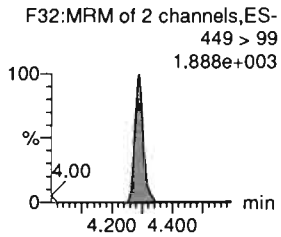
PFEChS



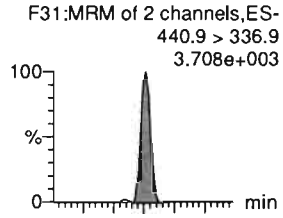


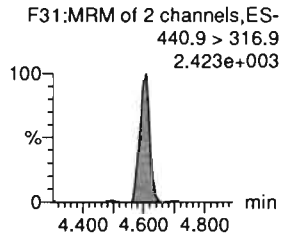
PFHpS



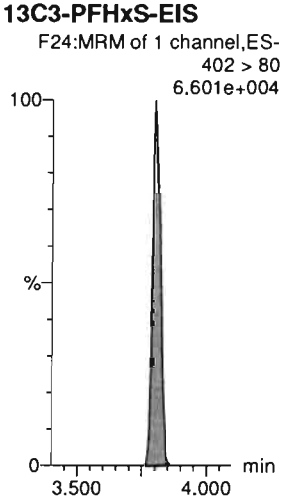


7:3 FTCA

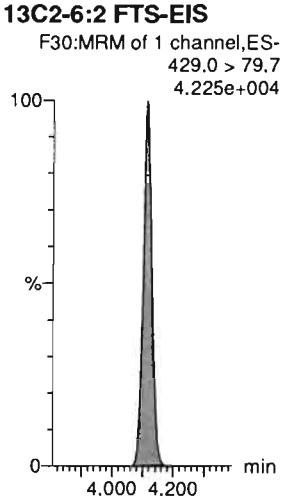




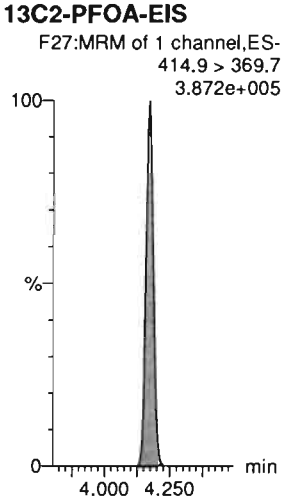
13C3-PFHxS-EIS



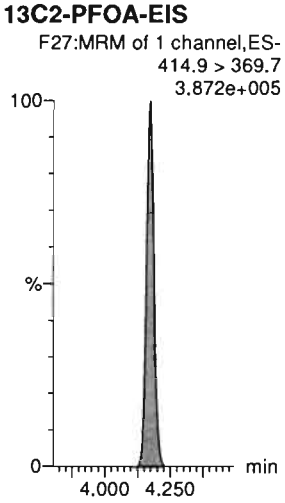
13C2-6:2 FTS-EIS



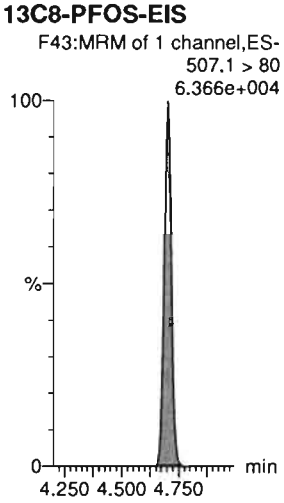
13C2-PFOA-EIS



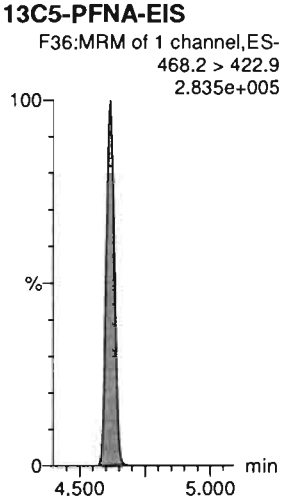
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



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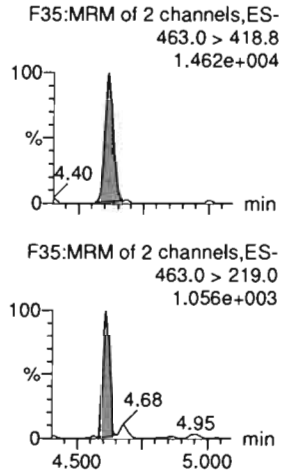
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

PFNA



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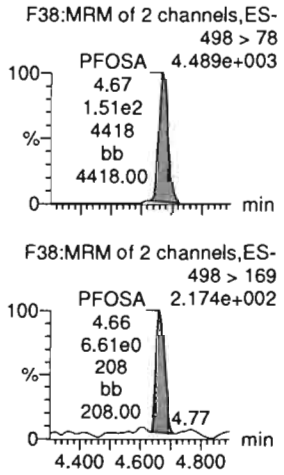

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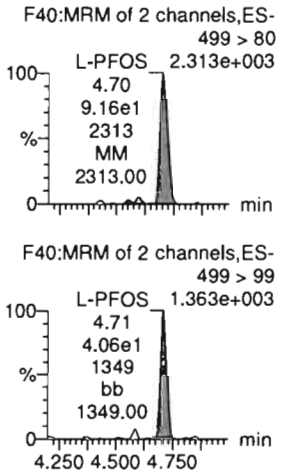
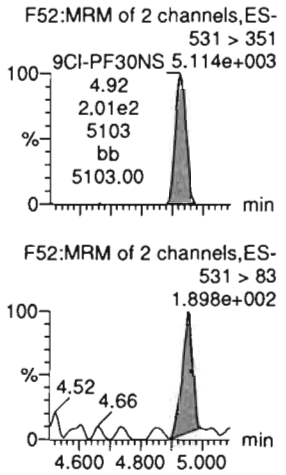


9Cl-PF30NS



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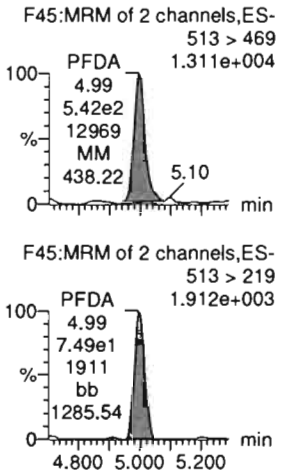
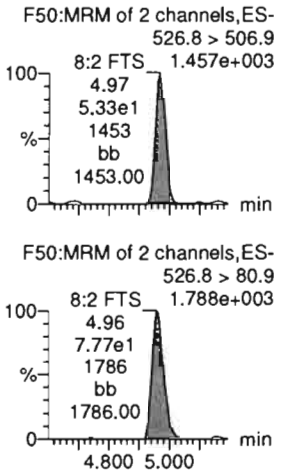


8:2 FTS



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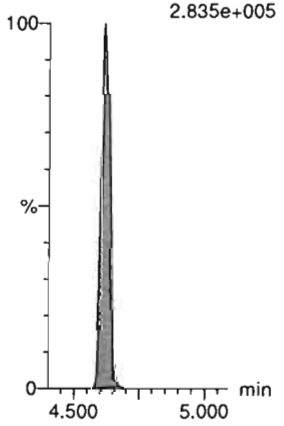
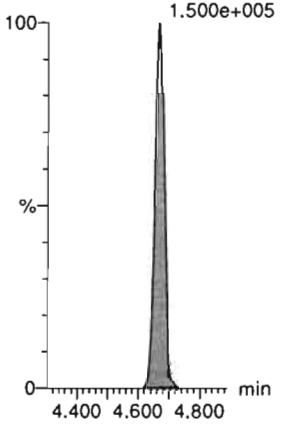


13C8-PFOSA-EIS



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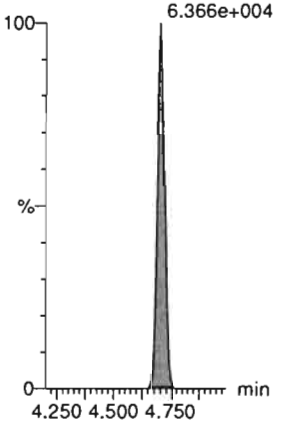

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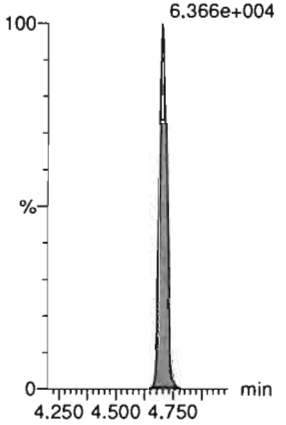

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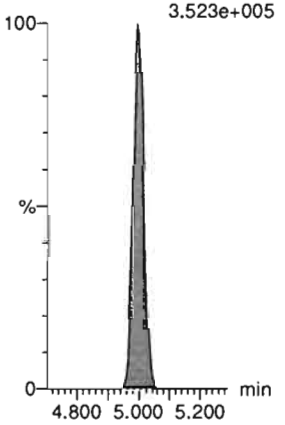

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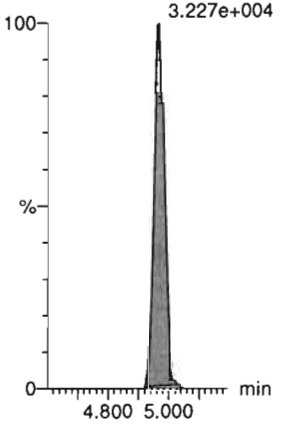

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Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

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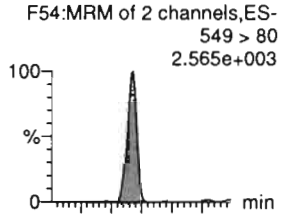

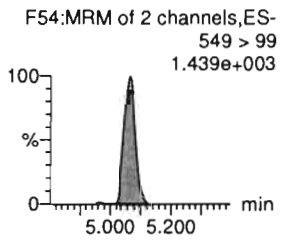

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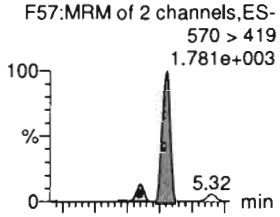

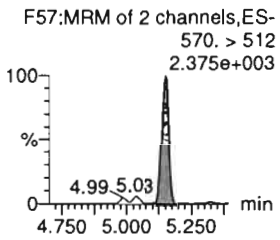

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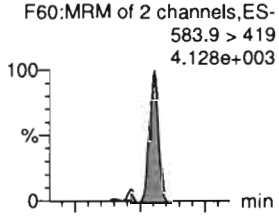

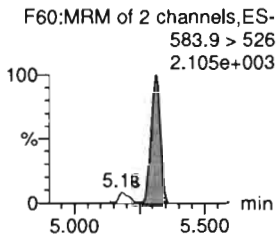

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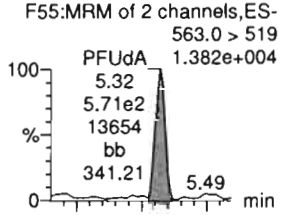

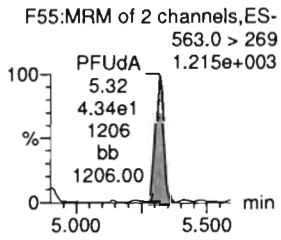

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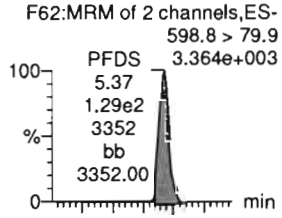

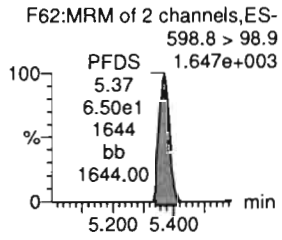

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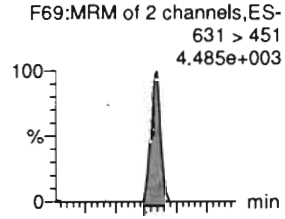
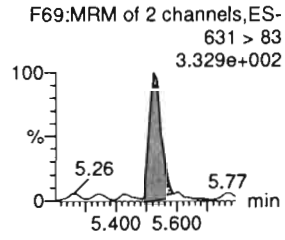
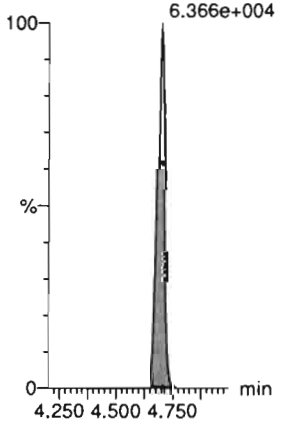




13C8-PFOS-EIS



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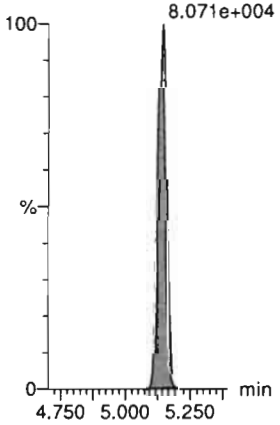

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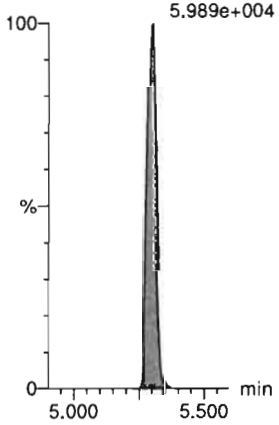

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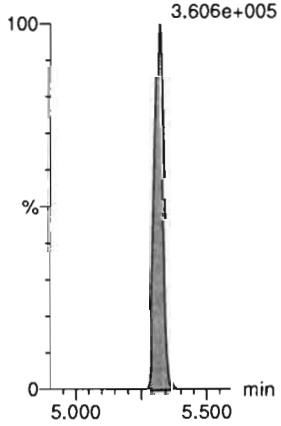

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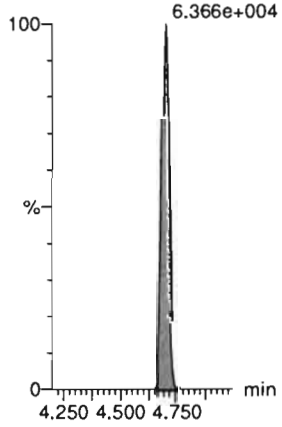

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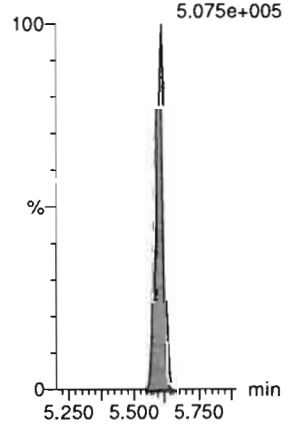

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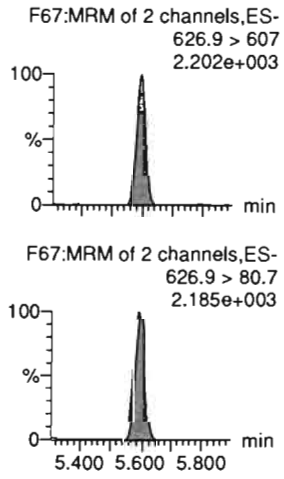
Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

10:2 FTS



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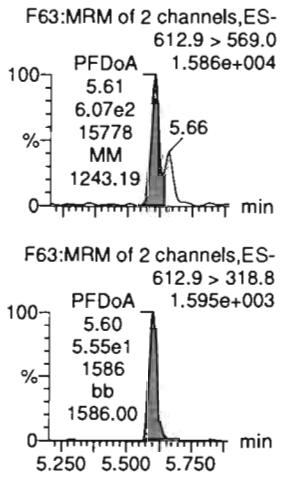

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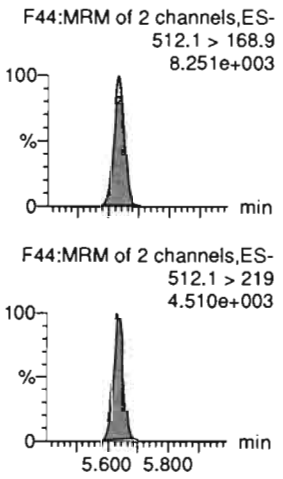

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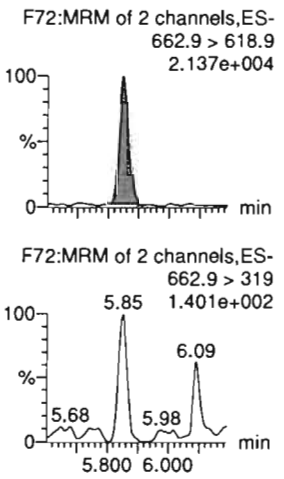

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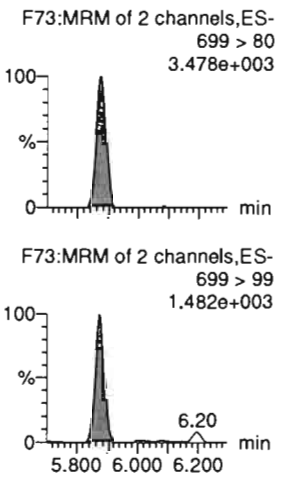

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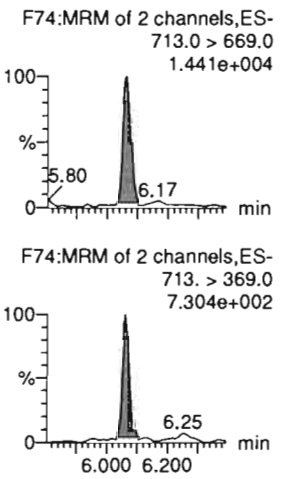
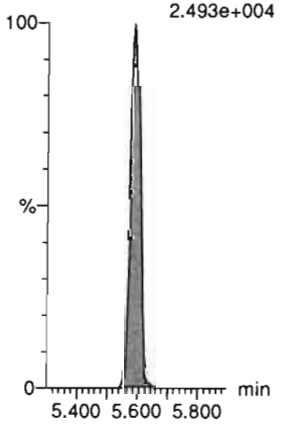
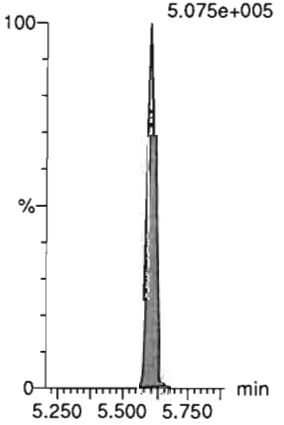


13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



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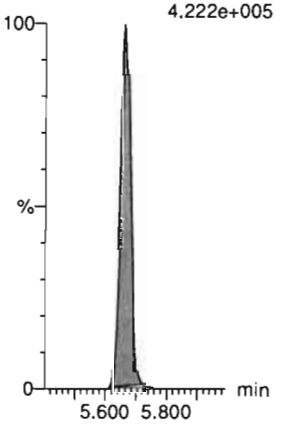

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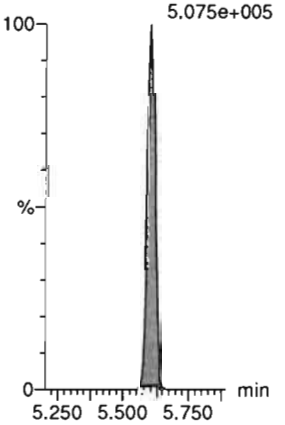

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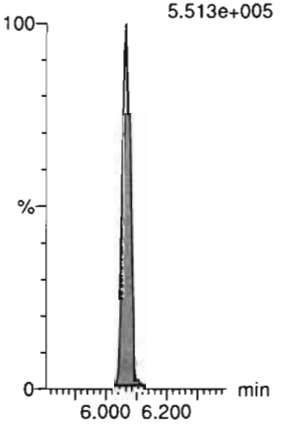

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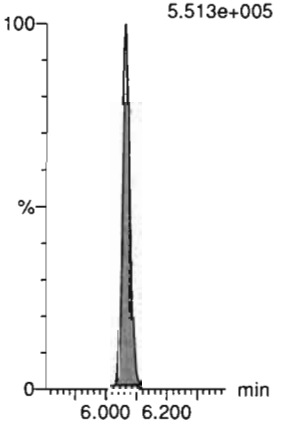

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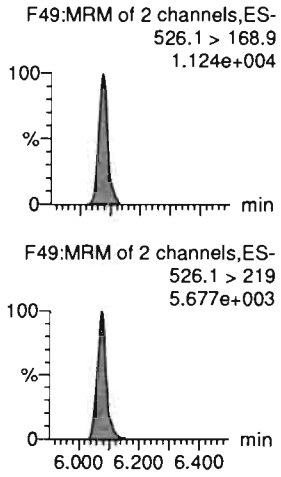
Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

N-EtFOSA



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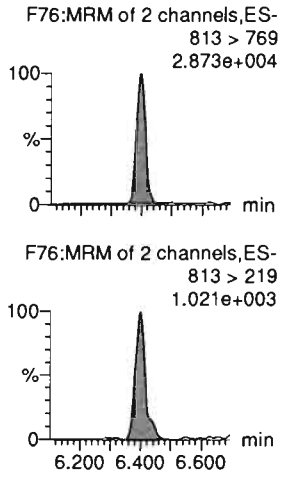

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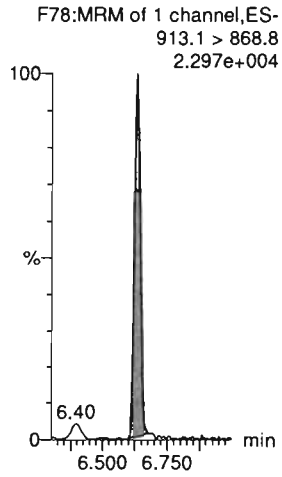
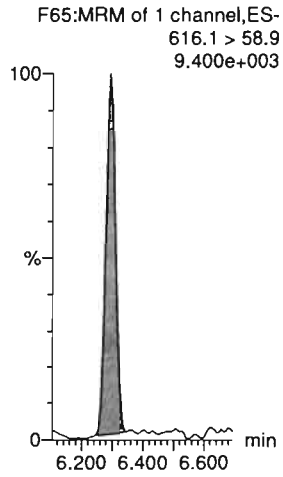


N-MeFOSE



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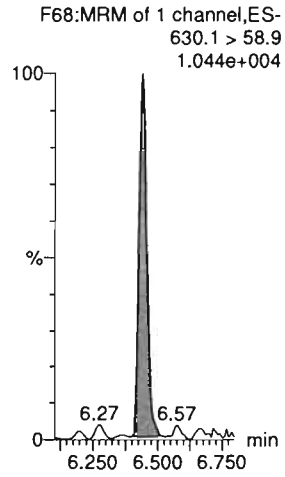

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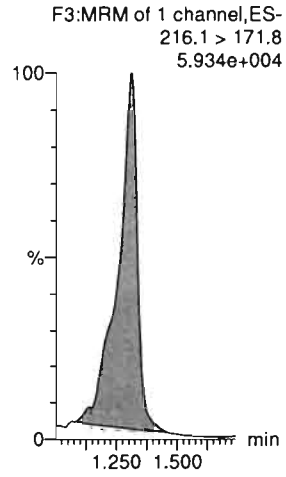
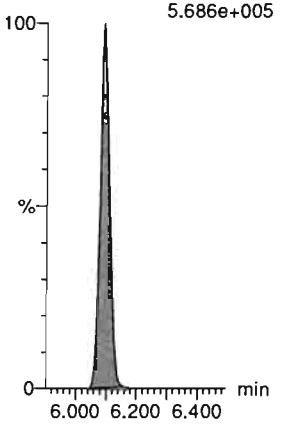
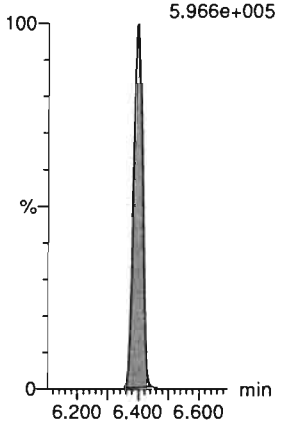


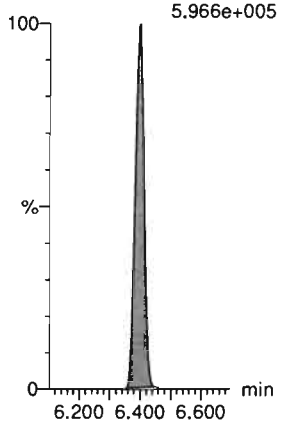
d5-N-ETFOSA-EIS



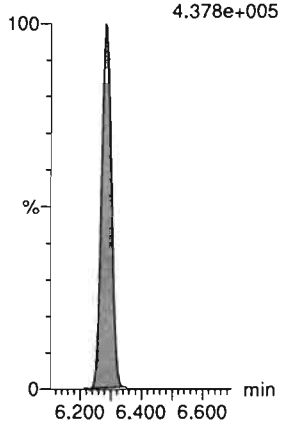
13C2-PFHxDA-EIS



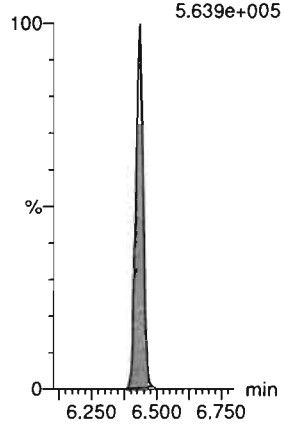
13C2-PFHxDA-EIS



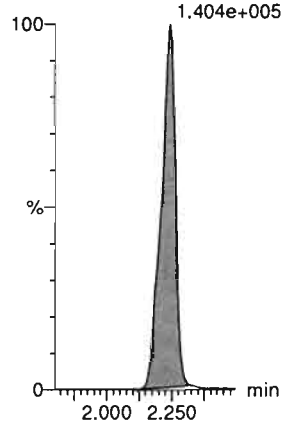
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

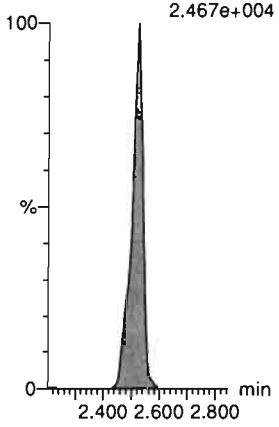


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

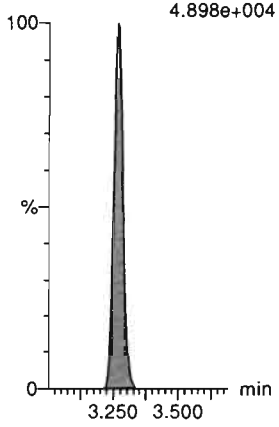
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

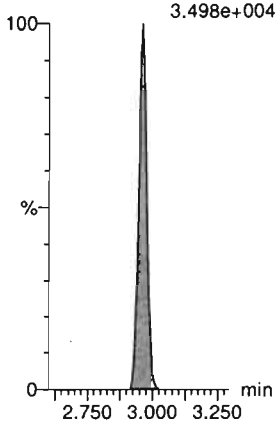
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.467e+004



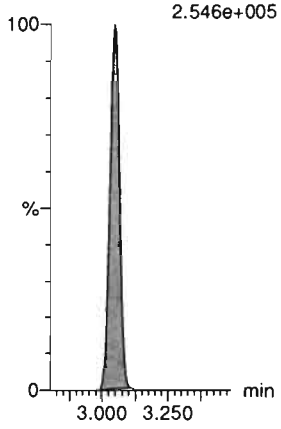
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
4.898e+004



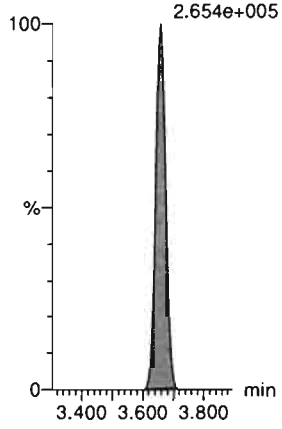
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.498e+004



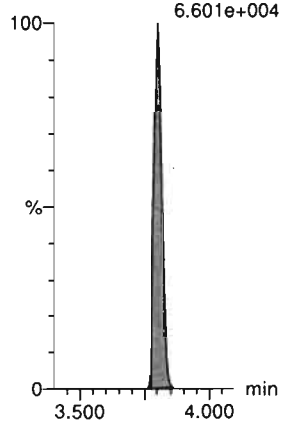
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.546e+005



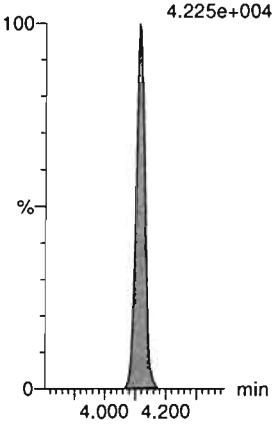
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.654e+005



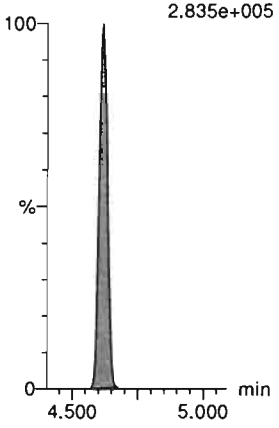
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.601e+004



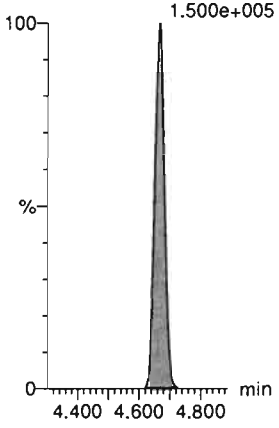
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.225e+004



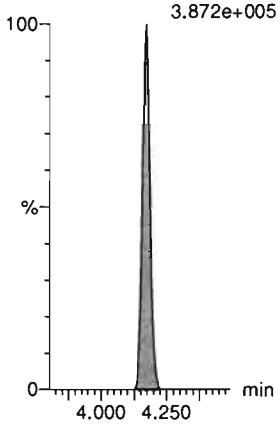
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
2.835e+005



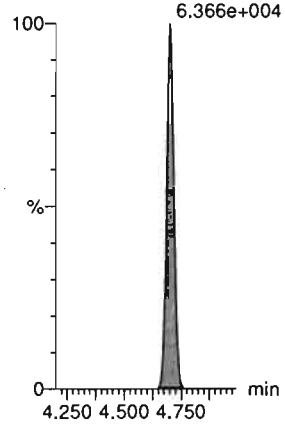
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.500e+005



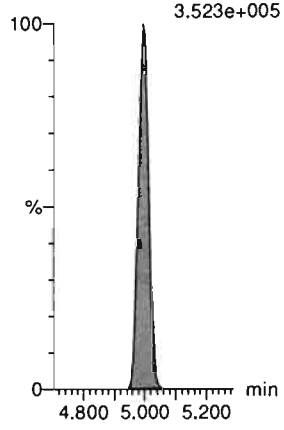
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.872e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.366e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.523e+005

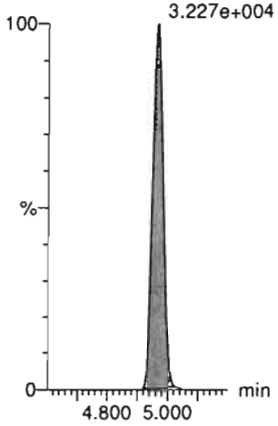


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

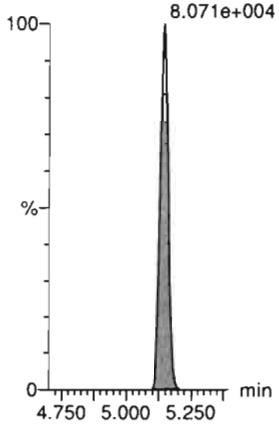
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

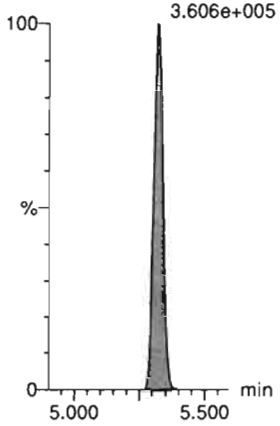
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.227e+004



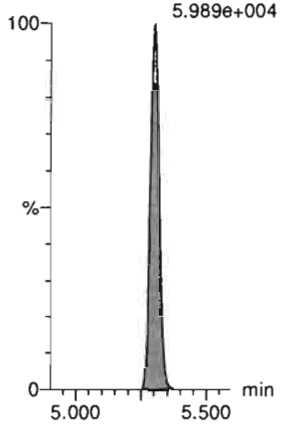
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
8.071e+004



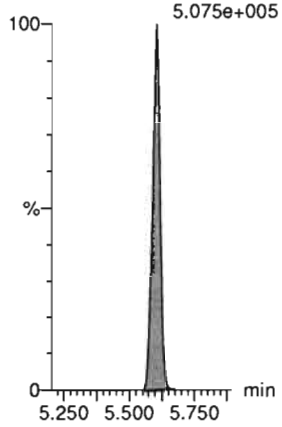
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.606e+005



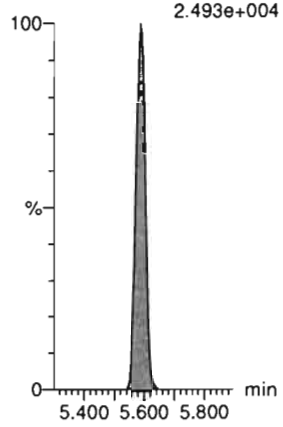
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
5.989e+004



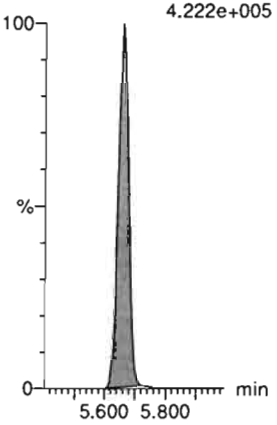
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
5.075e+005



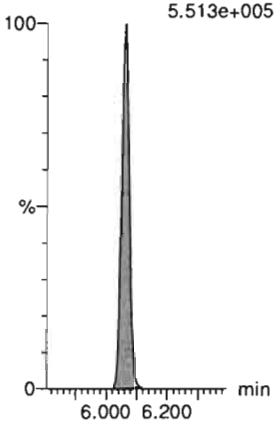
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.493e+004



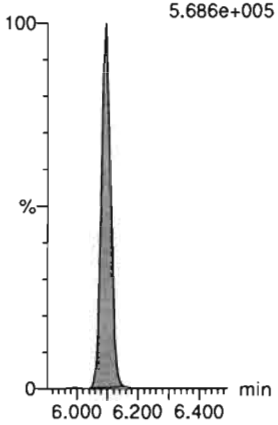
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.222e+005



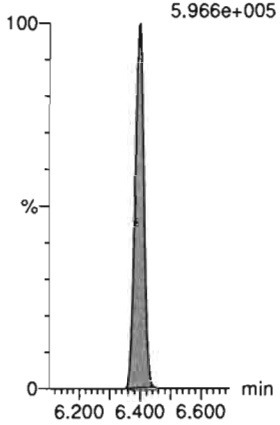
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.513e+005



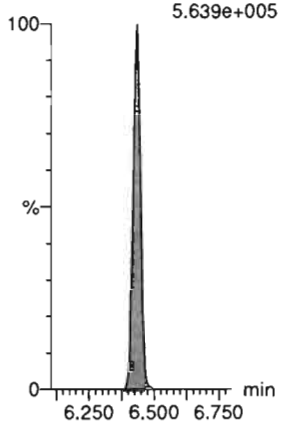
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.686e+005



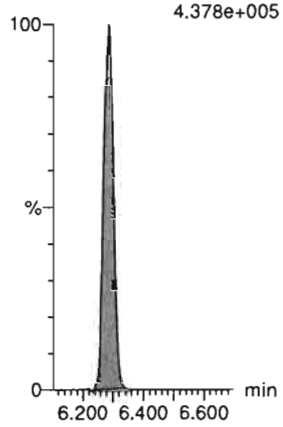
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
5.966e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.639e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.378e+005

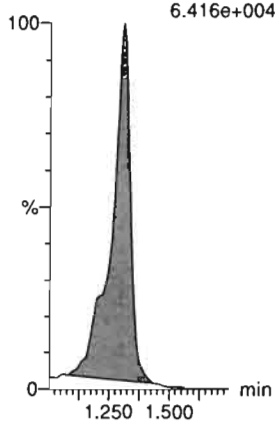


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

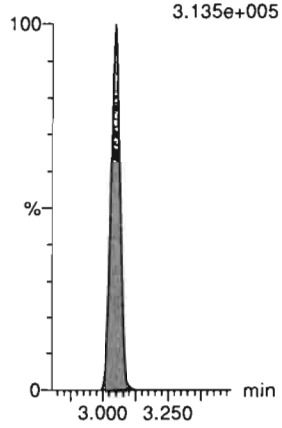
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-06, Date: 23-Jul-2020, Time: 10:50:27, ID: ST200723P1-2 PFC CS-1 20G1602, Description: PFC CS-1 20G1602

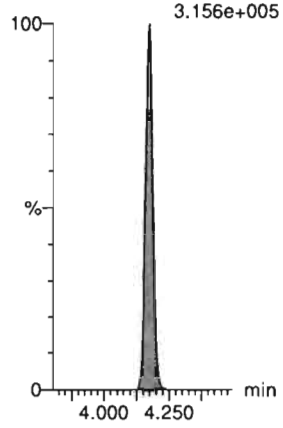
13C4-PFBA



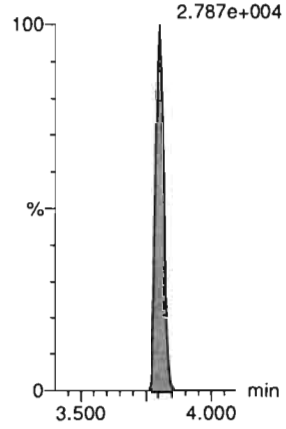
13C5-PFHxA



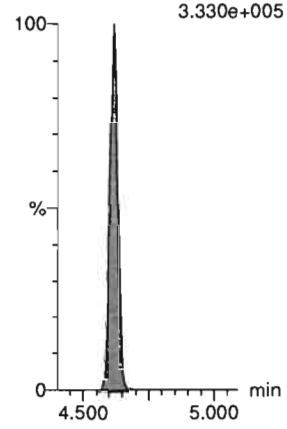
13C8-PFOA



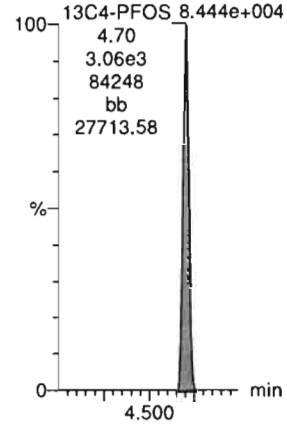
18O2-PFHxS



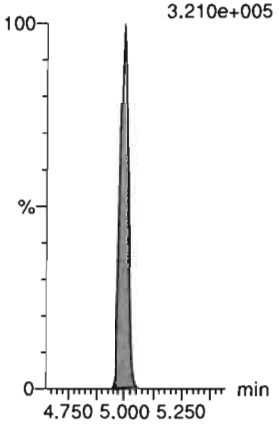
13C9-PFNA



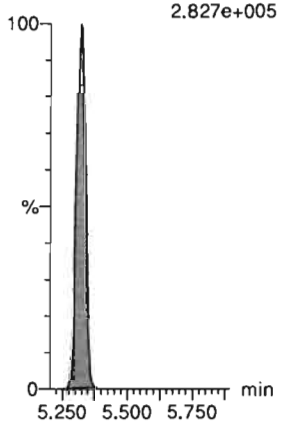
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Last Altered: Thursday, July 23, 2020 13:51:37 Pacific Daylight Time
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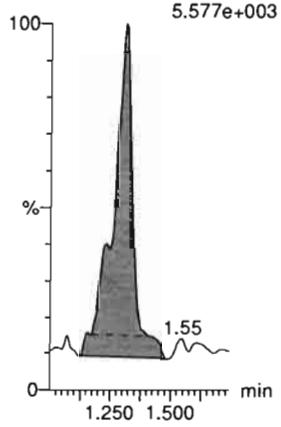
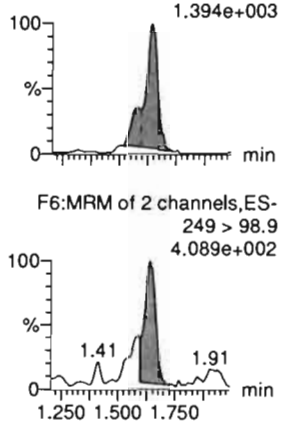
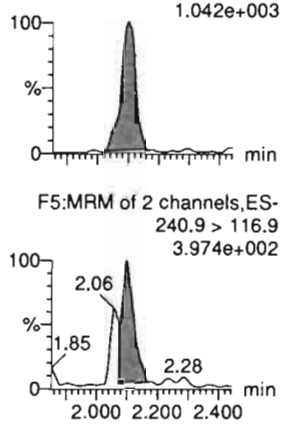
PFBA



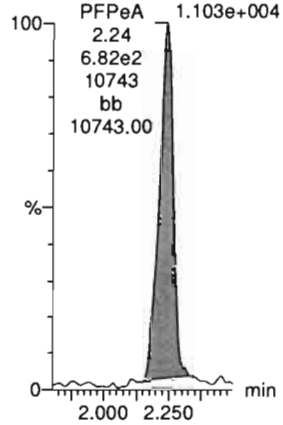
PFPrS



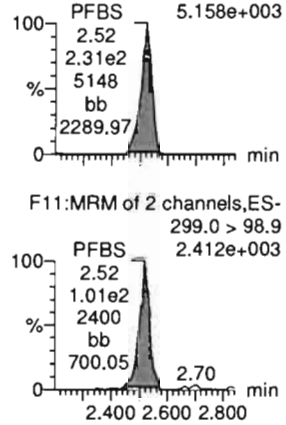
3:3 FTCA



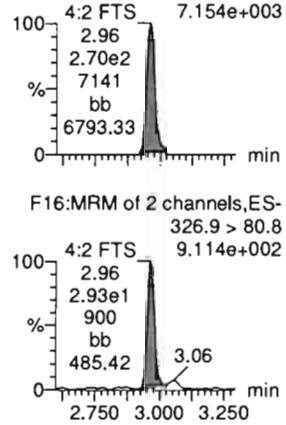
PFPeA



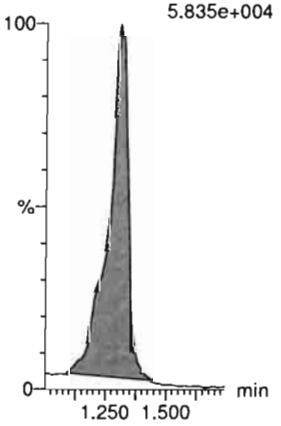
PFBS



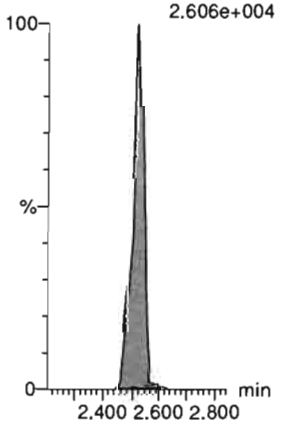
4:2 FTS



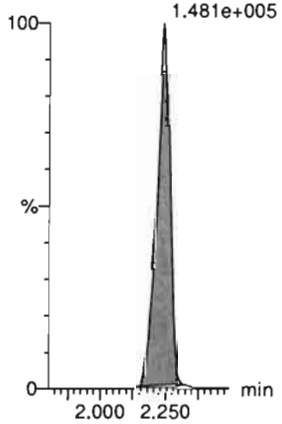
13C3-PFBA-EIS



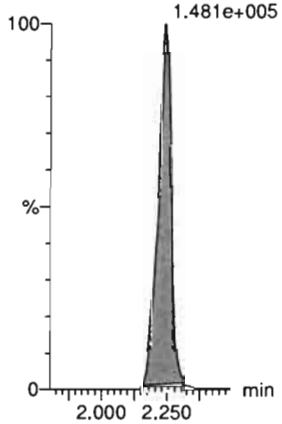
13C3-PFBS-EIS



13C3-PFPeA-EIS



13C3-PFPeA-EIS



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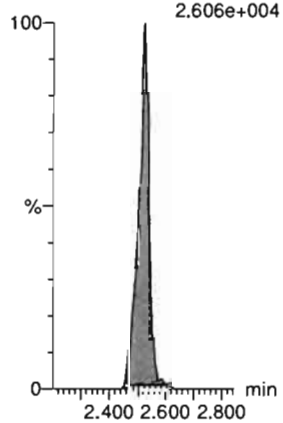
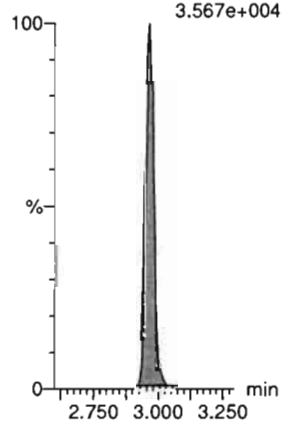


13C2-4:2 FTS-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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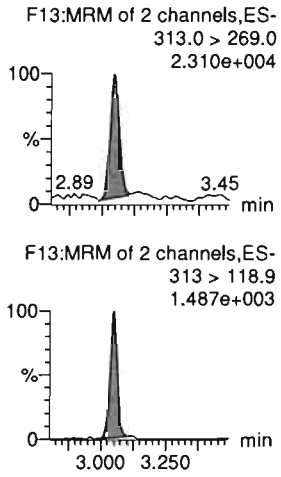
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

PFHxA



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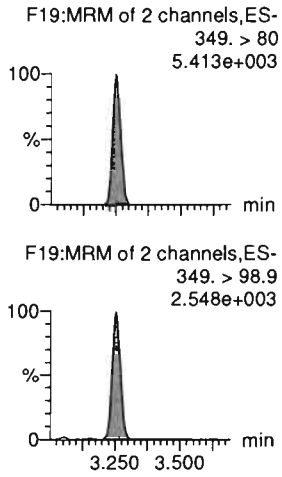

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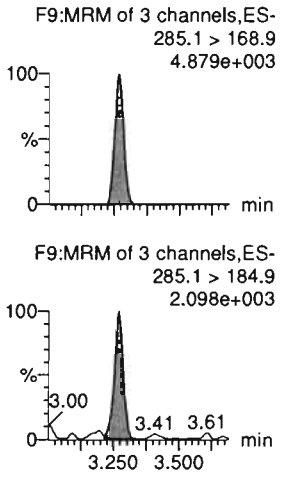

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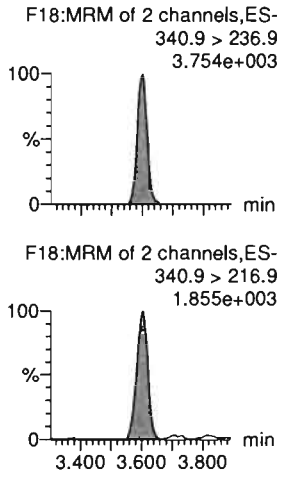

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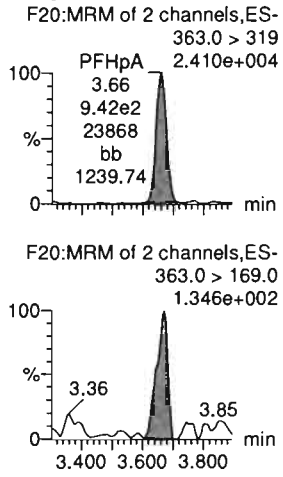

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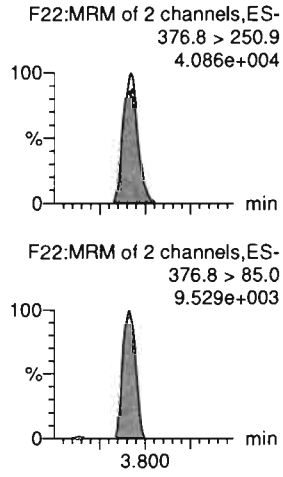

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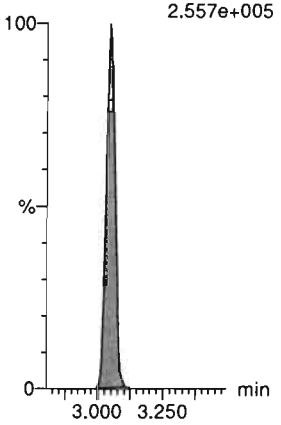

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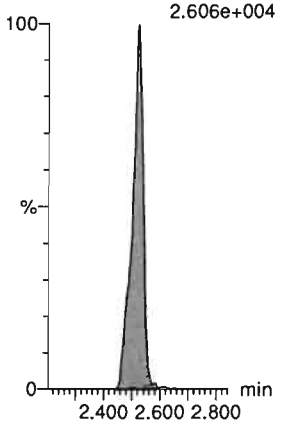

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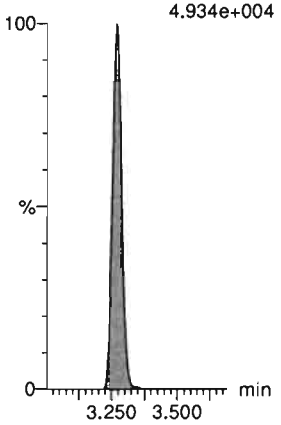
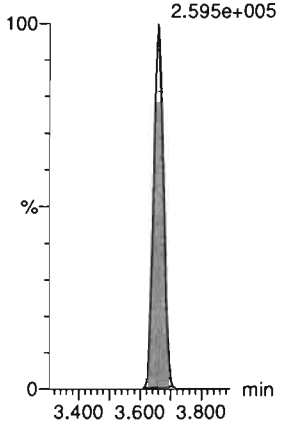


13C4-PFHpA-EIS



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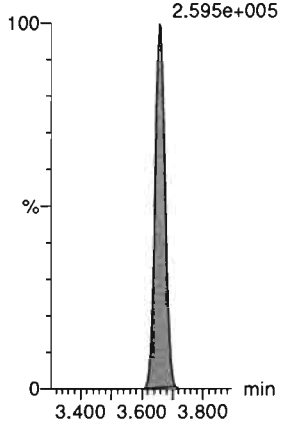

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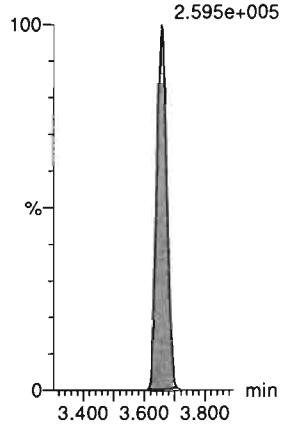

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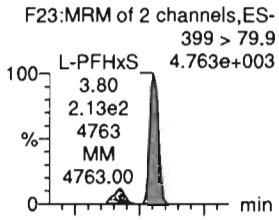
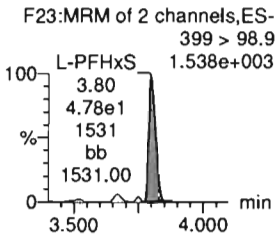
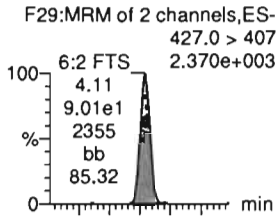
Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

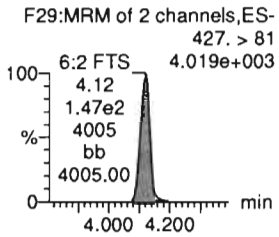
L-PFHxS





6:2 FTS





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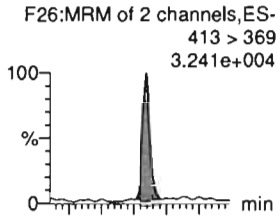

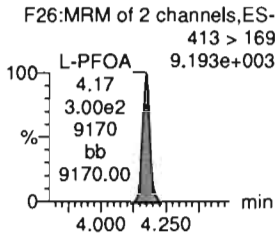

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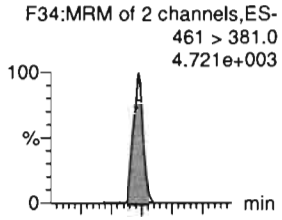

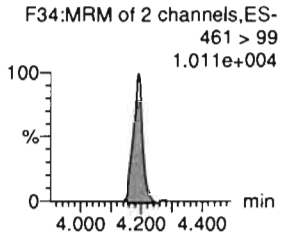

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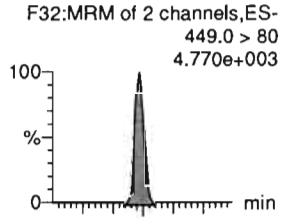
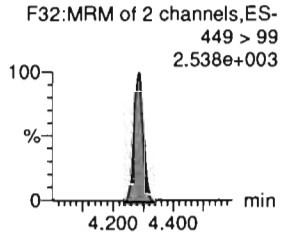
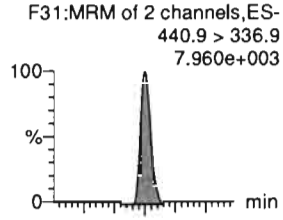
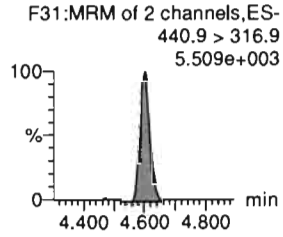




7:3 FTCA





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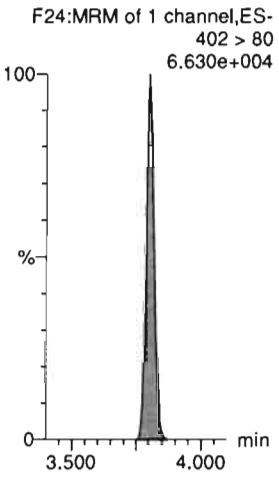
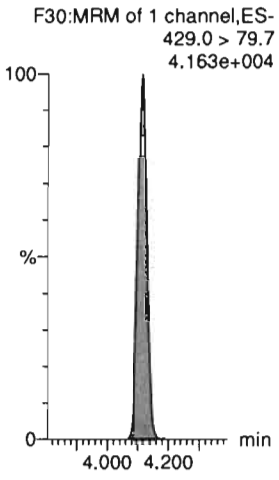


13C2-6:2 FTS-EIS



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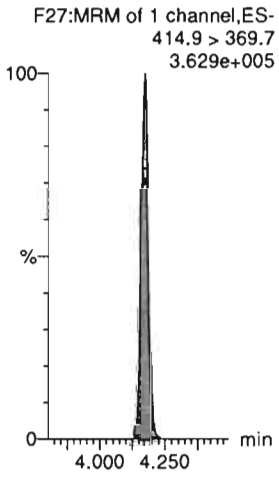

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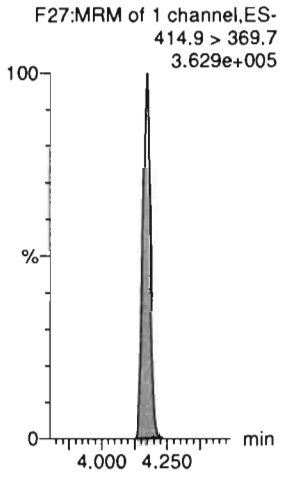
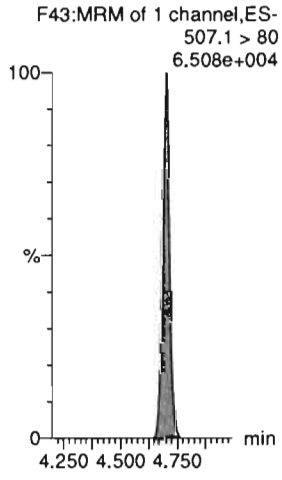
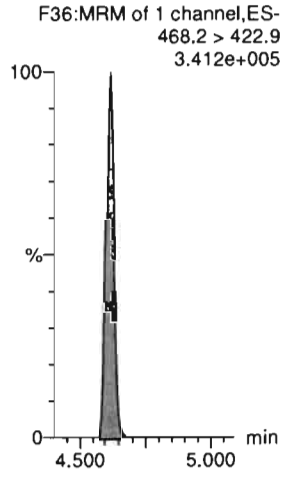


13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

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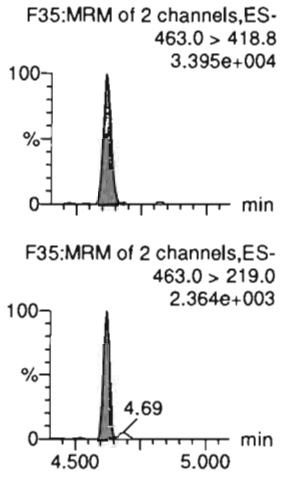

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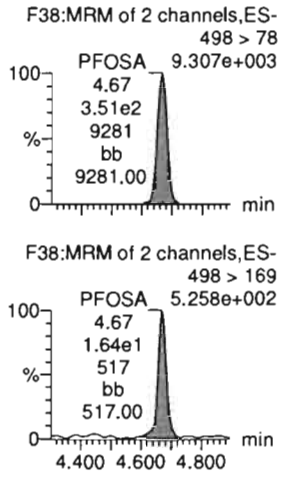
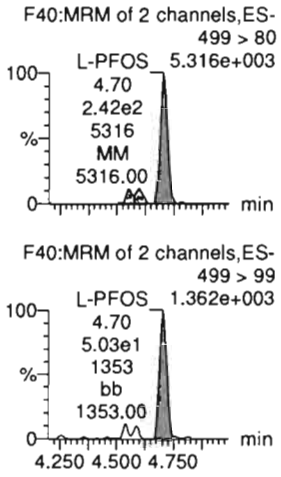
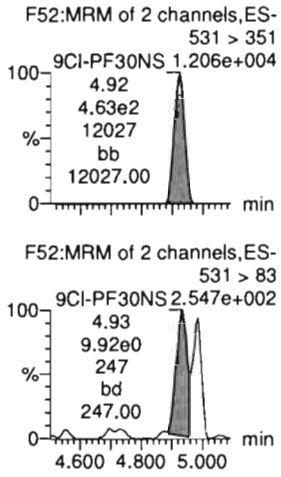


L-PFOS



9Cl-PF30NS



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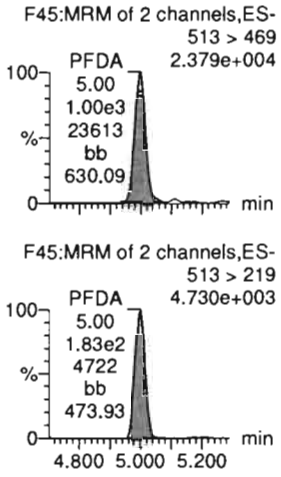
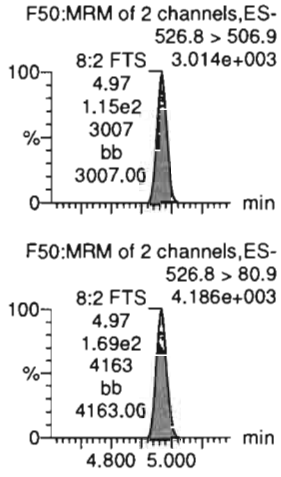


8:2 FTS



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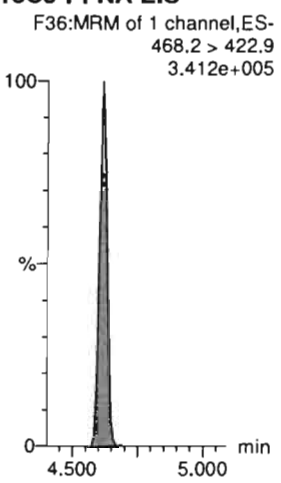
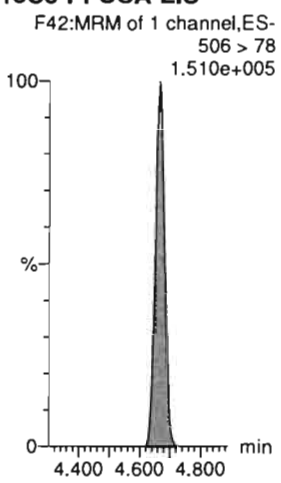


13C8-PFOSA-EIS



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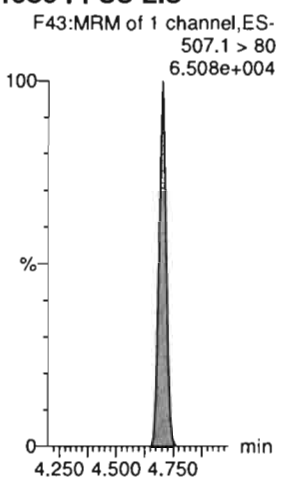

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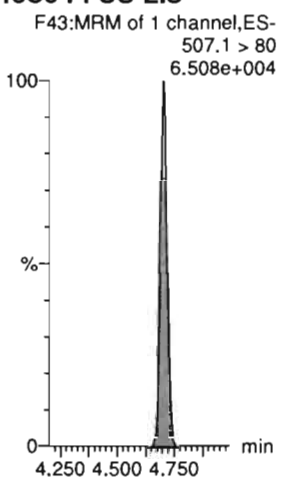

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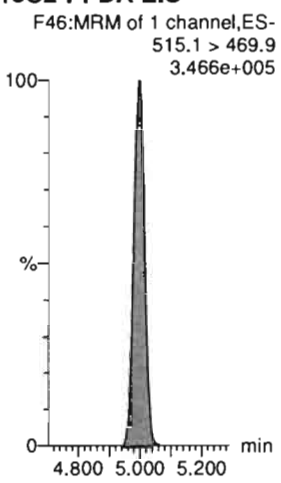
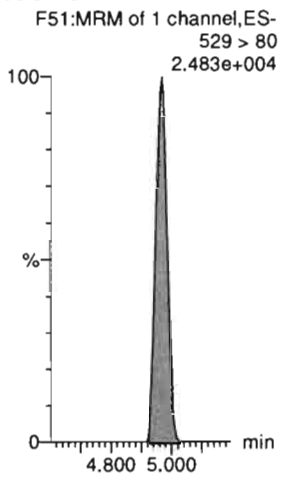


13C2-8:2 FTS-EIS



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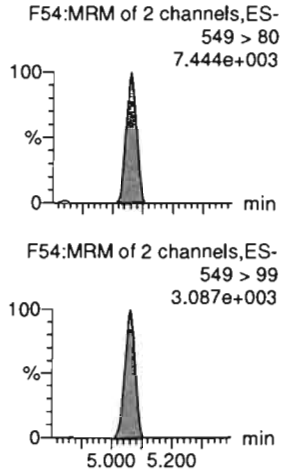
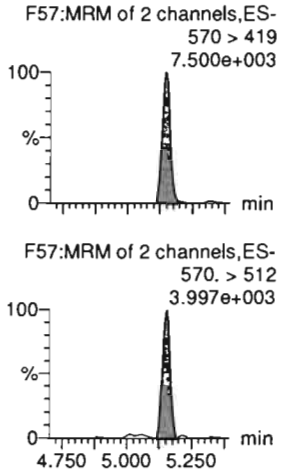
Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

PFNS



L-MeFOSAA



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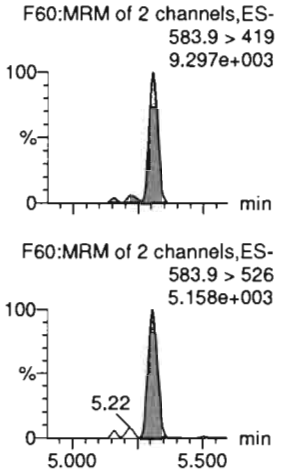

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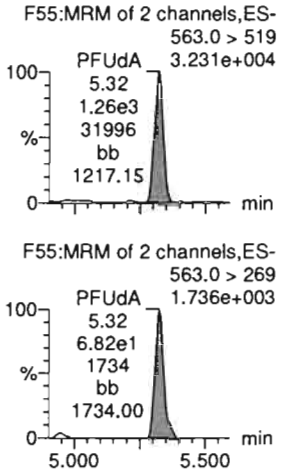

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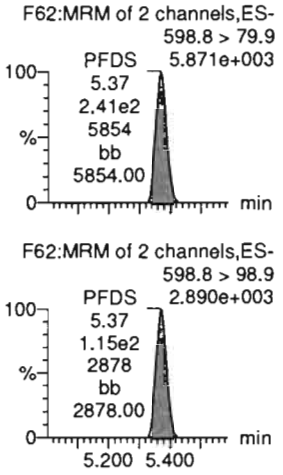
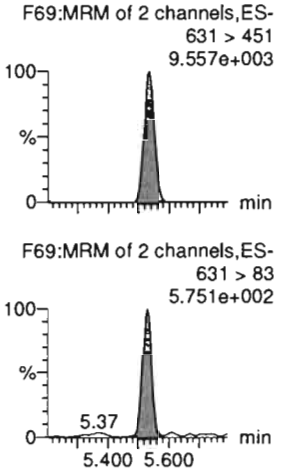
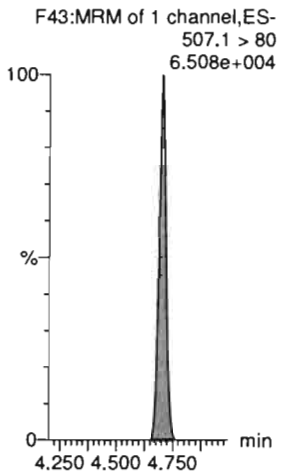


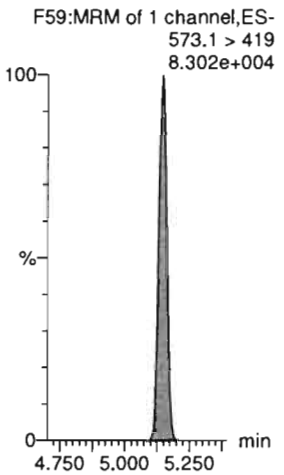
11Cl-PF30UdS



13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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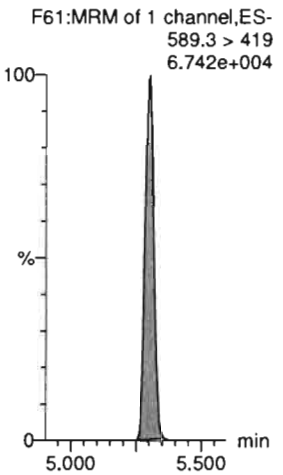
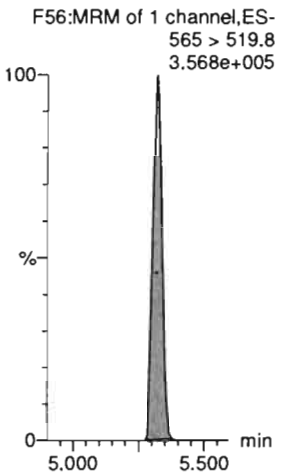
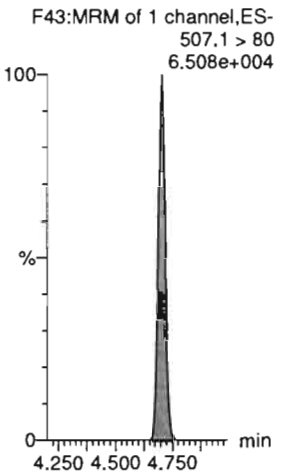


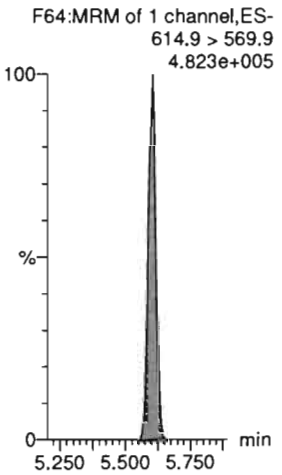
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

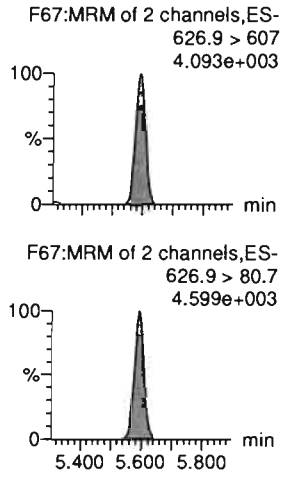


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

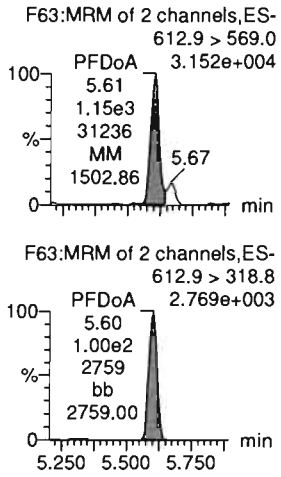
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

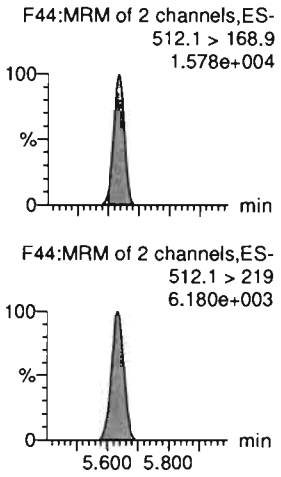
10:2 FTS



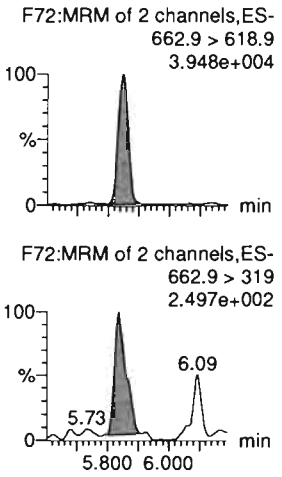
PFDoA



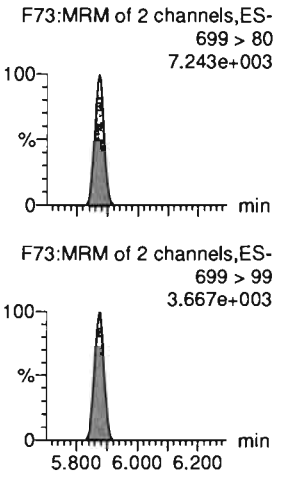
N-MeFOSA



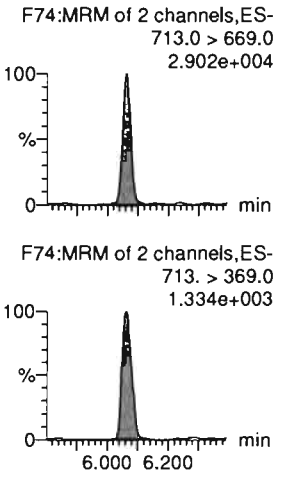
PFTrDA



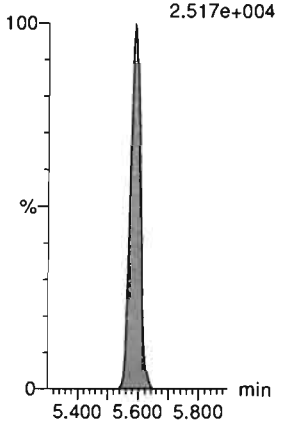
PFDoS



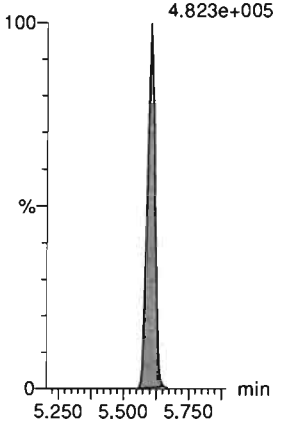
PFTeDA



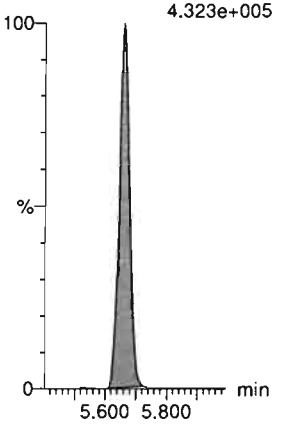
13C2-10:2 FTS-EIS



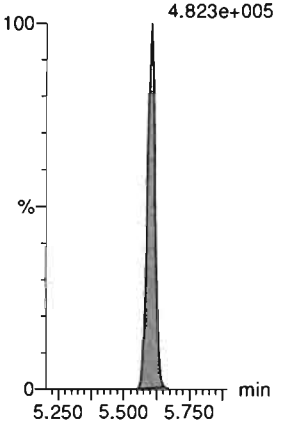
13C2-PFDoA-EIS



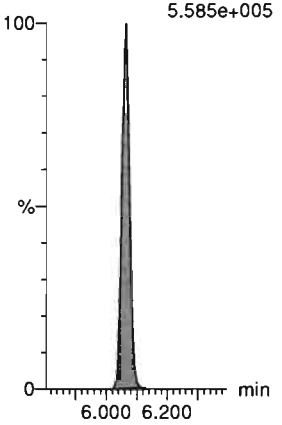
d3-N-MeFOSA-EIS



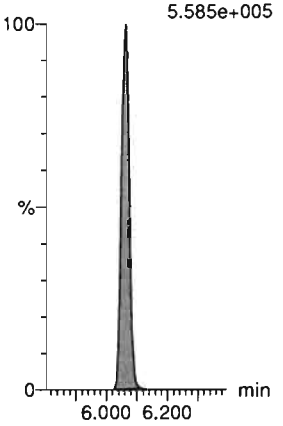
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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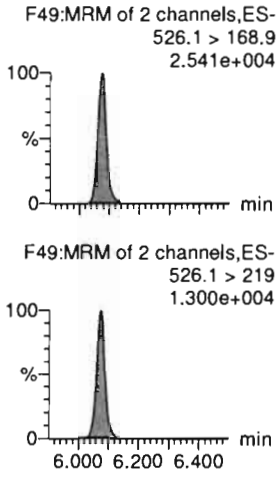
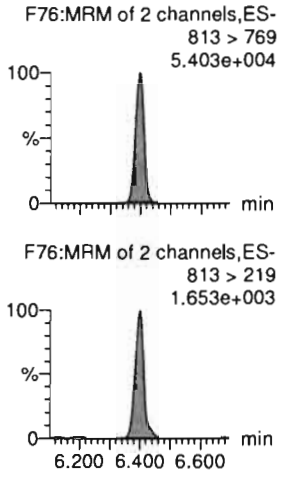
Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

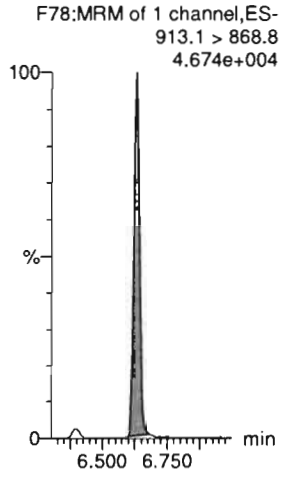
N-EtFOSA



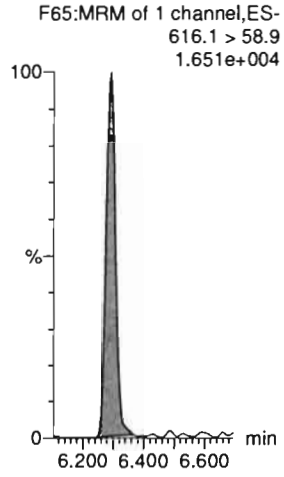
PFHxDA



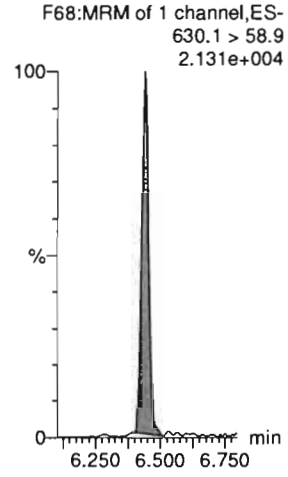
PFODA



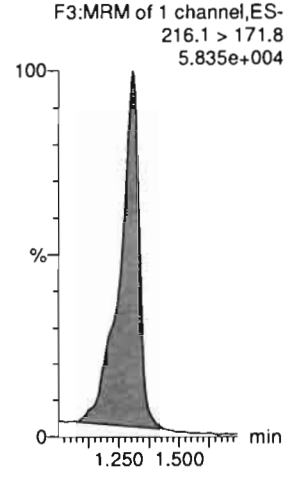
N-MeFOSE



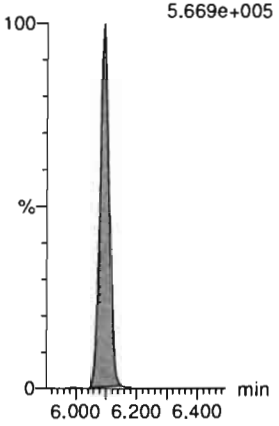
N-EtFOSE



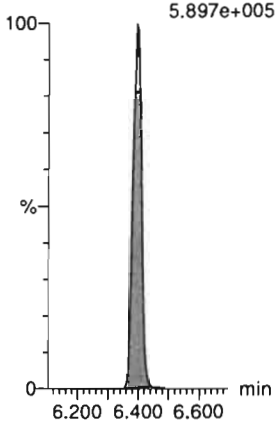
13C3-PFBA-RSD



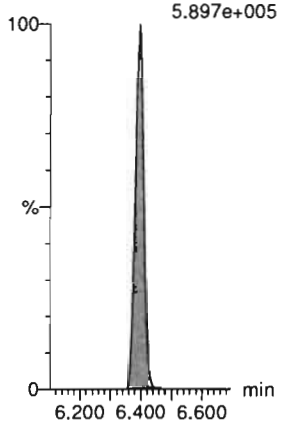
d5-N-ETFOSA-EIS



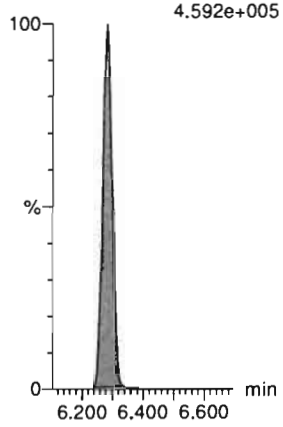
13C2-PFHxDA-EIS



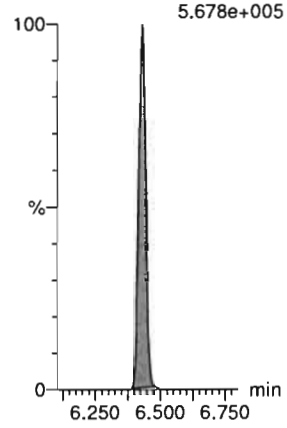
13C2-PFHxDA-EIS



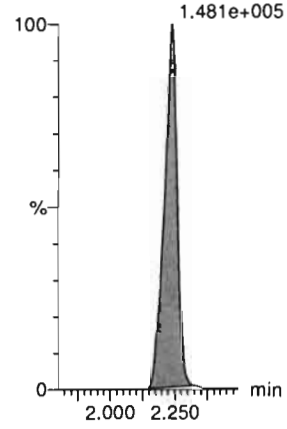
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

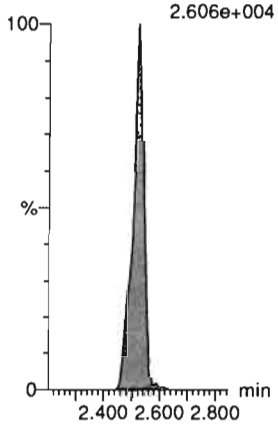


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

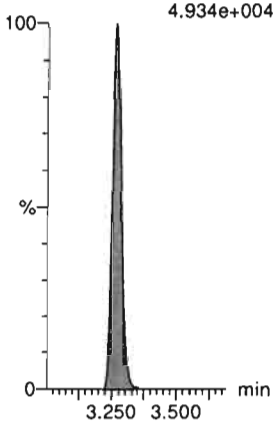
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

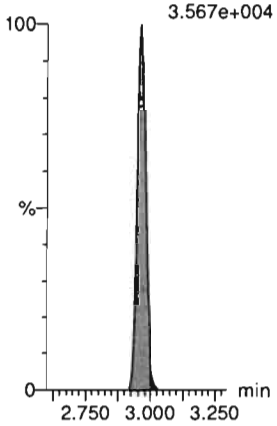
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.606e+004



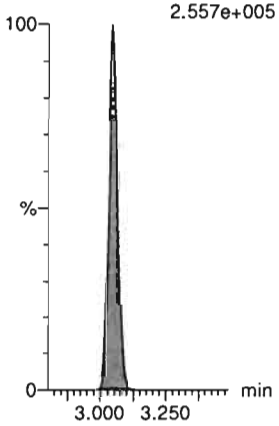
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
4.934e+004



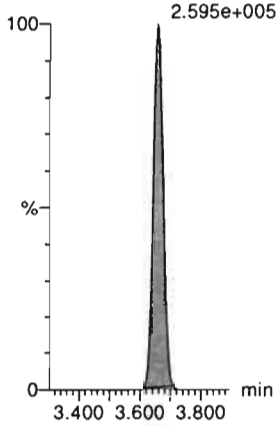
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.567e+004



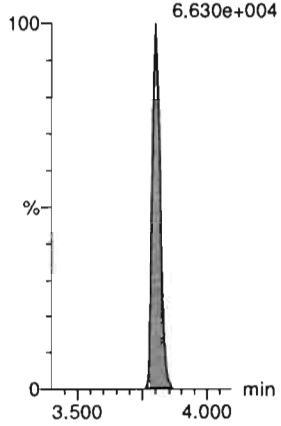
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.557e+005



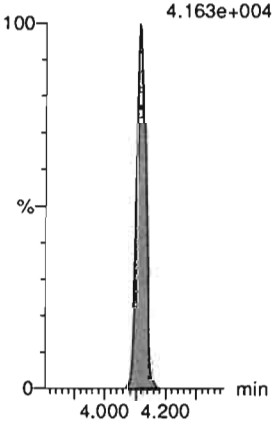
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.595e+005



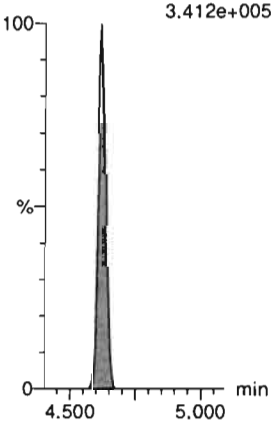
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.630e+004



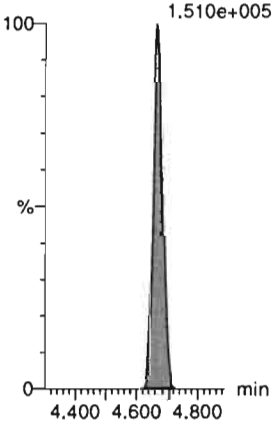
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.163e+004



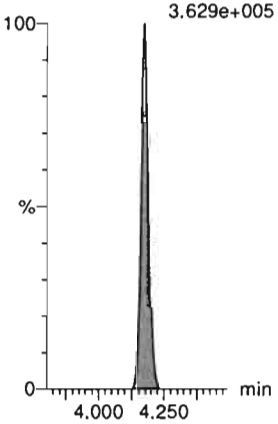
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.412e+005



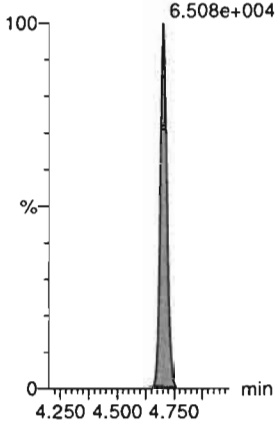
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.510e+005



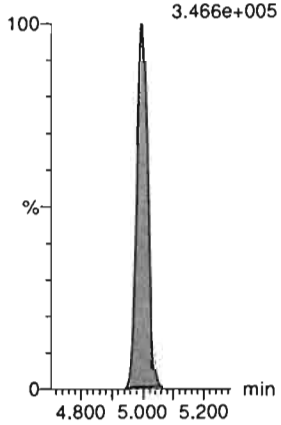
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.629e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.508e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.466e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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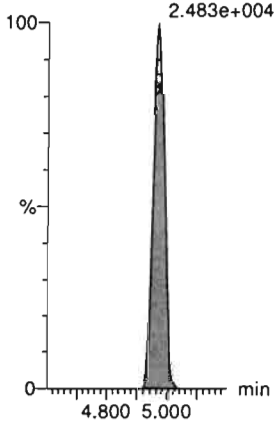
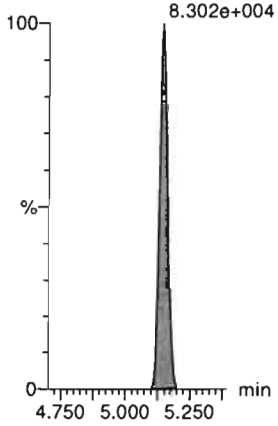
Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

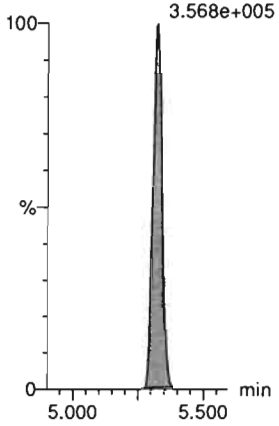
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
2.483e+004



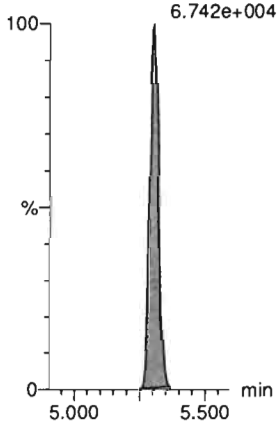
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
8.302e+004



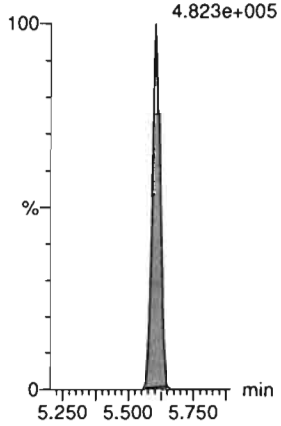
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.568e+005



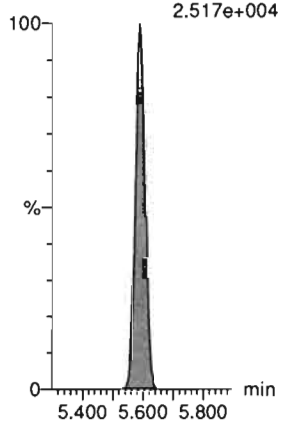
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
6.742e+004



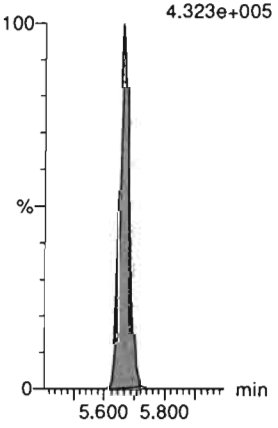
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.823e+005



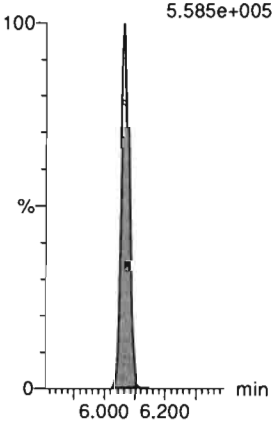
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.517e+004



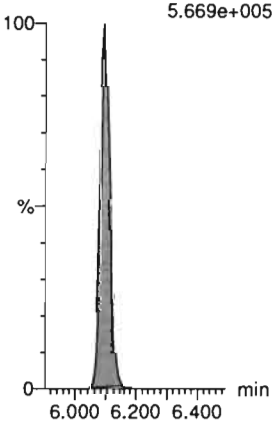
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.323e+005



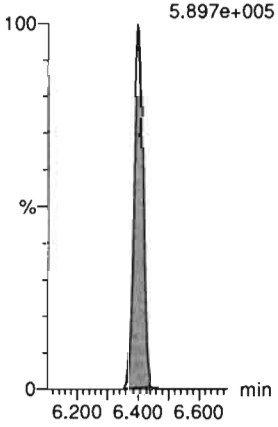
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.585e+005



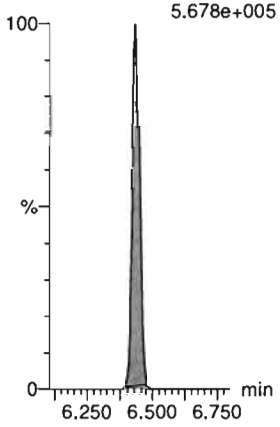
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.669e+005



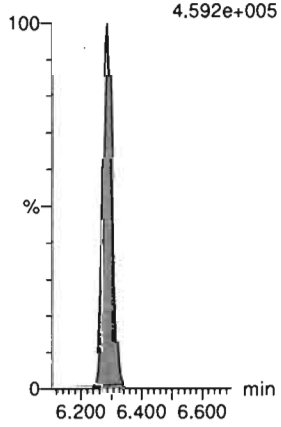
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
5.897e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.678e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.592e+005



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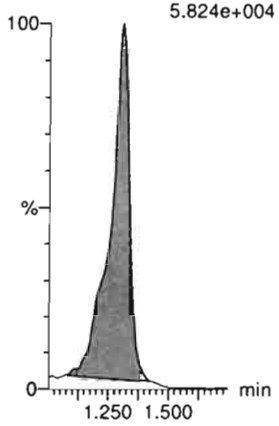
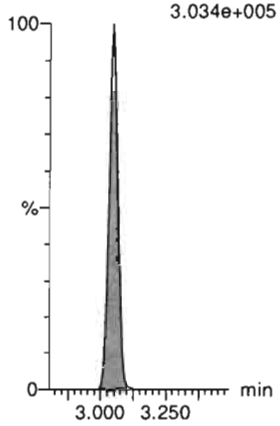
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-07, Date: 23-Jul-2020, Time: 11:01:03, ID: ST200723P1-3 PFC CS0 20G1603, Description: PFC CS0 20G1603

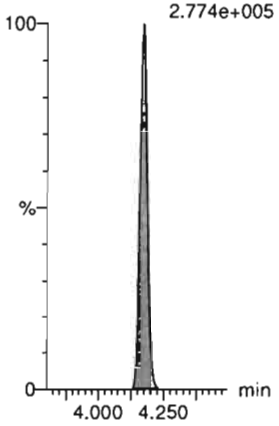
13C4-PFBA



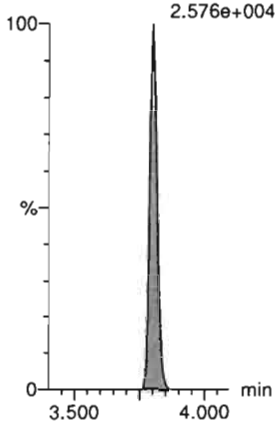
13C5-PFHxA



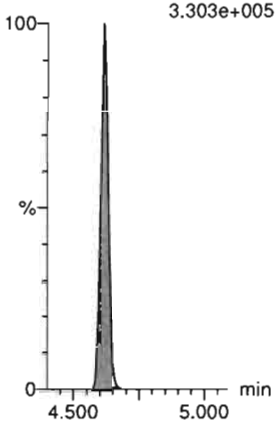
13C8-PFOA



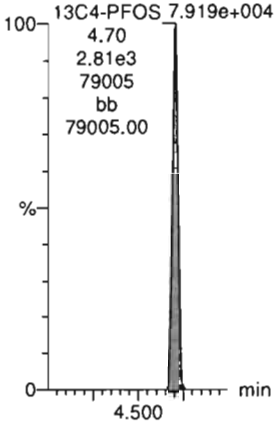
18O2-PFHxS



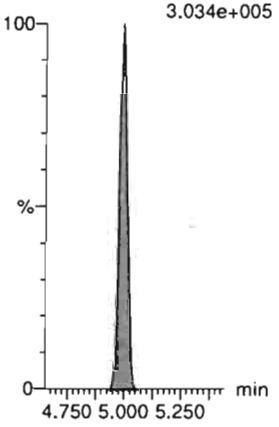
13C9-PFNA



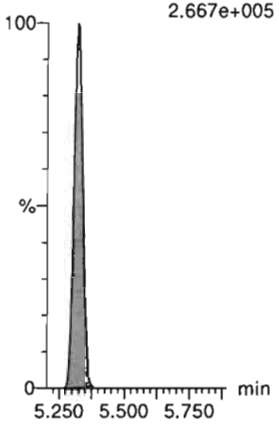
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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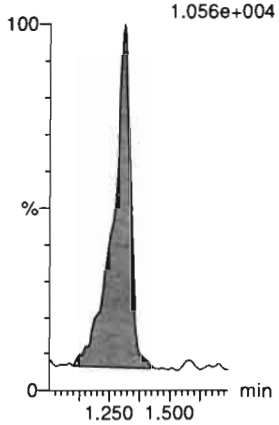
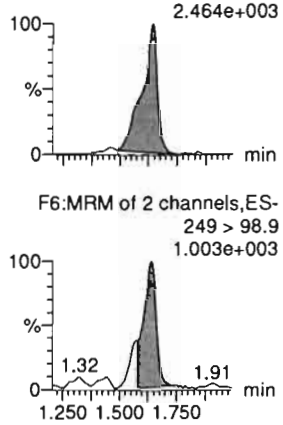
Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

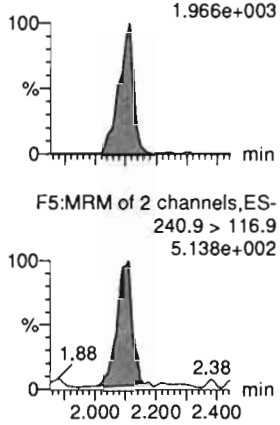
PFBA



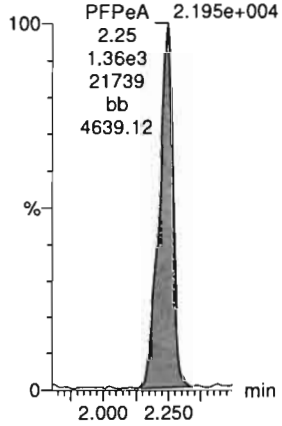
PFPrS



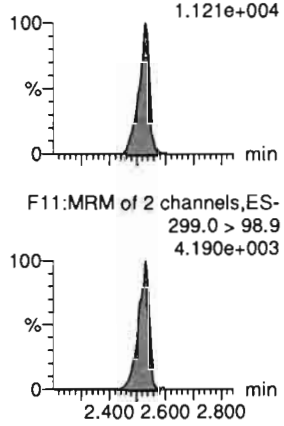
3:3 FTCA



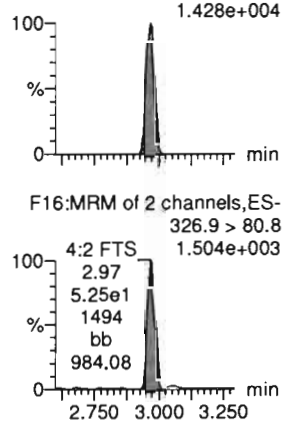
PFPeA



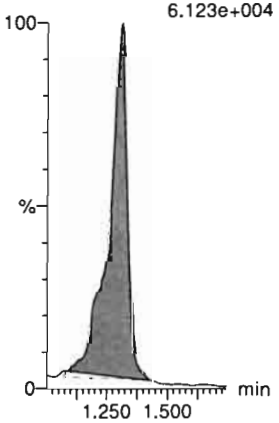
PFBS



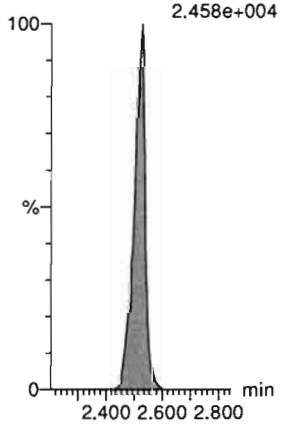
4:2 FTS



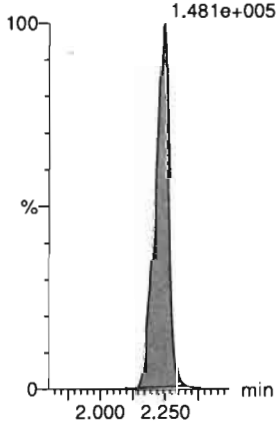
13C3-PFBA-EIS



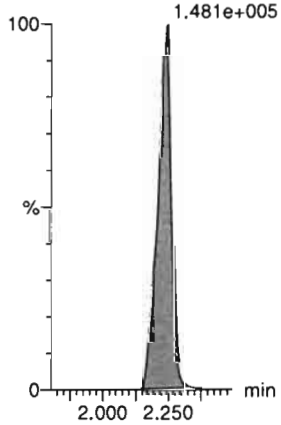
13C3-PFBS-EIS



13C3-PFPeA-EIS



13C3-PFPeA-EIS



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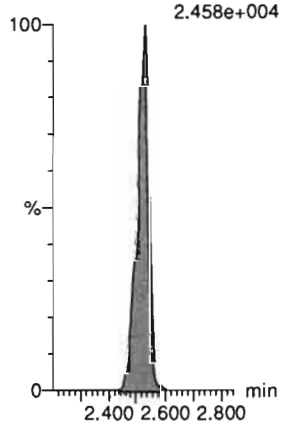
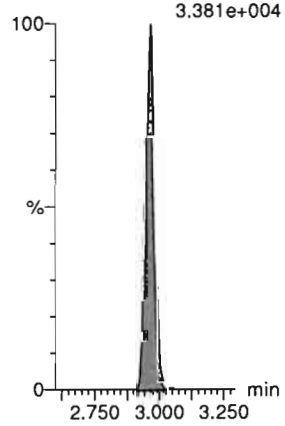


13C2-4:2 FTS-EIS



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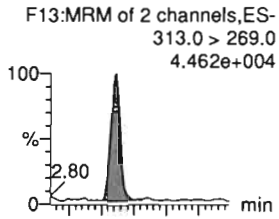
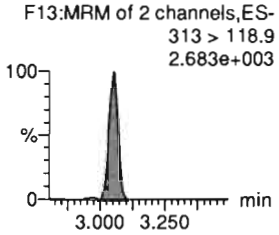
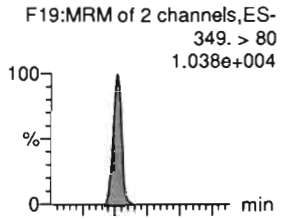
Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

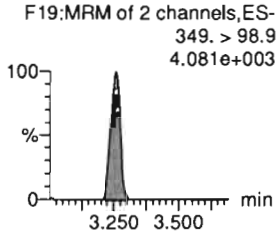
PFHxA



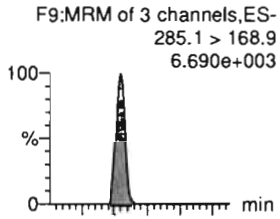


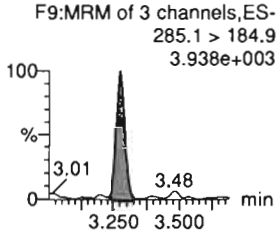
PFPeS



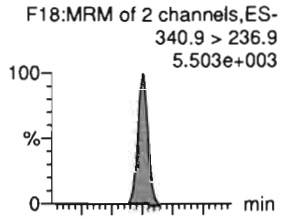


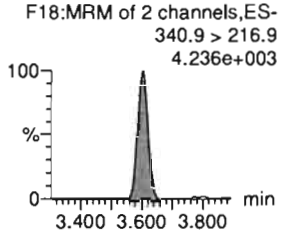
HFPO-DA



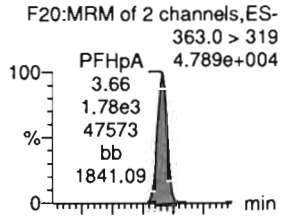


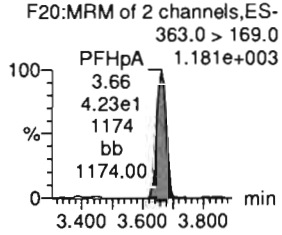
5:3 FTCA



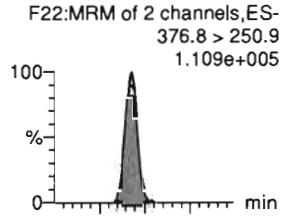


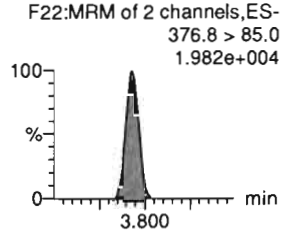
PFHpA



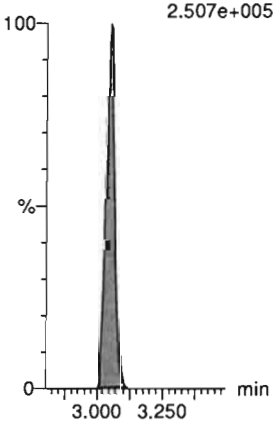


ADONA

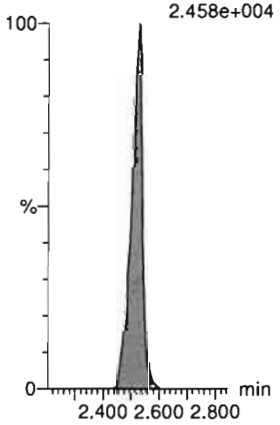




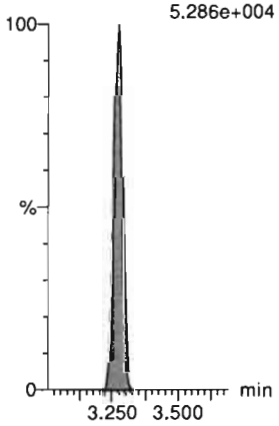
13C2-PFHxA-EIS



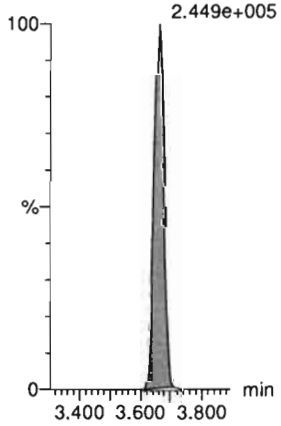
13C3-PFBS-EIS



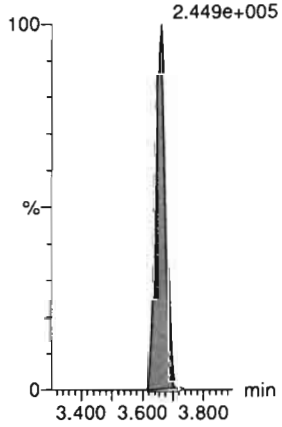
13C3-HFPO-DA-EIS



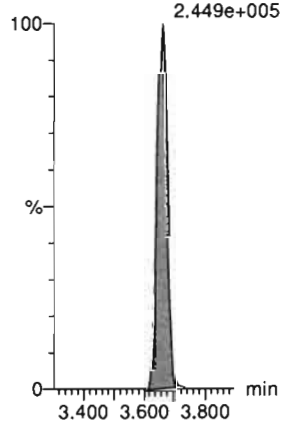
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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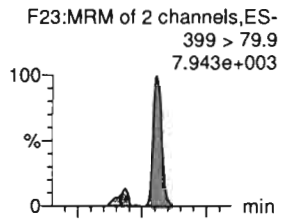
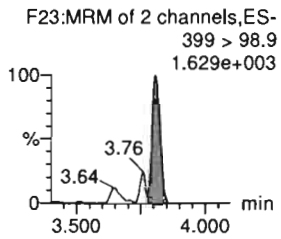
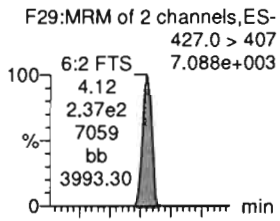
Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

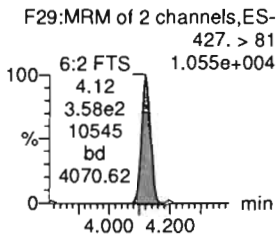
L-PFHxS



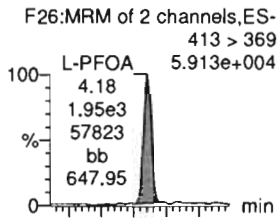


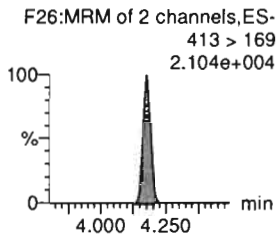
6:2 FTS



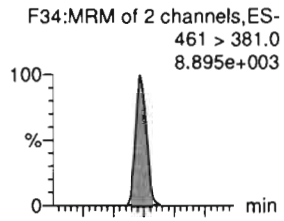


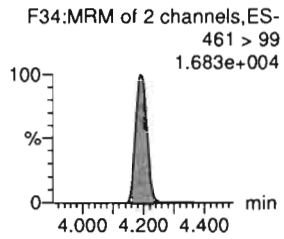
L-PFOA





PFEChS





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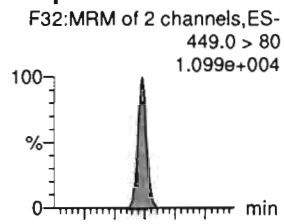
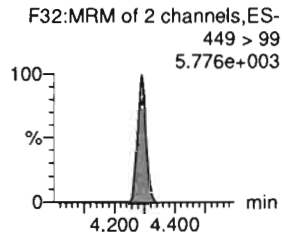
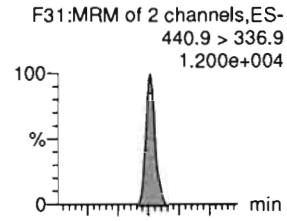
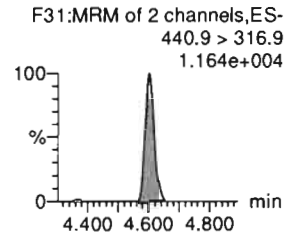


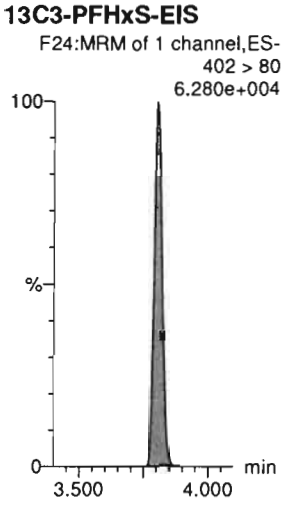


7:3 FTCA

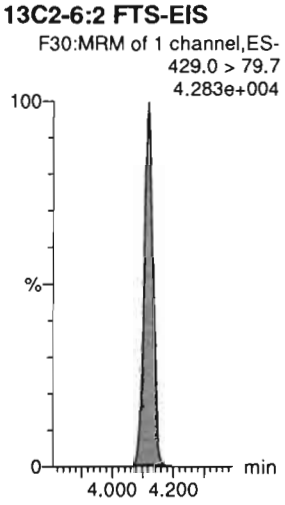




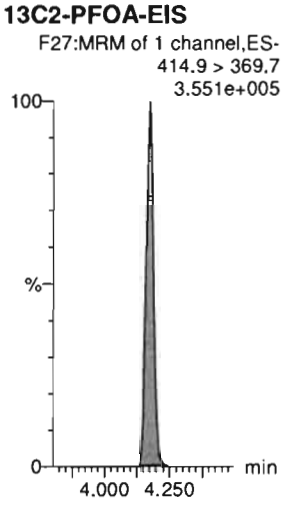
13C3-PFHxS-EIS



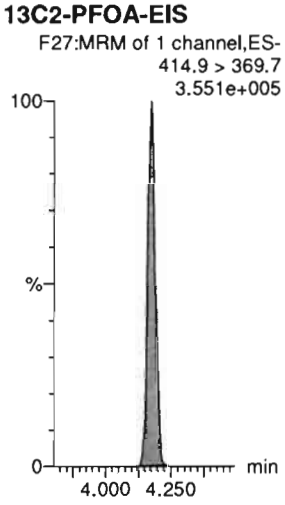
13C2-6:2 FTS-EIS



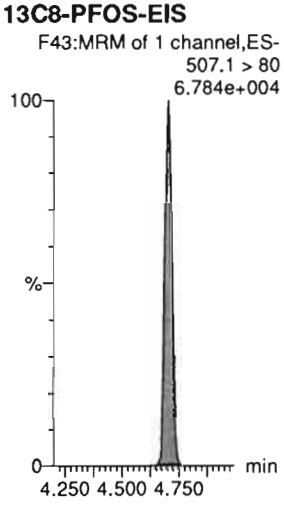
13C2-PFOA-EIS



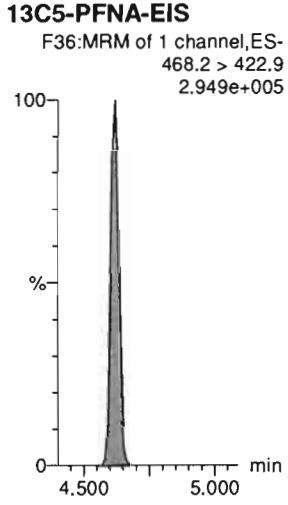
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

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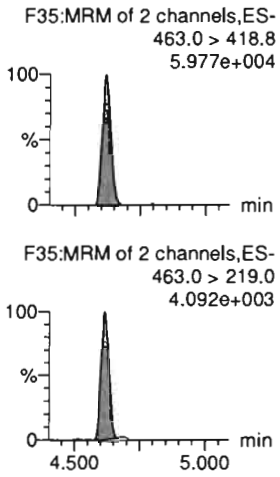

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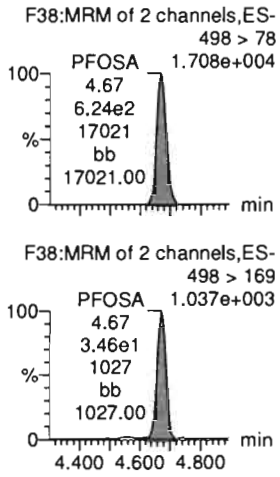
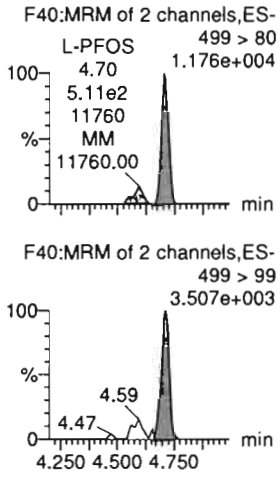
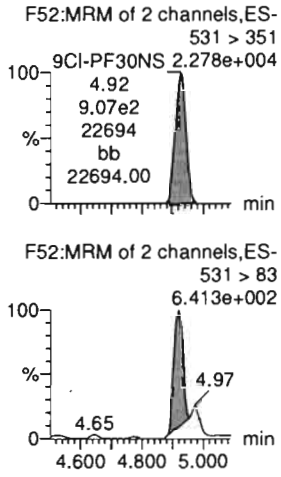


L-PFOS



9Cl-PF30NS



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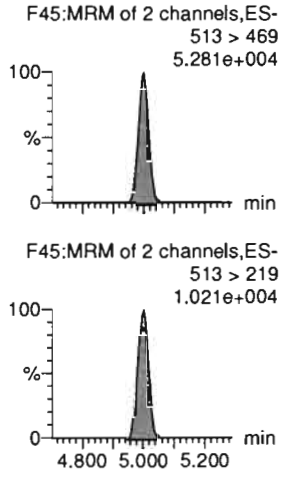
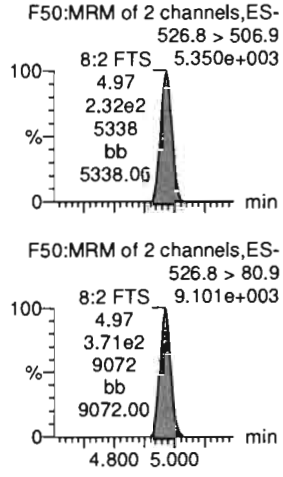
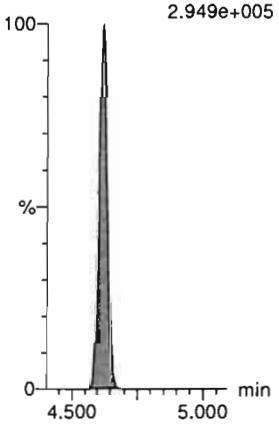


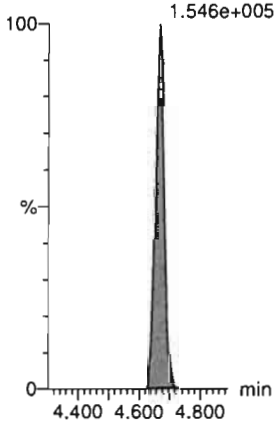
8:2 FTS



13C5-PFNA-EIS



13C8-PFOSA-EIS



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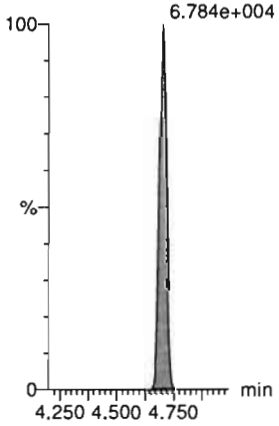

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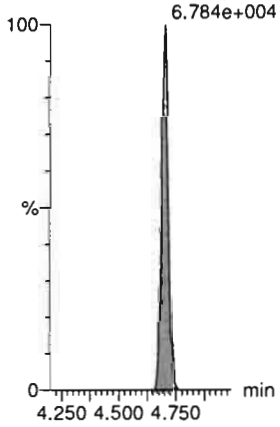
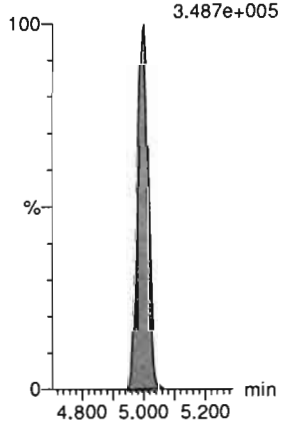
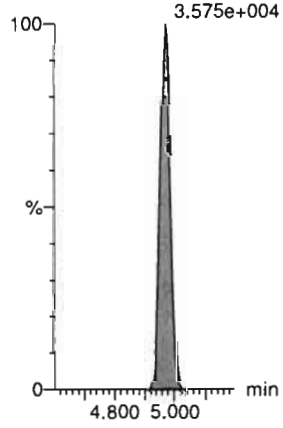


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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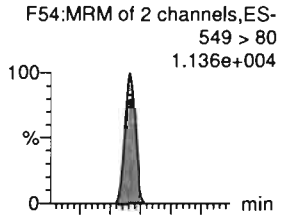
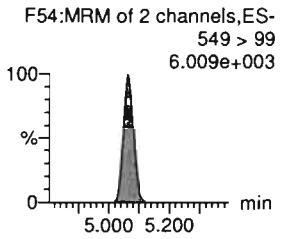
Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

PFNS





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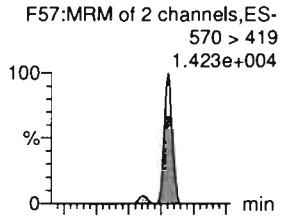

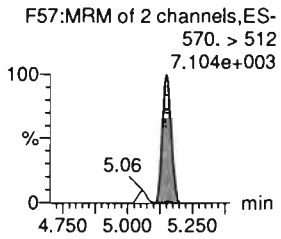

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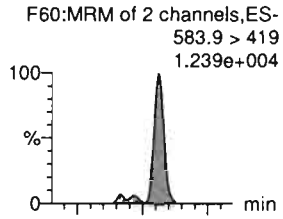

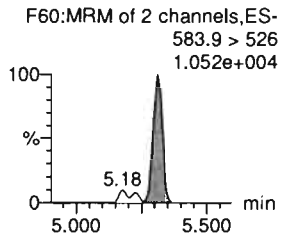

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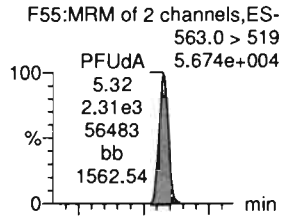
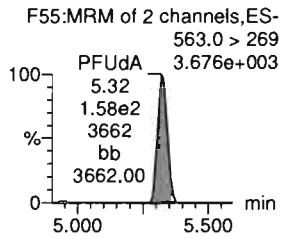
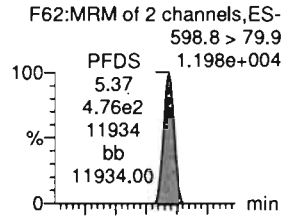
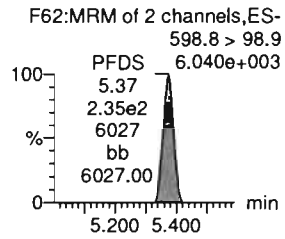


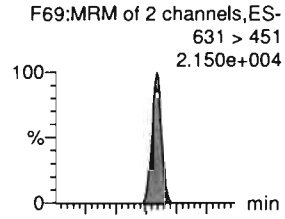


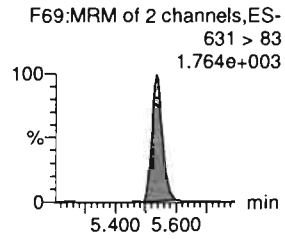
PFDS



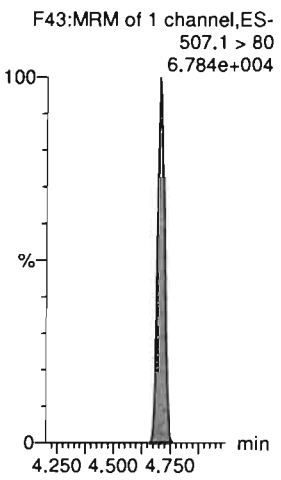


11Cl-PF30UdS

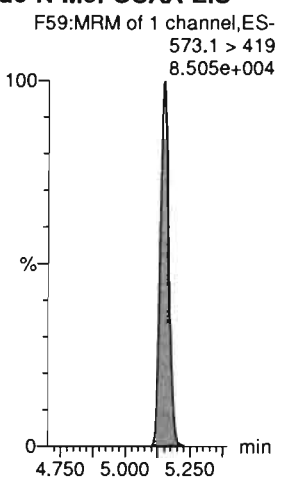




13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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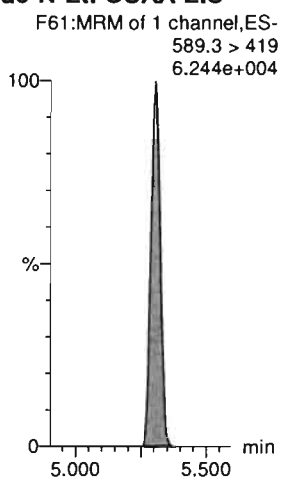
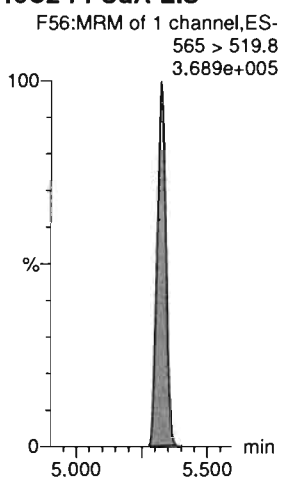
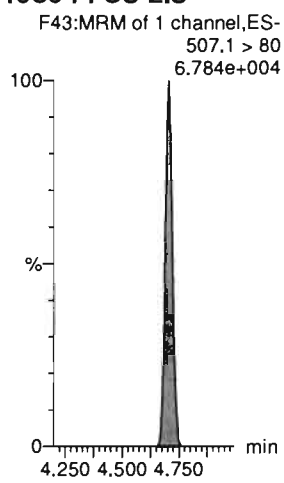


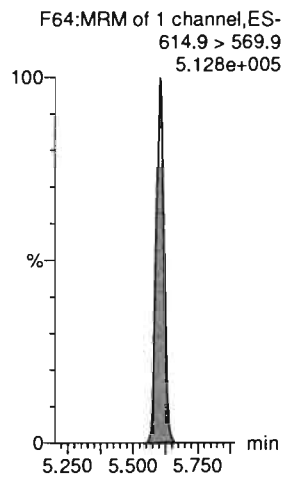
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



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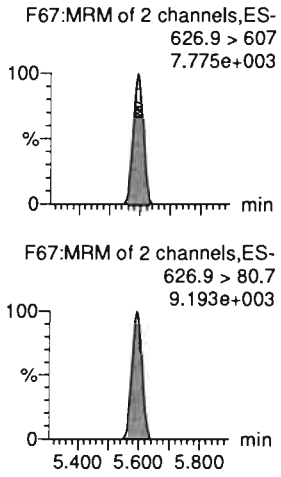
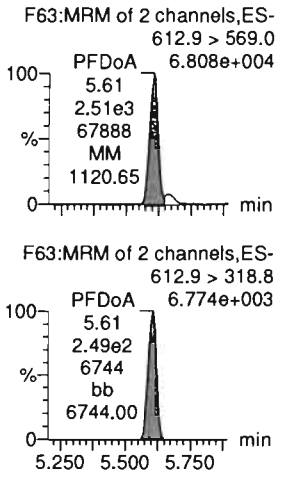
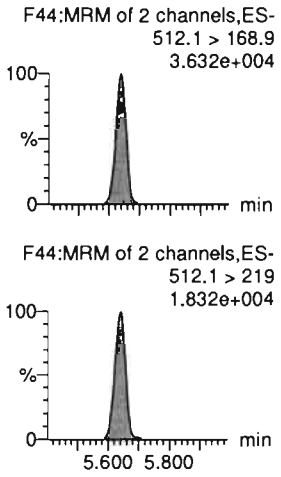
10:2 FTS



PFDoA



N-MeFOSA



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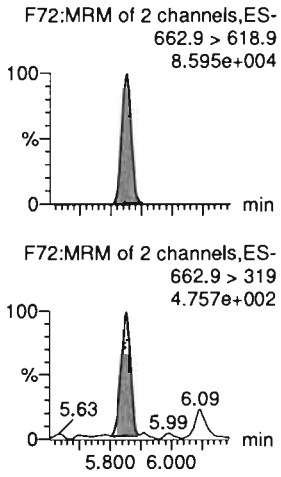
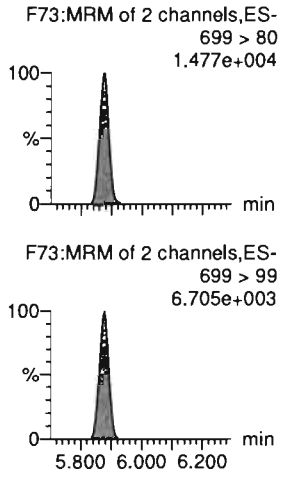
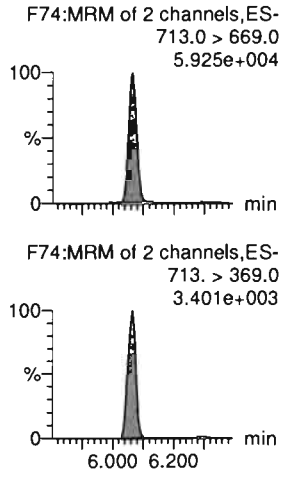


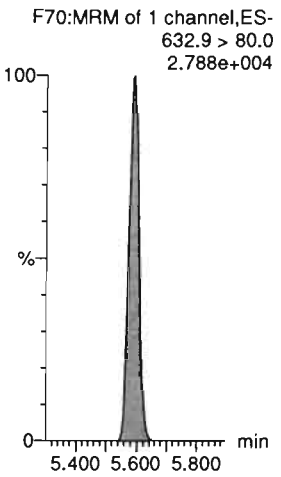
PFDoS



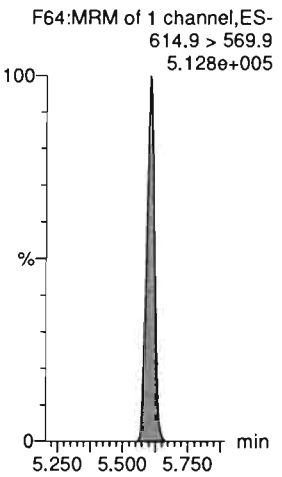
PFTeDA



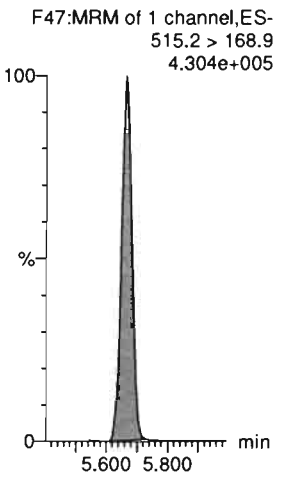
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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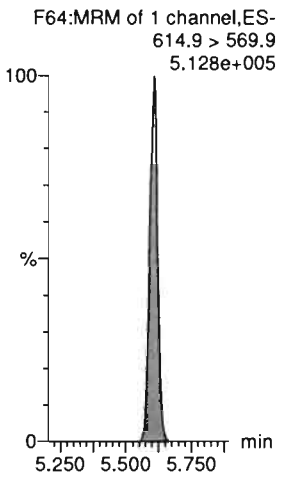
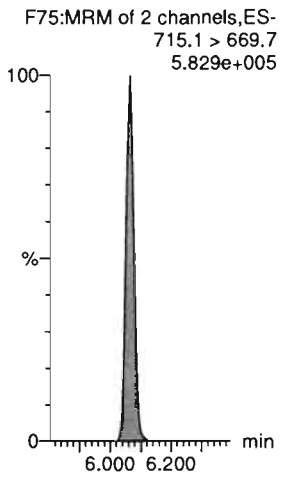
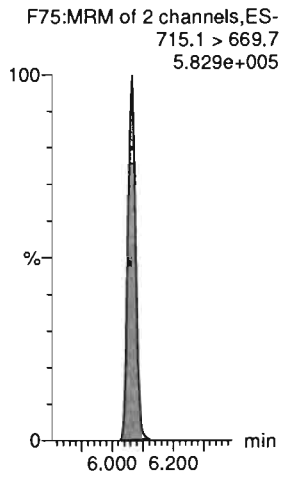


13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

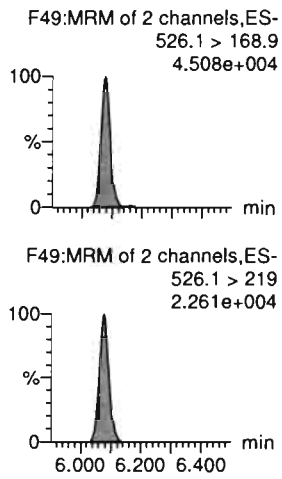


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

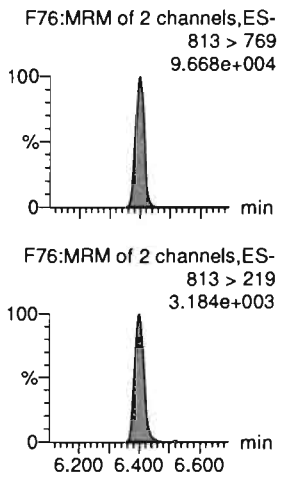
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

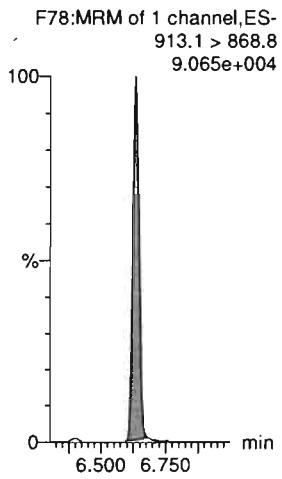
N-EtFOSA



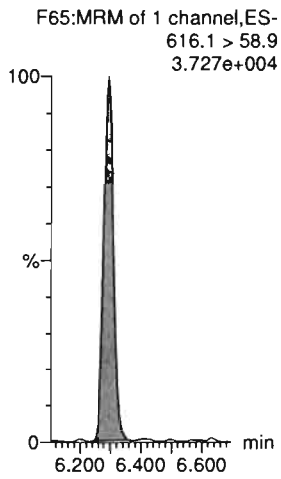
PFHxDA



PFODA



N-MeFOSE



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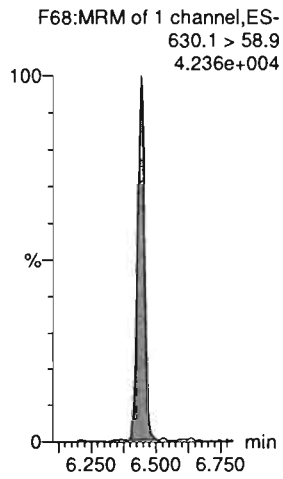
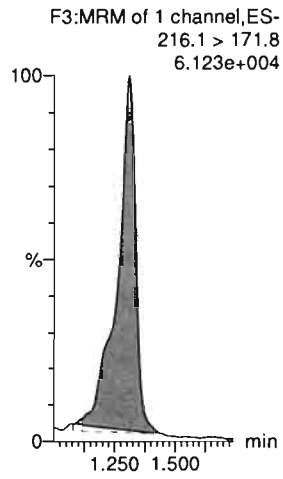
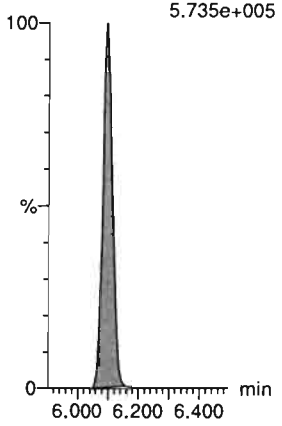


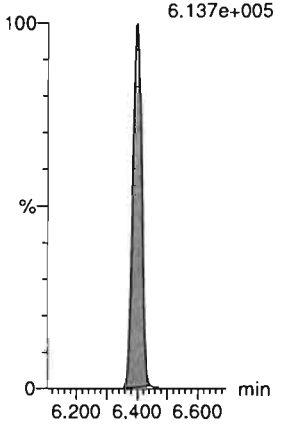
13C3-PFBA-RSD



d5-N-ETFOSA-EIS



13C2-PFHxDA-EIS



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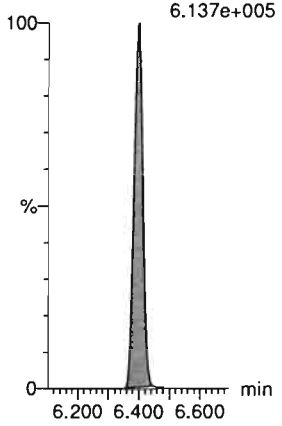
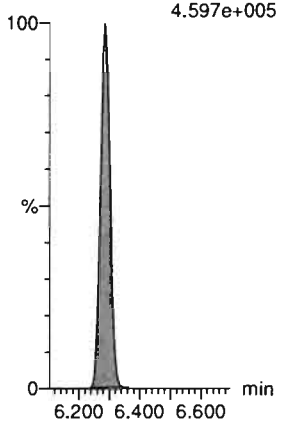
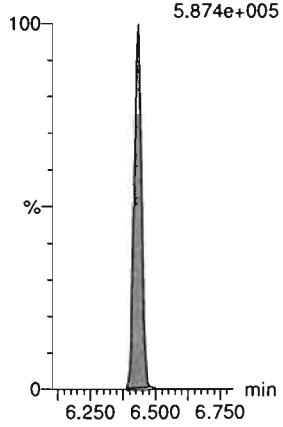


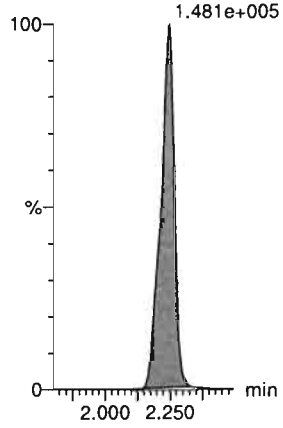
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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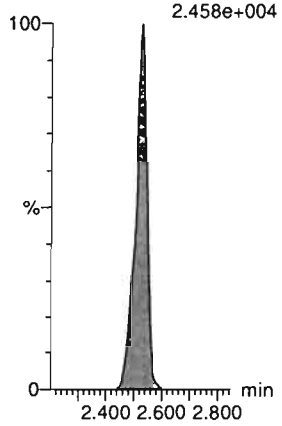
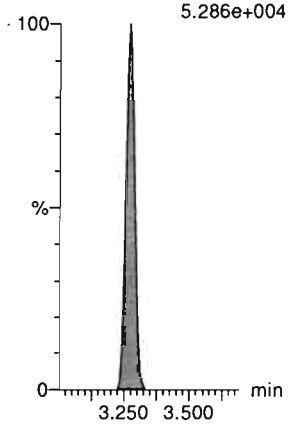
Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

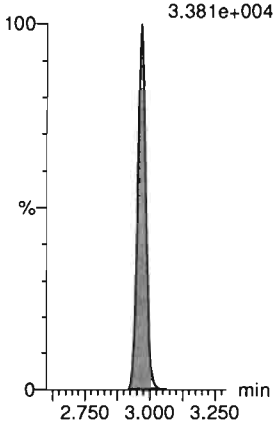
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.458e+004



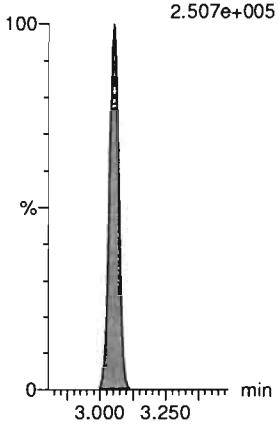
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.286e+004



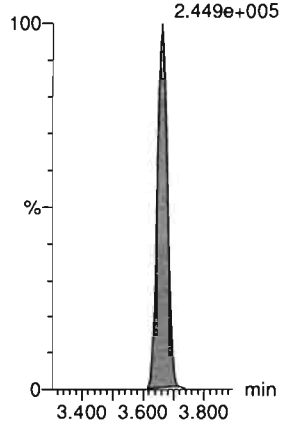
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.381e+004



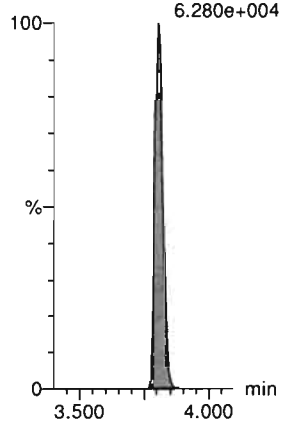
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.507e+005



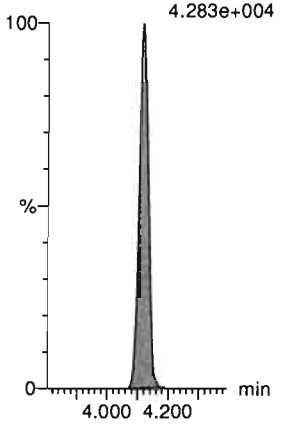
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.449e+005



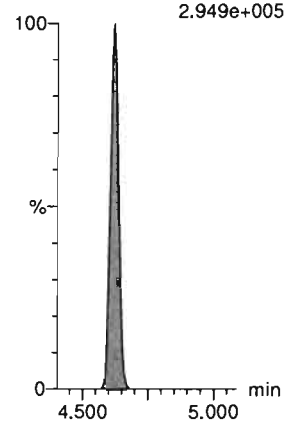
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.280e+004



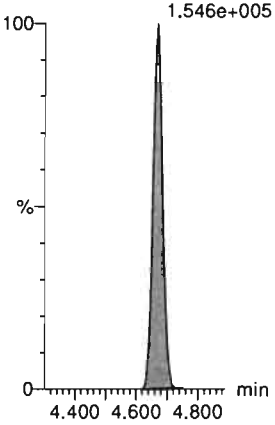
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.283e+004



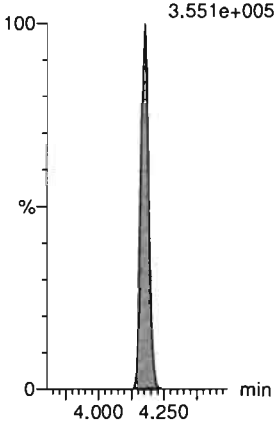
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
2.949e+005



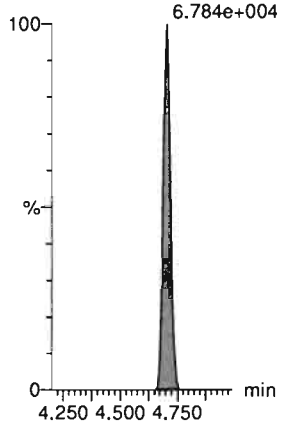
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.546e+005



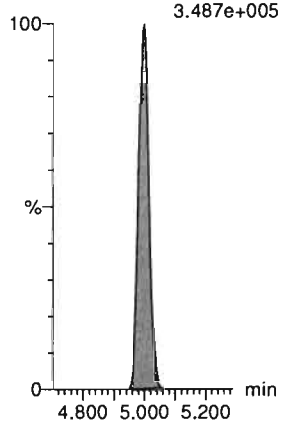
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.551e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.784e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.487e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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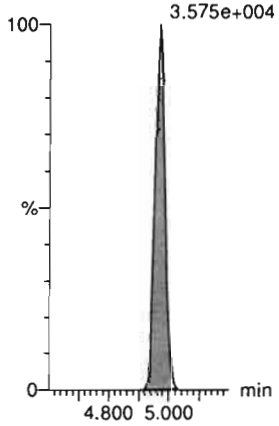
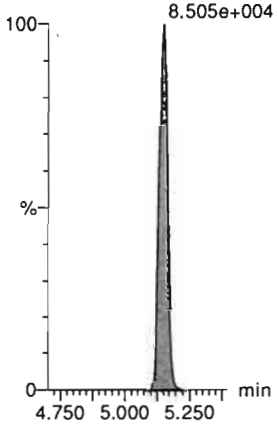
Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

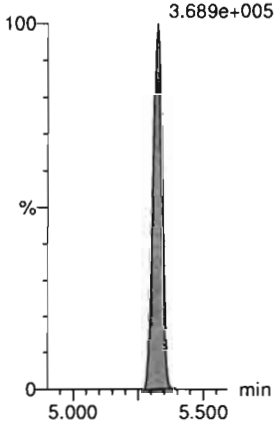
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.575e+004



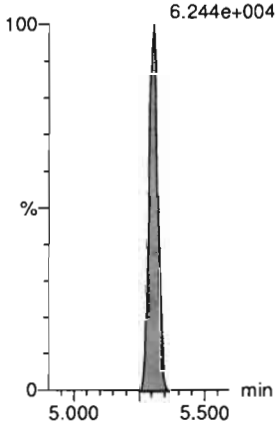
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
8.505e+004



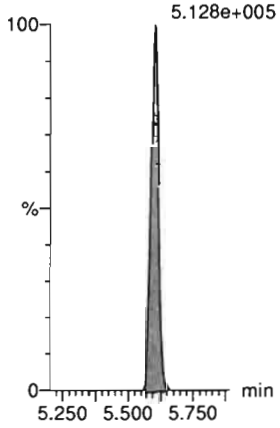
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.689e+005



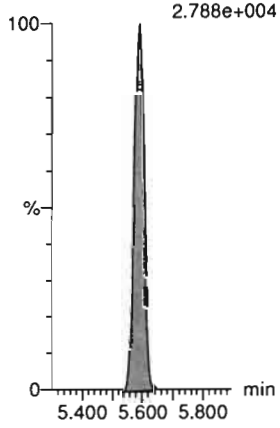
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
6.244e+004



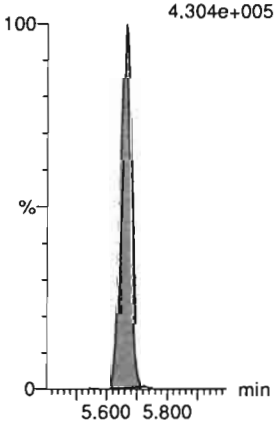
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
5.128e+005



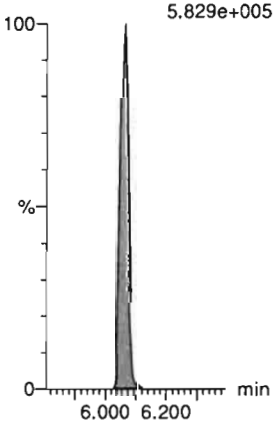
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.788e+004



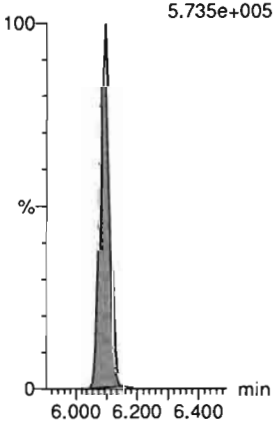
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.304e+005



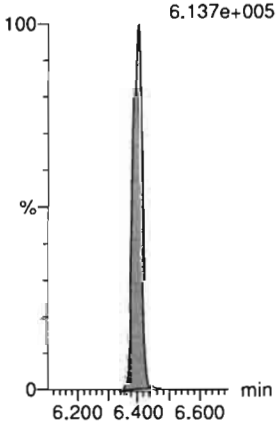
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.829e+005



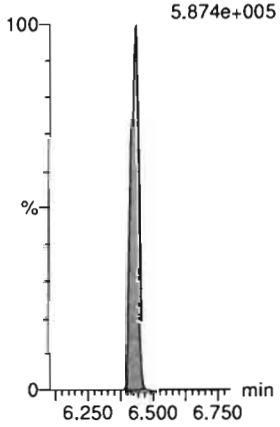
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.735e+005



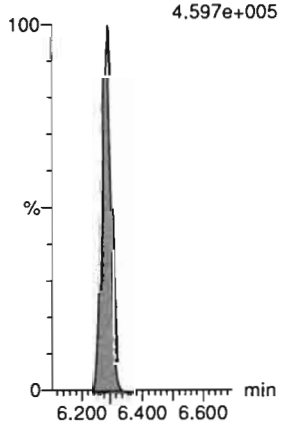
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.137e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.874e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.597e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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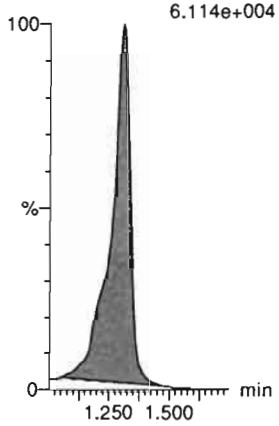
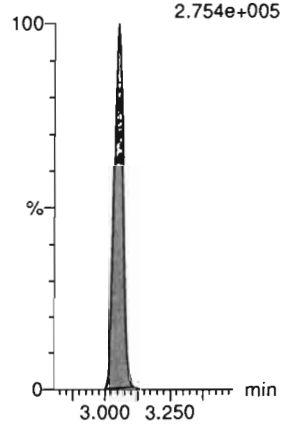
Name: 200723P1-08, Date: 23-Jul-2020, Time: 11:11:38, ID: ST200723P1-4 PFC CS1 20G1604, Description: PFC CS1 20G1604

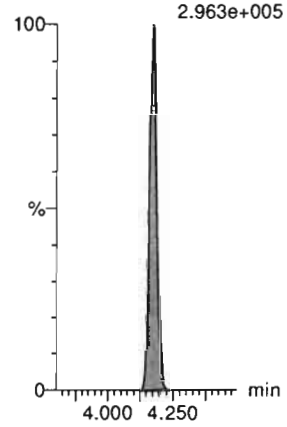
13C4-PFBA



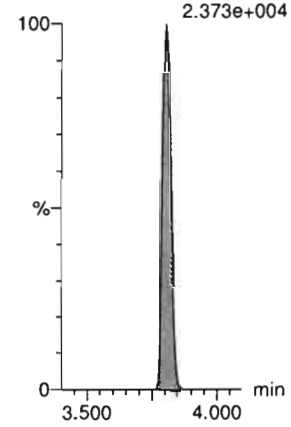
13C5-PFHxA



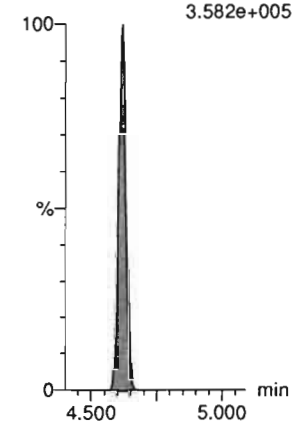
13C8-PFOA



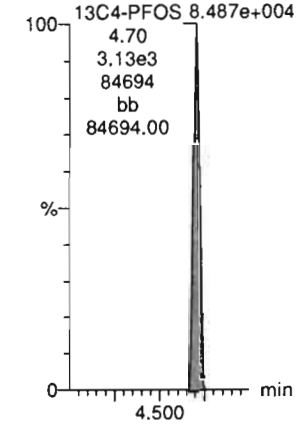
18O2-PFHxS



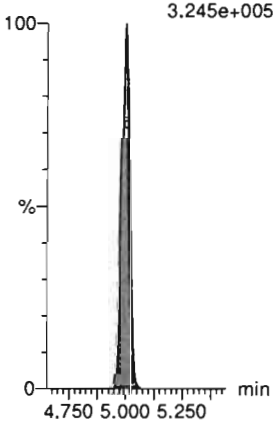
13C9-PFNA



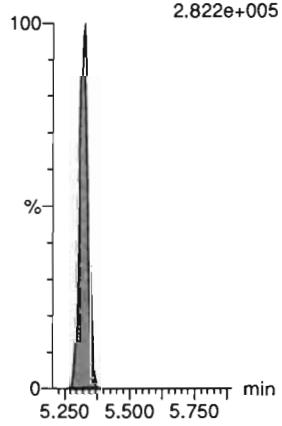
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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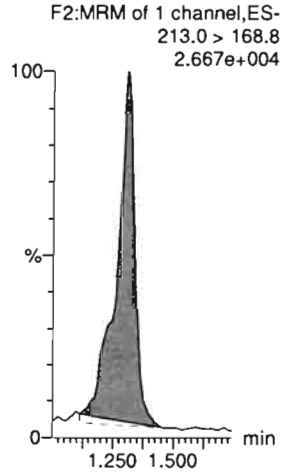
Printed: Thursday, July 23, 2020 14:00:36 Pacific Daylight Time

Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

PFBA



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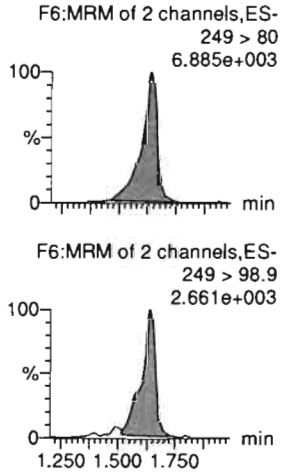
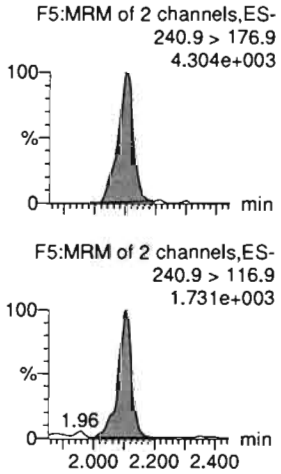


3:3 FTCA



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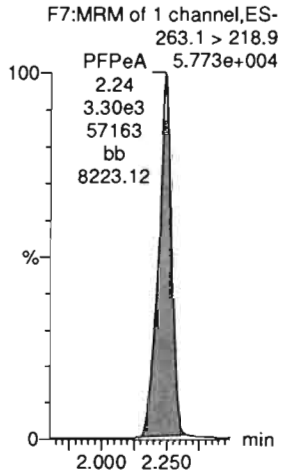
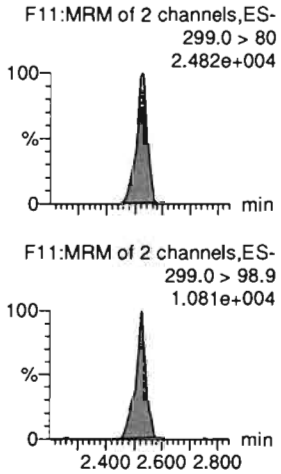
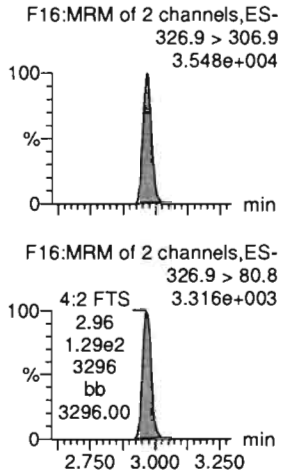


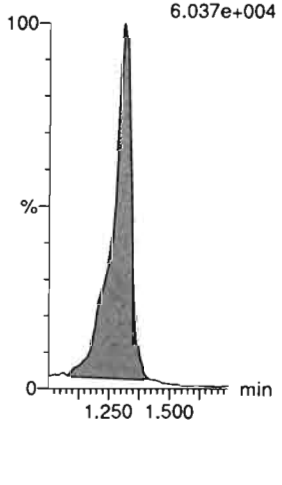
PFBS



4:2 FTS



13C3-PFBA-EIS



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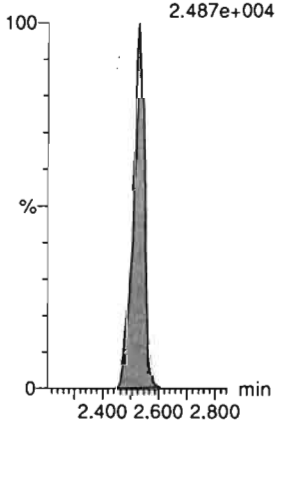

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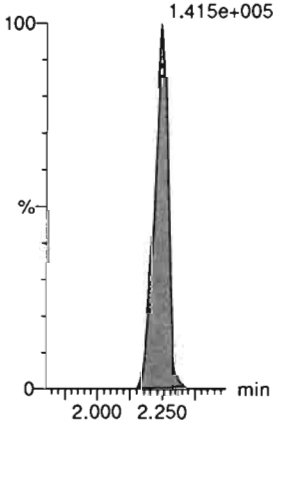

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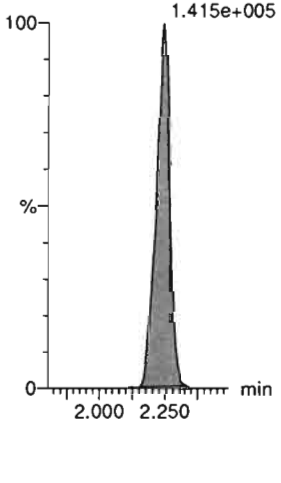

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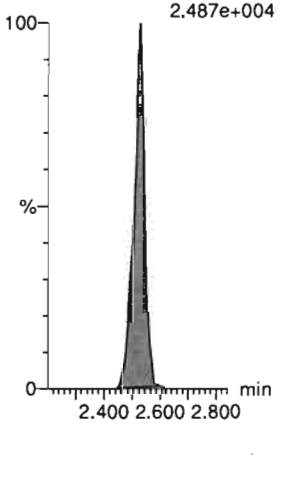
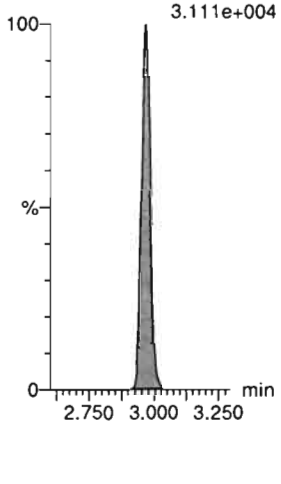


13C2-4:2 FTS-EIS



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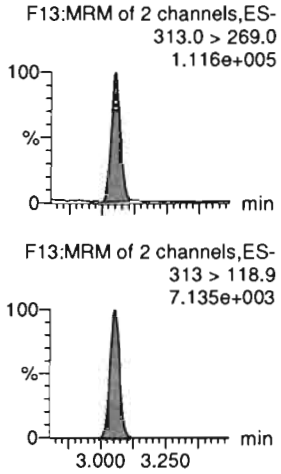
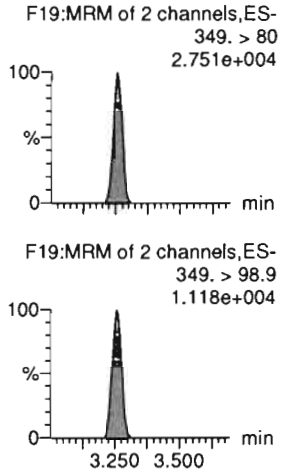
Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

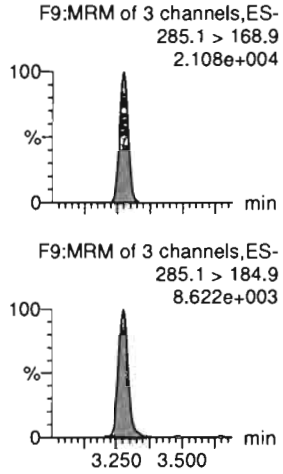
PFHxA



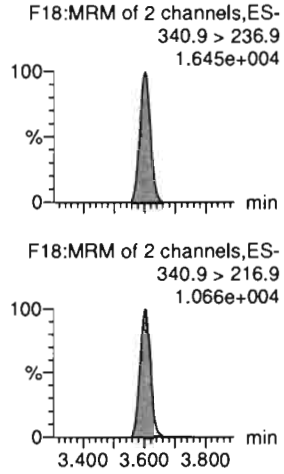
PFPeS



HFPO-DA



5:3 FTCA



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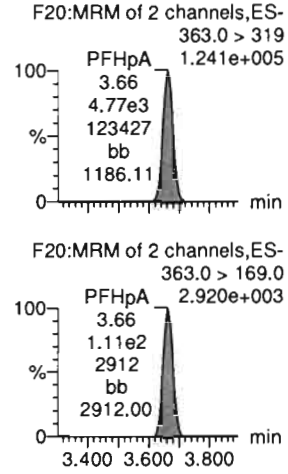
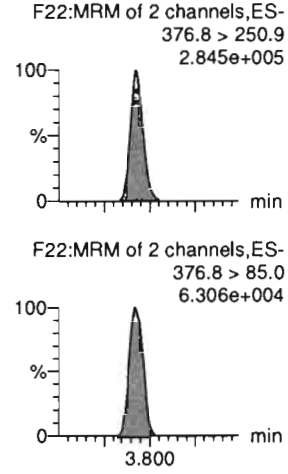


ADONA



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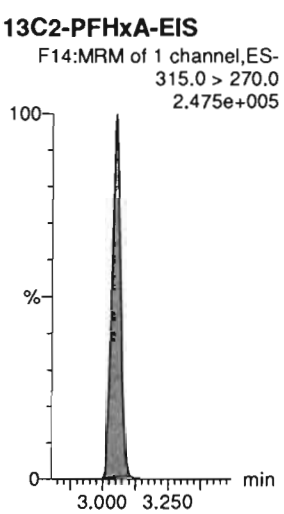
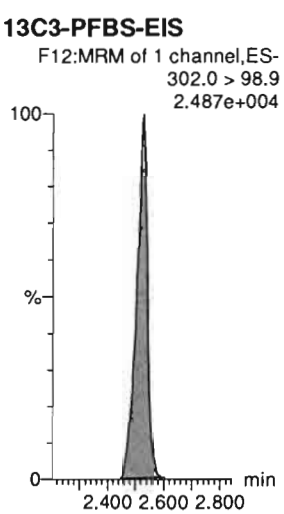
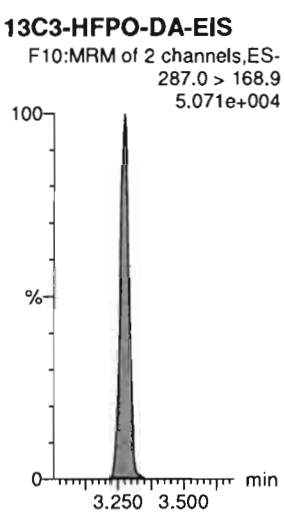


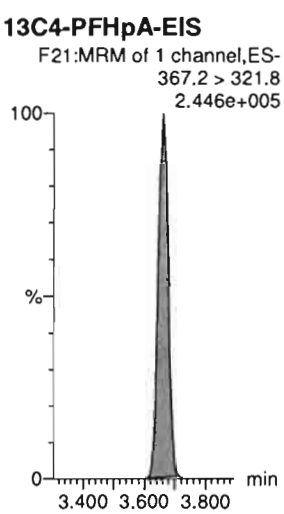
13C3-PFBS-EIS



13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



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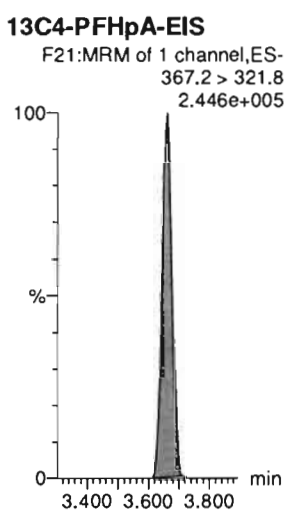

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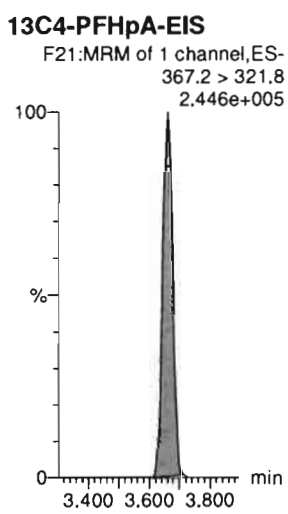

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Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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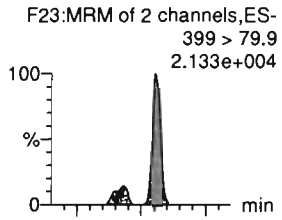
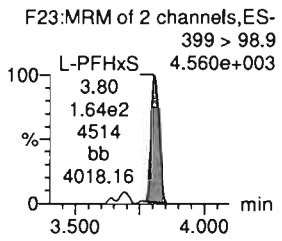
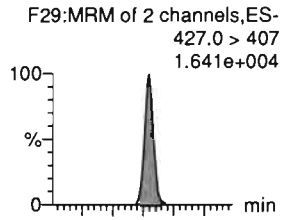
Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

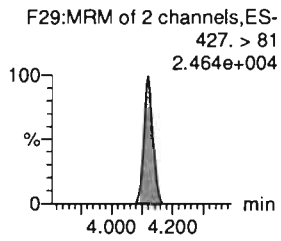
L-PFHxS



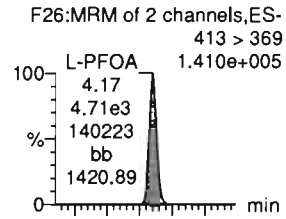


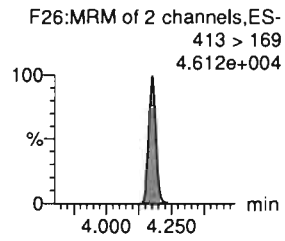
6:2 FTS



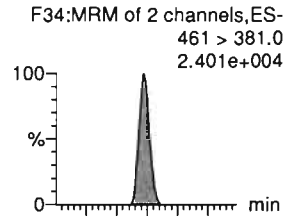


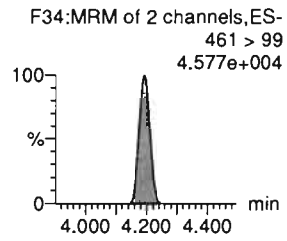
L-PFOA



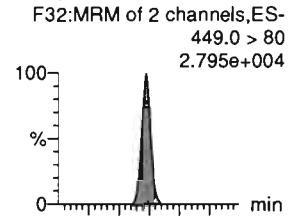


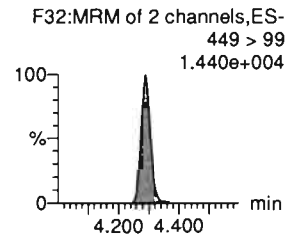
PFEChS



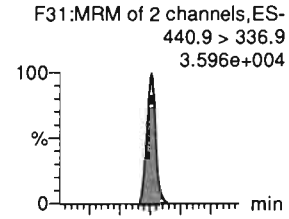


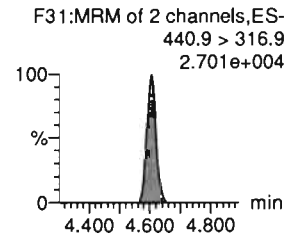
PFHpS



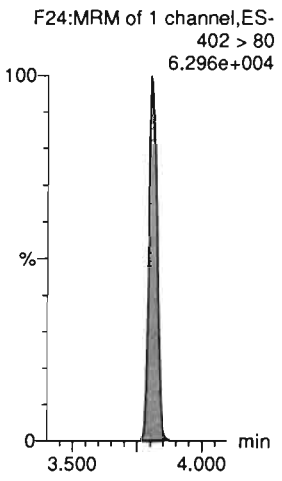


7:3 FTCA

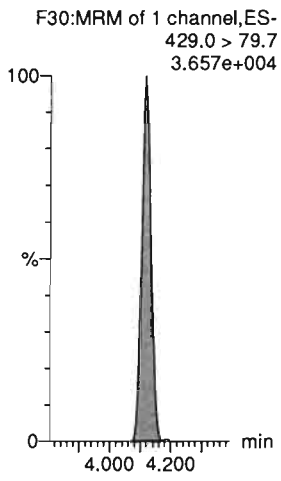




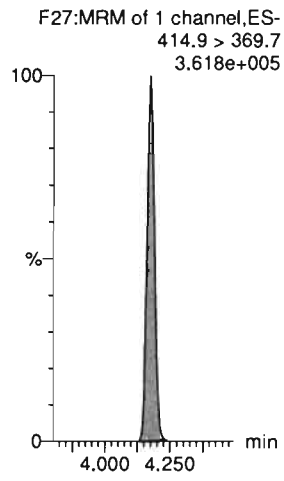
13C3-PFHxS-EIS



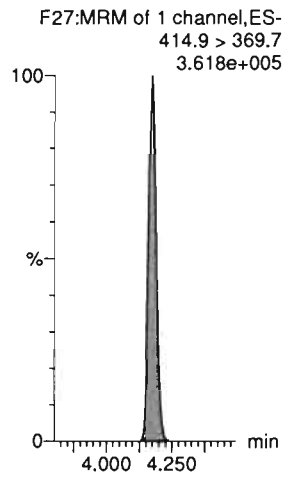
13C2-6:2 FTS-EIS



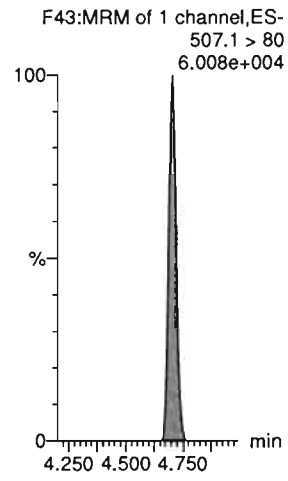
13C2-PFOA-EIS



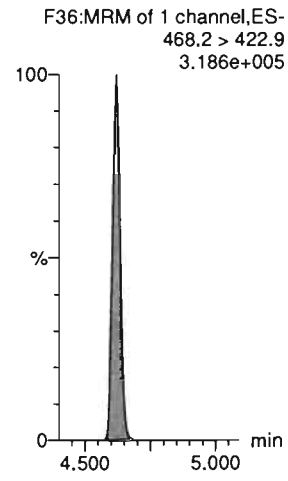
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



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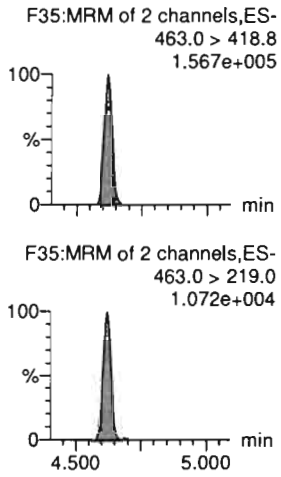
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

PFNA



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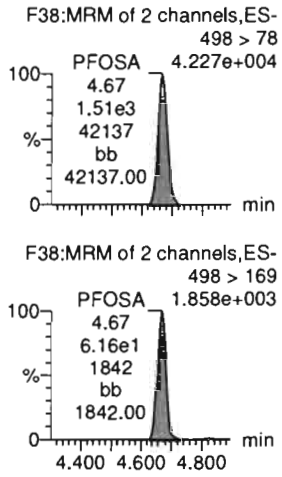
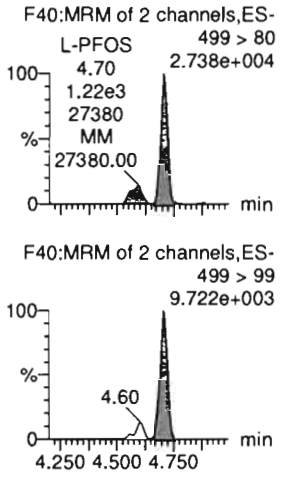
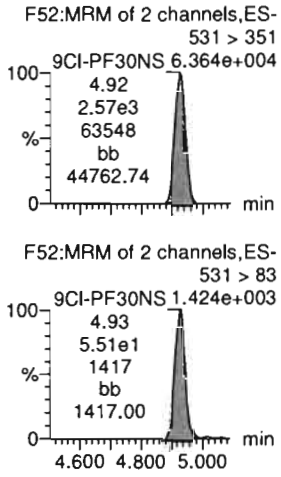


L-PFOS



9Cl-PF30NS



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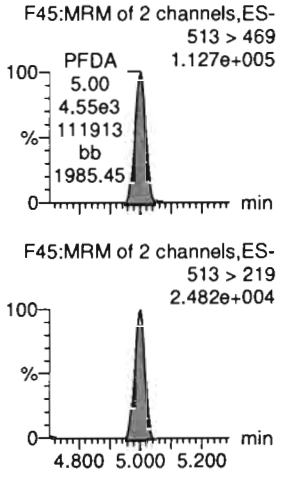
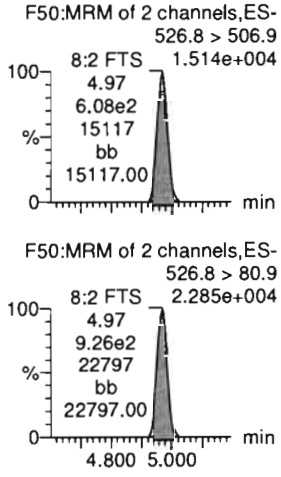
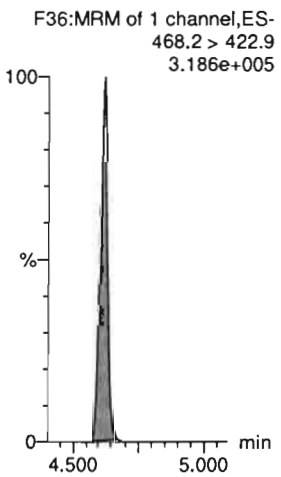


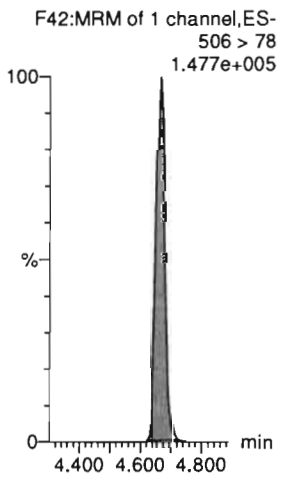
8:2 FTS



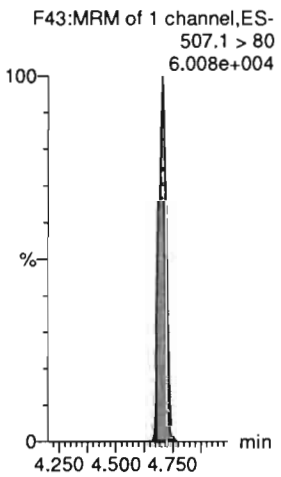
13C5-PFNA-EIS



13C8-PFOSA-EIS



13C8-PFOS-EIS



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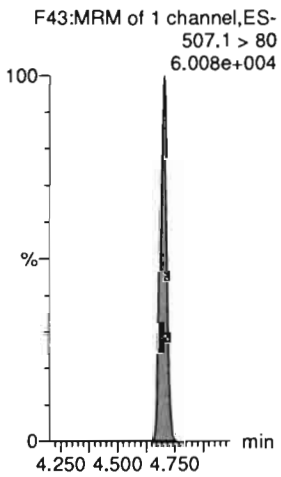

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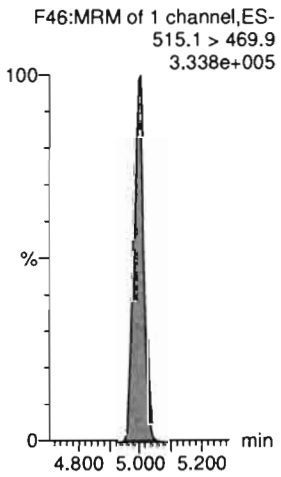

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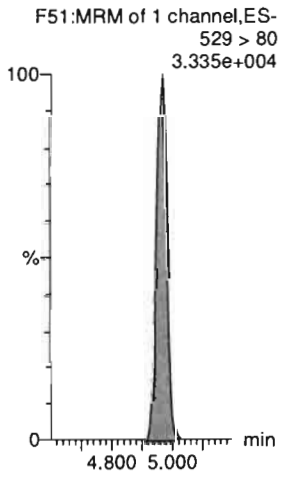

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Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

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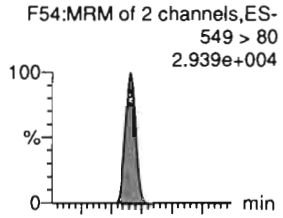

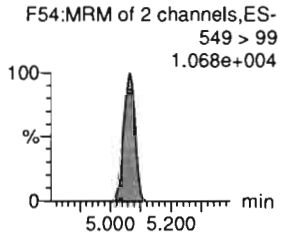

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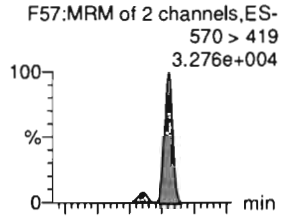

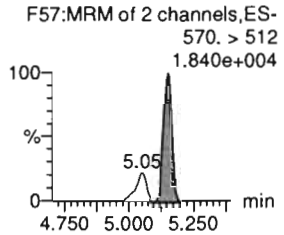

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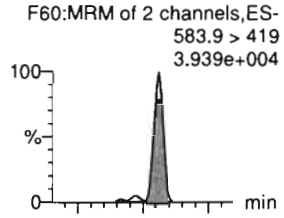

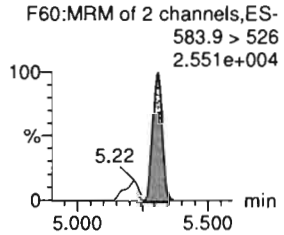

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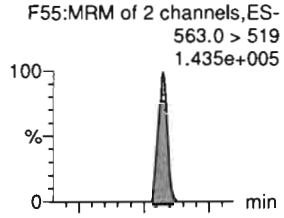

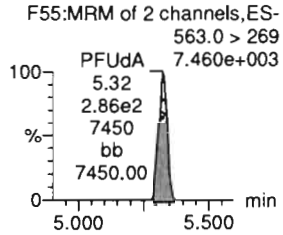

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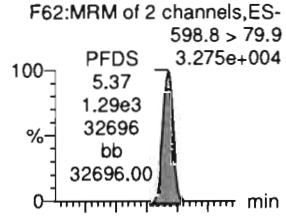

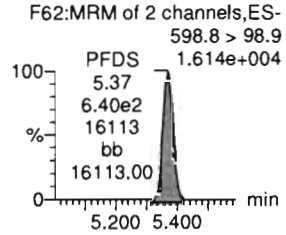

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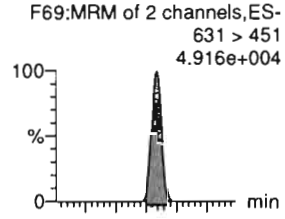
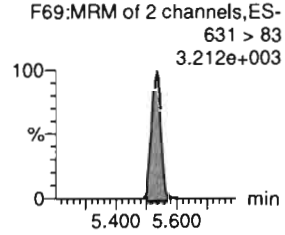
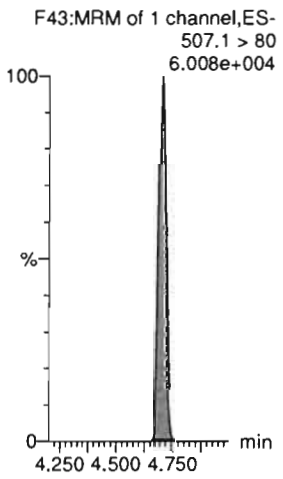




13C8-PFOS-EIS



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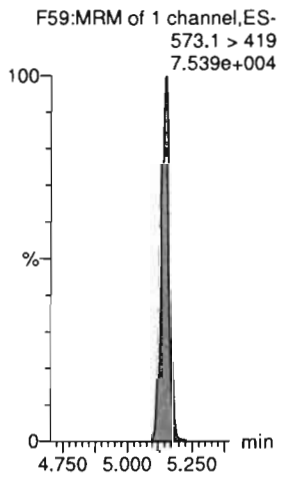

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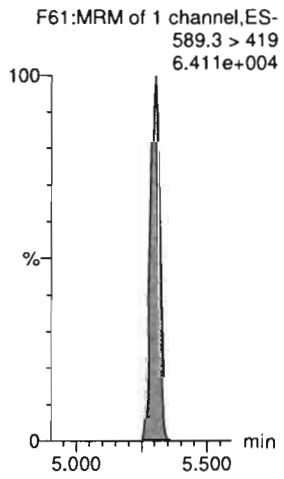

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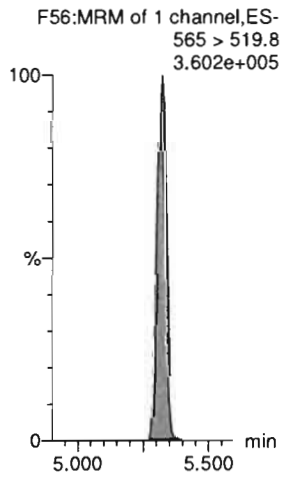

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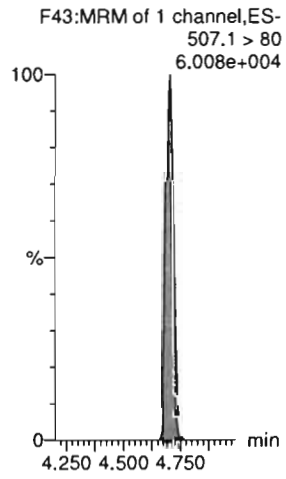

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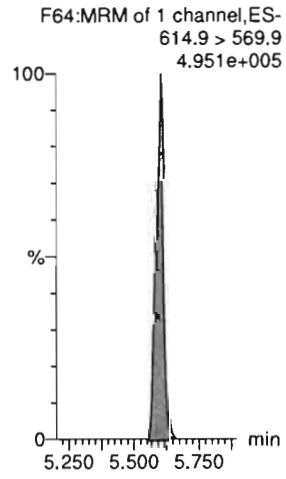

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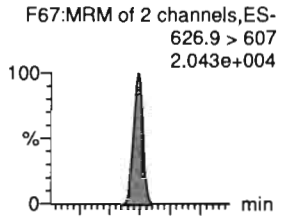
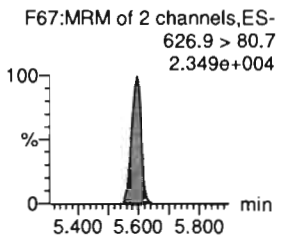
10:2 FTS





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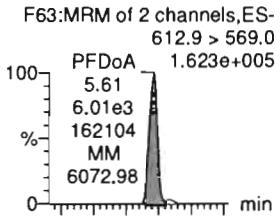

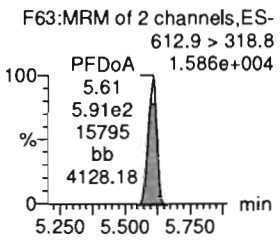

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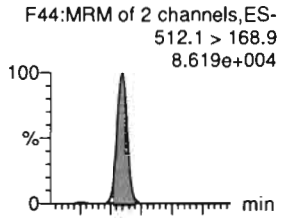

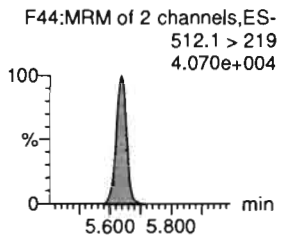

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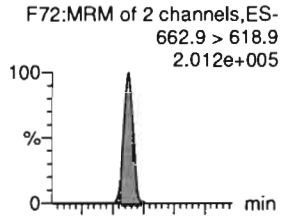

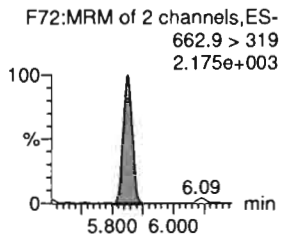

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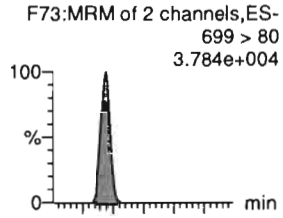

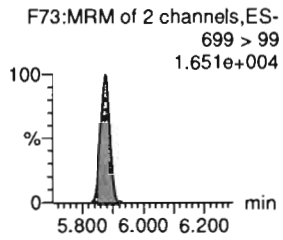

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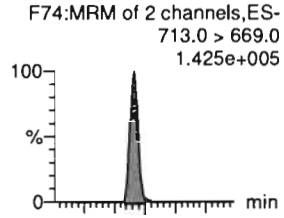

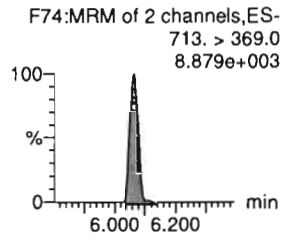

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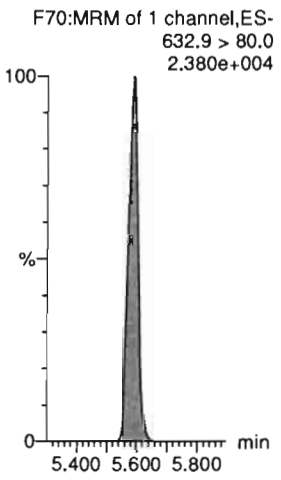

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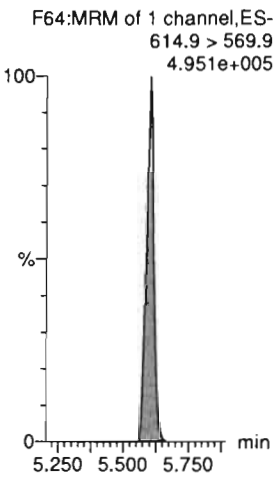

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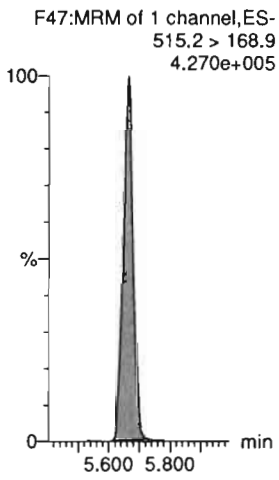

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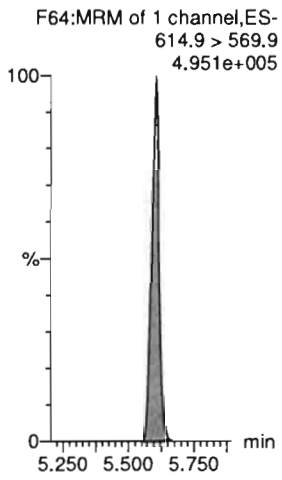

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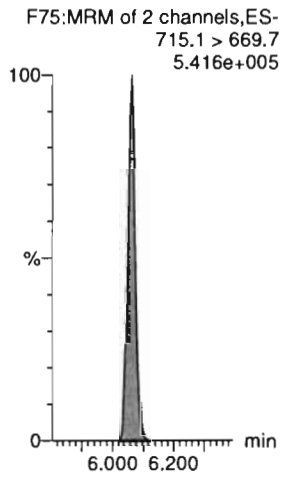

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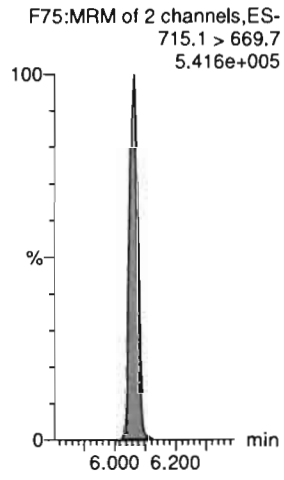

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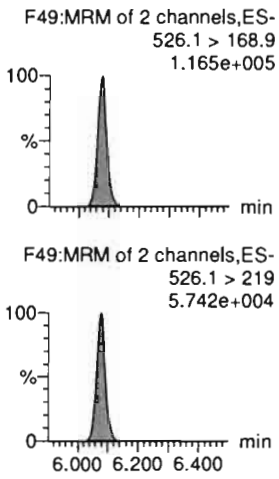
N-EtFOSA



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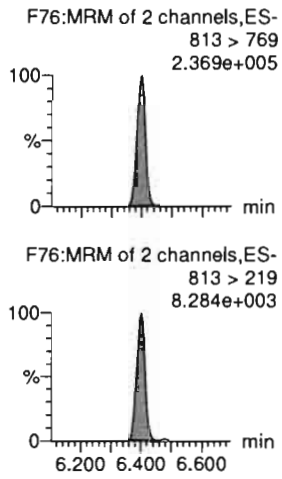

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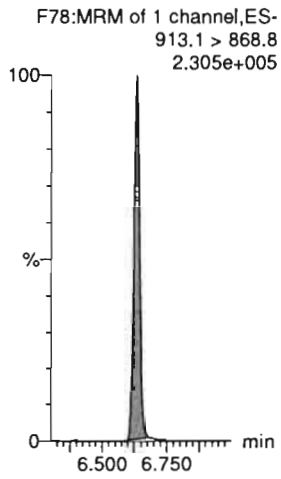

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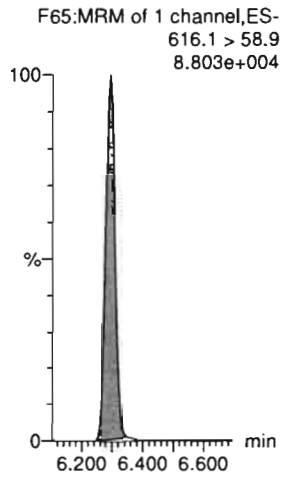

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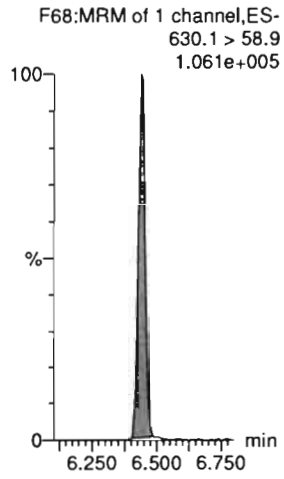

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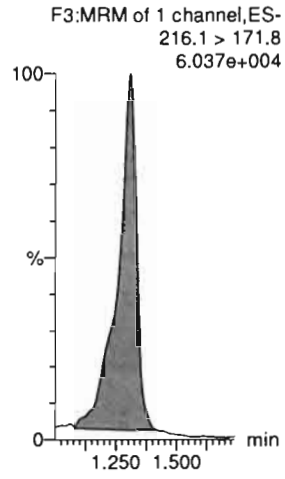
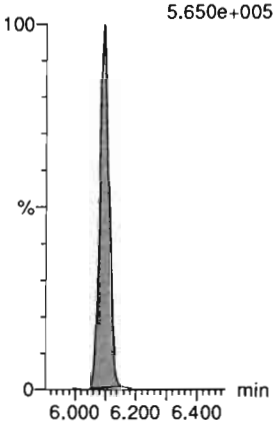
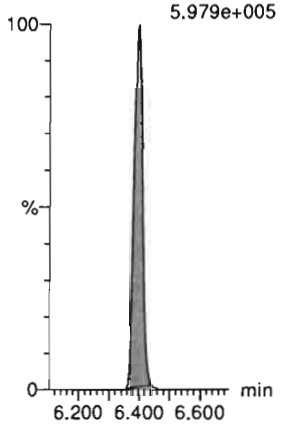


d5-N-ETFOSA-EIS



13C2-PFHxDA-EIS



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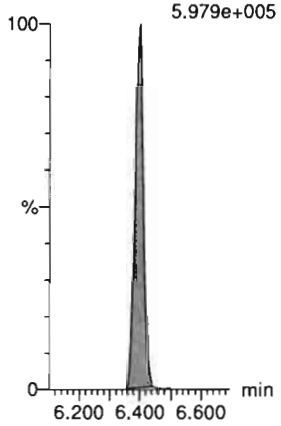
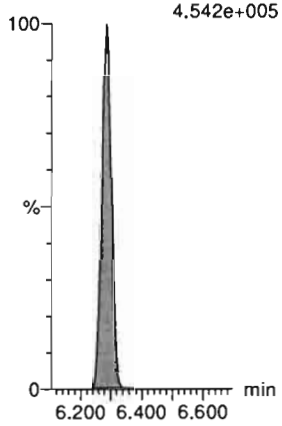


d7-N-MeFOSE-EIS



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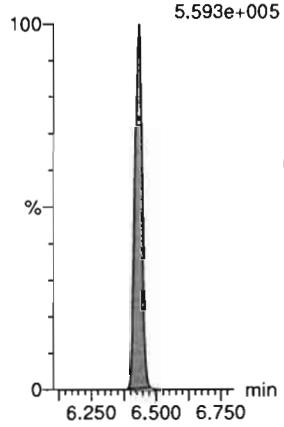

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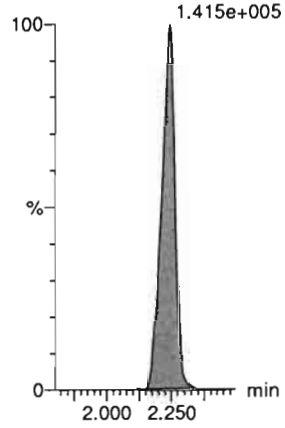

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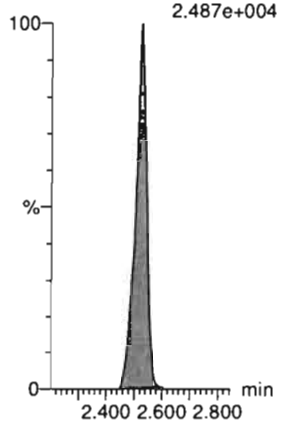
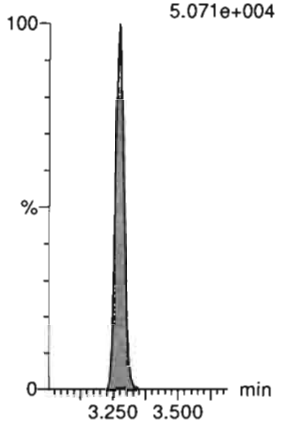
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

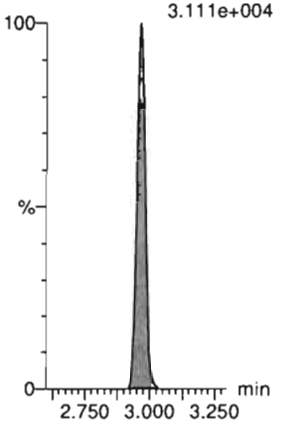
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.487e+004



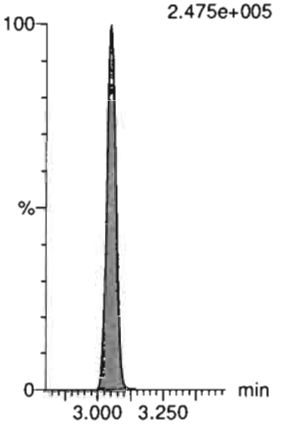
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.071e+004



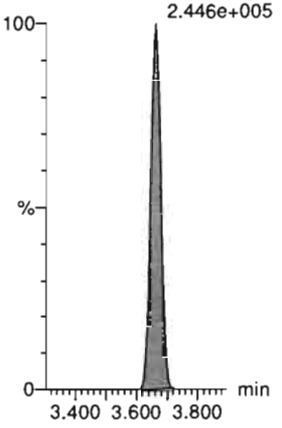
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.111e+004



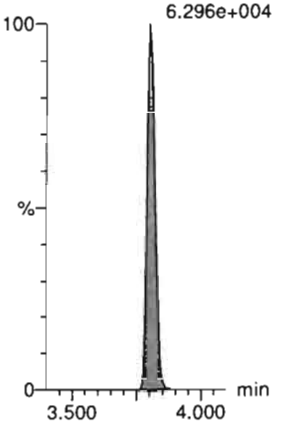
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.475e+005



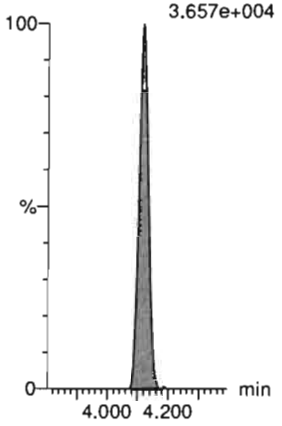
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.446e+005



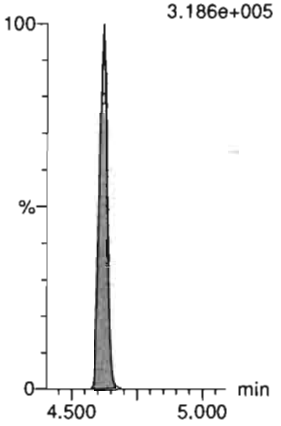
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.296e+004



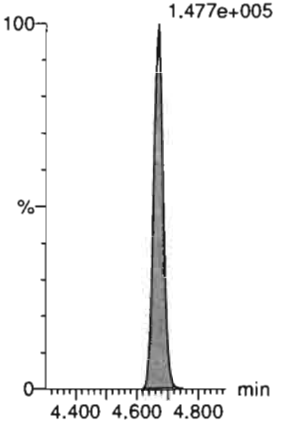
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.657e+004



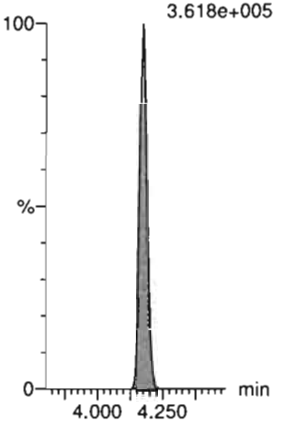
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.186e+005



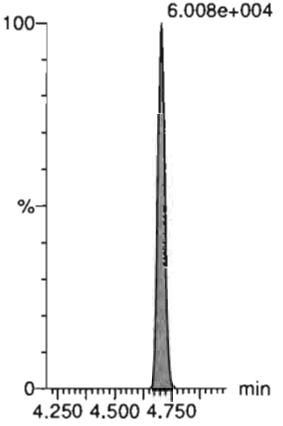
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.477e+005



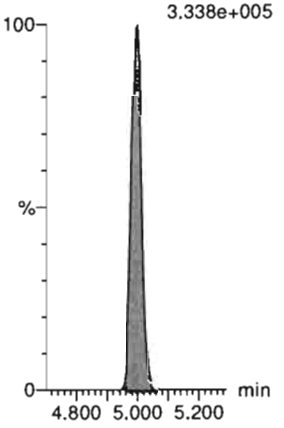
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.618e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.008e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.338e+005

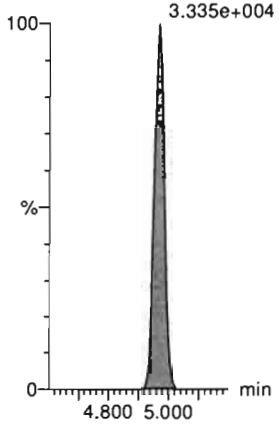


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

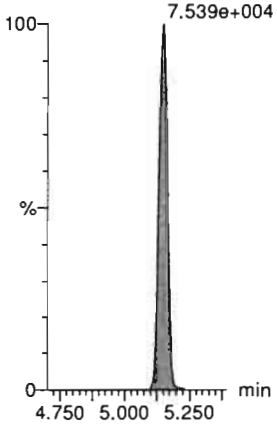
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

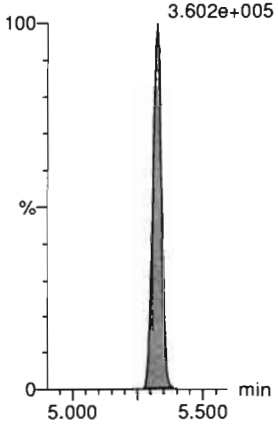
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.335e+004



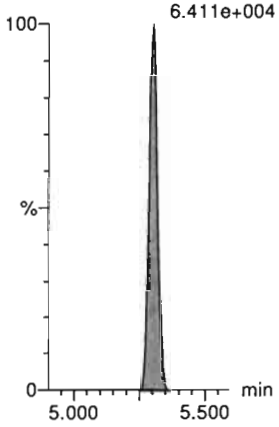
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
7.539e+004



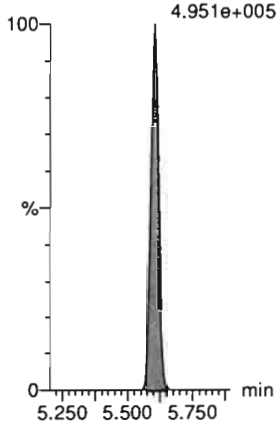
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.602e+005



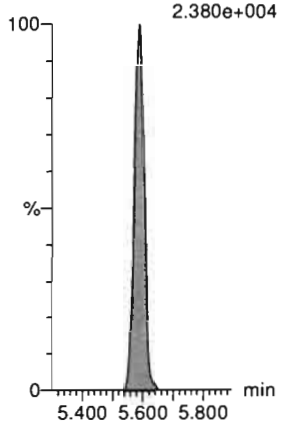
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
6.411e+004



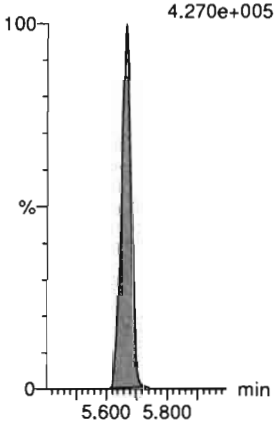
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.951e+005



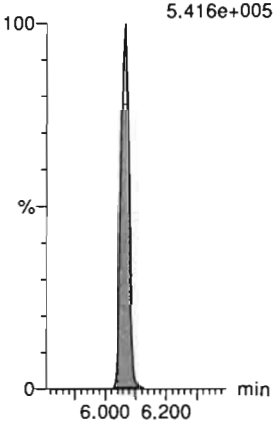
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.380e+004



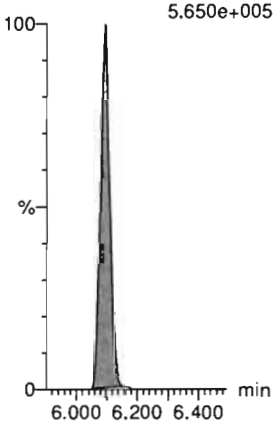
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.270e+005



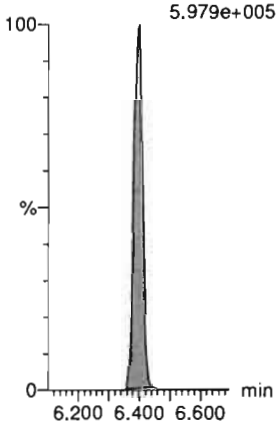
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.416e+005



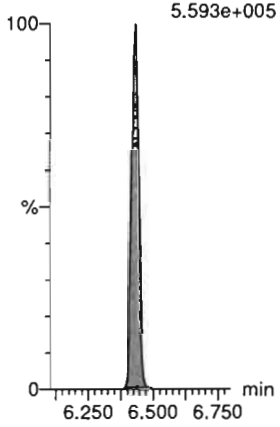
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.650e+005



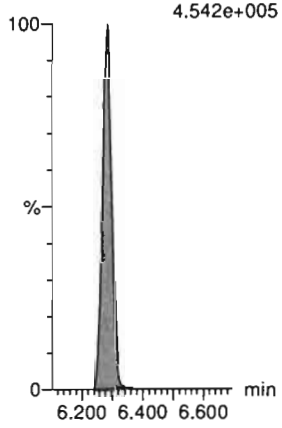
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
5.979e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.593e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.542e+005

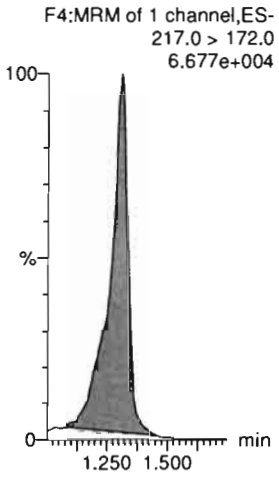


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

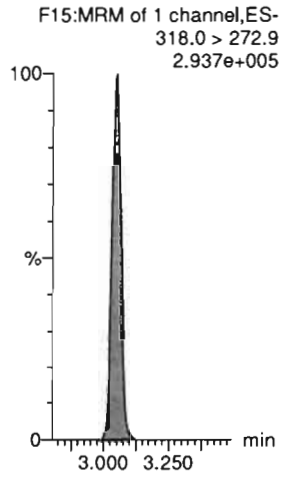
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-09, Date: 23-Jul-2020, Time: 11:22:14, ID: ST200723P1-5 PFC CS2 20G1605, Description: PFC CS2 20G1605

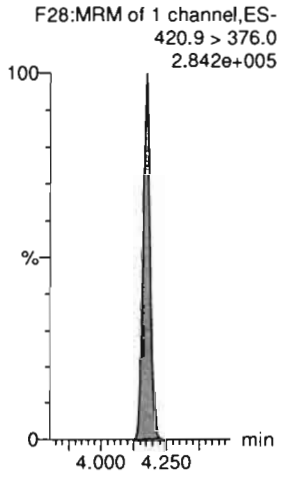
13C4-PFBA



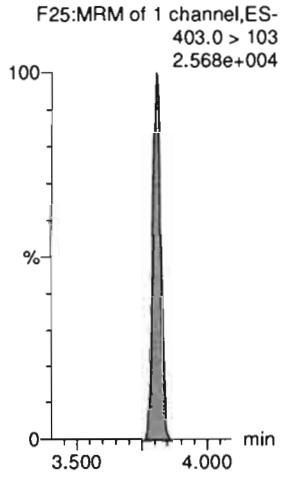
13C5-PFHxA



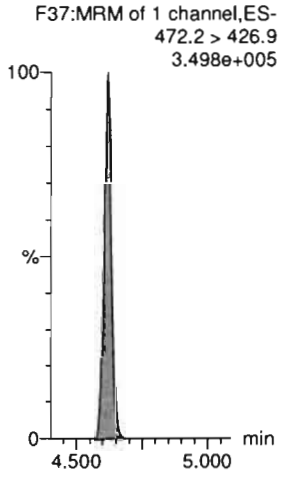
13C8-PFOA



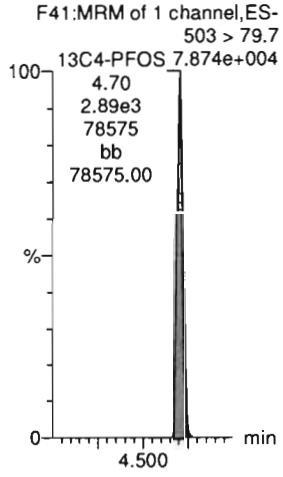
18O2-PFHxS



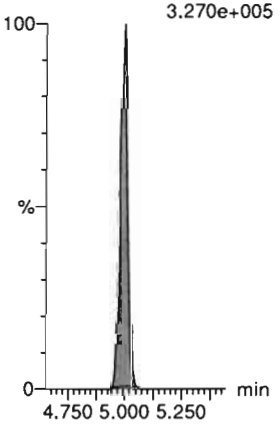
13C9-PFNA



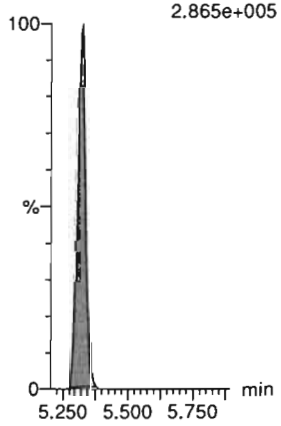
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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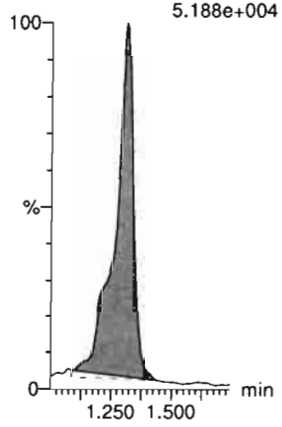
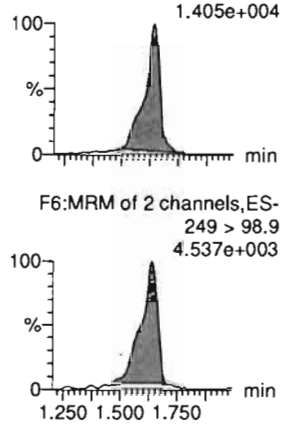
Last Altered: Thursday, July 23, 2020 13:51:37 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:00:36 Pacific Daylight Time

Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

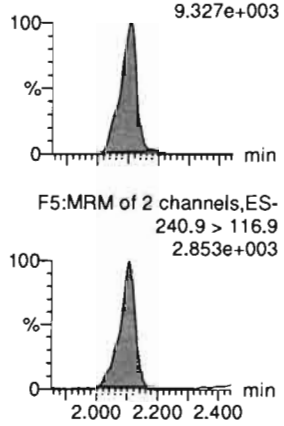
PFBA



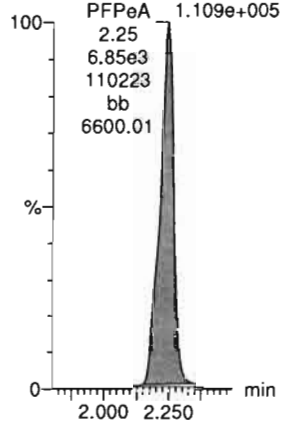
PFPrS



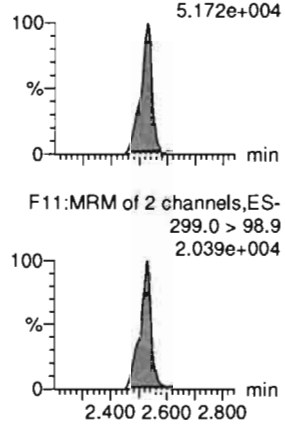
3:3 FTCA



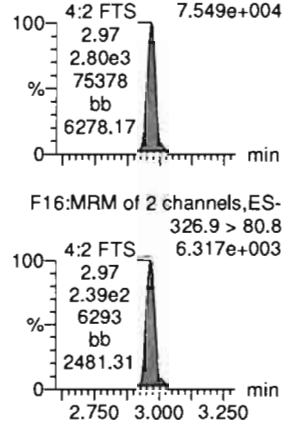
PFPeA



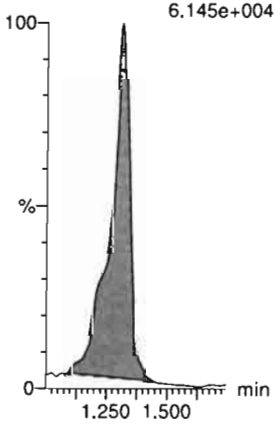
PFBS



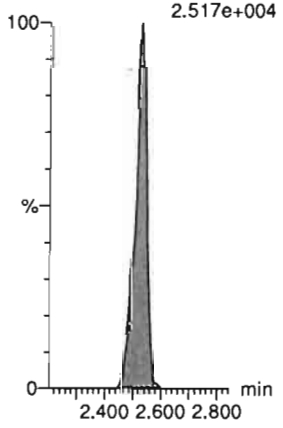
4:2 FTS



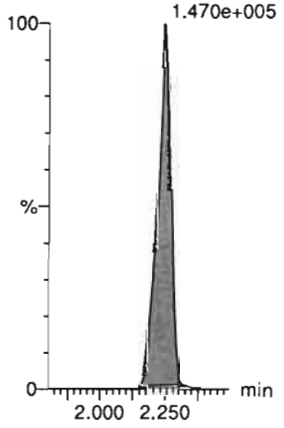
13C3-PFBA-EIS



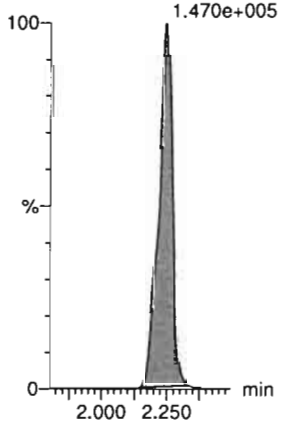
13C3-PFBS-EIS



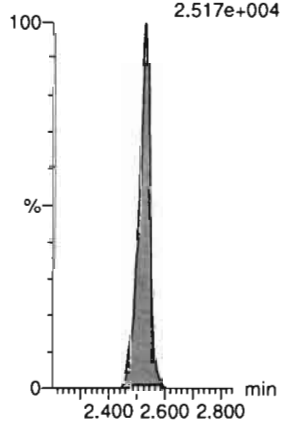
13C3-PFPeA-EIS



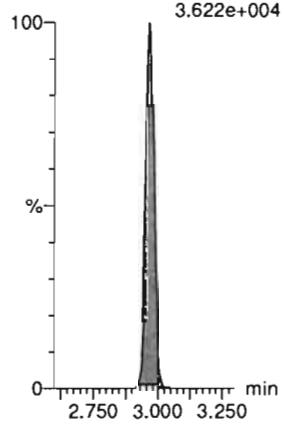
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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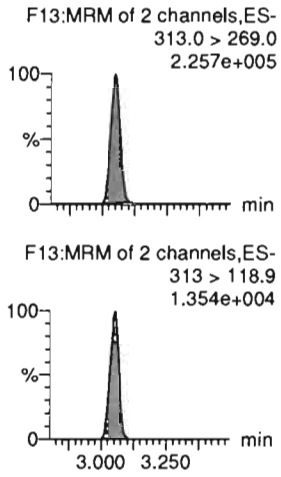
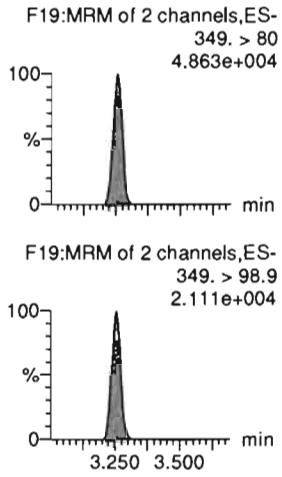
Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

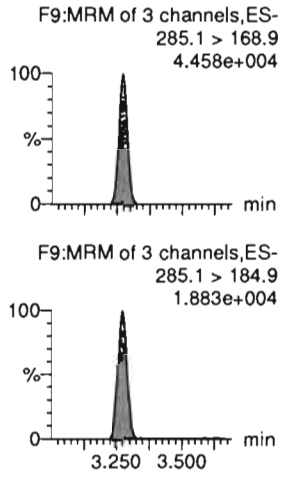
PFHxA



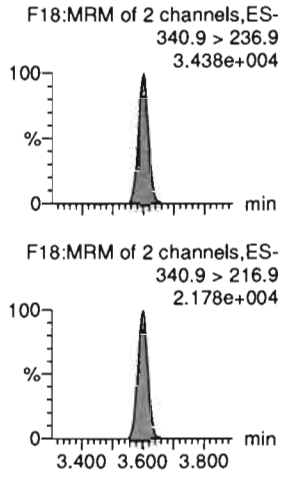
PFPeS



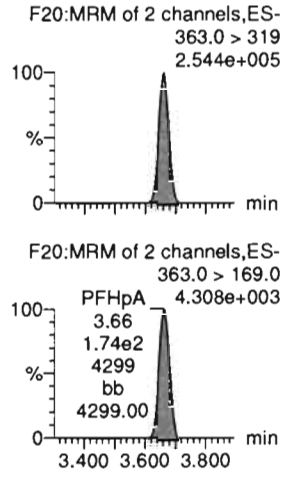
HFPO-DA



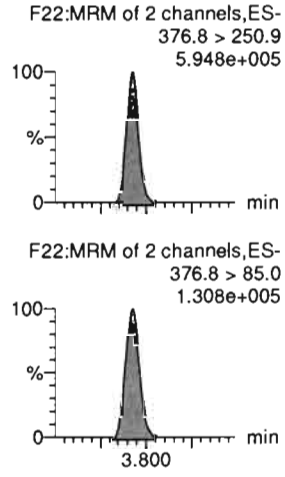
5:3 FTCA



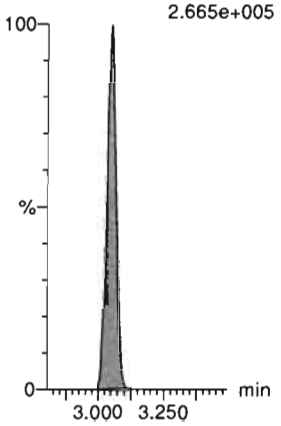
PFHpA



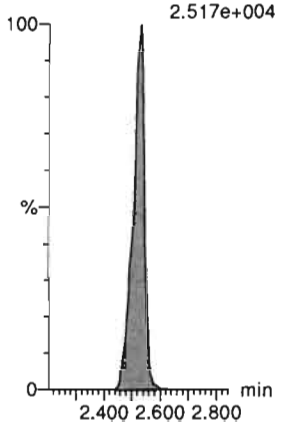
ADONA



13C2-PFHxA-EIS



13C3-PFBS-EIS



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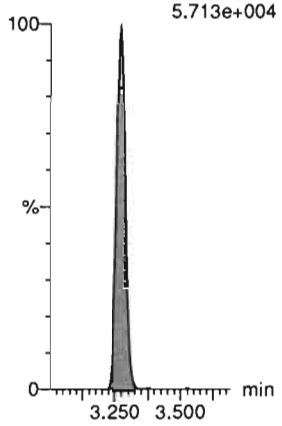

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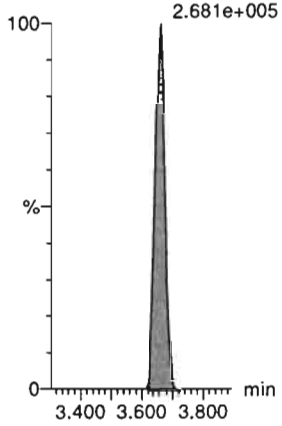

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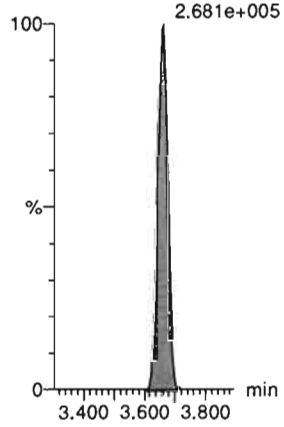

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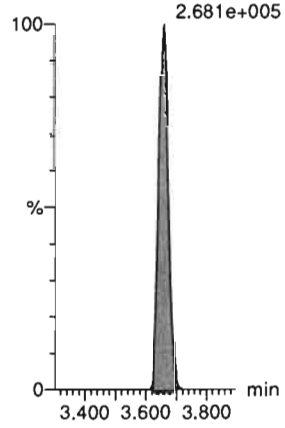

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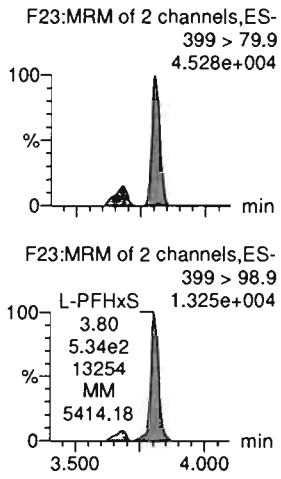
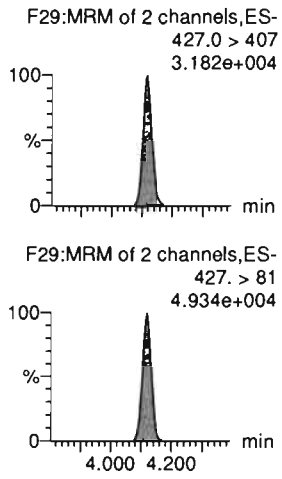
Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

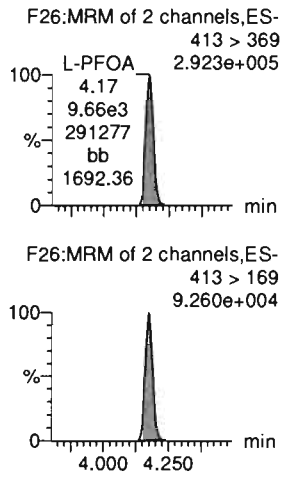
L-PFHxS



6:2 FTS



L-PFOA



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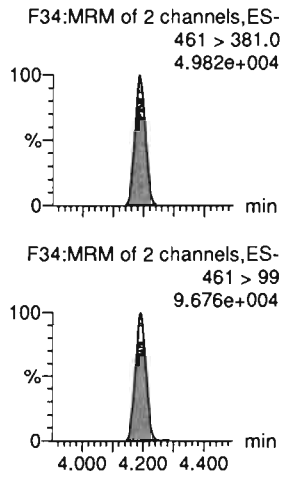
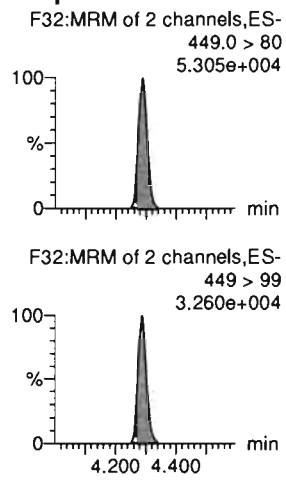
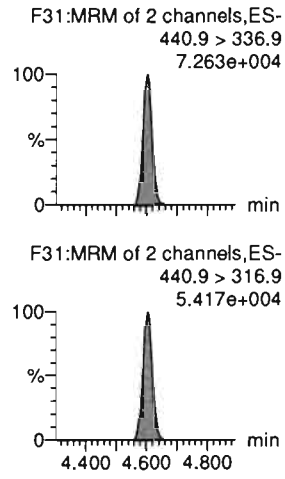


PFHpS



7:3 FTCA



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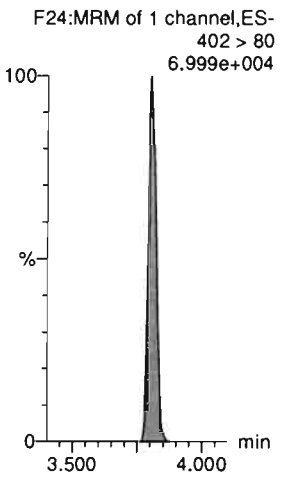

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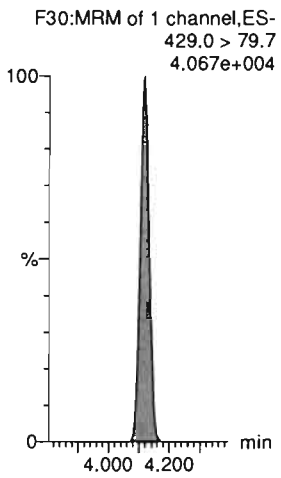

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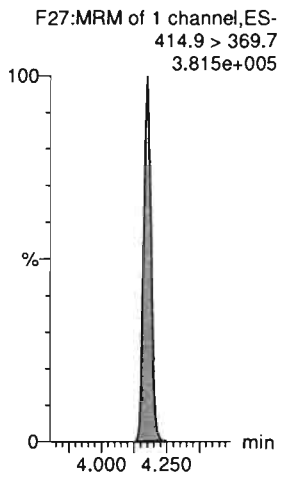

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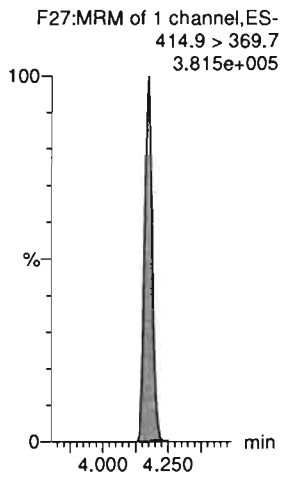
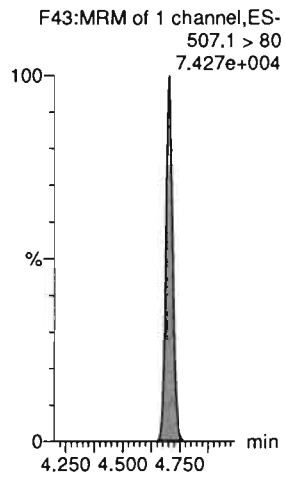
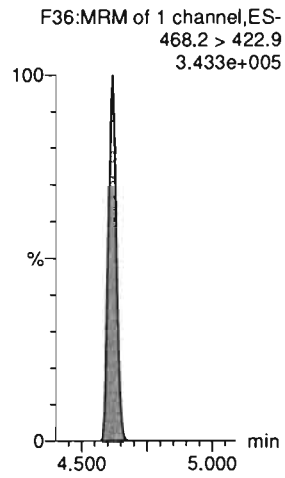


13C8-PFOS-EIS



13C5-PFNA-EIS



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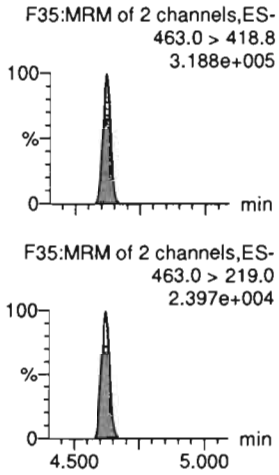
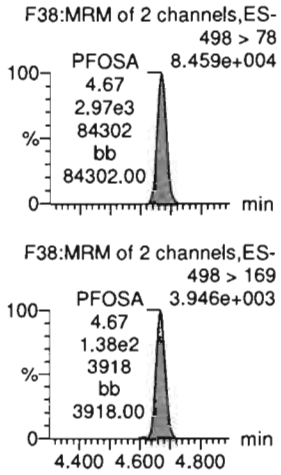
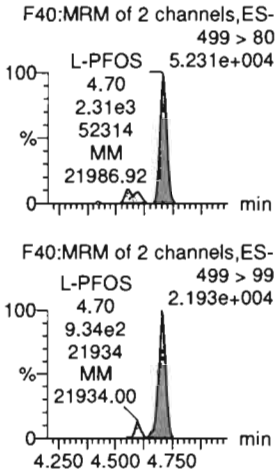


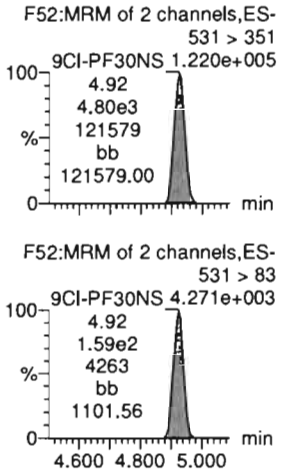
PFOSA



L-PFOS



9Cl-PF30NS



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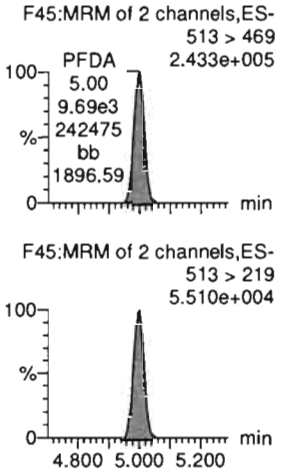
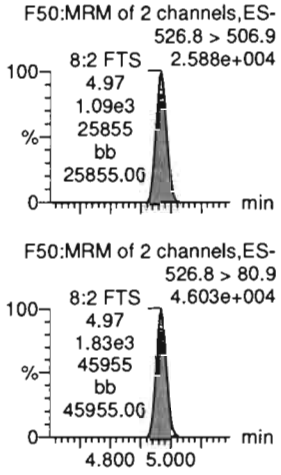


8:2 FTS



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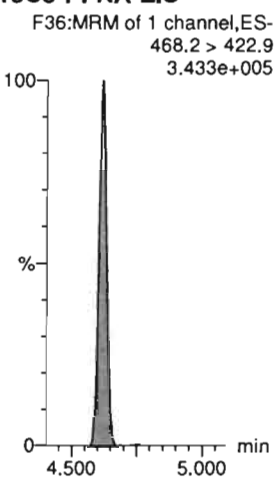
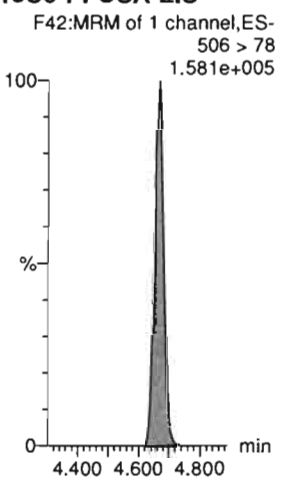
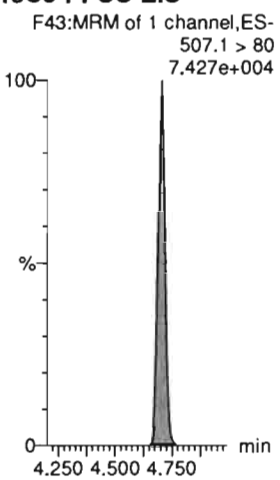


13C8-PFOSA-EIS



13C8-PFOS-EIS



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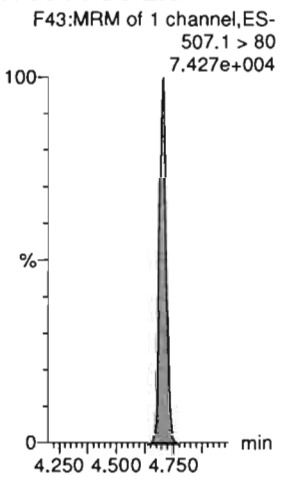
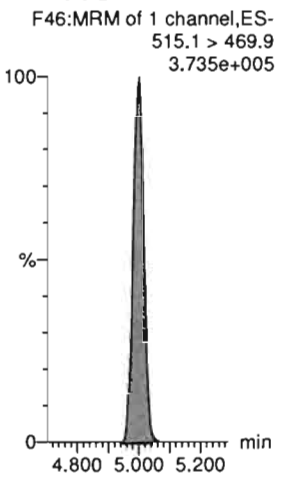
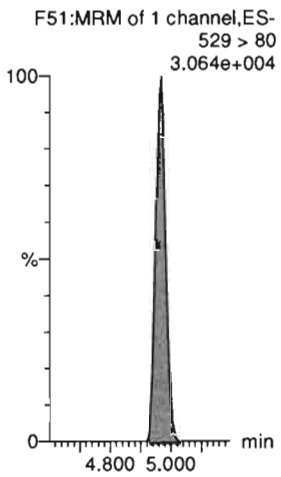


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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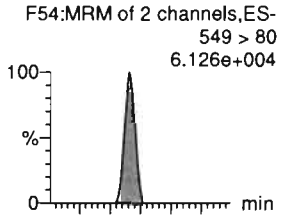
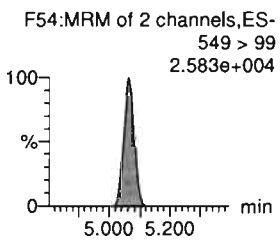
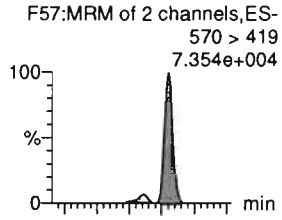
Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

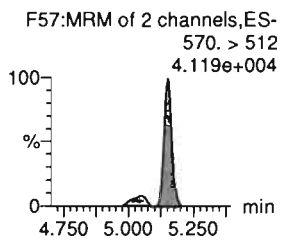
PFNS



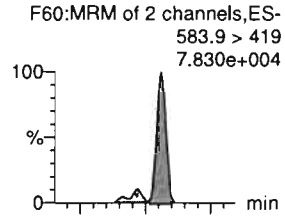


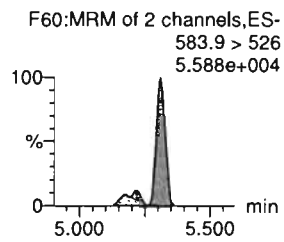
L-MeFOSAA



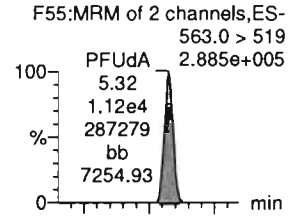


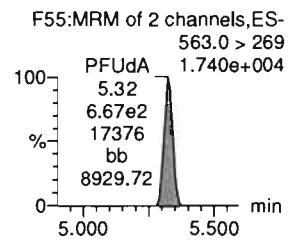
L-EtFOSAA



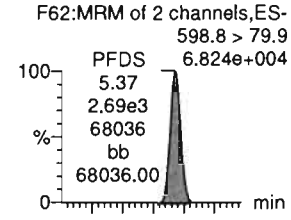


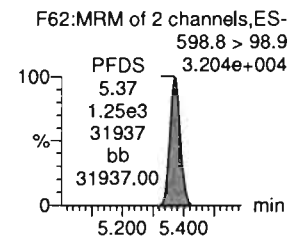
PFUdA



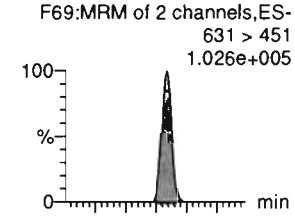


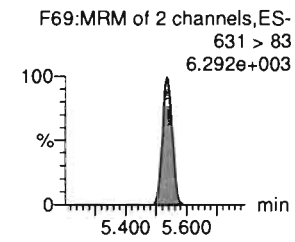
PFDS



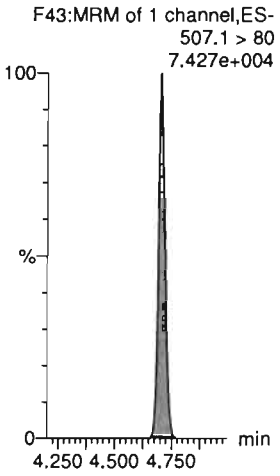


11Cl-PF30UdS

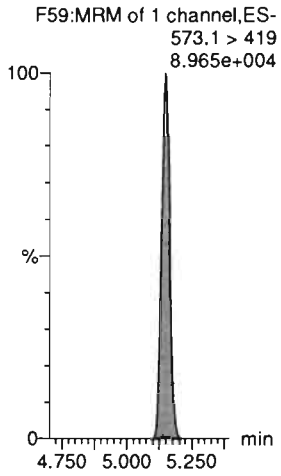




13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



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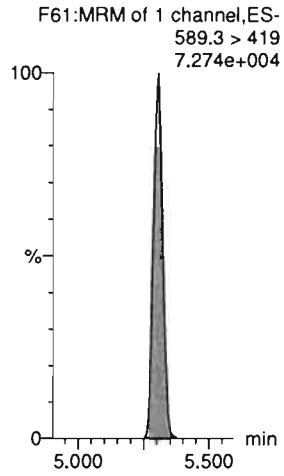
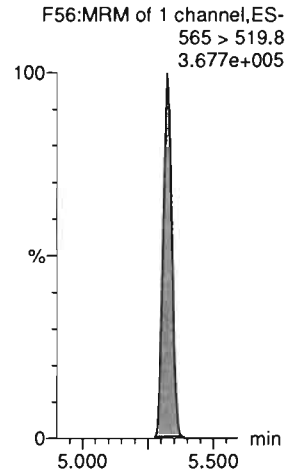


13C2-PFUdA-EIS



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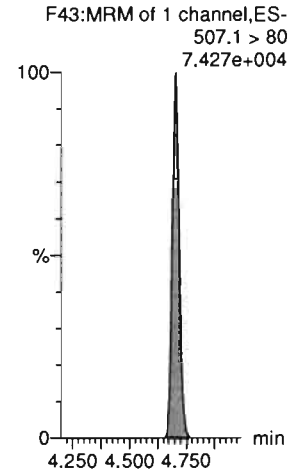
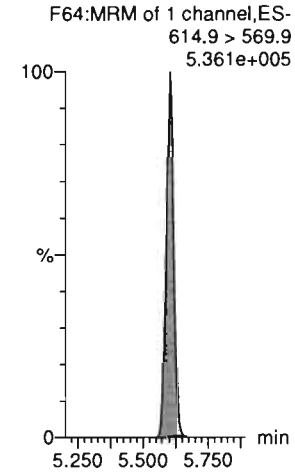


13C2-PFDoA-EIS

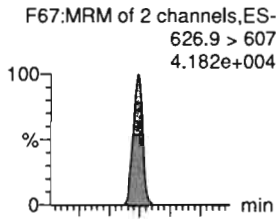


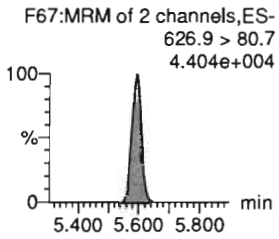
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

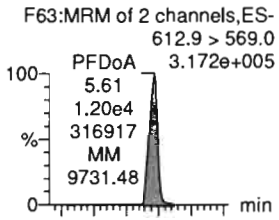
Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

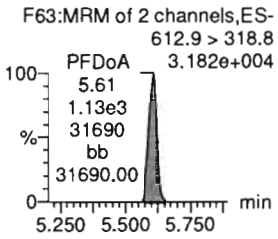
10:2 FTS



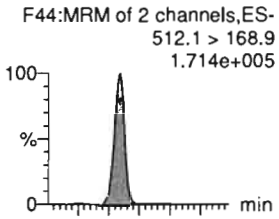


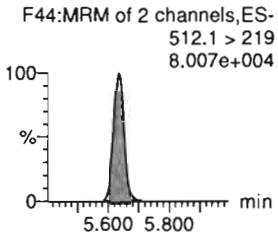
PFDoA





N-MeFOSA





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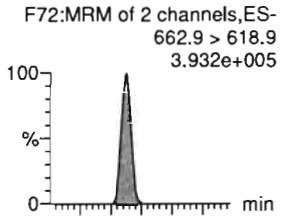

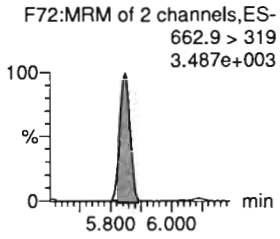

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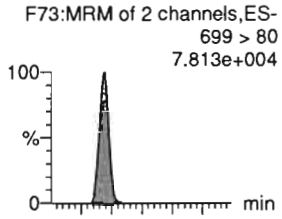
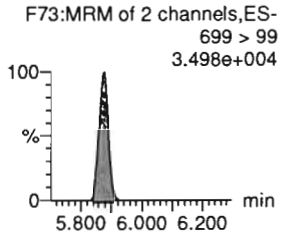
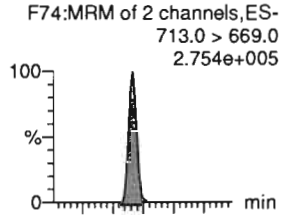
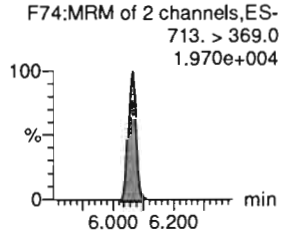


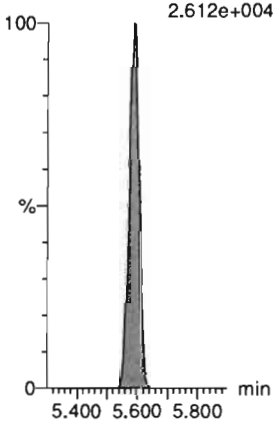


PFTeDA

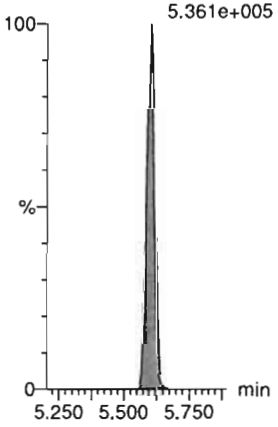




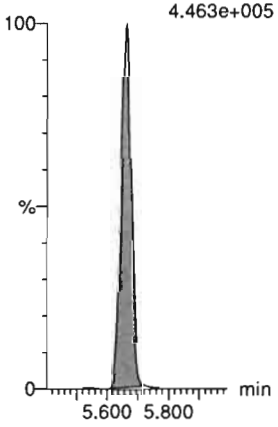
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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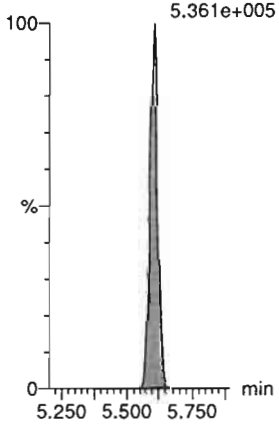

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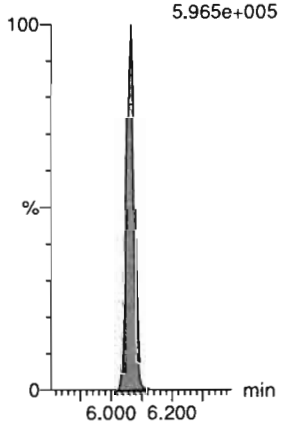
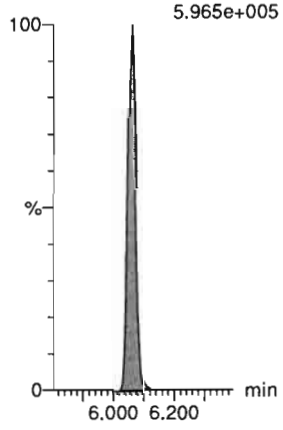


13C2-PFTeDA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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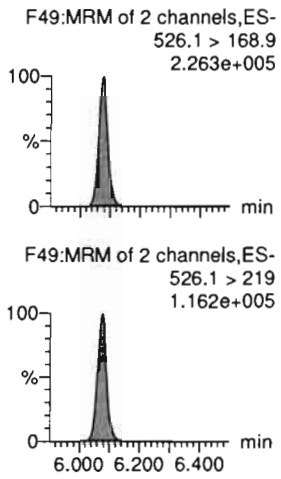
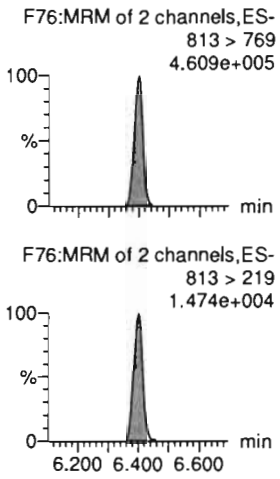
Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

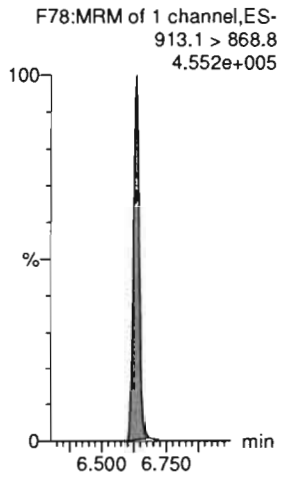
N-EtFOSA



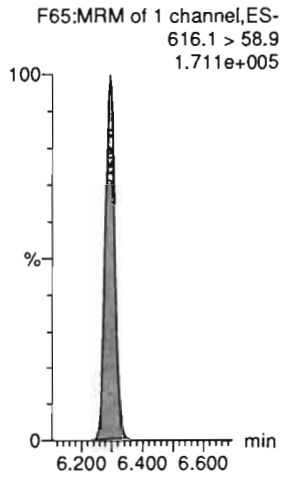
PFHxDA



PFODA



N-MeFOSE



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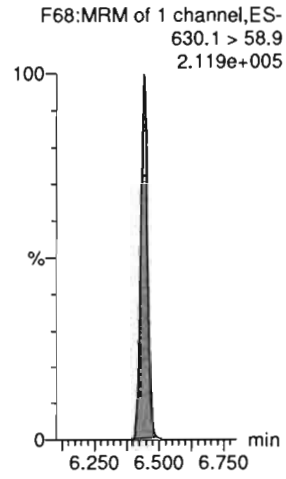
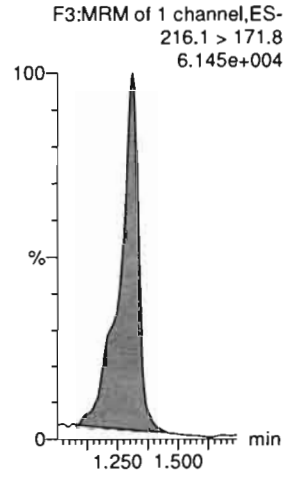
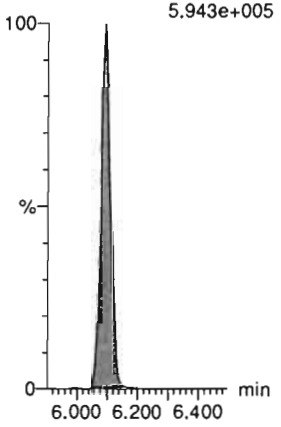


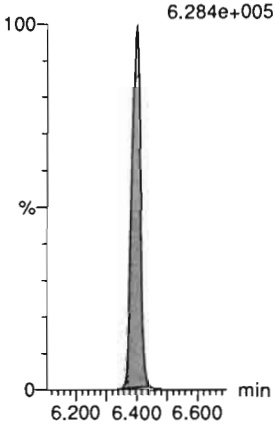
13C3-PFBA-RSD



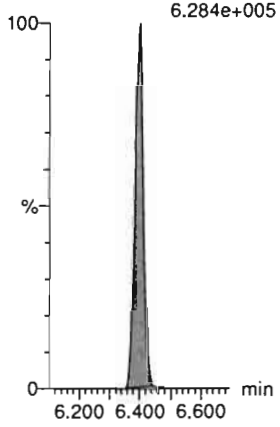
d5-N-ETFOSA-EIS



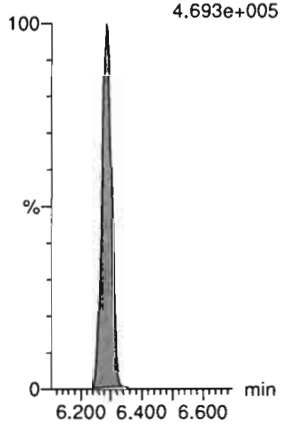
13C2-PFHxDA-EIS



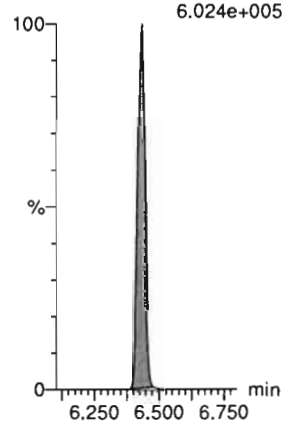
13C2-PFHxDA-EIS



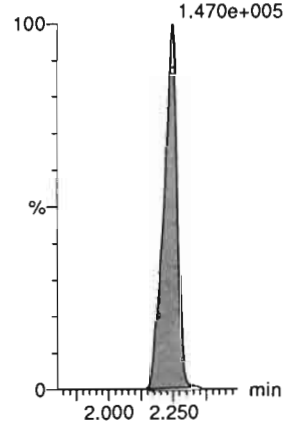
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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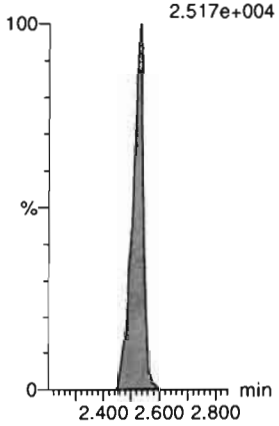
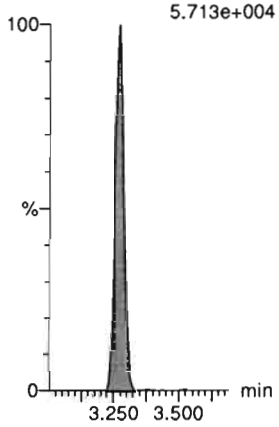
Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

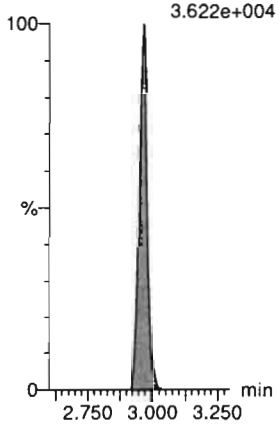
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.517e+004



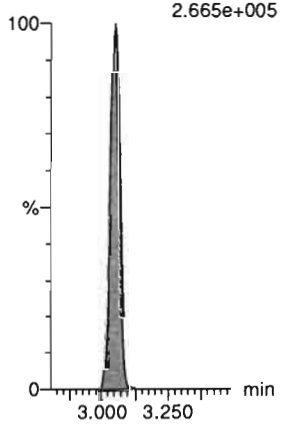
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.713e+004



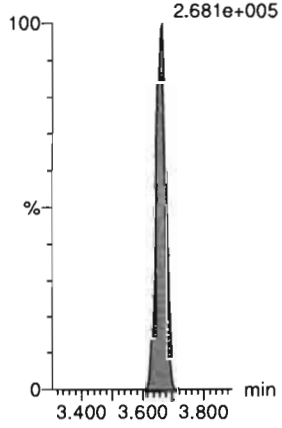
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.622e+004



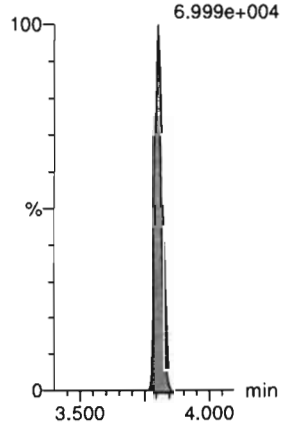
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.665e+005



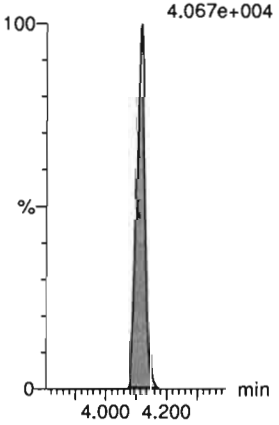
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.681e+005



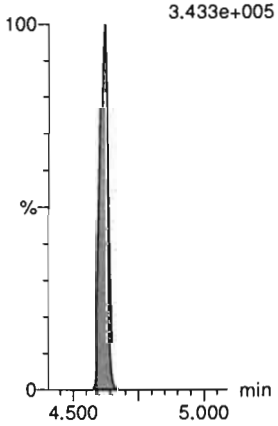
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.999e+004



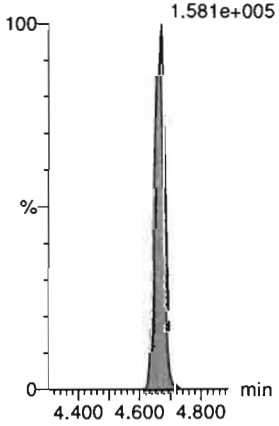
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.067e+004



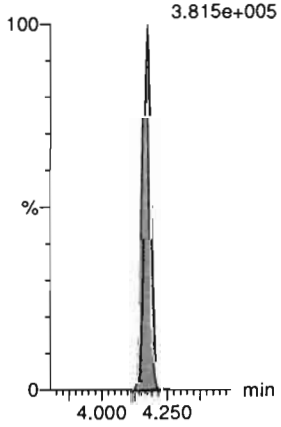
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.433e+005



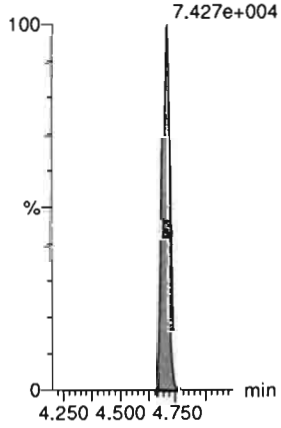
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.581e+005



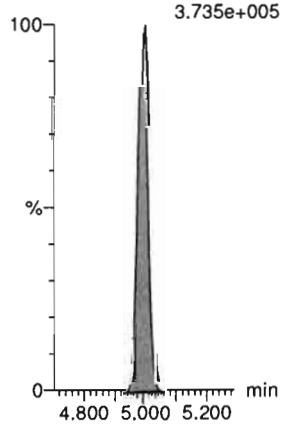
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.815e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
7.427e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.735e+005



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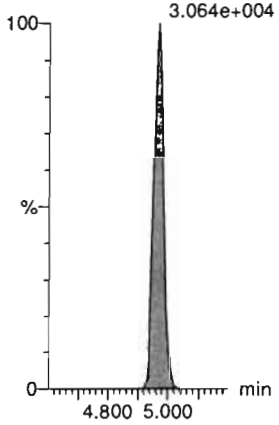
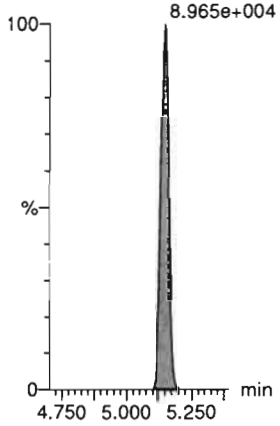
Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

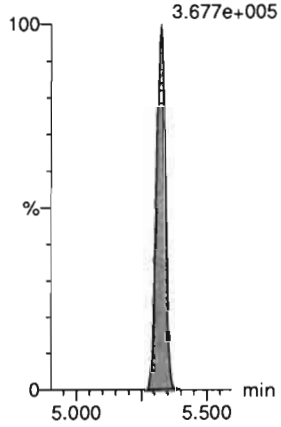
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.064e+004



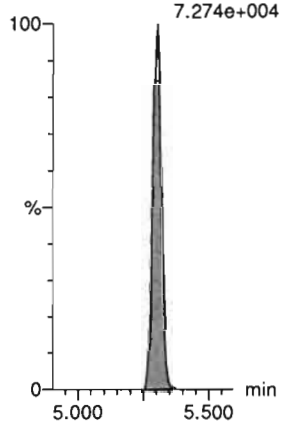
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
8.965e+004



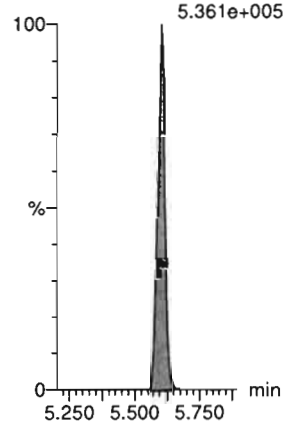
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.677e+005



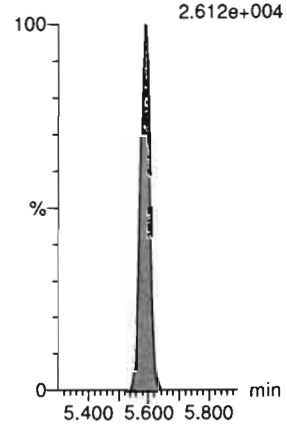
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.274e+004



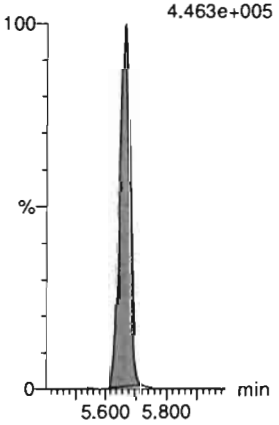
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
5.361e+005



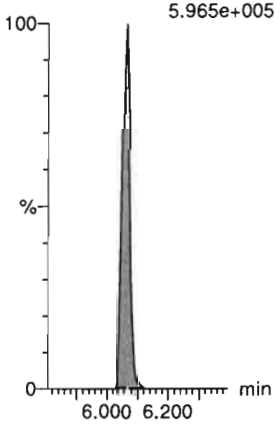
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.612e+004



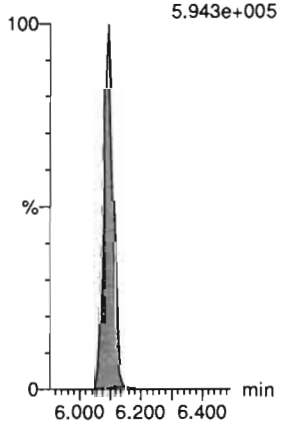
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.463e+005



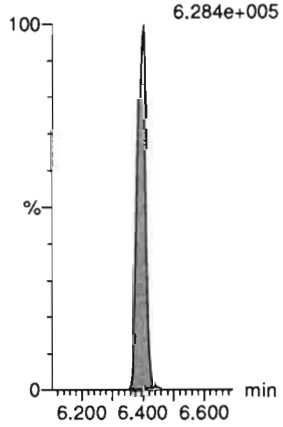
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.965e+005



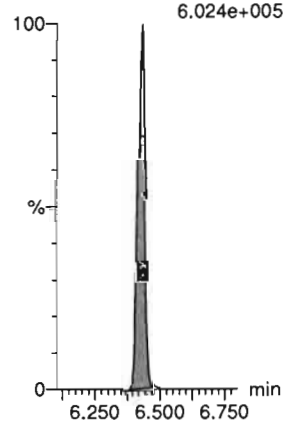
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.943e+005



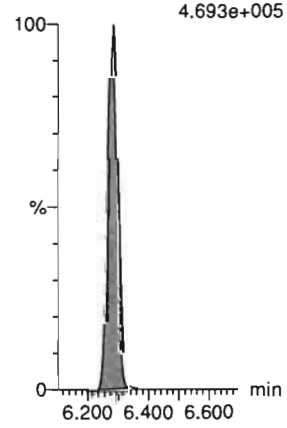
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.284e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
6.024e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.693e+005



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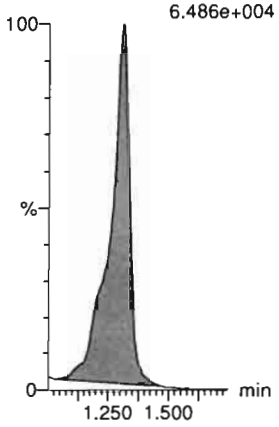
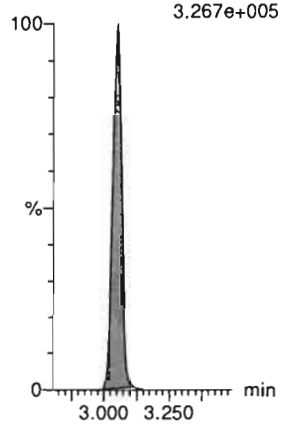
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-10, Date: 23-Jul-2020, Time: 11:32:50, ID: ST200723P1-6 PFC CS3 20G1606, Description: PFC CS3 20G1606

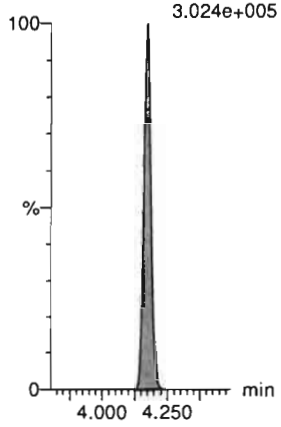
13C4-PFBA



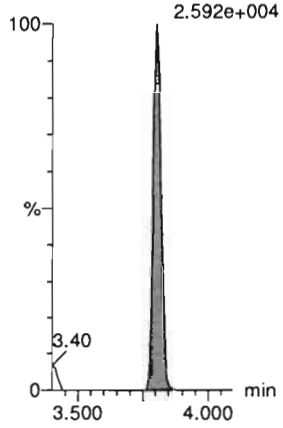
13C5-PFHxA



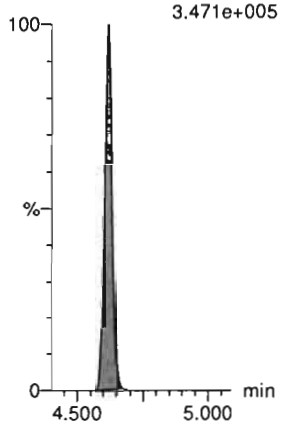
13C8-PFOA



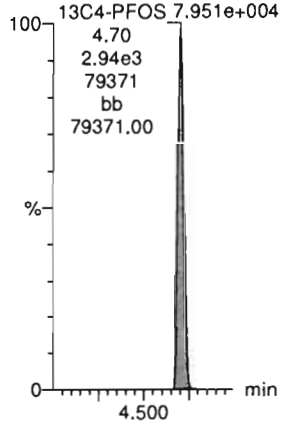
18O2-PFHxS



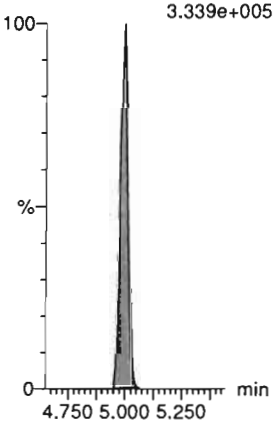
13C9-PFNA



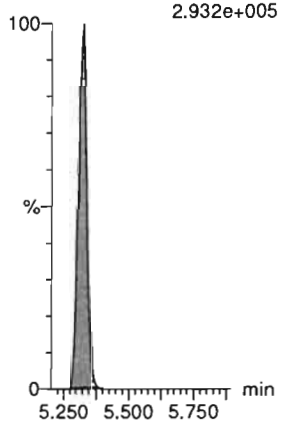
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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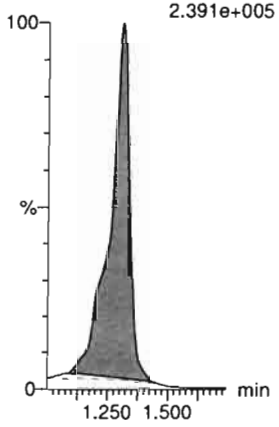
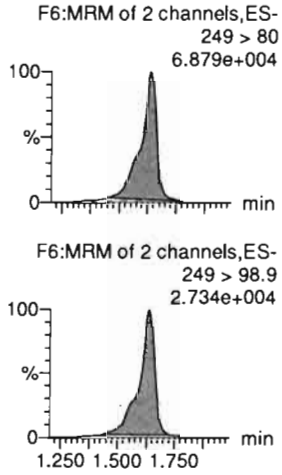
Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

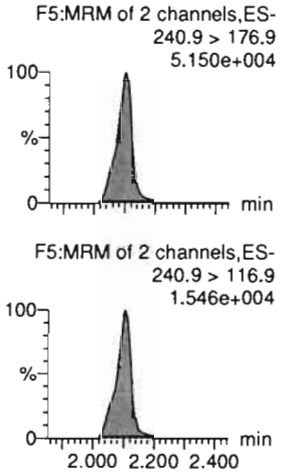
PFBA



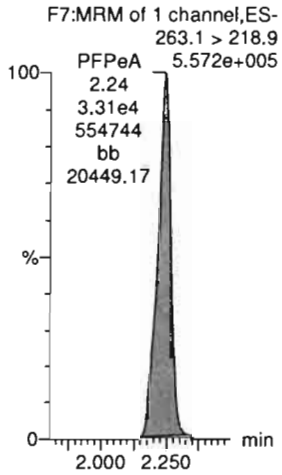
PFPrS



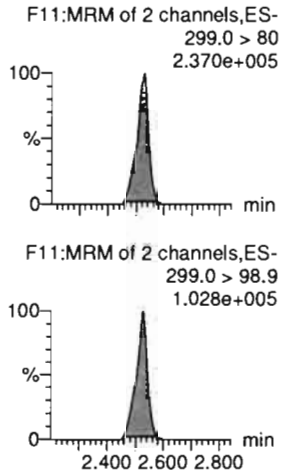
3:3 FTCA



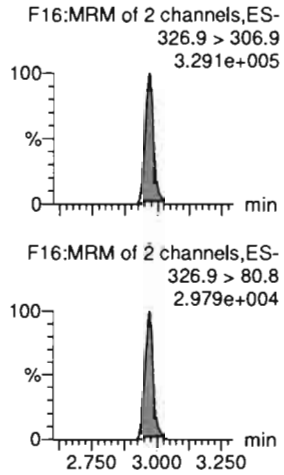
PFPeA



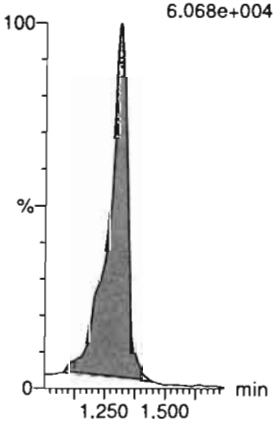
PFBS



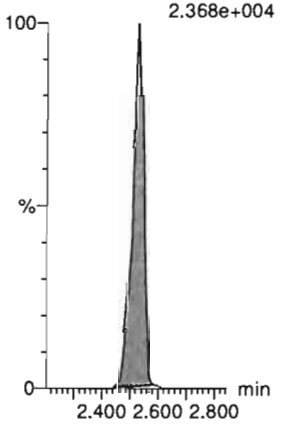
4:2 FTS



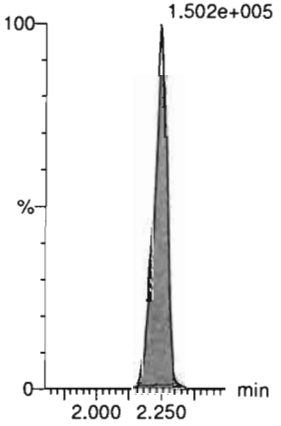
13C3-PFBA-EIS



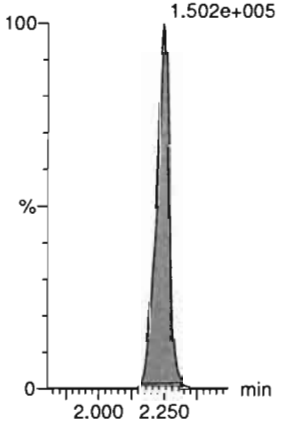
13C3-PFBS-EIS



13C3-PFPeA-EIS



13C3-PFPeA-EIS



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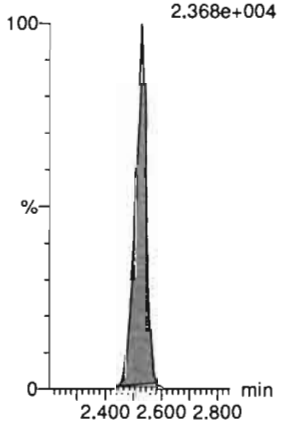
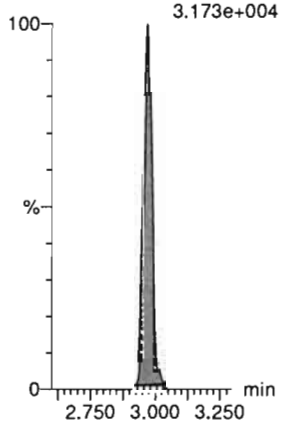


13C2-4:2 FTS-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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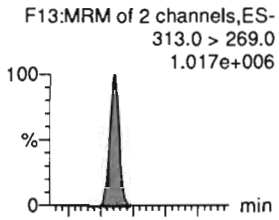
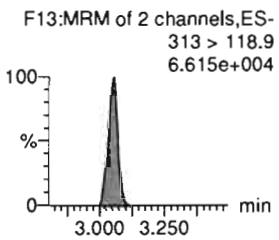
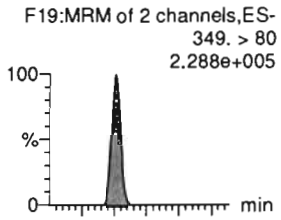
Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

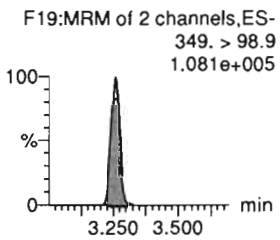
PFHxA



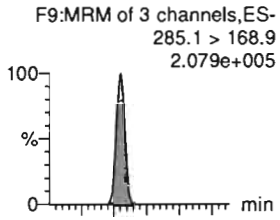


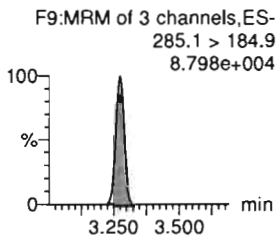
PFPeS



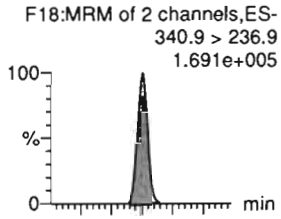


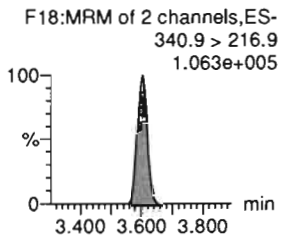
HFPO-DA



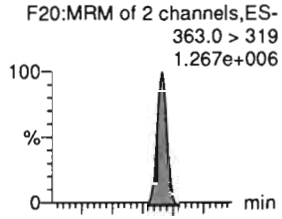


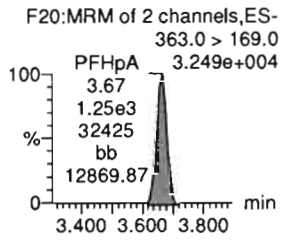
5:3 FTCA



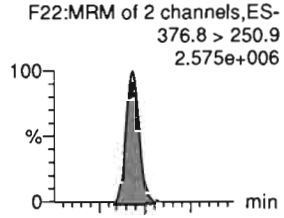


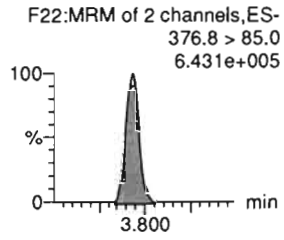
PFHpA



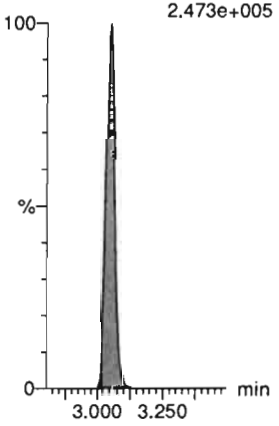


ADONA

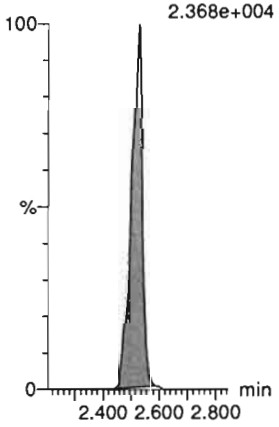




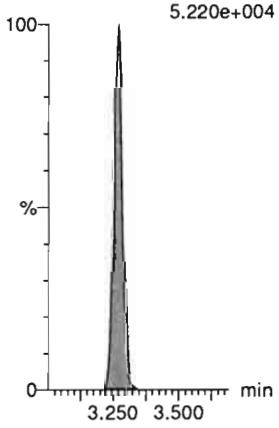
13C2-PFHxA-EIS



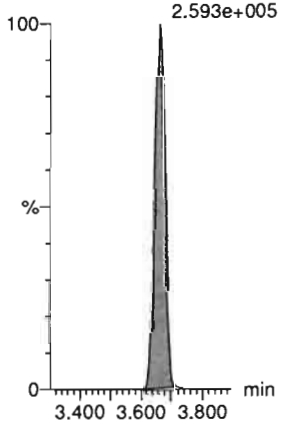
13C3-PFBS-EIS



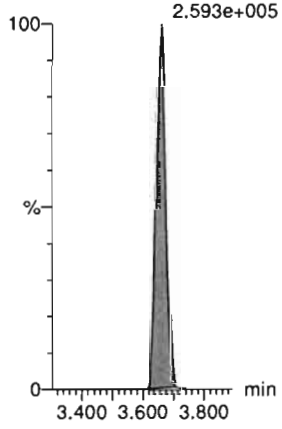
13C3-HFPO-DA-EIS



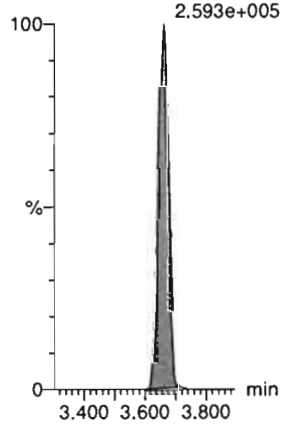
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

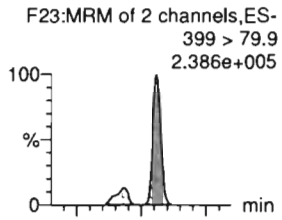


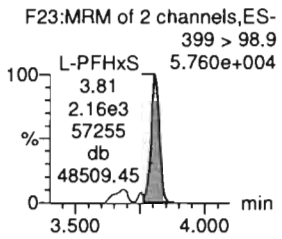
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

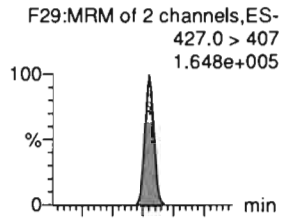
Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

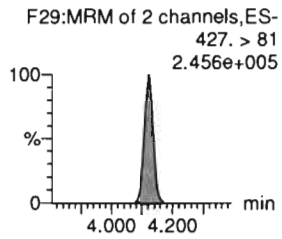
L-PFHxS



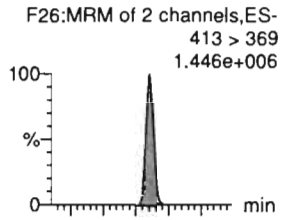


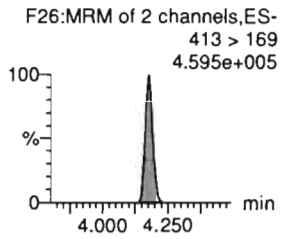
6:2 FTS





L-PFOA





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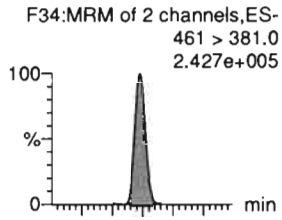

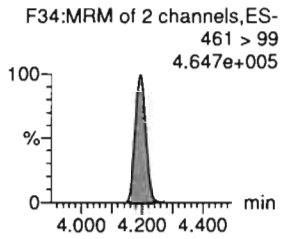

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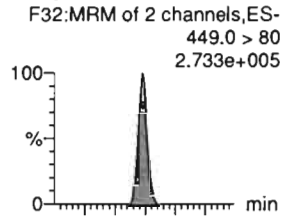
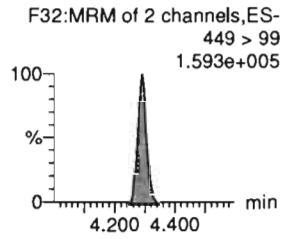
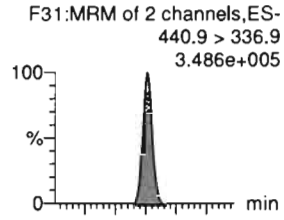
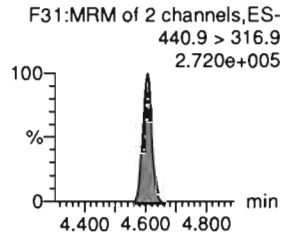


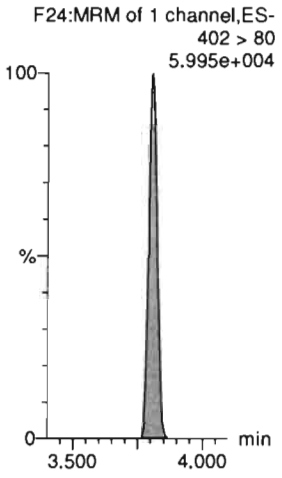


7:3 FTCA

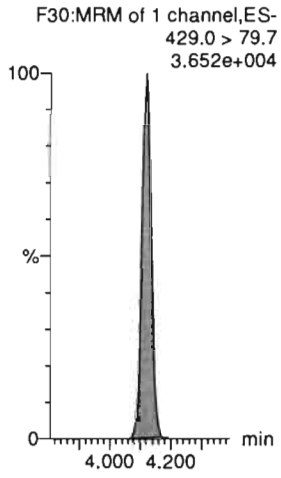




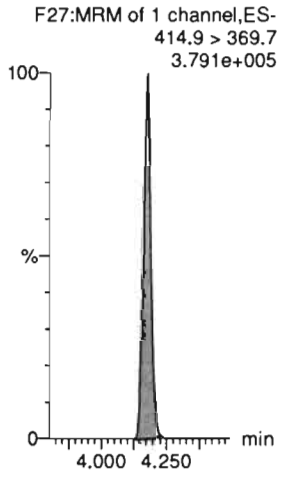
13C3-PFHxS-EIS



13C2-6:2 FTS-EIS



13C2-PFOA-EIS



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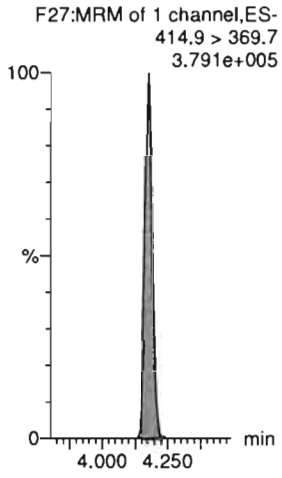
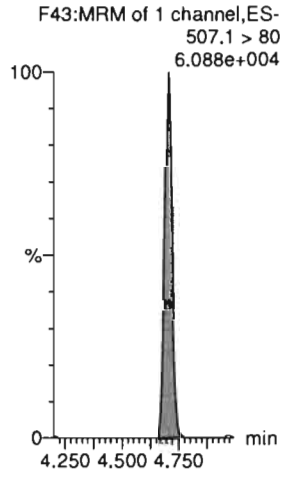
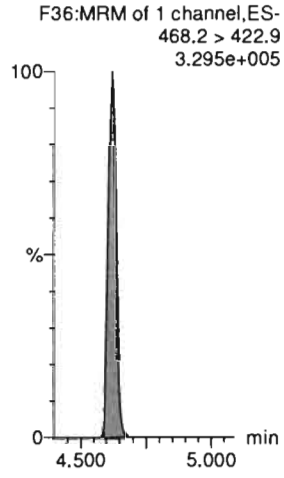


13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

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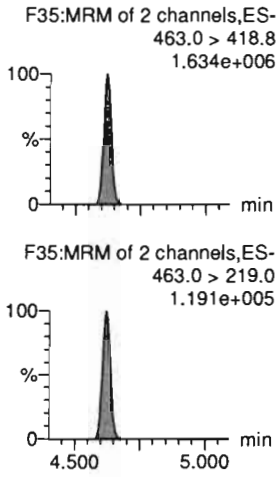

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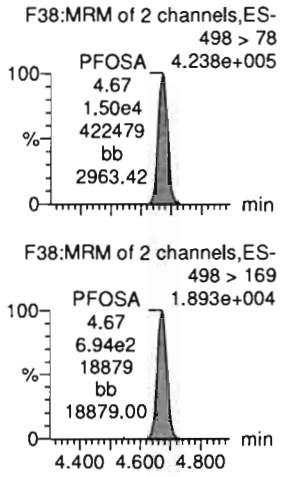
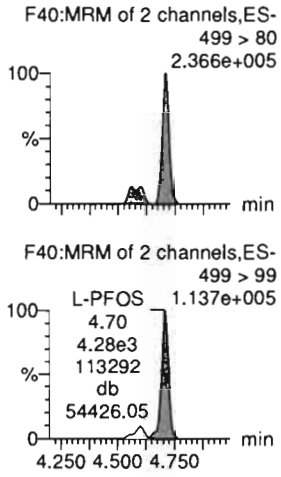
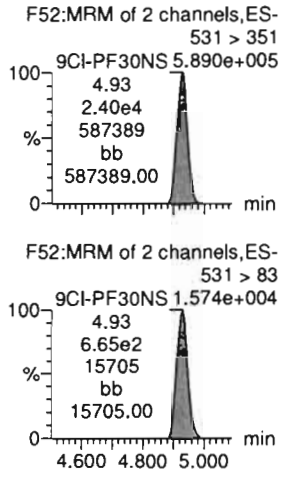


L-PFOS



9Cl-PF30NS



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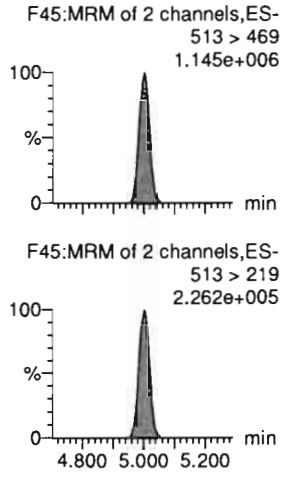
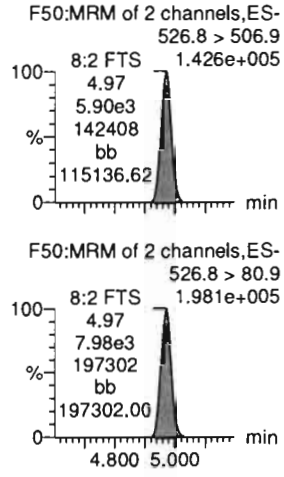


8:2 FTS



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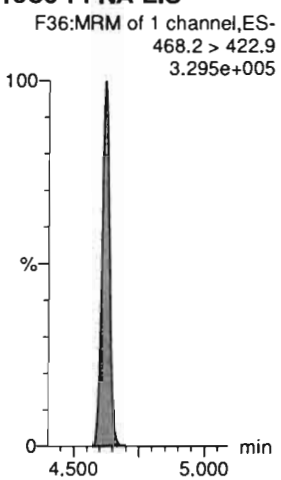
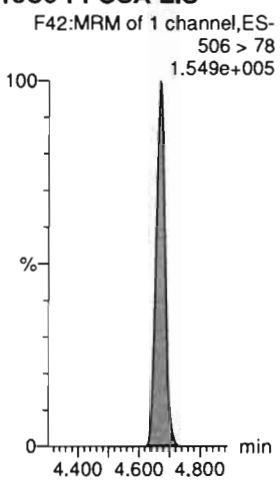


13C8-PFOSA-EIS



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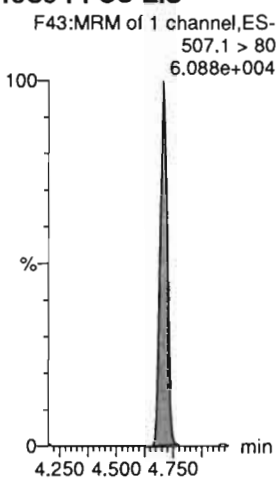

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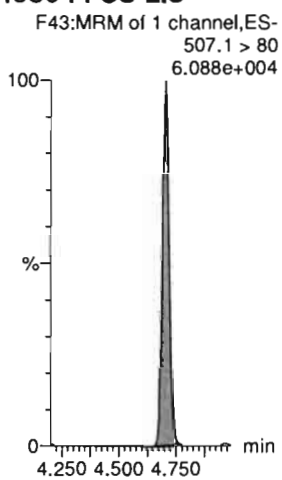

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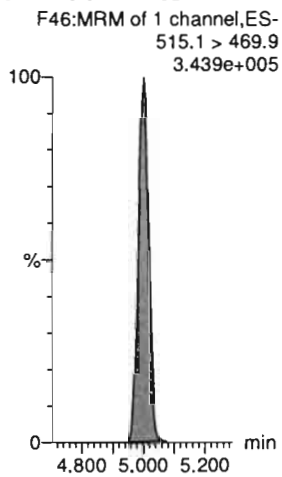

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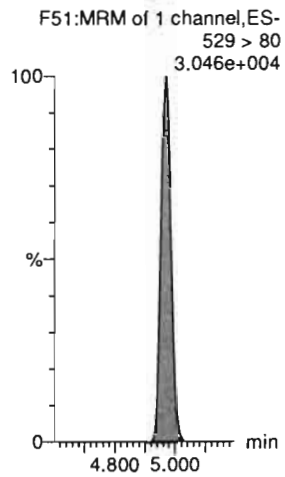

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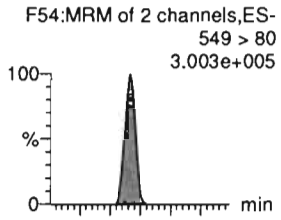
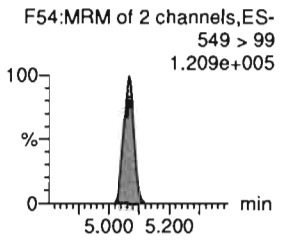
PFNS





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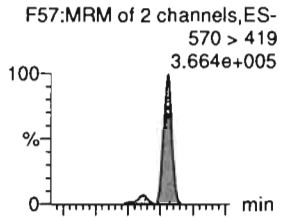

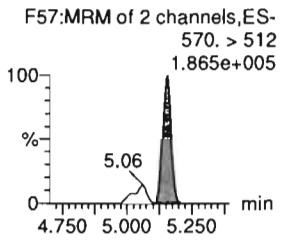

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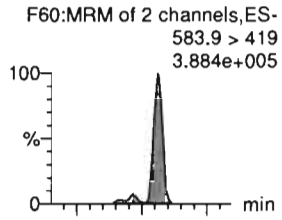

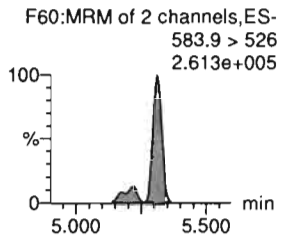

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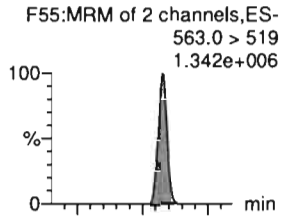

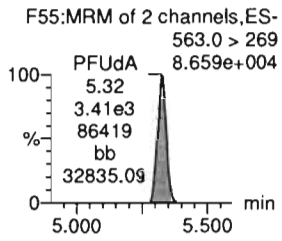

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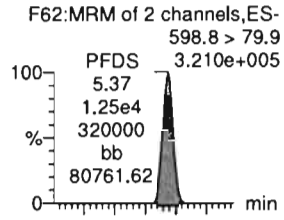
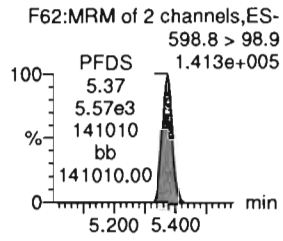
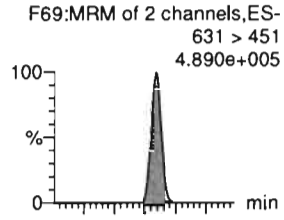
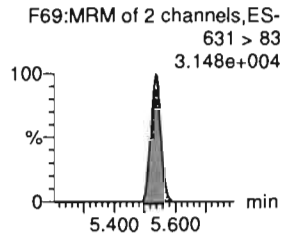


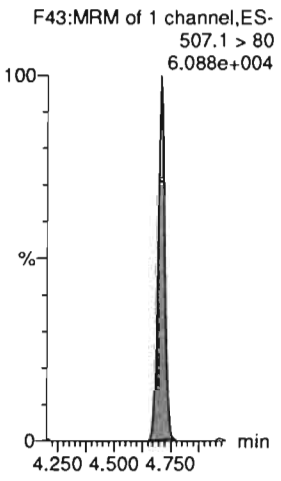


11Cl-PF30UdS

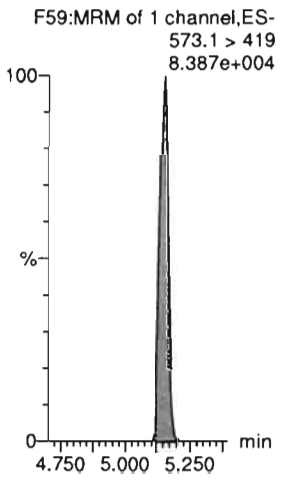




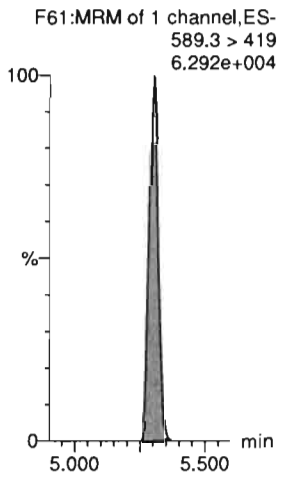
13C8-PFOS-EIS



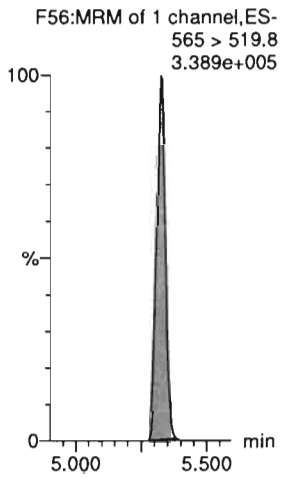
d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFUdA-EIS



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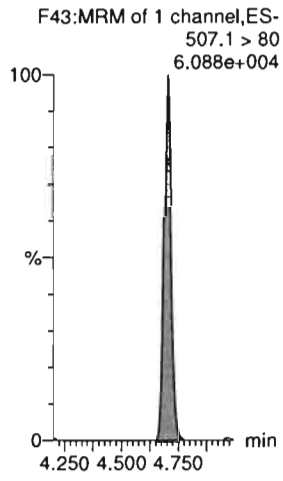

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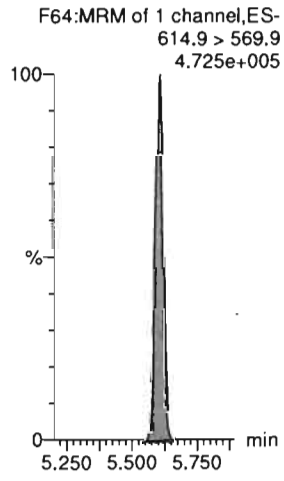

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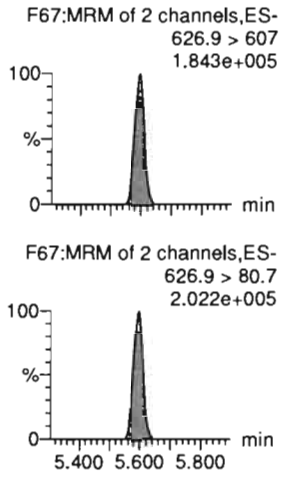
10:2 FTS



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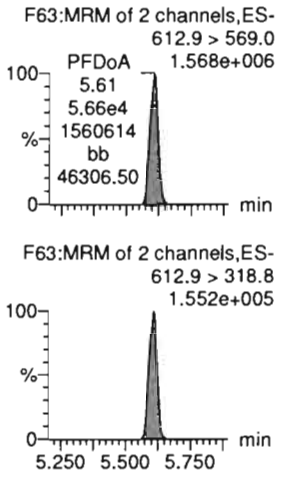
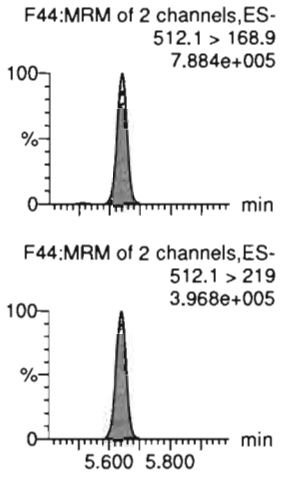


N-MeFOSA



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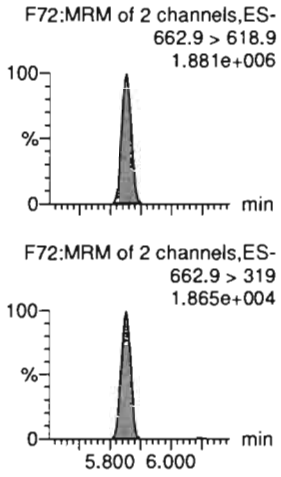
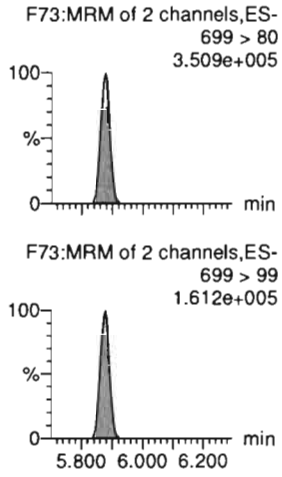
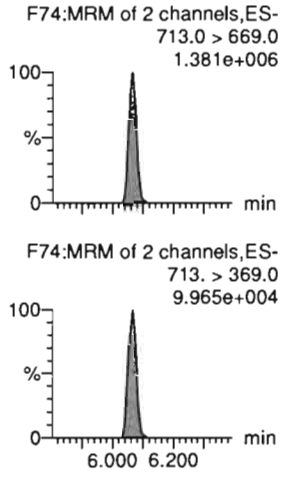


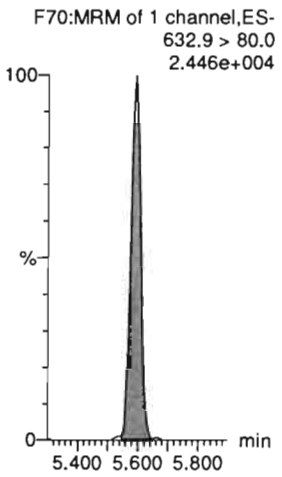
PFDoS



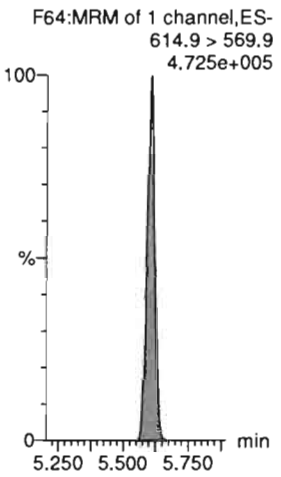
PFTeDA



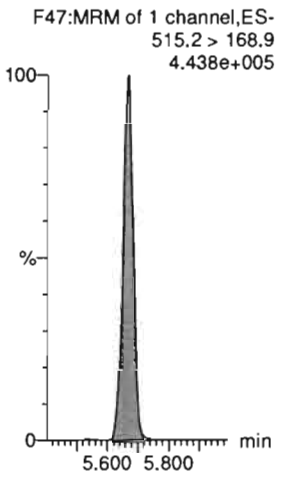
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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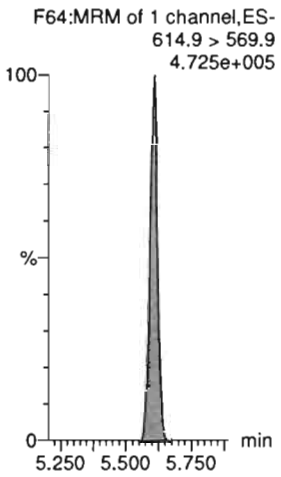

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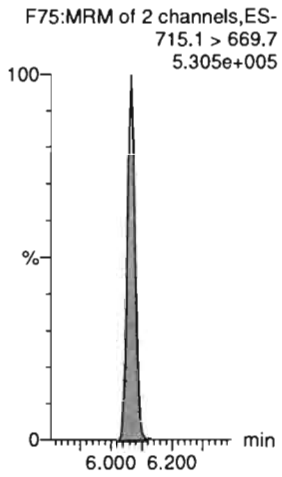
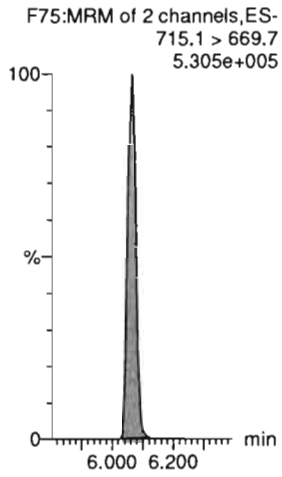


13C2-PFTeDA-EIS

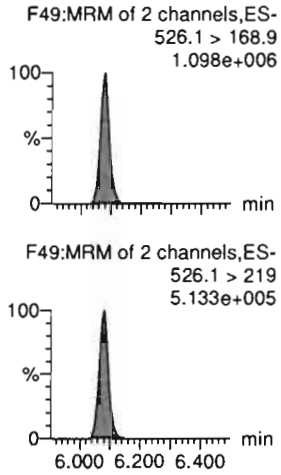


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

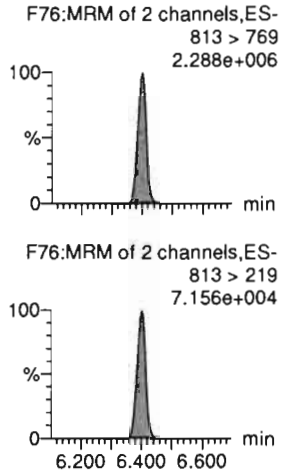
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

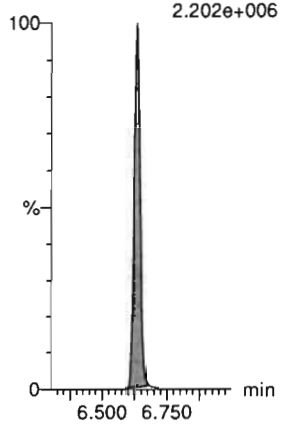
N-EtFOSA



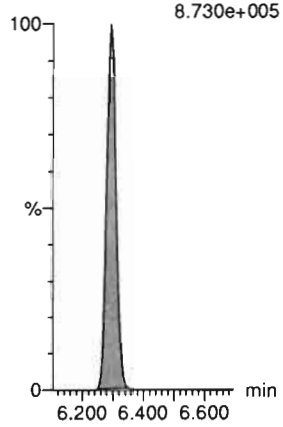
PFHxDA



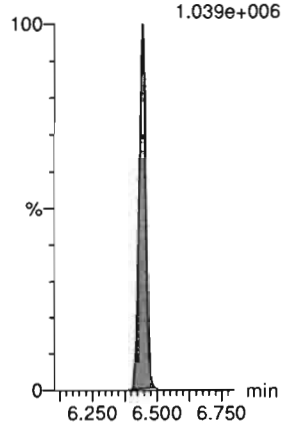
PFODA



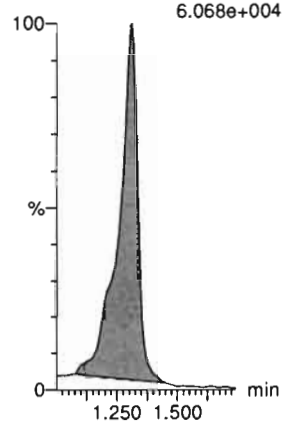
N-MeFOSE



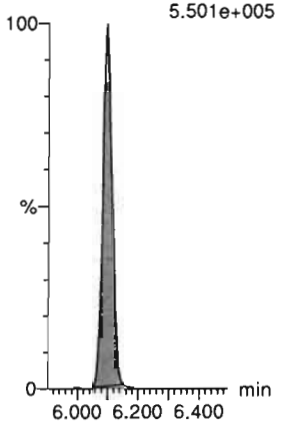
N-EtFOSE



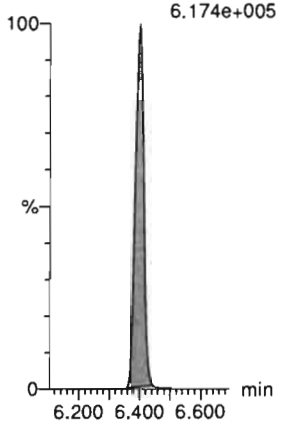
13C3-PFBA-RSD



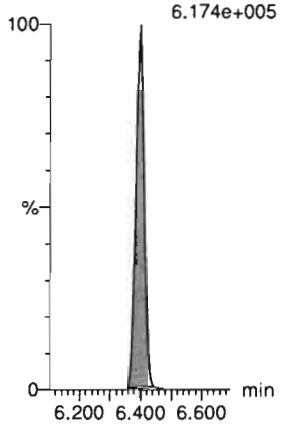
d5-N-ETFOSA-EIS



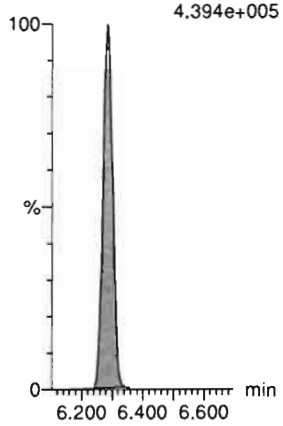
13C2-PFHxDA-EIS



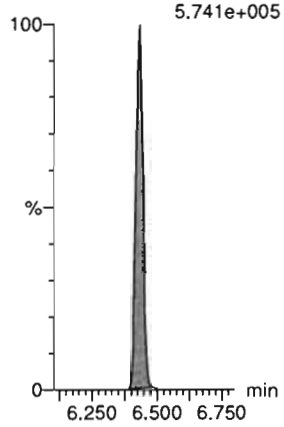
13C2-PFHxDA-EIS



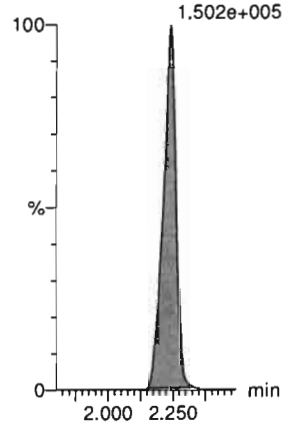
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

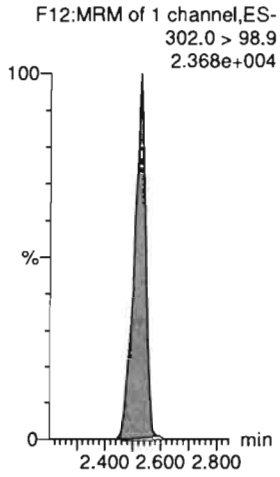


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

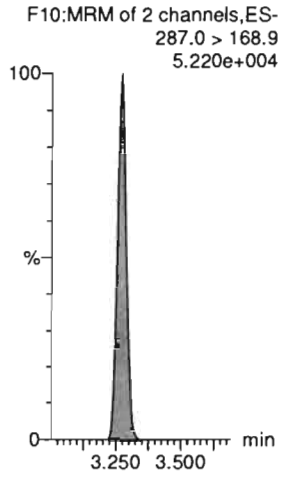
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

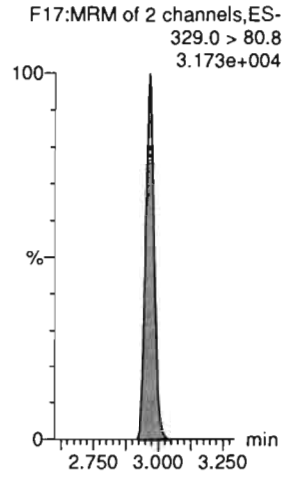
13C3-PFBS-RSD



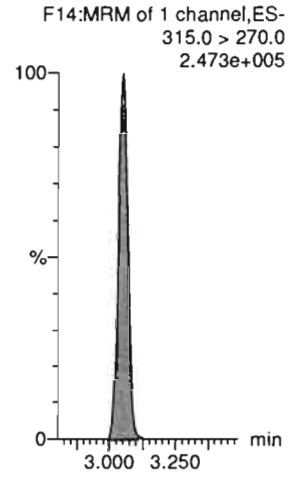
13C3-HFPO-DA-RSD



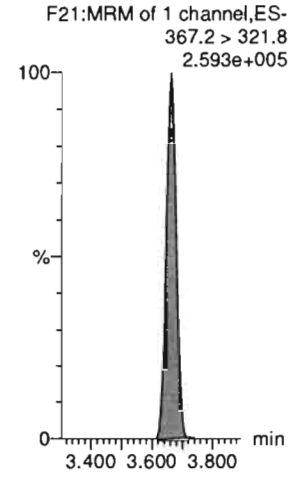
13C2-4:2 FTS-RSD



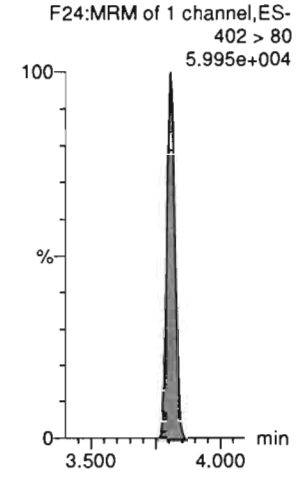
13C2-PFHxA-RSD



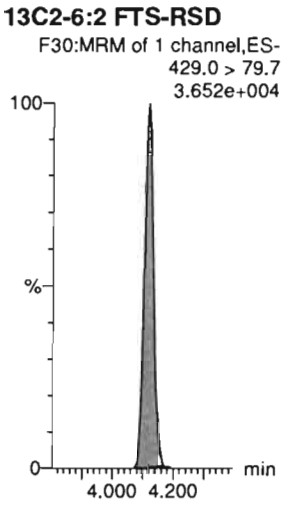
13C4-PFHpA-RSD



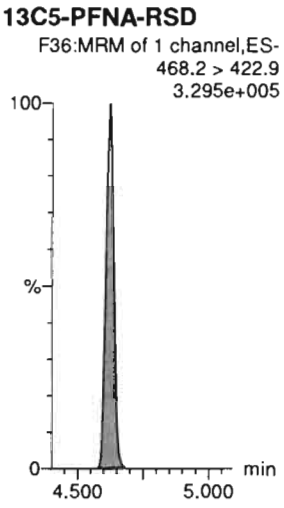
13C3-PFHxS-RSD



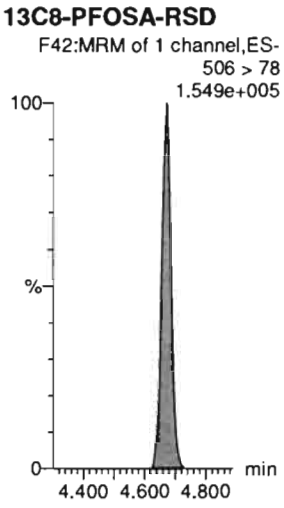
13C2-6:2 FTS-RSD



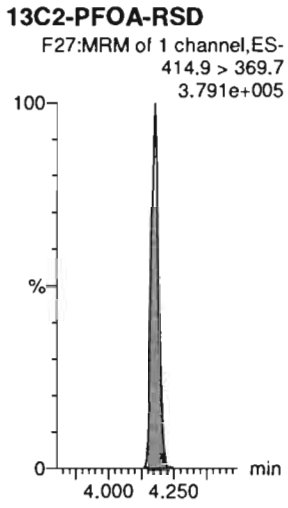
13C5-PFNA-RSD



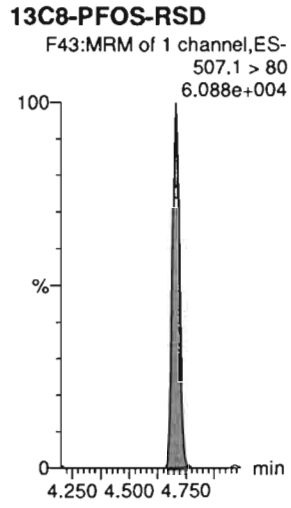
13C8-PFOSA-RSD



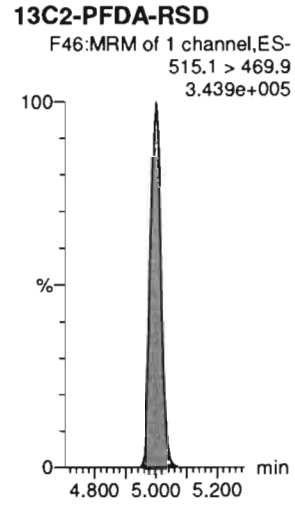
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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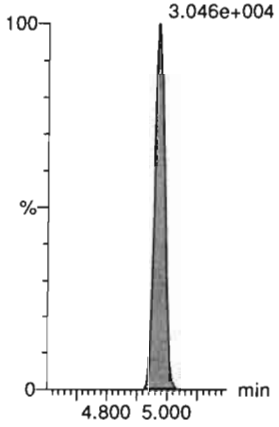
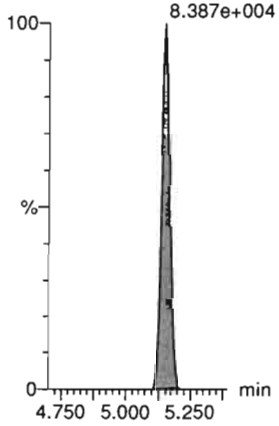
Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

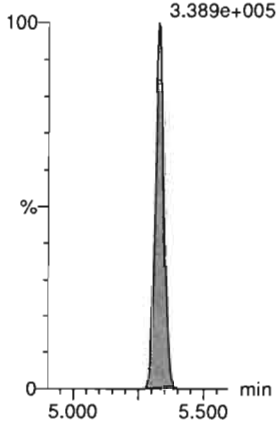
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.046e+004



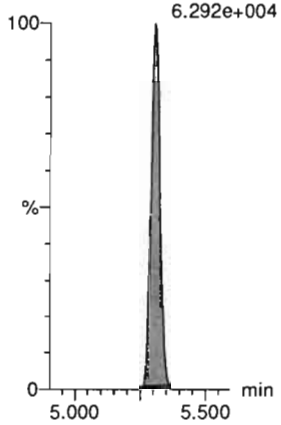
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
8.387e+004



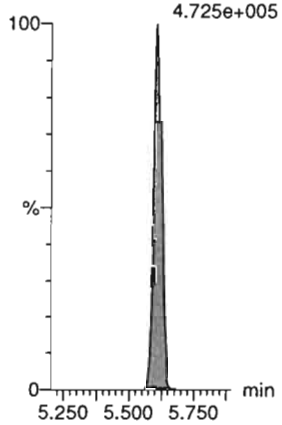
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.389e+005



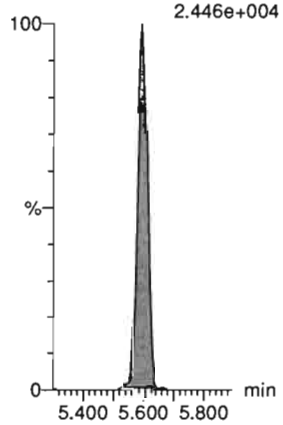
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
6.292e+004



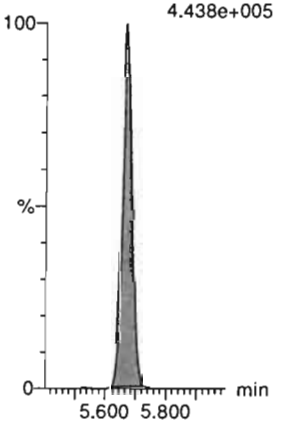
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.725e+005



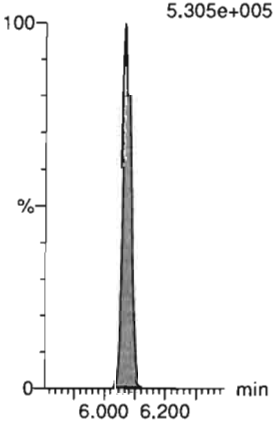
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.446e+004



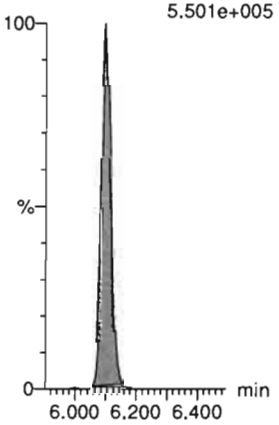
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.438e+005



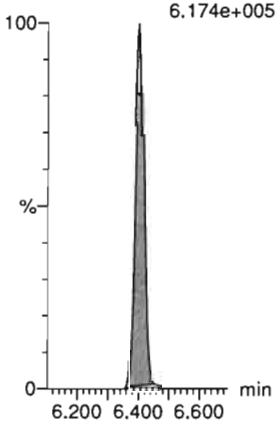
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.305e+005



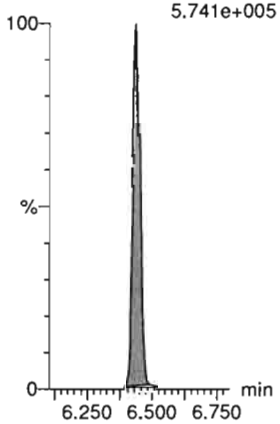
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.501e+005



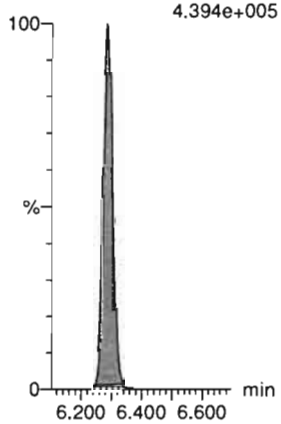
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.174e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
5.741e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.394e+005

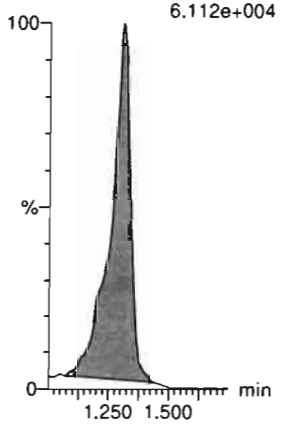


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

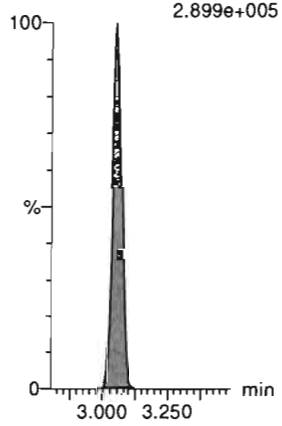
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-11, Date: 23-Jul-2020, Time: 11:43:26, ID: ST200723P1-7 PFC CS4 20G1607, Description: PFC CS4 20G1607

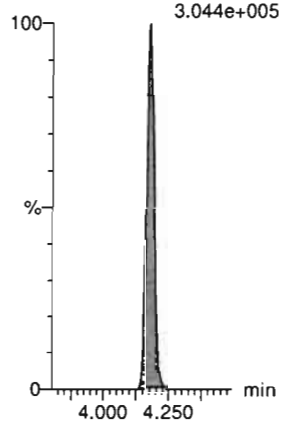
13C4-PFBA



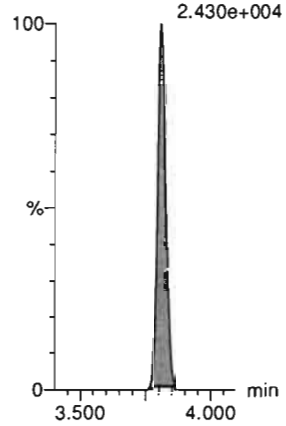
13C5-PFHxA



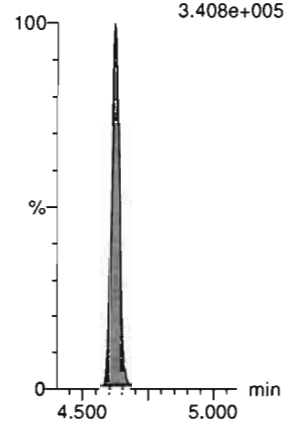
13C8-PFOA



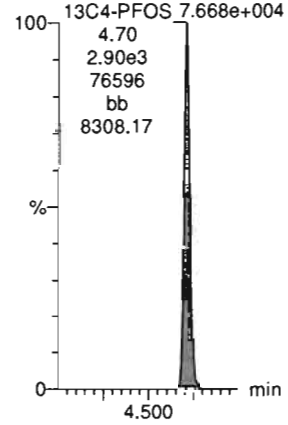
18O2-PFHxS



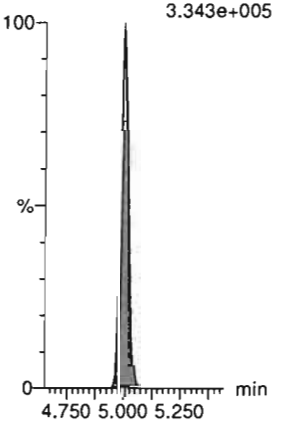
13C9-PFNA



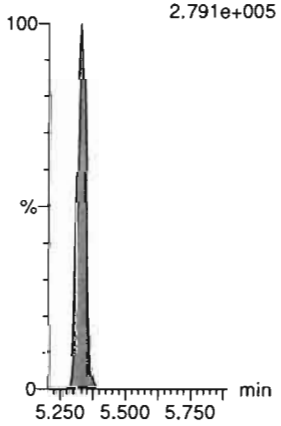
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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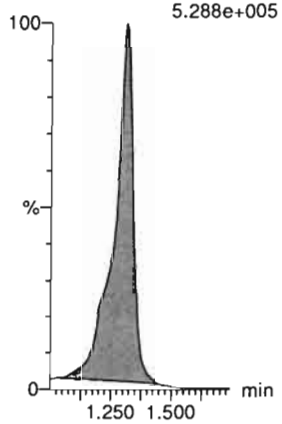
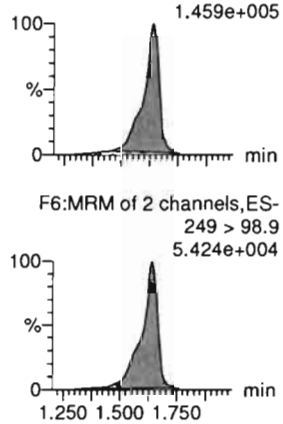
Printed: Thursday, July 23, 2020 14:00:36 Pacific Daylight Time

Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

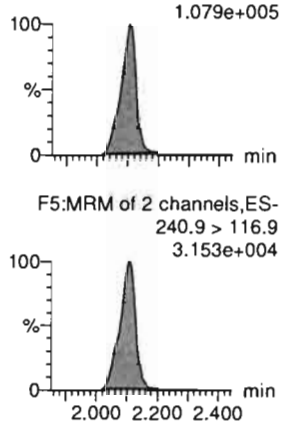
PFBA



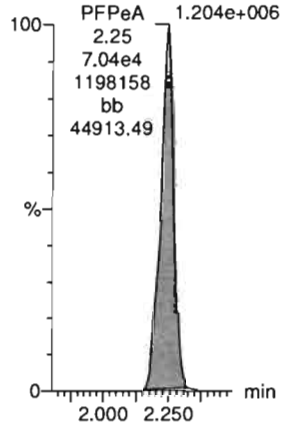
PFPrS



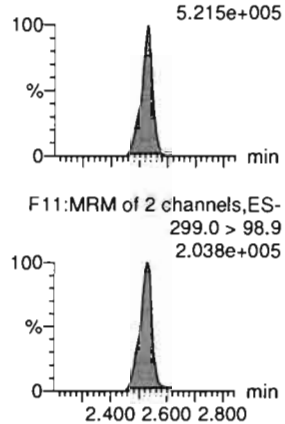
3:3 FTCA



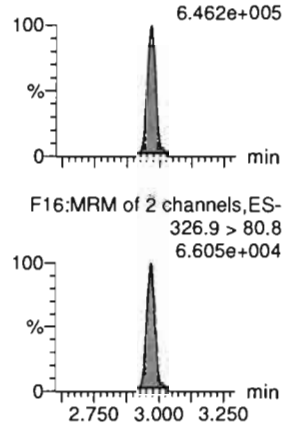
PFPeA



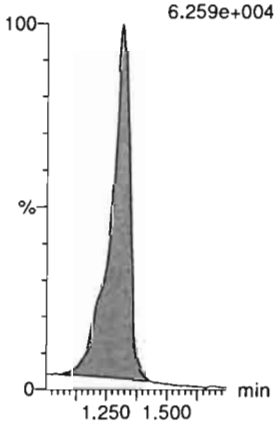
PFBS



4:2 FTS



13C3-PFBA-EIS



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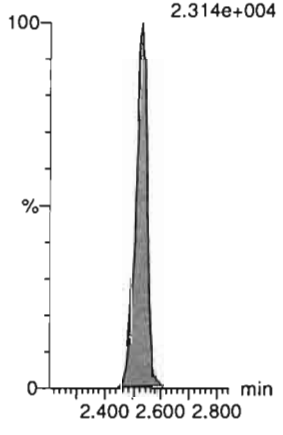

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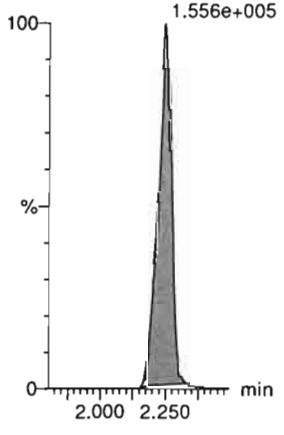

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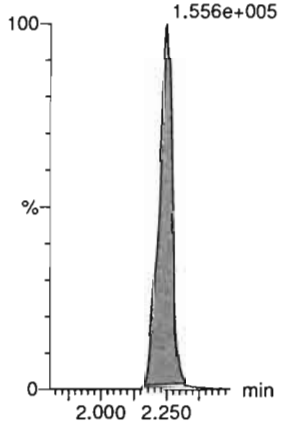

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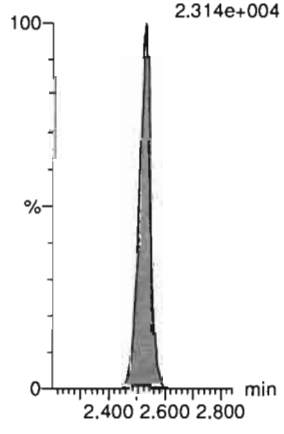
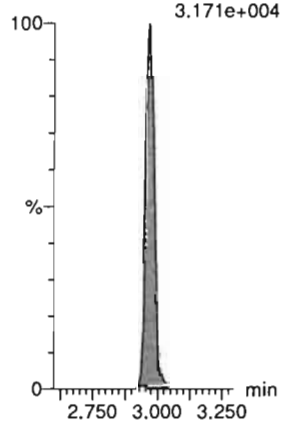


13C2-4:2 FTS-EIS



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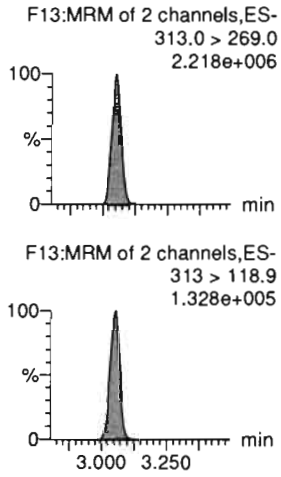
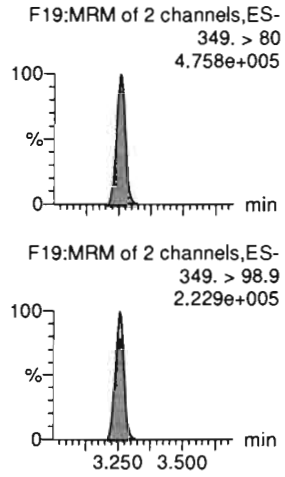
Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

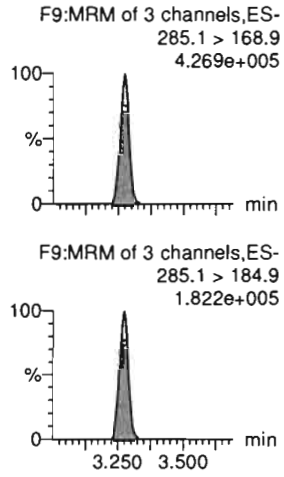
PFHxA



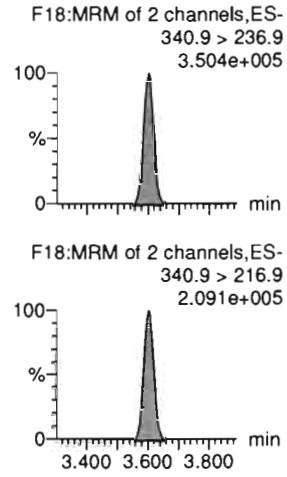
PFPeS



HFPO-DA



5:3 FTCA



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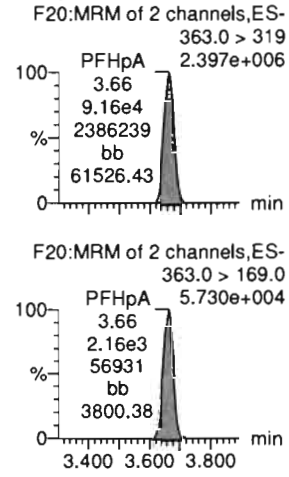
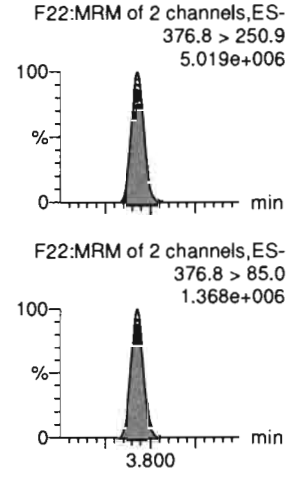
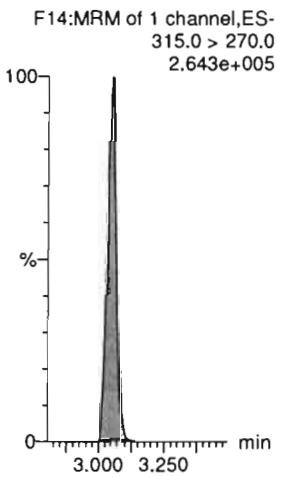


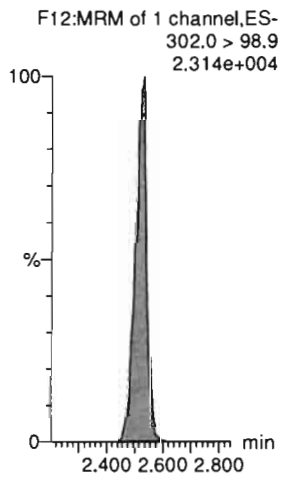
ADONA



13C2-PFHxA-EIS



13C3-PFBS-EIS



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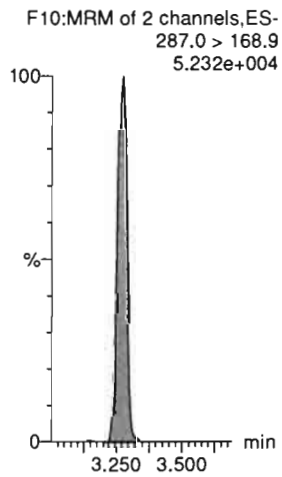
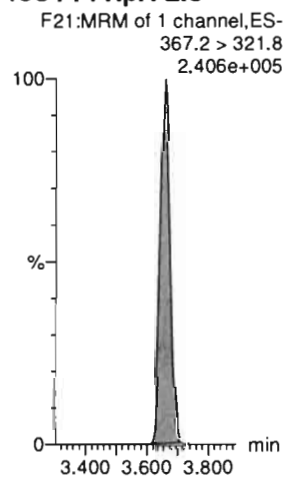


13C4-PFHpA-EIS



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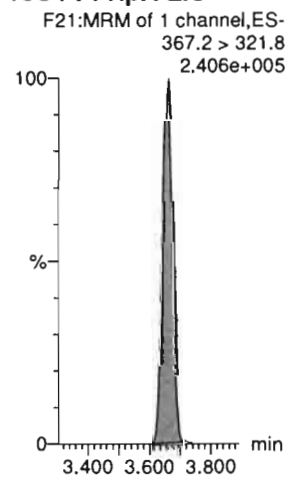

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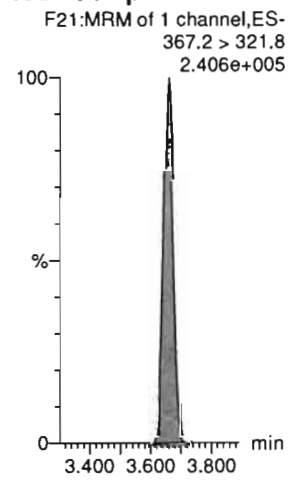

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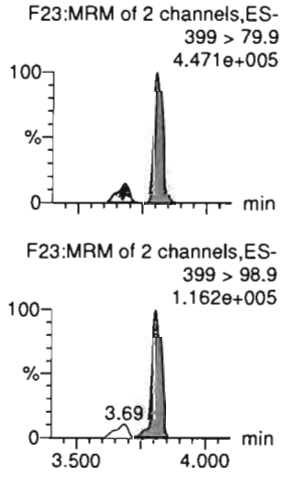
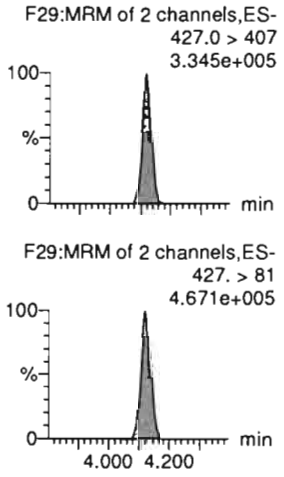
Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

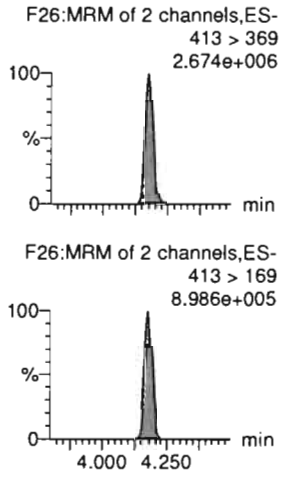
L-PFHxS



6:2 FTS



L-PFOA



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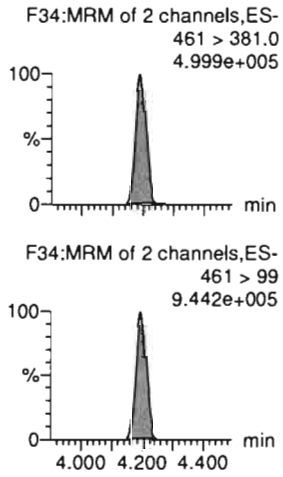

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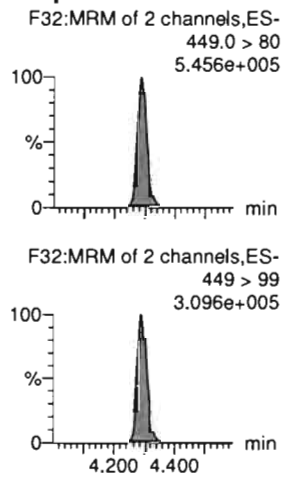
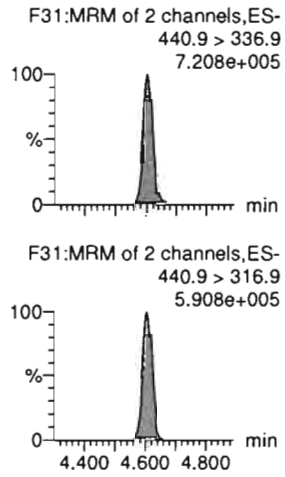


7:3 FTCA



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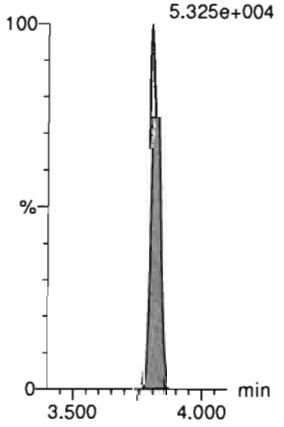
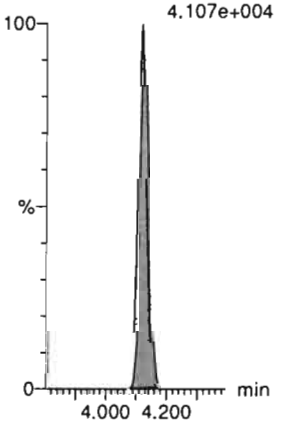


13C2-6:2 FTS-EIS



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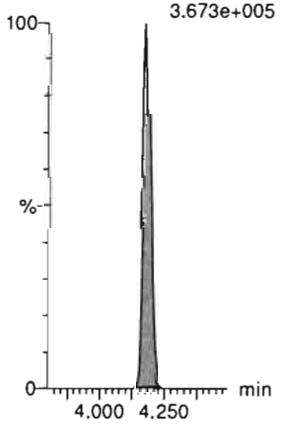
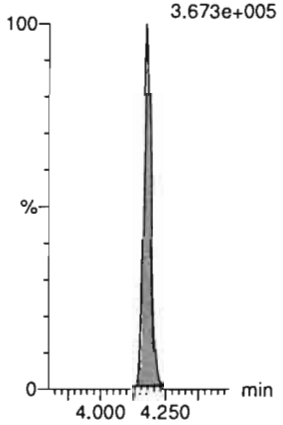
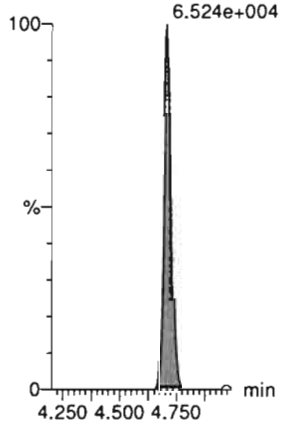


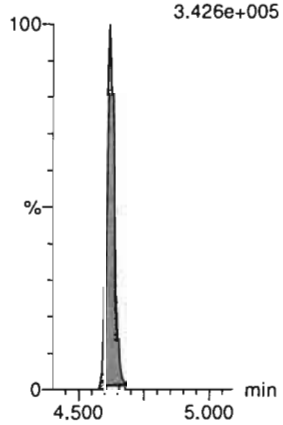
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



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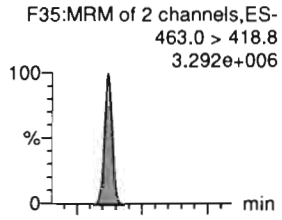

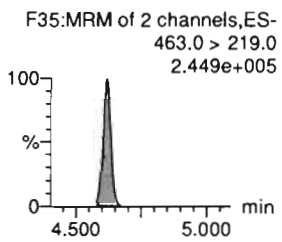

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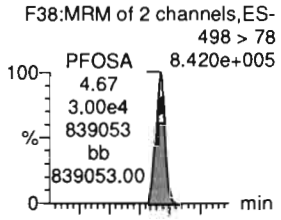
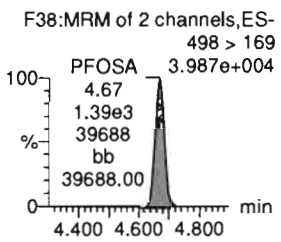
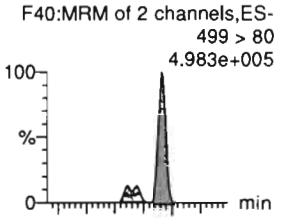
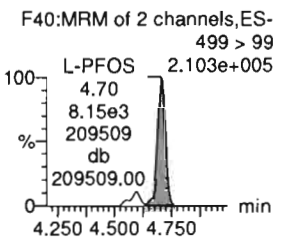




L-PFOS





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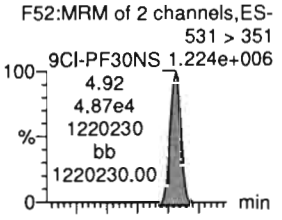
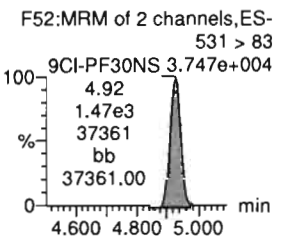
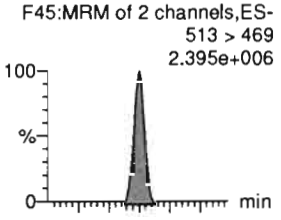
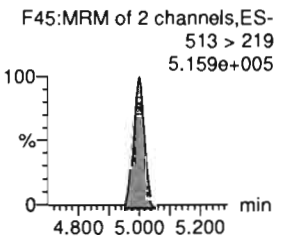


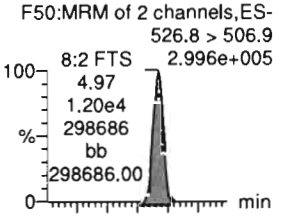


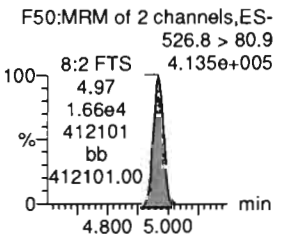
PFDA



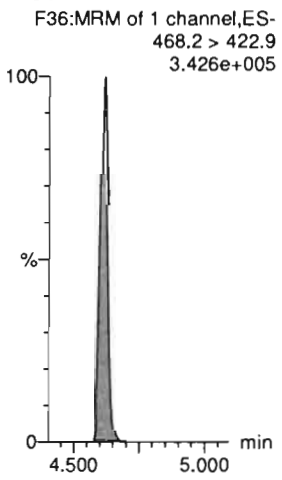


8:2 FTS

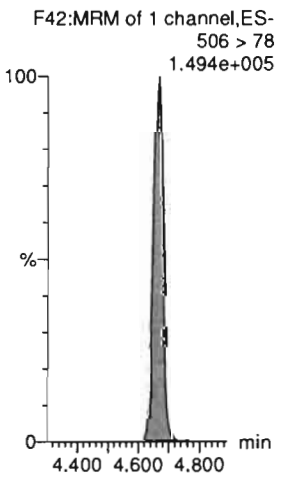




13C5-PFNA-EIS



13C8-PFOSA-EIS



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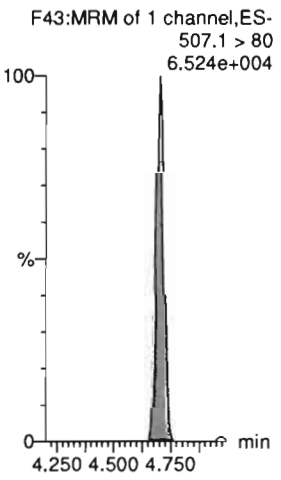

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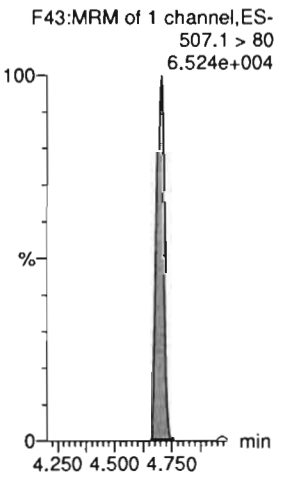
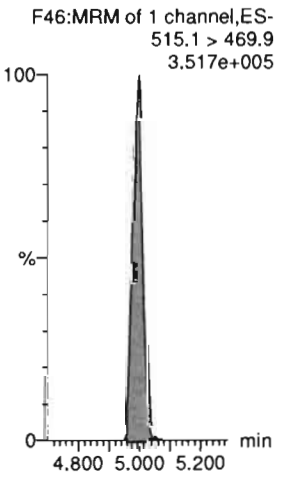
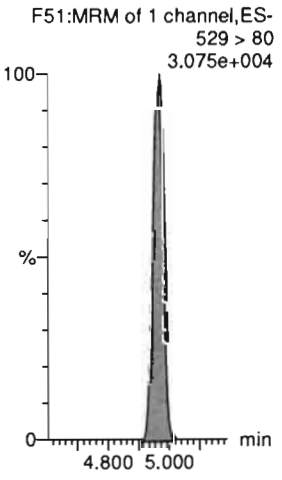


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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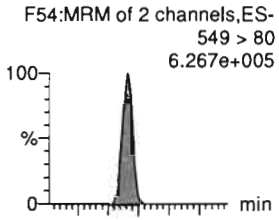
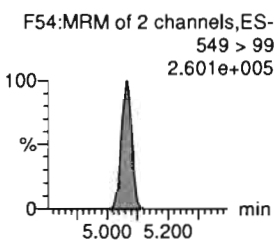
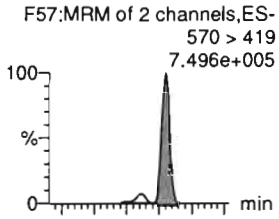
Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

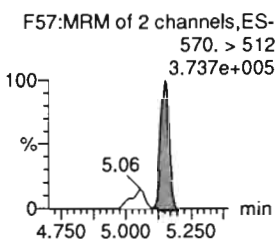
PFNS





L-MeFOSAA





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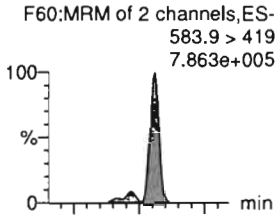
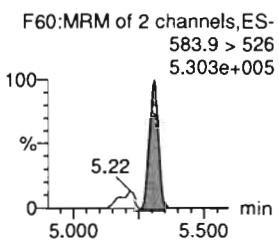
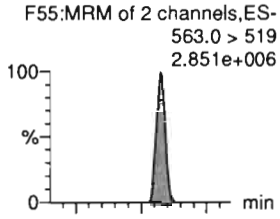
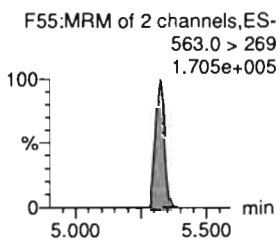


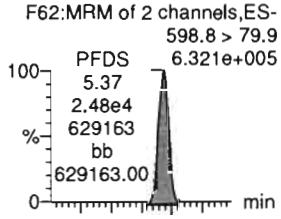


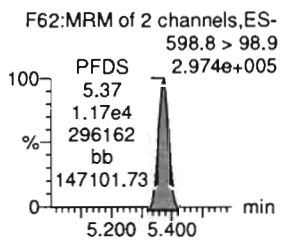
PFUdA



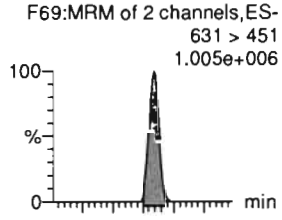


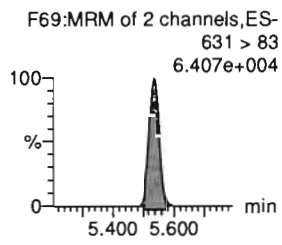
PFDS



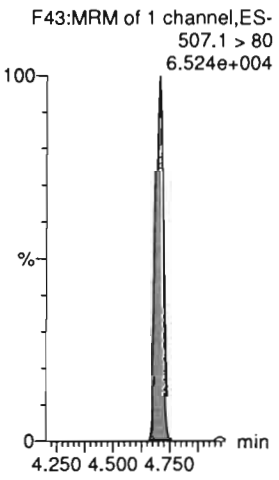


11Cl-PF30UdS

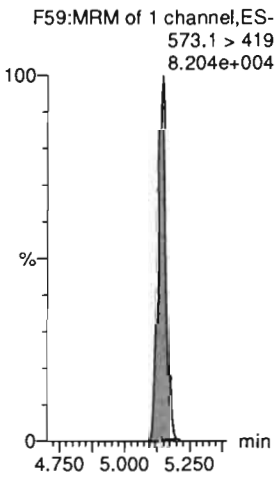




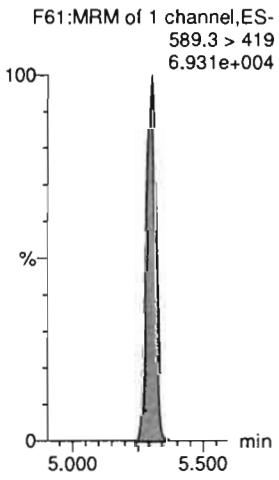
13C8-PFOS-EIS



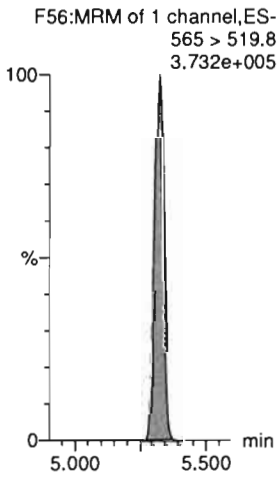
d3-N-MeFOSAA-EIS



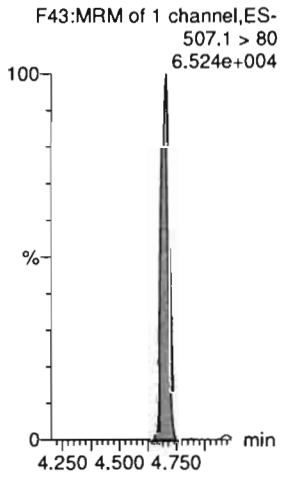
d5-N-EtFOSAA-EIS



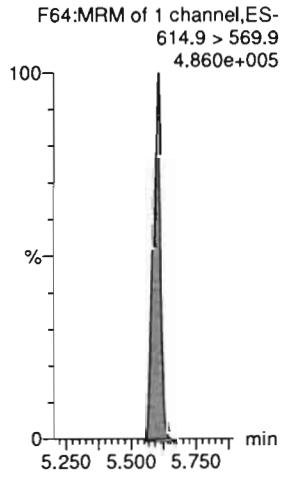
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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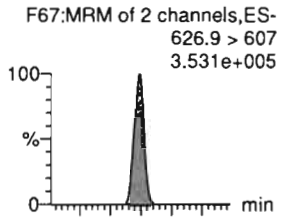
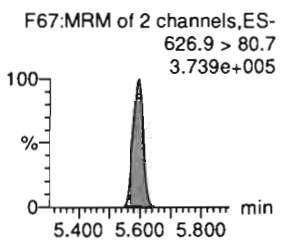
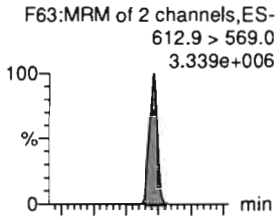
Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

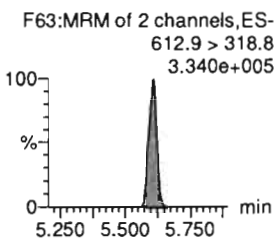
10:2 FTS



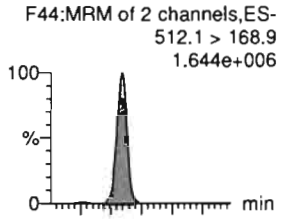


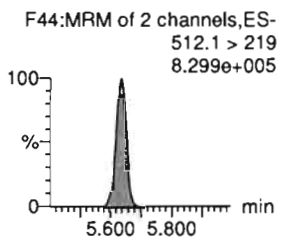
PFDoA





N-MeFOSA





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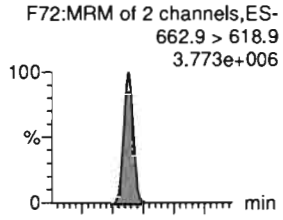
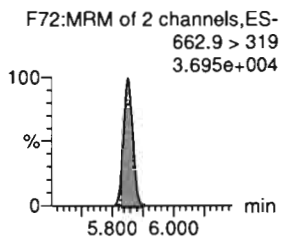
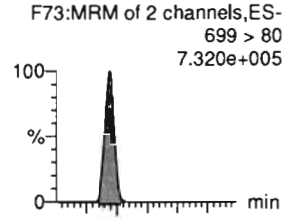
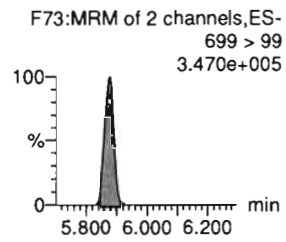


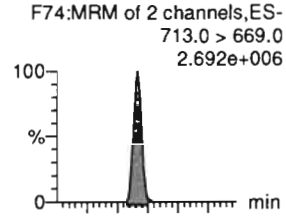


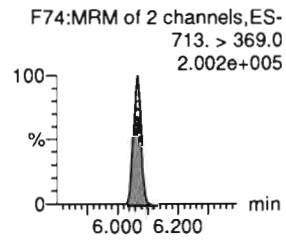
PFDoS



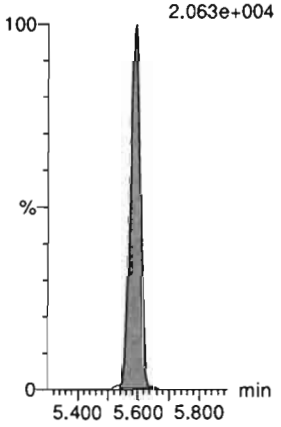


PFTeDA

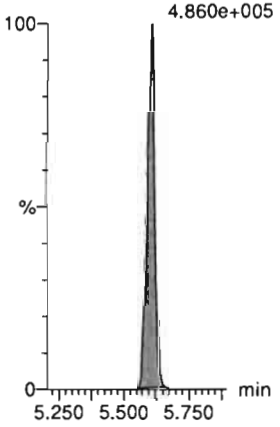




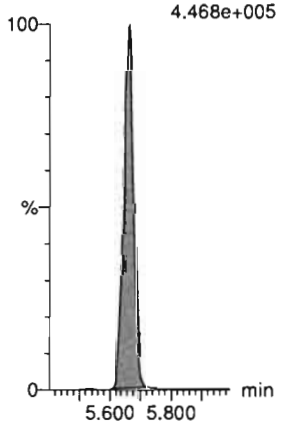
13C2-10:2 FTS-EIS



13C2-PFDoA-EIS



d3-N-MeFOSA-EIS



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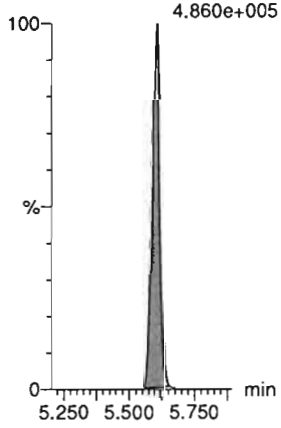

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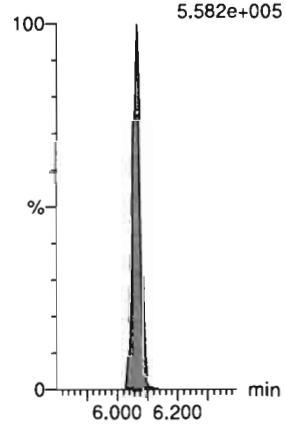
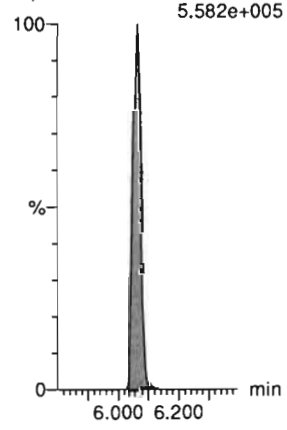


13C2-PFTeDA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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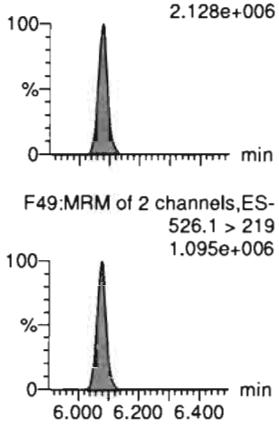
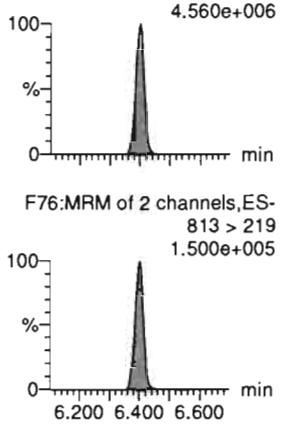
Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

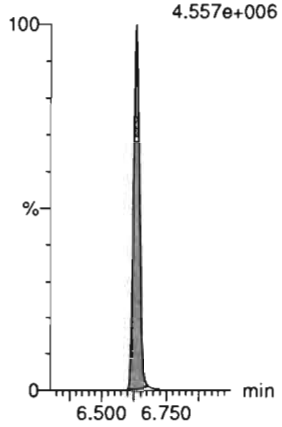
N-EtFOSA



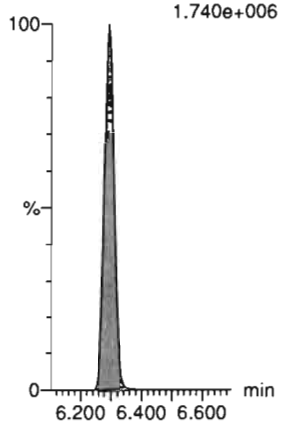
PFHxDA



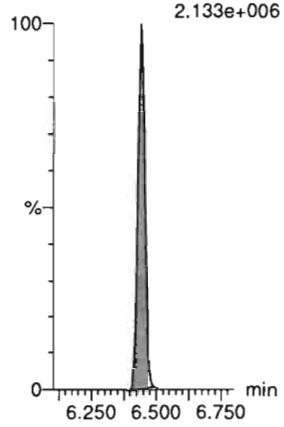
PFODA



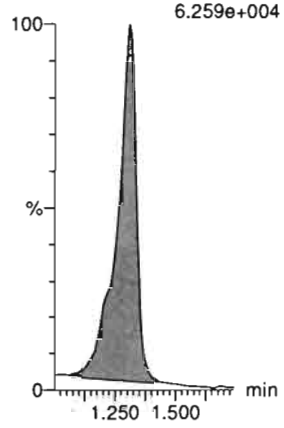
N-MeFOSE



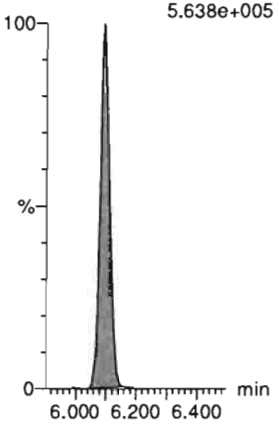
N-EtFOSE



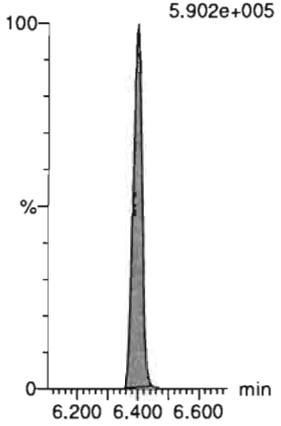
13C3-PFBA-RSD



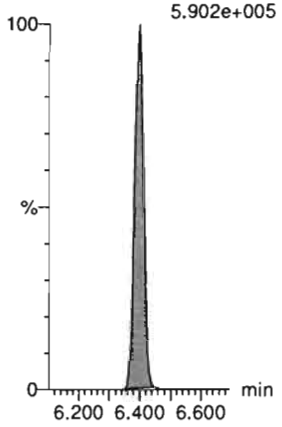
d5-N-ETFOSA-EIS



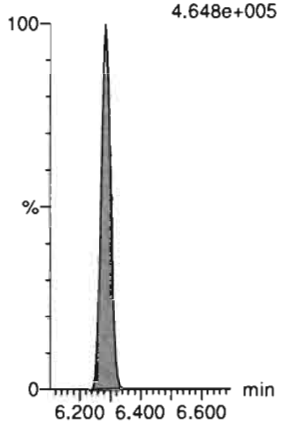
13C2-PFHxDA-EIS



13C2-PFHxDA-EIS



d7-N-MeFOSE-EIS



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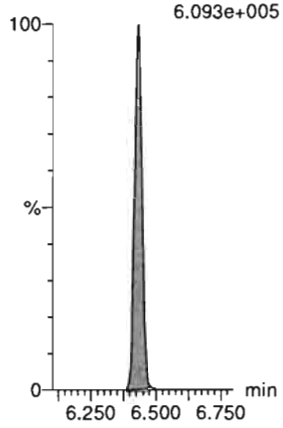
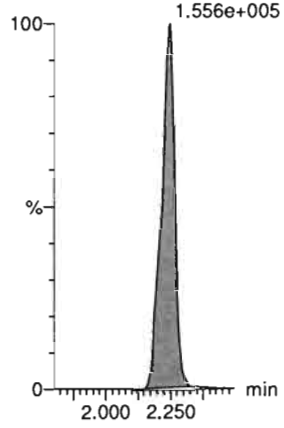


13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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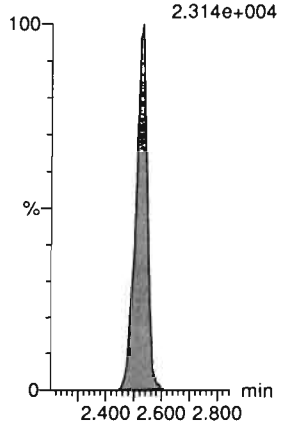
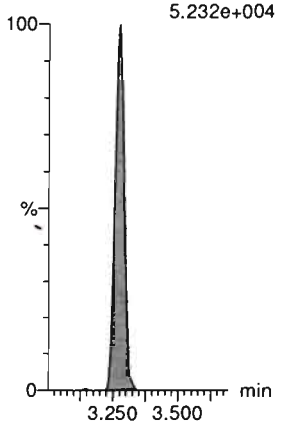
Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

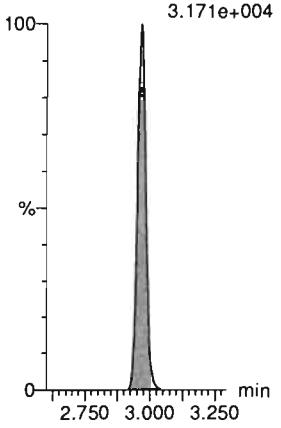
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.314e+004



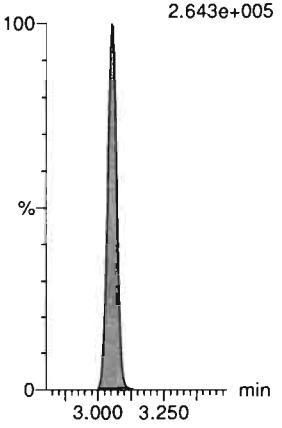
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.232e+004



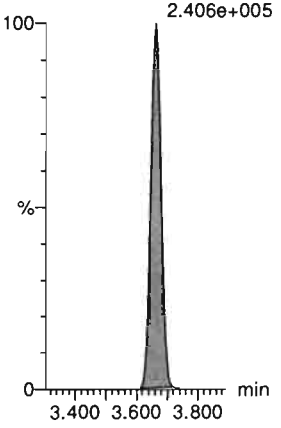
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.171e+004



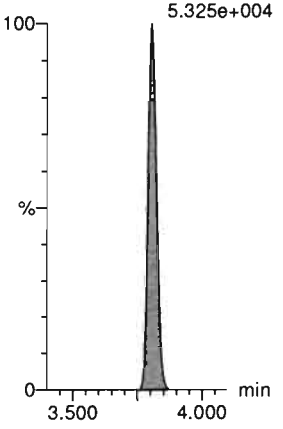
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.643e+005



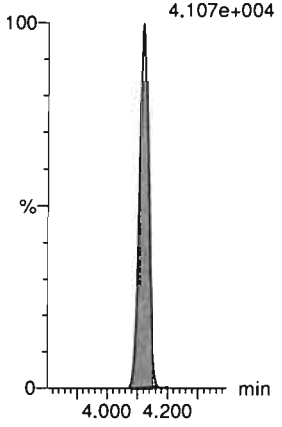
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.406e+005



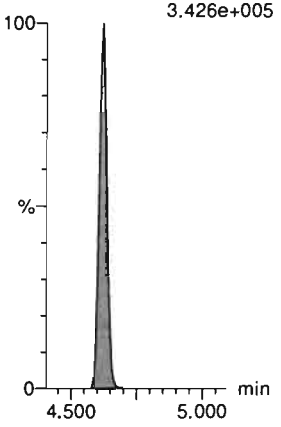
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
5.325e+004



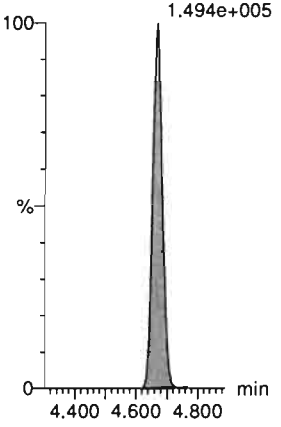
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.107e+004



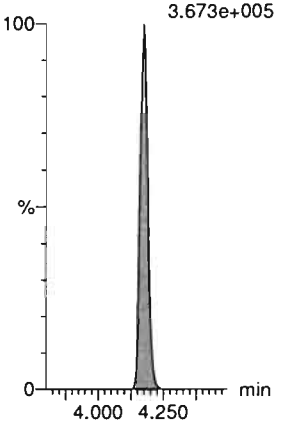
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.426e+005



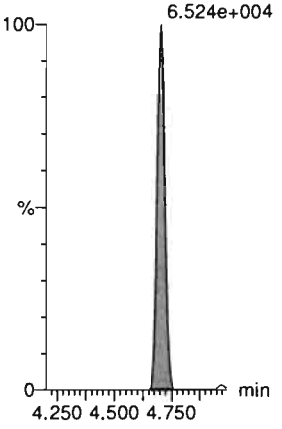
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.494e+005



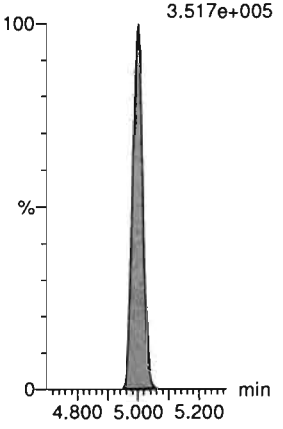
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.673e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.524e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.517e+005

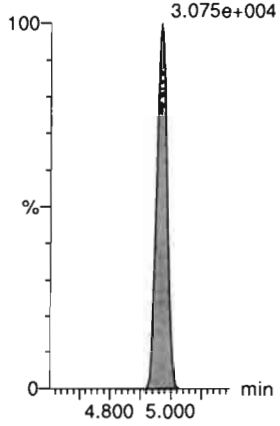


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

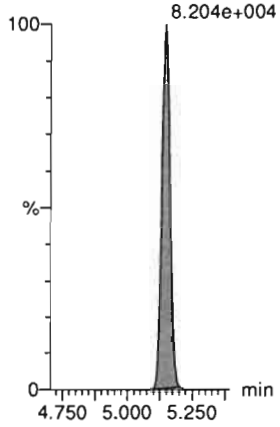
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

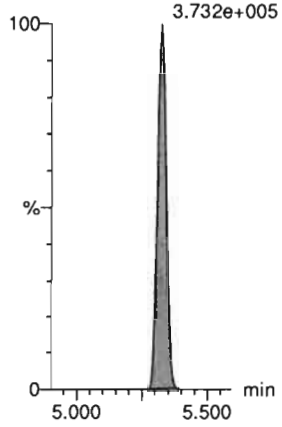
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.075e+004



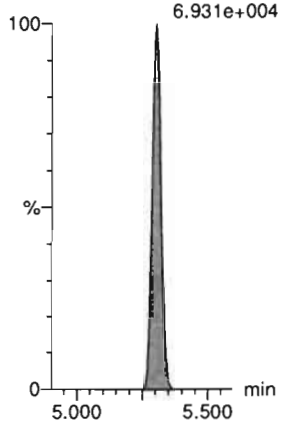
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
8.204e+004



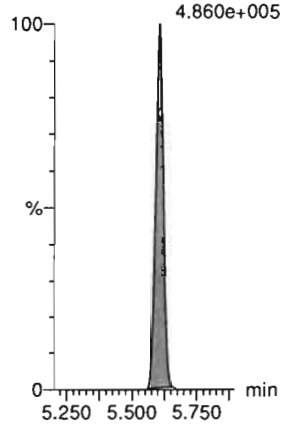
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.732e+005



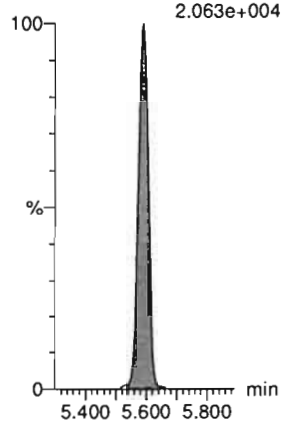
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
6.931e+004



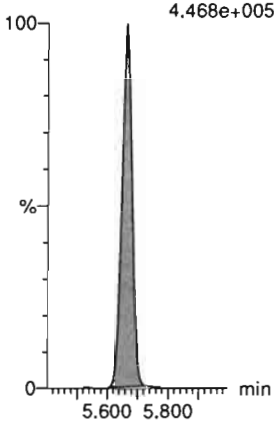
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.860e+005



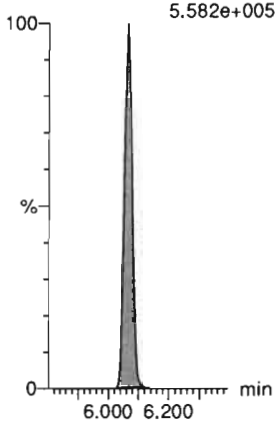
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.063e+004



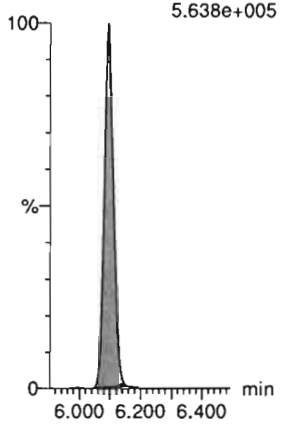
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.468e+005



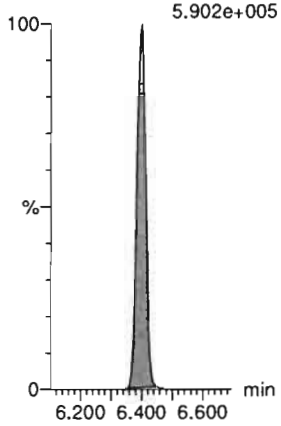
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.582e+005



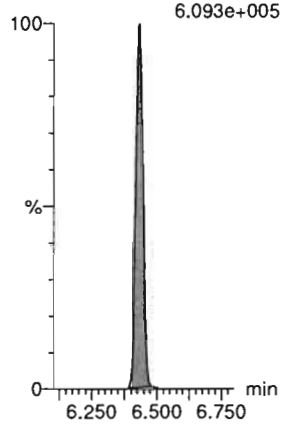
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.638e+005



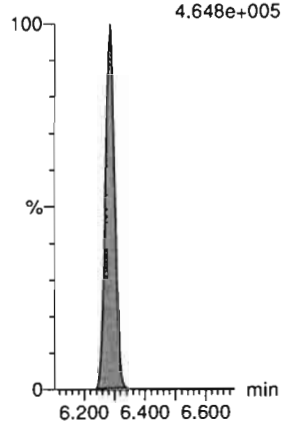
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
5.902e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
6.093e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.648e+005

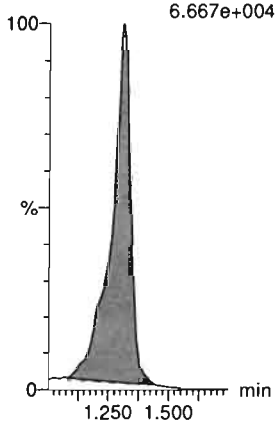


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

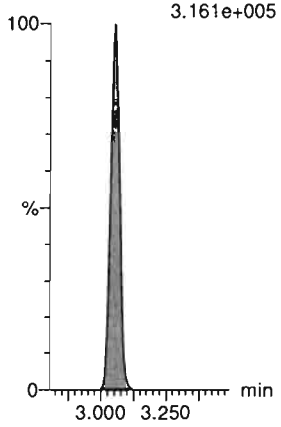
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-12, Date: 23-Jul-2020, Time: 11:54:02, ID: ST200723P1-8 PFC CS5 20G1608, Description: PFC CS5 20G1608

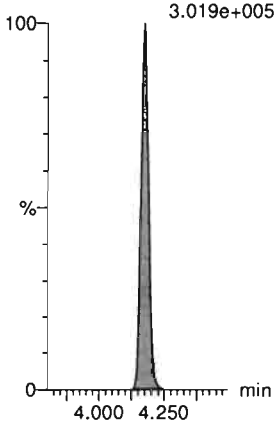
13C4-PFBA



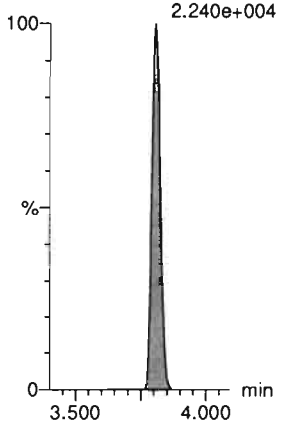
13C5-PFHxA



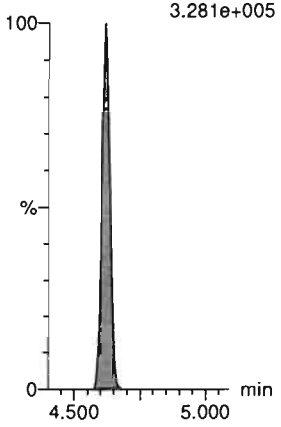
13C8-PFOA



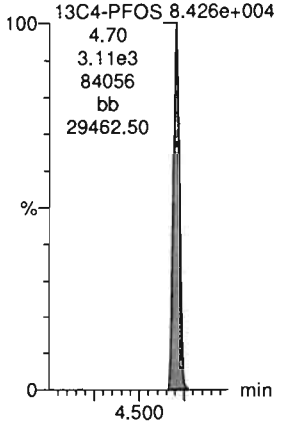
18O2-PFHxS



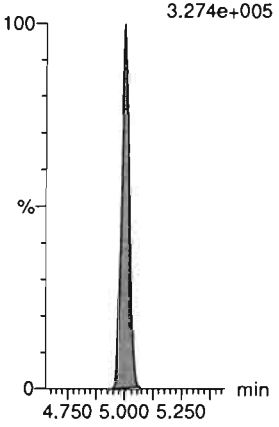
13C9-PFNA



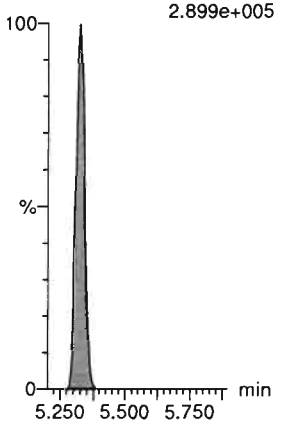
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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Last Altered: Thursday, July 23, 2020 13:51:37 Pacific Daylight Time
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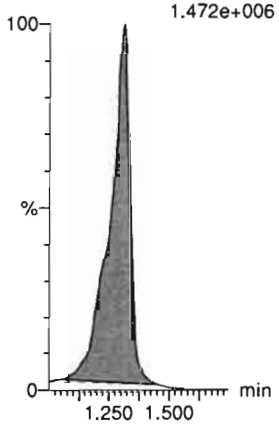
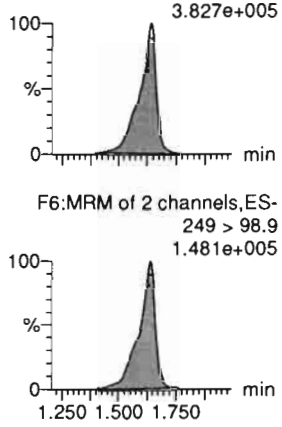
Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

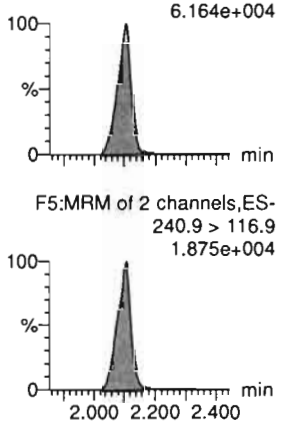
PFBA



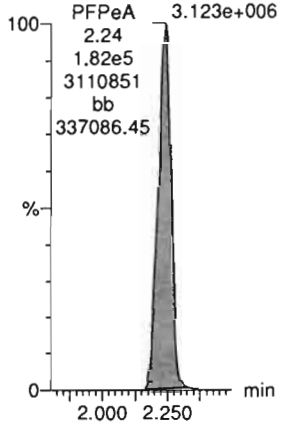
PFPrS



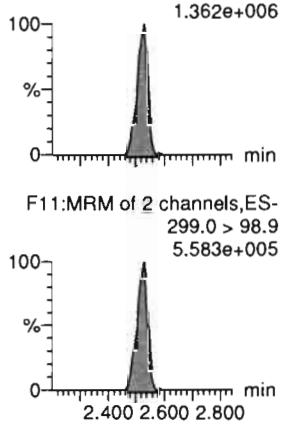
3:3 FTCA



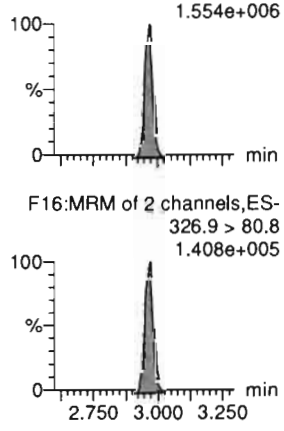
PFPeA



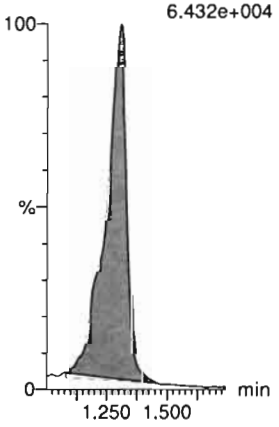
PFBS



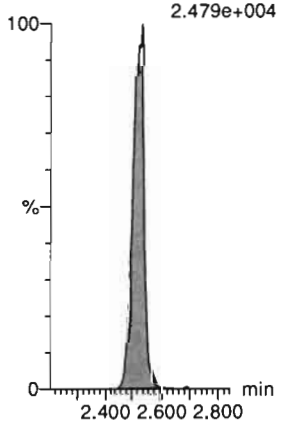
4:2 FTS



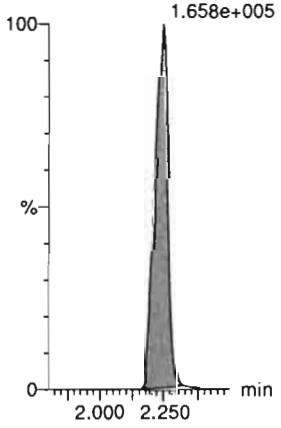
13C3-PFBA-EIS



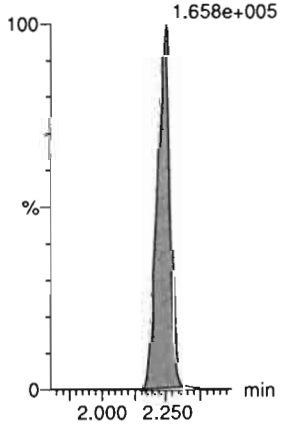
13C3-PFBS-EIS



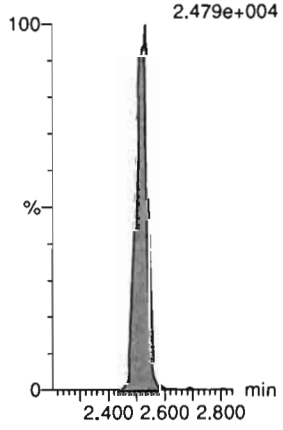
13C3-PFPeA-EIS



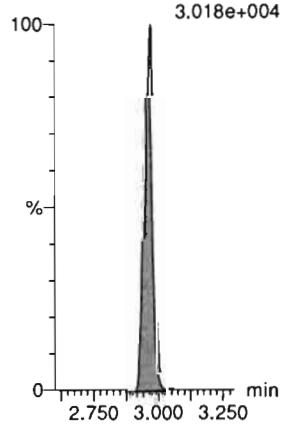
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



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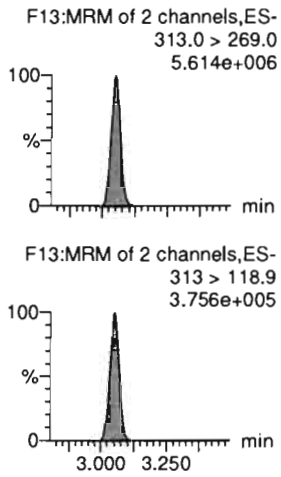
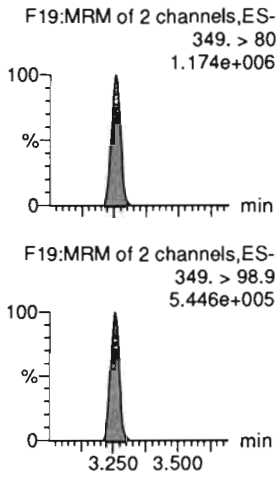
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

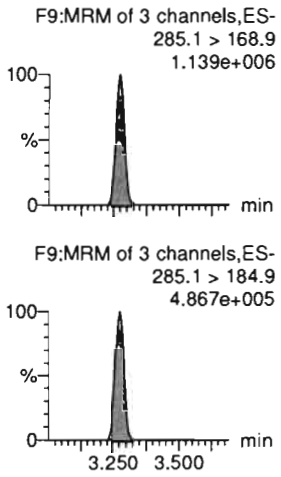
PFHxA



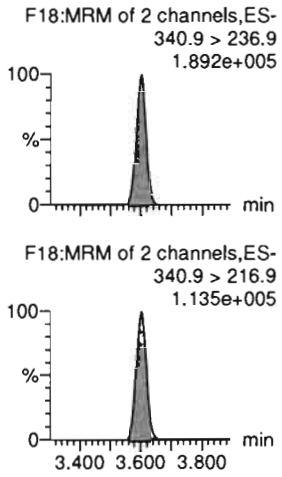
PFPeS



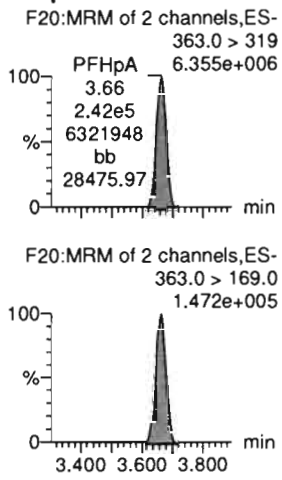
HFPO-DA



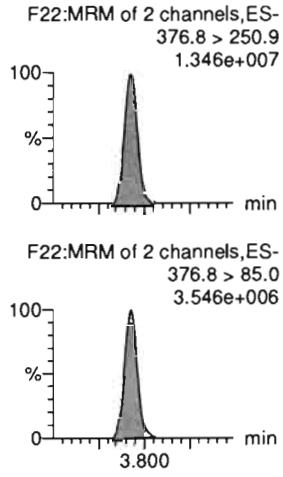
5:3 FTCA



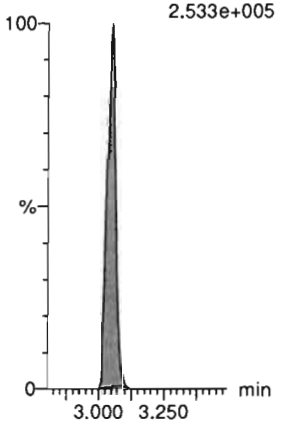
PFHpA



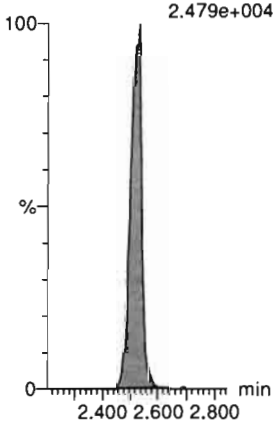
ADONA



13C2-PFHxA-EIS



13C3-PFBS-EIS



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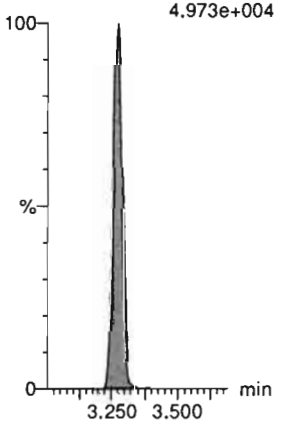

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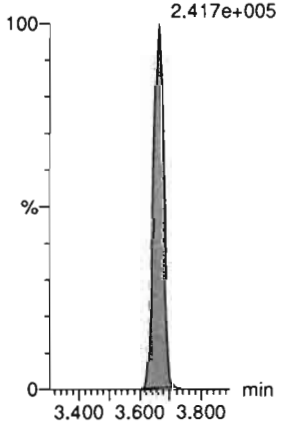

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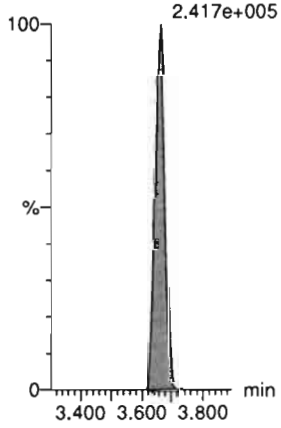

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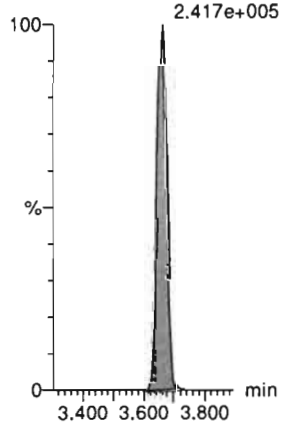

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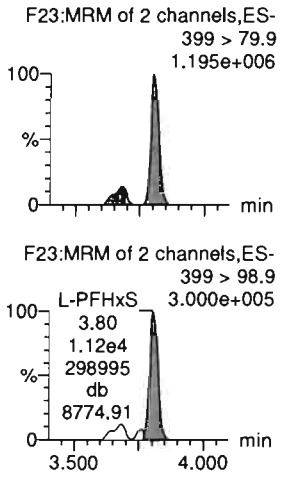
Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

L-PFHxS



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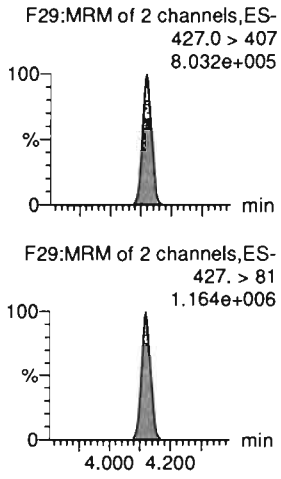

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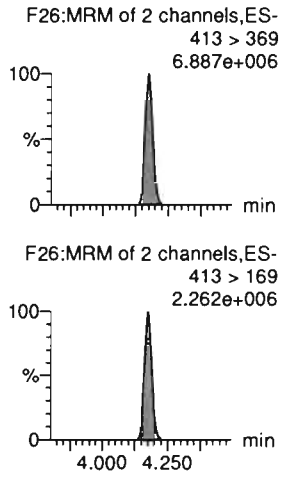

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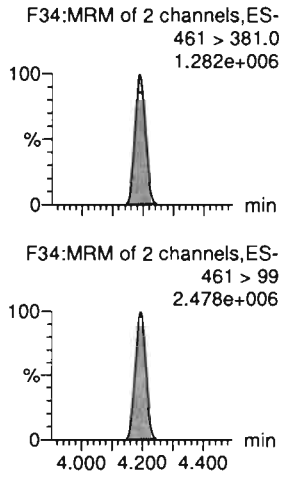

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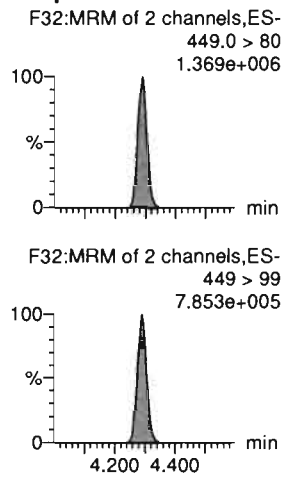
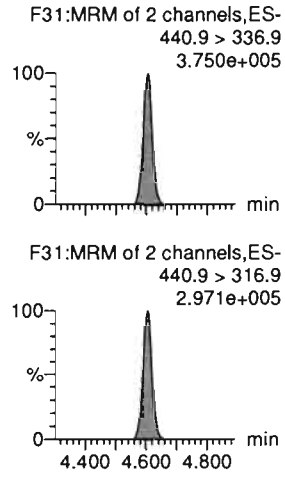


7:3 FTCA



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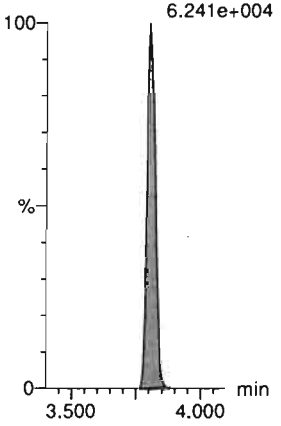
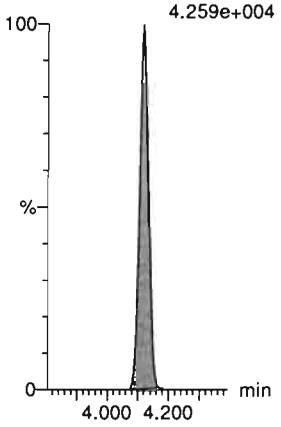


13C2-6:2 FTS-EIS



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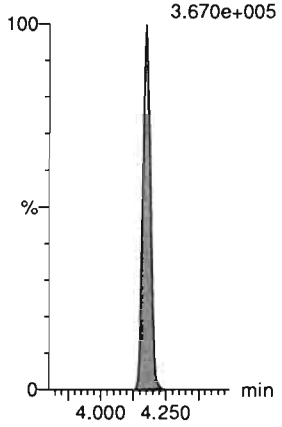

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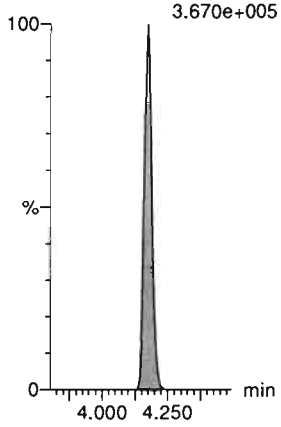
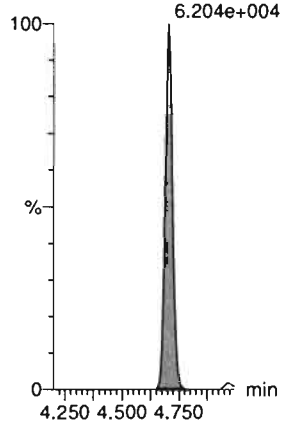
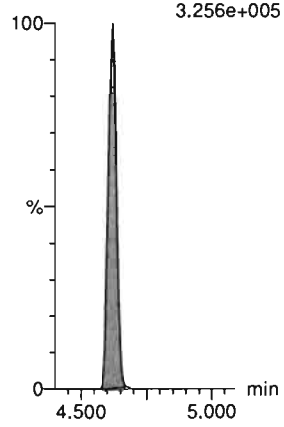


13C8-PFOS-EIS



13C5-PFNA-EIS



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Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

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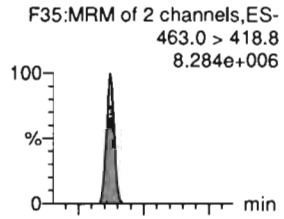

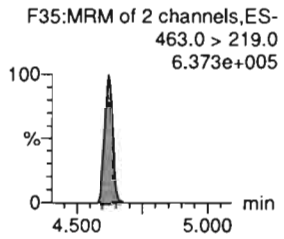

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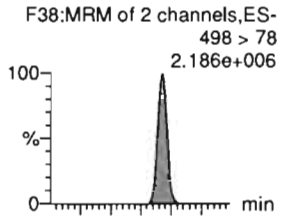
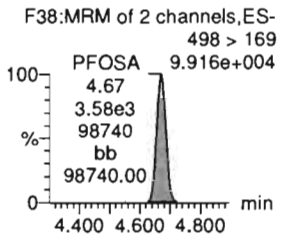
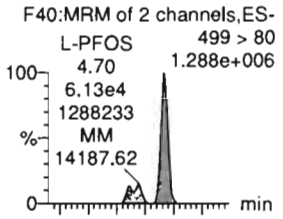
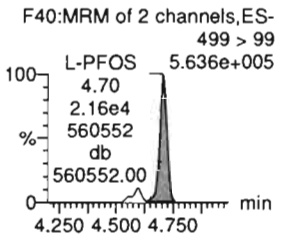




L-PFOS





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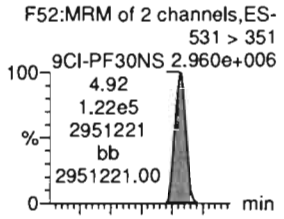

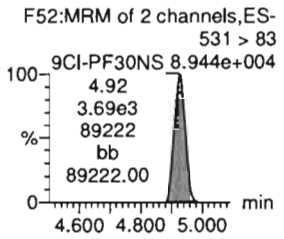

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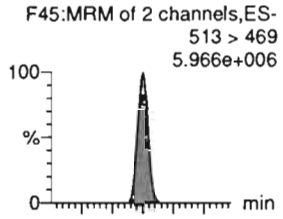
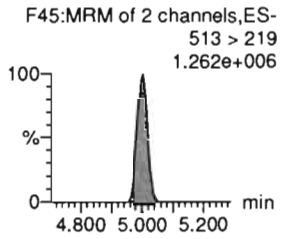
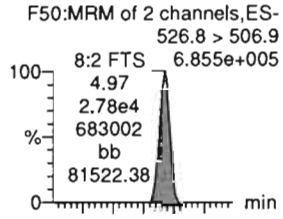
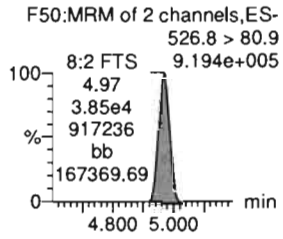




8:2 FTS





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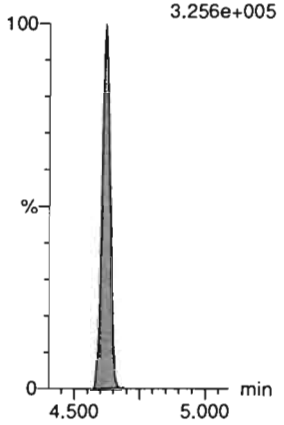

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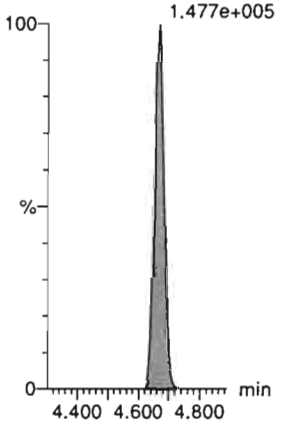

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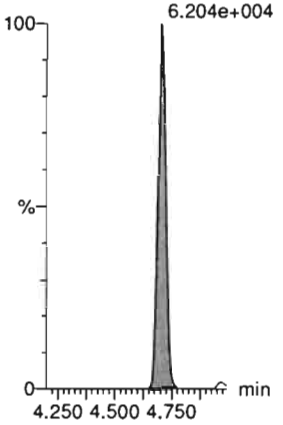

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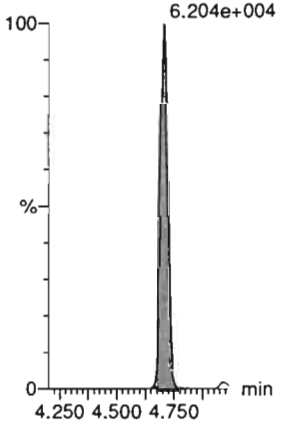
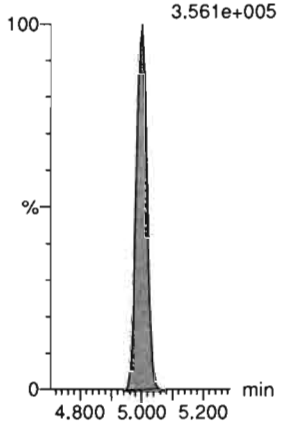
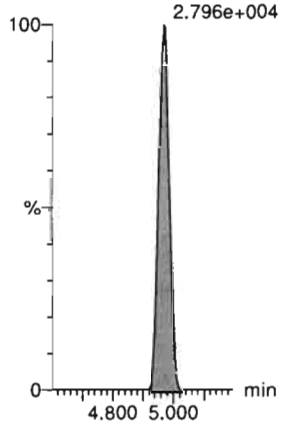


13C2-PFDA-EIS



13C2-8:2 FTS-EIS



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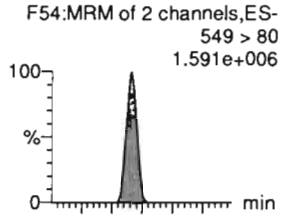
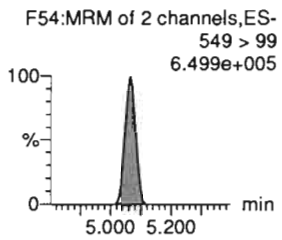
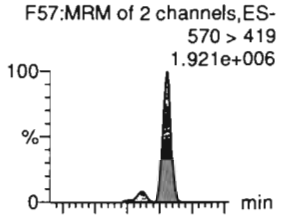
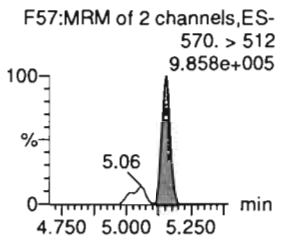
PFNS





L-MeFOSAA





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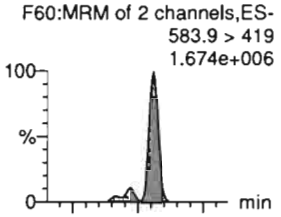

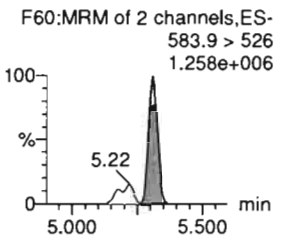

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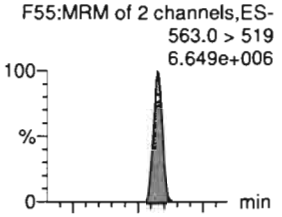

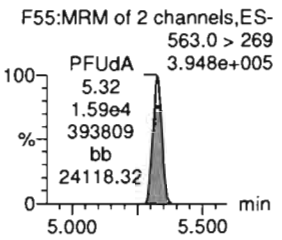

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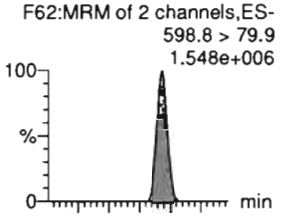

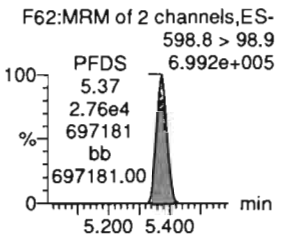

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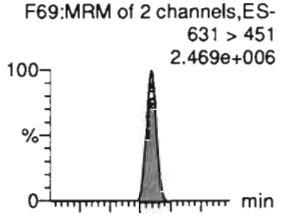
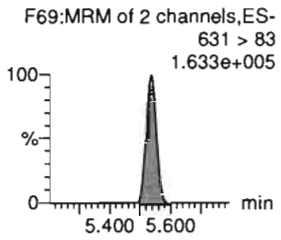
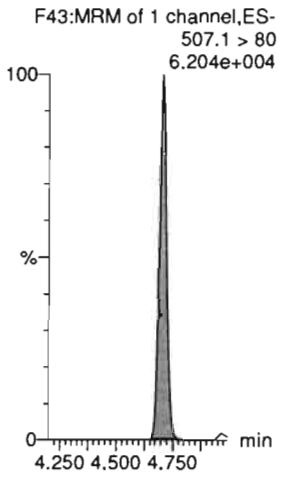
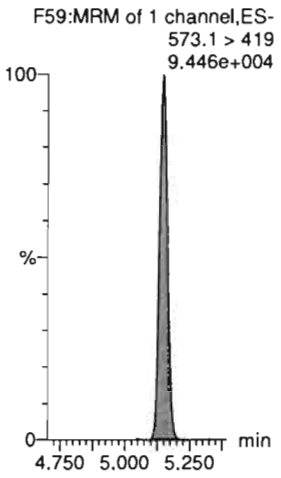




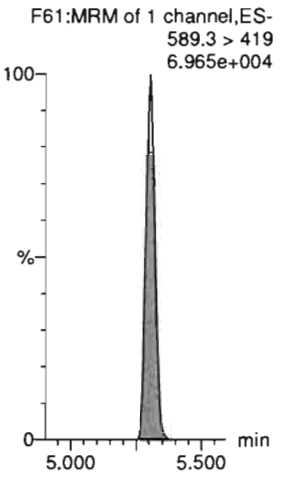
13C8-PFOS-EIS



d3-N-MeFOSAA-EIS



d5-N-EtFOSAA-EIS



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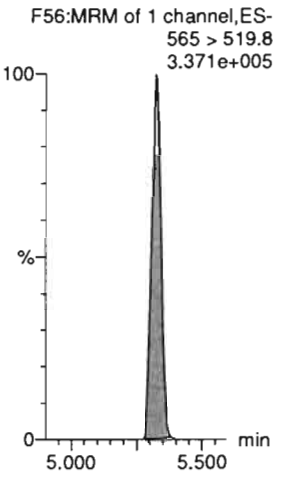
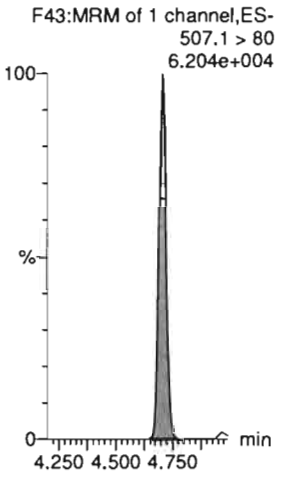
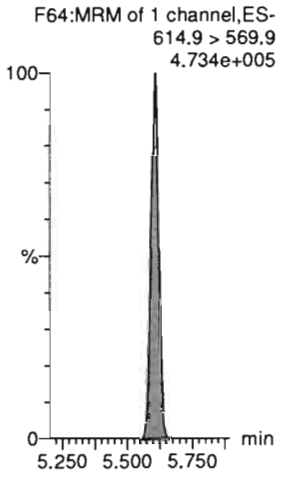


13C8-PFOS-EIS



13C2-PFDoA-EIS

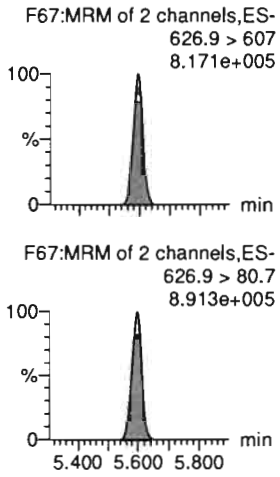


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

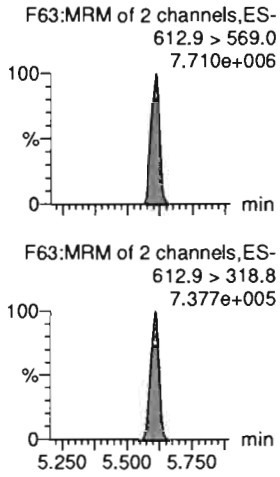
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

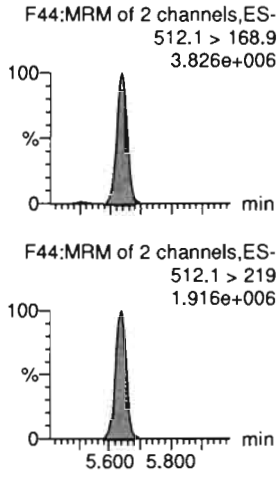
10:2 FTS



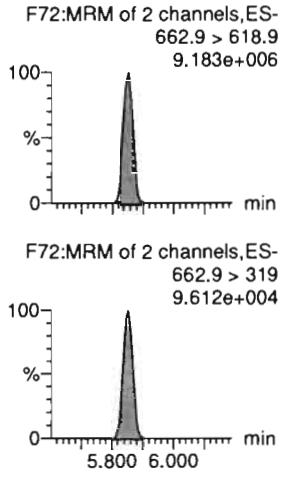
PFDoA



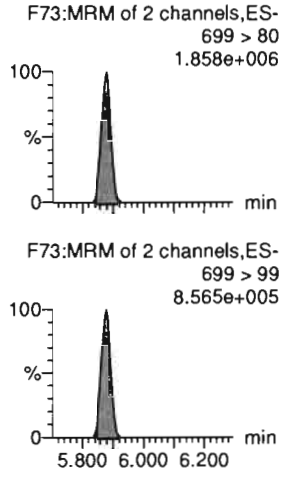
N-MeFOSA



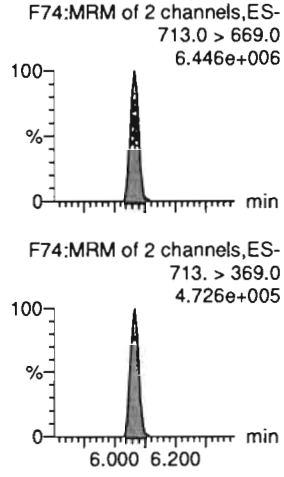
PFTrDA



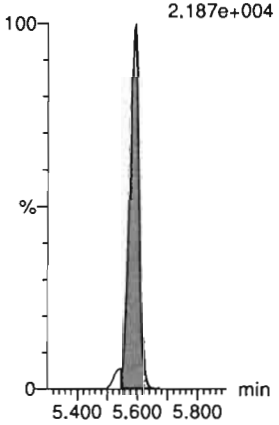
PFDoS



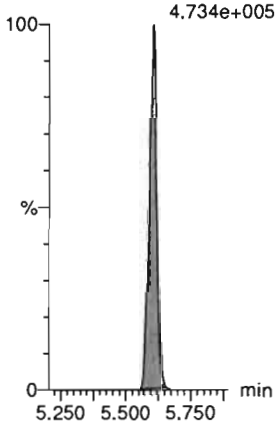
PFTeDA



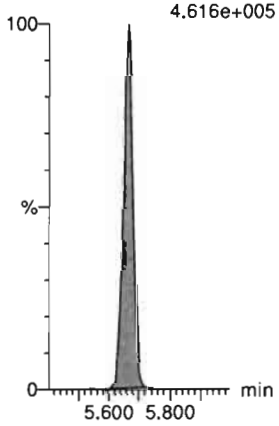
13C2-10:2 FTS-EIS



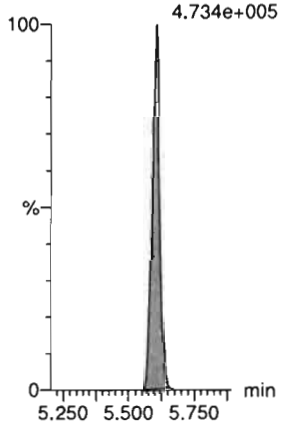
13C2-PFDoA-EIS



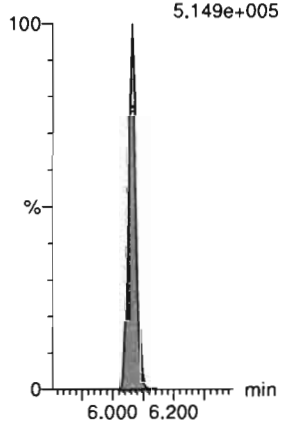
d3-N-MeFOSA-EIS



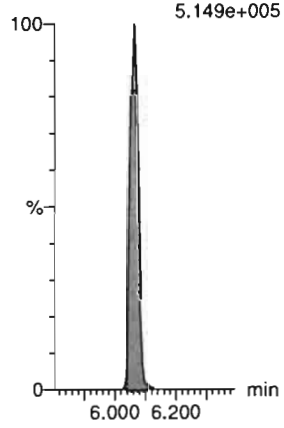
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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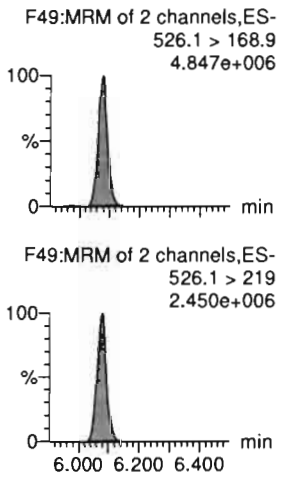
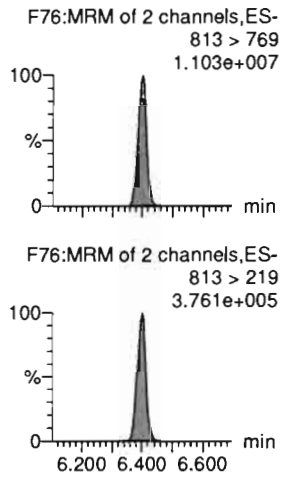
Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

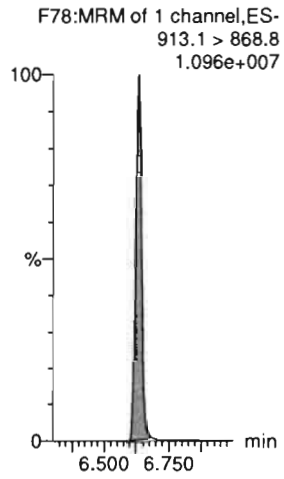
N-EtFOSA



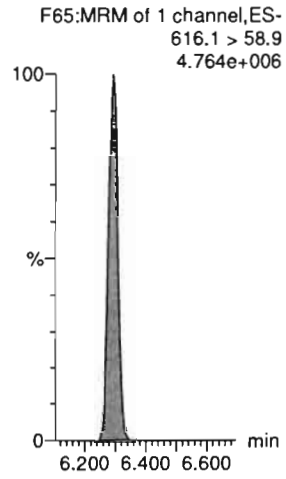
PFHxDA



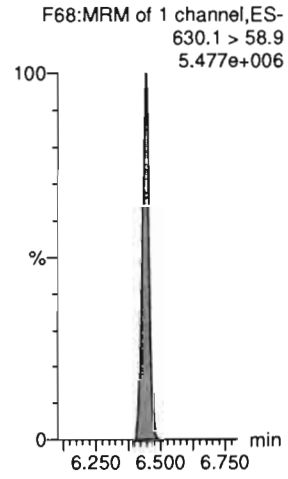
PFODA



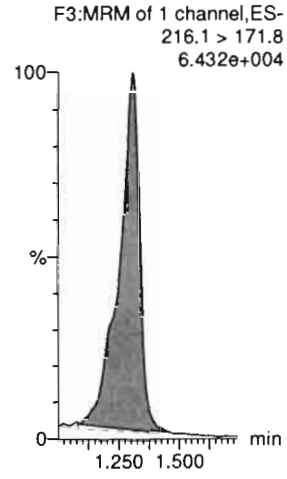
N-MeFOSE



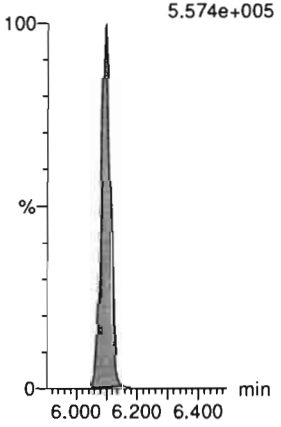
N-EtFOSE



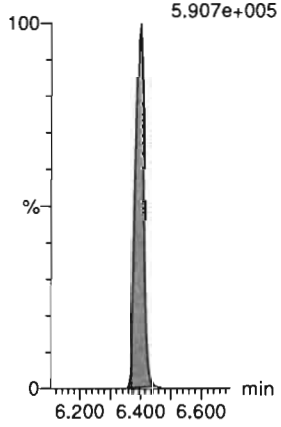
13C3-PFBA-RSD



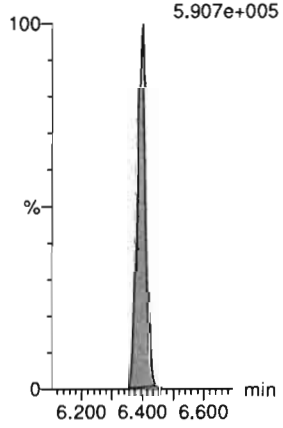
d5-N-ETFOSA-EIS



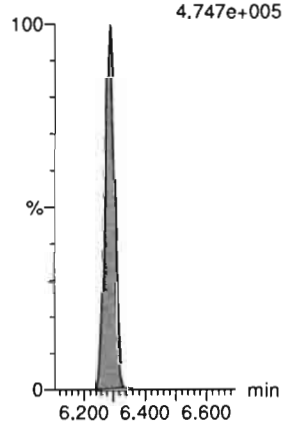
13C2-PFHxDA-EIS



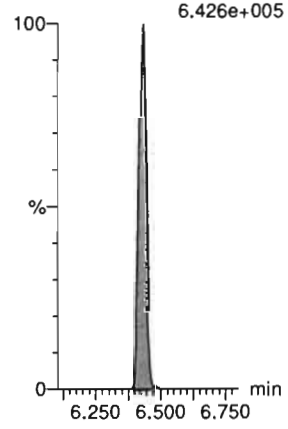
13C2-PFHxDA-EIS



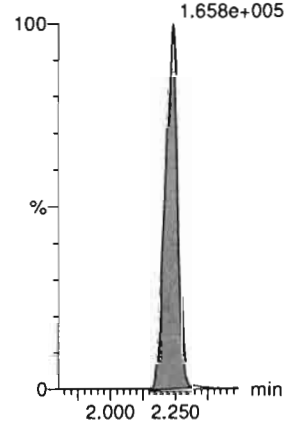
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

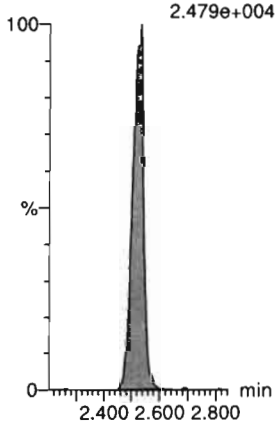


Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

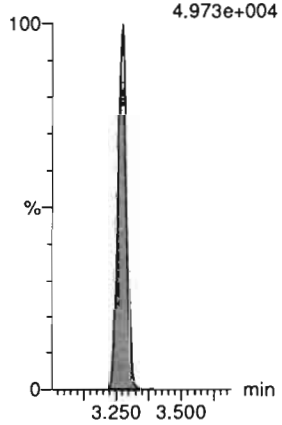
Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

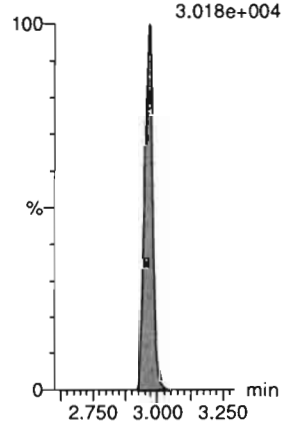
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.479e+004



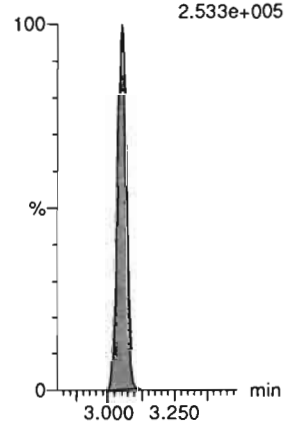
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
4.973e+004



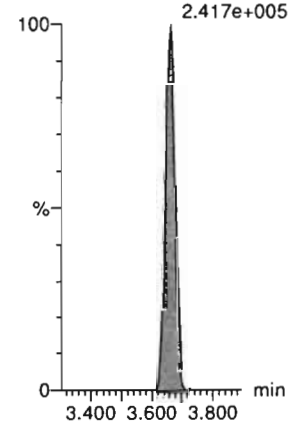
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.018e+004



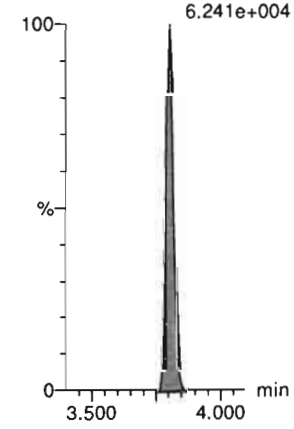
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.533e+005



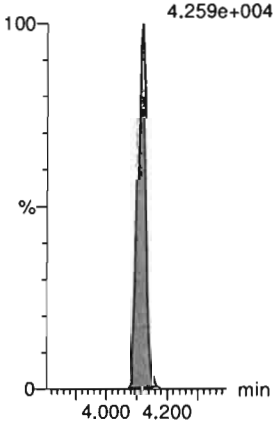
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.417e+005



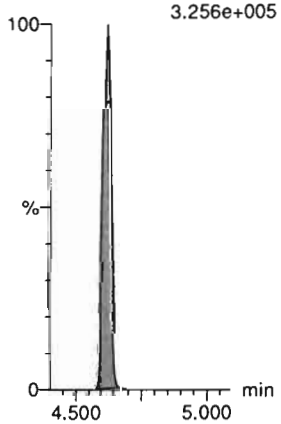
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.241e+004



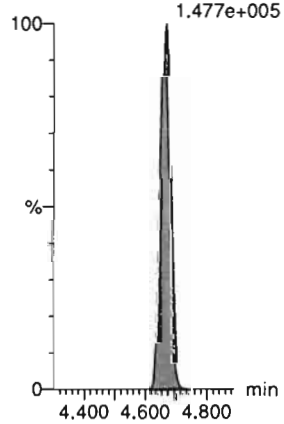
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.259e+004



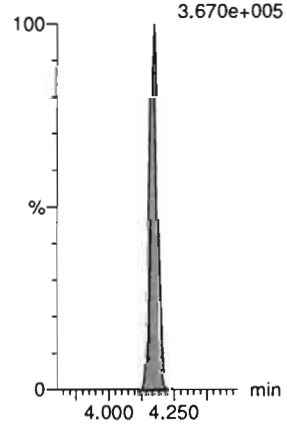
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.256e+005



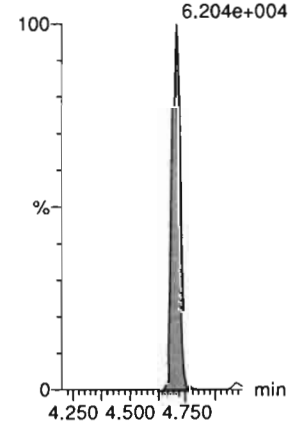
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.477e+005



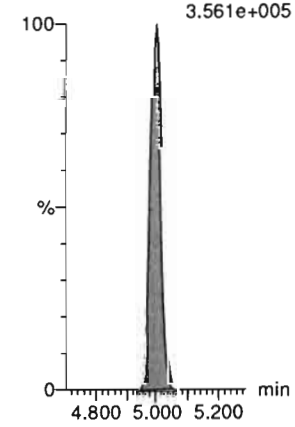
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.670e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.204e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.561e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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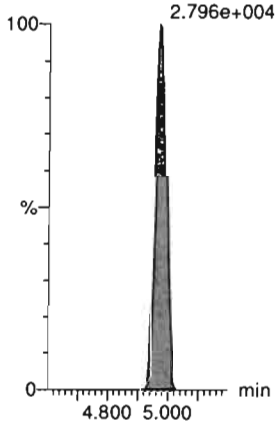
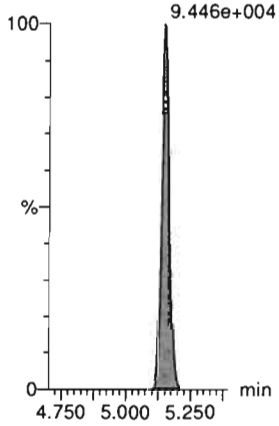
Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

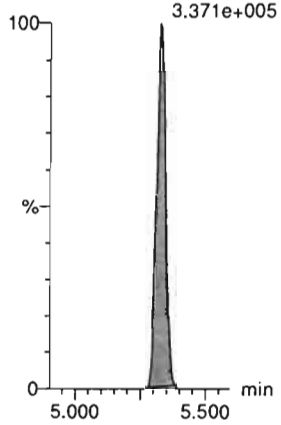
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
2.796e+004



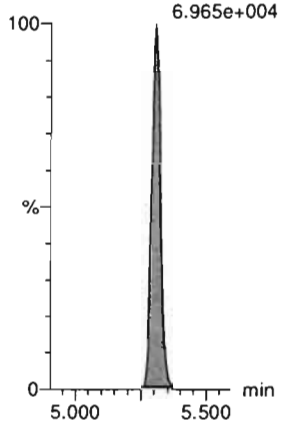
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
9.446e+004



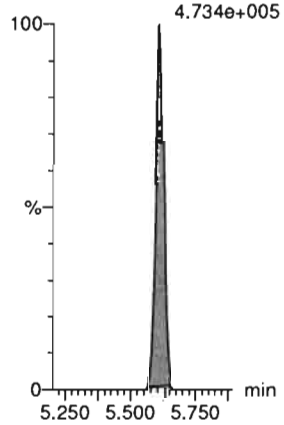
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.371e+005



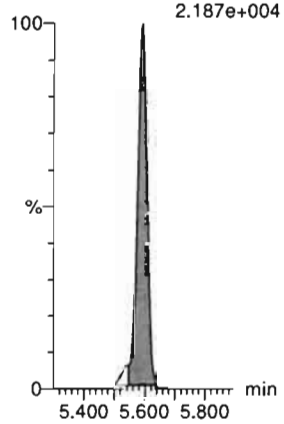
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
6.965e+004



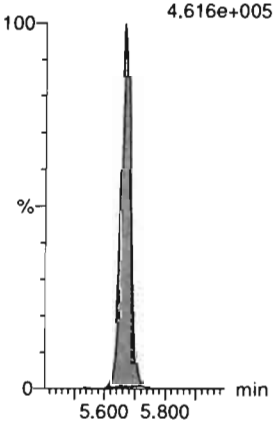
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
4.734e+005



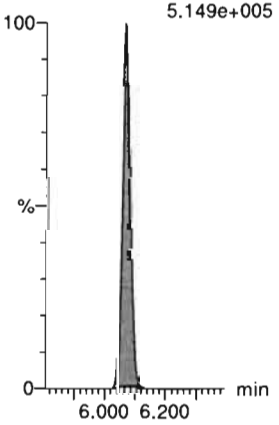
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.187e+004



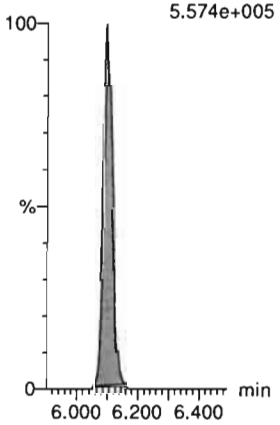
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.616e+005



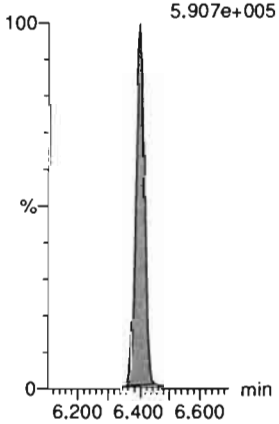
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.149e+005



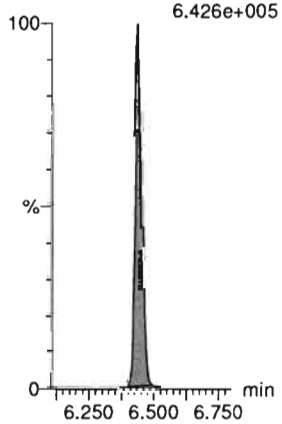
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.574e+005



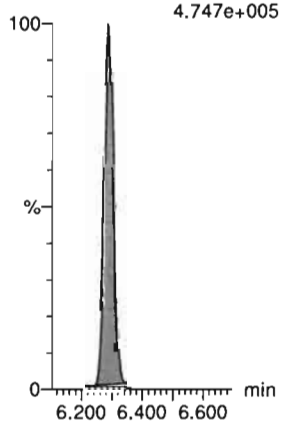
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
5.907e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
6.426e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.747e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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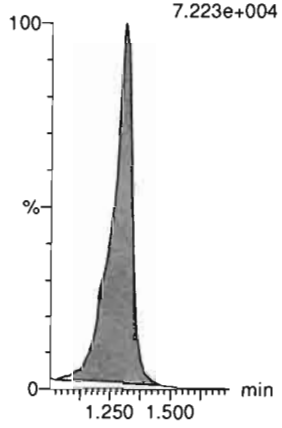
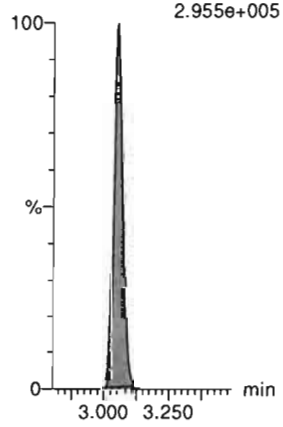
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-13, Date: 23-Jul-2020, Time: 12:04:37, ID: ST200723P1-9 PFC CS6 20G1609, Description: PFC CS6 20G1609

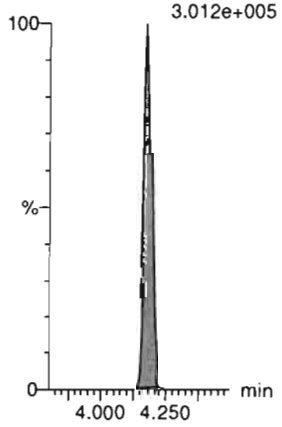
13C4-PFBA



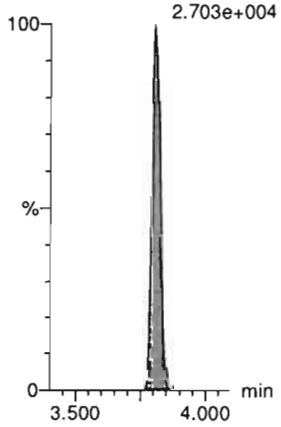
13C5-PFHxA



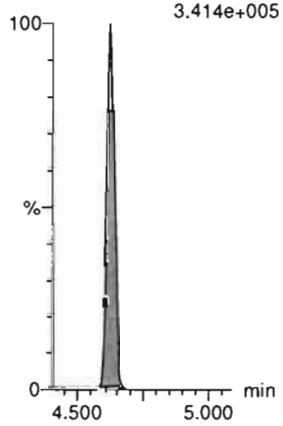
13C8-PFOA



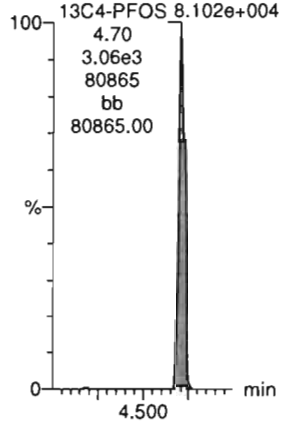
18O2-PFHxS



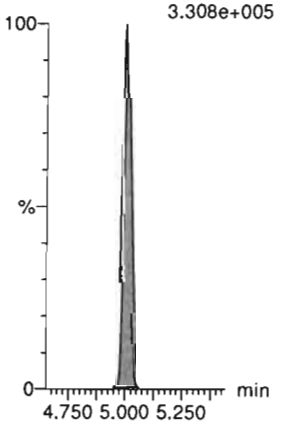
13C9-PFNA



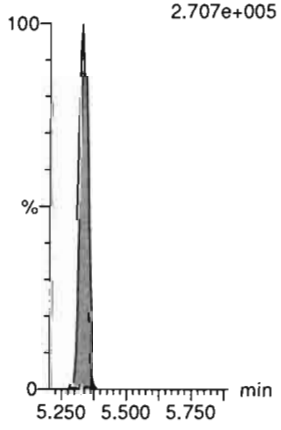
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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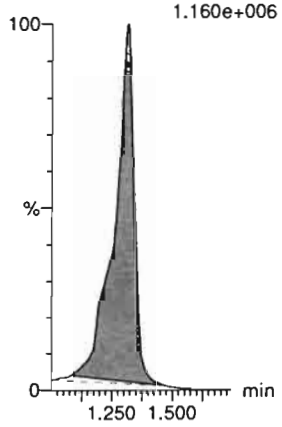
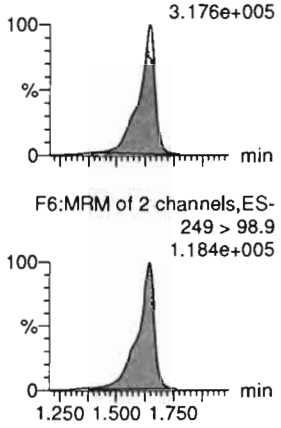
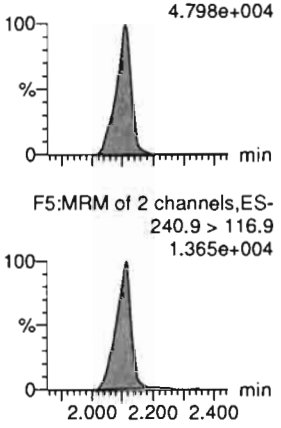
PFBA



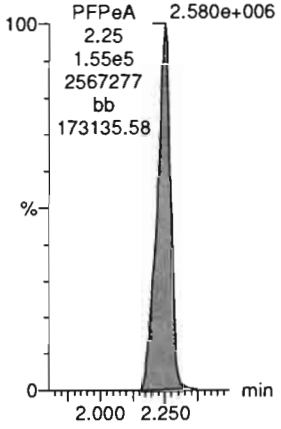
PFPrS



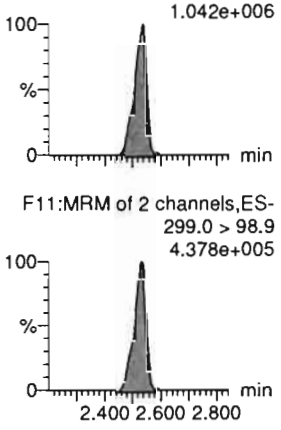
3:3 FTCA



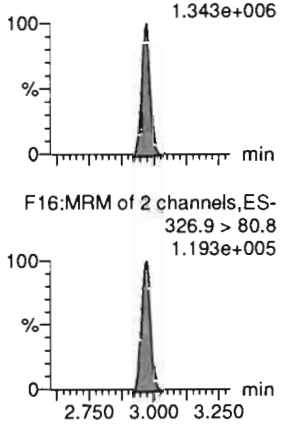
PFPeA



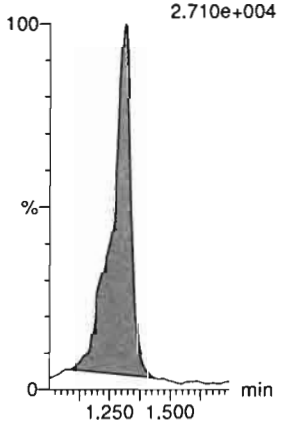
PFBS



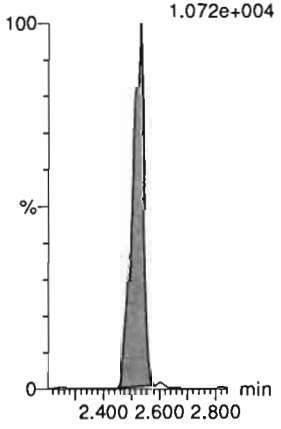
4:2 FTS



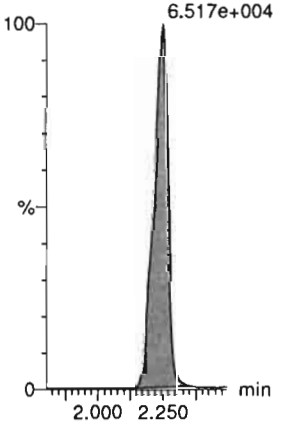
13C3-PFBA-EIS



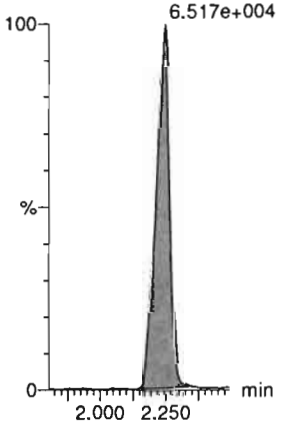
13C3-PFBS-EIS



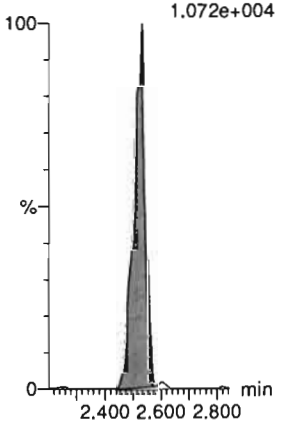
13C3-PFPeA-EIS



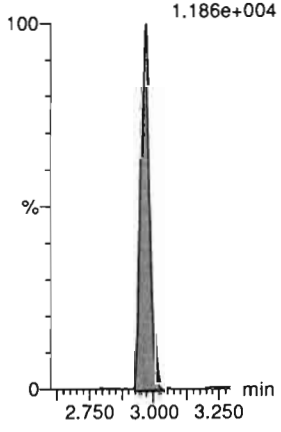
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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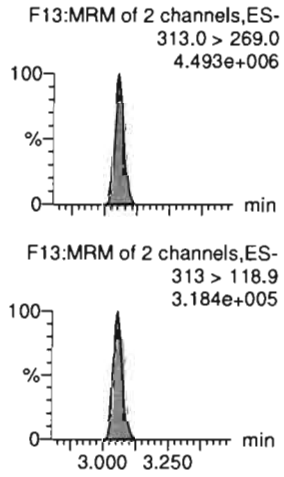
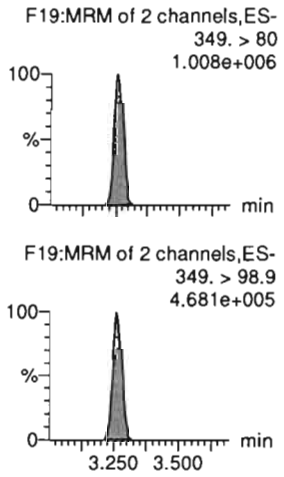
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

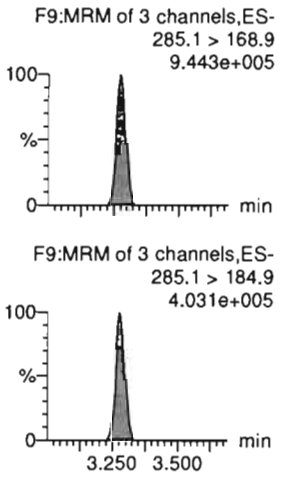
PFHxA



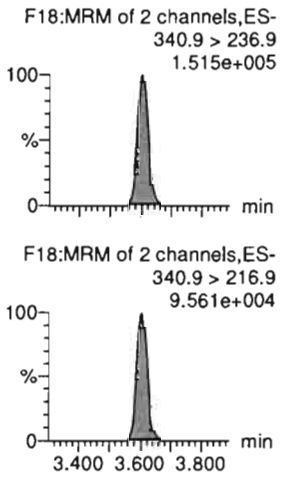
PFPeS



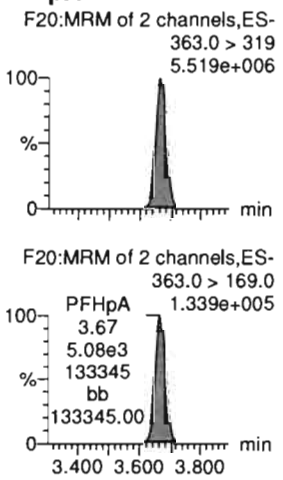
HFPO-DA



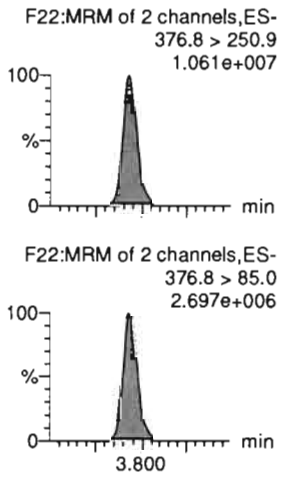
5:3 FTCA



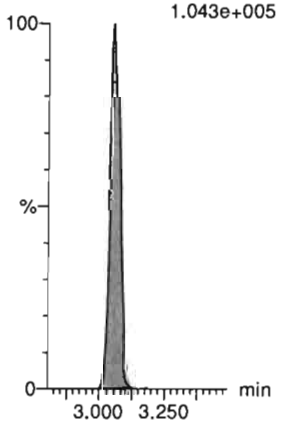
PFHpA



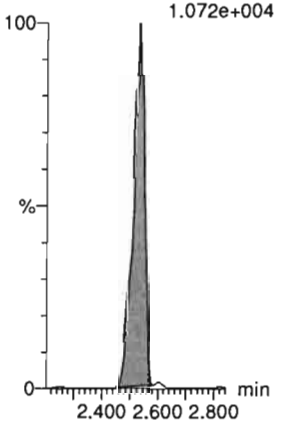
ADONA



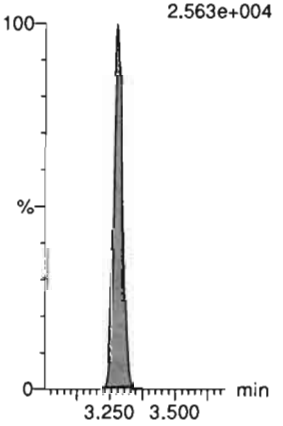
13C2-PFHxA-EIS



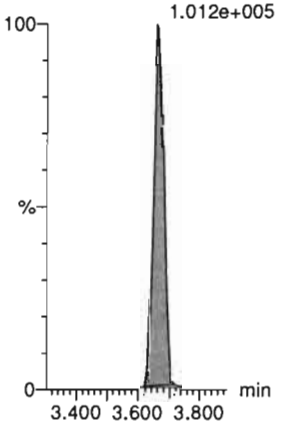
13C3-PFBS-EIS



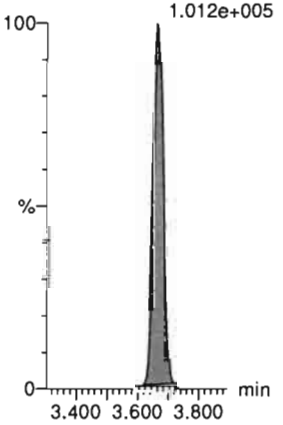
13C3-HFPO-DA-EIS



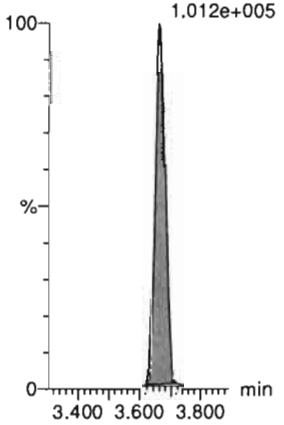
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



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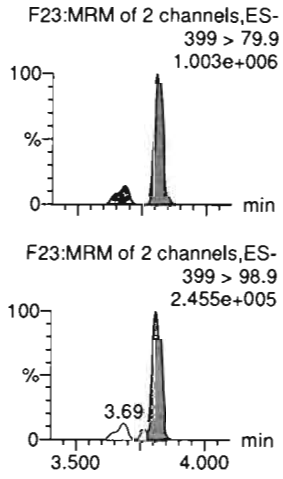
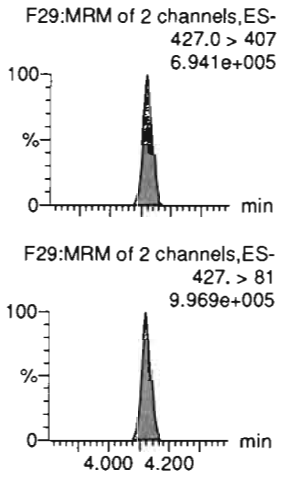
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

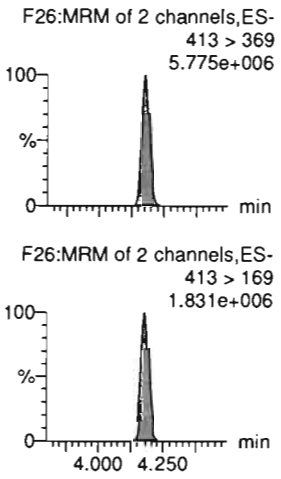
L-PFHxS



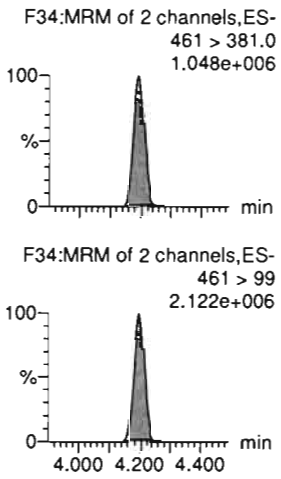
6:2 FTS



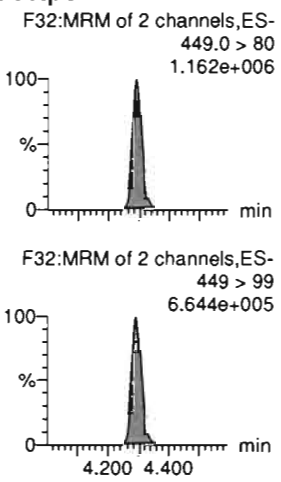
L-PFOA



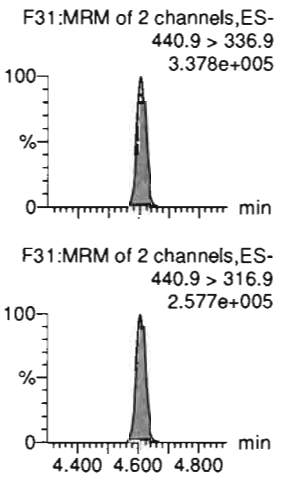
PFEChS



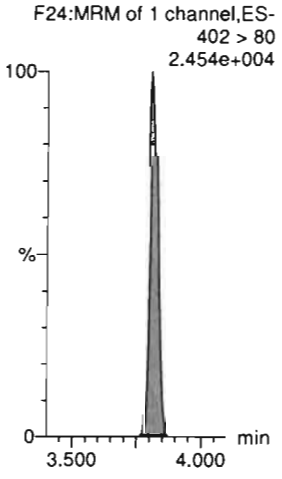
PFHpS



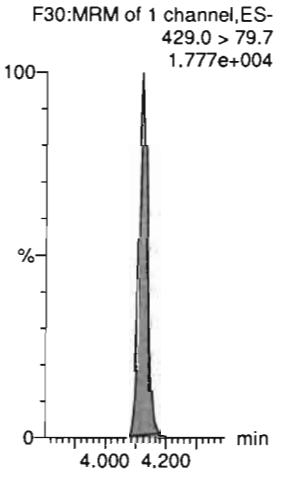
7:3 FTCA



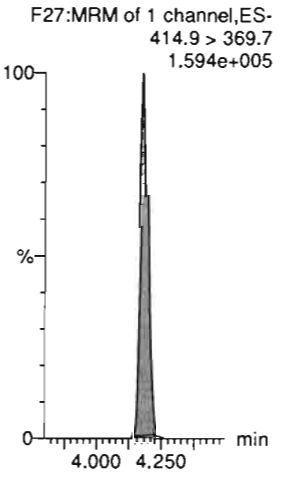
13C3-PFHxS-EIS



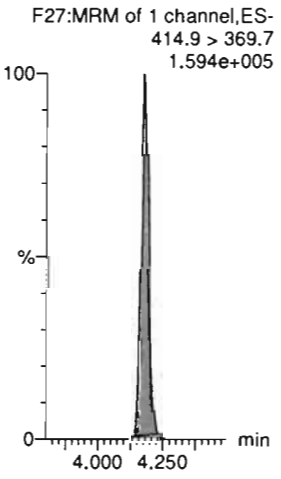
13C2-6:2 FTS-EIS



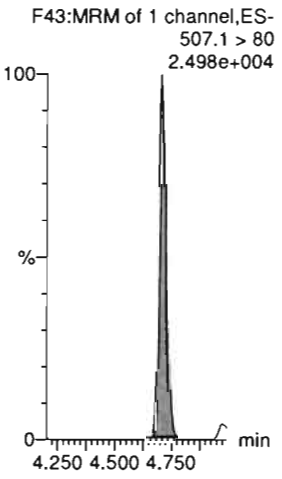
13C2-PFOA-EIS



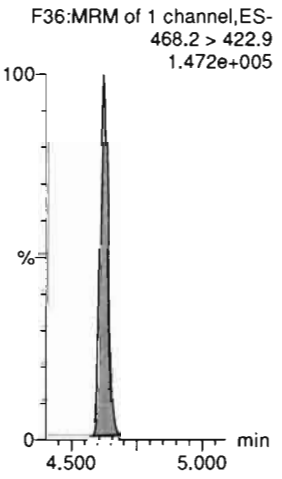
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



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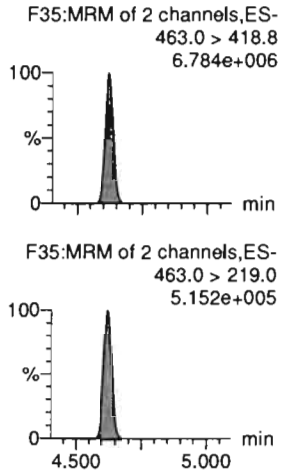
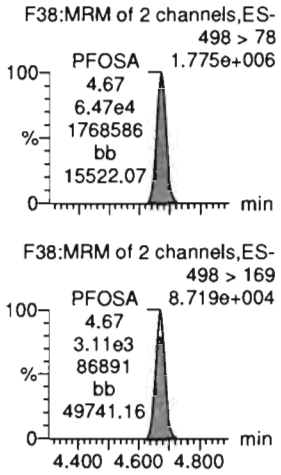
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

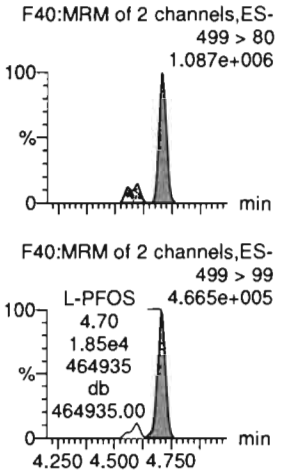
PFNA



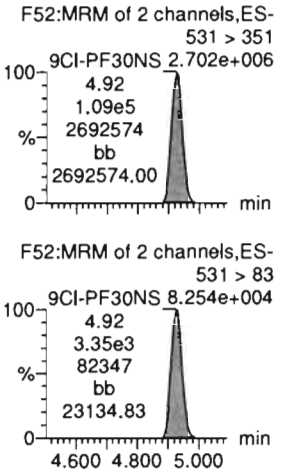
PFOSA



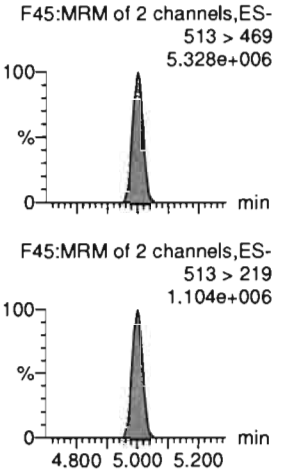
L-PFOS



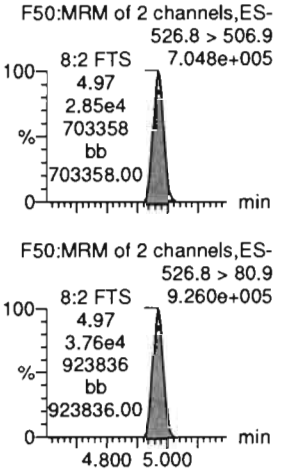
9CI-PF30NS



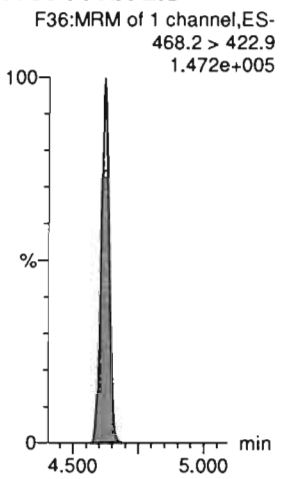
PFDA



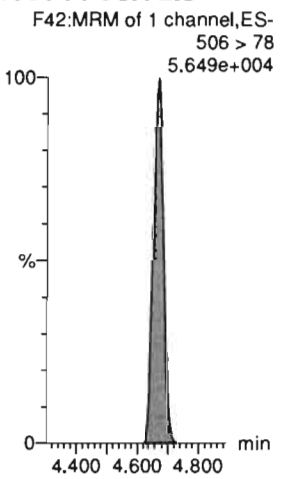
8:2 FTS



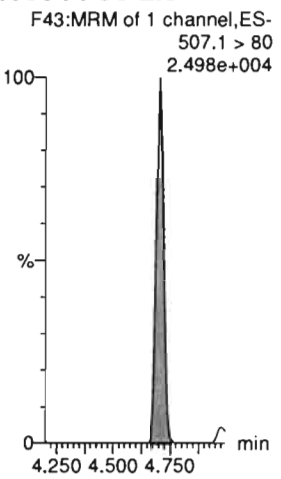
13C5-PFNA-EIS



13C8-PFOSA-EIS



13C8-PFOS-EIS



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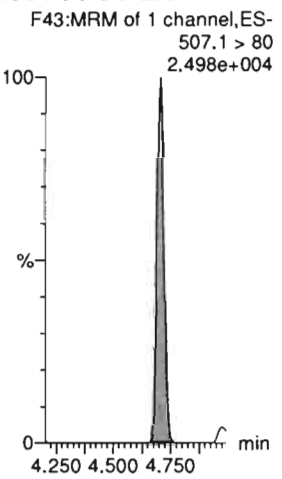
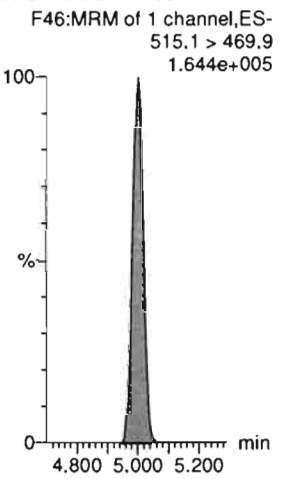
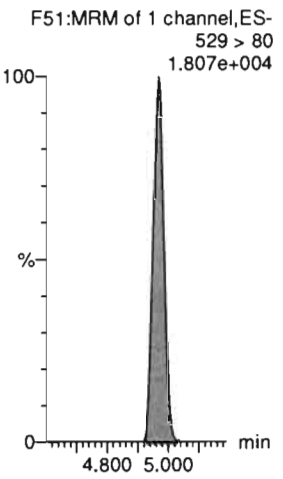


13C2-PFDA-EIS



13C2-8:2 FTS-EIS

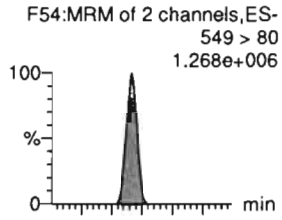


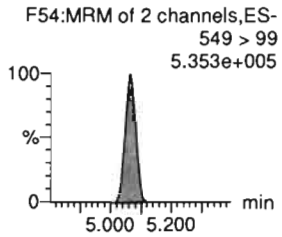
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
Printed: Thursday, July 23, 2020 13:24:51 Pacific Daylight Time

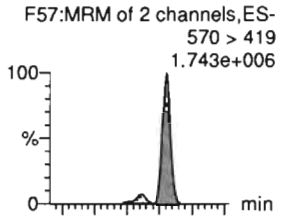
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

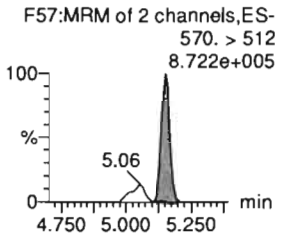
PFNS



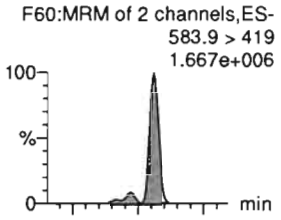


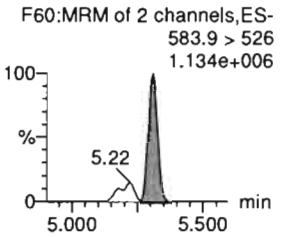
L-MeFOSAA



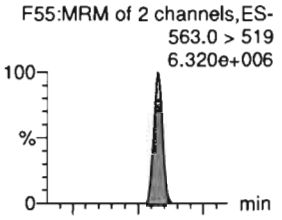


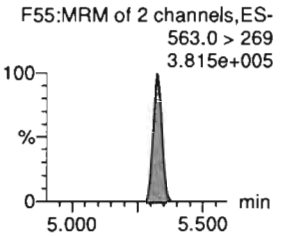
L-EtFOSAA



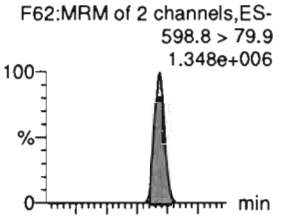


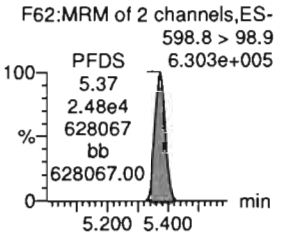
PFUdA



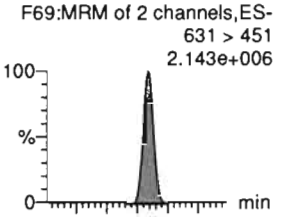


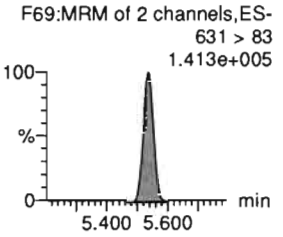
PFDS



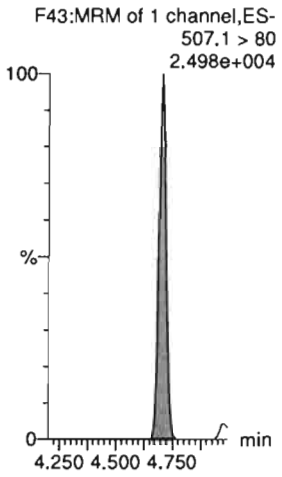


11Cl-PF30UdS

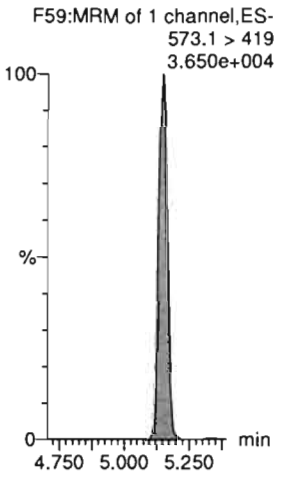




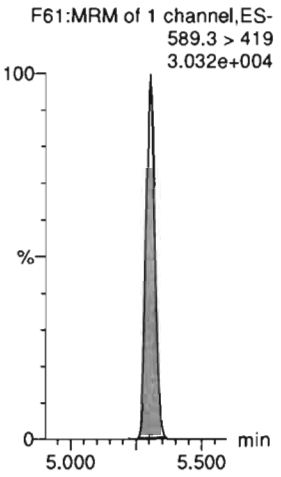
13C8-PFOS-EIS



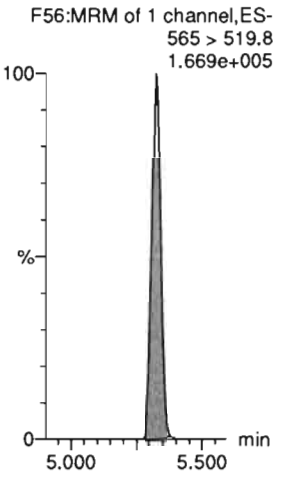
d3-N-MeFOSAA-EIS



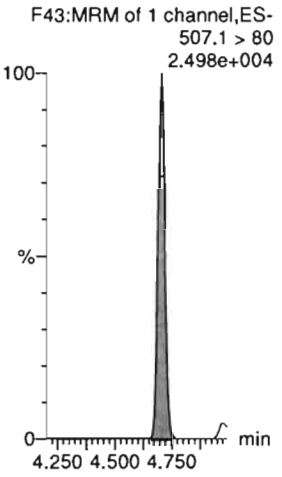
d5-N-EtFOSAA-EIS



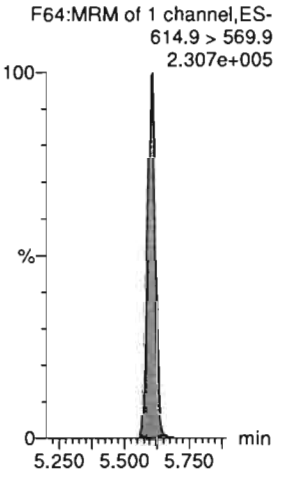
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



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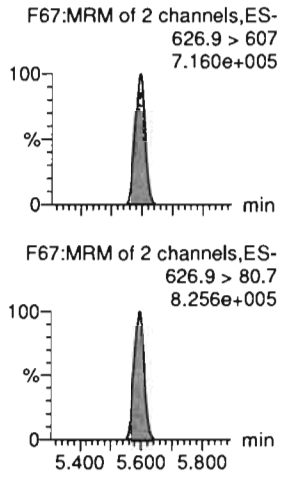
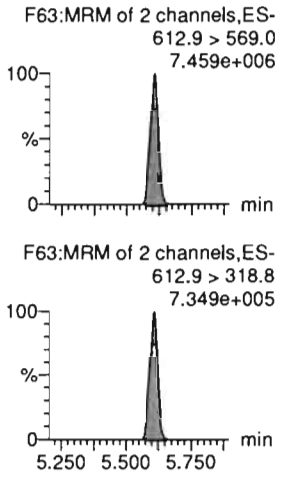
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

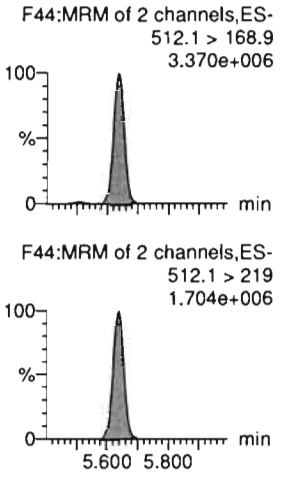
10:2 FTS



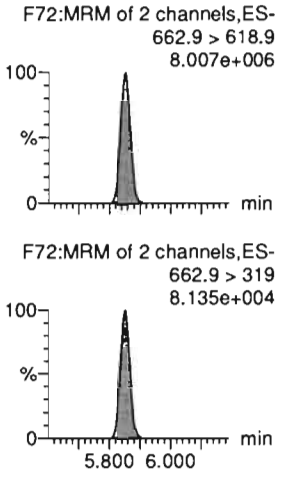
PFDoA



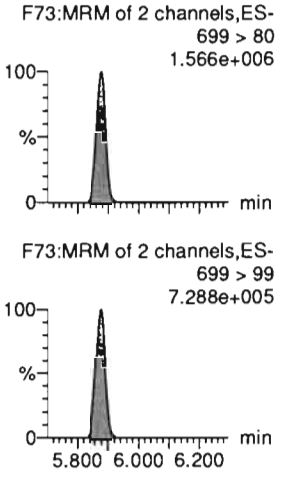
N-MeFOSA



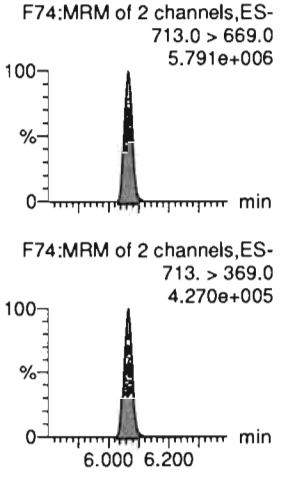
PFTrDA



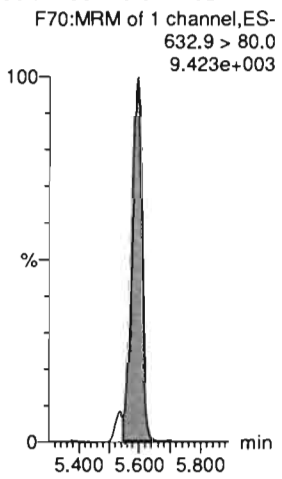
PFDoS



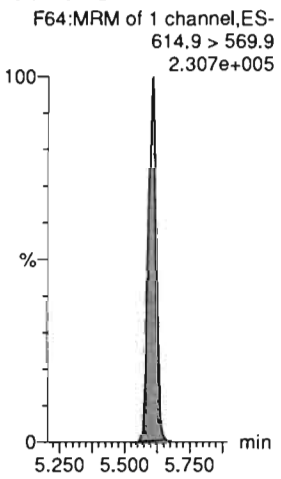
PFTeDA



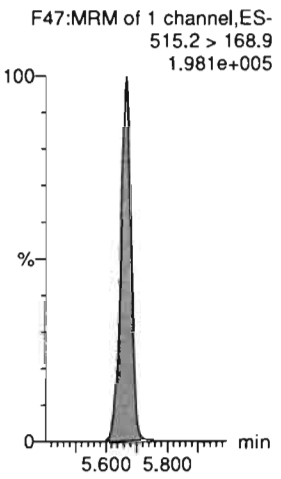
13C2-10:2 FTS-EIS



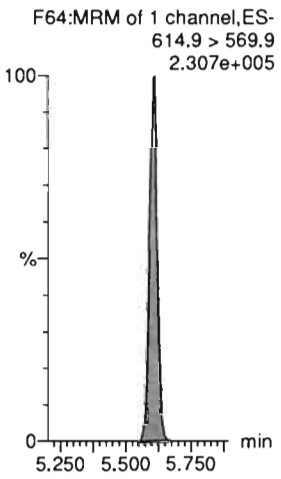
13C2-PFDoA-EIS



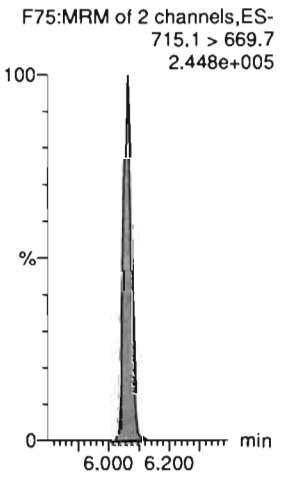
d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



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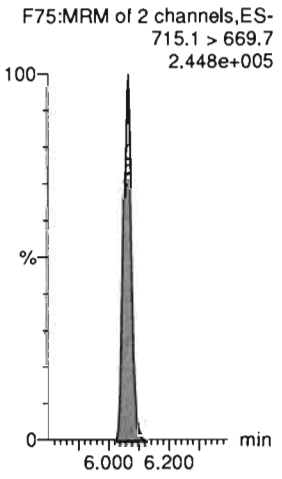

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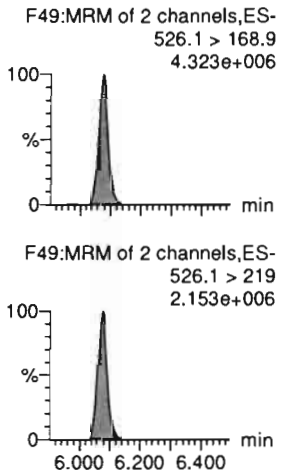
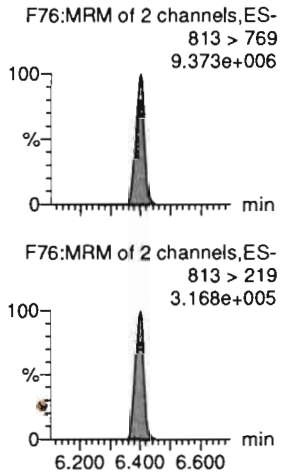
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

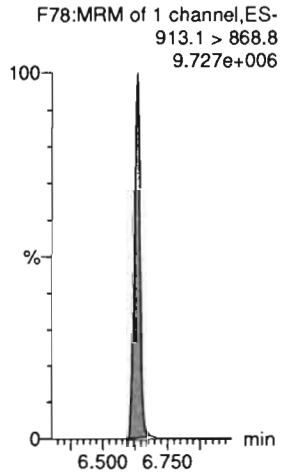
N-EtFOSA



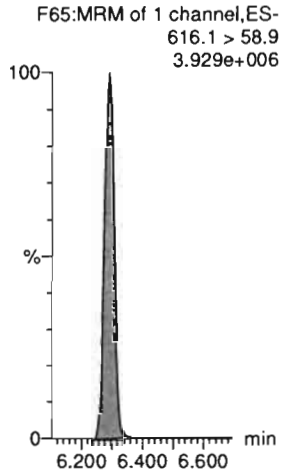
PFHxDA



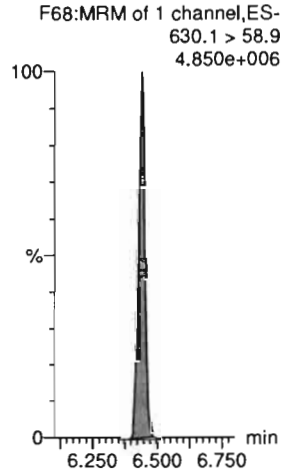
PFODA



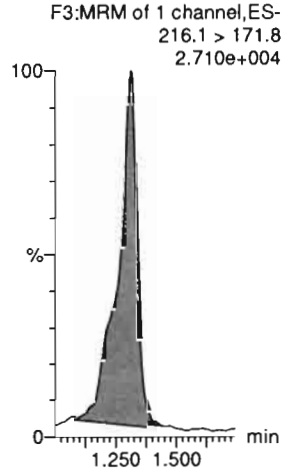
N-MeFOSE



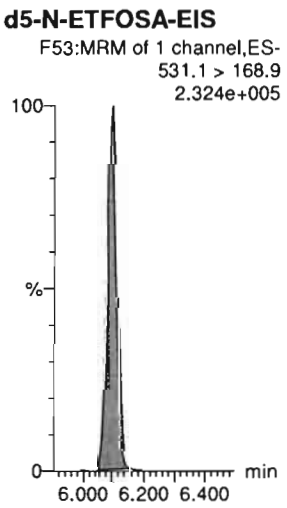
N-EtFOSE



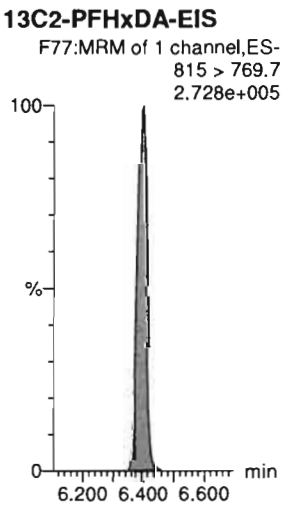
13C3-PFBA-RSD



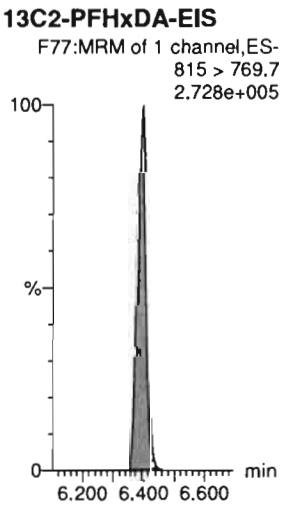
d5-N-ETFOSA-EIS



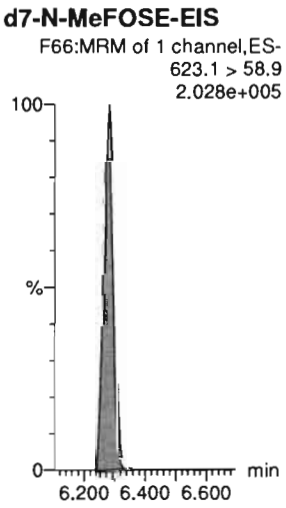
13C2-PFHxDA-EIS



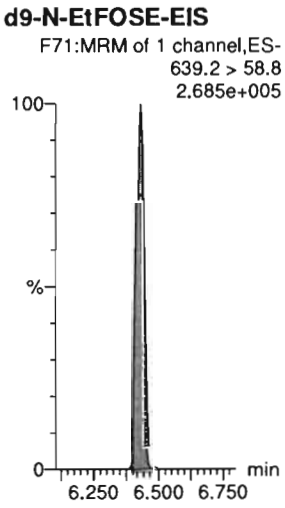
13C2-PFHxDA-EIS



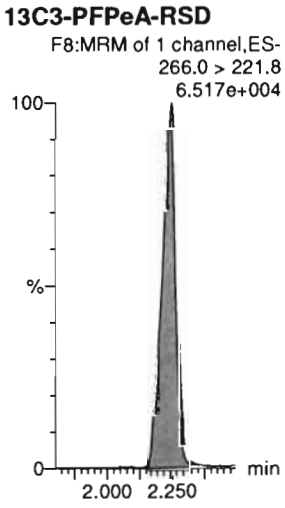
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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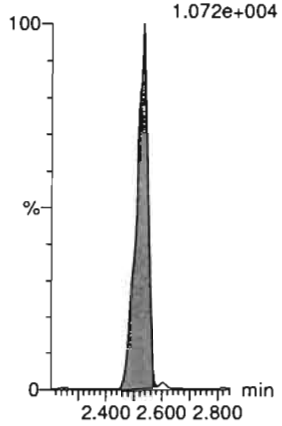
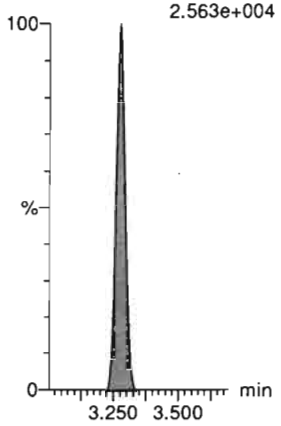
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

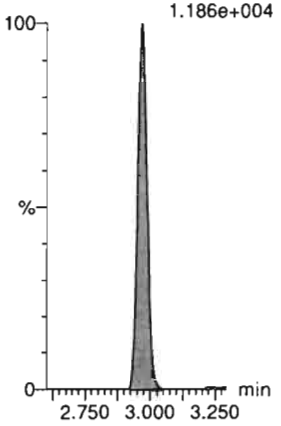
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
1.072e+004



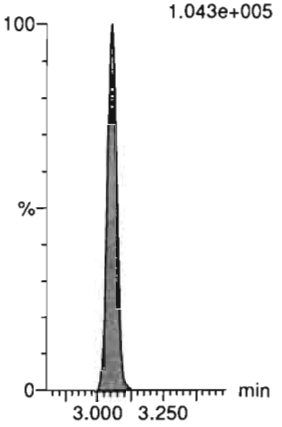
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
2.563e+004



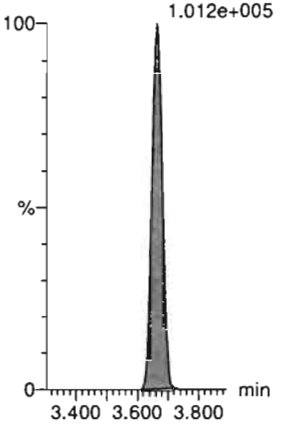
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
1.186e+004



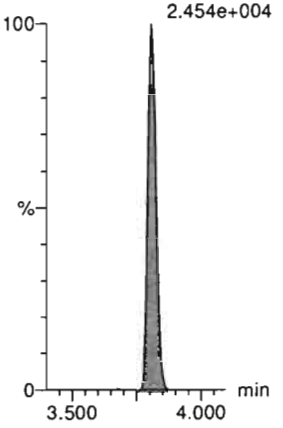
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
1.043e+005



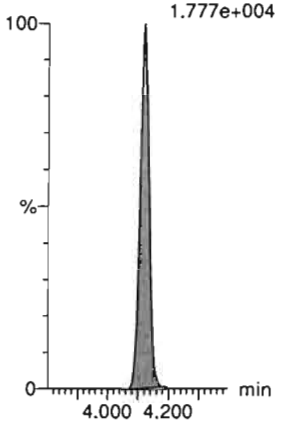
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.012e+005



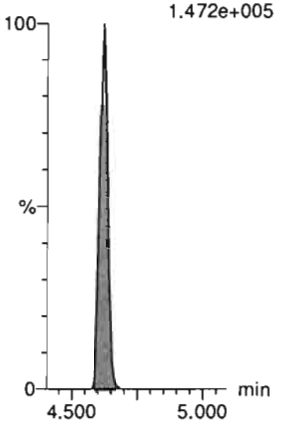
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
2.454e+004



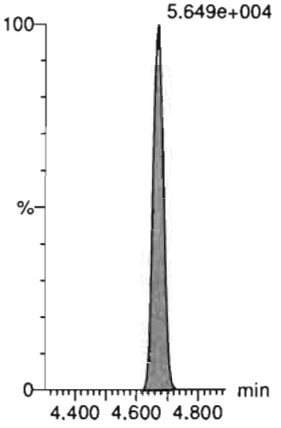
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
1.777e+004



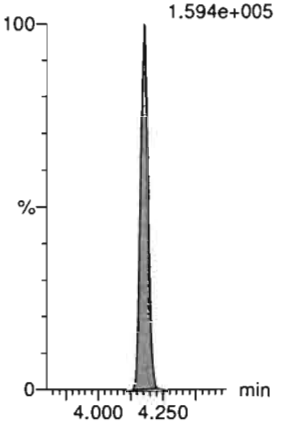
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
1.472e+005



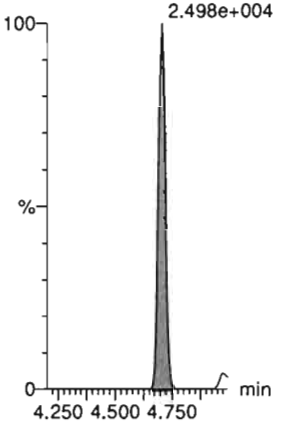
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
5.649e+004



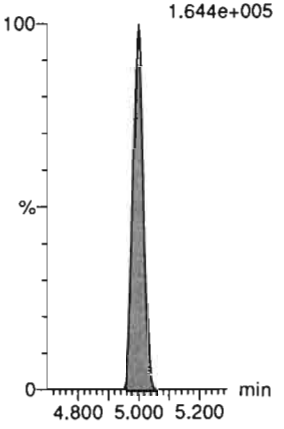
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
1.594e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
2.498e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
1.644e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

Last Altered: Thursday, July 23, 2020 13:21:45 Pacific Daylight Time
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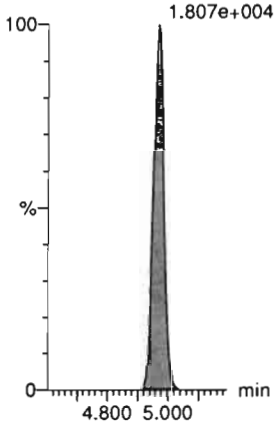
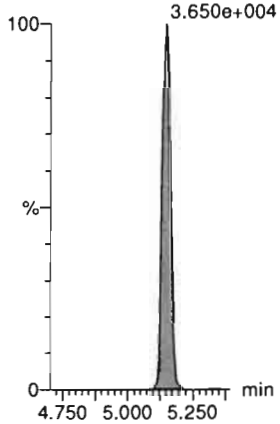
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

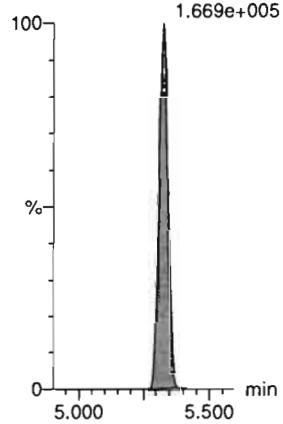
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
1.807e+004



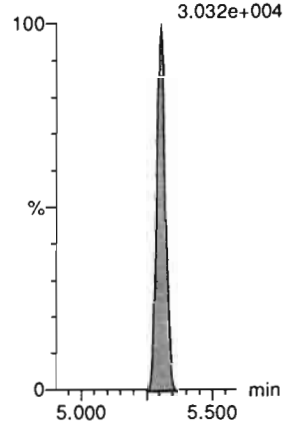
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
3.650e+004



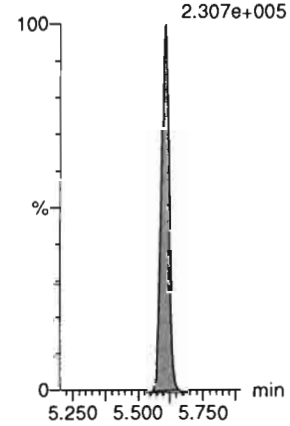
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
1.669e+005



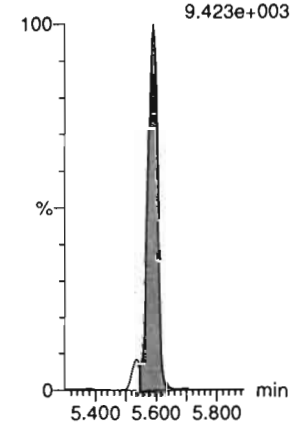
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
3.032e+004



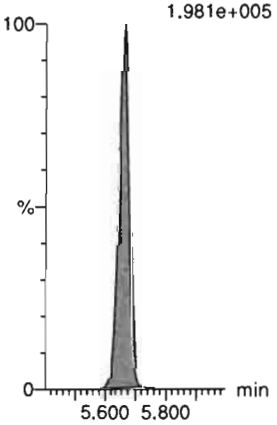
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
2.307e+005



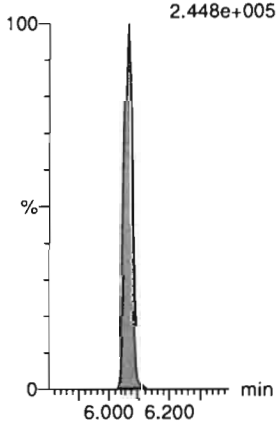
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
9.423e+003



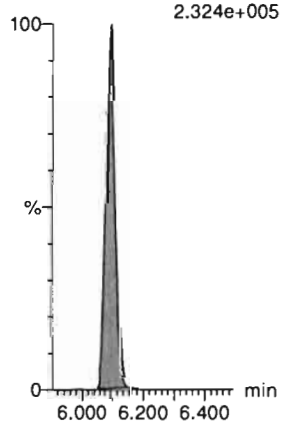
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
1.981e+005



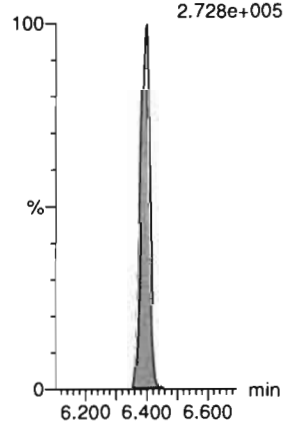
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
2.448e+005



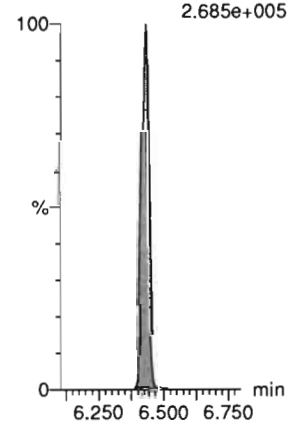
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
2.324e+005



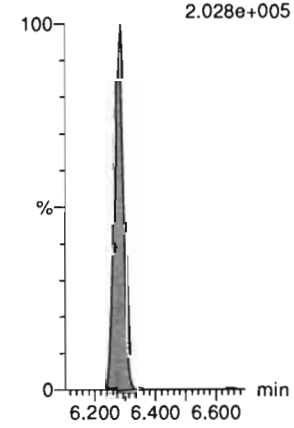
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
2.728e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
2.685e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
2.028e+005



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-CRV.qld

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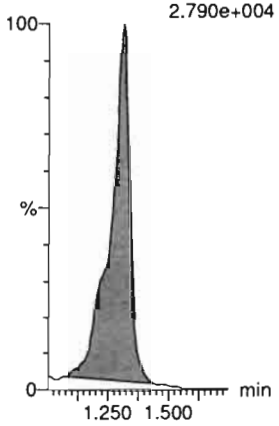
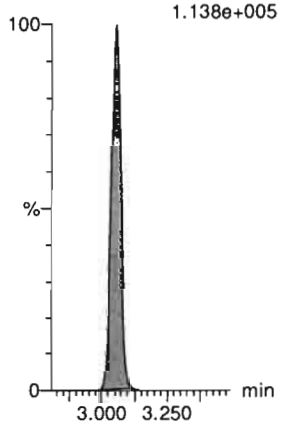
Name: 200723P1-14, Date: 23-Jul-2020, Time: 12:15:13, ID: ST200723P1-10 PFC CS7 20G1610, Description: PFC CS7 20G1610

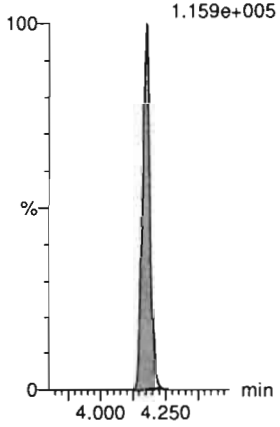
13C4-PFBA



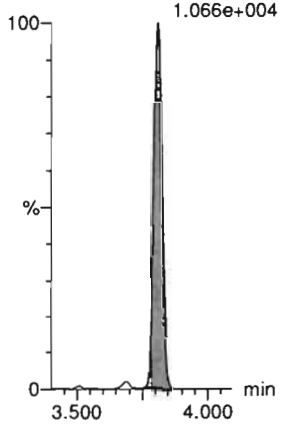
13C5-PFHxA



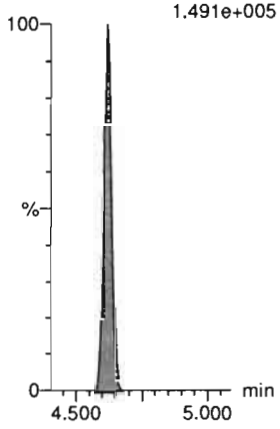
13C8-PFOA



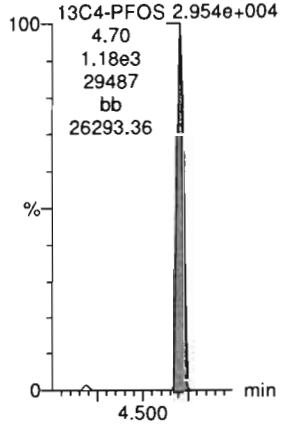
18O2-PFHxS



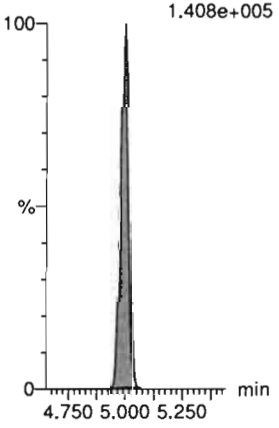
13C9-PFNA



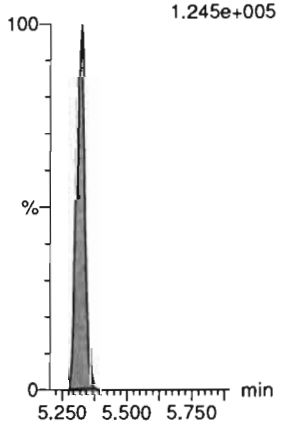
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-ICV.qld

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(A) Not in ICV
JAM 7/23/2020

Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	4837.961	5766.241	1.00	1.32	10.488	10.000	9.64	96.4	NO		
2	2	PFPrS	249 > 80		1193.446	1.00			10.000		(A)	NO		YES
3	3	3:3 FTCA	240.9 > 176.9		9436.115	1.00			10.000		↓	NO		YES
4	4	PFPeA	263.1 > 218.9	7287.627	9436.115	1.00	2.25	9.654	10.000	10.1	101.0	NO		
5	5	PFBS	299.0 > 80	2099.691	1193.446	1.00	2.53	21.992	8.840	8.23	93.1	NO	2.460	NO
6	6	4:2 FTS	326.9 > 306.9	2641.564	1310.127	1.00	2.97	25.203	9.360	9.97	106.5	NO	11.355	YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	5766.241		1.00	1.32	5766.241	12.500	13.0	103.6	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1193.446		1.00	2.54	1193.446	12.500	12.6	100.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	9436.115		1.00	2.25	9436.115	12.500	13.3	106.2	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	9436.115		1.00	2.25	9436.115	12.500	13.3	106.2	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1193.446		1.00	2.54	1193.446	12.500	12.6	100.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1310.127		1.00	2.97	1310.127	12.500	12.0	96.2	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	9597.524	10185.402	1.00	3.05	11.779	10.000	10.9	109.1	NO	17.437	NO
15	8	PFPeS	349.>80	1947.133	1193.446	1.00	3.26	20.394	9.360	9.73	104.0	NO	2.527	NO
16	9	HFPO-DA	285.1 > 168.9	1677.010	2155.515	1.00	3.28	9.725	10.000	9.14	91.4	NO	2.316	NO
17	10	5:3 FTCA	340.9 > 236.9		10295.194	1.00			10.000		(A)	NO		YES
18	11	PFHpA	363.0 > 319	9966.175	10295.194	1.00	3.67	12.101	10.000	9.74	97.4	NO	40.991	YES
19	12	ADONA	376.8 > 250.9	18137.088	10295.194	1.00	3.77	22.021	9.440	9.35	99.1	NO	4.619	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	10185.402		1.00	3.05	10185.402	12.500	11.7	93.7	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1193.446		1.00	2.54	1193.446	12.500	12.6	100.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2155.515		1.00	3.28	2155.515	12.500	12.3	98.4	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	10295.194		1.00	3.67	10295.194	12.500	12.8	102.5	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	10295.194		1.00	3.67	10295.194	12.500	12.8	102.5	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	10295.194		1.00	3.67	10295.194	12.500	12.8	102.5	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9	2005.272	2207.106	1.00	3.81	11.357	9.120	9.83	107.8	NO	3.522	NO
28	15	6:2 FTS	427.0 > 407	1092.505	1467.586	1.00	4.12	9.305	9.480	9.22	97.3	NO	0.652	NO
29	16	L-PFOA	413 > 369	9929.076	12774.724	1.00	4.18	9.716	10.000	10.1	101.1	NO	3.064	NO
30	18	PFecHS	461 > 381.0		12774.724	1.00			10.000		(A)	NO		YES
31	19	PFHpS	449.0 > 80	1880.602	2449.618	1.00	4.29	9.596	9.520	10.2	107.3	NO	1.890	NO
32	20	7:3 FTCA	440.9 > 336.9		12956.593	1.00			10.000		(A)	NO		YES
33	61	13C3-PFHxS-EIS	402 >80	2207.106		1.00	3.81	2207.106	12.500	11.4	91.1	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1467.586		1.00	4.12	1467.586	12.500	13.2	105.9	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12774.724		1.00	4.18	12774.724	12.500	12.8	102.1	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12774.724		1.00	4.18	12774.724	12.500	12.8	102.1	NO		

OPV 7/23/2020

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Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2449.618		1.00	4.71	2449.618	12.500	11.7	93.6	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	12956.593		1.00	4.62	12956.593	12.500	13.6	109.2	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	12244.438	12956.593	1.00	4.62	11.813	10.000	9.38	93.8	NO	14.014	YES
41	22	PFOSA	498 > 78	3042.162	5668.422	1.00	4.67	6.709	10.000	9.65	96.5	NO	20.487	NO
42	23	L-PFOS	499 > 80	2135.951	2449.618	1.00	4.71	10.899	9.280	9.51	102.5	NO	2.382	NO
43	25	9Cl-PF30NS	531 > 351	4827.211	2449.618	1.00	4.93	24.632	9.320	10.5	113.0	NO	23.646	YES
44	26	PFDA	513 > 469	9659.547	14436.320	1.00	5.01	8.364	10.000	9.70	97.0	NO	4.680	NO
45	27	8:2 FTS	526.8> 506.9	1094.096	1341.703	1.00	4.97	10.193	9.600	7.94	82.7	NO	0.627	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	12956.593		1.00	4.62	12956.593	12.500	13.6	109.2	NO		
47	67	13C8-PFOSA-EIS	506 > 78	5668.422		1.00	4.67	5668.422	12.500	12.9	103.4	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2449.618		1.00	4.71	2449.618	12.500	11.7	93.6	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2449.618		1.00	4.71	2449.618	12.500	11.7	93.6	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	14436.320		1.00	5.00	14436.320	12.500	12.1	97.2	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1341.703		1.00	4.97	1341.703	12.500	14.2	113.4	NO		
52	-1													
53	28	PFNS	549 > 80	2389.630	2449.618	1.00	5.07	12.194	9.600	9.97	103.8	NO	2.232	NO
54	29	L-MeFOSAA	570 > 419	3163.391	3308.250	1.00	5.15	11.953	10.000	10.3	103.1	NO	1.850	NO
55	31	L-EtFOSAA	583.9 > 419	3643.582	2747.151	1.00	5.31	16.579	10.000	10.7	106.7	NO	1.401	NO
56	33	PFUdA	563.0 > 519	11345.376	15117.691	1.00	5.33	9.381	10.000	9.46	94.6	NO	18.081	NO
57	34	PFDS	598.8 > 79.9	2530.580	2449.618	1.00	5.37	12.913	9.640	10.5	108.9	NO	2.311	NO
58	35	11Cl-PF30UdS	631 > 451	3659.717	18484.576	1.00	5.54	2.475	9.440	9.13	96.7	NO	16.269	NO
59	71	13C8-PFOS-EIS	507.1 > 80	2449.618		1.00	4.71	2449.618	12.500	11.7	93.6	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	3308.250		1.00	5.15	3308.250	12.500	12.6	101.1	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	2747.151		1.00	5.30	2747.151	12.500	11.9	95.0	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	15117.691		1.00	5.33	15117.691	12.500	13.1	104.8	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2449.618		1.00	4.71	2449.618	12.500	11.7	93.6	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	18484.576		1.00	5.61	18484.576	12.500	12.5	100.3	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		899.232	1.00			10.000		(A)	NO		YES
67	37	PFDoA	612.9 > 569.0	13071.441	18484.576	1.00	5.61	8.839	10.000	10.2	101.5	NO	10.762	NO
68	38	N-MeFOSA	512.1 > 168.9		17275.678	1.00			9.600		(A)	NO		YES
69	39	PFTrDA	662.9 > 618.9	14861.483	18484.576	1.00	5.85	10.050	10.000	9.57	95.7	NO	96.690	YES
70	40	PFDoS	699 > 80		17358.602	1.00			10.000		(A)	NO		YES
71	41	PFTeDA	713.0 > 669.0	8620.639	17358.602	1.00	6.07	6.208	10.000	10.1	100.9	NO	14.902	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	899.232		1.00	5.60	899.232	12.500	11.3	90.0	NO		

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Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	18484.576		1.00	5.61	18484.576	12.500	12.5	100.3	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	17275.678		1.00	5.66	17275.678	149.200	151	101.1	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	18484.576		1.00	5.61	18484.576	12.500	12.5	100.3	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	17358.602		1.00	6.07	17358.602	12.500	12.1	96.8	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	17358.602		1.00	6.07	17358.602	12.500	12.1	96.8	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9		21204.316	1.00			9.600			NO		YES
80	43	PFHxDA	813 > 769		20737.174	1.00			10.000			NO		YES
81	44	PFODA	913.1 > 868.8		20737.174	1.00			10.000			NO		
82	45	N-MeFOSE	616.1 > 58.9		17689.174	1.00			9.600			NO		
83	46	N-EtFOSE	630.1 > 58.9		19698.162	1.00			9.600			NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	5796.606	6121.577	1.00	1.32	11.836	12.500	12.6	100.5	NO		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	21204.316		1.00	6.10	21204.316	149.200	147	98.8	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	20737.174		1.00	6.40	20737.174	12.500	12.4	99.1	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	20737.174		1.00	6.40	20737.174	12.500	12.4	99.1	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	17689.174		1.00	6.29	17689.174	149.200	153	102.5	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	19698.162		1.00	6.43	19698.162	149.200	154	103.4	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8	9533.686	12288.044	1.00	2.25	9.698	12.500	13.2	105.8	NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9	1193.446	897.499	1.00	2.54	16.622	12.500	13.1	105.1	NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2155.515	12288.044	1.00	3.28	2.193	12.500	12.8	102.4	NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8	1310.127	897.499	1.00	2.97	18.247	12.500	13.2	105.7	NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0	10185.402	12288.044	1.00	3.05	10.361	12.500	12.3	98.1	NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8	10295.194	12288.044	1.00	3.67	10.473	12.500	13.3	106.3	NO		
97	62	13C3-PFHxS-RSD	402 > 80	2207.106	897.499	1.00	3.81	30.740	12.500	12.3	98.7	NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1467.586	3190.482	1.00	4.12	5.750	12.500	12.3	98.5	NO		
99	66	13C5-PFNA-RSD	468.2 > 422.9	12956.593	13011.011	1.00	4.62	12.448	12.500	13.0	104.1	NO		
100	68	13C8-PFOSA-RSD	506 > 78	5668.422	11119.21(	1.00	4.67	6.372	12.500	13.3	106.4	NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7	12774.724	10333.111	1.00	4.18	15.454	12.500	12.3	98.4	NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2449.618	3190.482	1.00	4.71	9.597	12.500	12.1	96.8	NO		
103	74	13C2-PFDA-RSD	515.1 > 469.9	14436.320	13453.334	1.00	5.00	13.413	12.500	12.2	97.5	NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1341.703	3190.482	1.00	4.97	5.257	12.500	12.0	96.2	NO		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419	3308.250	11119.21(	1.00	5.15	3.719	12.500	13.4	106.8	NO		
107	80	13C2-PFUdA-RSD	565 > 519.8	15117.691	11119.21(	1.00	5.33	16.995	12.500	13.2	105.9	NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419	2747.151	11119.21(	1.00	5.30	3.088	12.500	13.1	105.2	NO		

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Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9	18484.576	13453.334	1.00	5.61	17.175	12.500	12.7	101.5	NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	899.232	3190.482	1.00	5.60	3.523	12.500	11.3	90.1	NO		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9	17275.678	11119.21C	1.00	5.66	19.421	149.200	152	102.0	NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7	17358.602	11119.21C	1.00	6.07	19.514	12.500	12.9	103.0	NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9	21204.316	11119.21C	1.00	6.10	23.837	149.200	157	105.1	NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7	20737.174	11119.21C	1.00	6.40	23.312	12.500	12.8	102.2	NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9	17689.174	11119.21C	1.00	6.29	19.886	149.200	157	105.5	NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8	19698.162	11119.21C	1.00	6.43	22.144	149.200	156	104.6	NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	6121.577	6121.577	1.00	1.31	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9	12288.044	12288.044	1.00	3.05	12.500	12.500	12.5	100.0	NO		
120	1...	13C8-PFOA	420.9 > 376.0	10333.111	10333.111	1.00	4.18	12.500	12.500	12.5	100.0	NO		
121	1...	18O2-PFHxS	403.0 > 103	897.499	897.499	1.00	3.81	12.500	12.500	12.5	100.0	NO		
122	1...	13C9-PFNA	472.2 > 426.9	13011.011	13011.011	1.00	4.62	12.500	12.500	12.5	100.0	NO		
123	1...	13C4-PFOS	503 > 79.7	3190.482	3190.482	1.00	4.71	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7	13453.334	13453.334	1.00	5.00	12.500	12.500	12.5	100.0	NO		
125	1...	13C7-PFUdA	570.1 > 524.8	11119.21C	11119.21C	1.00	5.33	12.500	12.500	12.5	100.0	NO		

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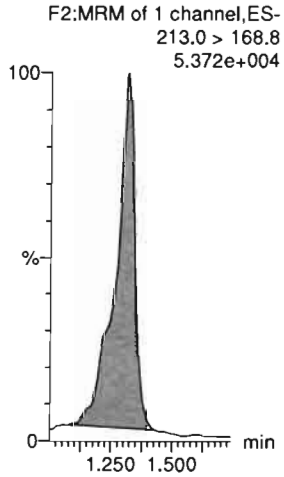

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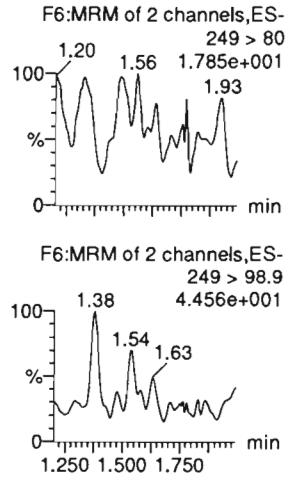
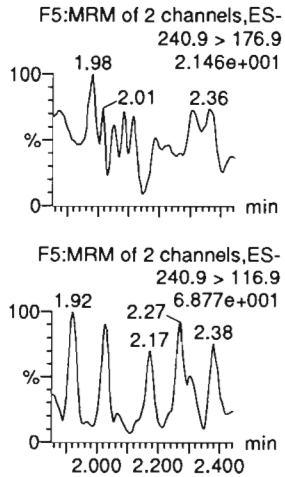


3:3 FTCA



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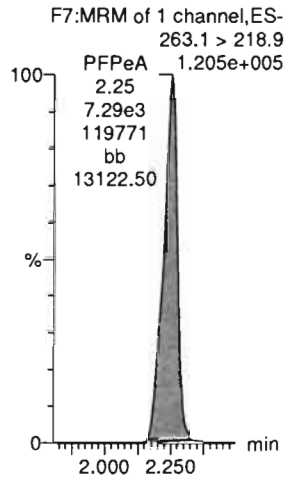

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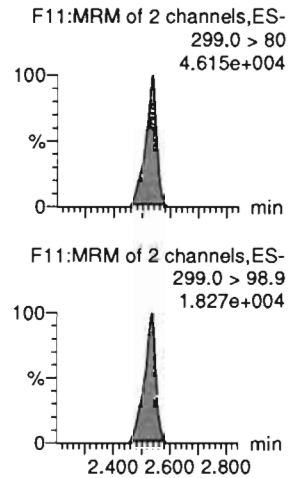
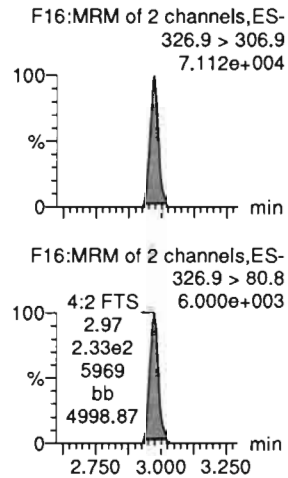


4:2 FTS



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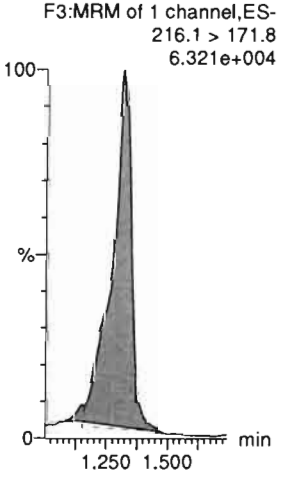

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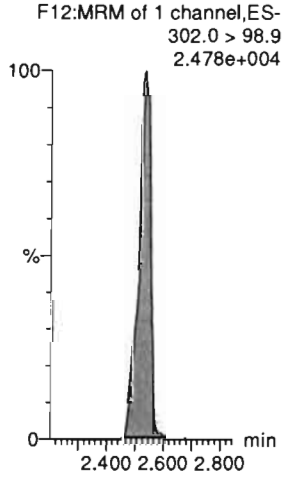

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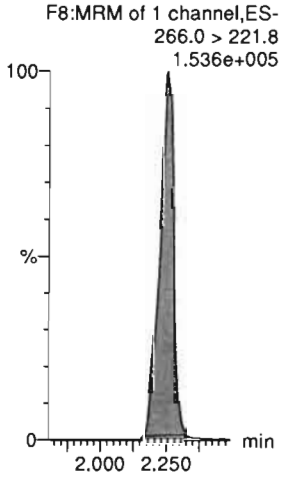

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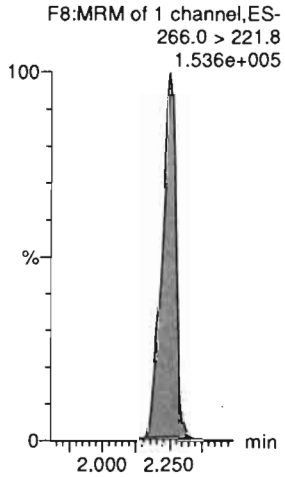

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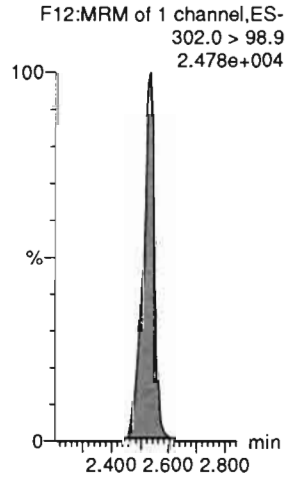

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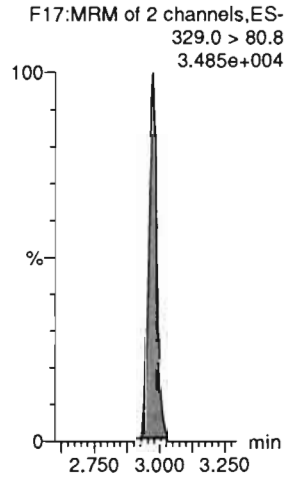

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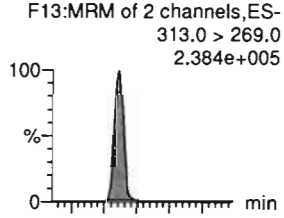
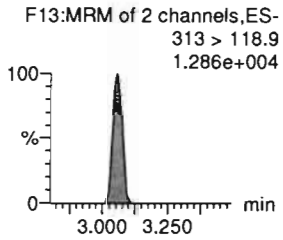
PFHxA





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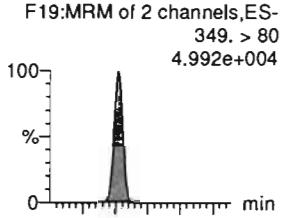

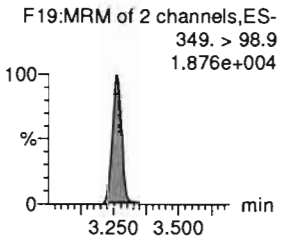

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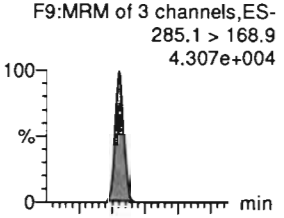

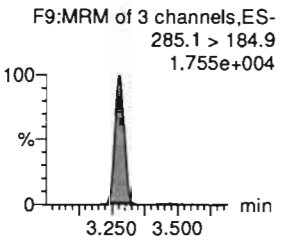

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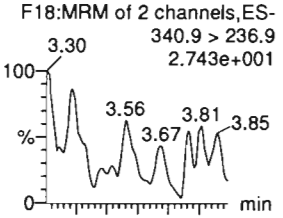
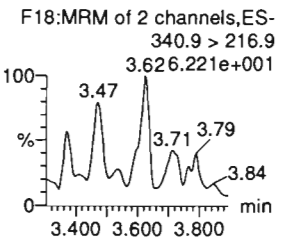
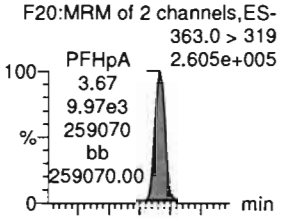
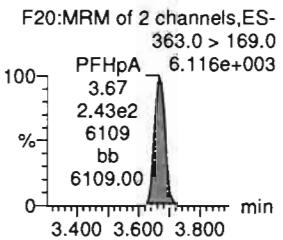




PFHpA





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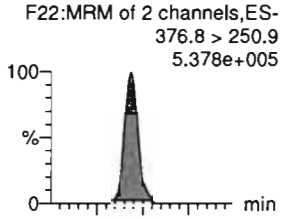
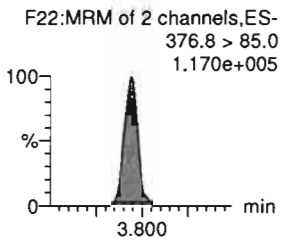
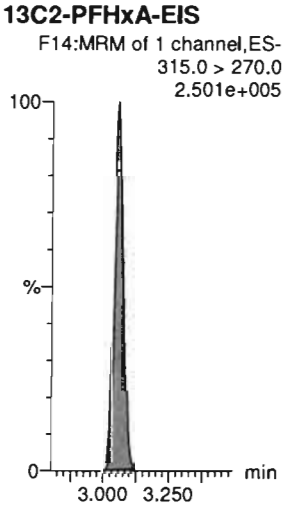




13C2-PFHxA-EIS



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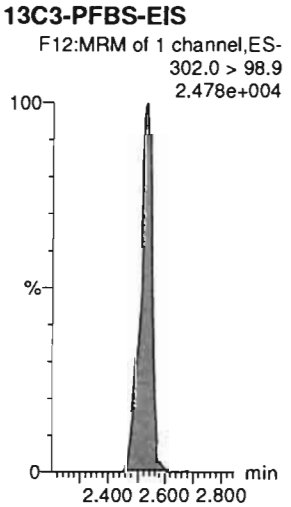

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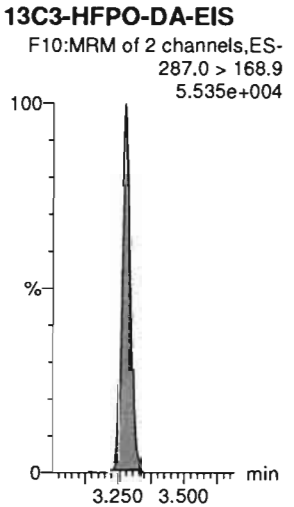

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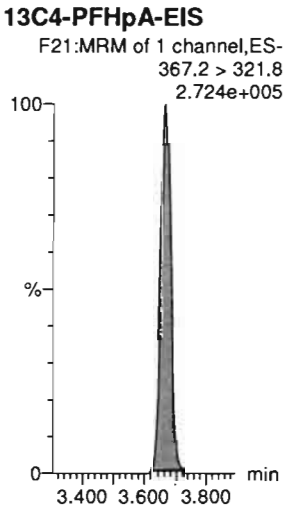

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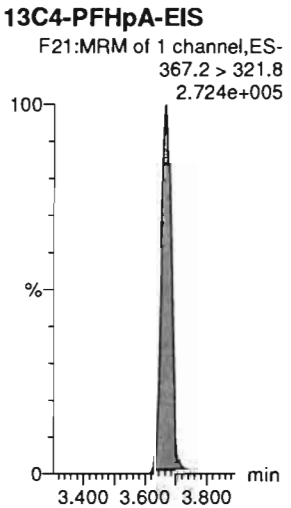

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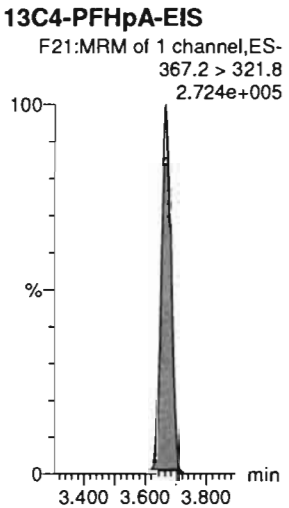

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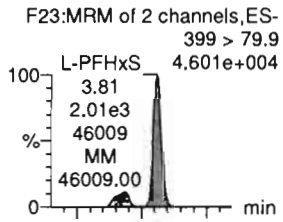
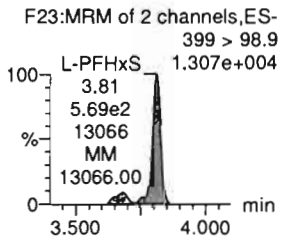
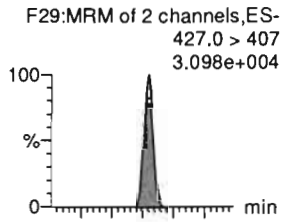
Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

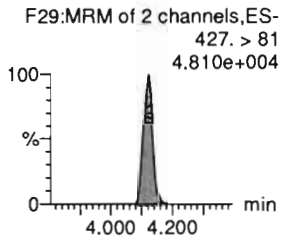
L-PFHxS





6:2 FTS





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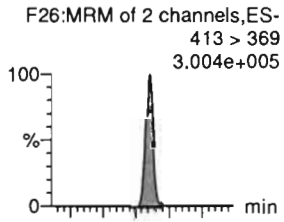

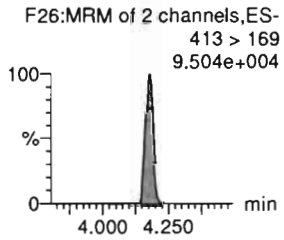

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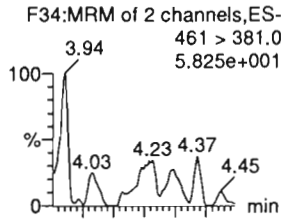

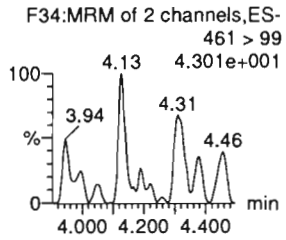

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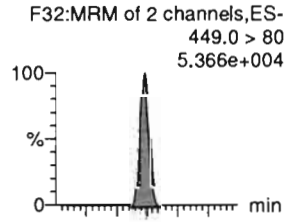

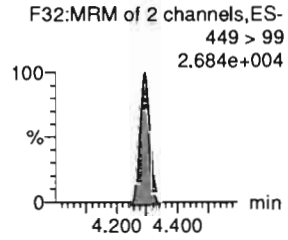

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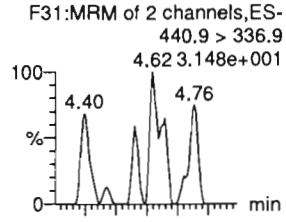

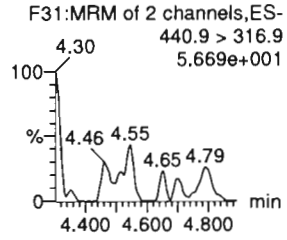

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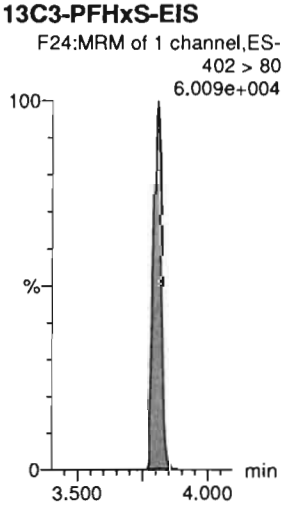

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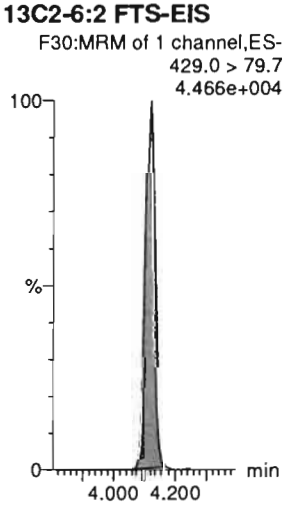

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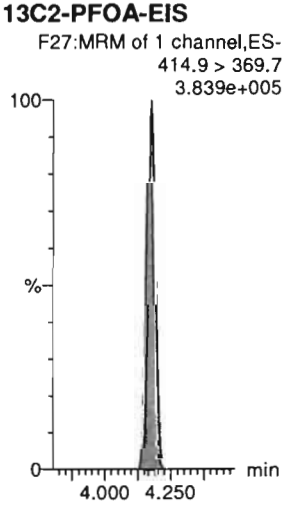

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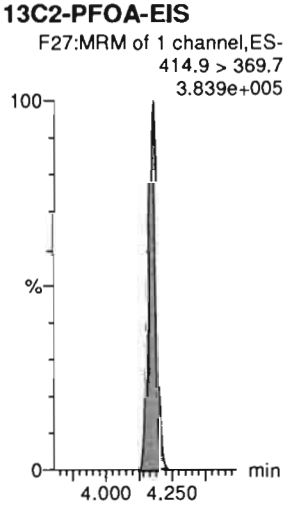
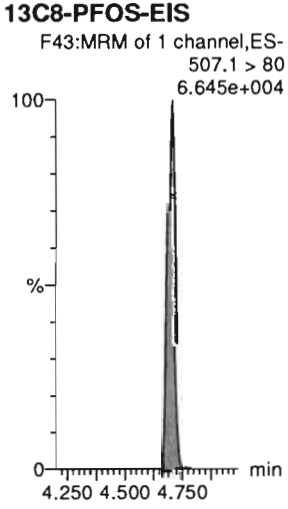
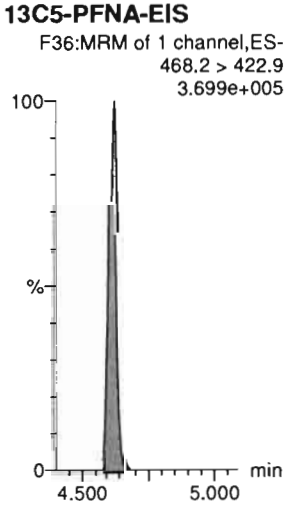


13C8-PFOS-EIS



13C5-PFNA-EIS



OPV 7/23/2020

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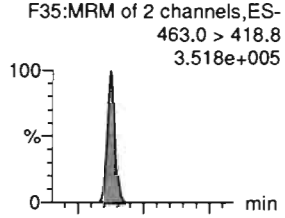

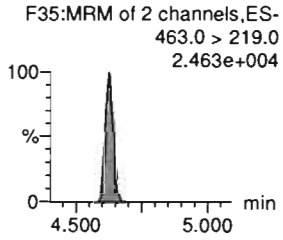

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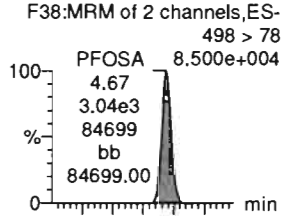
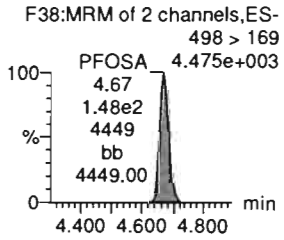
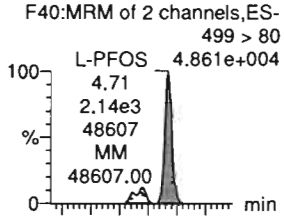
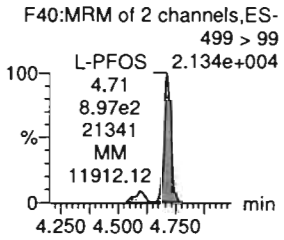


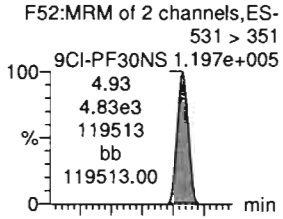


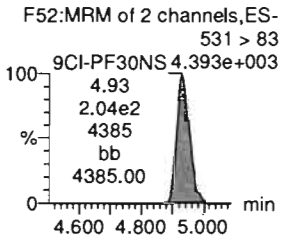
L-PFOS





9Cl-PF30NS





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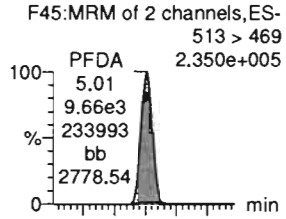

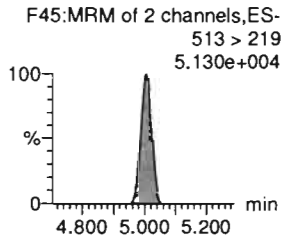

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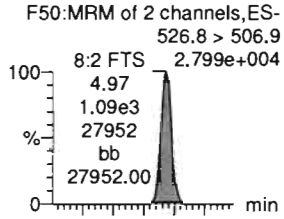

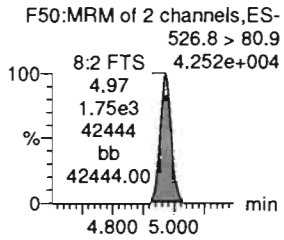

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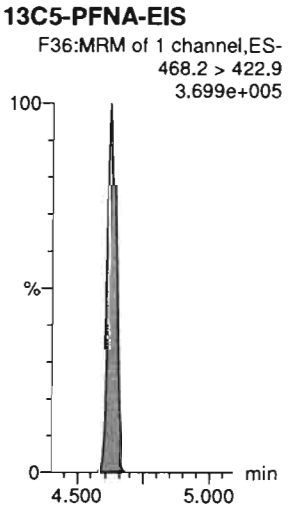

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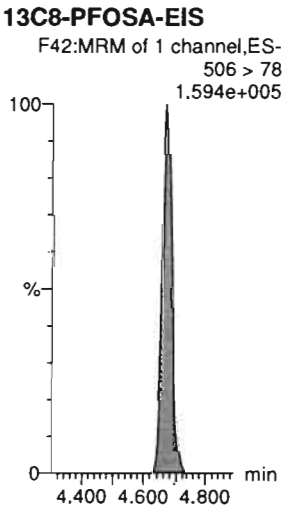

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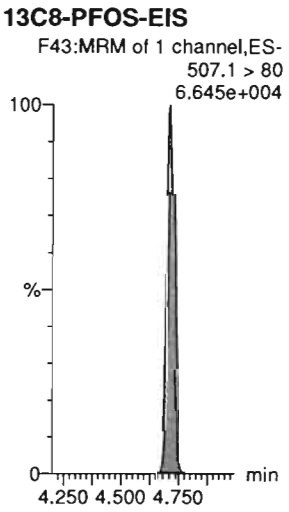

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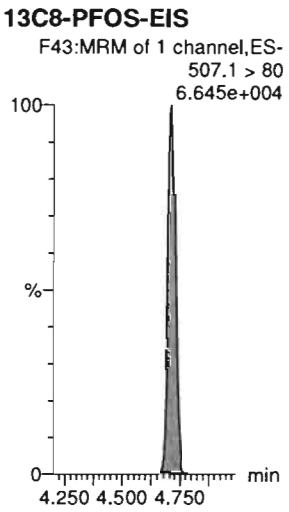

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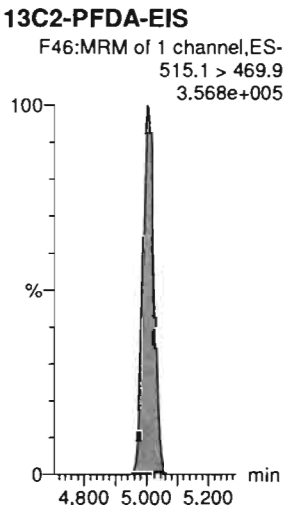

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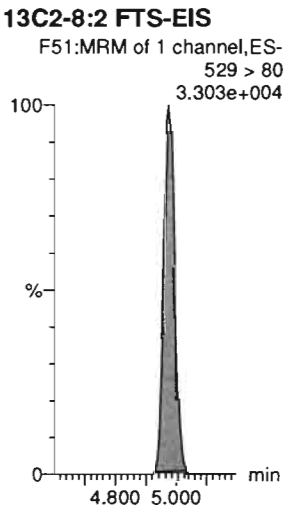

OPV 7/23/2020

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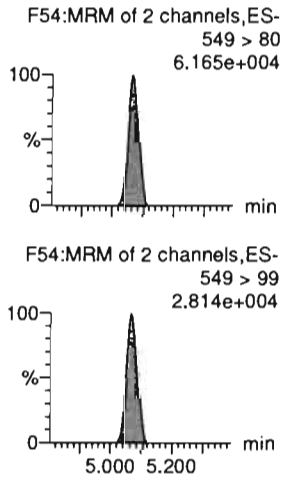
PFNS



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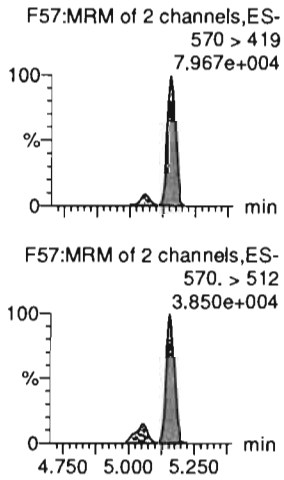

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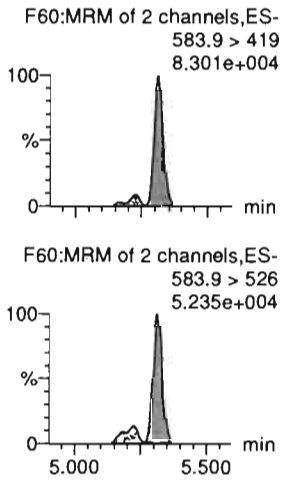
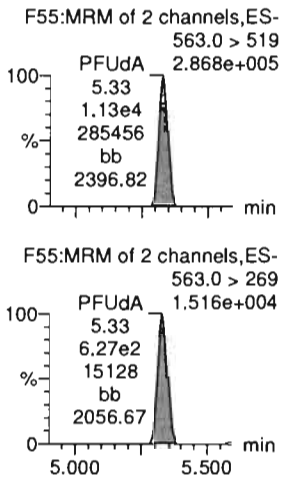
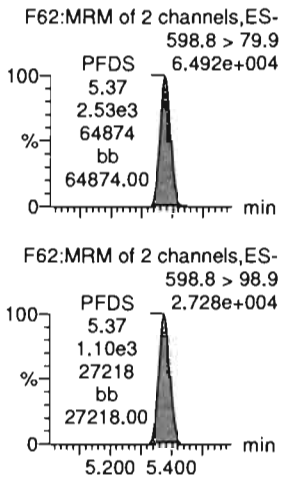


PFUdA



PFDS



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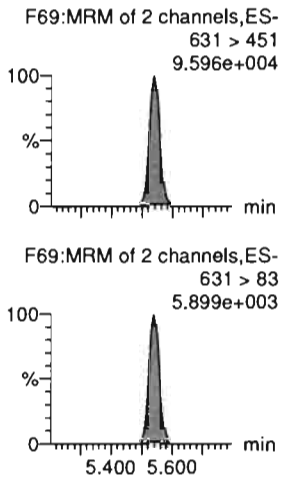
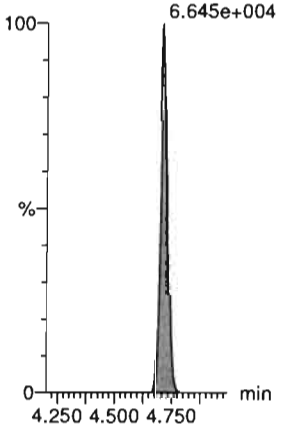
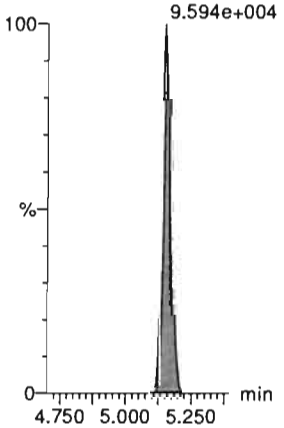


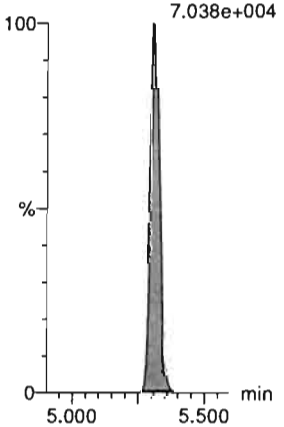
13C8-PFOS-EIS



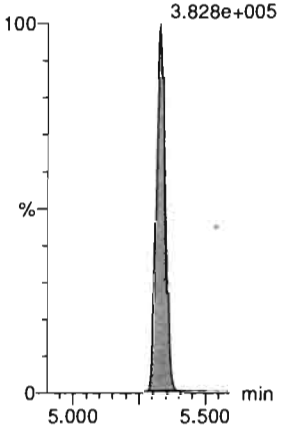
d3-N-MeFOSAA-EIS



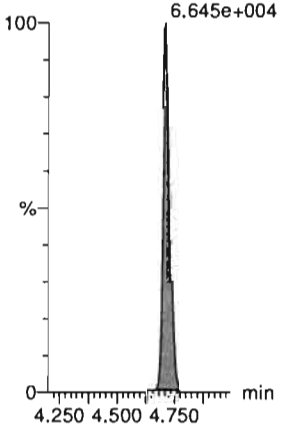
d5-N-EtFOSAA-EIS



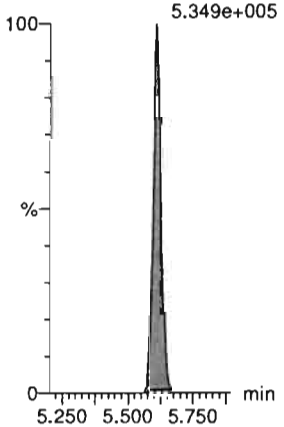
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



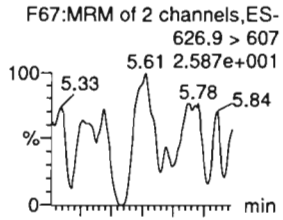
OPV 7/23/2020

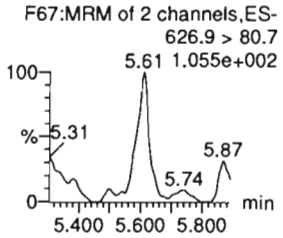
Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-ICV.qld

Last Altered: Thursday, July 23, 2020 14:36:40 Pacific Daylight Time
Printed: Thursday, July 23, 2020 14:38:11 Pacific Daylight Time

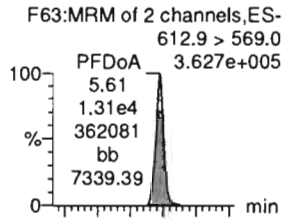
Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

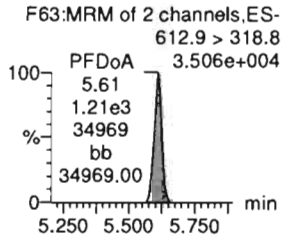
10:2 FTS



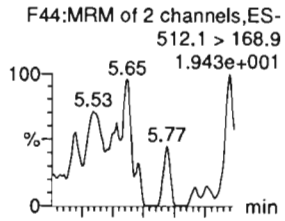


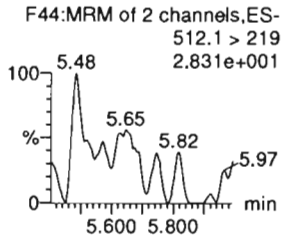
PFDoA



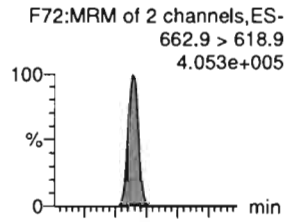


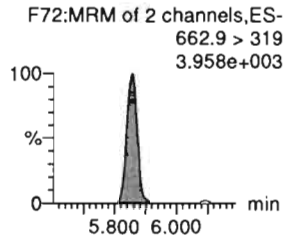
N-MeFOSA



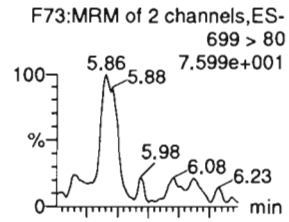


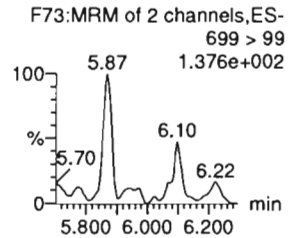
PFTrDA



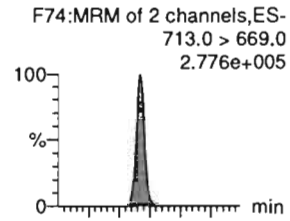


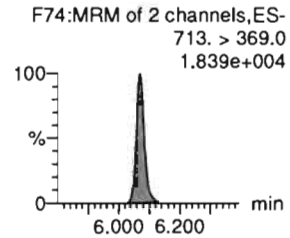
PFDoS



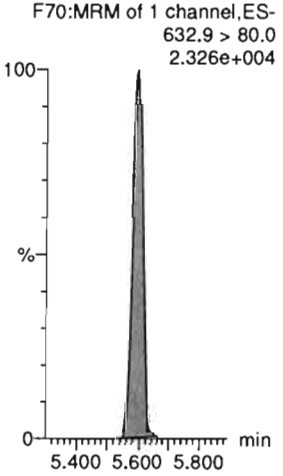


PFTeDA

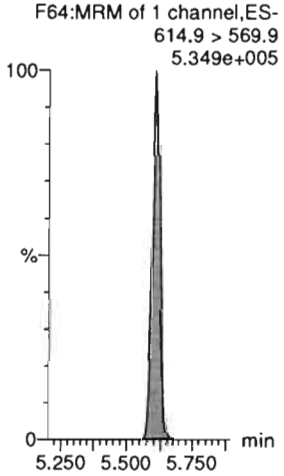




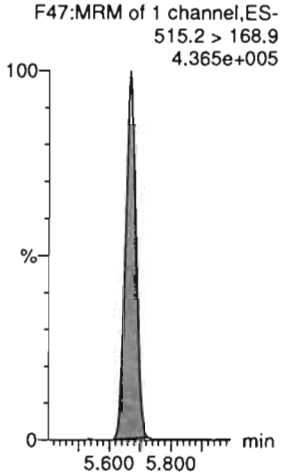
13C2-10:2 FTS-EIS



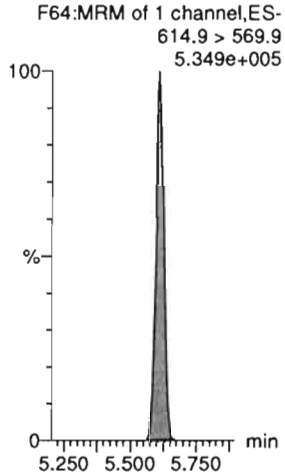
13C2-PFDoA-EIS



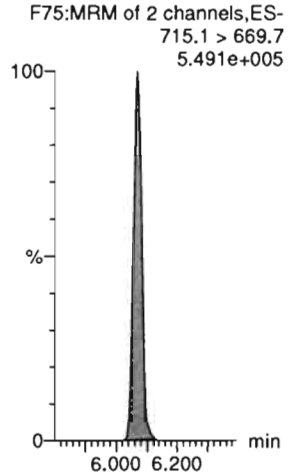
d3-N-MeFOSA-EIS



13C2-PFDoA-EIS



13C2-PFTeDA-EIS



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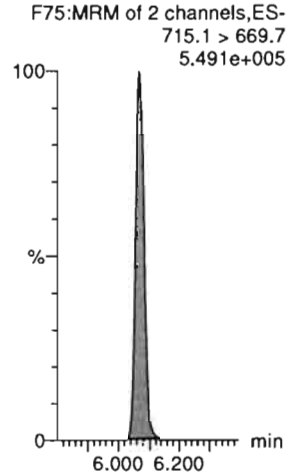

OPV 7/23/2020

Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-ICV.qld

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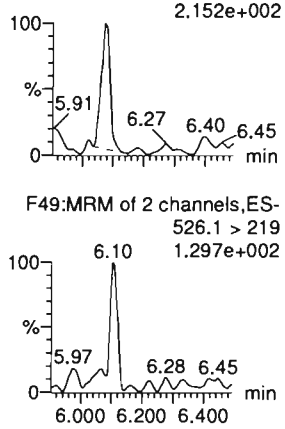
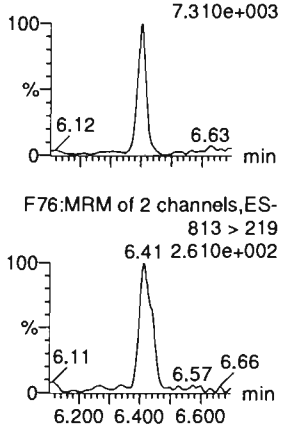
Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

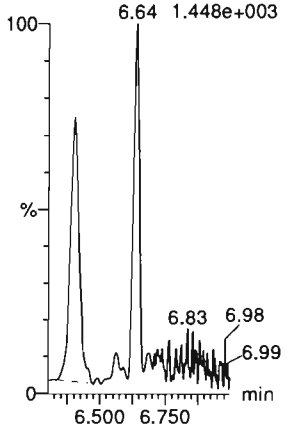
N-EtFOSA



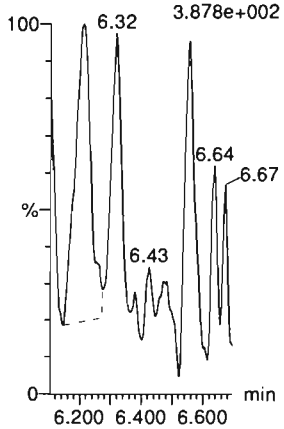
PFHxDA



PFODA



N-MeFOSE



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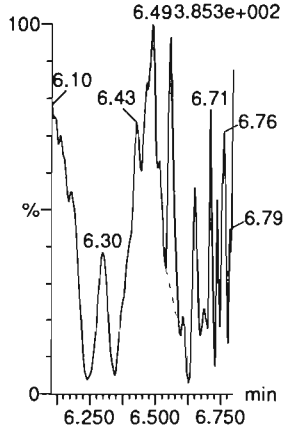
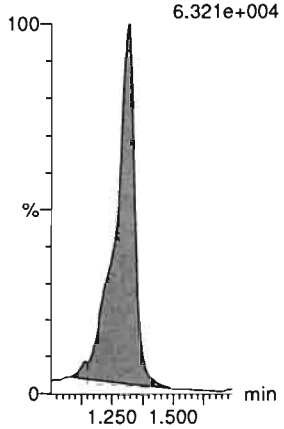
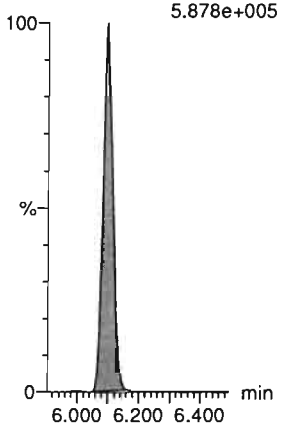


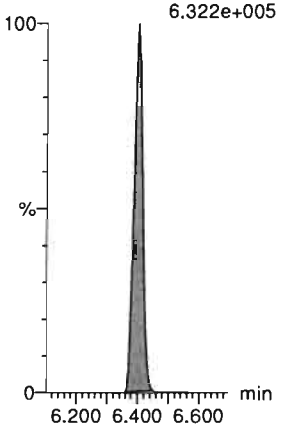
13C3-PFBA-RSD



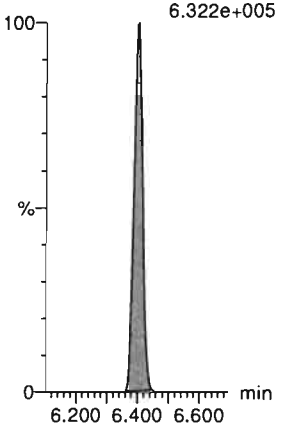
d5-N-ETFOSA-EIS



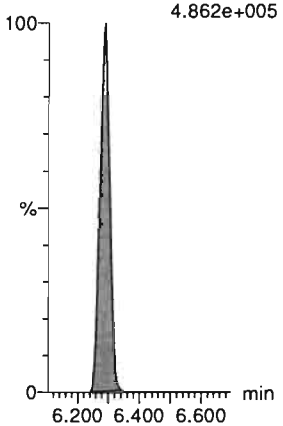
13C2-PFHxDA-EIS



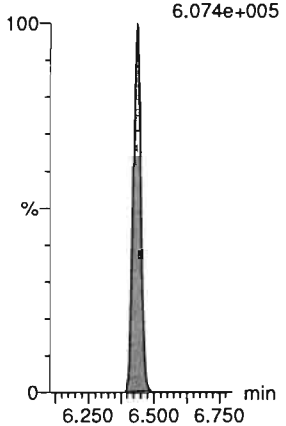
13C2-PFHxDA-EIS



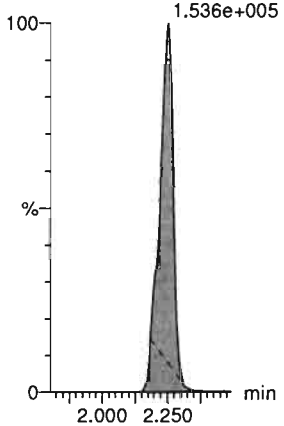
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD



Dataset: D:\PFAS5.PRO\RESULTS\200723P1\200723P1-ICV.qld

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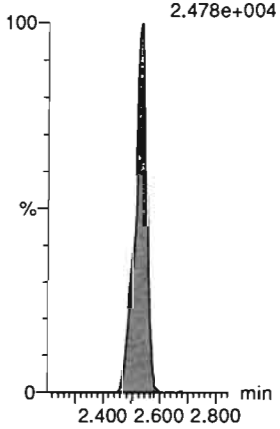
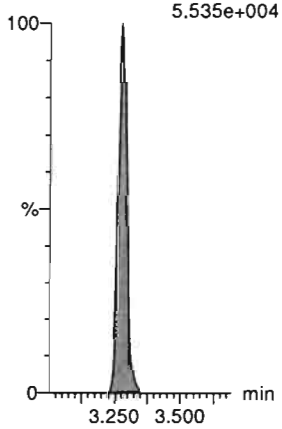
Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

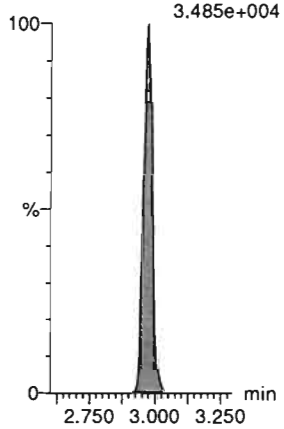
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.9
2.478e+004



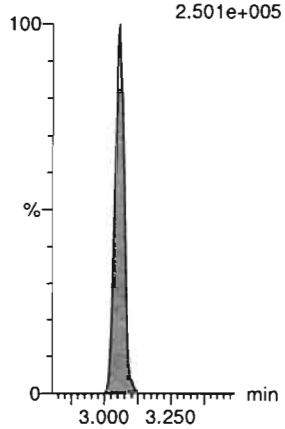
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
5.535e+004



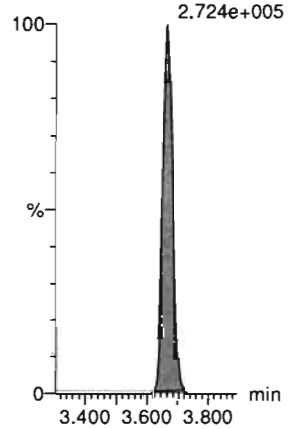
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 80.8
3.485e+004



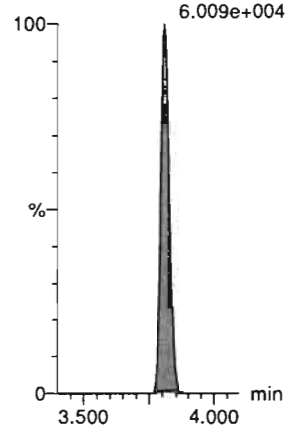
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.501e+005



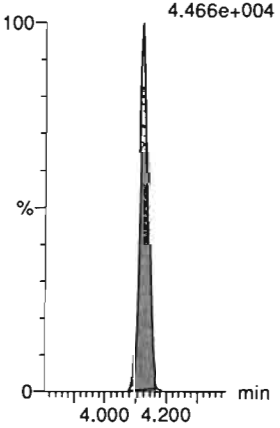
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.724e+005



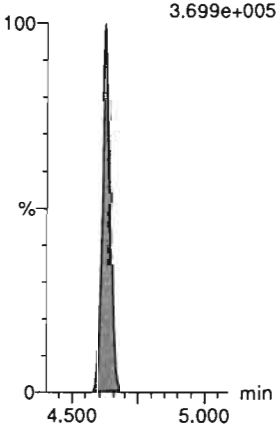
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
402 > 80
6.009e+004



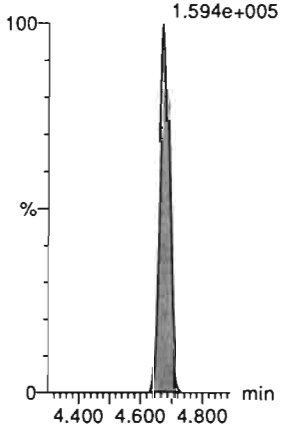
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
4.466e+004



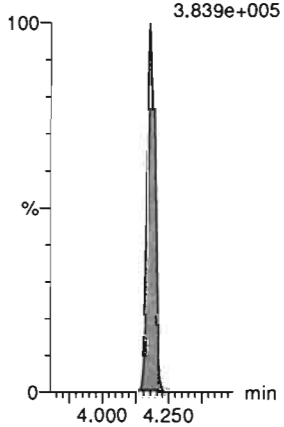
13C5-PFNA-RSD
F36:MRM of 1 channel,ES-
468.2 > 422.9
3.699e+005



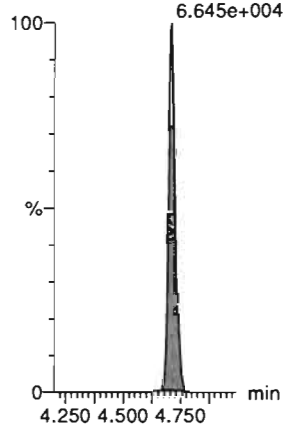
13C8-PFOSA-RSD
F42:MRM of 1 channel,ES-
506 > 78
1.594e+005



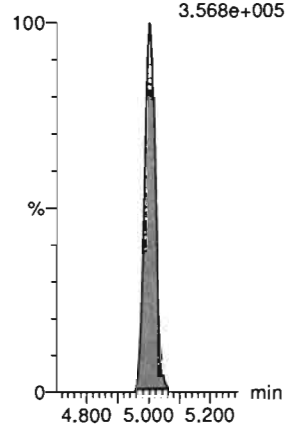
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.839e+005



13C8-PFOS-RSD
F43:MRM of 1 channel,ES-
507.1 > 80
6.645e+004



13C2-PFDA-RSD
F46:MRM of 1 channel,ES-
515.1 > 469.9
3.568e+005



OPV 7/23/2020

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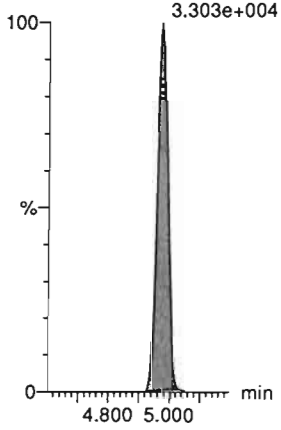
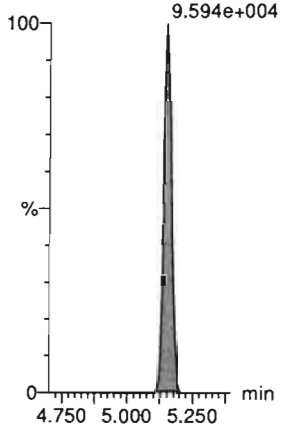
Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

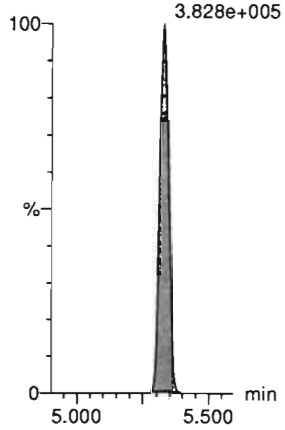
13C2-8:2 FTS-RSD
F51:MRM of 1 channel,ES-
529 > 80
3.303e+004



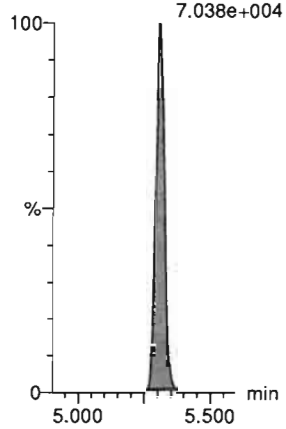
d3-N-MeFOSAA-RSD
F59:MRM of 1 channel,ES-
573.1 > 419
9.594e+004



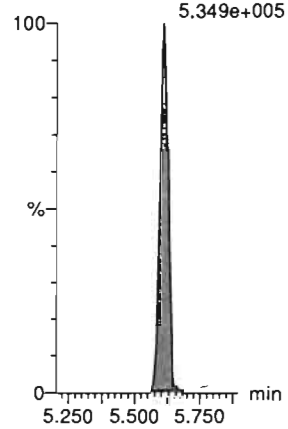
13C2-PFUdA-RSD
F56:MRM of 1 channel,ES-
565 > 519.8
3.828e+005



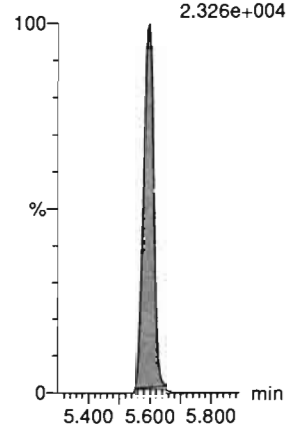
d5-N-EtFOSAA-RSD
F61:MRM of 1 channel,ES-
589.3 > 419
7.038e+004



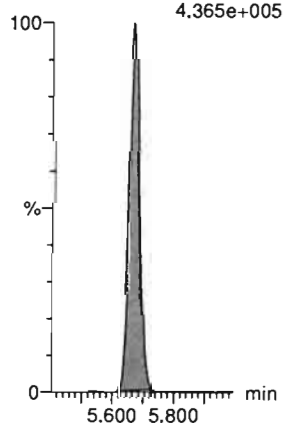
13C2-PFDoA-RSD
F64:MRM of 1 channel,ES-
614.9 > 569.9
5.349e+005



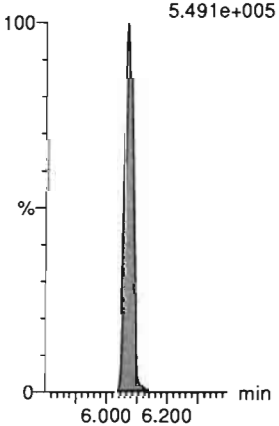
13C2-10:2 FTS-RSD
F70:MRM of 1 channel,ES-
632.9 > 80.0
2.326e+004



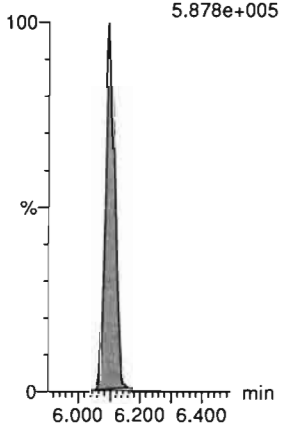
d3-N-MeFOSA-RSD
F47:MRM of 1 channel,ES-
515.2 > 168.9
4.365e+005



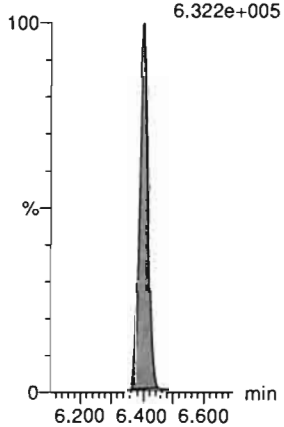
13C2-PFTeDA-RSD
F75:MRM of 2 channels,ES-
715.1 > 669.7
5.491e+005



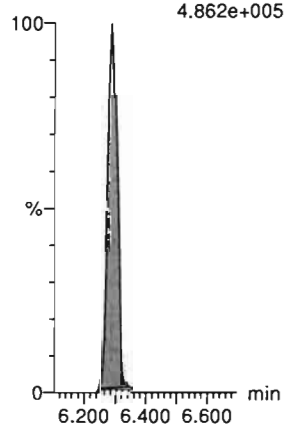
d5-N-ETFOSA-RSD
F53:MRM of 1 channel,ES-
531.1 > 168.9
5.878e+005



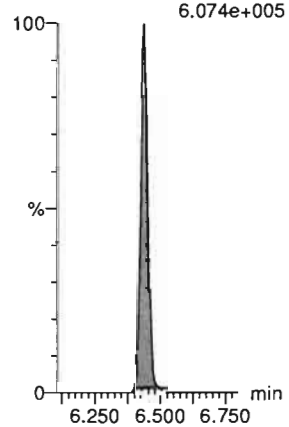
13C2-PFHxDA-RSD
F77:MRM of 1 channel,ES-
815 > 769.7
6.322e+005



d7-N-MeFOSE-RSD
F66:MRM of 1 channel,ES-
623.1 > 58.9
4.862e+005



d9-N-EtFOSE-RSD
F71:MRM of 1 channel,ES-
639.2 > 58.8
6.074e+005



OPV 7/23/2020

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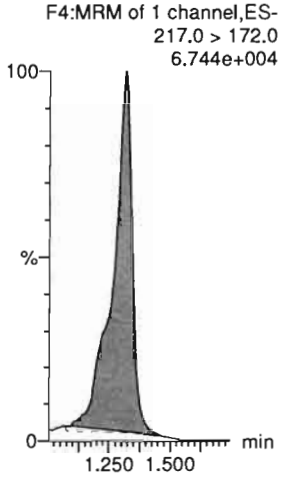
Printed: Thursday, July 23, 2020 14:38:11 Pacific Daylight Time

Name: 200723P1-16, Date: 23-Jul-2020, Time: 12:36:25, ID: ICV200723P1-1 PFC ICV 20G1611, Description: PFC ICV 20G1611

13C4-PFBA



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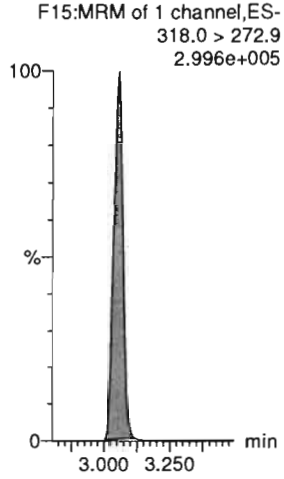

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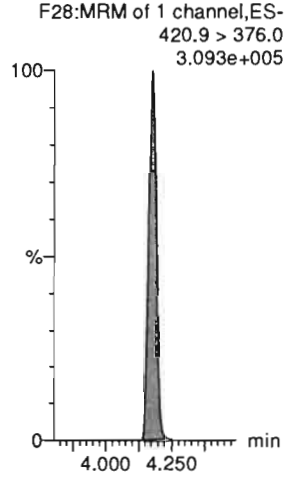
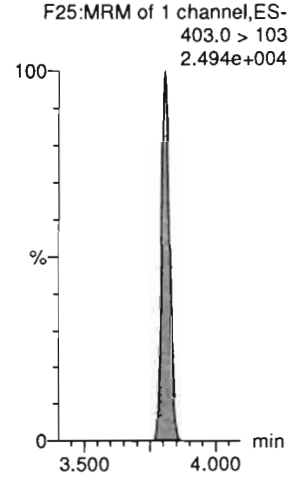


18O2-PFHxS



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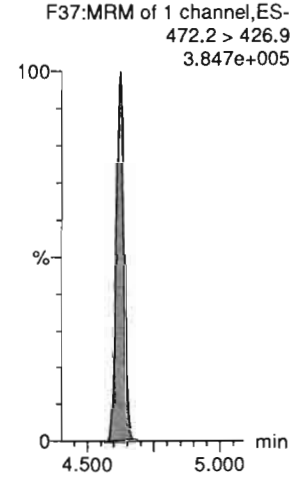
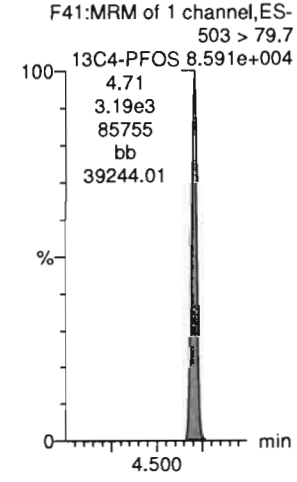


13C4-PFOS



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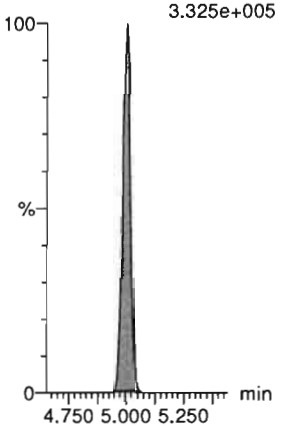

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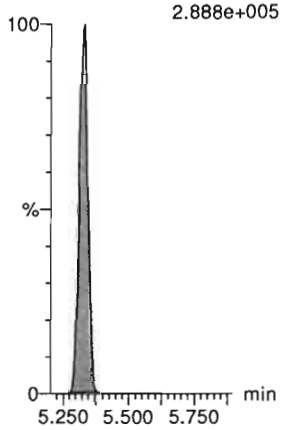

Vista Analytical Laboratory

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Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_07-23-20.cdb 23 Jul 2020 14:05:33

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

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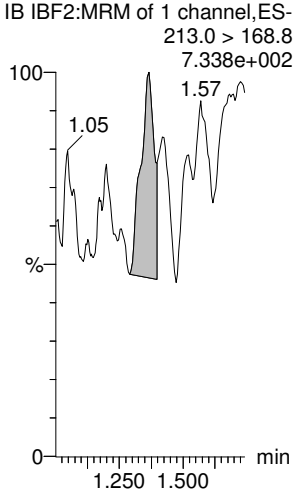

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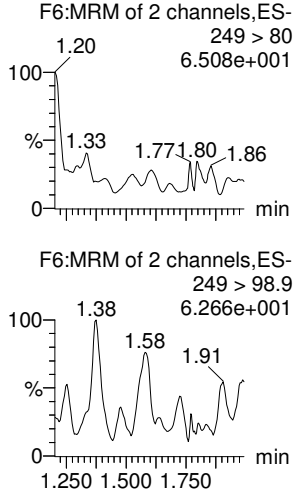
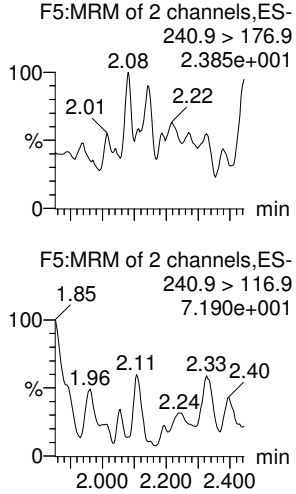


3:3 FTCA



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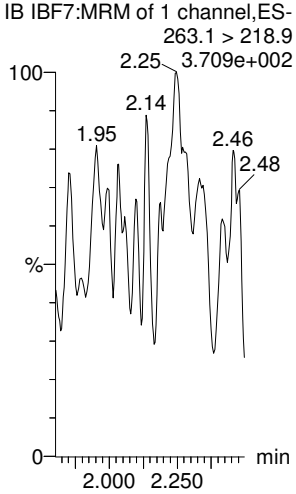

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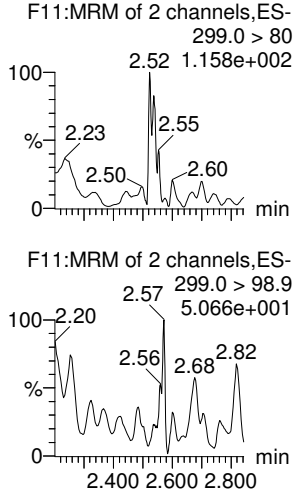
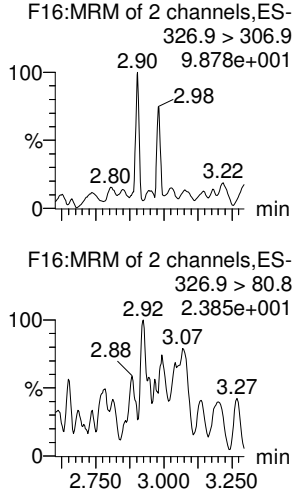


4:2 FTS



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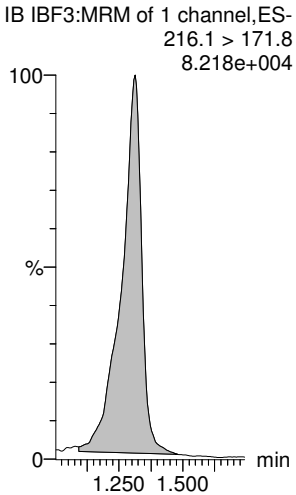

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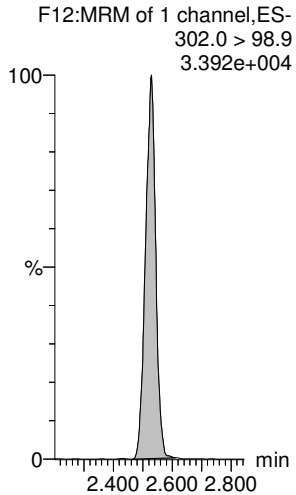

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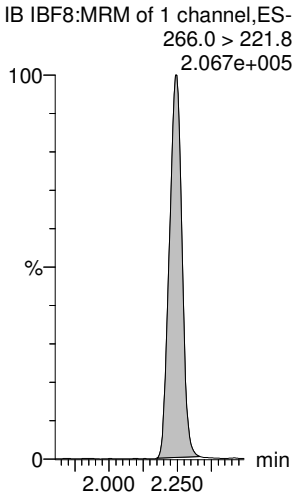

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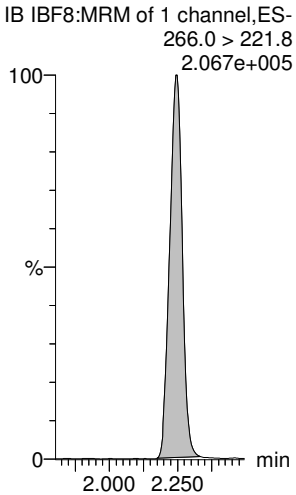

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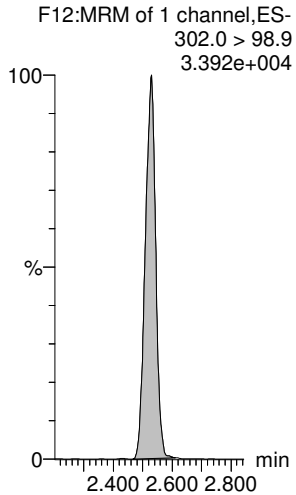
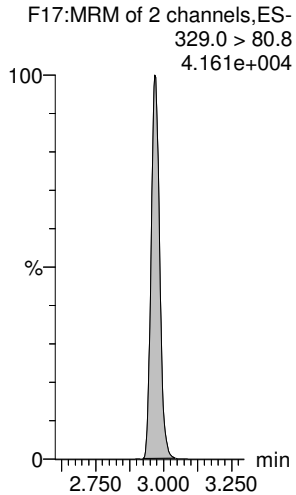


13C2-4:2 FTS-EIS



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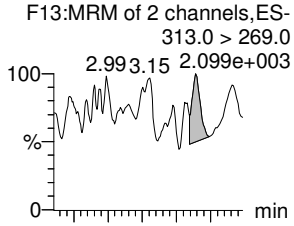
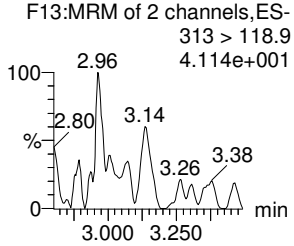
Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

PFHxA





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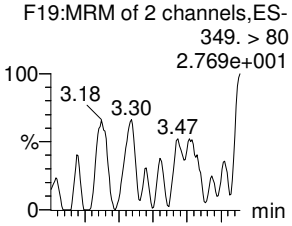
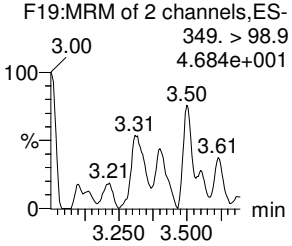
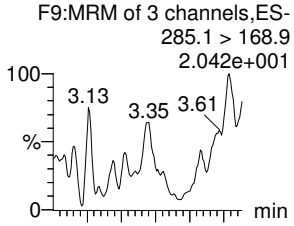
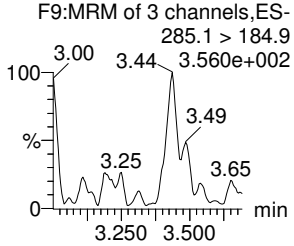


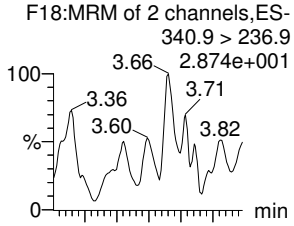


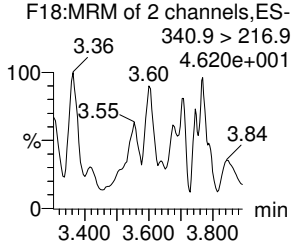
HFPO-DA



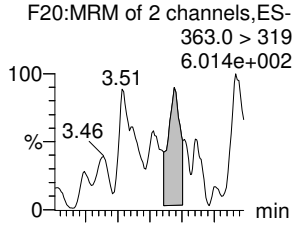


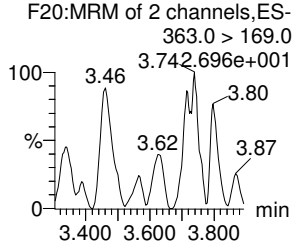
5:3 FTCA





PFHpA





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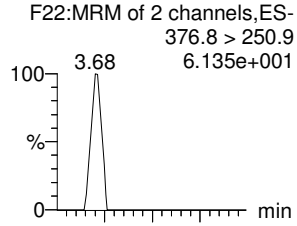

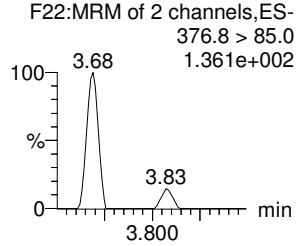

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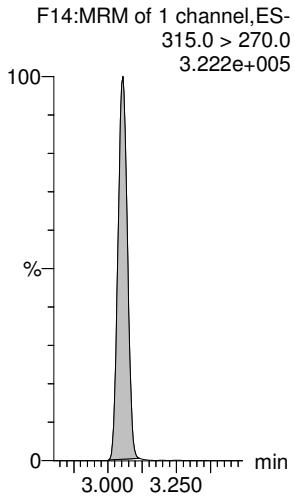
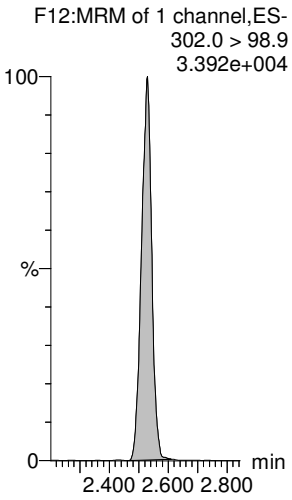


13C3-PFBS-EIS



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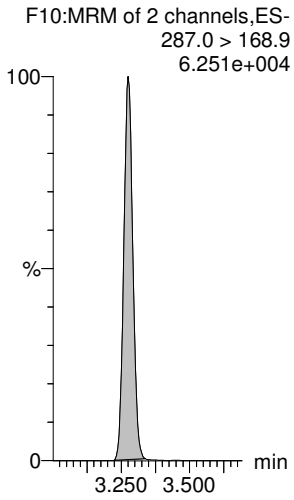

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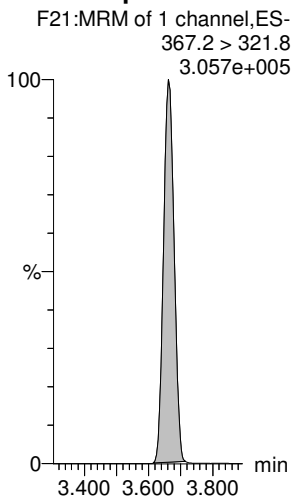

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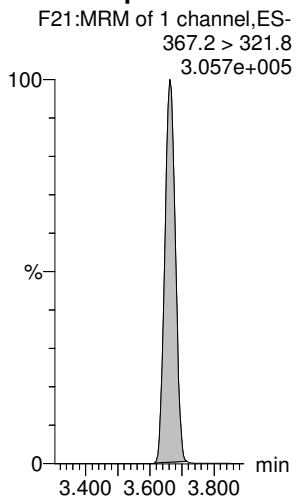

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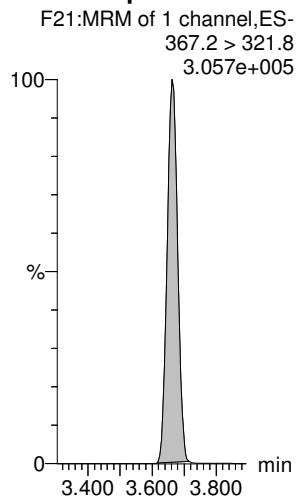

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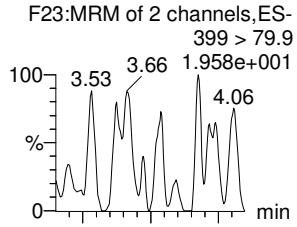
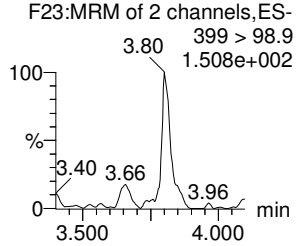
Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

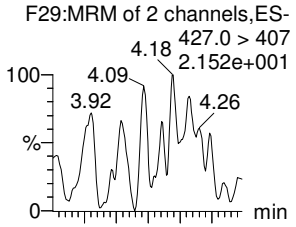
Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

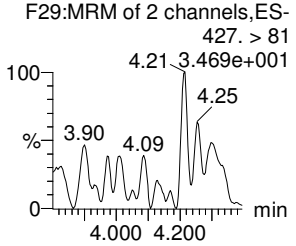
L-PFHxS



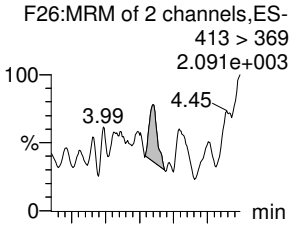


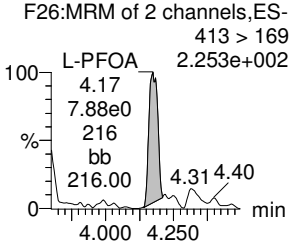
6:2 FTS





L-PFOA





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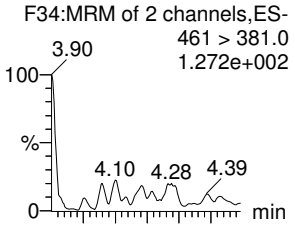

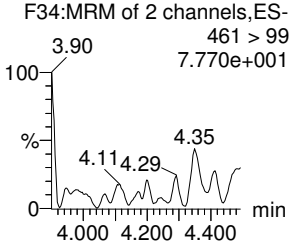

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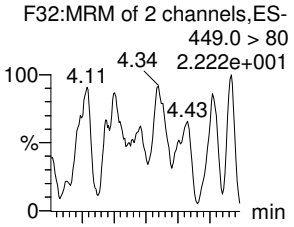

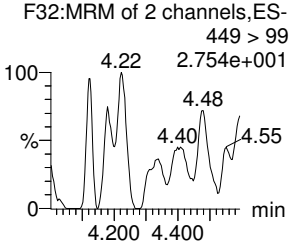

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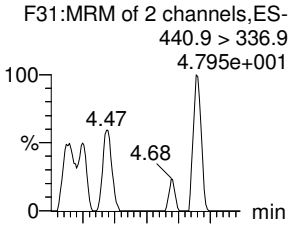

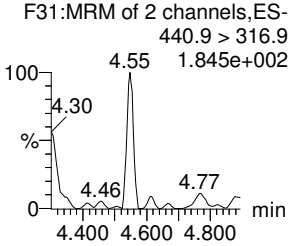

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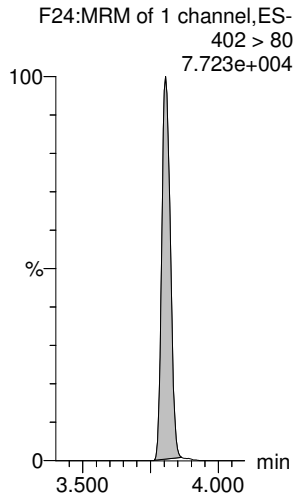
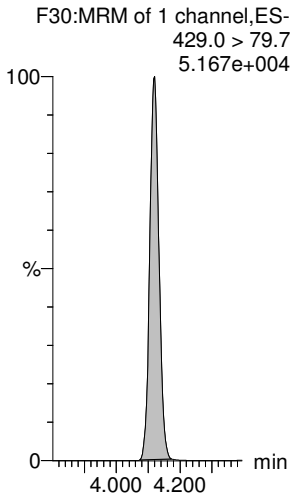


13C2-6:2 FTS-EIS



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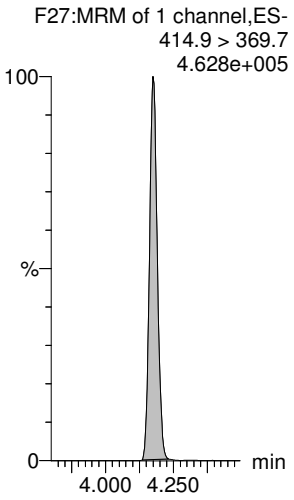

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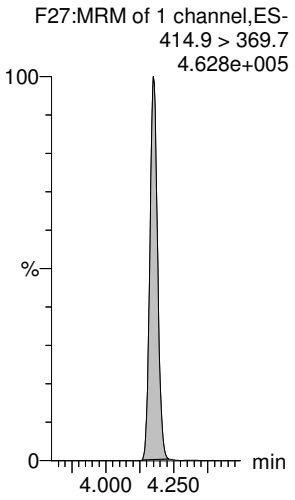
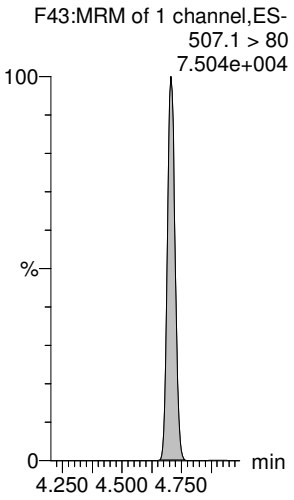
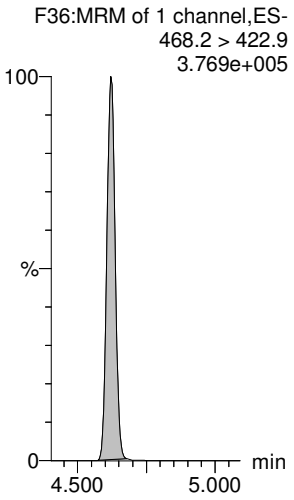


13C8-PFOS-EIS



13C5-PFNA-EIS



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Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

Name: 200723P1-15, Date: 23-Jul-2020, Time: 12:25:49, ID: IB, Description: IB

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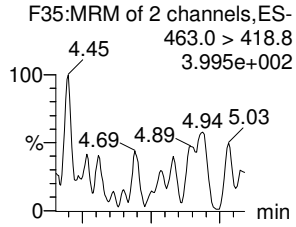

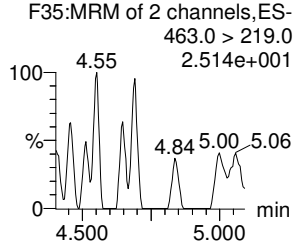

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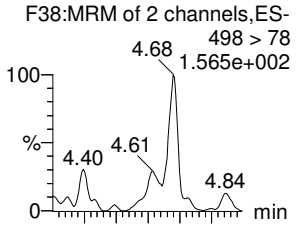
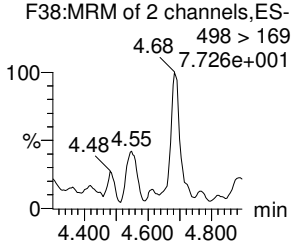
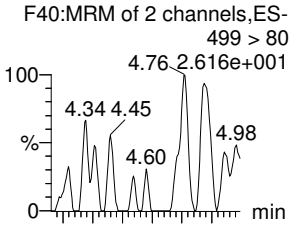
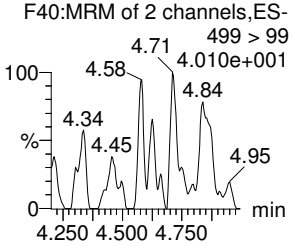




L-PFOS





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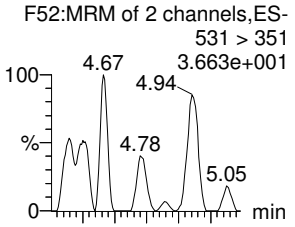

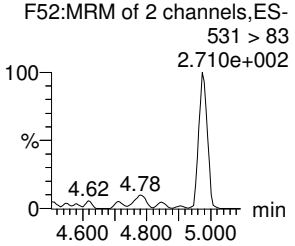

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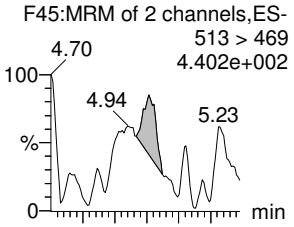

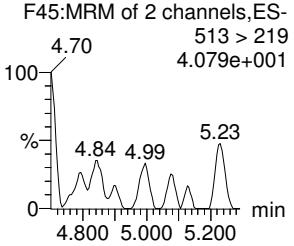

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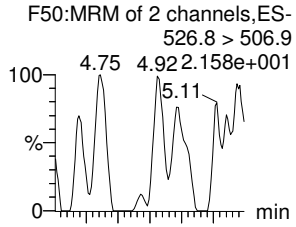

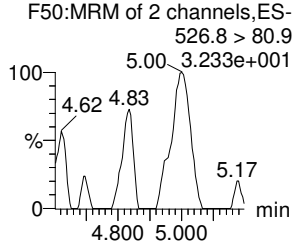

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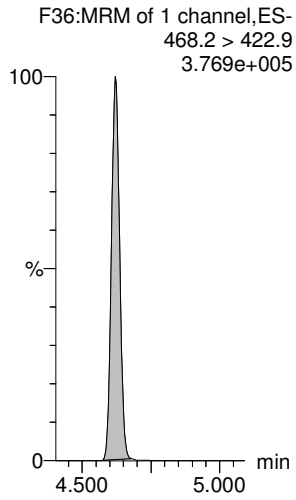

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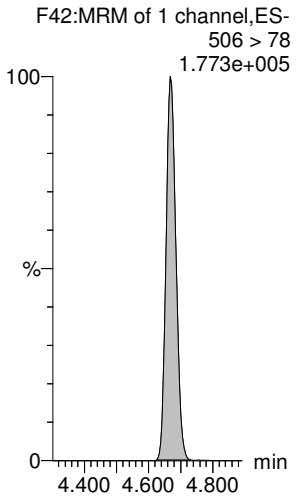

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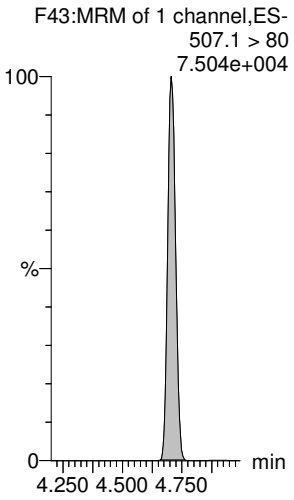

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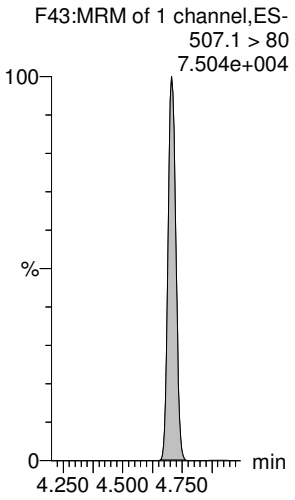

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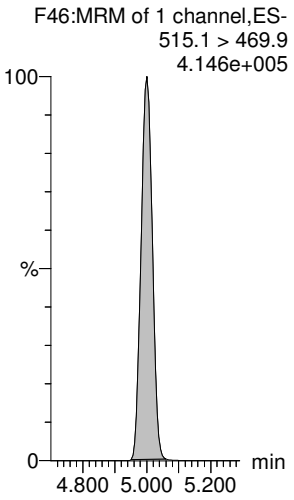

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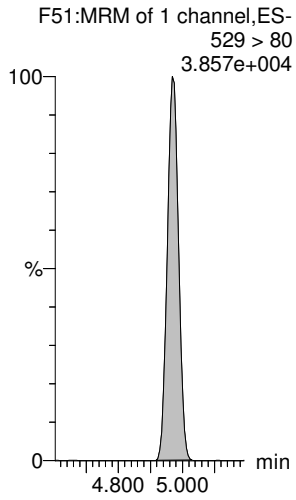

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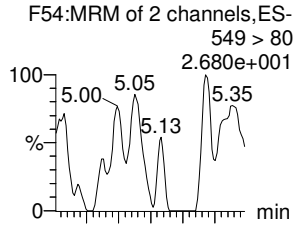

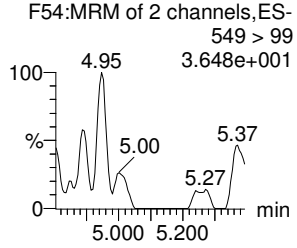

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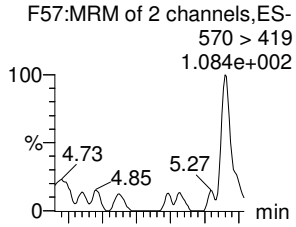

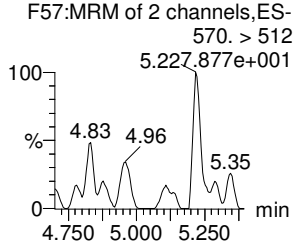

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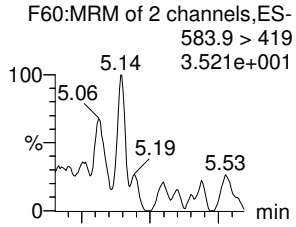

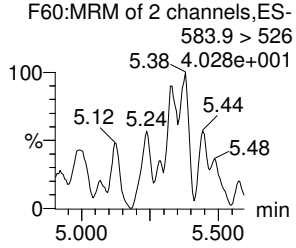

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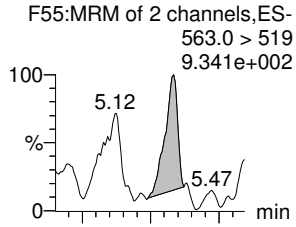

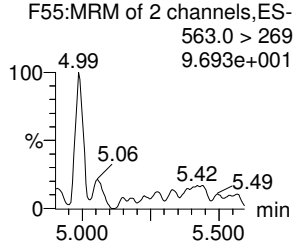

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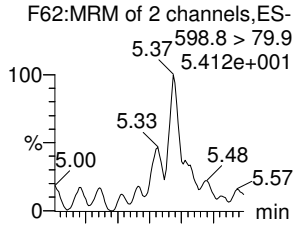

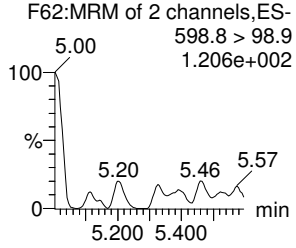

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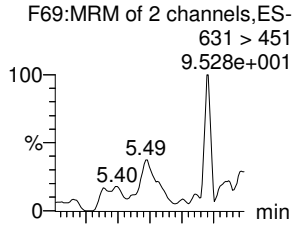

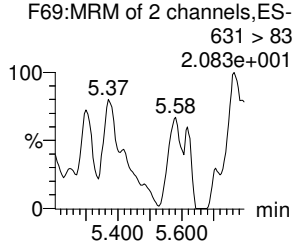

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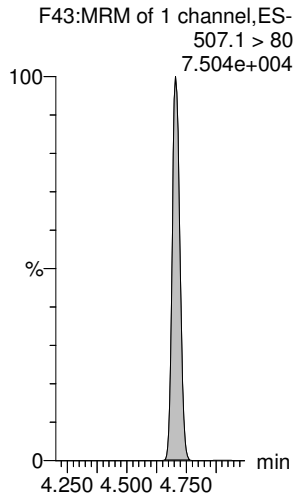

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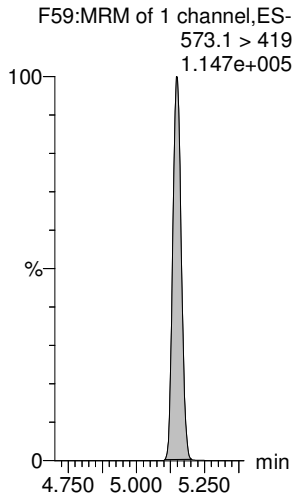

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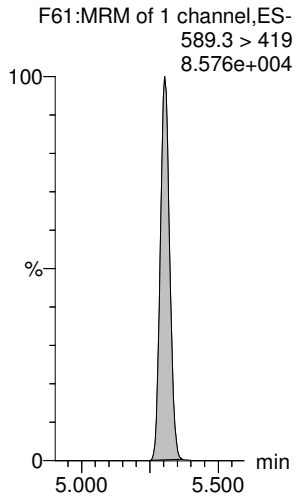

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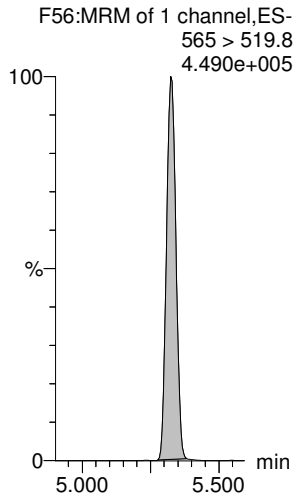

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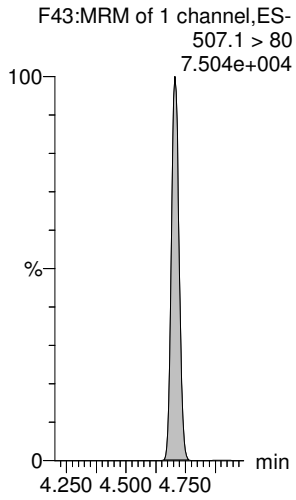

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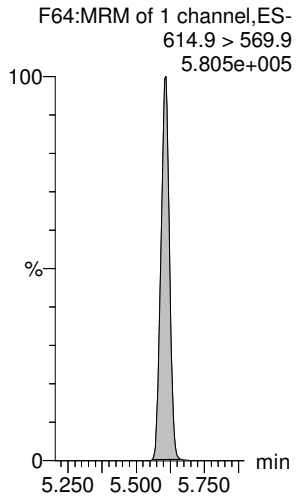

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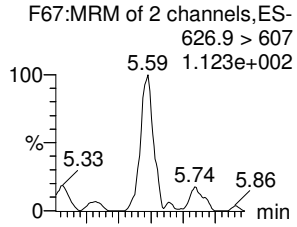
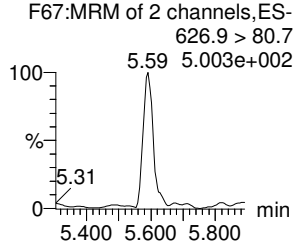
10:2 FTS





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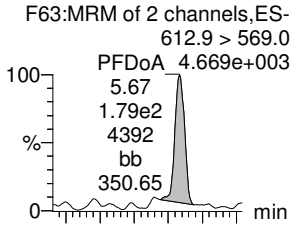

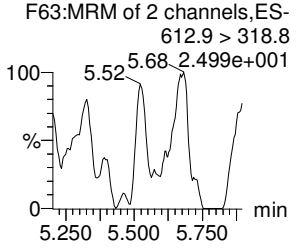

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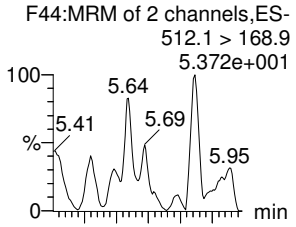

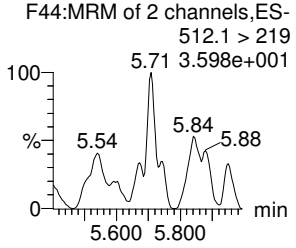

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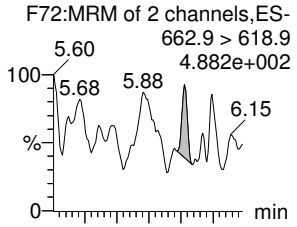

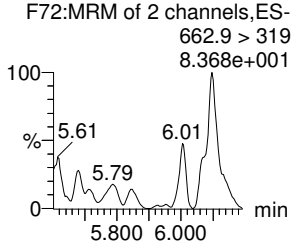

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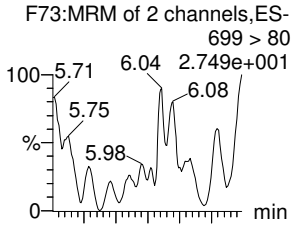

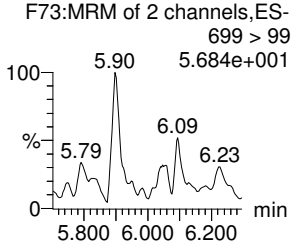

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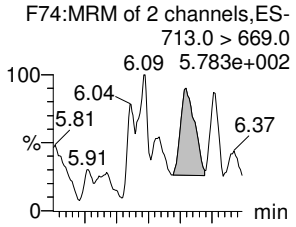
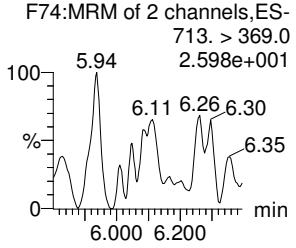
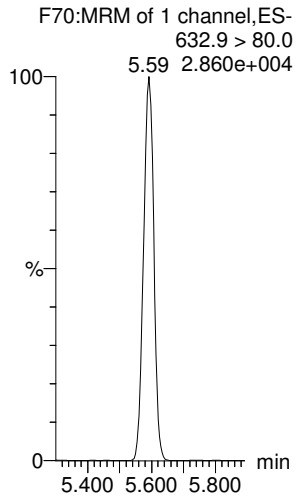




13C2-10:2 FTS-EIS



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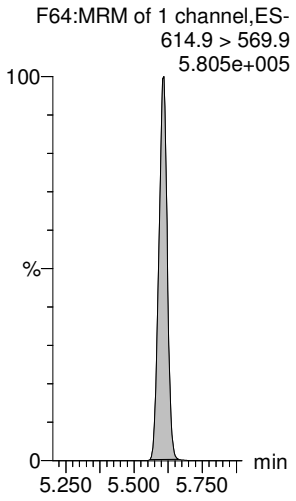

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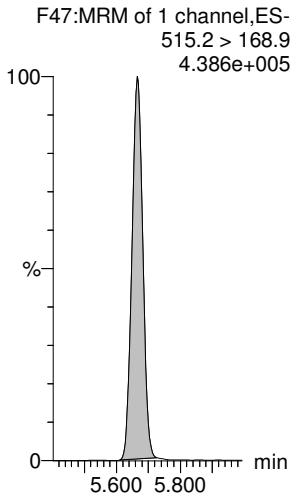

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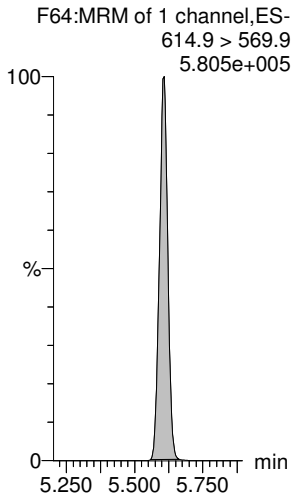

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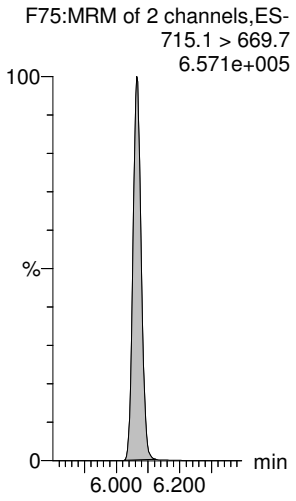

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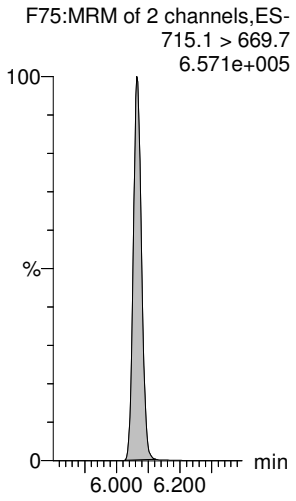

Vista Analytical Laboratory

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Printed: Thursday, July 23, 2020 14:32:44 Pacific Daylight Time

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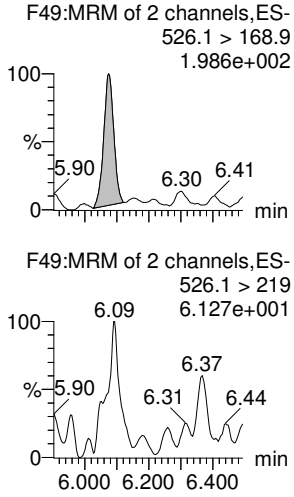

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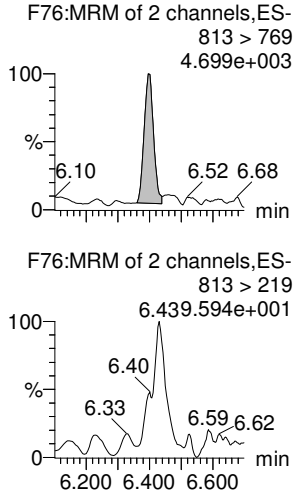

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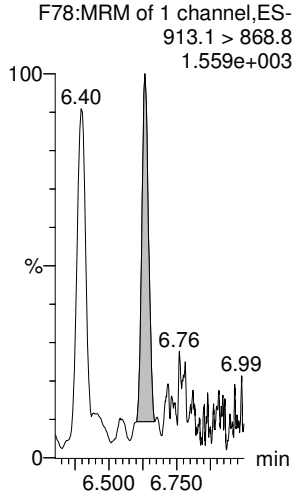

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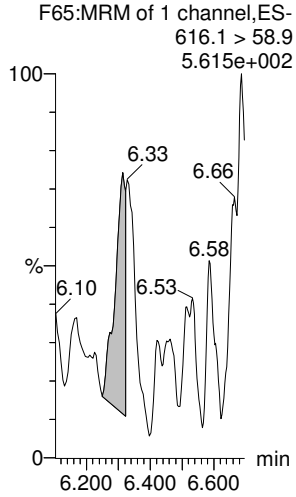

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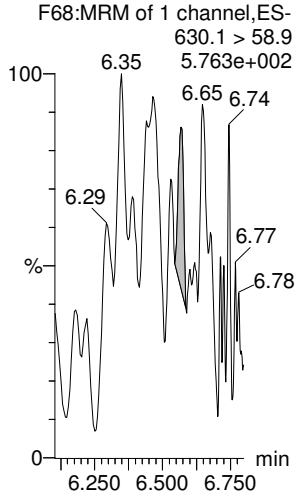

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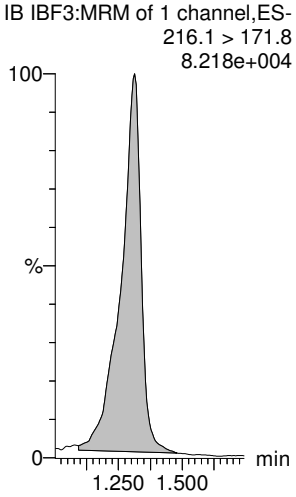

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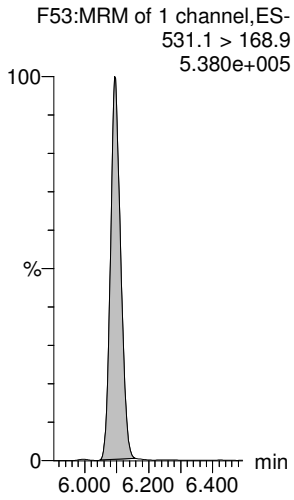

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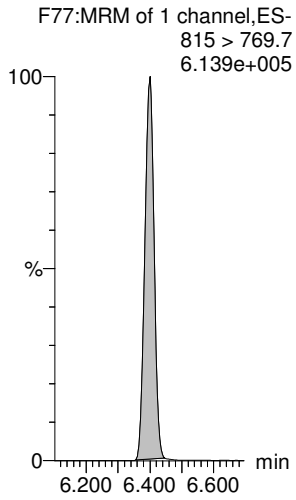

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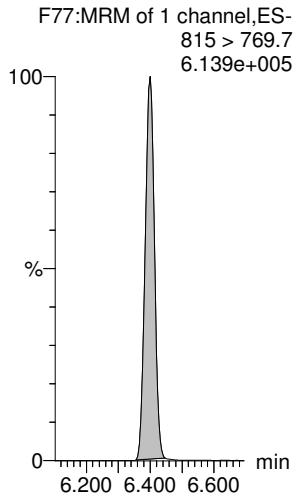

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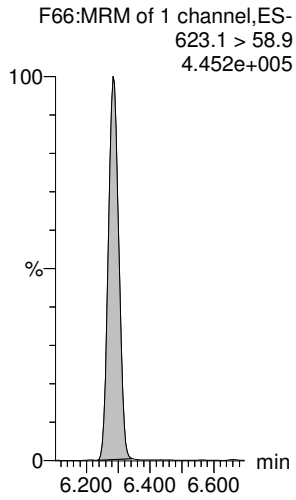

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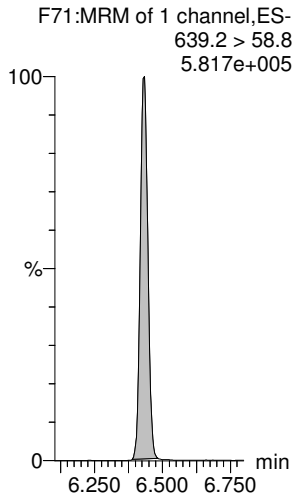

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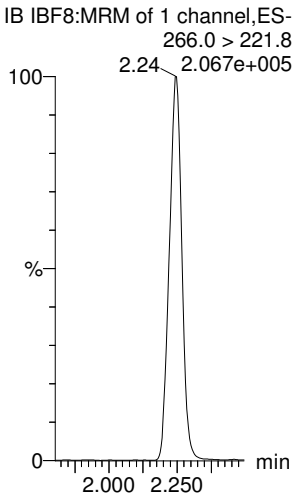

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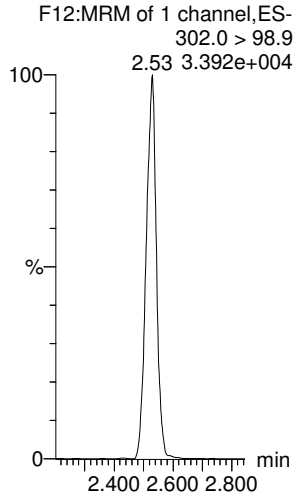

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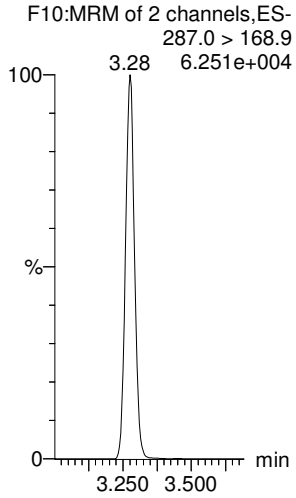

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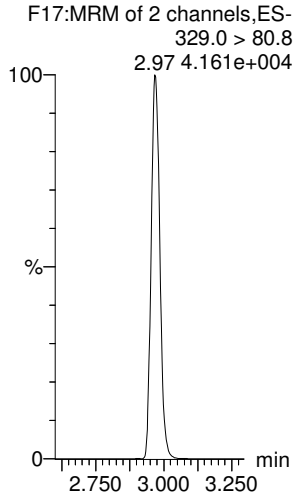

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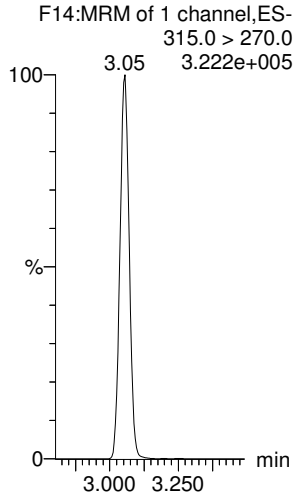

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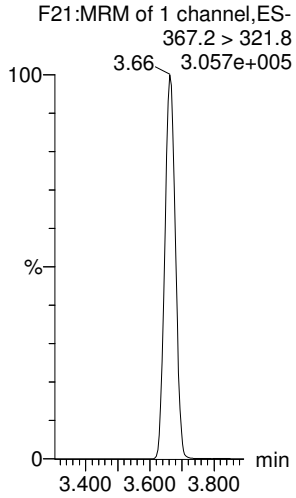

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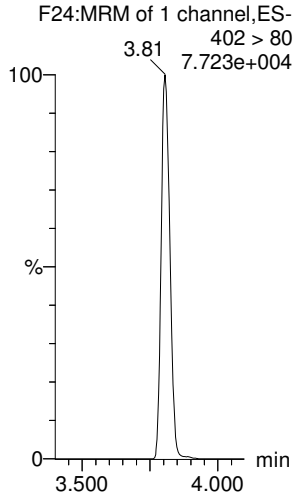

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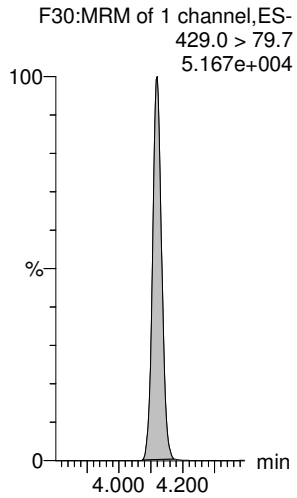

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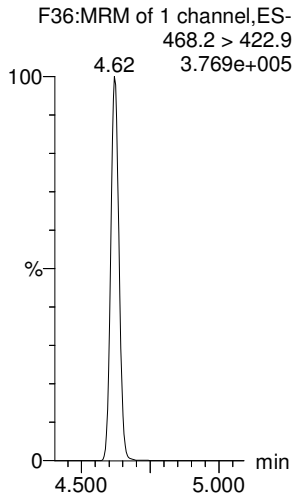

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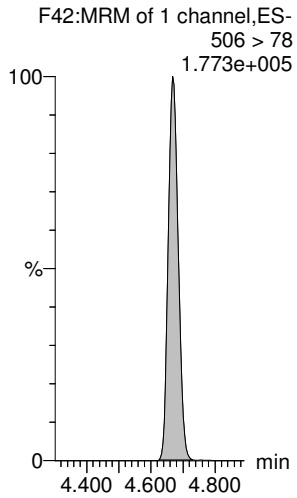

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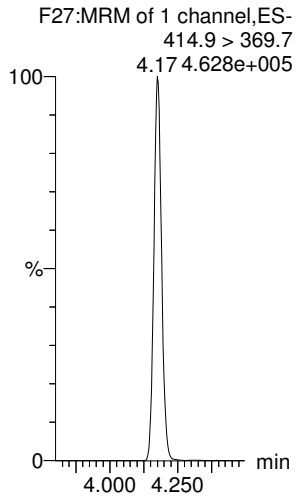

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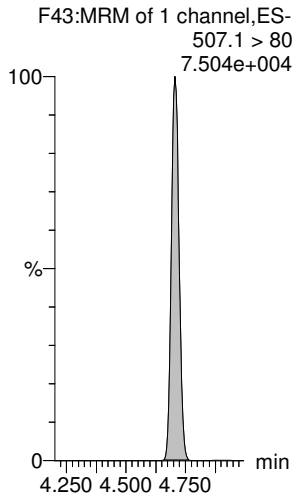

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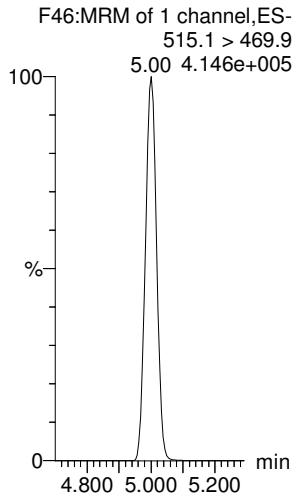

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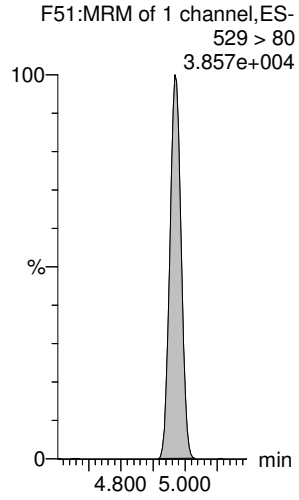
13C2-8:2 FTS-RSD



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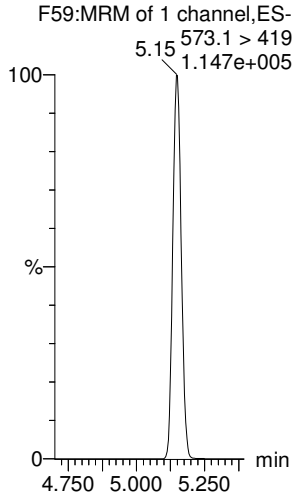

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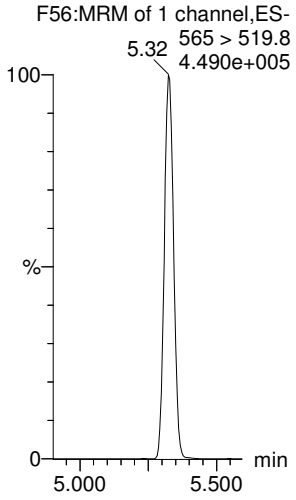

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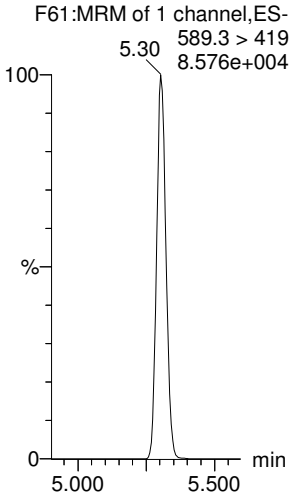

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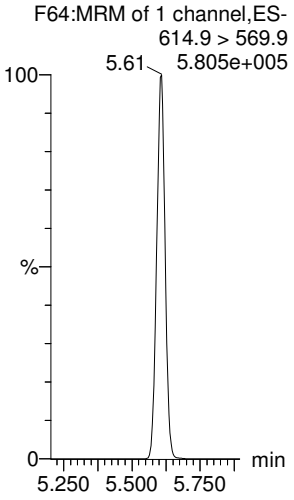

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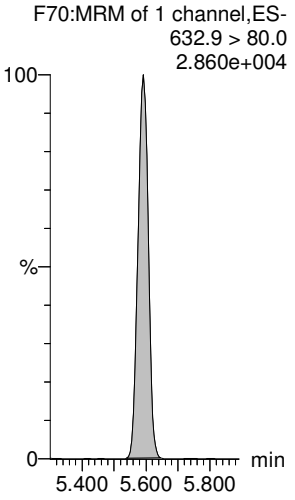

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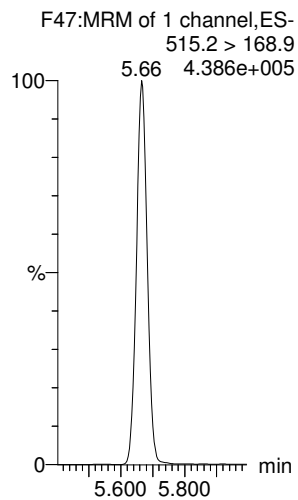

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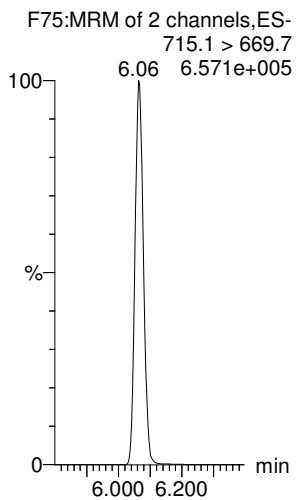

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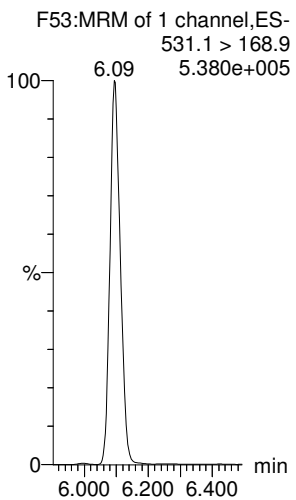

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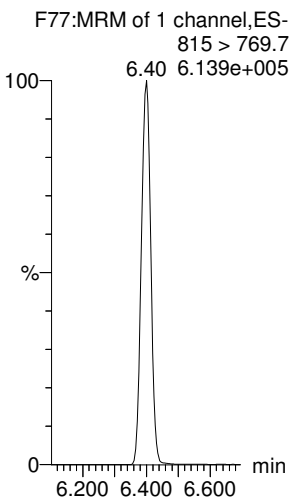

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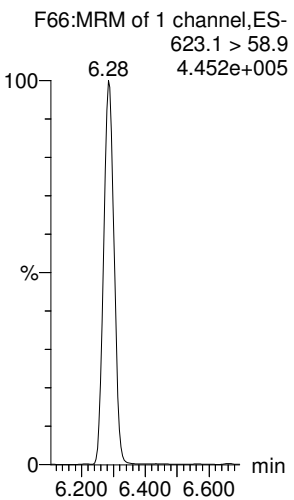
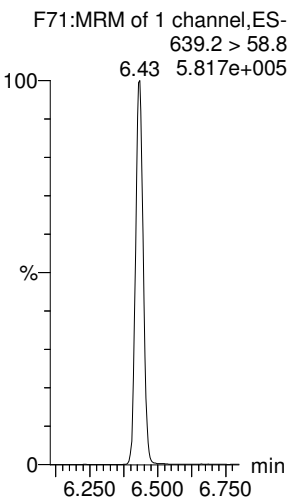


d9-N-EtFOSE-RSD



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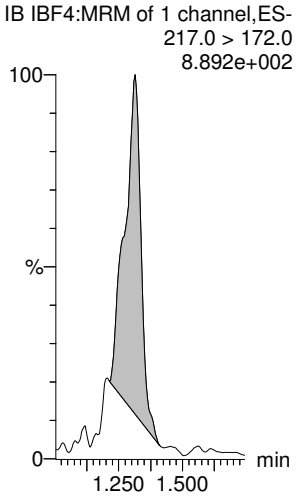
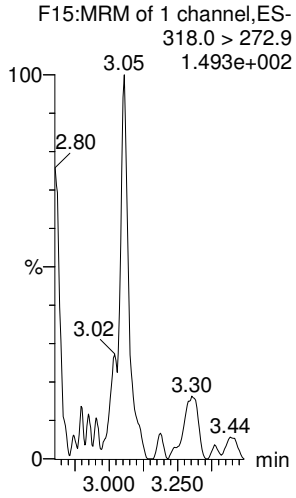
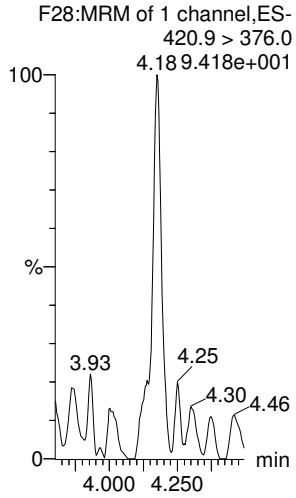
13C4-PFBA



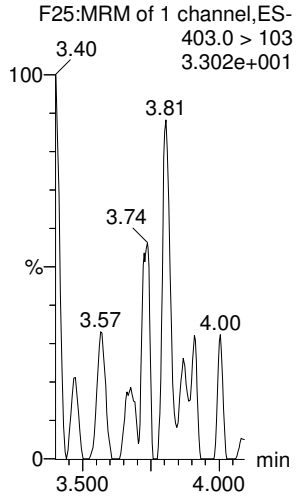
13C5-PFHxA



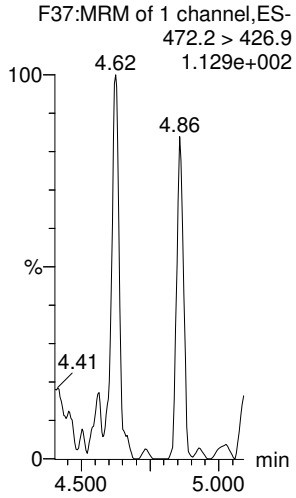
13C8-PFOA



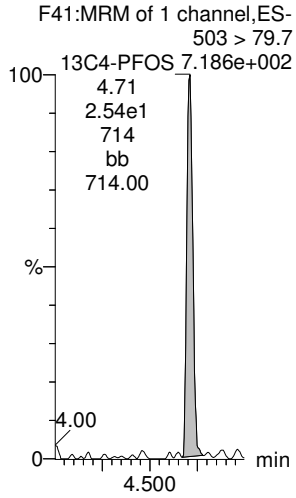
18O2-PFHxS



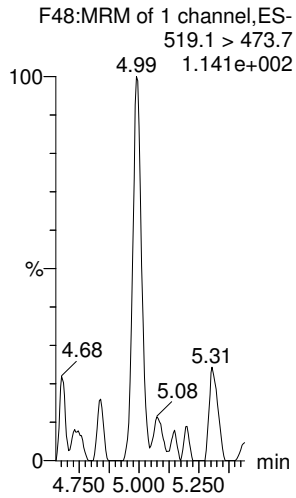
13C9-PFNA



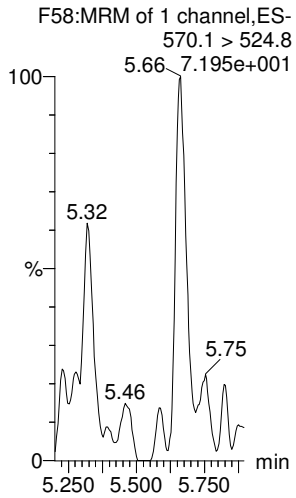
13C4-PFOS



13C6-PFDA



13C7-PFUdA



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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	1	PFBA	213.0 > 168.8	23.480	7458.740	1.00	1.37	0.039		0.0691		NO		
2	2	PFPrS	249 > 80		1353.590	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		10888.818	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9		10888.818	1.00						NO		
5	5	PFBS	299.0 > 80		1353.590	1.00						NO		YES
6	6	4:2 FTS	326.9 > 306.9		1504.876	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	7458.740		1.00	1.31	7458.740	12.500	16.8	134.0	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.9	1353.590		1.00	2.53	1353.590	12.500	14.2	114.0	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	10888.818		1.00	2.24	10888.818	12.500	15.3	122.5	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	10888.818		1.00	2.24	10888.818	12.500	15.3	122.5	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.9	1353.590		1.00	2.53	1353.590	12.500	14.2	114.0	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >80.8	1504.876		1.00	2.97	1504.876	12.500	13.8	110.5	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	36.190	12605.017	1.00	3.32	0.036		0.0162		NO		YES
15	8	PFPeS	349.>80		1353.590	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2367.110	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		11461.588	1.00						NO		YES
18	11	PFHpA	363.0 > 319	21.933	11461.588	1.00	3.68	0.024		0.0149		NO		YES
19	12	ADONA	376.8 > 250.9		11461.588	1.00						NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	12605.017		1.00	3.05	12605.017	12.500	14.5	115.9	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.9	1353.590		1.00	2.53	1353.590	12.500	14.2	114.0	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2367.110		1.00	3.28	2367.110	12.500	13.5	108.1	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	11461.588		1.00	3.66	11461.588	12.500	14.3	114.1	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	11461.588		1.00	3.66	11461.588	12.500	14.3	114.1	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	11461.588		1.00	3.66	11461.588	12.500	14.3	114.1	NO		
26	-1													
27	13	L-PFHxS	399 > 79.9		2779.535	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407		1689.185	1.00						NO		YES
29	16	L-PFOA	413 > 369	29.397	14815.169	1.00	4.17	0.025				NO	3.731	NO
30	18	PFecHS	461 > 381.0		14815.169	1.00						NO		YES
31	19	PFHpS	449.0 > 80		2755.371	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		13036.242	1.00						NO		YES
33	61	13C3-PFHxS-EIS	402 > 80	2779.535		1.00	3.81	2779.535	12.500	14.3	114.7	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1689.185		1.00	4.12	1689.185	12.500	15.2	121.9	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	14815.169		1.00	4.17	14815.169	12.500	14.8	118.4	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	14815.169		1.00	4.17	14815.169	12.500	14.8	118.4	NO		

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	13036.242		1.00	4.62	13036.242	12.500	13.7	109.8	NO		
39	-1													
40	21	PFNA	463.0 > 418.8		13036.242	1.00						NO		YES
41	22	PFOSA	498 > 78		6246.255	1.00						NO		YES
42	23	L-PFOS	499 > 80		2755.371	1.00						NO		YES
43	25	9Cl-PF30NS	531 > 351		2755.371	1.00						NO		YES
44	26	PFDA	513 > 469	8.671	16548.736	1.00	5.01	0.007				NO		YES
45	27	8:2 FTS	526.8 > 506.9		1559.371	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	13036.242		1.00	4.62	13036.242	12.500	13.7	109.8	NO		
47	67	13C8-PFOSA-EIS	506 > 78	6246.255		1.00	4.67	6246.255	12.500	14.2	113.9	NO		
48	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
49	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	16548.736		1.00	5.00	16548.736	12.500	13.9	111.4	NO		
51	75	13C2-8:2 FTS-EIS	529 > 80	1559.371		1.00	4.97	1559.371	12.500	16.5	131.8	NO		
52	-1													
53	28	PFNS	549 > 80		2755.371	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		4037.174	1.00						NO		YES
55	31	L-EtFOSAA	583.9 > 419		3370.842	1.00						NO		YES
56	33	PFUdA	563.0 > 519	41.781	17469.656	1.00	5.33	0.030				NO		YES
57	34	PFDS	598.8 >79.9		2755.371	1.00						NO		YES
58	35	11Cl-PF30UdS	631 > 451		20302.211	1.00						NO		YES
59	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
60	77	d3-N-MeFOSAA-EIS	573.1 > 419	4037.174		1.00	5.15	4037.174	12.500	15.4	123.3	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3370.842		1.00	5.30	3370.842	12.500	14.6	116.5	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	17469.656		1.00	5.32	17469.656	12.500	15.1	121.1	NO		
63	71	13C8-PFOS-EIS	507.1 > 80	2755.371		1.00	4.71	2755.371	12.500	13.2	105.3	NO		
64	83	13C2-PFDoA-EIS	614.9 > 569.9	20302.211		1.00	5.61	20302.211	12.500	13.8	110.1	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607			1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	179.358	20302.211	1.00	5.67	0.110		0.138		NO		YES
68	38	N-MeFOSA	512.1 > 168.9		16858.416	1.00						NO		YES
69	39	PFTrDA	662.9 > 618.9	5.028	20302.211	1.00	6.01	0.003				NO		YES
70	40	PFDoS	699 > 80		19619.930	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	18.918	19619.930	1.00	6.22	0.012				NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0			1.00			12.500			NO		

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.9 > 569.9	20302.211		1.00	5.61	20302.211	12.500	13.8	110.1	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	16858.416		1.00	5.66	16858.416	149.200	147	98.7	NO		
75	83	13C2-PFDoA-EIS	614.9 > 569.9	20302.211		1.00	5.61	20302.211	12.500	13.8	110.1	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	19619.930		1.00	6.06	19619.930	12.500	13.7	109.4	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	19619.930		1.00	6.06	19619.930	12.500	13.7	109.4	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	6.910	19655.697	1.00	6.07	0.052				NO		YES
80	43	PFHxDA	813 > 769	154.533	20413.049	1.00	6.40	0.095		0.00600		NO		YES
81	44	PFODA	913.1 > 868.8	40.546	20413.049	1.00	6.63	0.025		0.0450		NO		
82	45	N-MeFOSE	616.1 > 58.9	12.702	16610.344	1.00	6.31	0.114		0.144		NO		
83	46	N-EtFOSE	630.1 > 58.9	5.449	18384.426	1.00	6.57	0.044				NO		
84	48	13C3-PFBA-RSD	216.1 > 171.8	7458.740	57.358	1.00	1.31	1625.479	12.500	1730	13806.4	YES		
85	91	d5-N-ETFOSA-EIS	531.1 > 168.9	19655.697		1.00	6.09	19655.697	149.200	137	91.6	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	20413.049		1.00	6.40	20413.049	12.500	12.2	97.6	NO		
87	93	13C2-PFHxDA-EIS	815 > 769.7	20413.049		1.00	6.40	20413.049	12.500	12.2	97.6	NO		
88	95	d7-N-MeFOSE-EIS	623.1 > 58.9	16610.344		1.00	6.28	16610.344	149.200	144	96.3	NO		
89	97	d9-N-EtFOSE-EIS	639.2 > 58.8	18384.426		1.00	6.43	18384.426	149.200	144	96.5	NO		
90	50	13C3-PFPeA-RSD	266.0 > 221.8			1.00			12.500			NO		
91	-1													
92	52	13C3-PFBS-RSD	302.0 > 98.9			1.00			12.500			NO		
93	54	13C3-HFPO-DA-RSD	287.0 > 168.9			1.00			12.500			NO		
94	56	13C2-4:2 FTS-RSD	329.0 >80.8			1.00			12.500			NO		
95	58	13C2-PFHxA-RSD	315.0 > 270.0			1.00			12.500			NO		
96	60	13C4-PFHpA-RSD	367.2 > 321.8			1.00			12.500			NO		
97	62	13C3-PFHxS-RSD	402 > 80			1.00			12.500			NO		
98	64	13C2-6:2 FTS-RSD	429.0 >79.7	1689.185	25.374	1.00	4.12	832.144	12.500	1780	14258.6	YES		
99	66	13C5-PFNA-RSD	468.2 > 422.9			1.00			12.500			NO		
100	68	13C8-PFOSA-RSD	506 > 78	6246.255		1.00	4.67		12.500			NO		
101	70	13C2-PFOA-RSD	414.9 > 369.7			1.00			12.500			NO		
102	72	13C8-PFOS-RSD	507.1 > 80	2755.371	25.374	1.00	4.71	1357.379	12.500	1710	13691.8	YES		
103	74	13C2-PFDA-RSD	515.1 > 469.9			1.00			12.500			NO		
104	-1													
105	76	13C2-8:2 FTS-RSD	529 > 80	1559.371	25.374	1.00	4.97	768.193	12.500	1760	14053.7	YES		
106	78	d3-N-MeFOSAA-RSD	573.1 > 419			1.00			12.500			NO		
107	80	13C2-PFUdA-RSD	565 > 519.8			1.00			12.500			NO		
108	82	d5-N-EtFOSAA-RSD	589.3 > 419			1.00			12.500			NO		

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	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	84	13C2-PFDoA-RSD	614.9 > 569.9			1.00			12.500			NO		
110	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1053.500	25.374	1.00	5.59	518.986	12.500	1660	13266.9	YES		
111	88	d3-N-MeFOSA-RSD	515.2 > 168.9			1.00			149.200			NO		
112	90	13C2-PFTeDA-RSD	715.1 > 669.7			1.00			12.500			NO		
113	92	d5-N-ETFOSA-RSD	531.1 > 168.9			1.00			149.200			NO		
114	94	13C2-PFHxDA-RSD	815 > 769.7			1.00			12.500			NO		
115	96	d7-N-MeFOSE-RSD	623.1 > 58.9			1.00			149.200			NO		
116	98	d9-N-EtFOSE-RSD	639.2 > 58.8			1.00			149.200			NO		
117	-1													
118	99	13C4-PFBA	217.0 > 172.0	57.358	57.358	1.00	1.31	12.500	12.500	12.5	100.0	NO		
119	1...	13C5-PFHxA	318.0 > 272.9			1.00			12.500			NO		
120	1...	13C8-PFOA	420.9 > 376.0			1.00			12.500			NO		
121	1...	18O2-PFHxS	403.0 > 103			1.00			12.500			NO		
122	1...	13C9-PFNA	472.2 > 426.9			1.00			12.500			NO		
123	1...	13C4-PFOS	503 > 79.7	25.374	25.374	1.00	4.71	12.500	12.500	12.5	100.0	NO		
124	1...	13C6-PFDA	519.1 > 473.7			1.00			12.500			NO		
125	1...	13C7-PFUdA	570.1 > 524.8			1.00			12.500			NO		

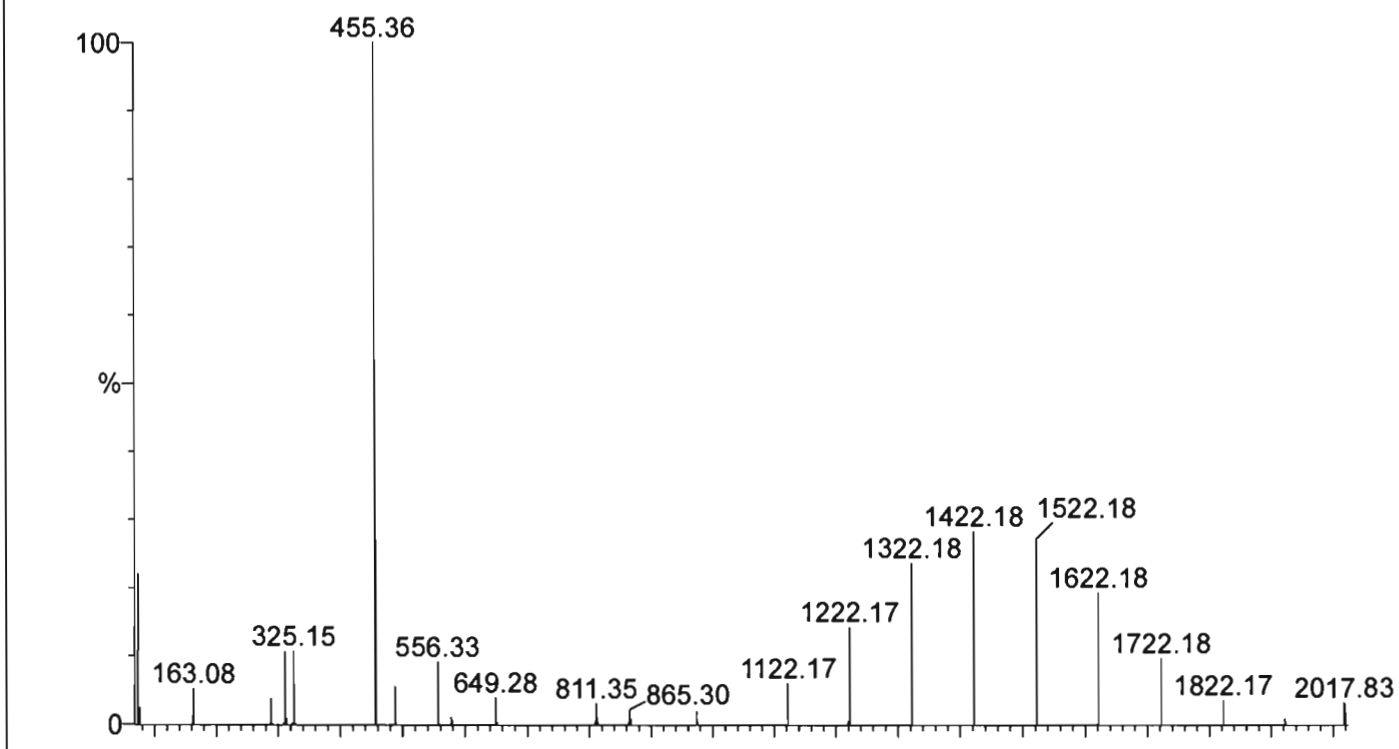
TUNE CHECKS

Calibration Verification Report - MS1 Static

Printed: **Tue Jul 21 14:23:53 2020**

Data file: STATMS1V - Calibrated

23 matches of 23 tested references



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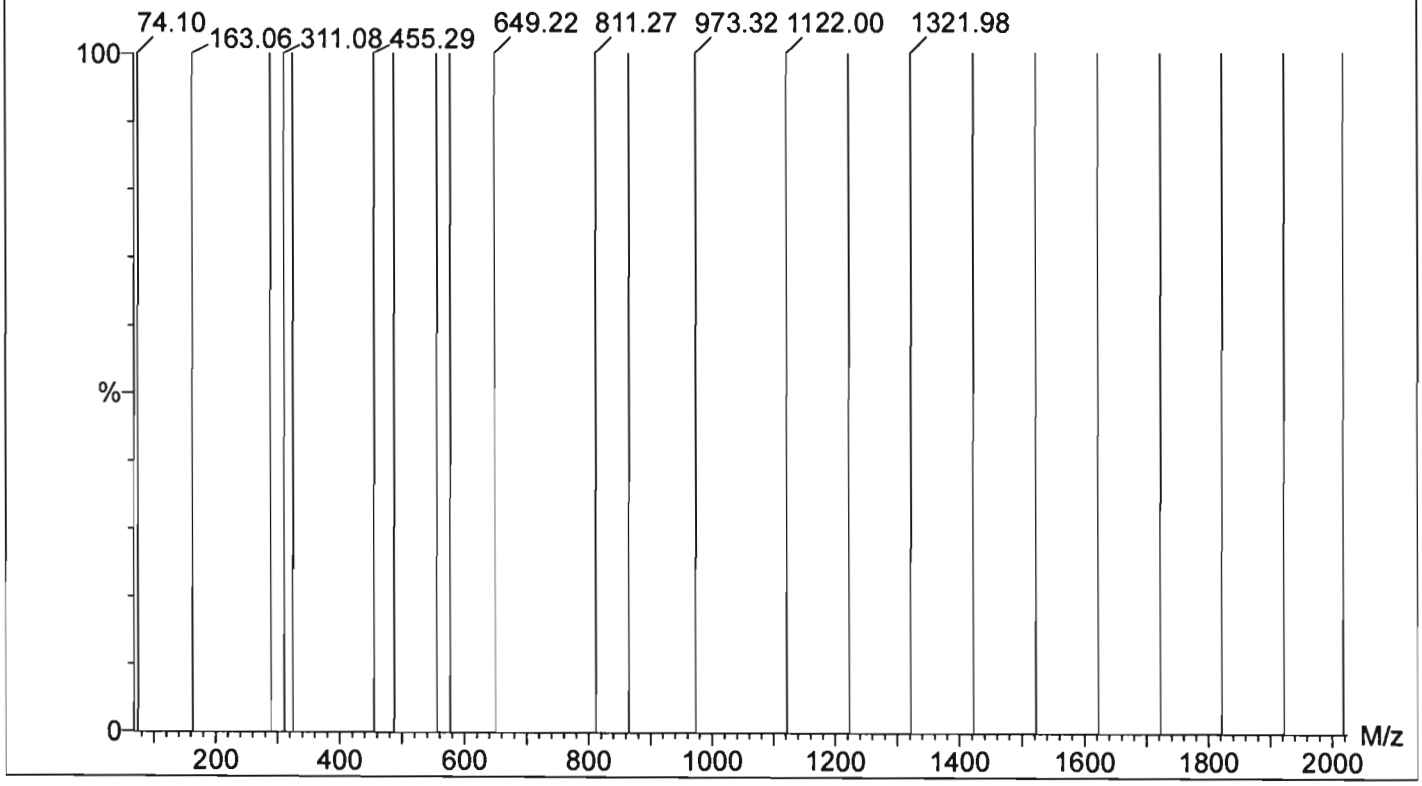
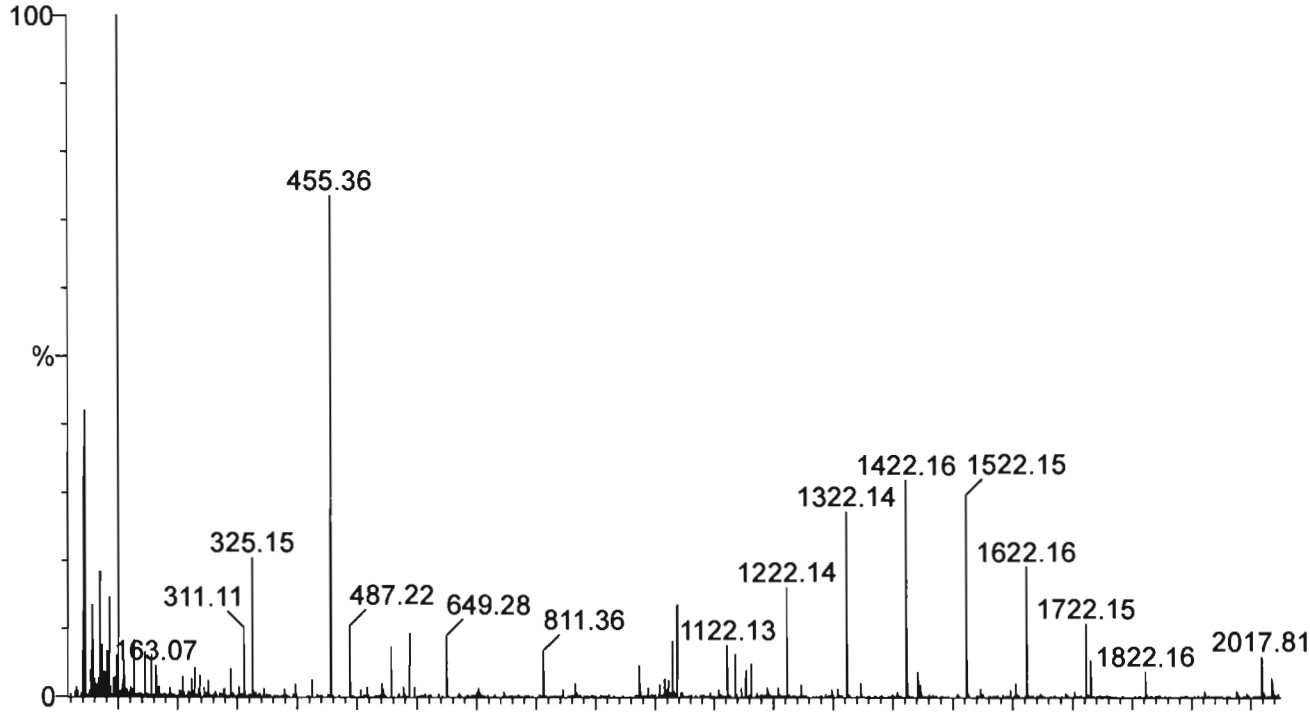
Mean residual = 0.122 amu



Data file: SCNMS1V - Calibrated 23 matches of 23 tested references



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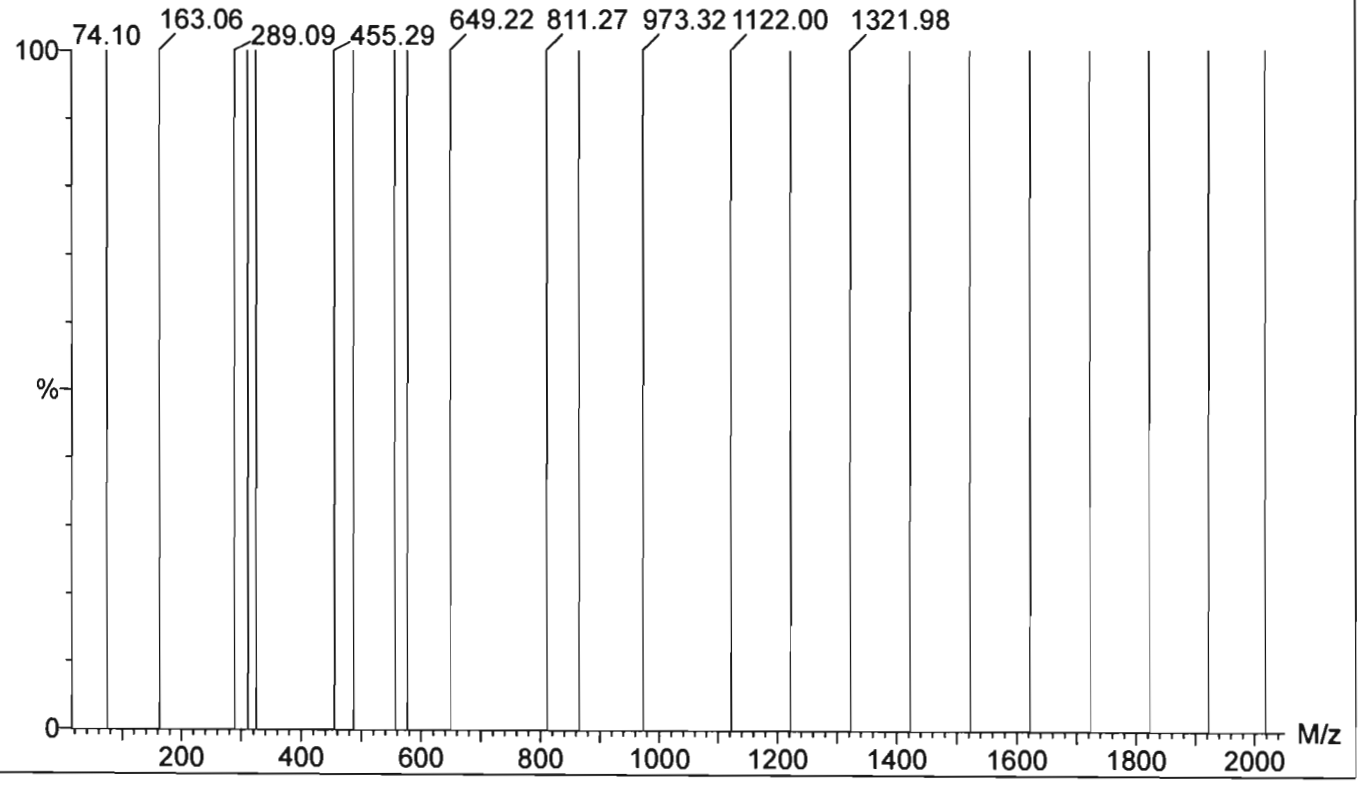
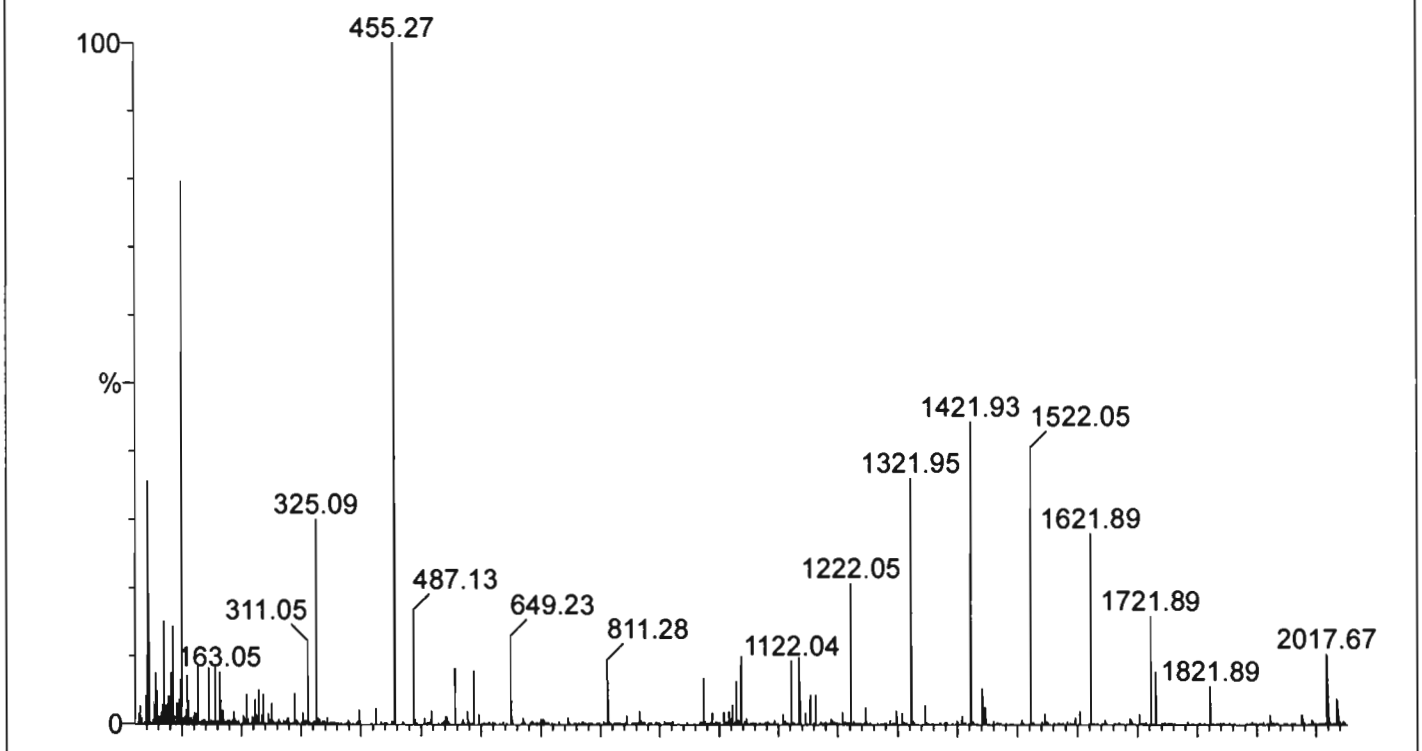


Data file: FASTMS1V - Calibrated 23 matches of 23 tested references



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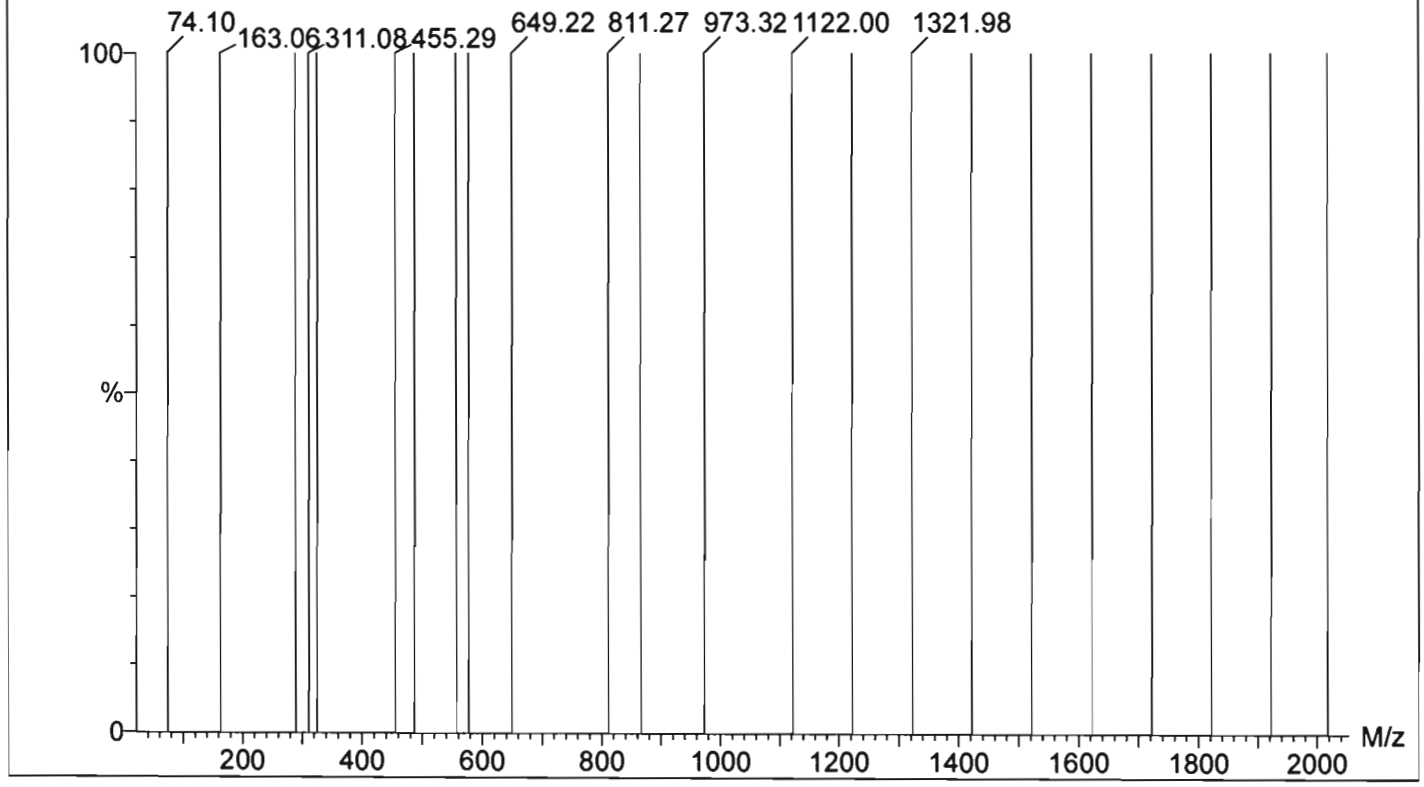

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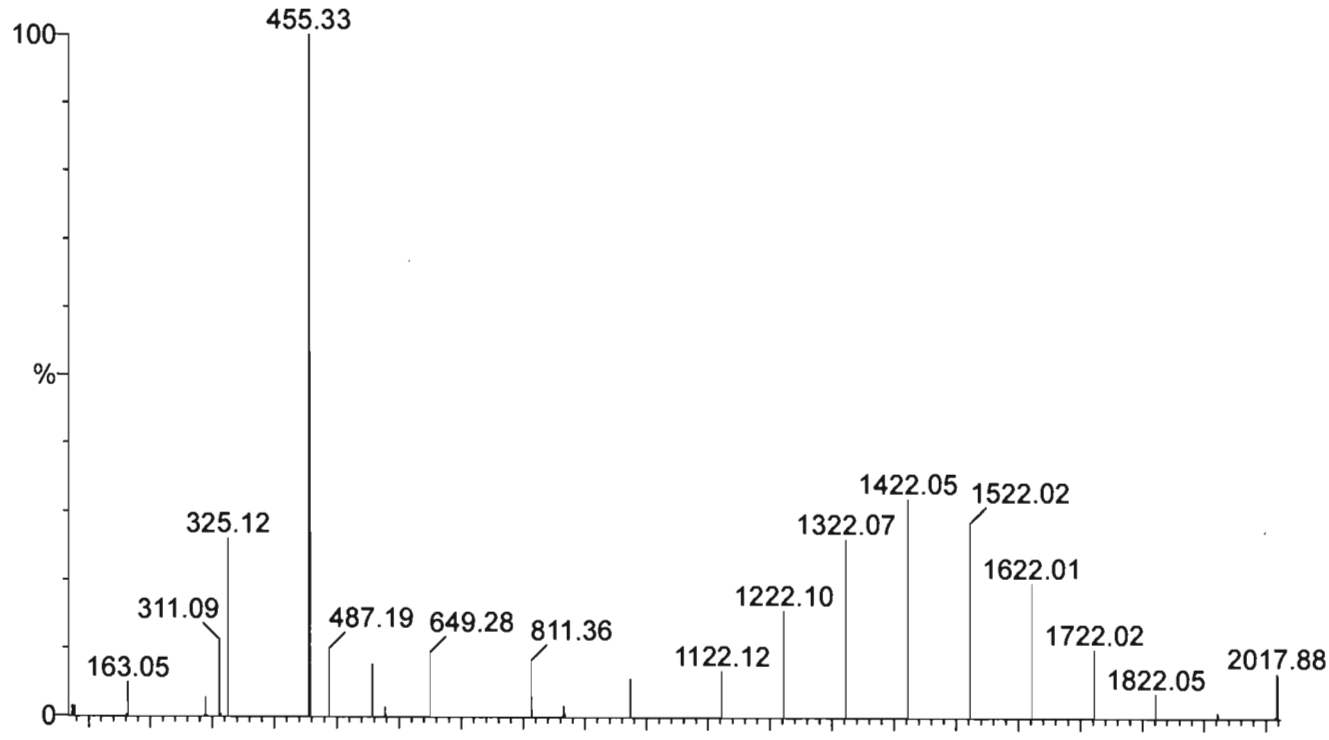

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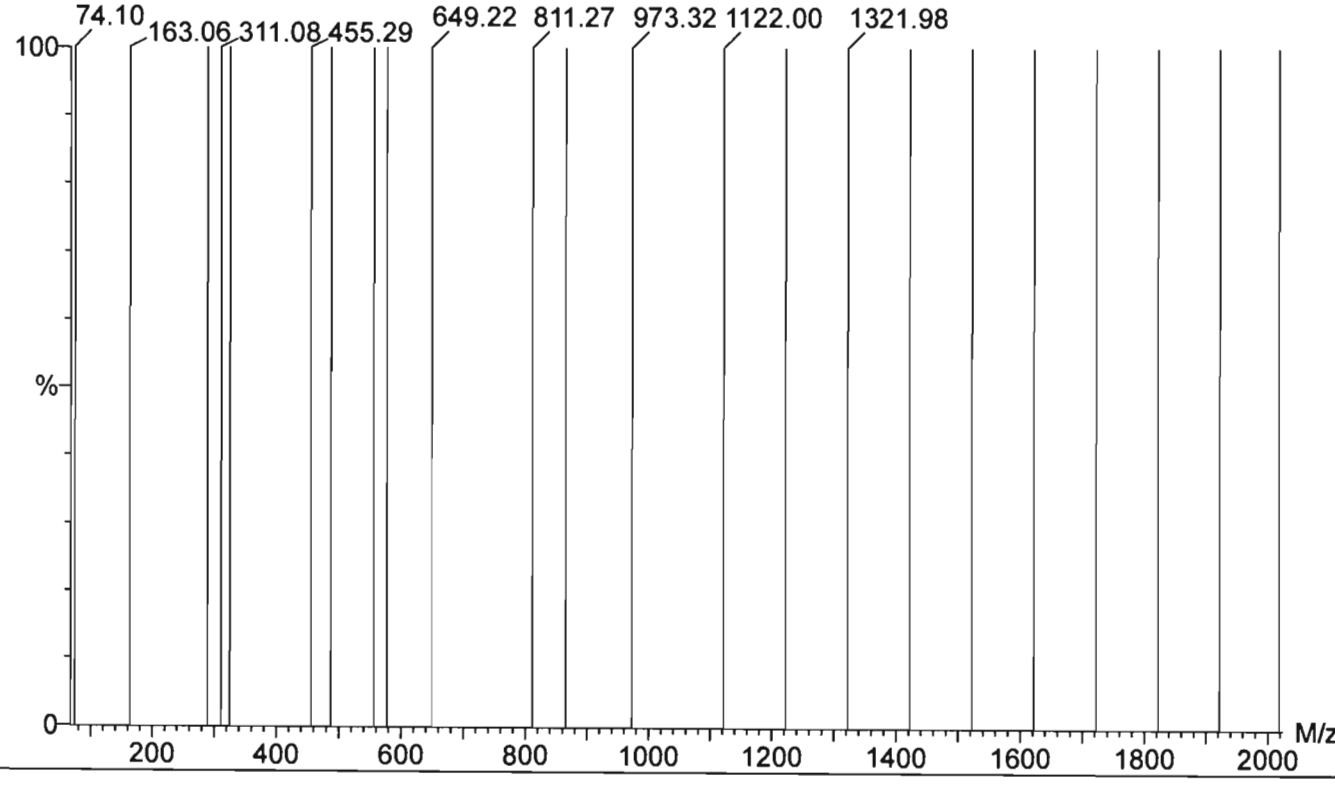
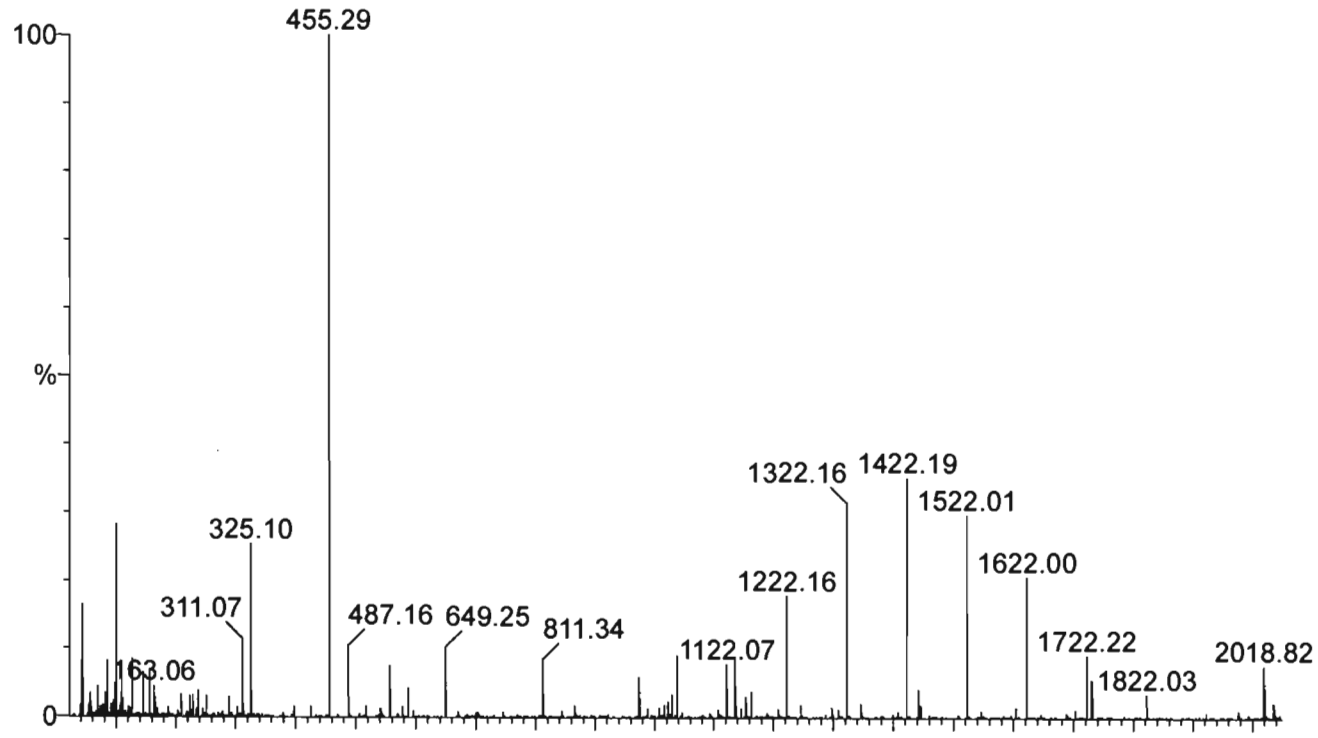


Data file: SCNMS2V - Calibrated 23 matches of 23 tested references



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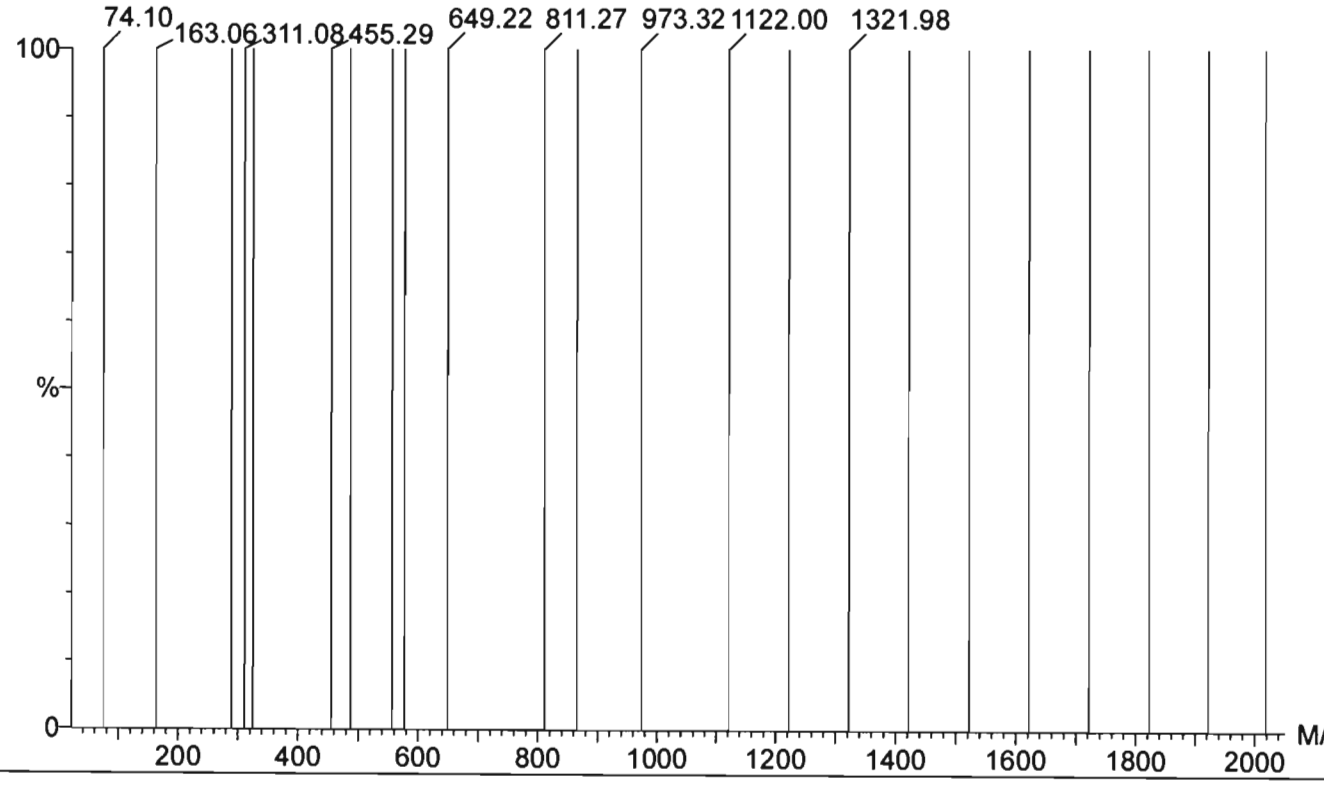
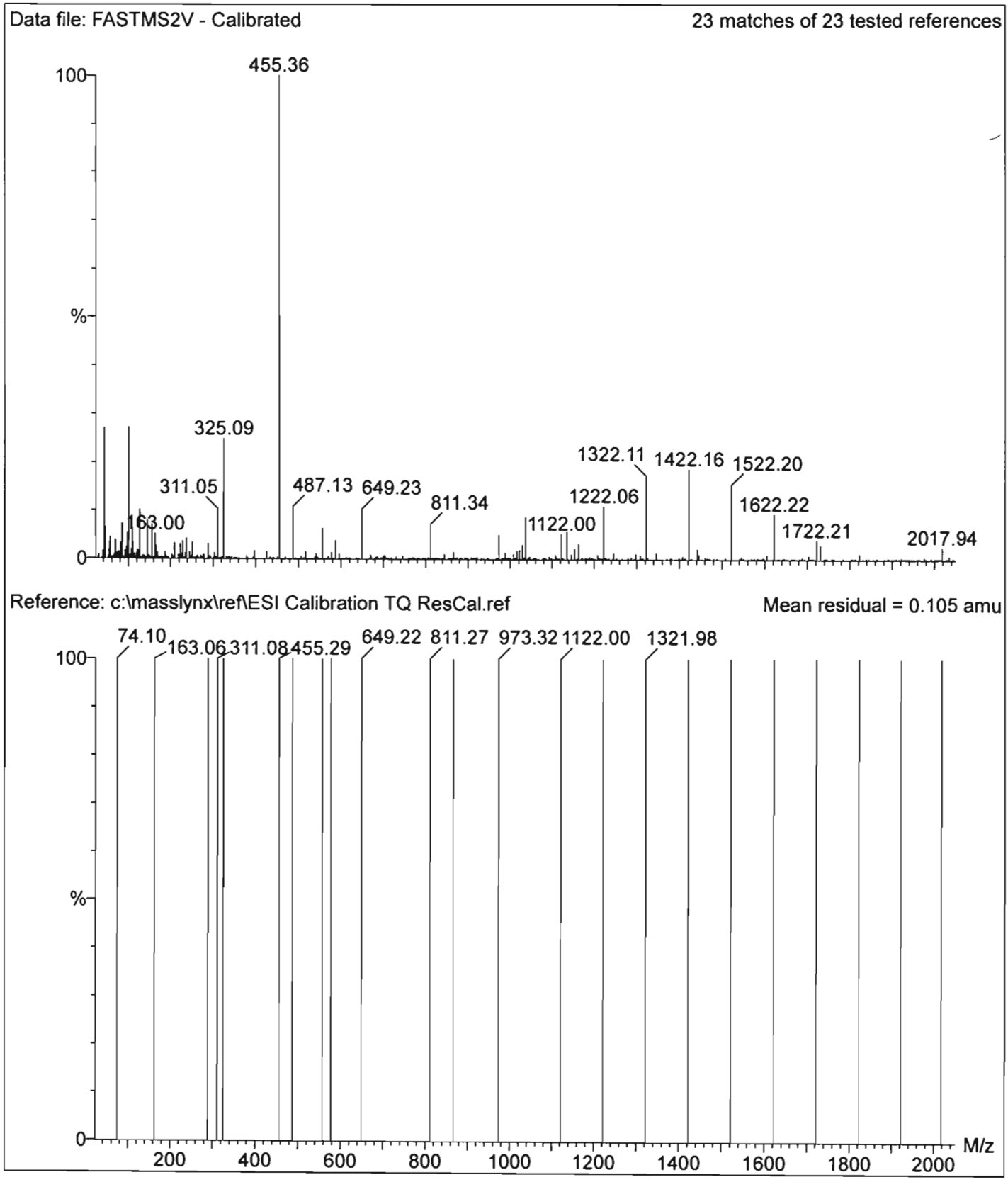


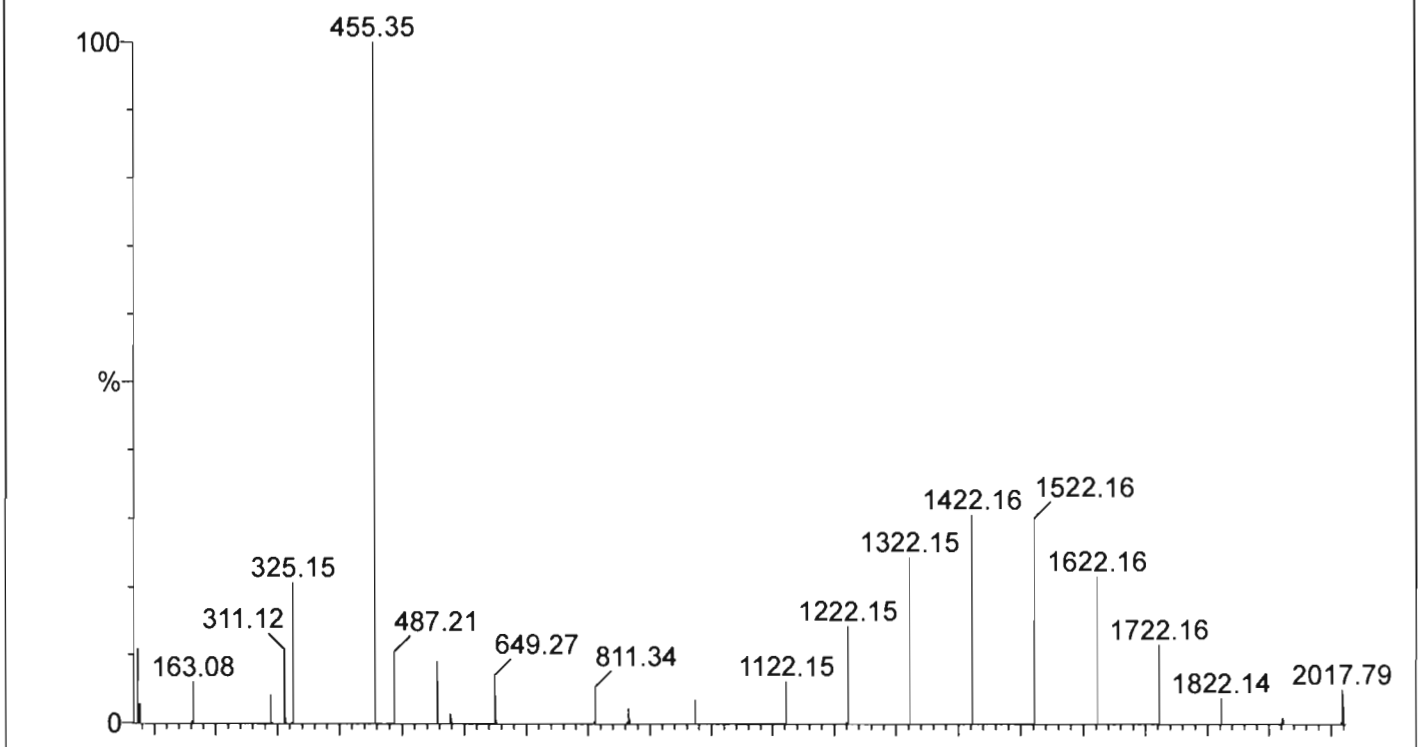

Data file: FASTMS2V - Calibrated
23 matches of 23 tested references
100
%
0
455.36
325.09
311.05
163.00
487.13
649.23
811.34
1122.00
1222.06
1322.11
1422.16
1522.20
1622.22
1722.21
2017.94
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref
Mean residual = 0.105 amu
74.10
163.06
311.08
455.29
649.22
811.27
973.32
1122.00
1321.98
100
%
0
200
400
600
800
1000
1200
1400
1600
1800
2000
M/z

QS(p) Tune check 07/23/20 10 ATV 07/23/20 07/~~20~~/2020

Calibration Verification Report - MS1 Static

Printed: **Thu Jul 23 09:09:38 2020**

Data file: STATMS1V - Calibrated 23 matches of 23 tested references



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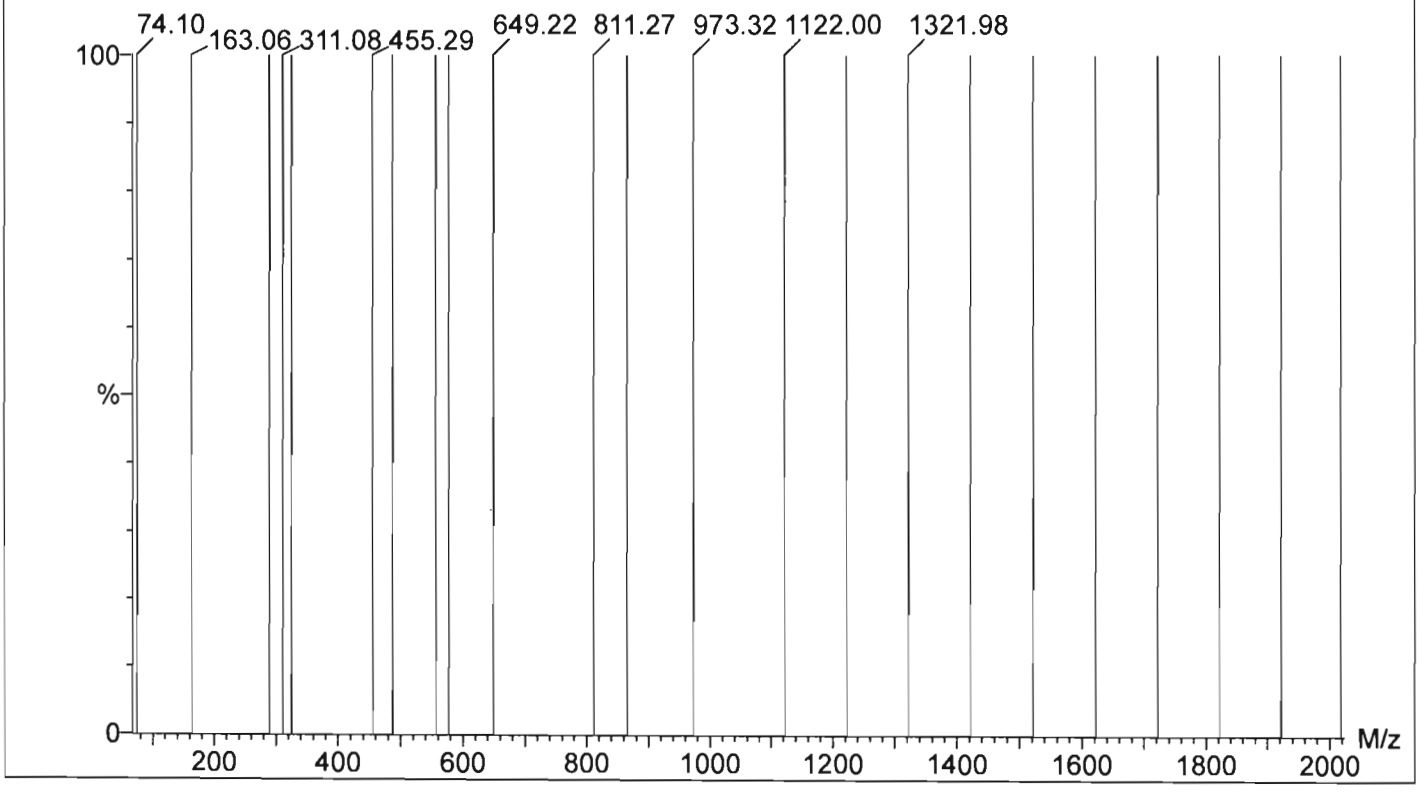
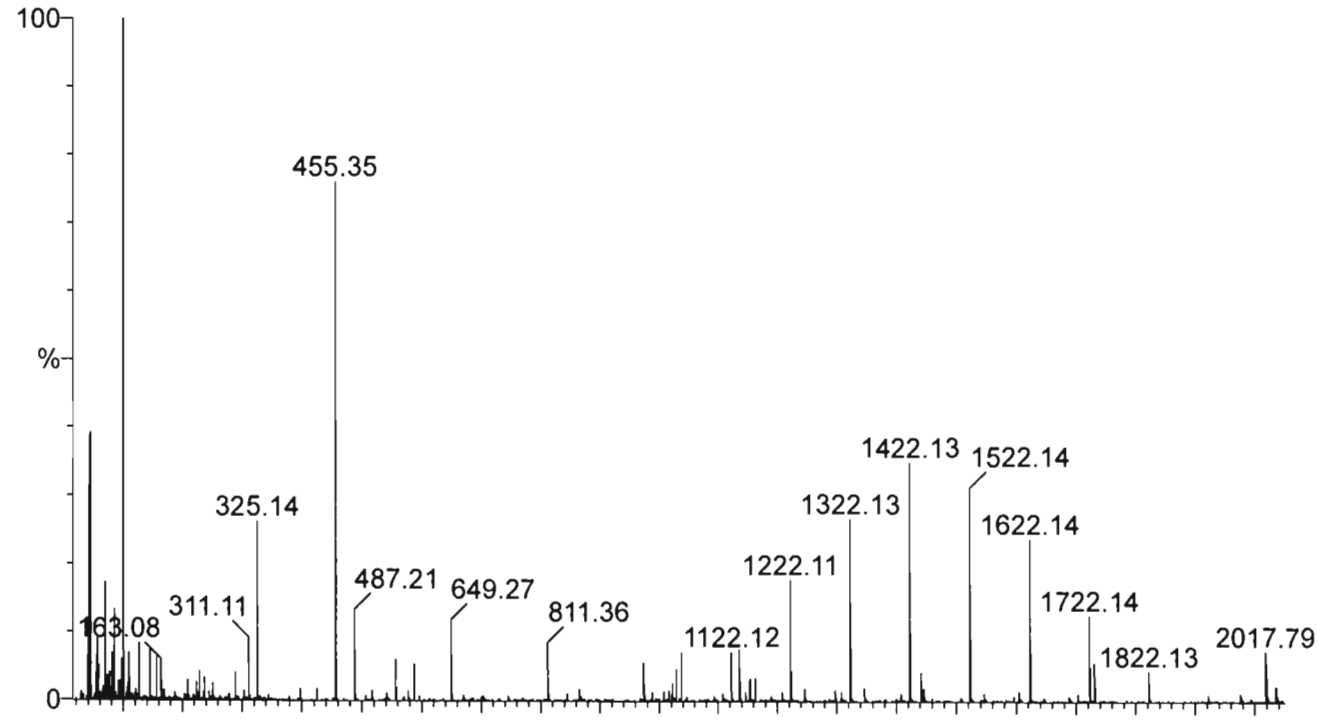


Data file: SCNMS1V - Calibrated 23 matches of 23 tested references



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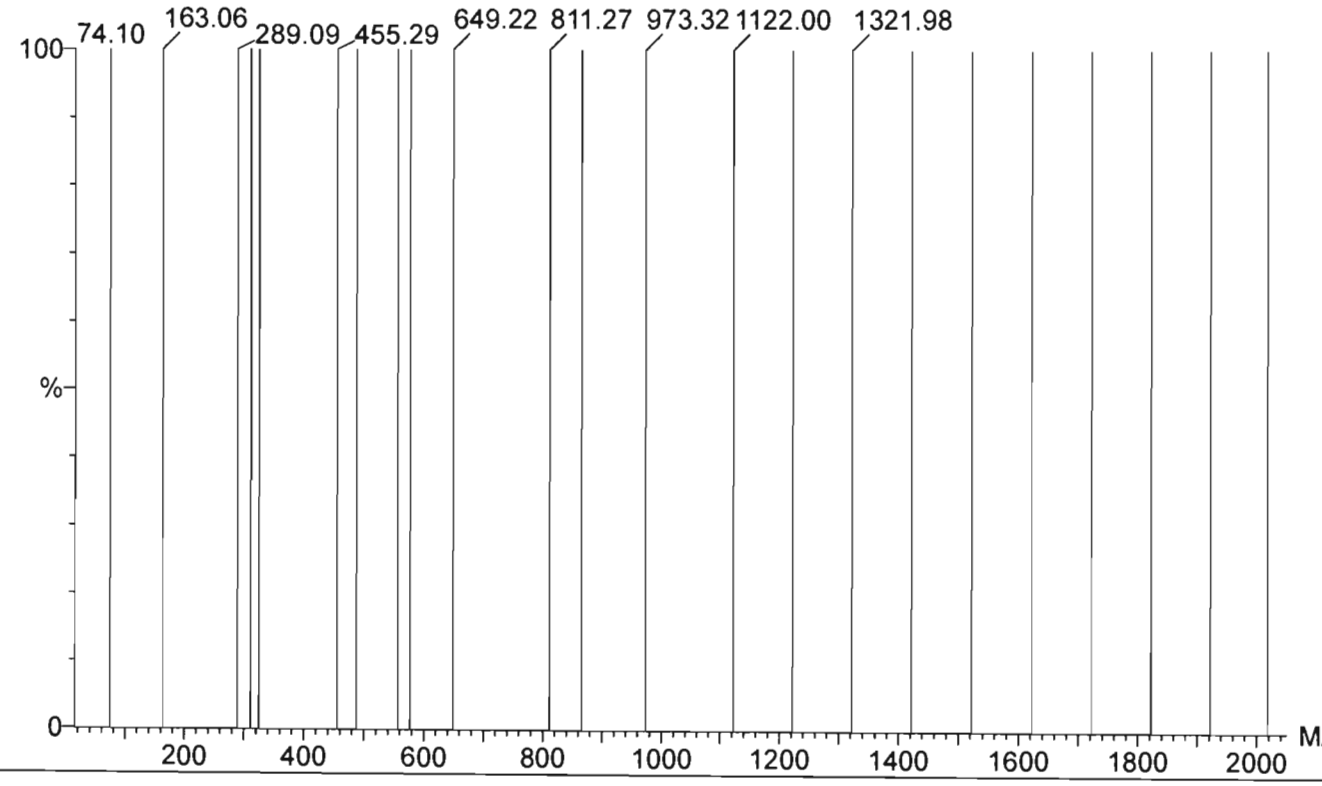

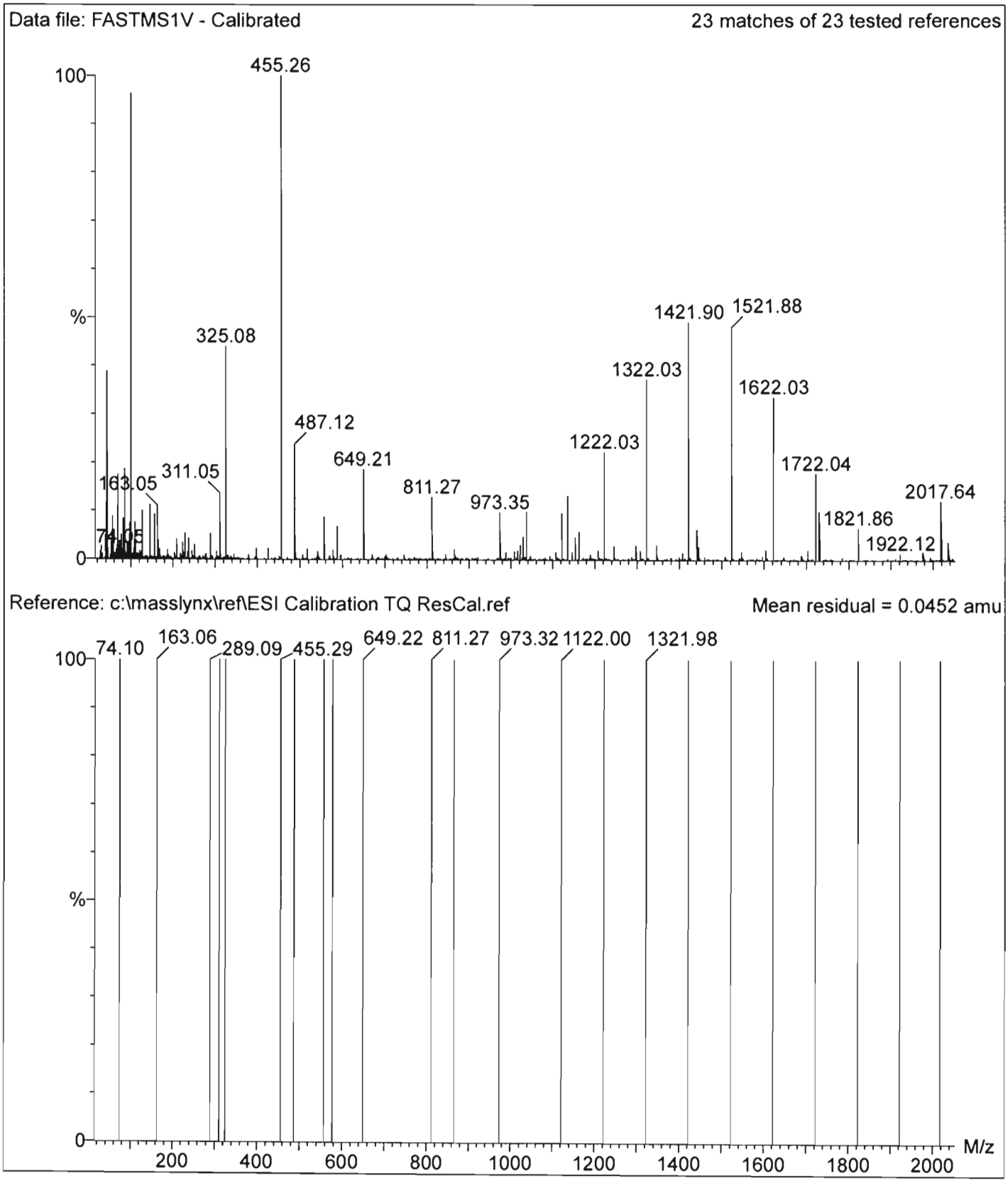
Data file: FASTMS1V - Calibrated
23 matches of 23 tested references
100
%
0
455.26
325.08
487.12
649.21
311.05
163.05
811.27
973.35
1222.03
1322.03
1421.90
1521.88
1622.03
1722.04
1821.86
1922.12
2017.64
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref
Mean residual = 0.0452 amu
74.10
163.06
289.09
455.29
649.22
811.27
973.32
1122.00
1321.98
200
400
600
800
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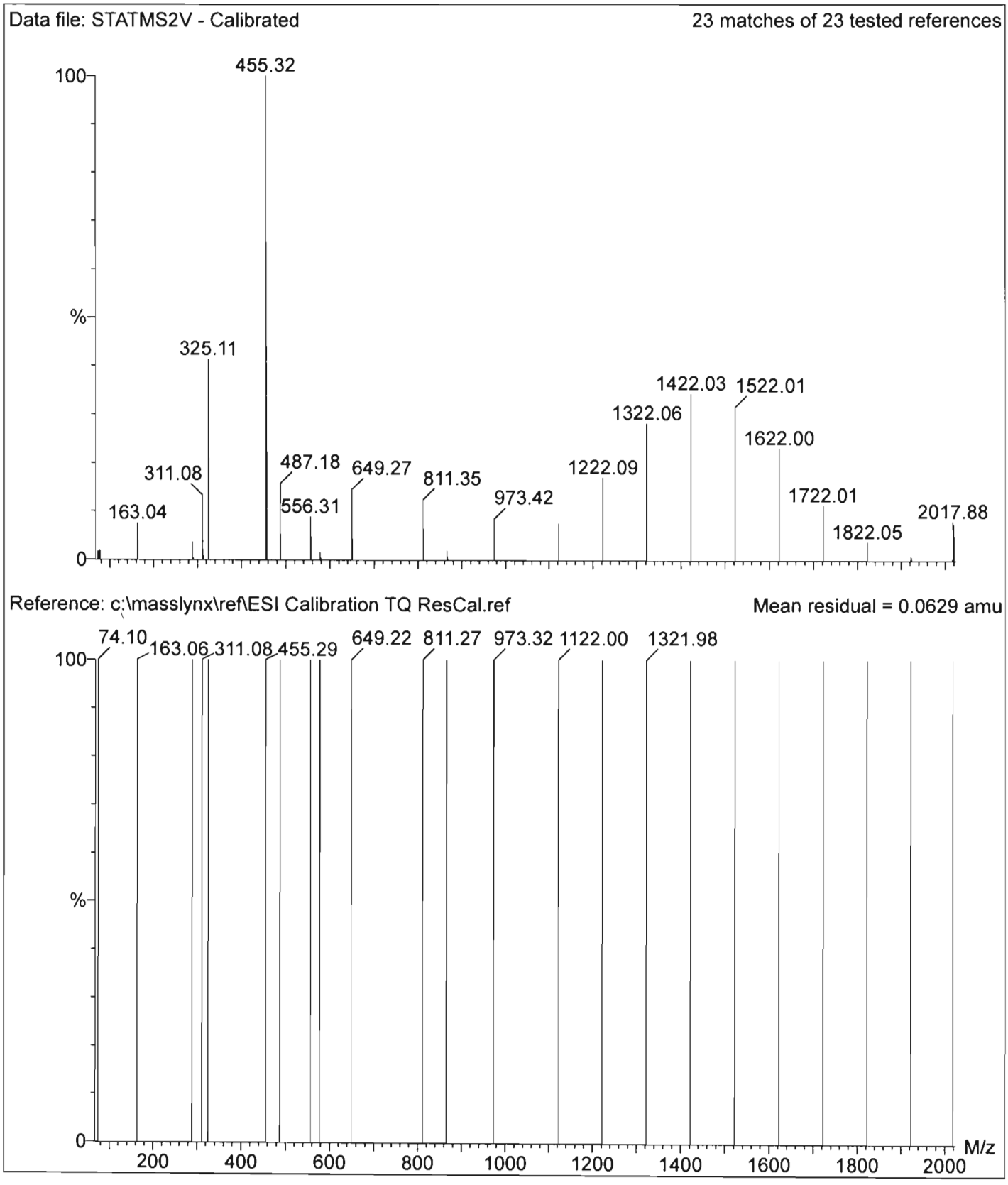
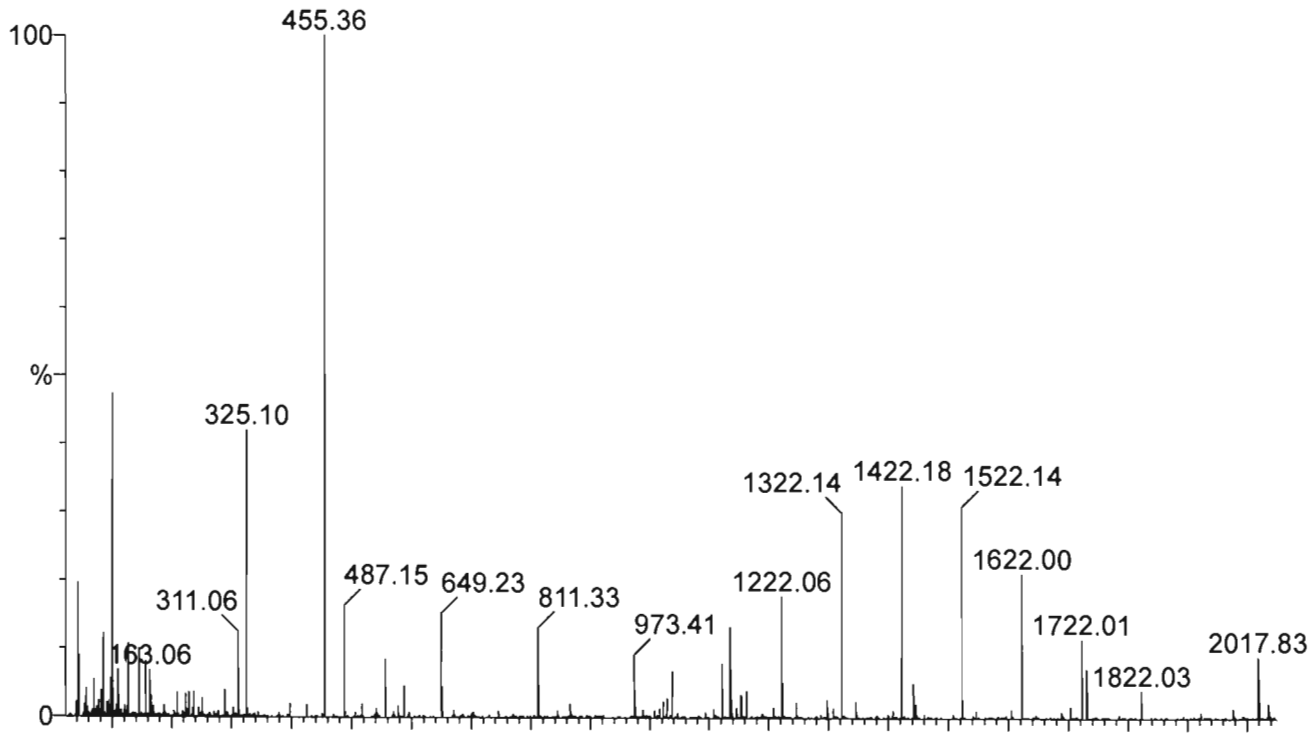
1400
1600
1800
2000
M/z


Data file: STATMS2V - Calibrated
23 matches of 23 tested references
100
%
0
455.32
325.11
311.08
163.04
487.18
556.31
649.27
811.35
973.42
1222.09
1322.06
1422.03
1522.01
1622.00
1722.01
1822.05
2017.88
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref
Mean residual = 0.0629 amu
74.10
163.06
311.08
455.29
649.22
811.27
973.32
1122.00
1321.98
200
400
600
800
1000
1200
1400
1600
1800
2000
M/z

Data file: SCNMS2V - Calibrated 23 matches of 23 tested references



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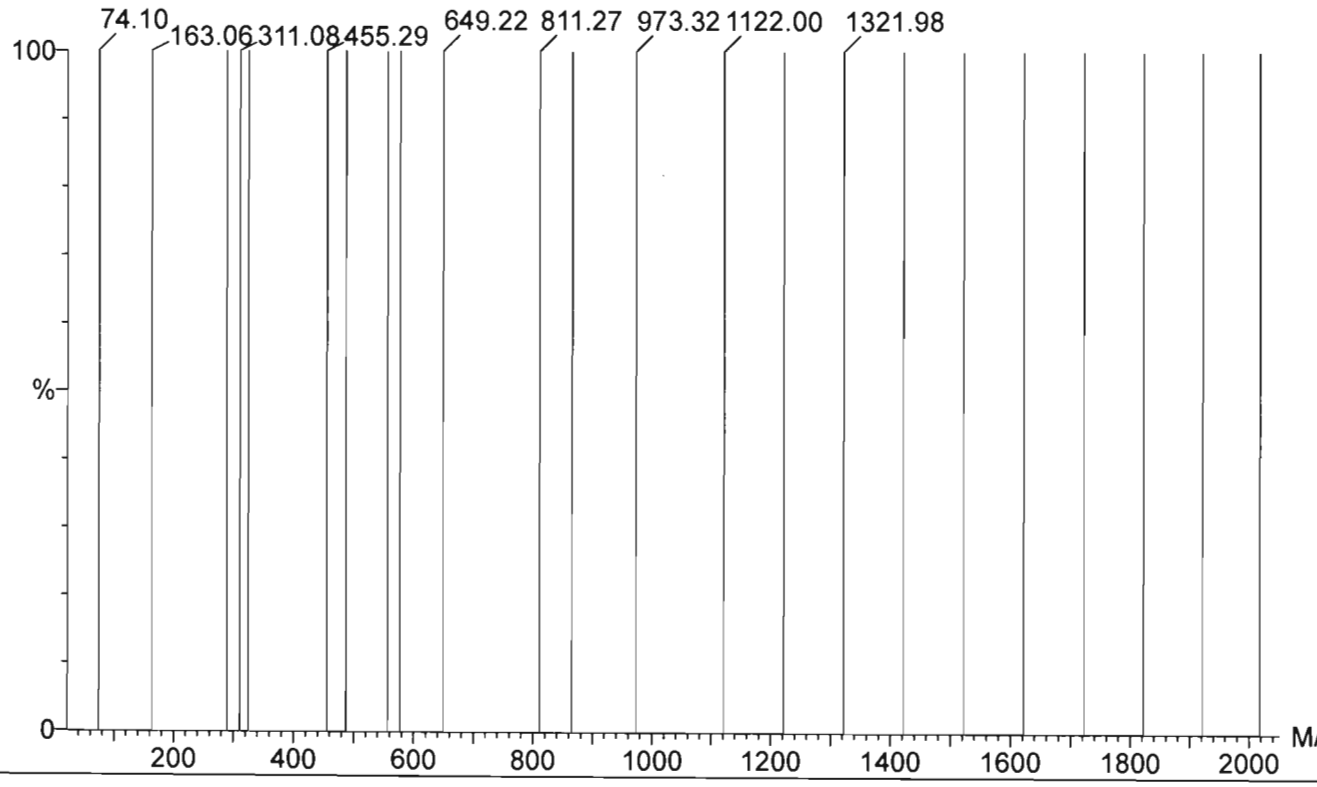
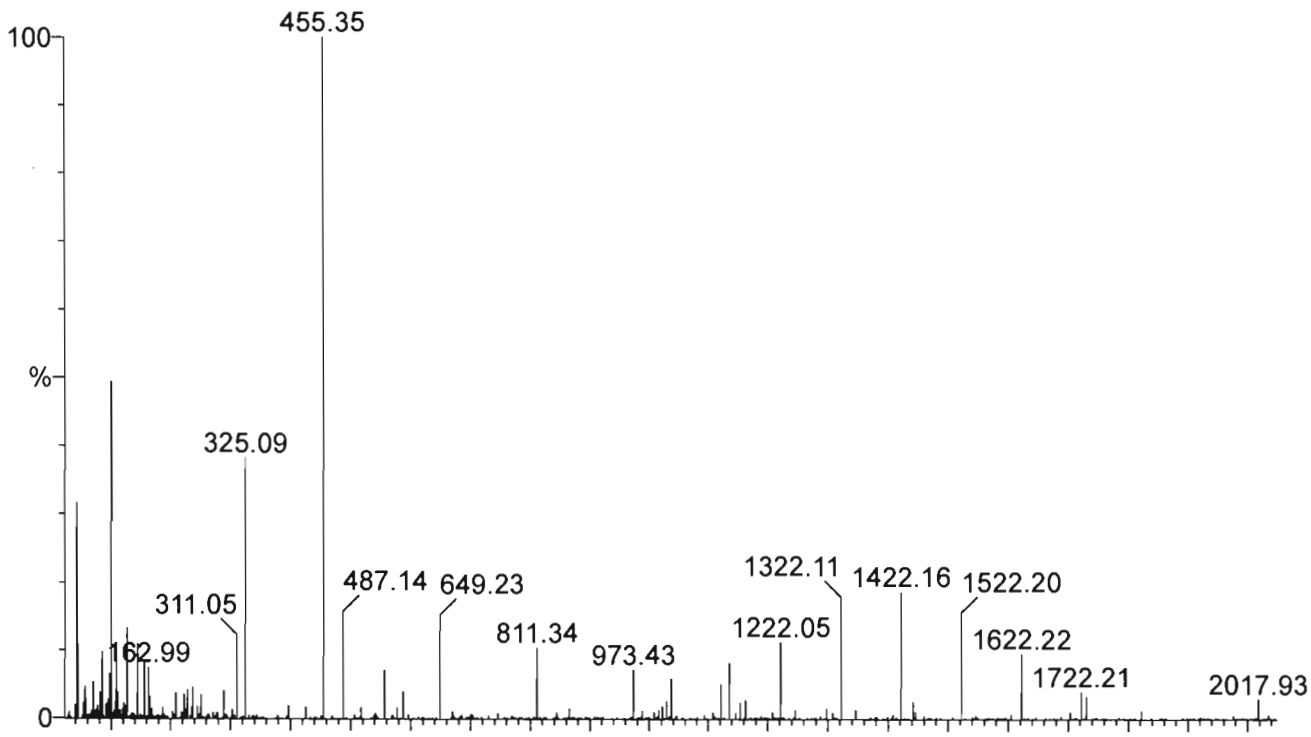


Printed: **Thu Jul 23 09:15:40 2020**

Data file: FASTMS2V - Calibrated 23 matches of 23 tested references



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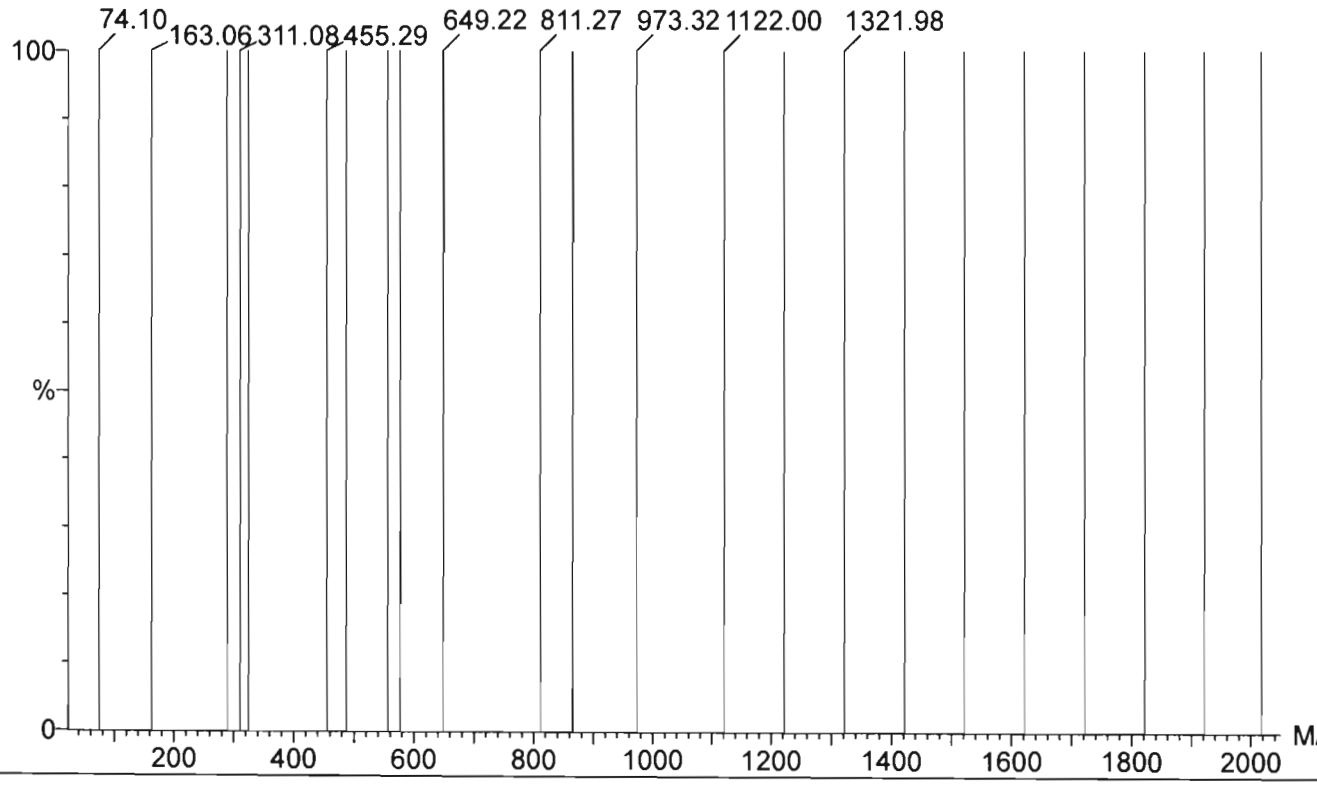


STANDARDS

Analytical Standard Record

Vista Analytical Laboratory

20E1201

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
19H2706	13C2-10:2 FTS	21-Aug-19	** Vendor **	21-Aug-24	1
19L0601	13C2-4:2 FTS	06-Dec-19	** Vendor **	29-Oct-24	1.07
19L0602	13C2-6:2 FTS	06-Dec-19	** Vendor **	21-Nov-24	1.05
19L0603	13C2-8:2 FTS	06-Dec-19	** Vendor **	11-Oct-24	1.04
19L0604	13C3-PFBA	06-Dec-19	** Vendor **	14-Dec-22	1
19L0605	13C2-PFDA	06-Dec-19	** Vendor **	05-Sep-24	1
19L0606	13C2-PFUdA	06-Dec-19	** Vendor **	04-Jul-24	1
19L0607	13C2-PFTeDA	06-Dec-19	** Vendor **	11-Dec-23	1
19L0608	13C5-PFNA	06-Dec-19	** Vendor **	05-Dec-23	1
19L0609	13C2-PFDoA	06-Dec-19	** Vendor **	11-Dec-23	1
19L0610	13C4-PFHpA	06-Dec-19	** Vendor **	06-May-24	1
19L0611	13C2-PFOA	06-Dec-19	** Vendor **	21-Jun-24	1
19L0612	13C3-PFPeA	06-Dec-19	** Vendor **	08-Mar-24	1
19L0613	13C8-FOSA-I	06-Dec-19	** Vendor **	19-Jun-24	1
19L0614	d3-N-Me-FOSAA	06-Dec-19	** Vendor **	24-Jul-24	1
19L0615	d5-N-EtFOSAA	06-Dec-19	** Vendor **	25-Jul-24	1
19L0616	13C3-PFBS	06-Dec-19	** Vendor **	29-Oct-24	1.075
19L0617	13C8-PFOS	06-Dec-19	** Vendor **	06-May-24	1.045
19L0618	13C3-PFHxS	06-Dec-19	** Vendor **	15-Oct-24	1.06
19L0619	13C2-PFHxA	06-Dec-19	** Vendor **	11-Oct-24	1
19L0620	13C2-PFHxDA	06-Dec-19	** Vendor **	11-Oct-24	1
19L0621	13C3-HFPO-DA	06-Dec-19	** Vendor **	20-Sep-22	1

Description:	PFC - IS	Expires:	12-May-21
Standard Type:	Reagent	Prepared:	12-May-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	12-May-20 10:53 by BML

10:2 added
10 uL spike

Analyte	CAS Number	Concentration	Units
13C3-HFPO-DA		1.25	ug/mL
13C2-4:2 FTS		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		1.25	ug/mL
13C2-PFHxDA		1.25	ug/mL
13C2-PFOA		1.25	ug/mL
13C2-10:2 FTS		1.25	ug/mL
13C2-PFUnA		1.25	ug/mL
d5-EtFOSAA		1.25	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

20E1201

Description:	PFC - IS	Expires:	12-May-21
Standard Type:	Reagent	Prepared:	12-May-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	12-May-20 10:53 by BML

10:2 added
10 uL spike

Analyte	CAS Number	Concentration	Units
13C3-PFBA		1.25	ug/mL
13C3-PFBS		1.25	ug/mL
13C3-PFHxS		1.25	ug/mL
13C3-PFPeA		1.25	ug/mL
13C4-PFHpA		1.25	ug/mL
13C5-PFNA		1.25	ug/mL
13C8-PFOS		1.25	ug/mL
13C8-PFOSA		1.25	ug/mL
d3-MeFOSAA		1.25	ug/mL
13C2-PFTeDA		1.25	ug/mL

19H27016

Cambridge Isotope Laboratories, Inc.

Certificate of Analysis

Product Name:
(Isotopic Label & Enrichment Specification)
1H,1H,2H,2H-PERFLUORODODECANE SULFONATE(10:2 FTS), SODIUM SALT (13C2, 99%; D4, 98%) 50 UG/ML IN MEOH

Lot Number: SDIJ-019A

Catalog Number: CDLM-10750-S

Product Information

Chemical Purity Specification:	≥ 98%
MW*: * *For isotopically labeled compounds, MW listed is for the fully enriched product.*	656.19
Labeled CAS Number:	NA
Unlabeled CAS Number:	108026-35-3
Chemical Formula:	C10*C2D4F21NaO3S
Storage:	Store at room temperature away from light and moisture.
Stability:	See storage and expiration date.

Certification

Cambridge Isotope Laboratories, Inc. guarantees that this material meets or exceeds the specifications stated. Absolute identity as well as chemical and isotopic purities are assured by the use of unambiguous synthetic routes and multiple chemical analyses whenever possible. Results are representative of QC testing at time of release from Quality Control unless otherwise stated. CIL Certificates of Analysis are occasionally updated with new data following recertification. We recommend checking the website for the latest version.

Volumetric measurements were made with Class A glassware. Gravimetry is traceable to the NIST through calibrated balances and certified, calibrated, standard weights. The calibrations are traceable to the NIST under Test No. 822/270236-04. The calibrations also meet specifications outlined in ISO 9001, ISO/IEC 17025, ANSI/NSCL Z540-1-1994, NCR Document 10CFR50 Appendix B, and applicable subdocuments.

This COA references the bulk catalog number before packaging. The COA also applies to the CIL finished good catalog number . Some possible packaging sizes and their corresponding suffix are -1.2, -1, -0.5, -10, or -0.1.

Approved by: Sashi Sivendran-Basak

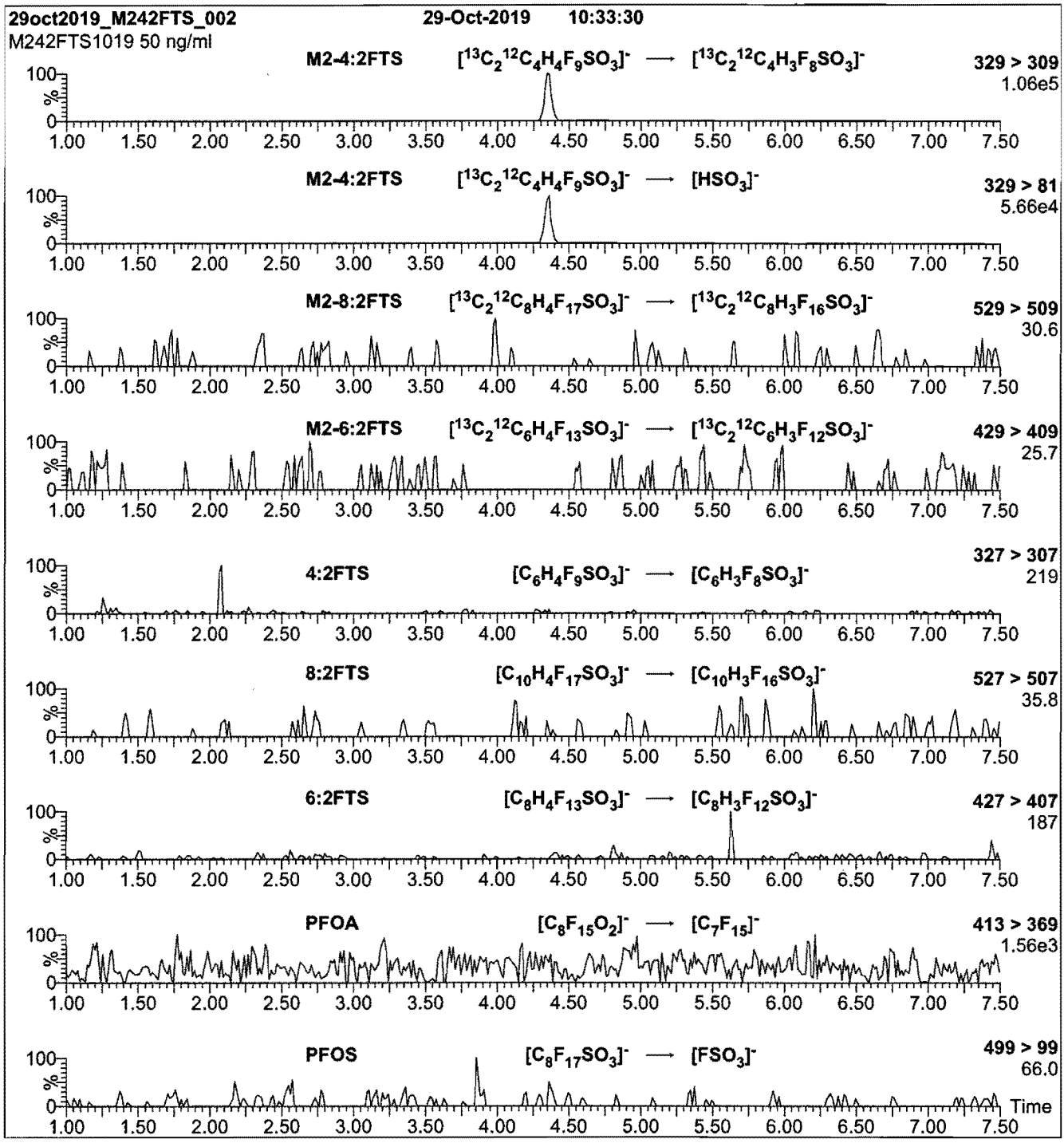
Sashi Sivendran-Basak, Ph.D., Quality Review

Quality Control Tests and Results

QC Release Date	8/21/2019
Expiration Date	8/21/2024
Concentration Based on Gravimetry	50.0 ± 0.5 µg/mL (k=2)
Chemical Purity of Neat Material(s)	100.0%

CIL subscribes to the following standards for different products: ISO Guide 34, ISO/IEC 17025, ISO 13485 and cGMP as appropriate.

Figure 2: **M2-4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2-4:2FTS)

Mobile phase: Same as Figure 1

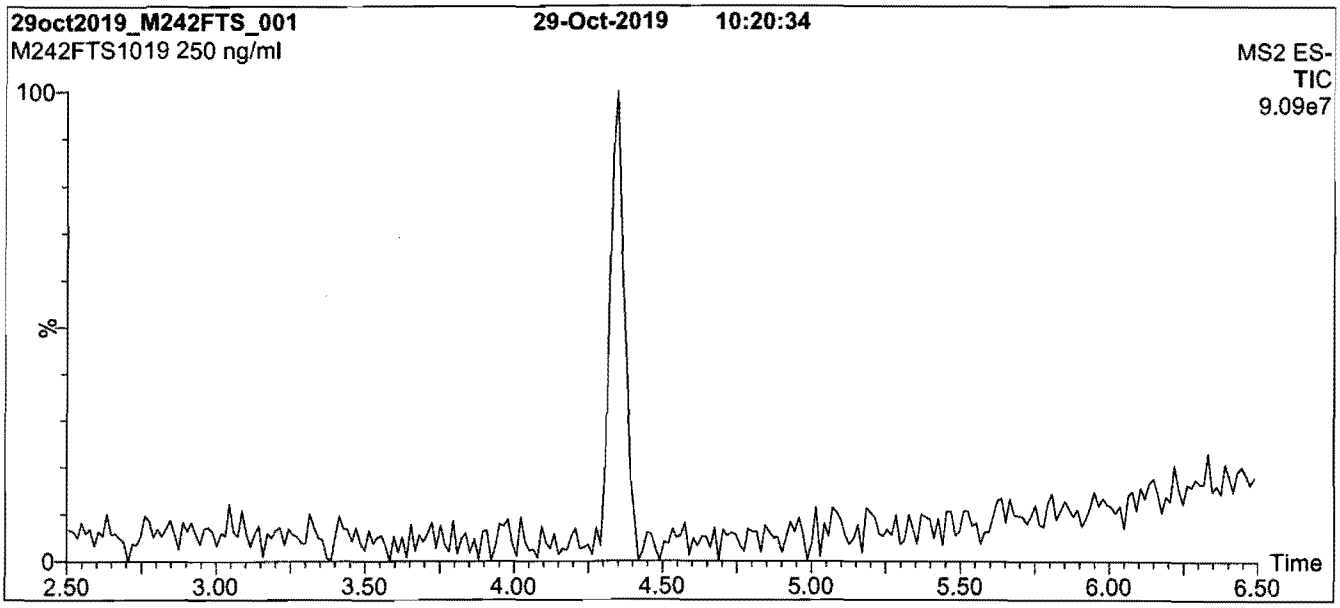
Flow: 300 µl/min

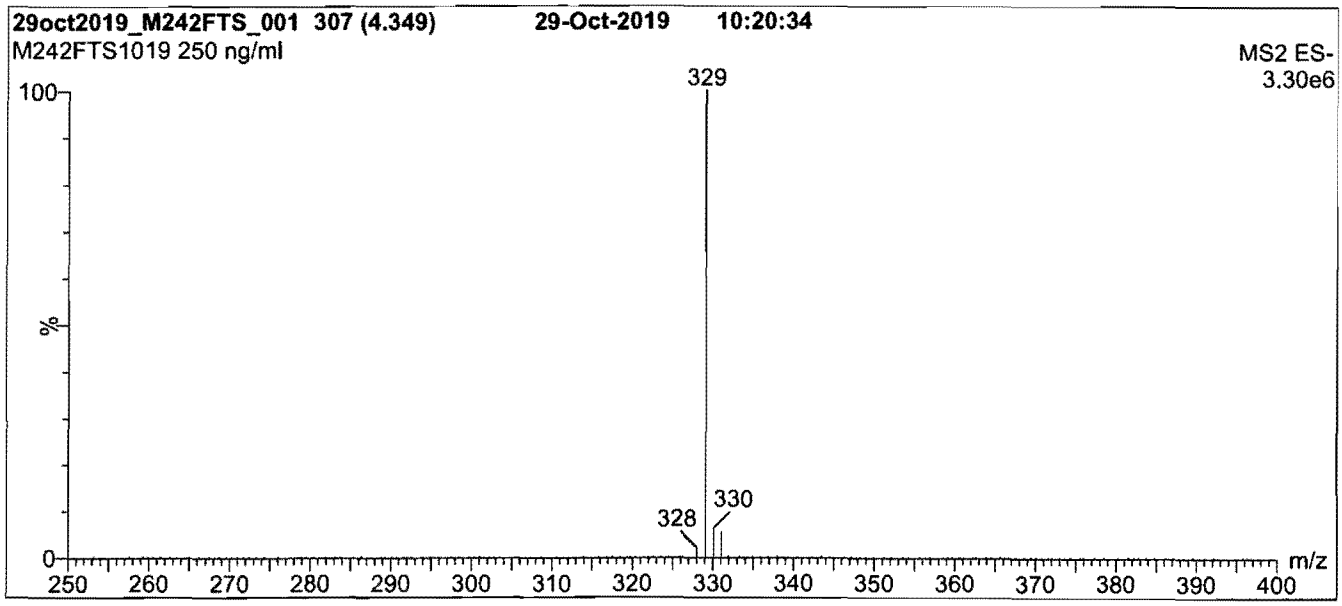
MS Parameters

Collision Gas (mbar) = 3.51e-3
Collision Energy (eV) = 18

19L0601

Figure 1: **M2-4:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2,...x_n$ on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

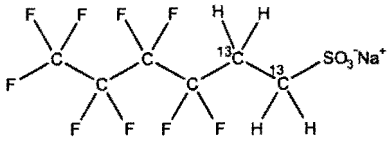
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0601

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M2-4:2FTS	**LOT NUMBER:**	M242FTS1019
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)	10/29/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/29/2024		
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).

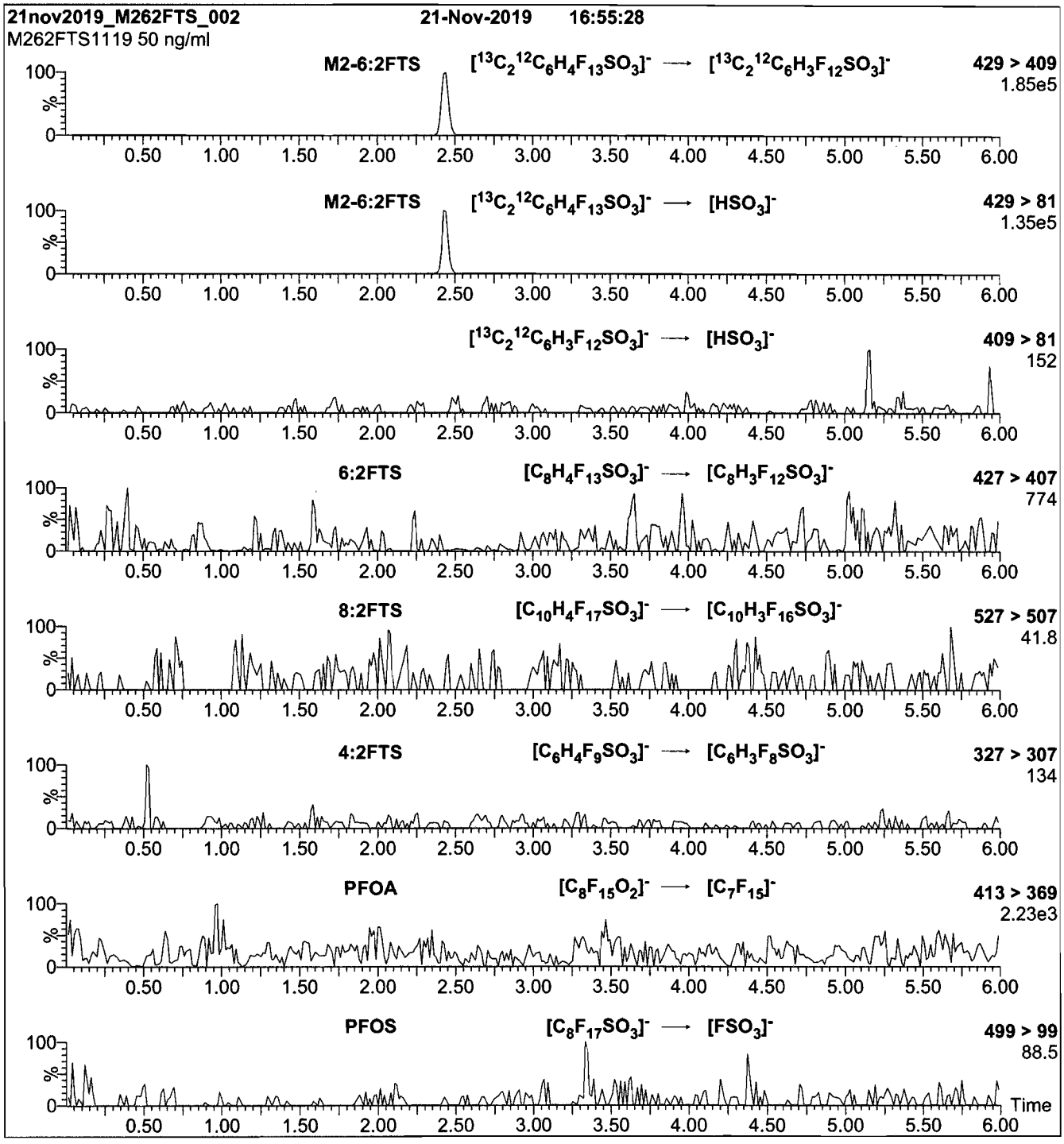
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/05/2019 (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

19L0602

Figure 2: **M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2-6:2FTS)

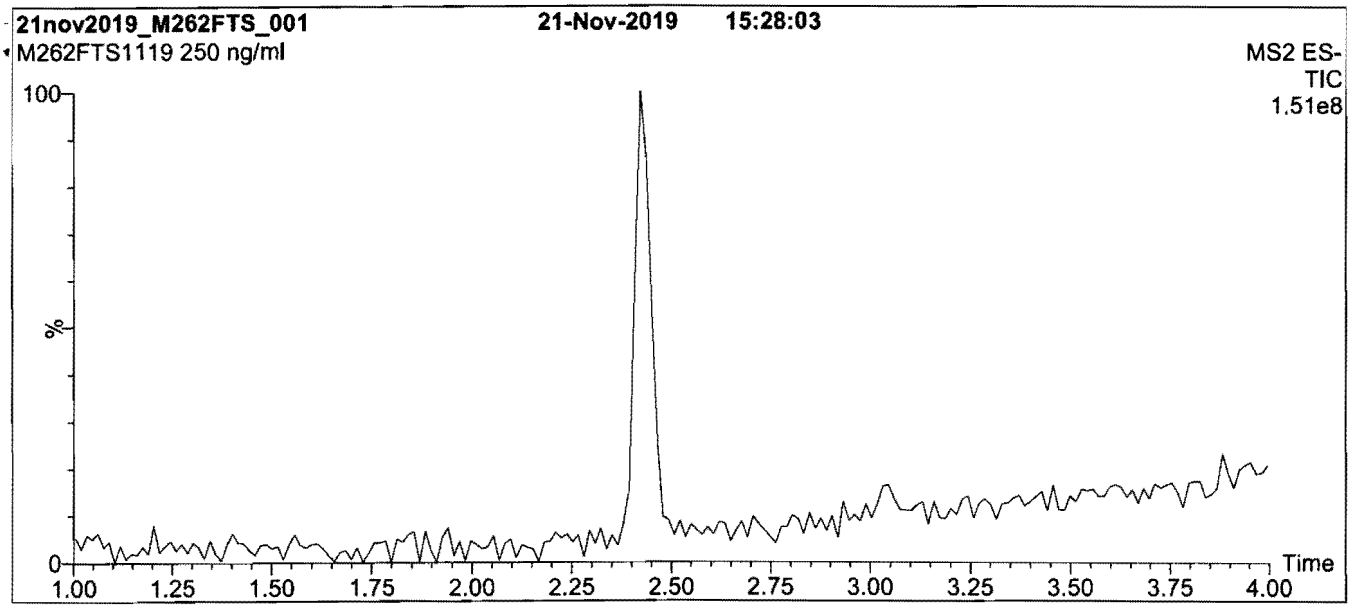
Mobile phase: Same as Figure 1

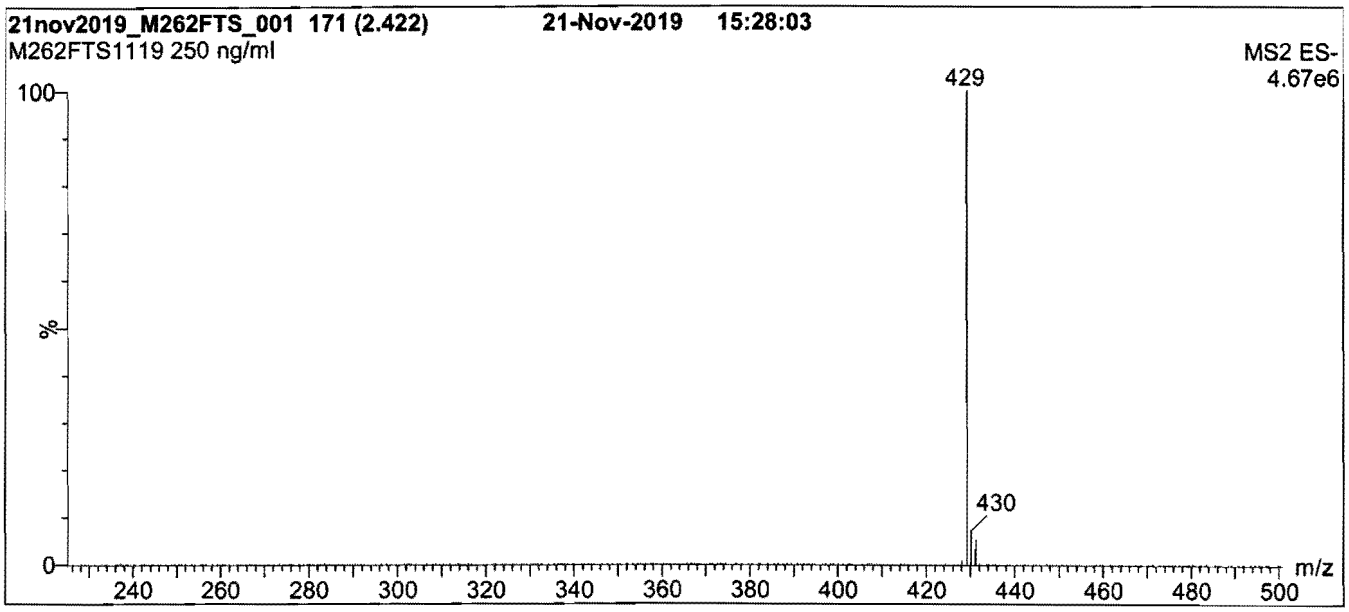
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.31e-3
Collision Energy (eV) = 20

Figure 1: **M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

19L0602

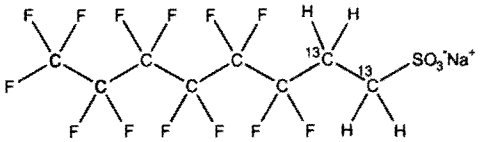
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2-6:2FTS **LOT NUMBER:** M262FTS1119

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)	**SOLVENT(S):**	Methanol
	47.5 ± 2.4 µg/ml (M2-6:2FTS anion)		
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	11/21/2019		
EXPIRY DATE: (mm/dd/yyyy)	11/21/2024		
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:

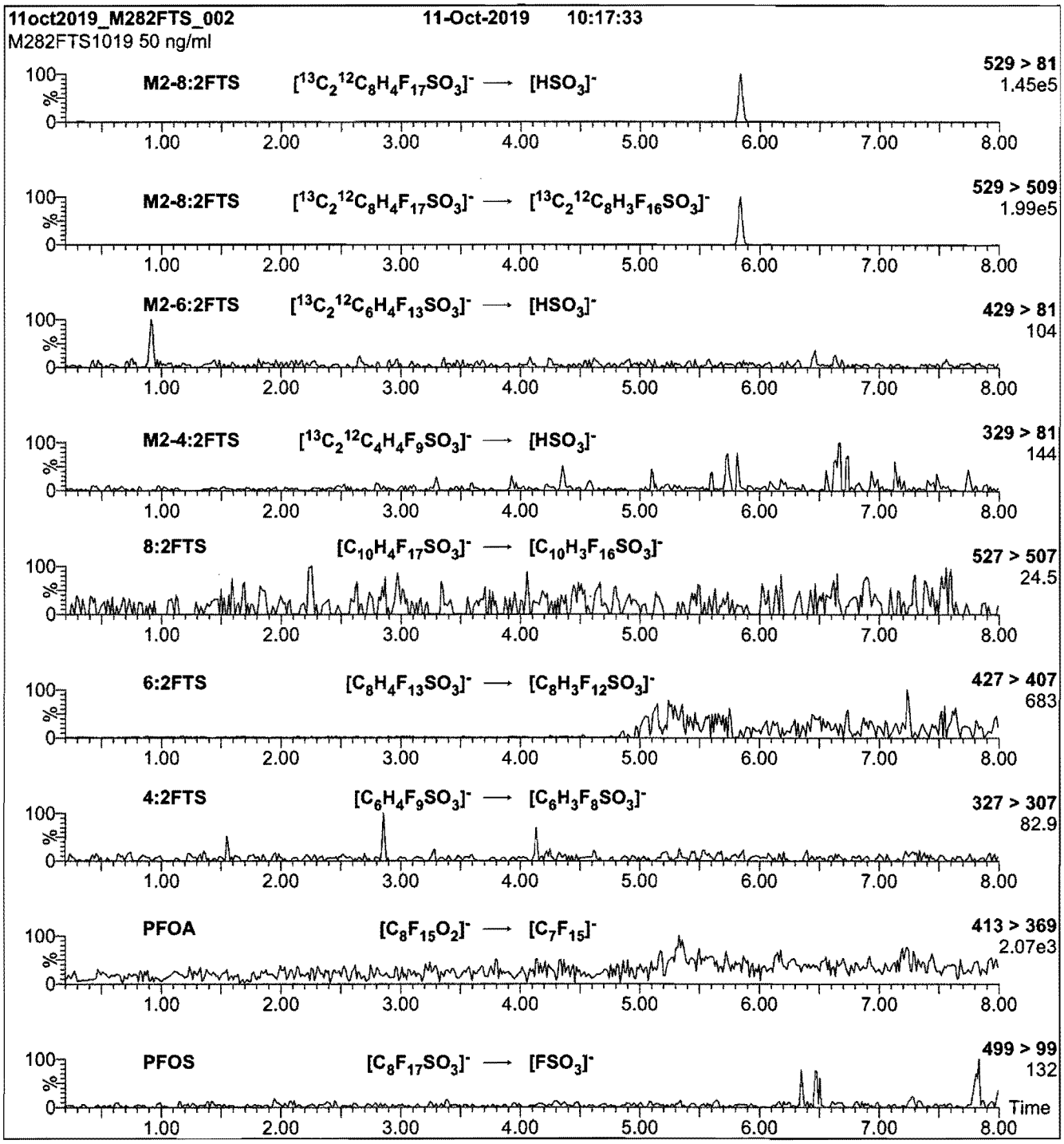
- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ^{34}S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for 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: _____ **Date:** 11/25/2019 (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

Figure 2: **M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2-8:2FTS)

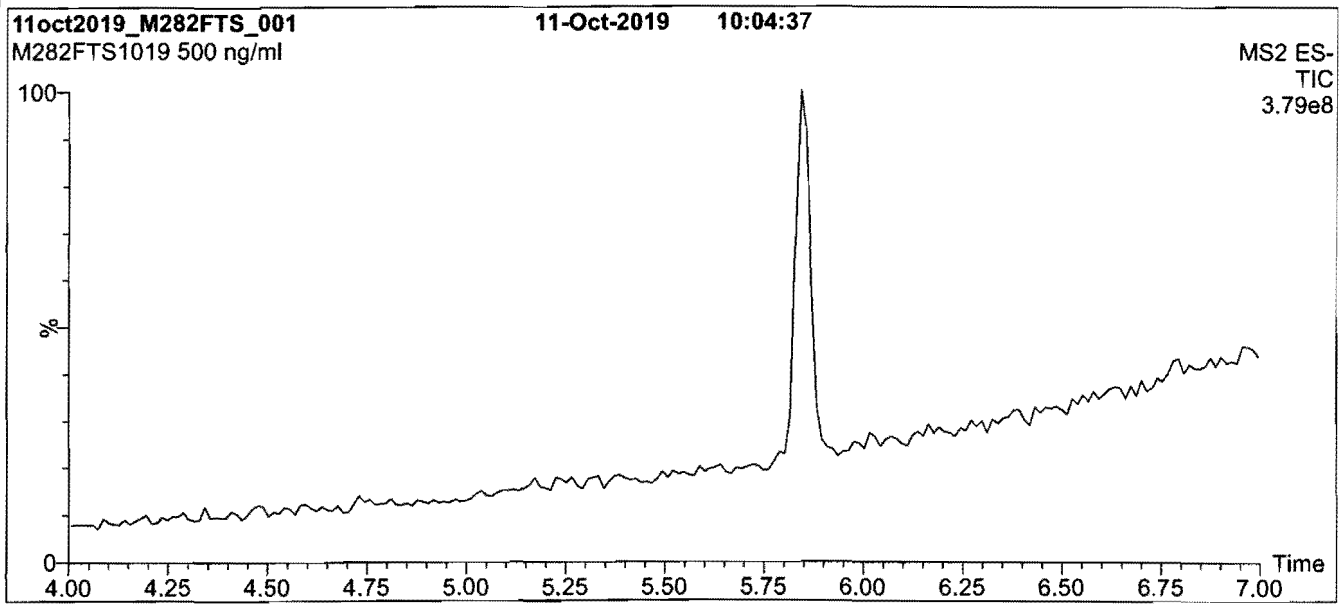
Mobile phase: Same as Figure 1

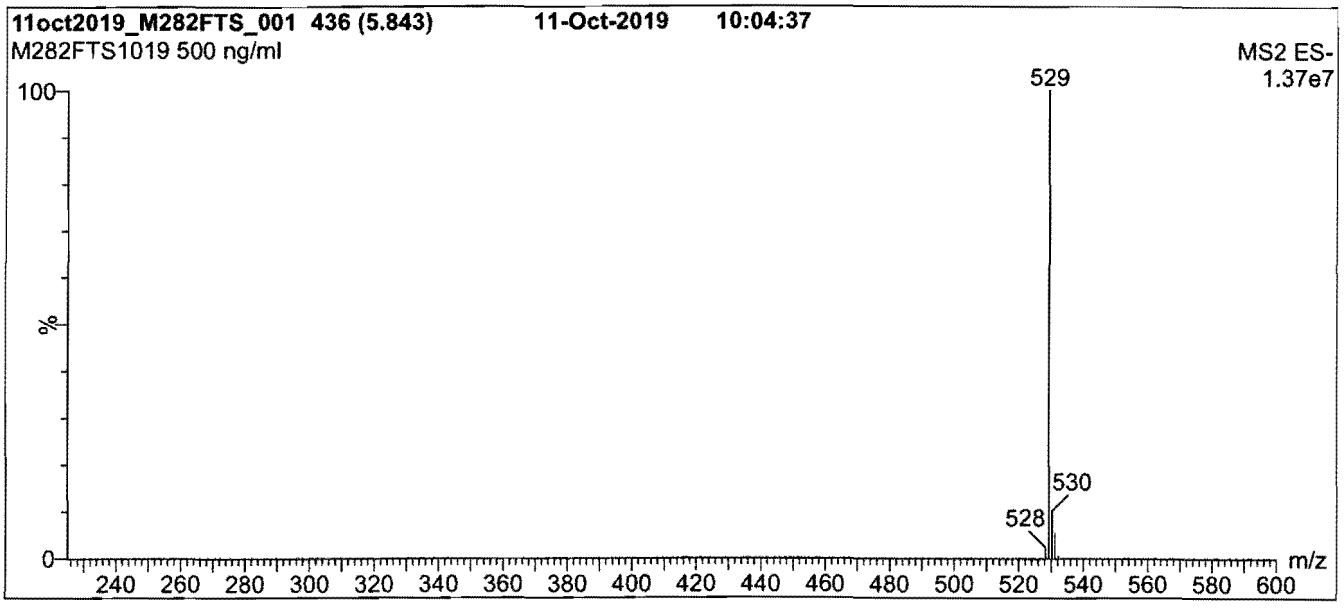
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.87e-3
Collision Energy (eV) = 26

Figure 1: **M2-8:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0603

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

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

19L0603

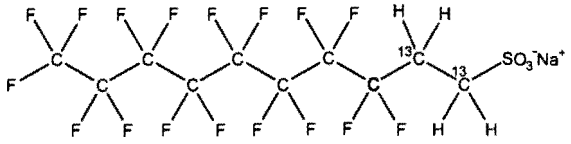
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2-8:2FTS **LOT NUMBER:** M282FTS1019

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) 47.9 ± 2.4 µg/ml (M2-8:2FTS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	10/11/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/11/2024		
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:

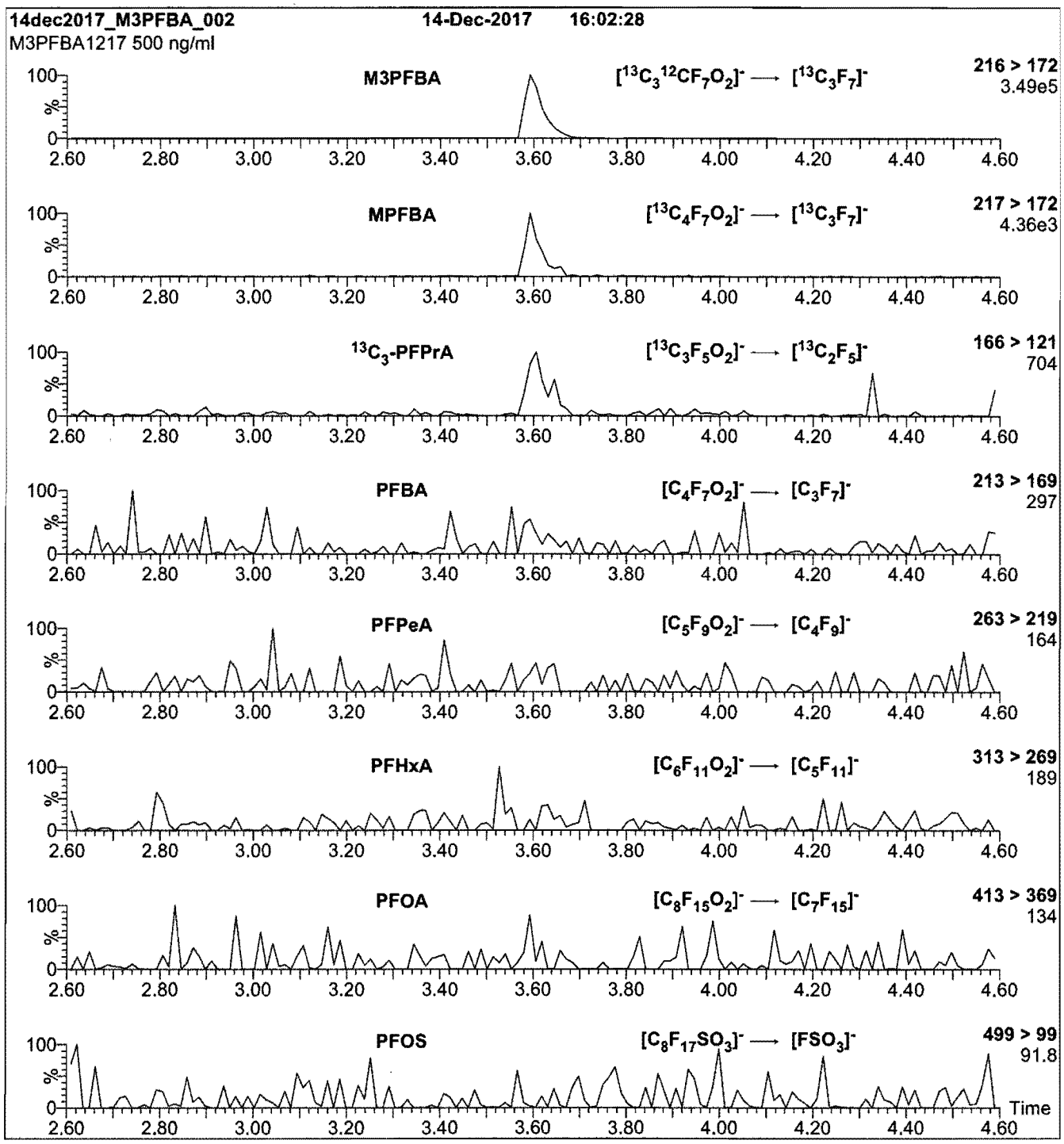
- See page 2 for further details.
- The native 8:2FTS contains 4.22% of ^{34}S (due to natural isotopic abundance) therefore both native 8:2FTS and M2-8:2FTS will produce signals in the m/z 529 to m/z 509 channel during SRM analysis. We recommend using the m/z 529 to m/z 81 transition to monitor for 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:** 10/15/2019 (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

Figure 2: **M3PFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml M3PFBA)

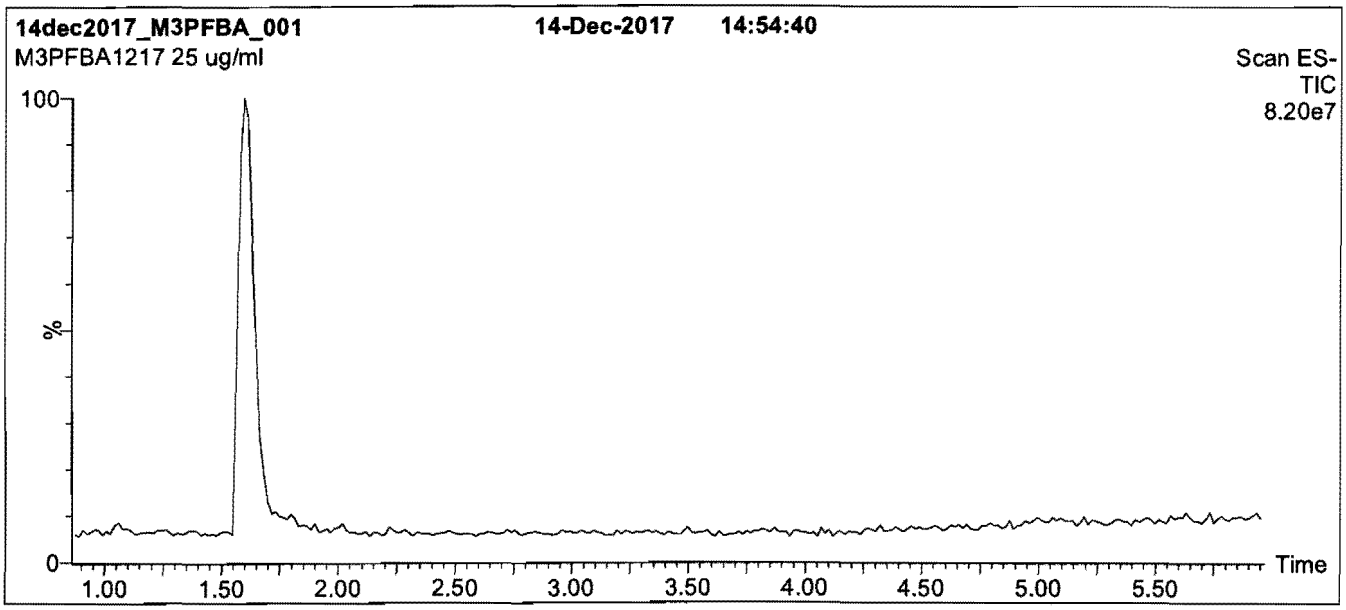
Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

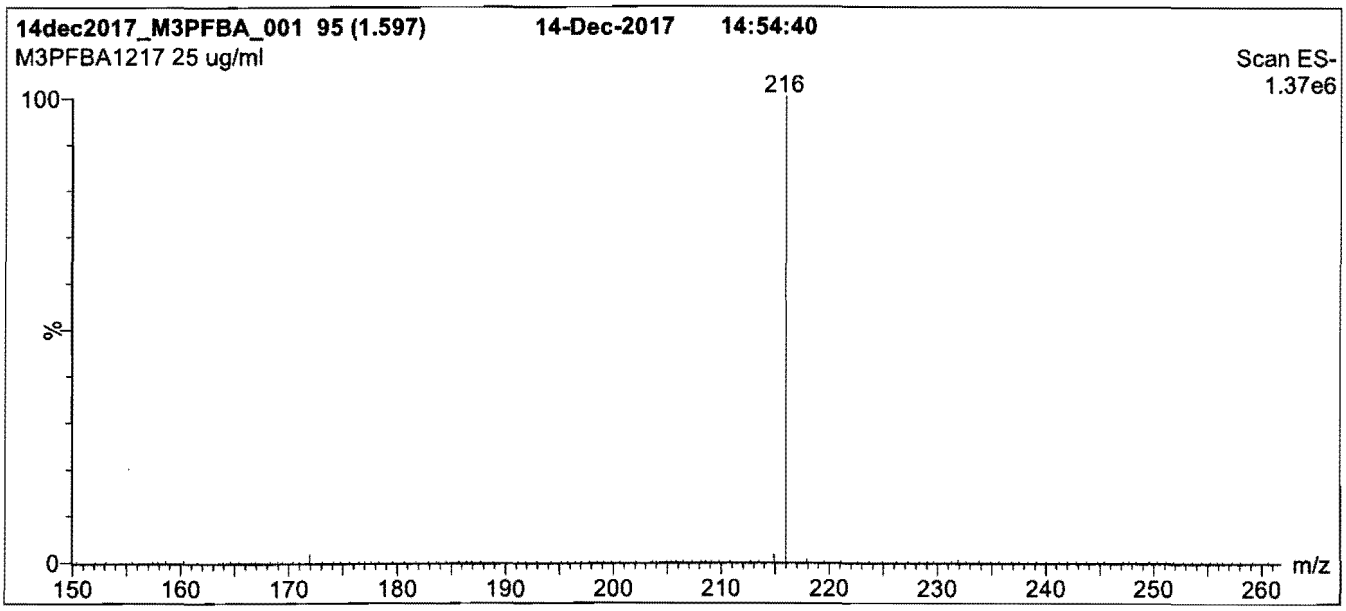
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

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

19L0604

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 Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

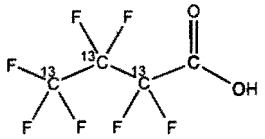
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0604

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M3PFBA	**LOT NUMBER:**	M3PFBA1217
COMPOUND:	Perfluoro-n-[2,3,4-$^{13}C_3$]butanoic acid		
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-$^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	12/14/2017		
EXPIRY DATE: (mm/dd/yyyy)	12/14/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

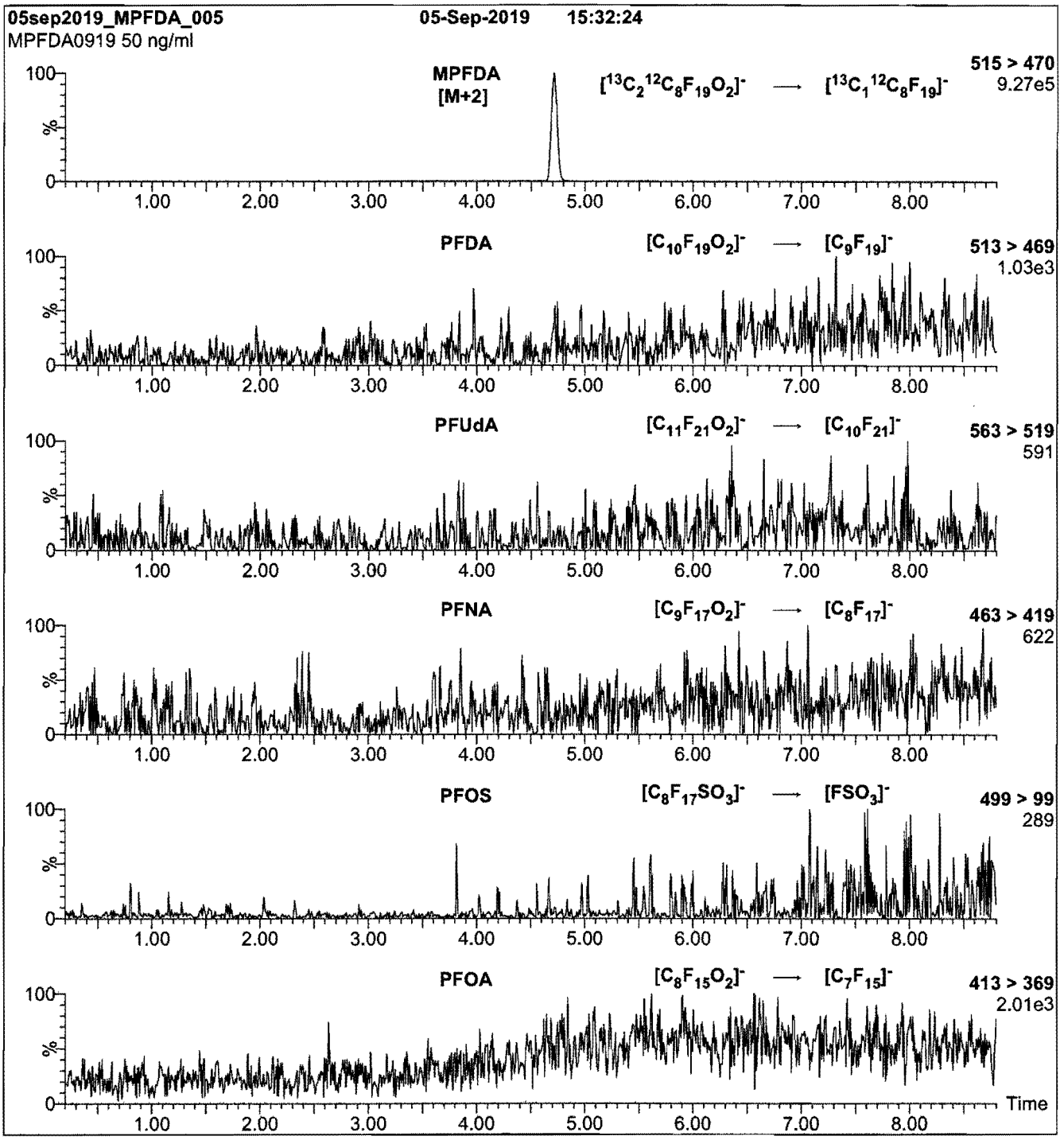
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-[$^{13}C_3$]propanoic acid and also contains ~ 1.0% of perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid due to the naturally occurring isotopic abundance of ^{13}C in the unlabelled carbon atom.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/22/2017 (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

Figure 2: **MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDA)

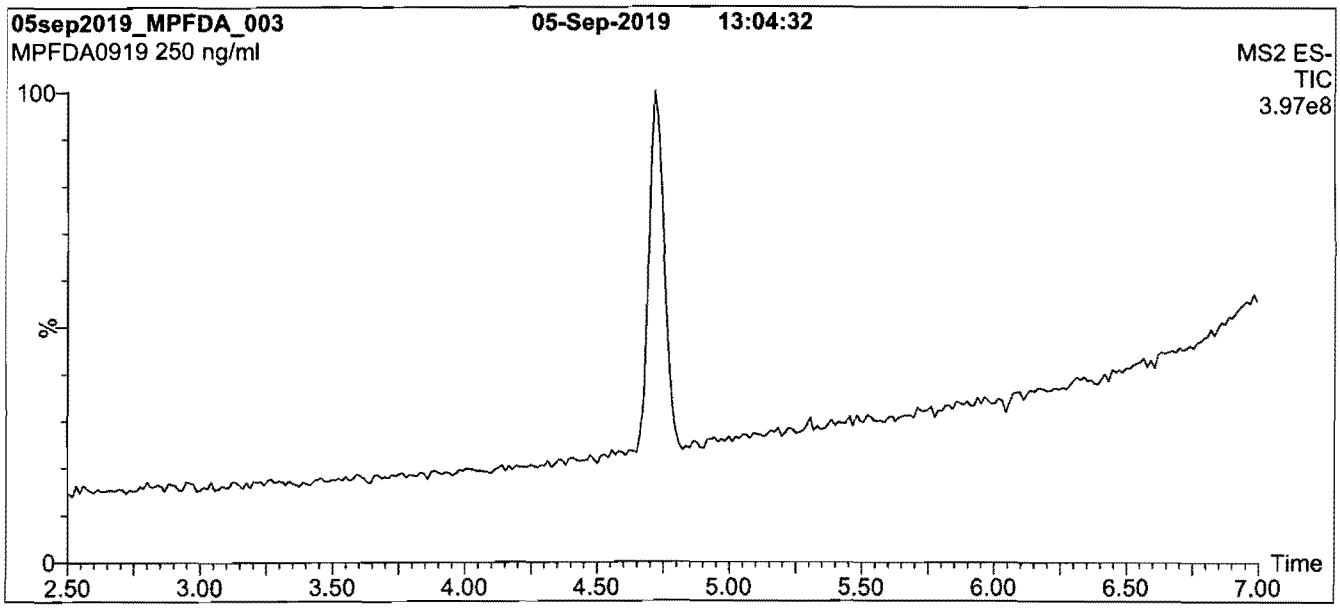
Mobile phase: Same as Figure 1

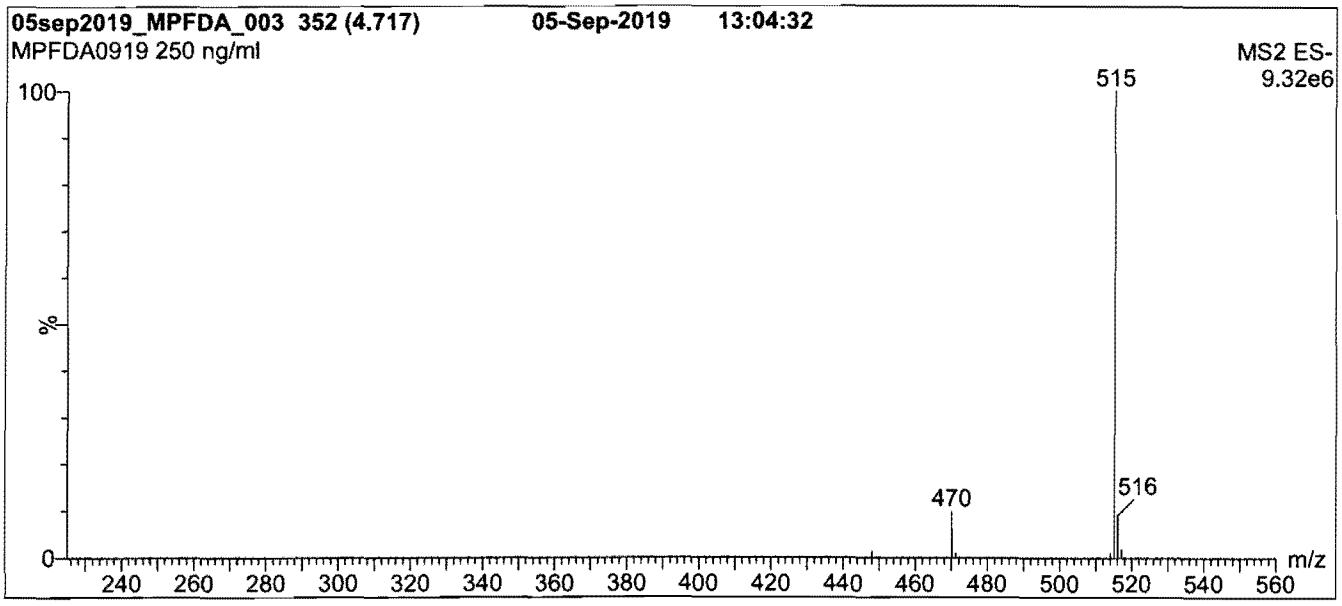
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.45e-3
Collision Energy (eV) = 10

Figure 1: **MPFDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0605

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

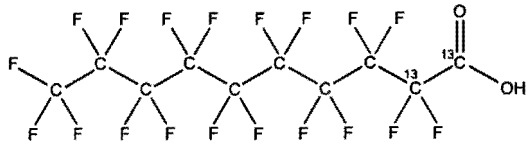
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0605

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFDA	**LOT NUMBER:**	MPFDA0919
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]decanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8HF_{19}O_2$	**MOLECULAR WEIGHT:**	516.07
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)	09/05/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/05/2024		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

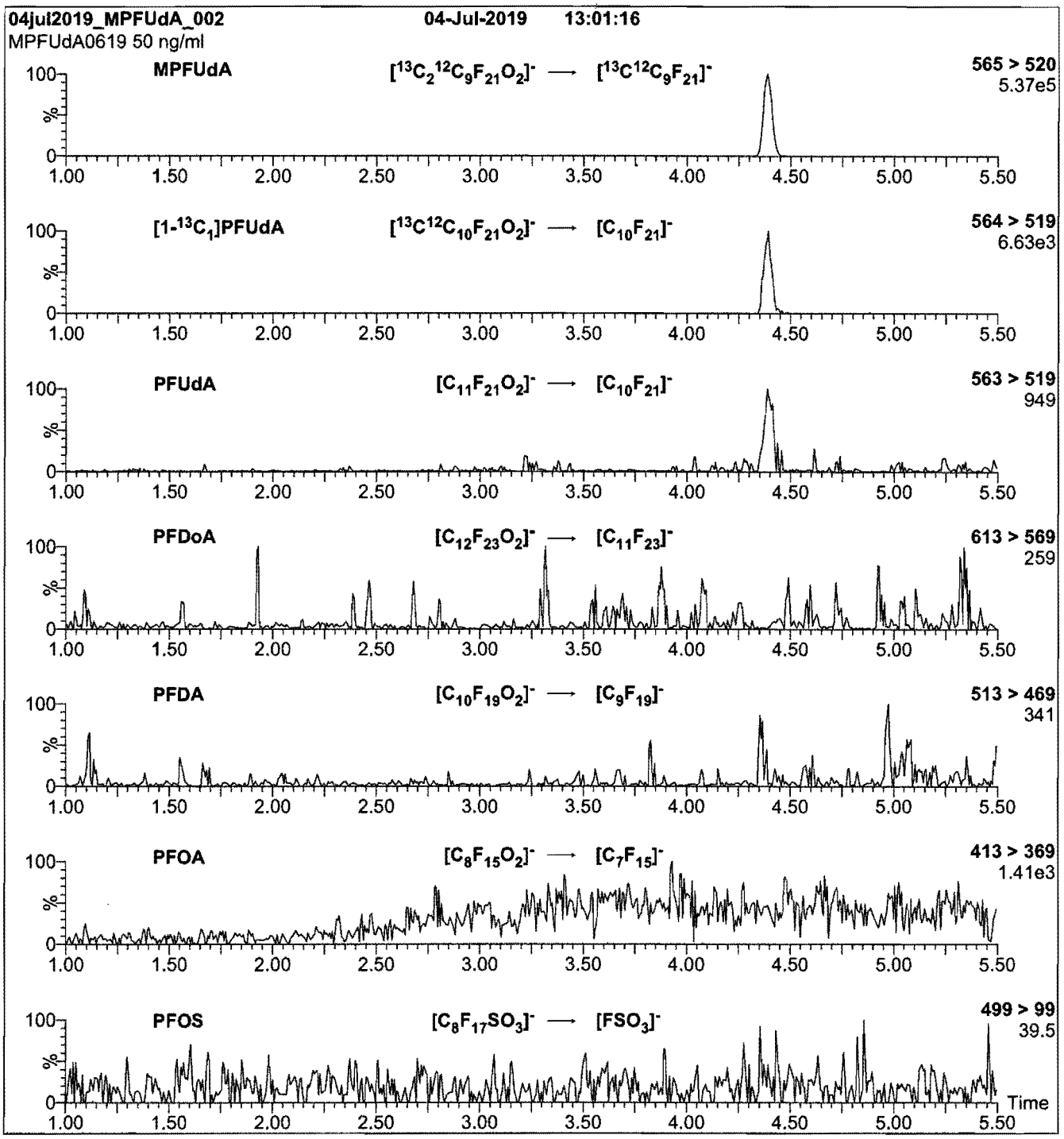
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/09/2019 (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

19L06006

Figure 2: **MPFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFUdA)

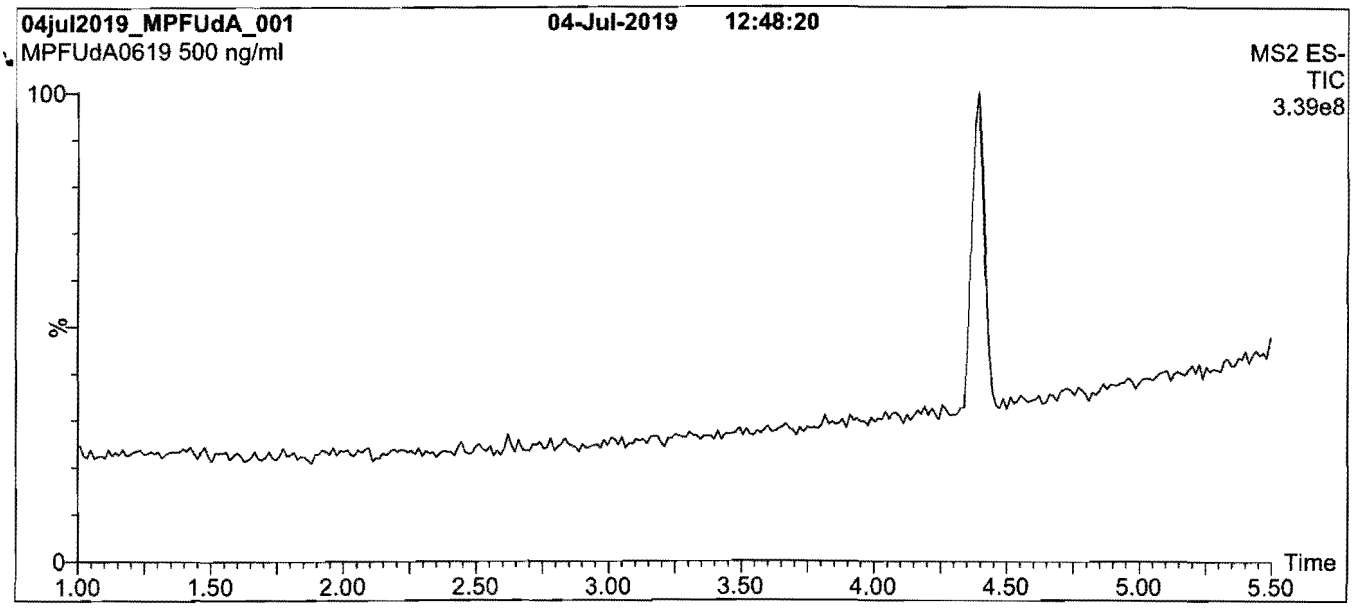
Mobile phase: Same as Figure 1

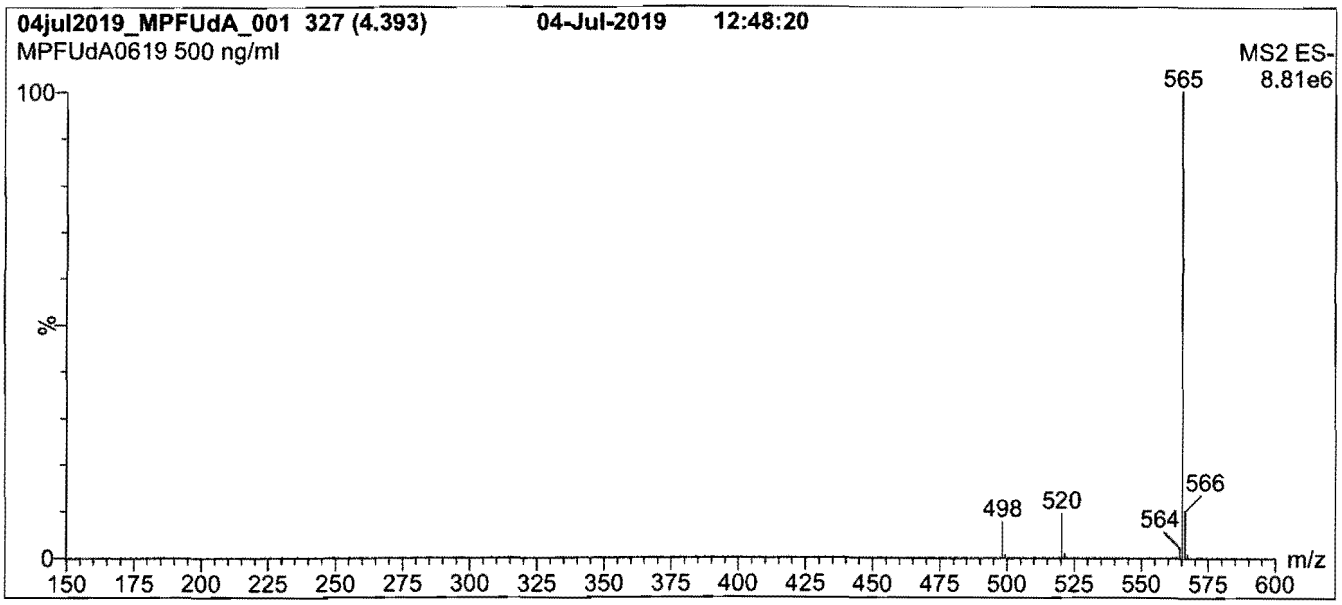
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 12

Figure 1: **MPFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0606

INTENDED USE:

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HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

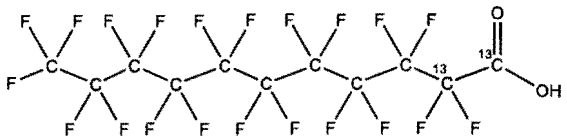
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0606

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFUdA	**LOT NUMBER:**	MPFUdA0619
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)	07/04/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/04/2024		
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:

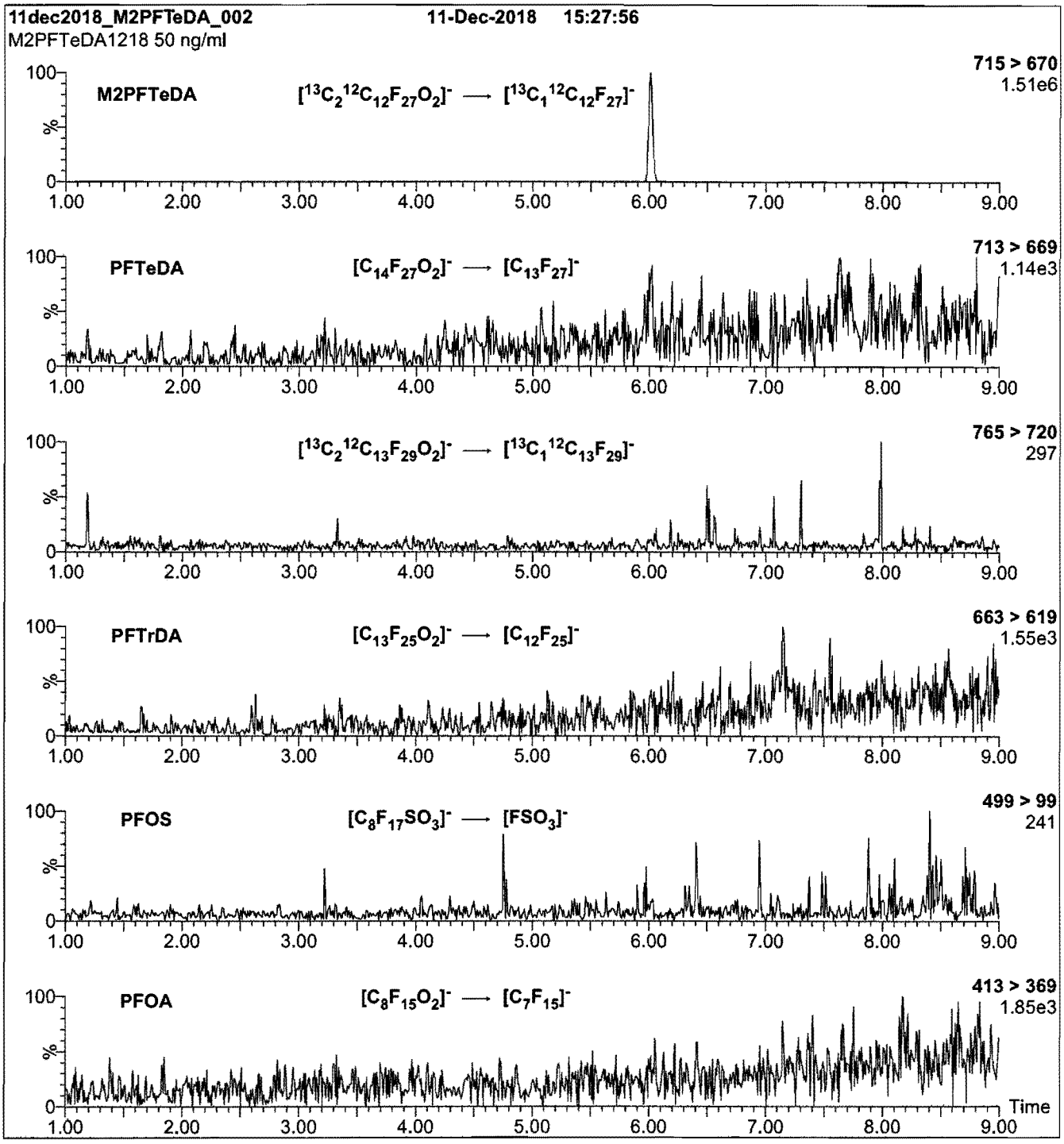
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of 1-$^{13}C_1$-PFUdA (~1%; see Figure 2), 2-$^{13}C_1$-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the ^{13}C-precursor.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/05/2019 (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

Figure 2: **M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2PFTeDA)

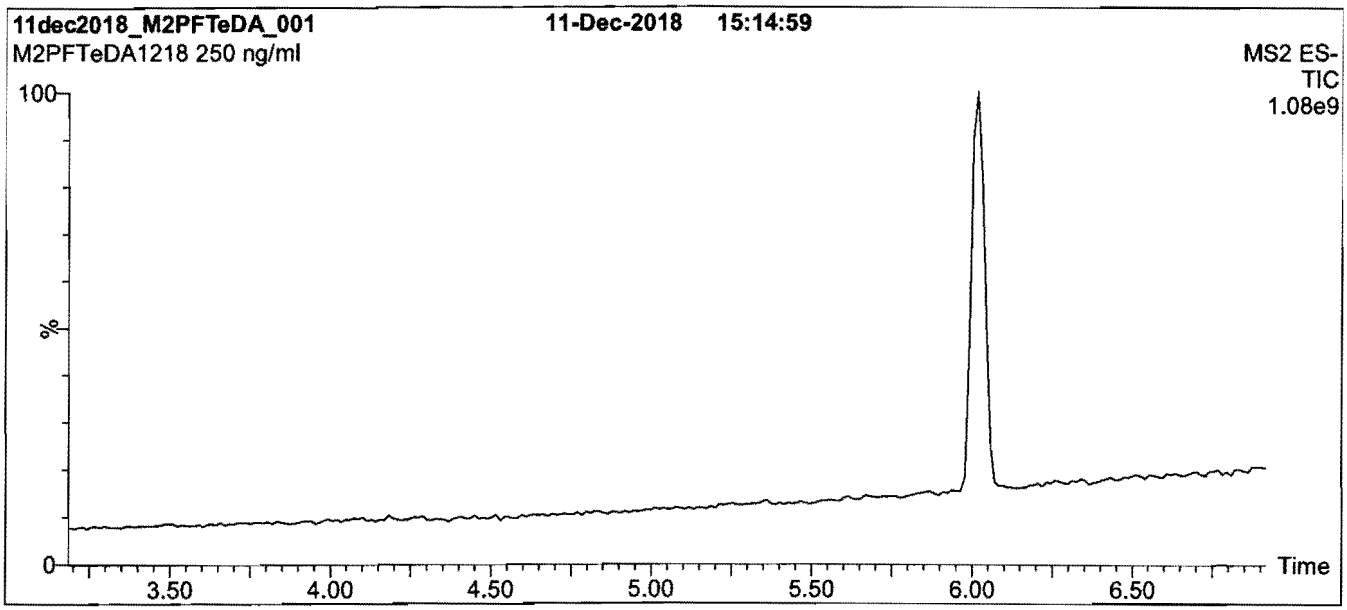
Mobile phase: Same as Figure 1

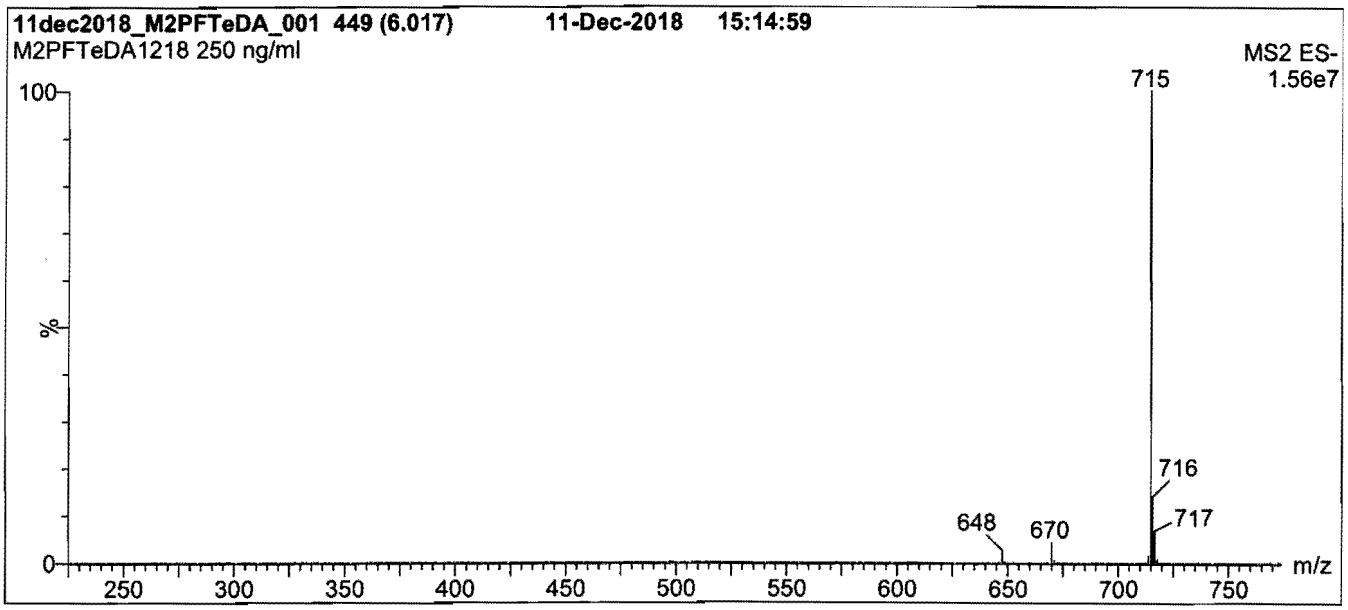
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.16e-3
Collision Energy (eV) = 14

Figure 1: **M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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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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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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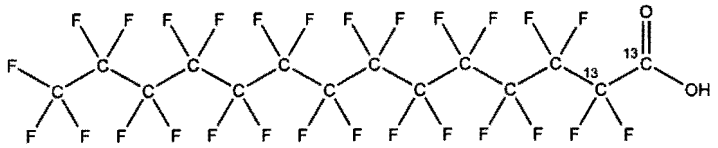
19L0607

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M2PFTeDA
LOT NUMBER: M2PFTeDA1218
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)	12/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/11/2023		
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.

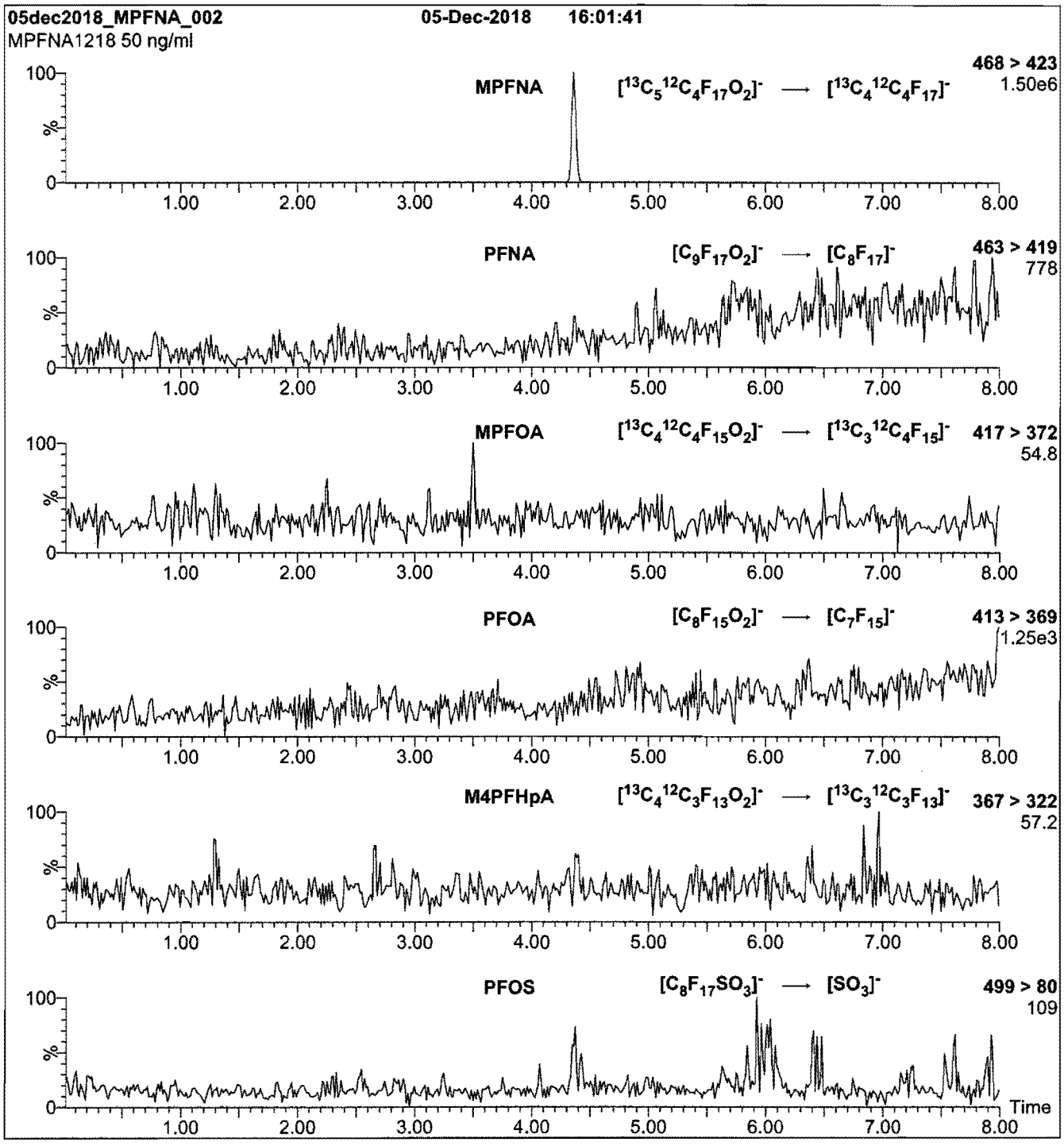
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/20/2018 (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

19L0608

Figure 2: **MPFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFNA)

Mobile phase: Same as Figure 1

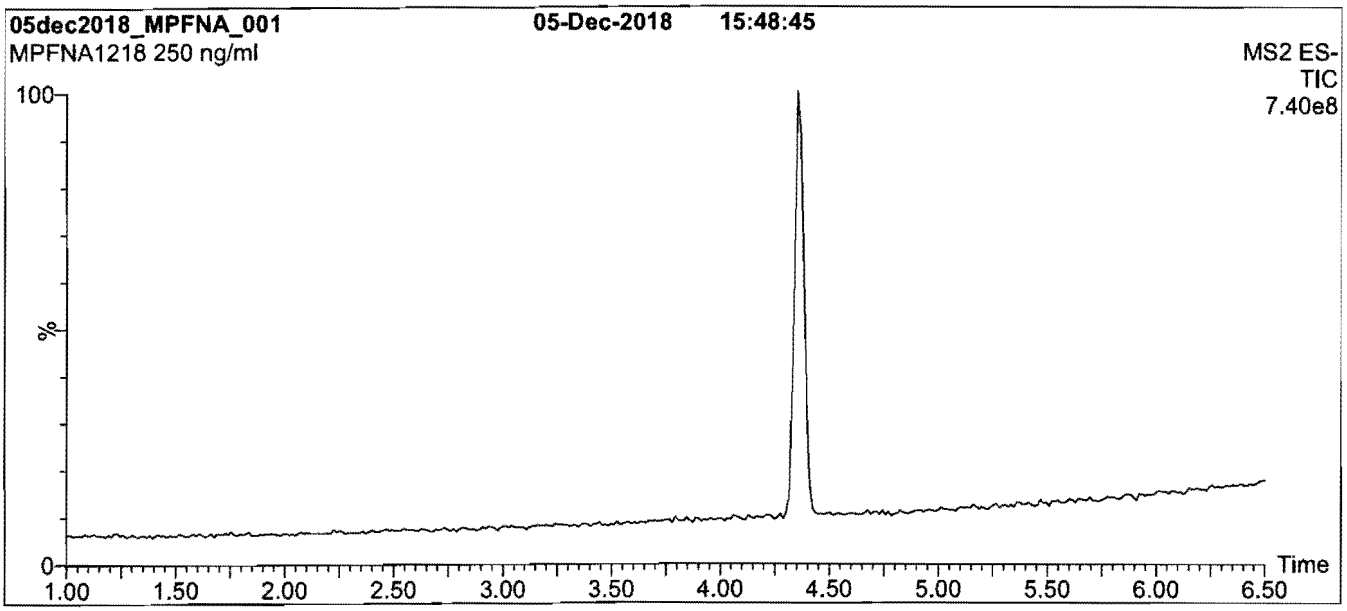
Flow: 300 µl/min

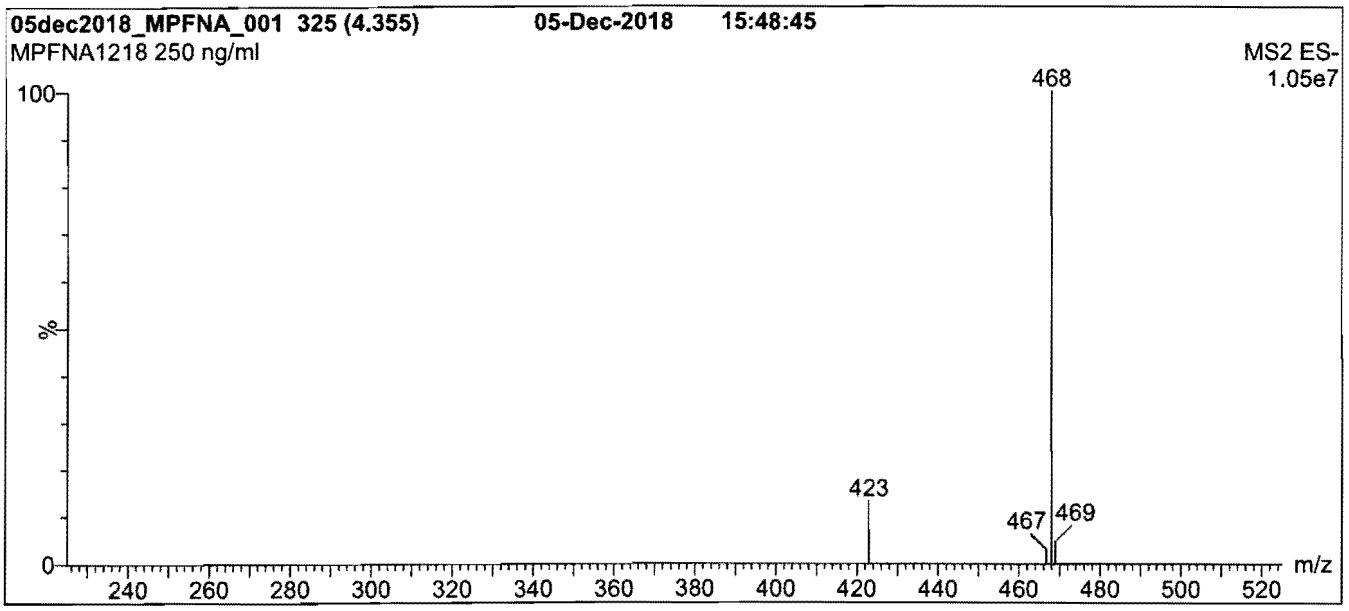
MS Parameters

Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 10

19L0608

Figure 1: **MPFNA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

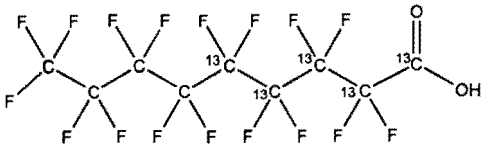
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0608

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFNA	**LOT NUMBER:**	MPFNA1218
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)	12/05/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/05/2023		
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:** 12/10/2018 (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

19L0609

WELLINGTON LABORATORIES

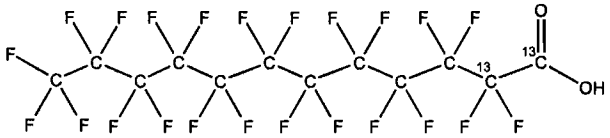
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: MPFDoA
COMPOUND: Perfluoro-n-[1,2-$^{13}C_2$]dodecanoic acid

LOT NUMBER: MPFDoA1218

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)	12/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/11/2023		
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: _____ **Date:** 12/18/2018 (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

19L0609

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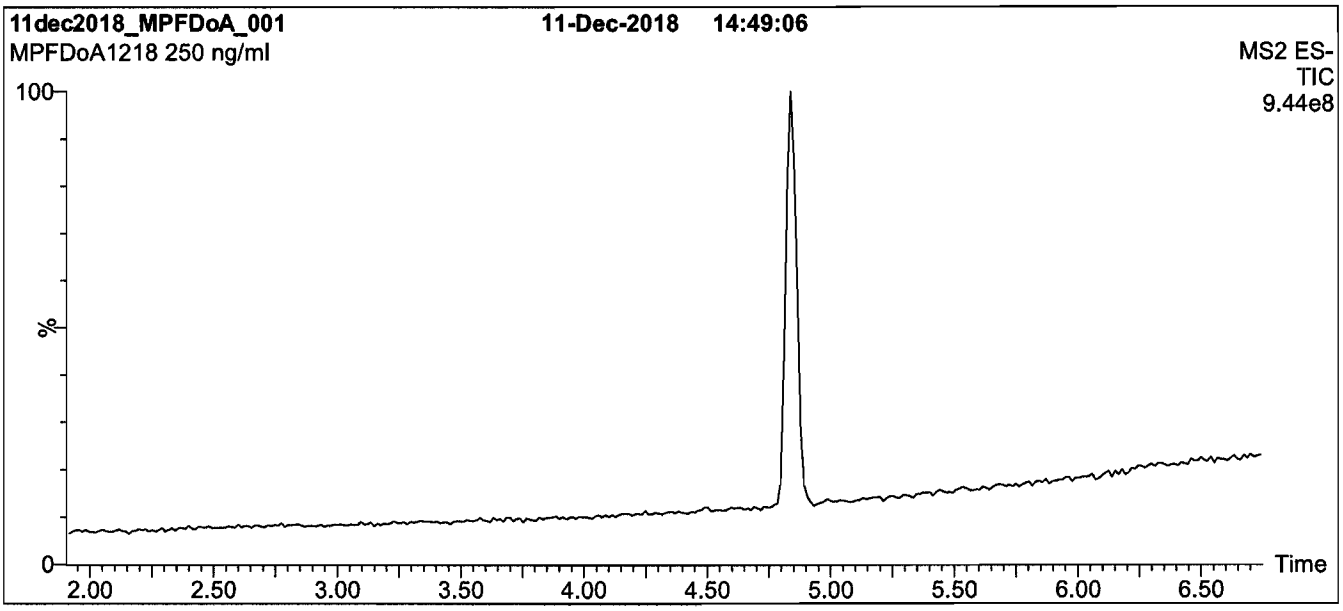
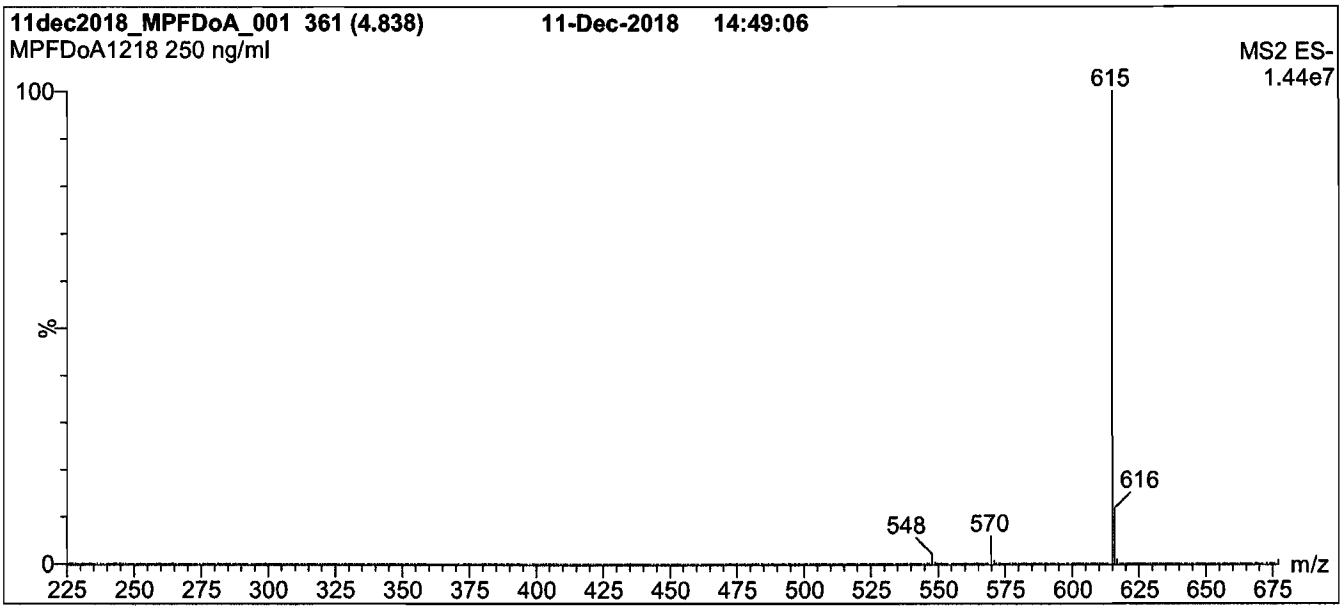
CALA Testing Accreditation No. A1226

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: **MPFDoA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 3 min before returning to initial conditions in 0.75 min.
Time: 12 min

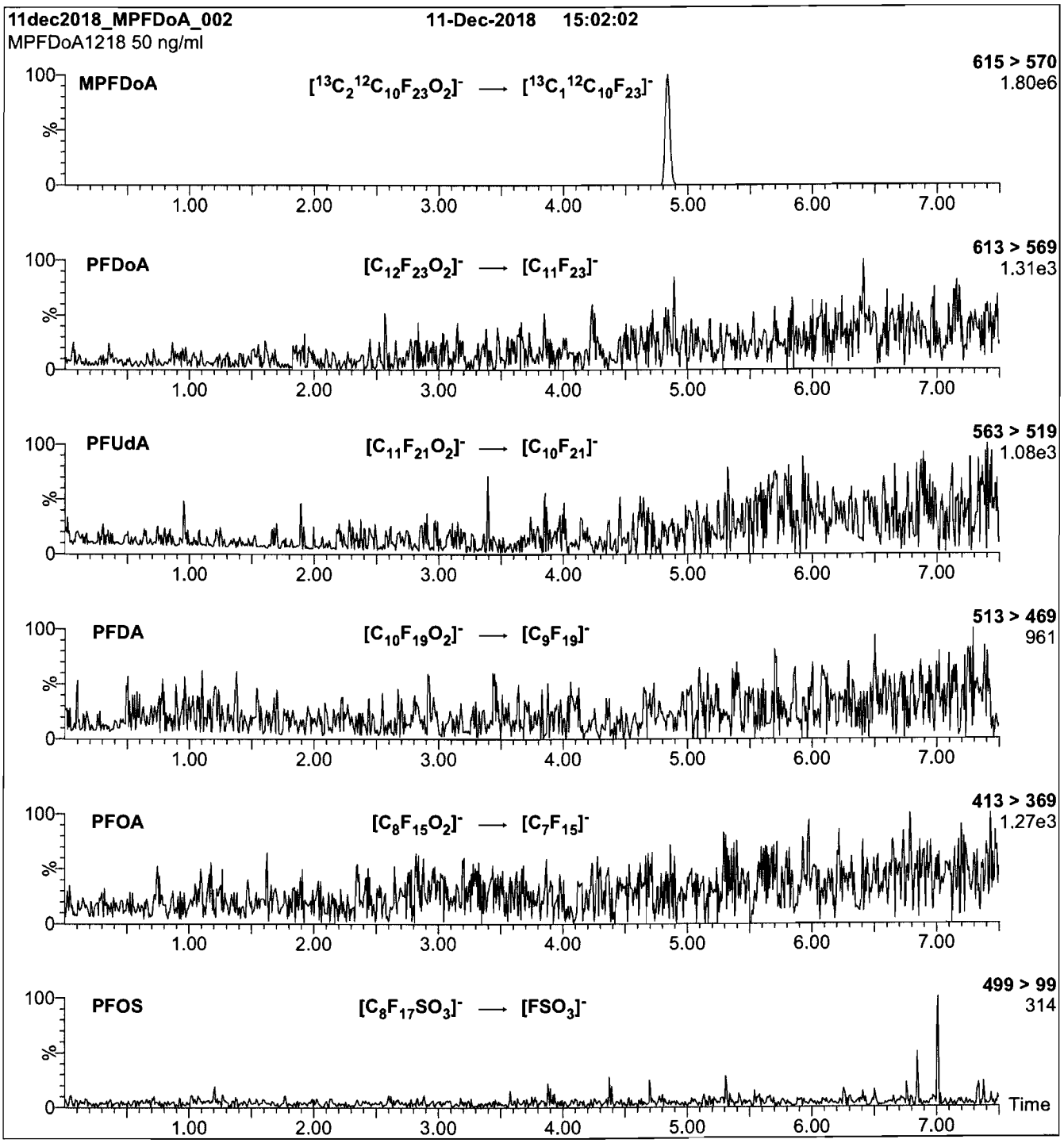
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Figure 2: **MPFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFDoA)

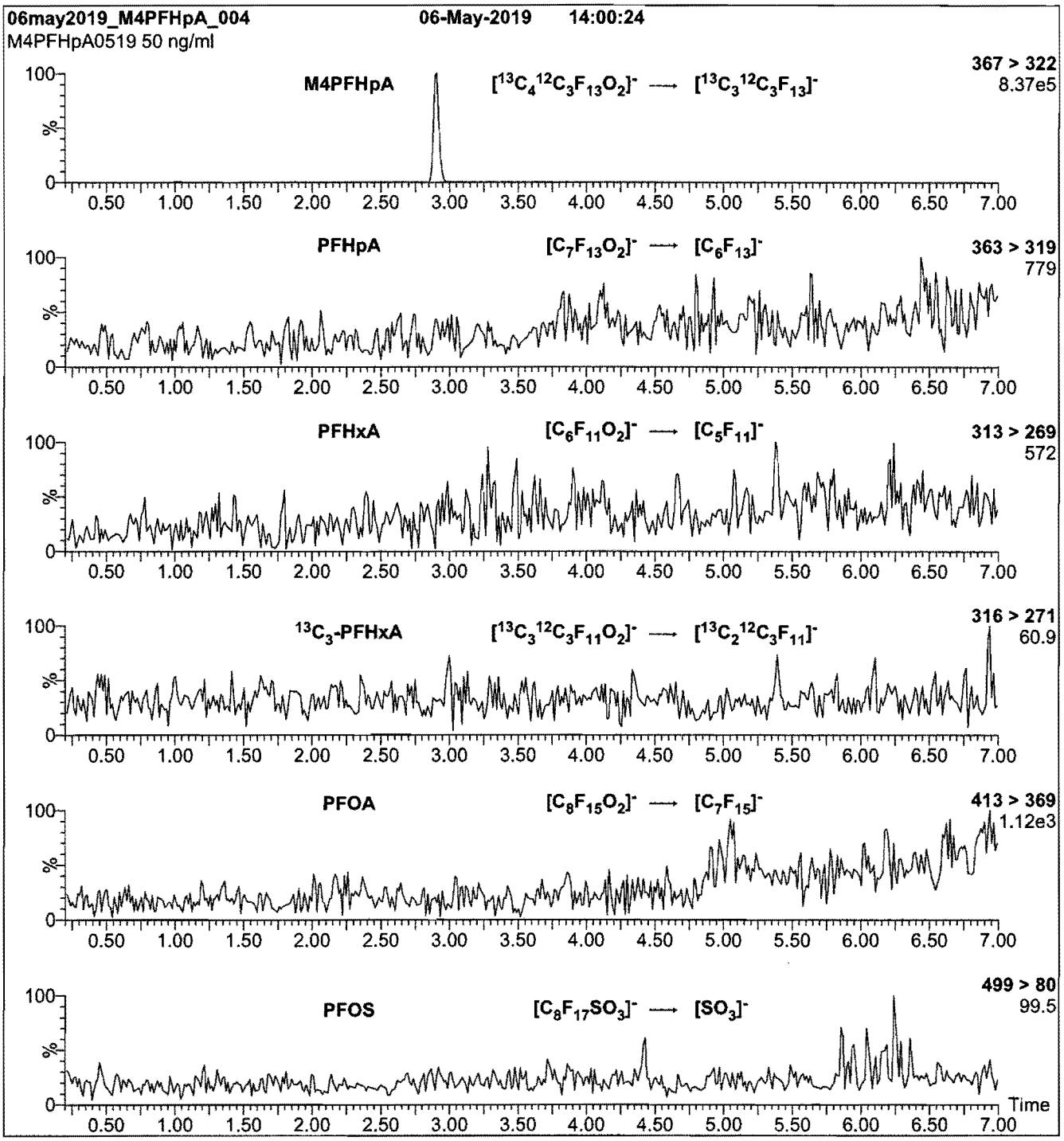
Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.16e-3
Collision Energy (eV) = 12

Figure 2: **M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M4PFHpA)

Mobile phase: Same as Figure 1

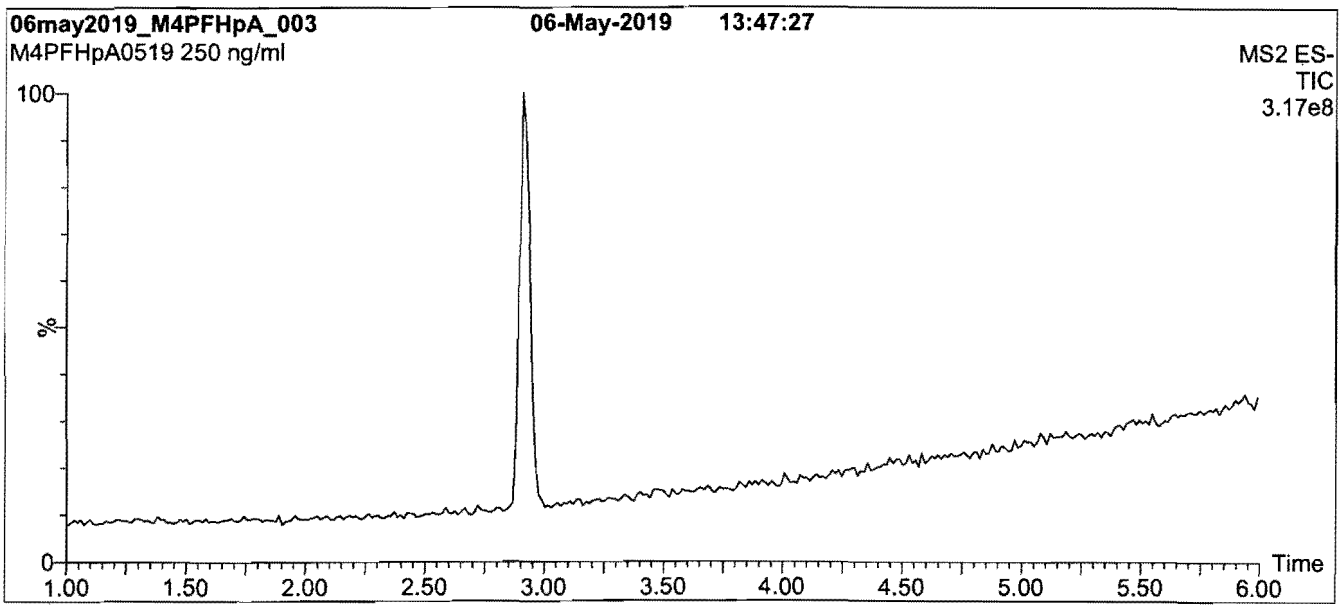
Flow: 300 µl/min

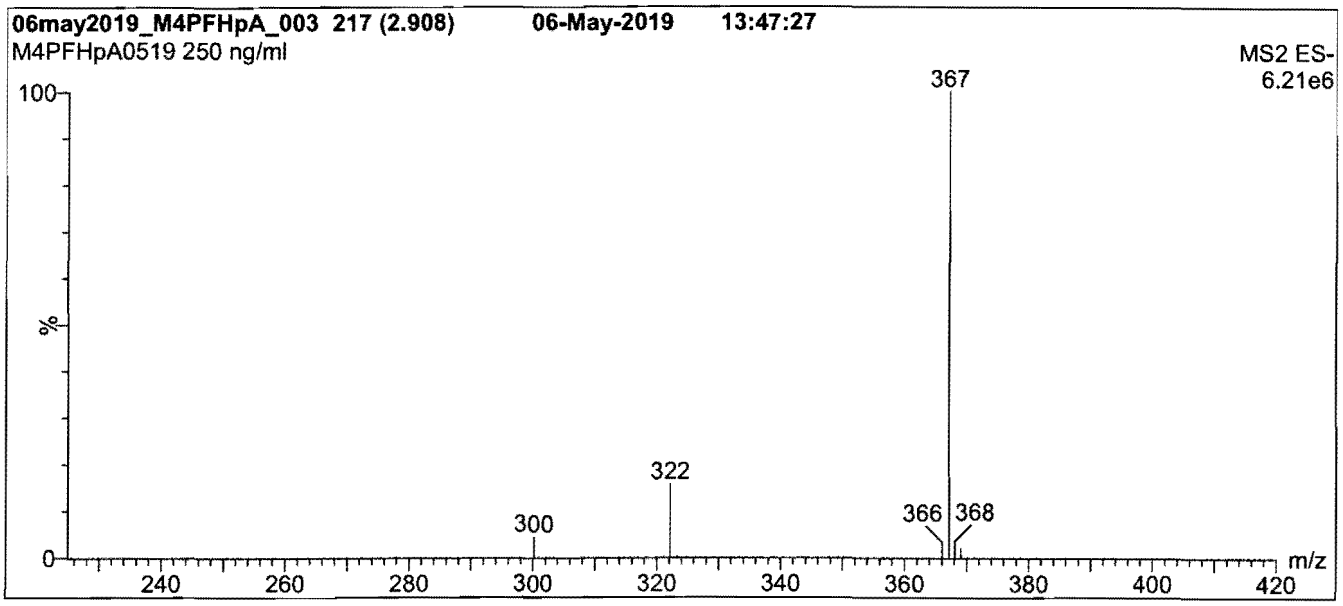
MS Parameters

Collision Gas (mbar) = 2.87e-3
Collision Energy (eV) = 8

19L0610

Figure 1: **M4PFHpA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0610

INTENDED USE:

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UNCERTAINTY:

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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.

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:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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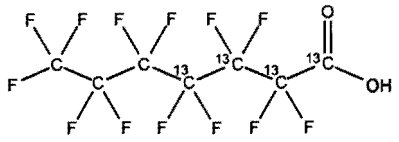
19L0610

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M4PFHpA	**LOT NUMBER:**	M4PFHpA0519
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 ($1,2,3,4\text{-}^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	05/06/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/06/2024		
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.

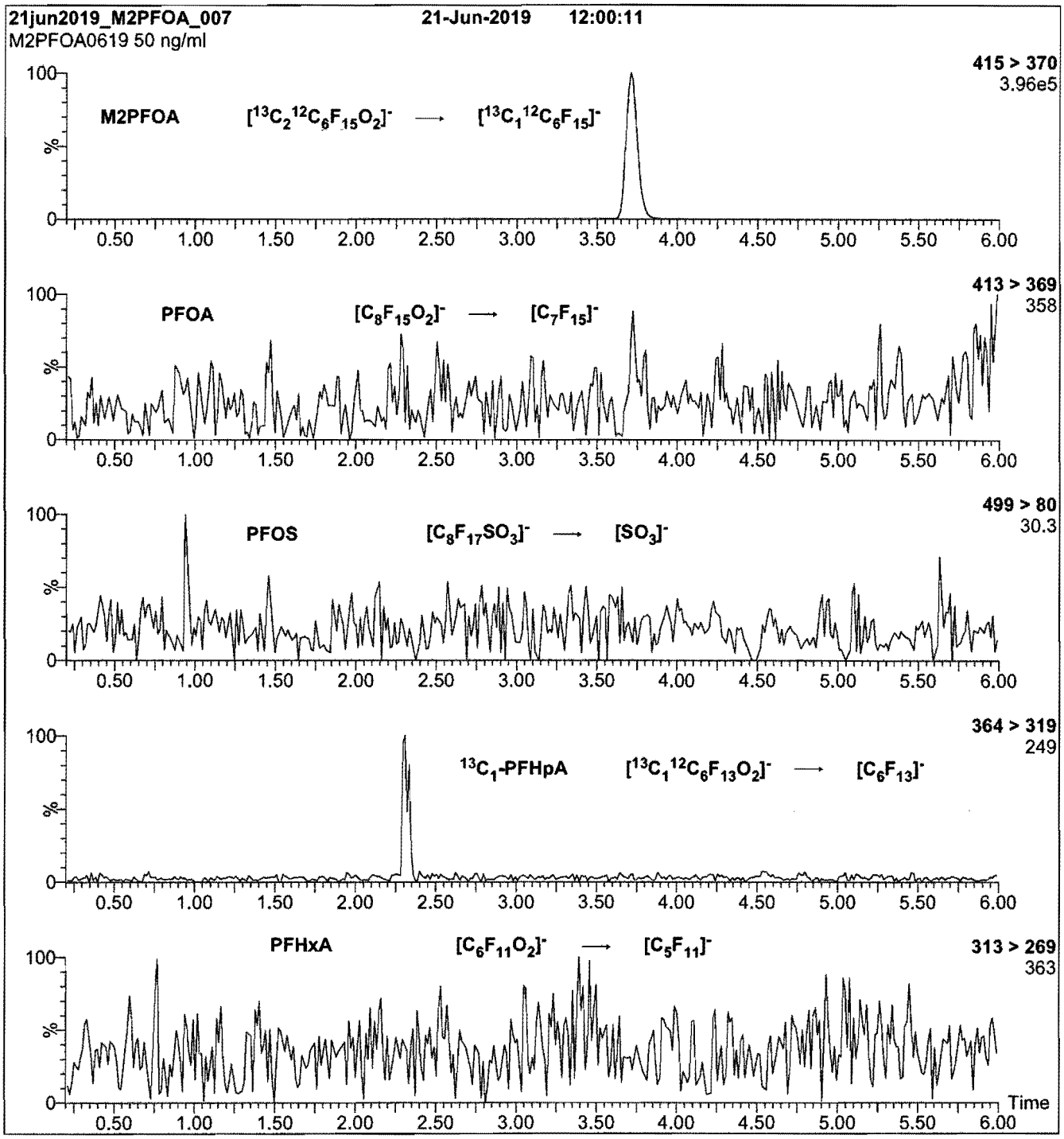
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/17/2019 (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

19L0611

Figure 2: **M2PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2PFOA)

Mobile phase: Same as Figure 1

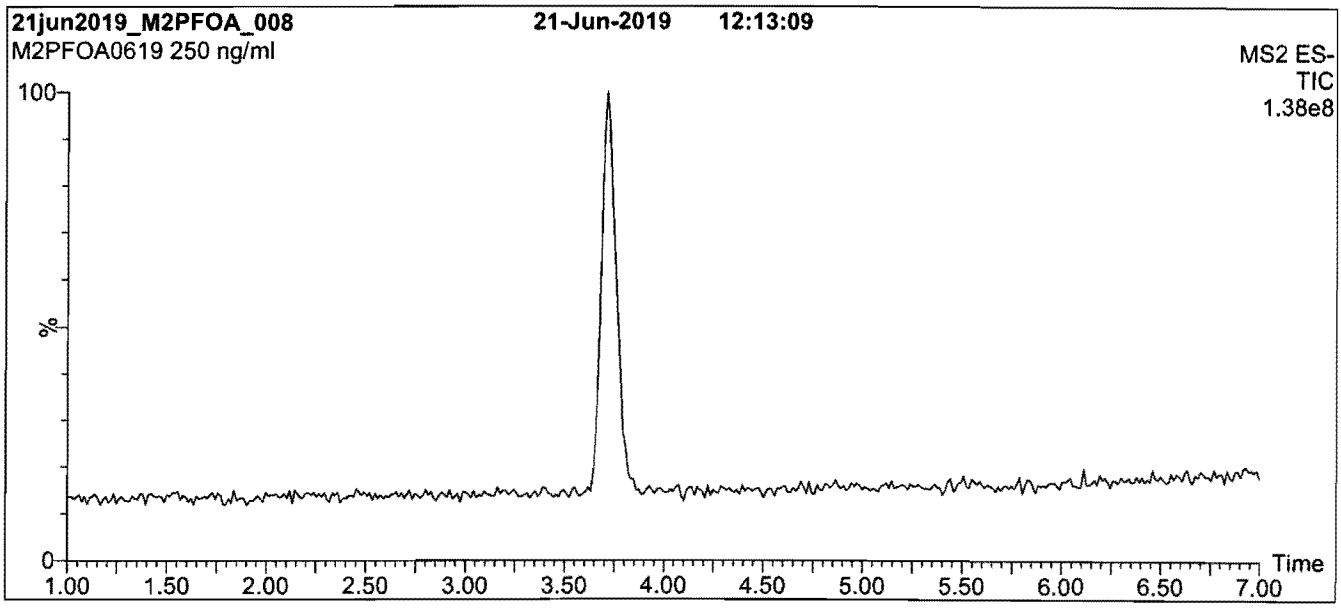
Flow: 300 µl/min

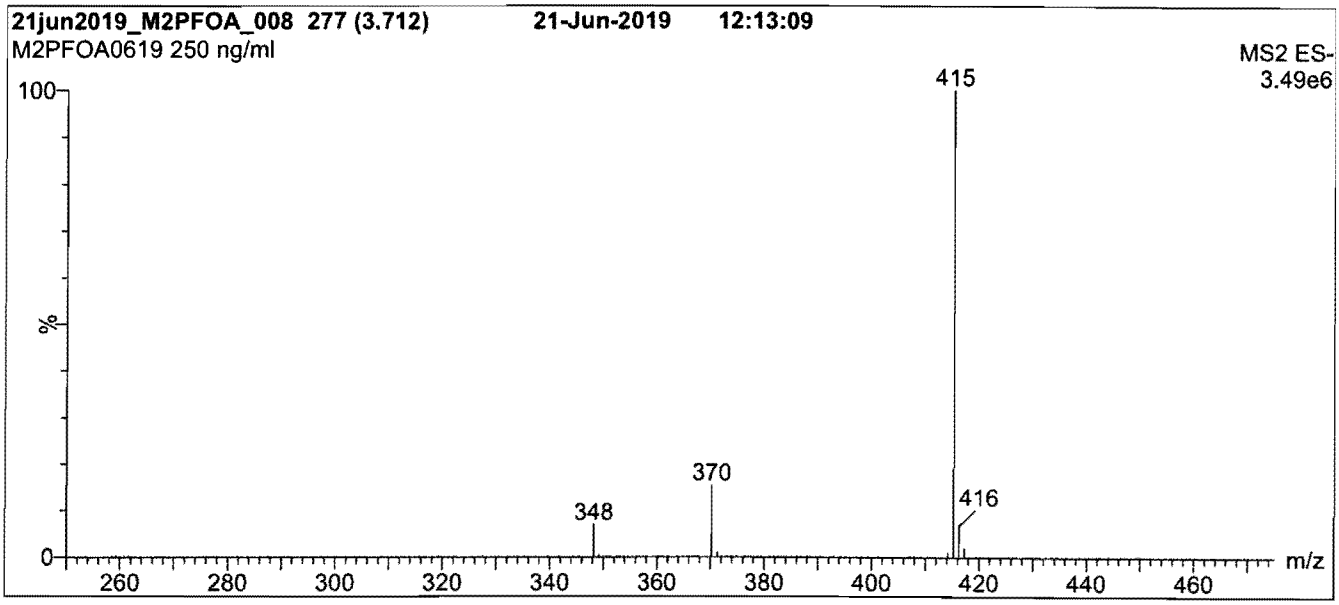
MS Parameters

Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 8

19L0611

Figure 1: **M2PFOA; LC/MS Data (TIC and Mass Spectrum)**





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Ramp to 80% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
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1920611

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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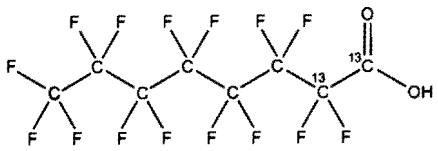
19L 0611

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M2PFOA	**LOT NUMBER:**	M2PFOA0619
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]octanoic acid		
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-$^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	06/21/2019		
EXPIRY DATE: (mm/dd/yyyy)	06/21/2024		
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-[$^{13}C_1$]heptanoic acid ($^{13}C_1$-PFHpA).

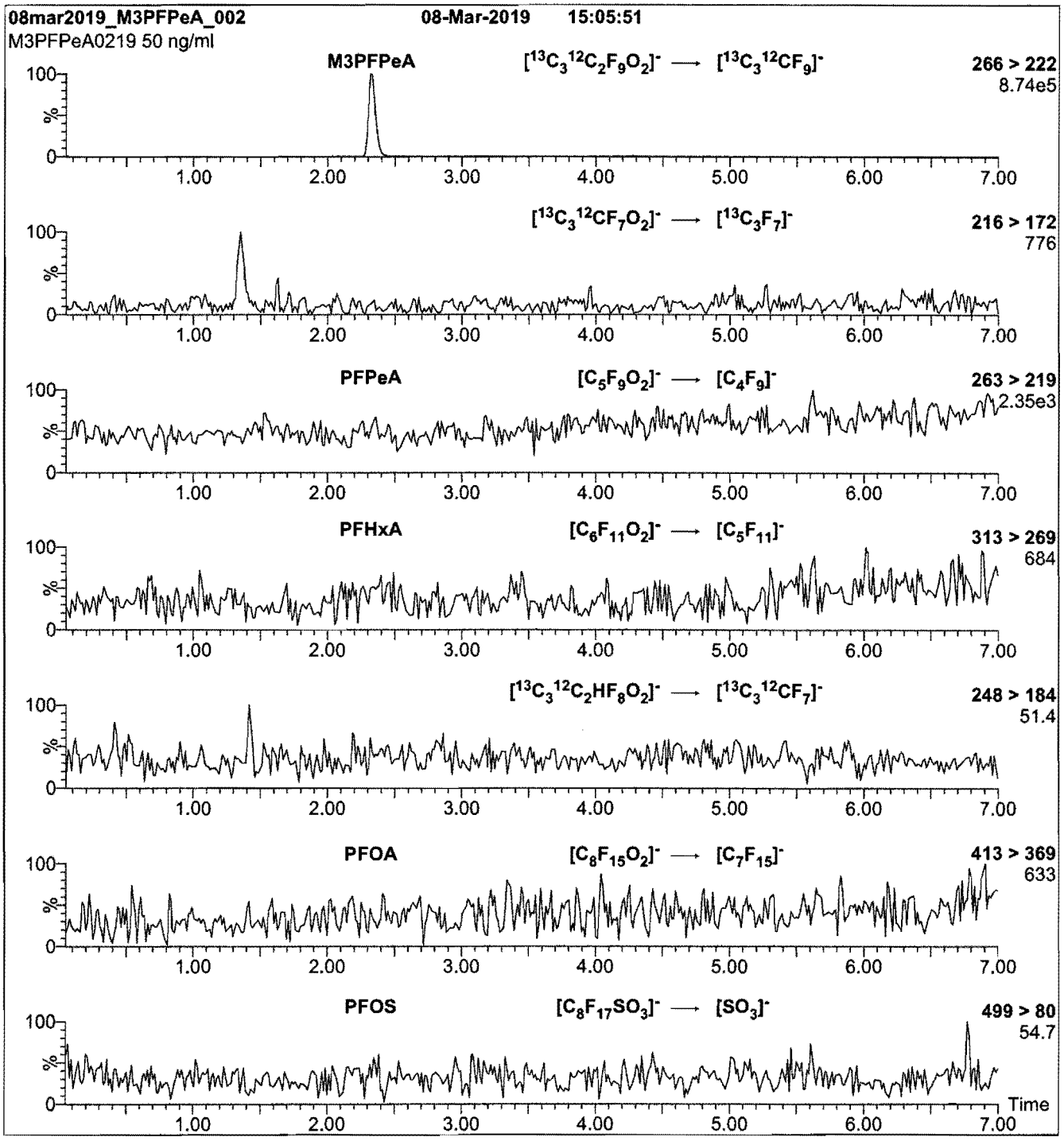
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/21/2019 (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

19L0612

Figure 2: **M3PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3PFPeA)

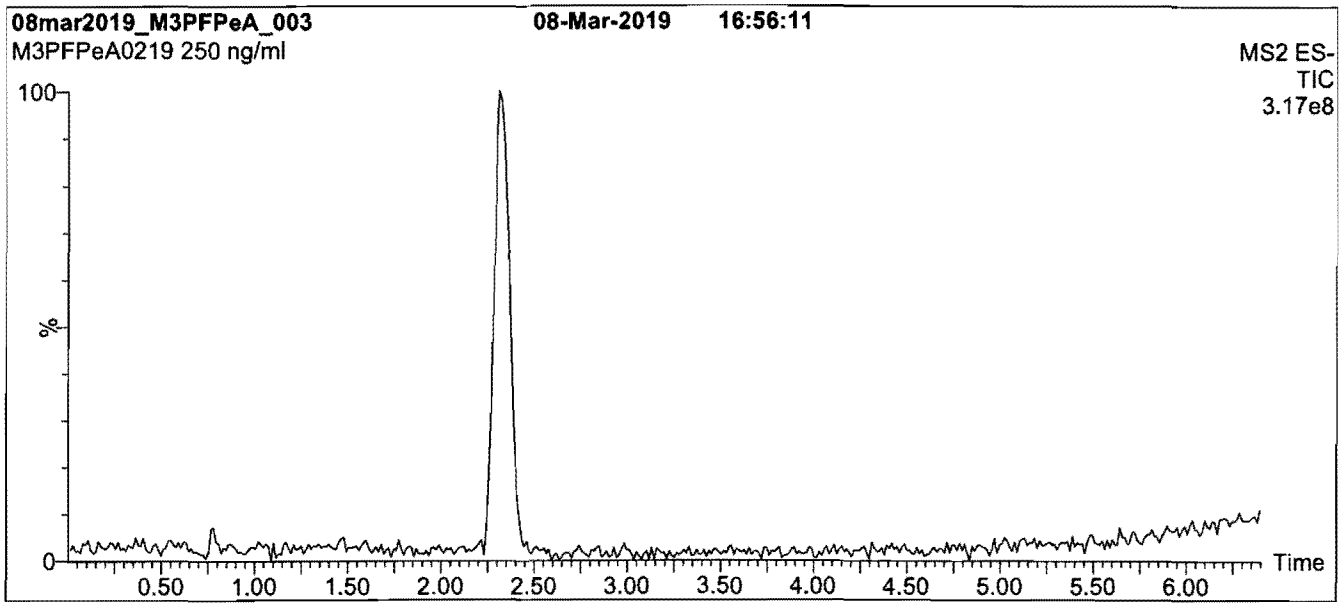
Mobile phase: Same as Figure 1

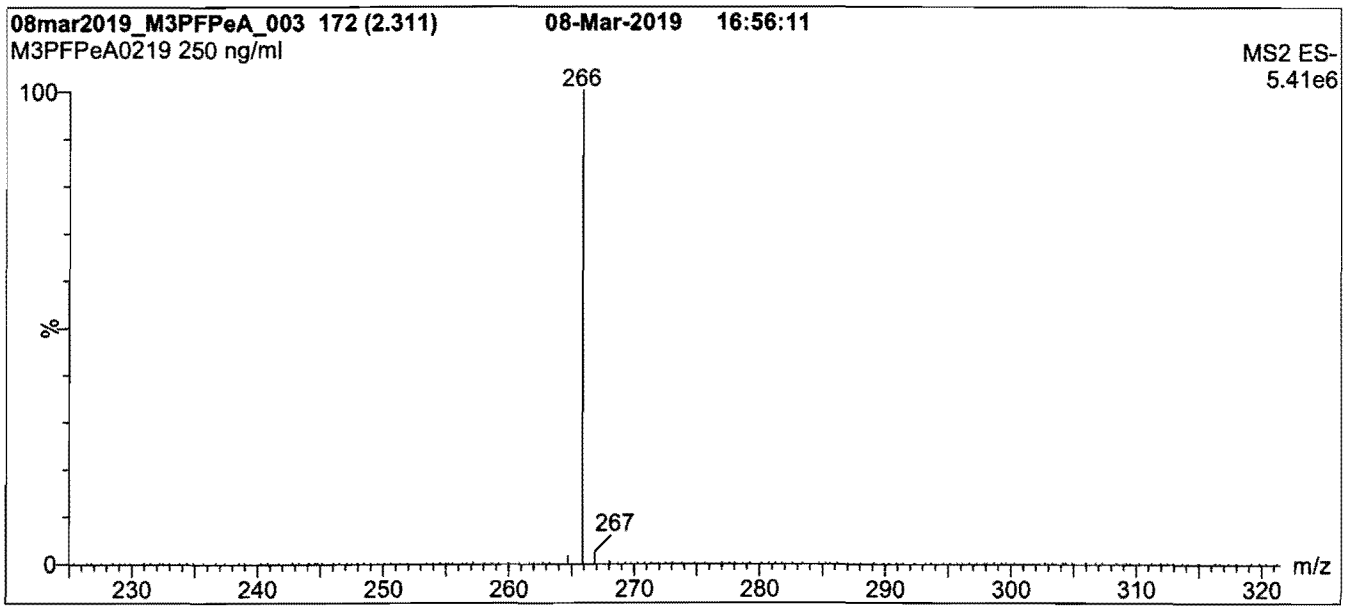
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.84e-3
Collision Energy (eV) = 8

Figure 1: **M3PFPeA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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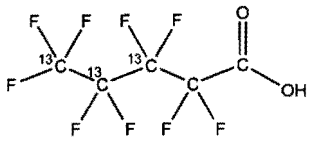
19L0612

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M3PFPeA	**LOT NUMBER:**	M3PFPeA0219
COMPOUND:	Perfluoro-n-[3,4,5-$^{13}C_3$]pentanoic acid		
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)	03/08/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/08/2024		
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.

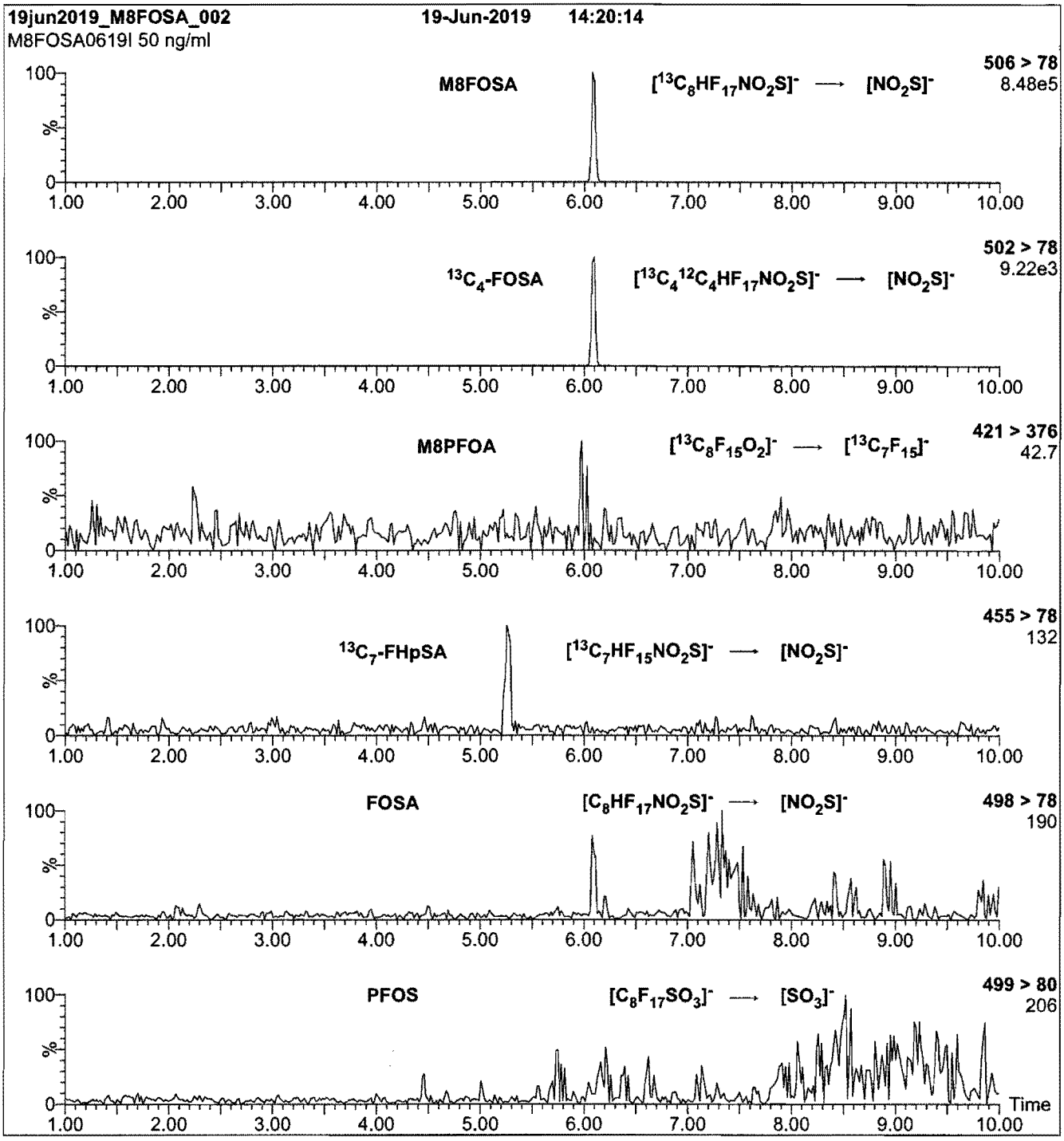
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/19/2019 (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

19L0613

Figure 2: **M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8FOSA-I)

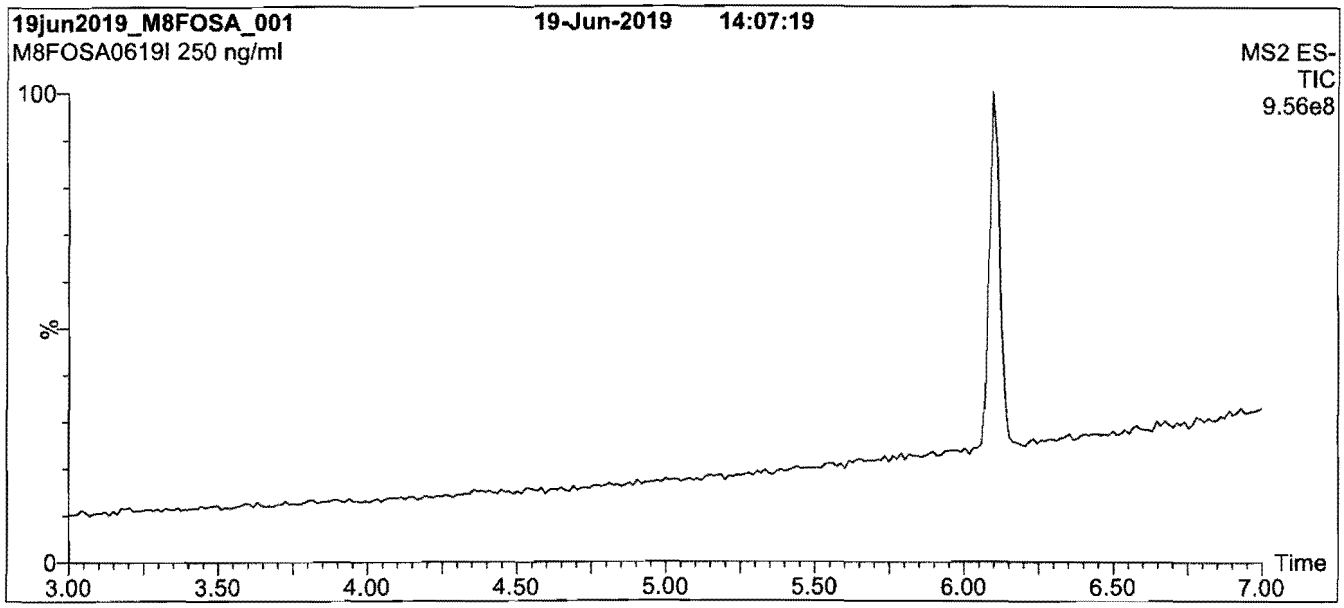
Mobile phase: Same as Figure 1

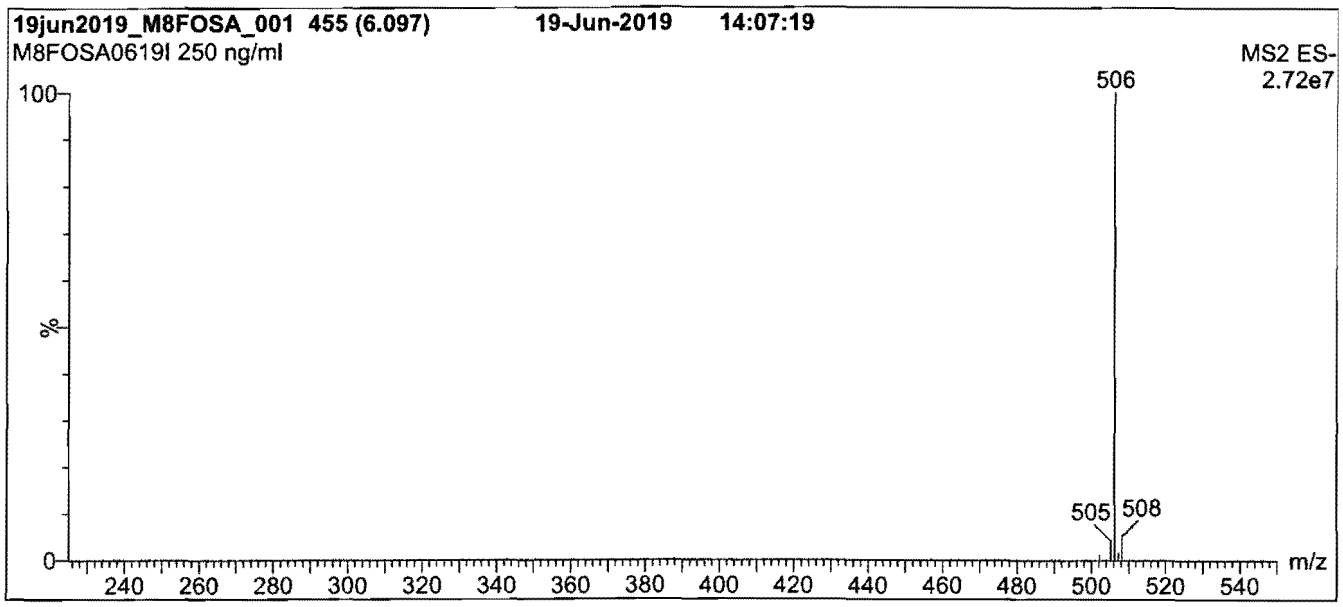
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.94e-3
Collision Energy (eV) = 30

Figure 1: **M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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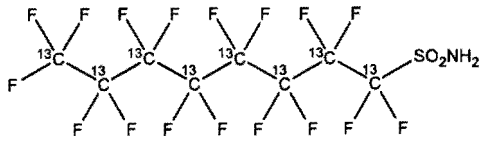
19L0613

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8FOSA-I	**LOT NUMBER:**	M8FOSA0619I
COMPOUND:	Perfluoro-1-[$^{13}C_8$]octanesulfonamide		
STRUCTURE:		**CAS #:**	1365803-60-6



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)	06/19/2019		
EXPIRY DATE: (mm/dd/yyyy)	06/19/2024		
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 ~ 1.2% of perfluoro-1-[$^{13}C_4$]octanesulfonamide and ~ 0.02% of perfluoro-1-[$^{13}C_7$]heptanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/21/2019 (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

1910614

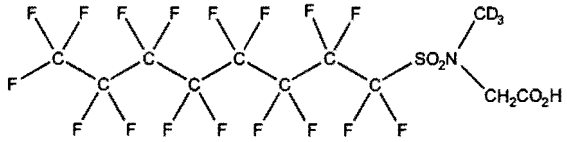
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: d3-N-MeFOSAA **LOT NUMBER:** d3NMeFOSAA0719

COMPOUND: N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

STRUCTURE: **CAS #:** 1400690-70-1



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)	07/24/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/24/2024		
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:** 07/26/2019 (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

19LC064

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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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:

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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:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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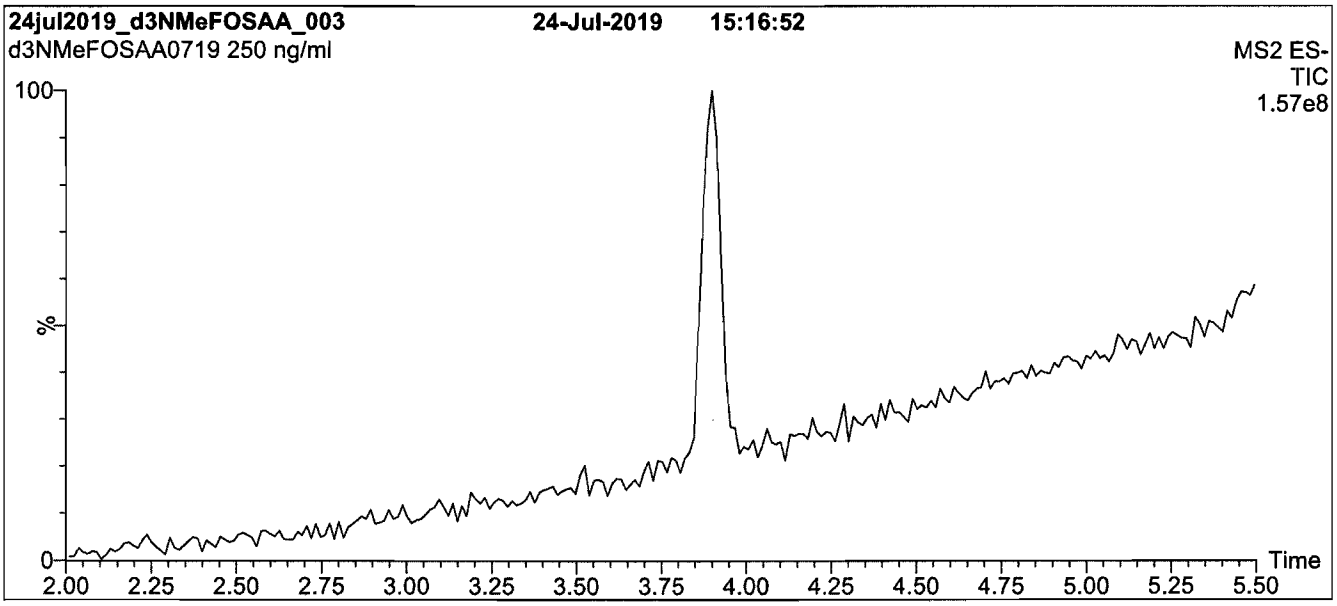
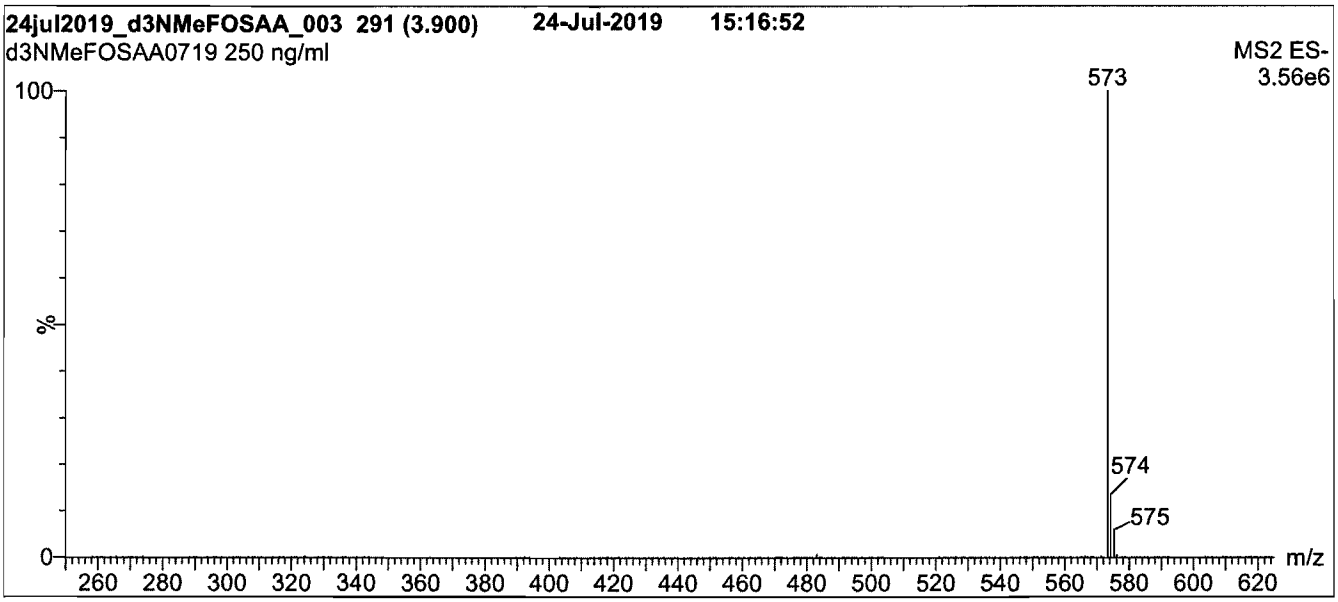
19L0614

Figure 1: **d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

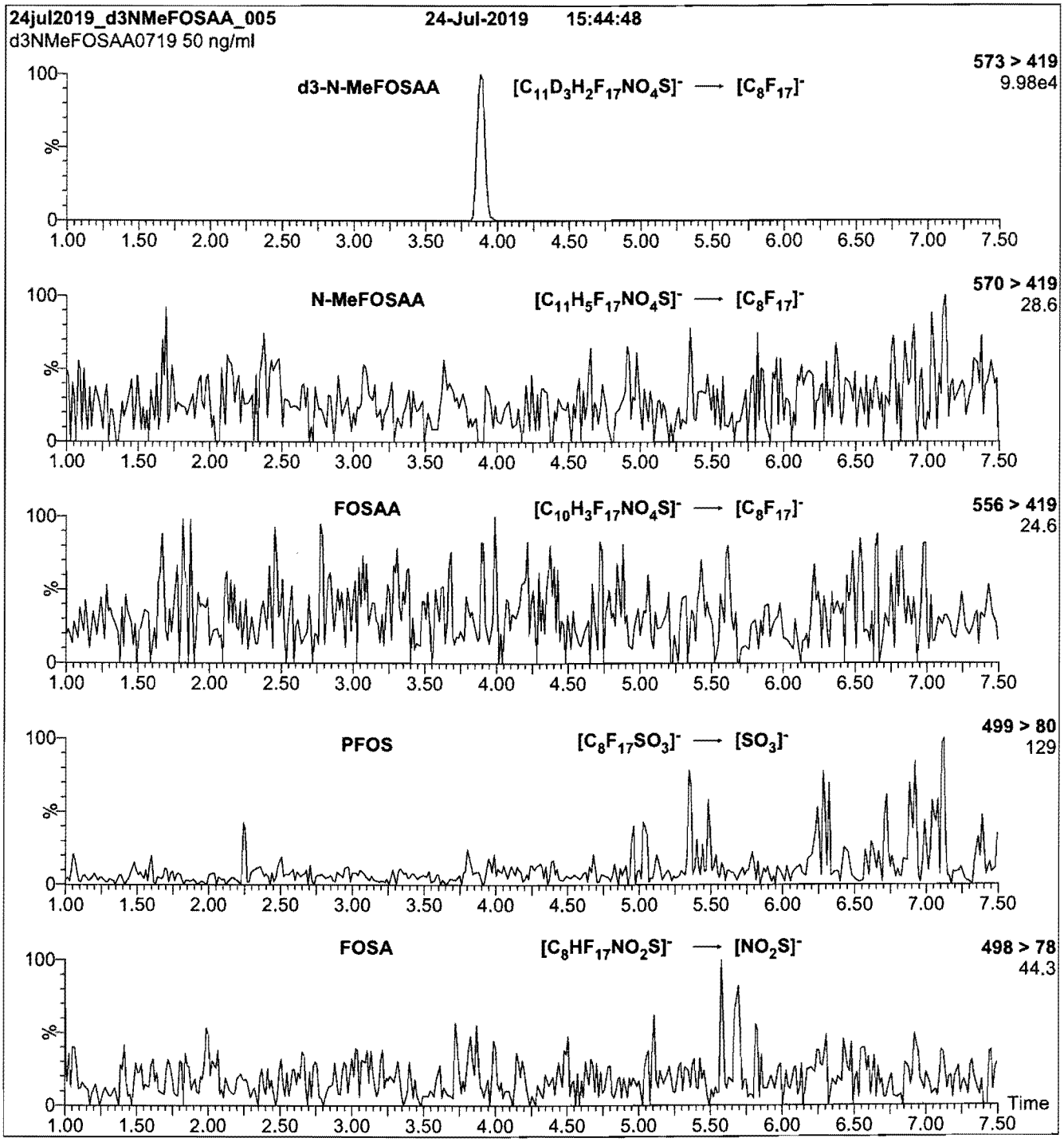
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Figure 2: **d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d3-N-MeFOSAA)

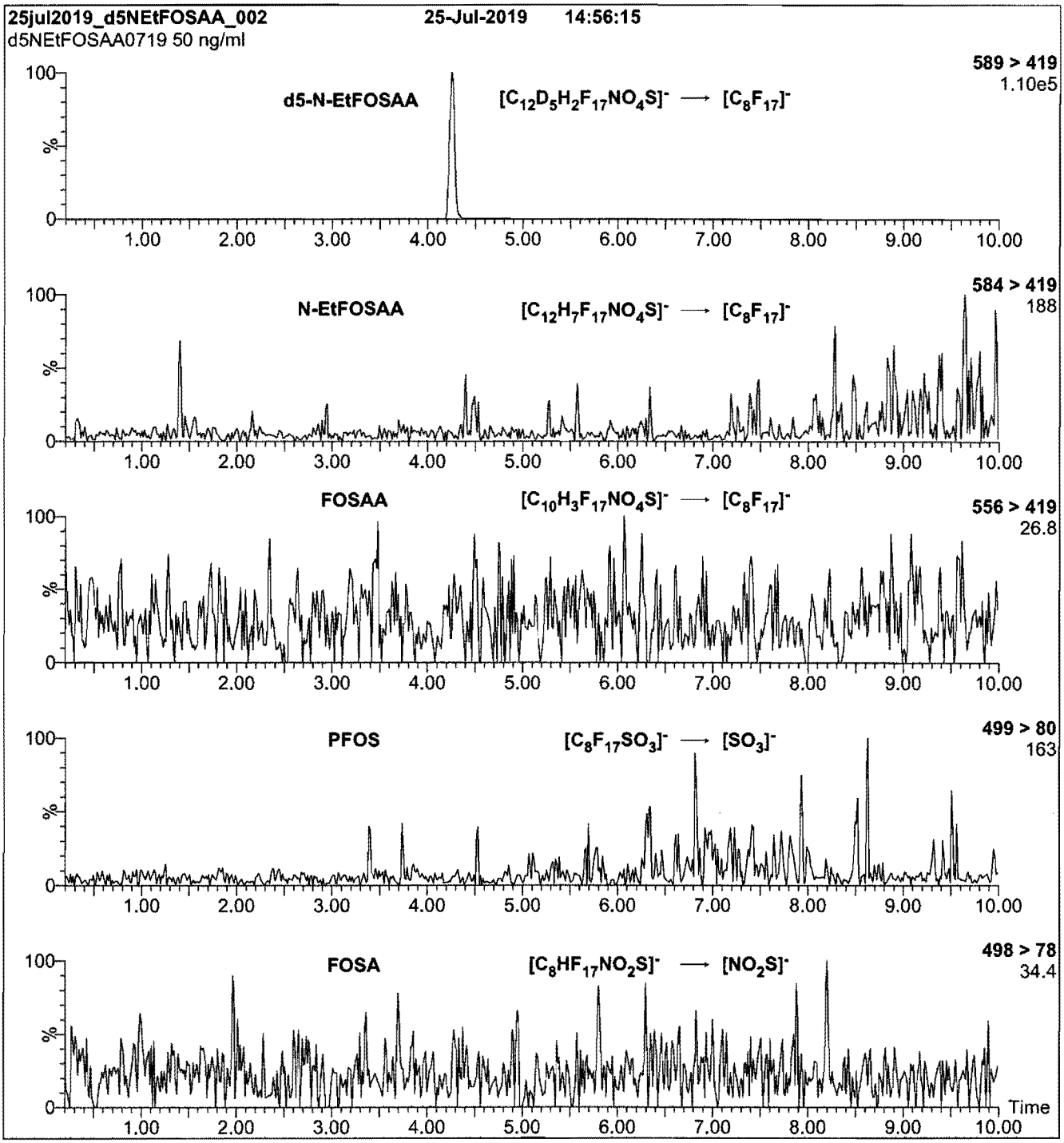
Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 18

Figure 2: **d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (d5-N-EtFOSAA)

Mobile phase: Same as Figure 1

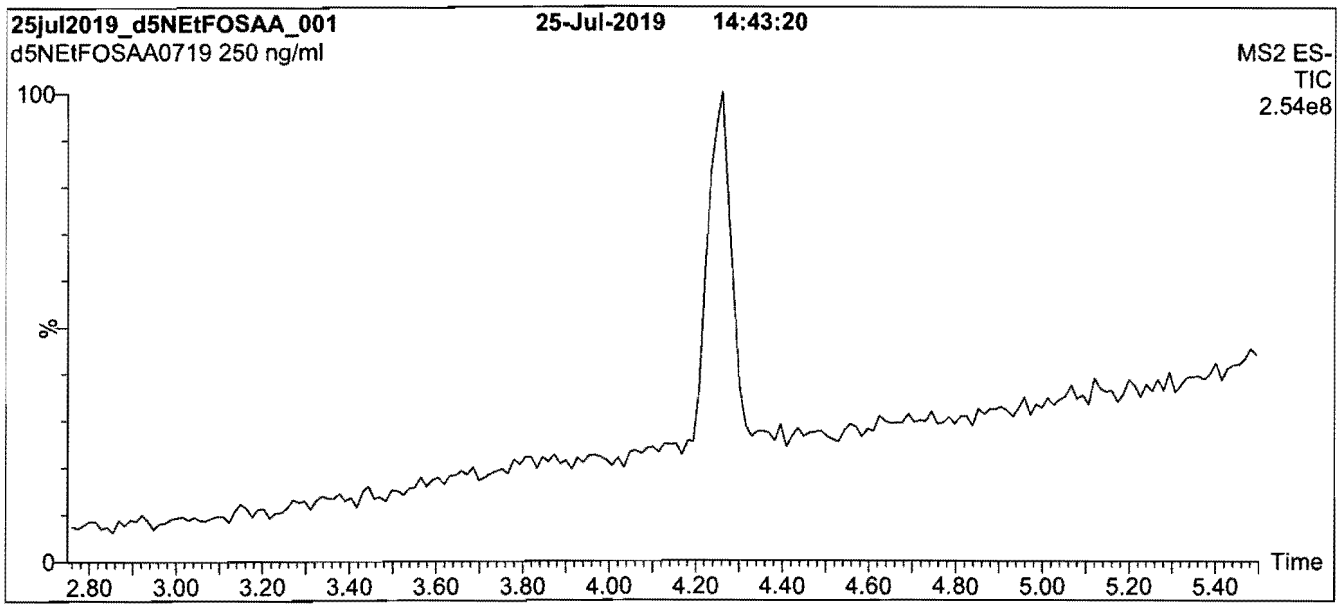
Flow: 300 µl/min

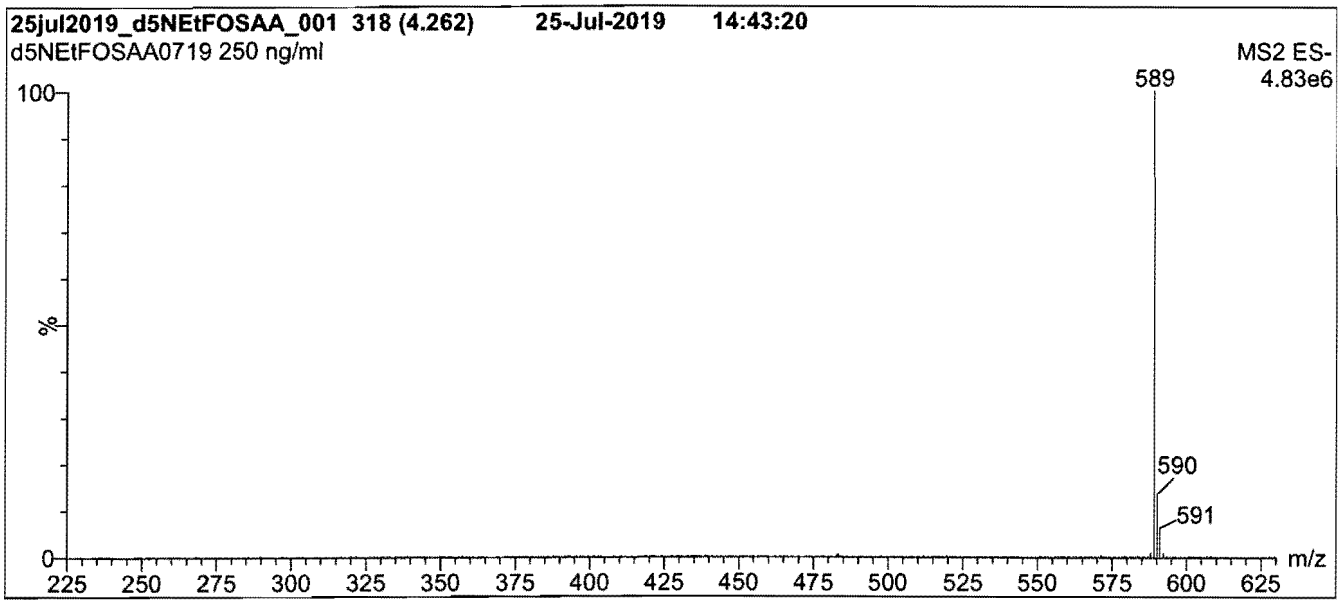
MS Parameters

Collision Gas (mbar) = 3.29e-3
Collision Energy (eV) = 18

19L0615

Figure 1: **d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 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
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0615

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

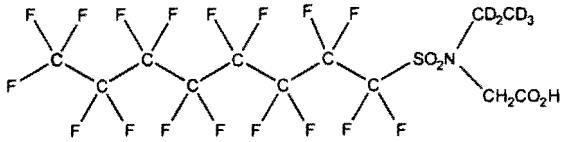
1910615

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: d5-N-EtFOSAA **LOT NUMBER:** d5NEtFOSAA0719
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) 07/25/2019
EXPIRY DATE: (mm/dd/yyyy) 07/25/2024
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:

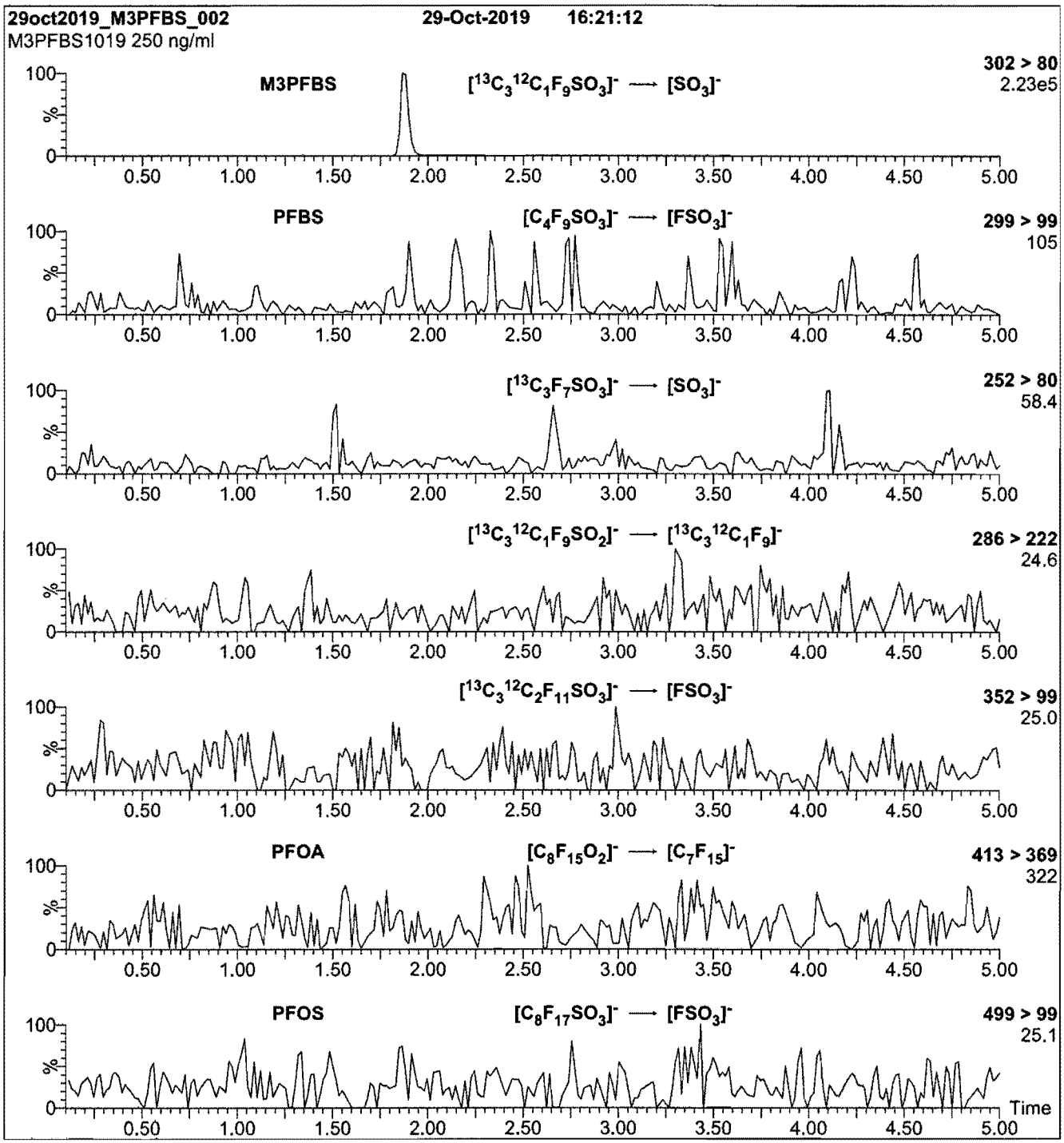
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/26/2019 (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

Figure 2: **M3PFBS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3PFBS)

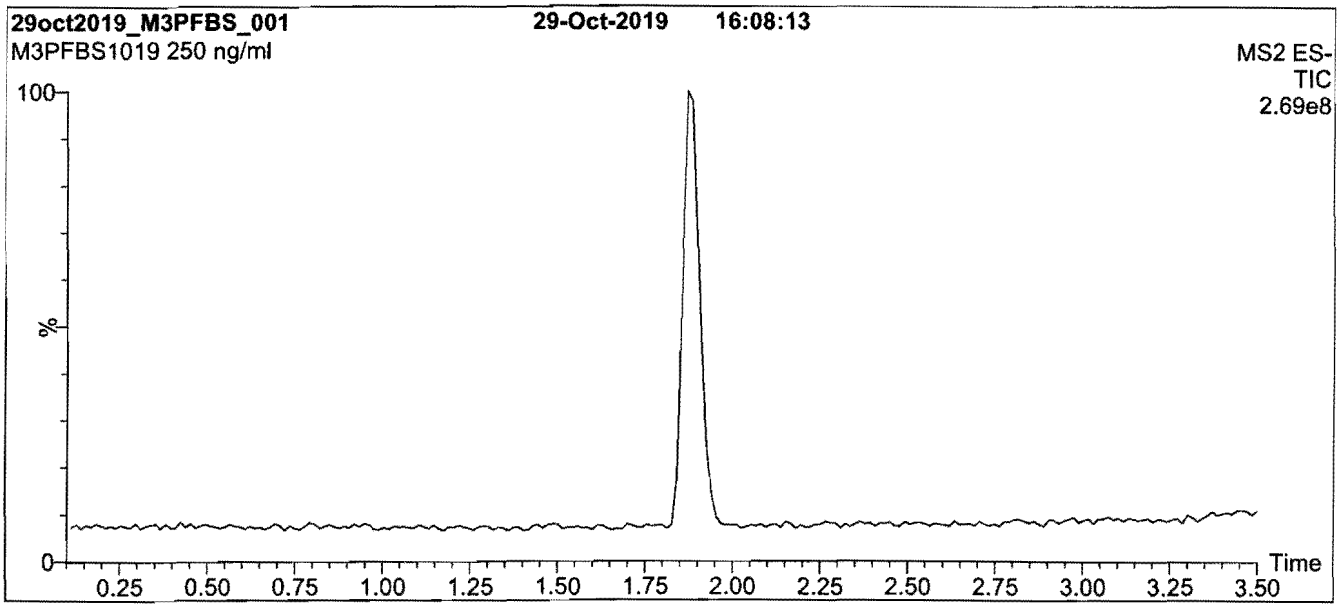
Mobile phase: Same as Figure 1

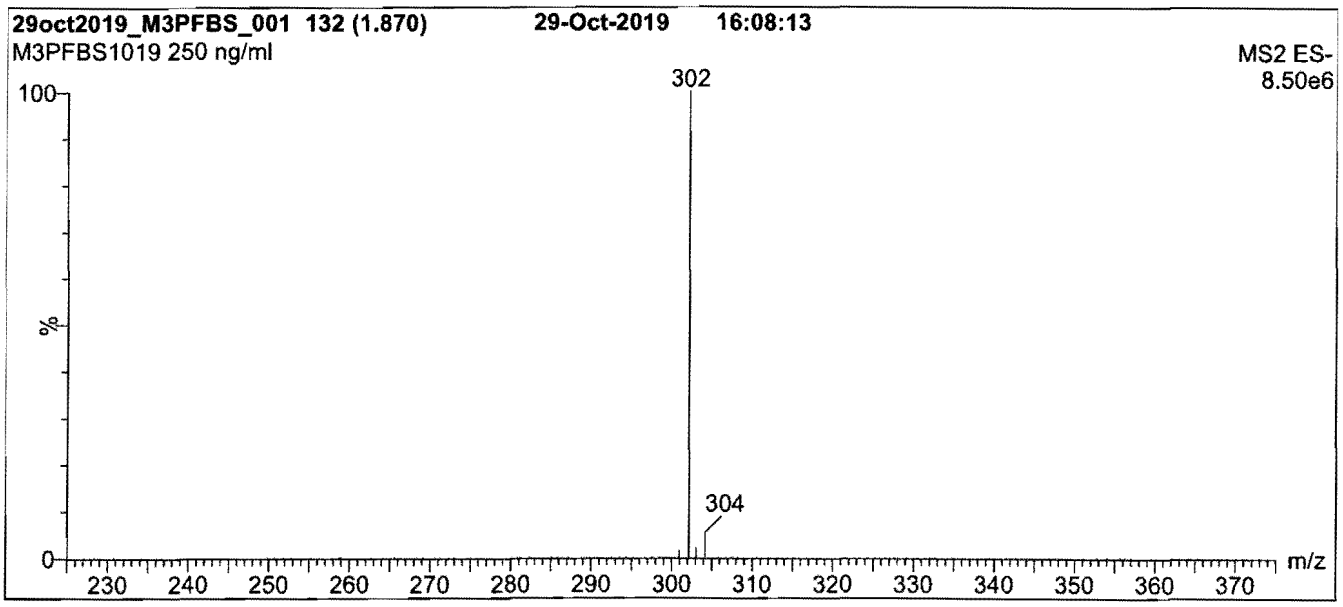
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.57e-3
Collision Energy (eV) = 30

Figure 1: **M3PFBS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0616

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

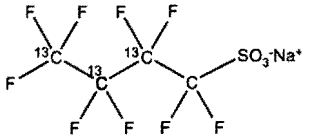
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0616

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M3PFBS	**LOT NUMBER:**	M3PFBS1019
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)	10/29/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/29/2024		
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:

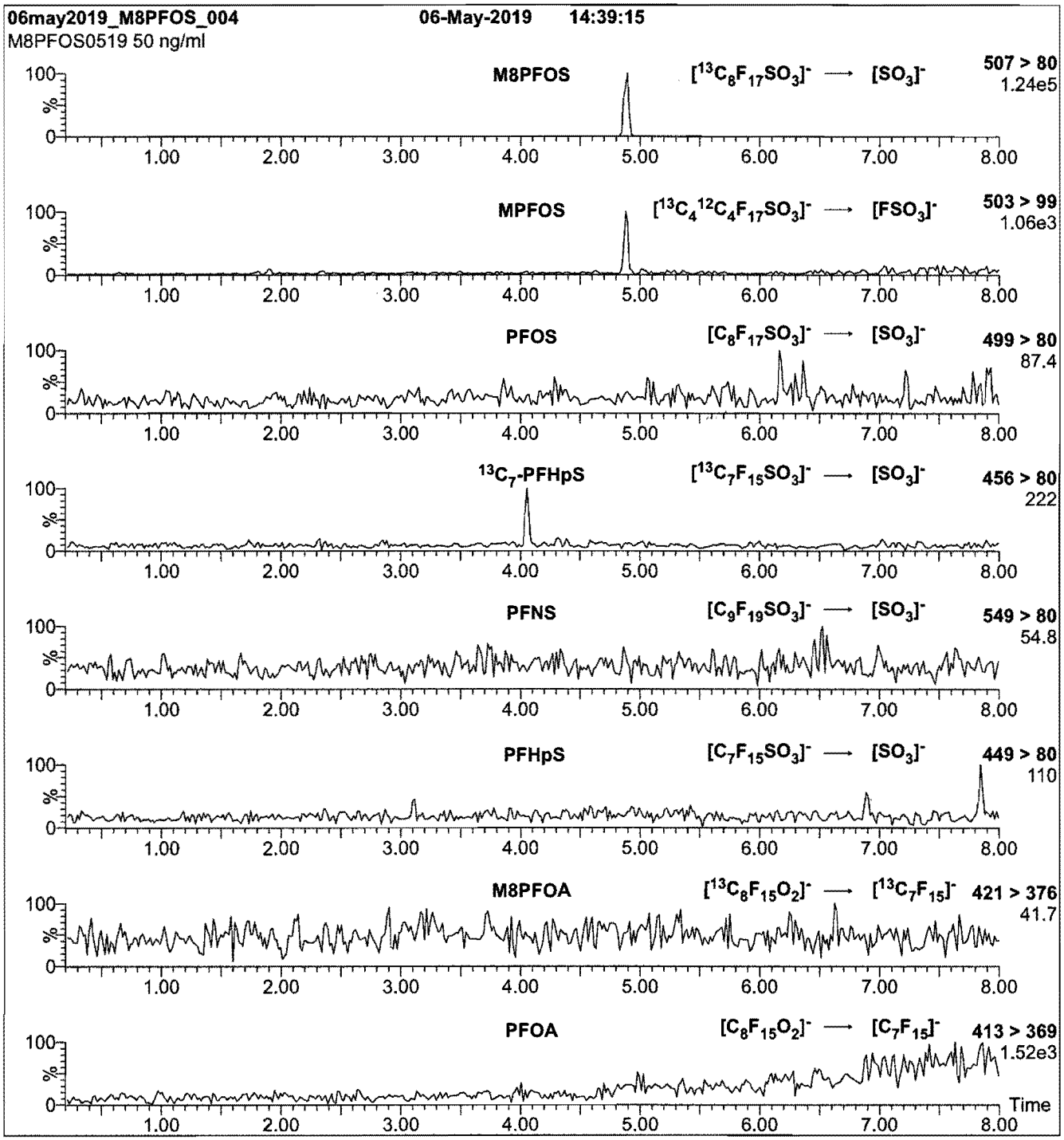
- See page 2 for further details.
- Contains < 0.1% of perfluoro-1-butanesulfonate.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/08/2019 (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

Figure 2: **M8PFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8PFOS)

Mobile phase: Same as Figure 1

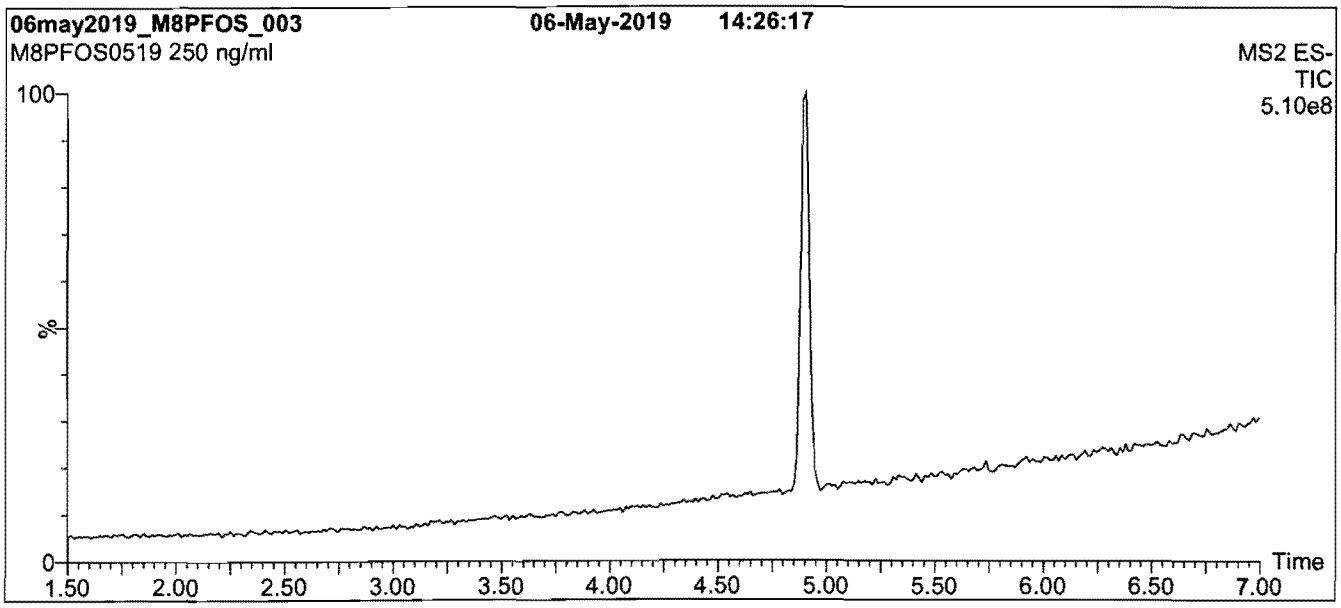
Flow: 300 µl/min

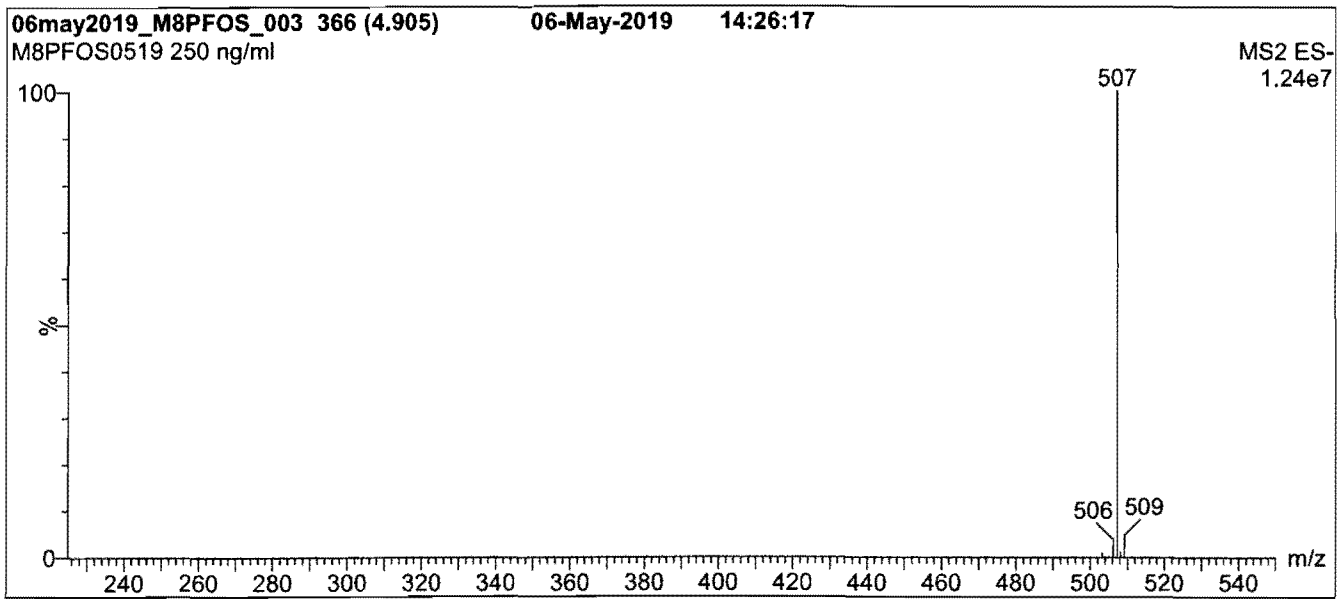
MS Parameters

Collision Gas (mbar) = 2.85e-3
Collision Energy (eV) = 42

19L0617

Figure 1: **M8PFOS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 2 min
before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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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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. A1226

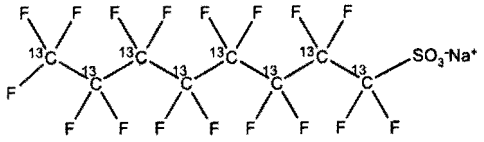
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8PFOS	**LOT NUMBER:**	M8PFOS0519
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)	05/06/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/06/2024		
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:

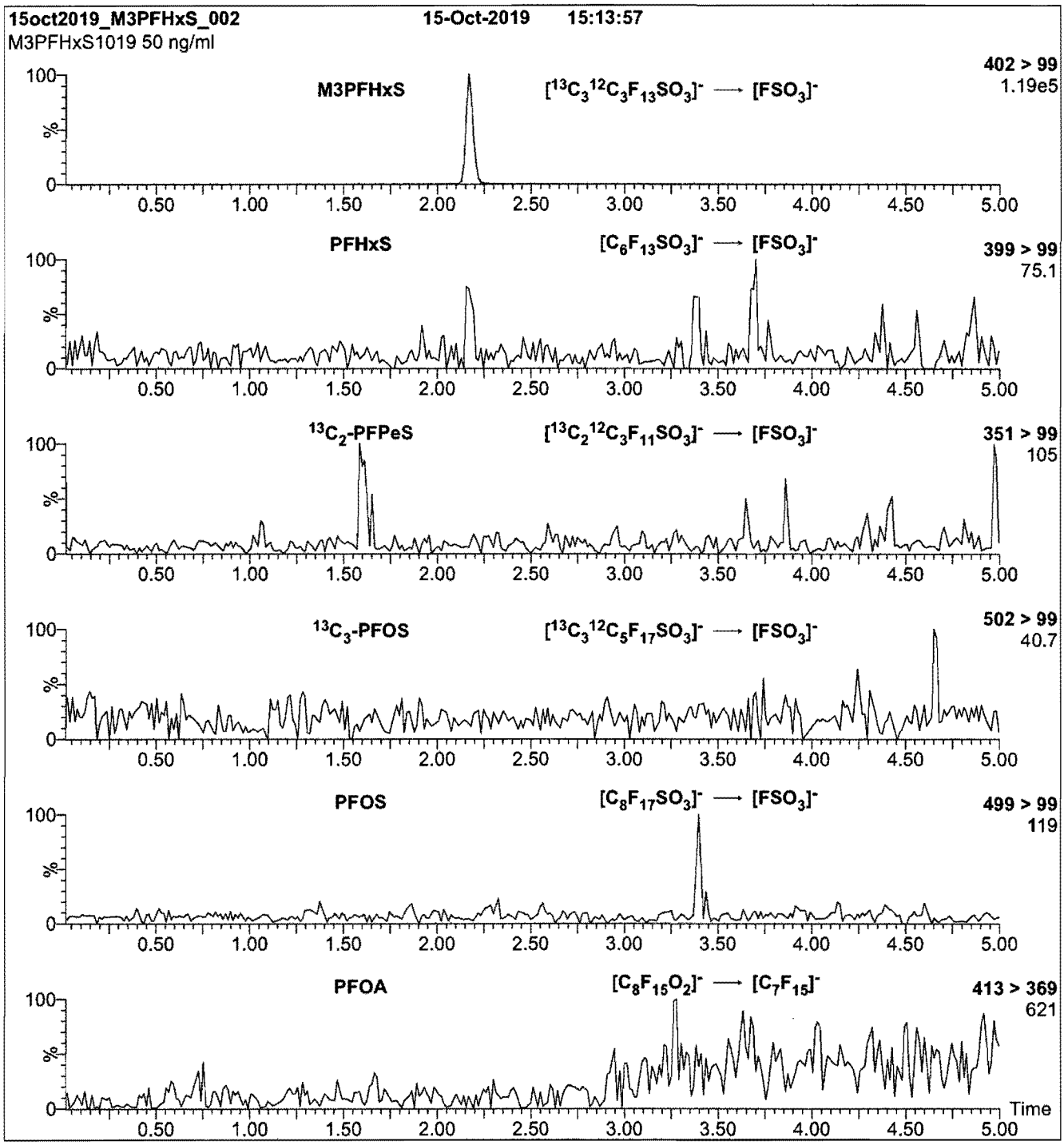
- See page 2 for further details.
- Contains ~ 0.2% of sodium perfluoro-1-[$^{13}C_7$]heptanesulfonate ($^{13}C_7$-PFHpS) and ~ 1.0% of sodium perfluoro-1-[$^{13}C_4$]octanesulfonate (MPFOS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/23/2019 (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

Figure 2: **M3PFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3PFHxS)

Mobile phase: Same as Figure 1

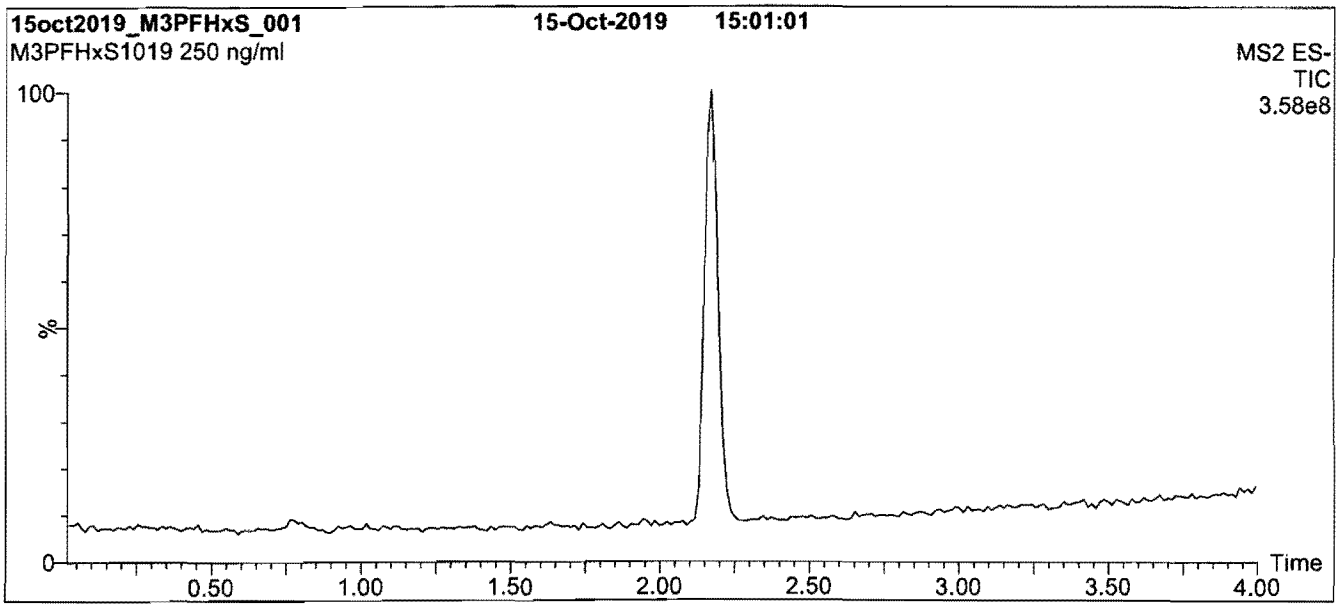
Flow: 300 µl/min

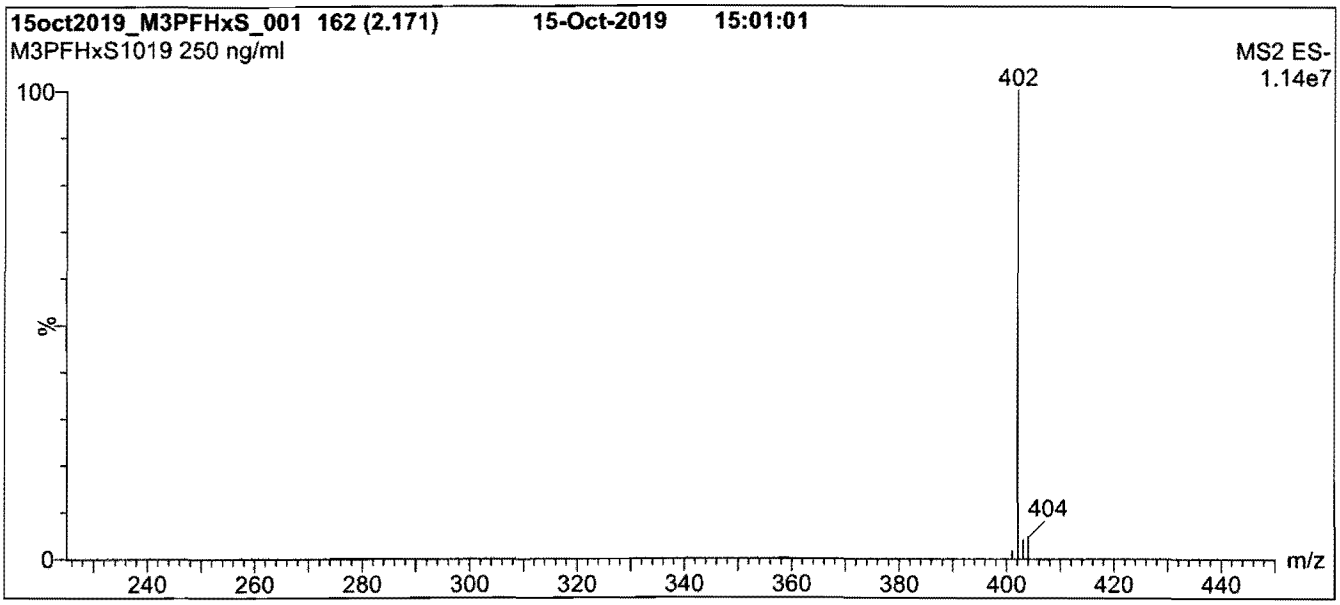
MS Parameters

Collision Gas (mbar) = 3.91e-3
Collision Energy (eV) = 32

19L0618

Figure 1: **M3PFHxS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

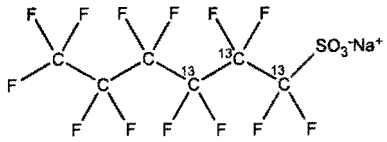
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0618

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M3PFHxS	**LOT NUMBER:**	M3PFHxS1019
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 ($1,2,3-^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	10/15/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/15/2024		
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 ~ 0.1% perfluoro-1-[1,2-$^{13}C_2$]pentanesulfonate, ~ 0.1% perfluoro-1-octanesulfonate, and ~ 0.05% of perfluoro-1-hexanesulfonate.

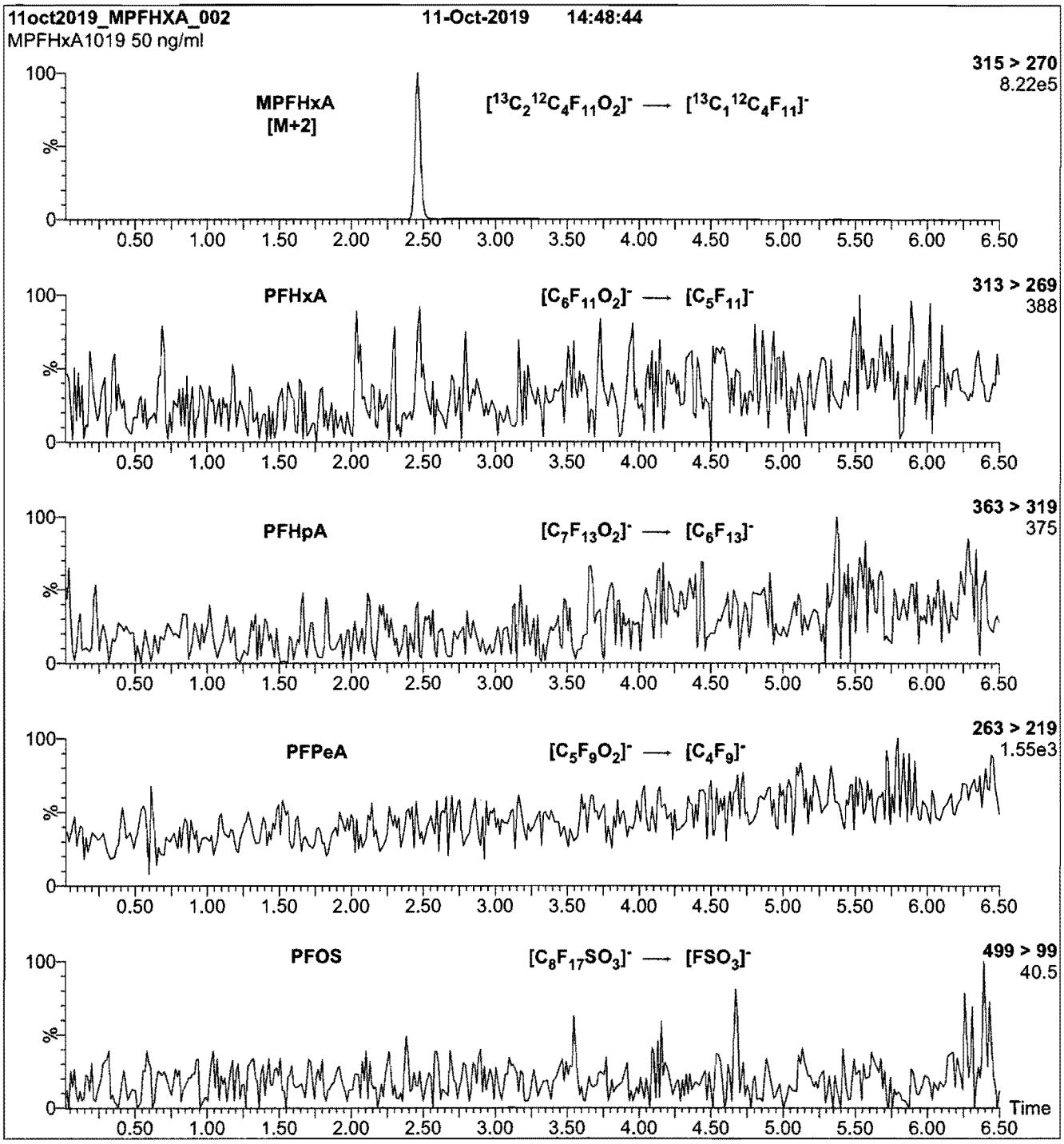
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/16/2019 (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

19L0619

Figure 2: **MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFHxA)

Mobile phase: Same as Figure 1

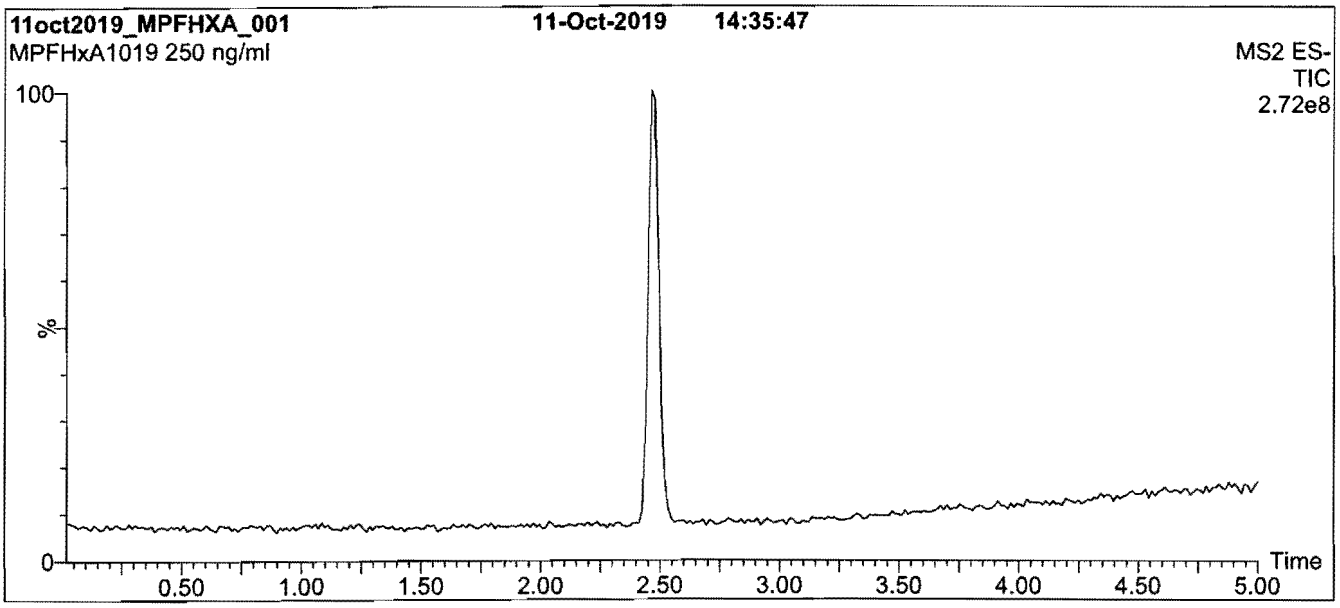
Flow: 300 µl/min

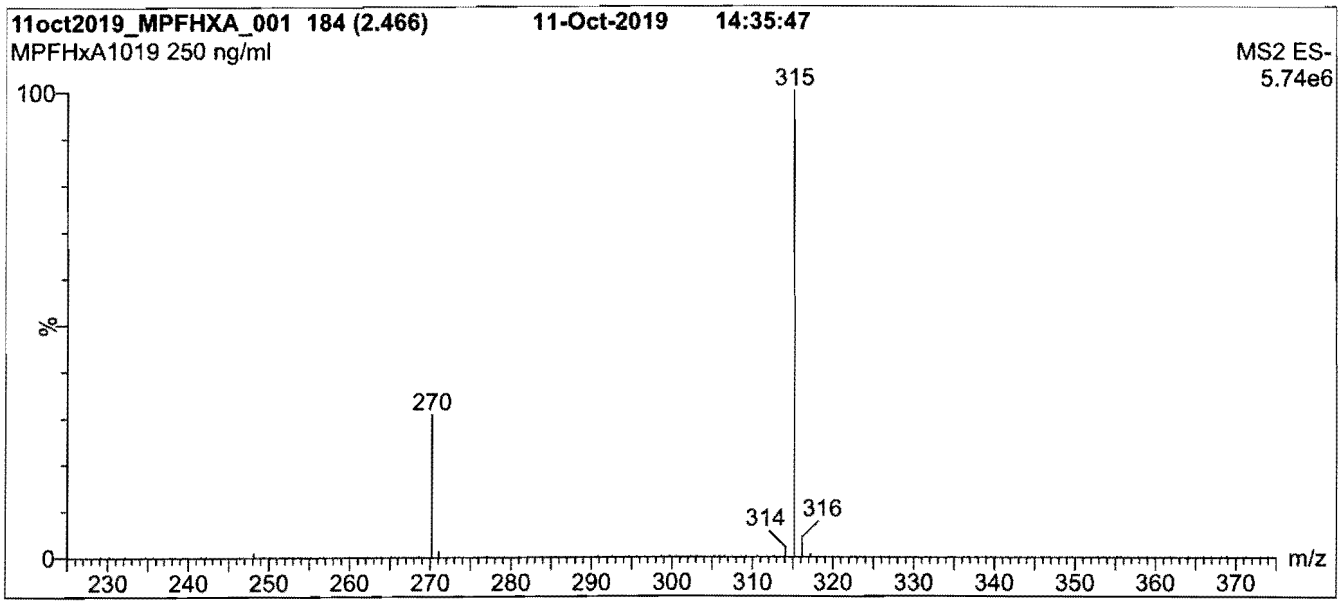
MS Parameters

Collision Gas (mbar) = 3.80e-3
Collision Energy (eV) = 8

19L0619

Figure 1: **MPFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

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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:

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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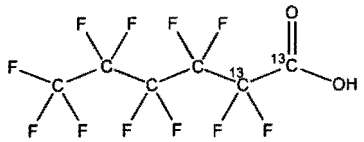
19L0619

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFHxA	**LOT NUMBER:**	MPFHxA1019
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 ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	10/11/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/11/2024		
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.

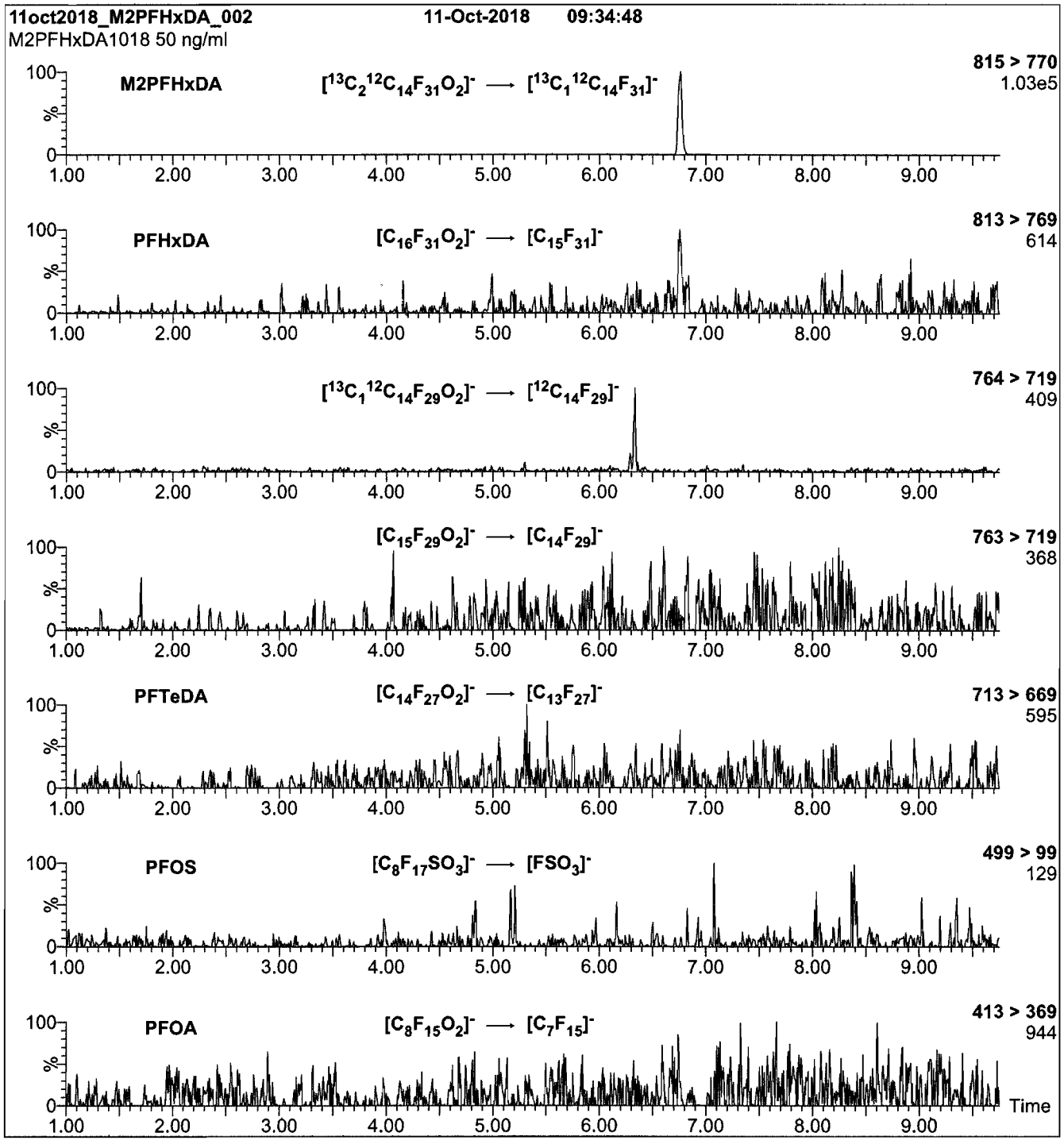
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/22/2019 (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

19L0620

Figure 2: **M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M2PFHxDA)

Mobile phase: Same as Figure 1

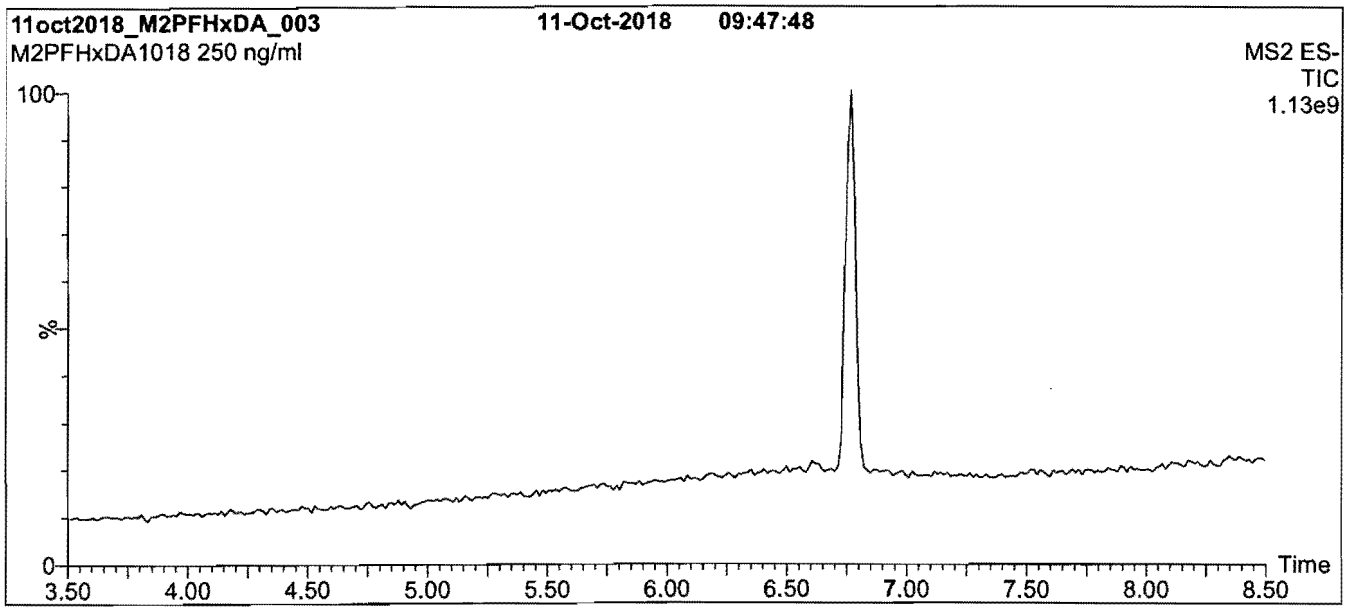
Flow: 300 µl/min

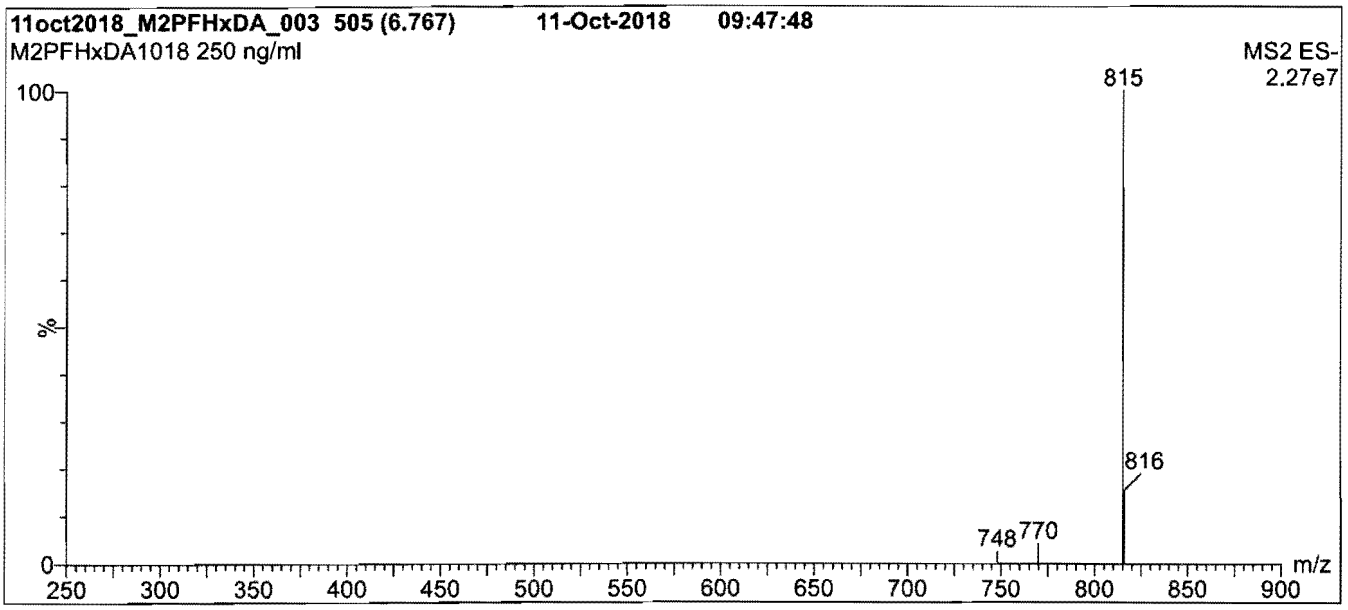
MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 15

19L0620

Figure 1: **M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 1200 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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where x is expressed as a relative standard uncertainty of the individual parameter.

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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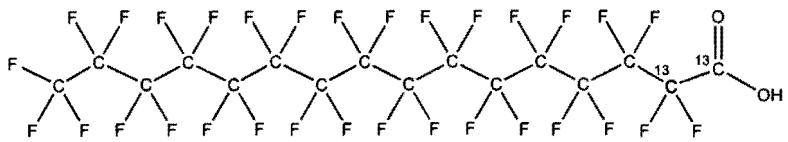
19L0620

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M2PFHxDA	**LOT NUMBER:**	M2PFHxDA1018
COMPOUND:	Perfluoro-n-[1,2-$^{13}C_2$]hexadecanoic acid		
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-$^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	10/11/2018		
EXPIRY DATE: (mm/dd/yyyy)	10/11/2023		
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:

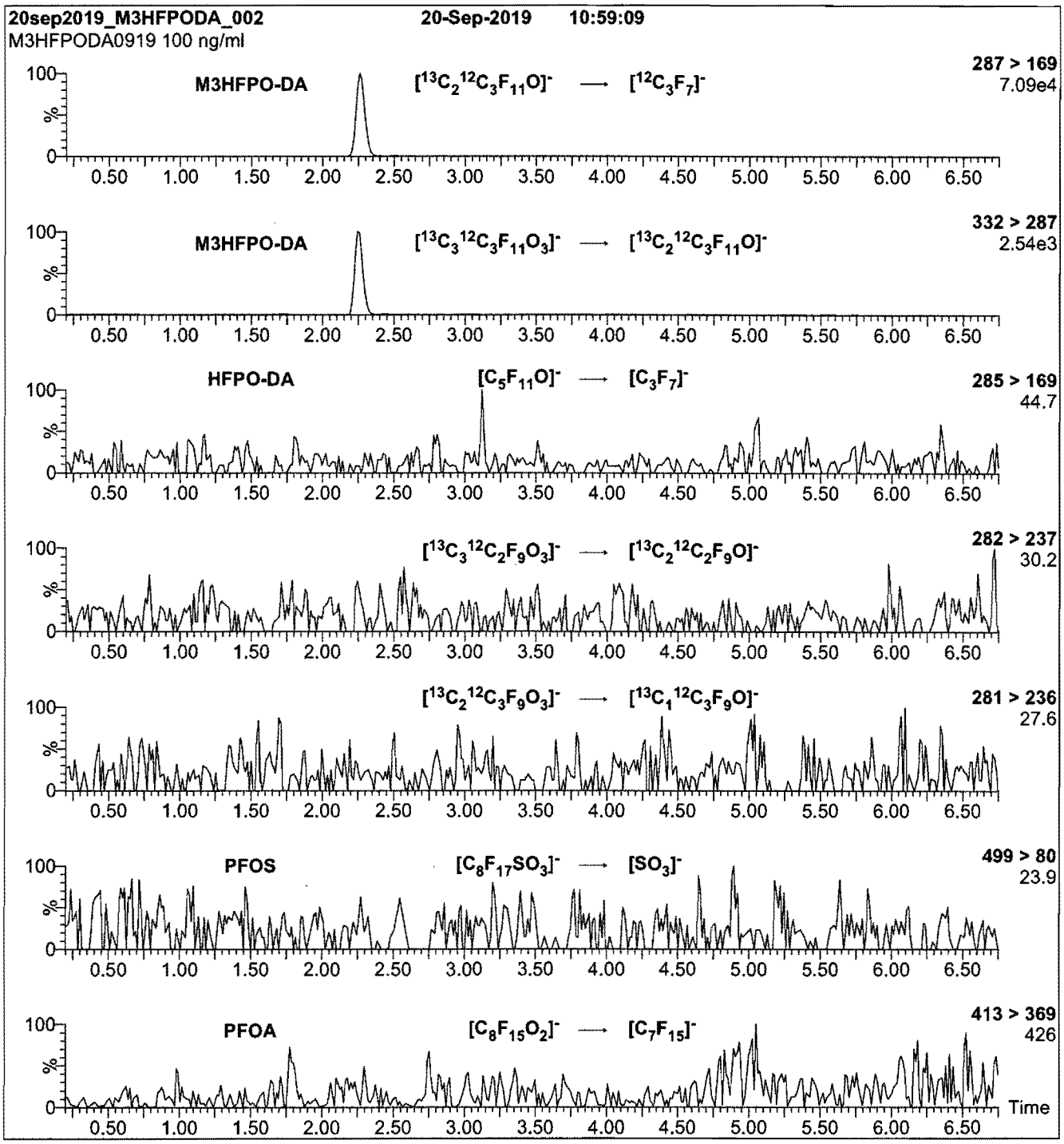
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of native perfluoro-n-hexadecanoic acid and ~ 0.2% of perfluoro-n-[$^{13}C_1$]pentadecanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/19/2018 (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

Figure 2: **M3HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M3HFPO-DA)

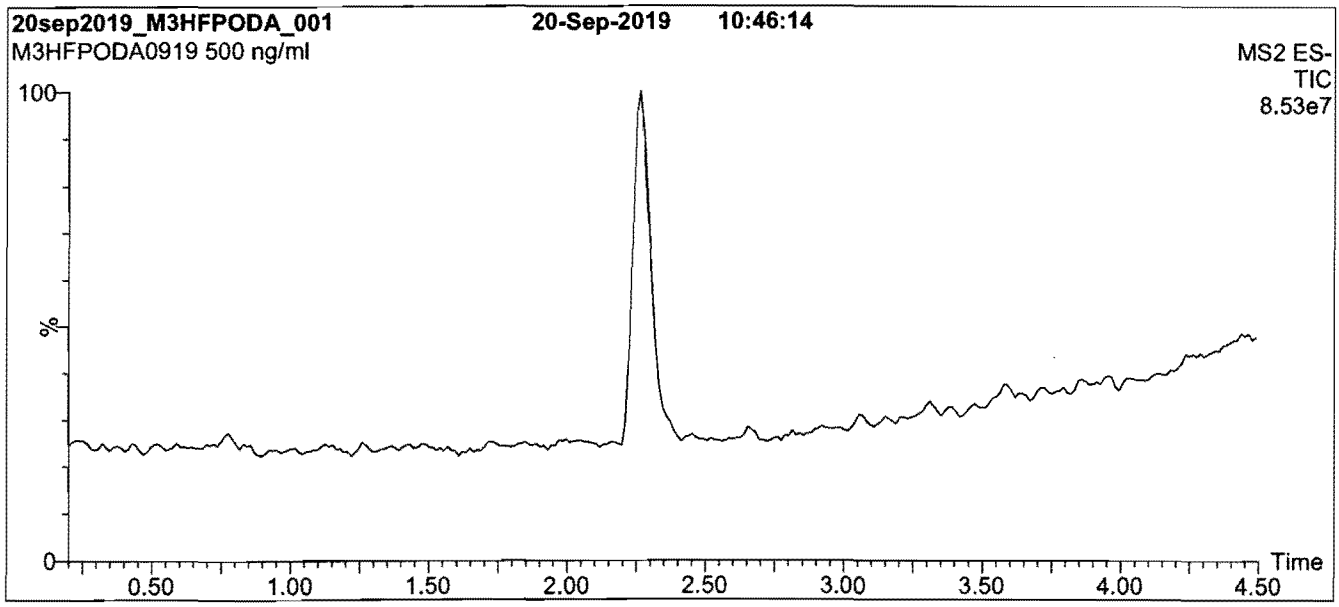
Mobile phase: Same as Figure 1

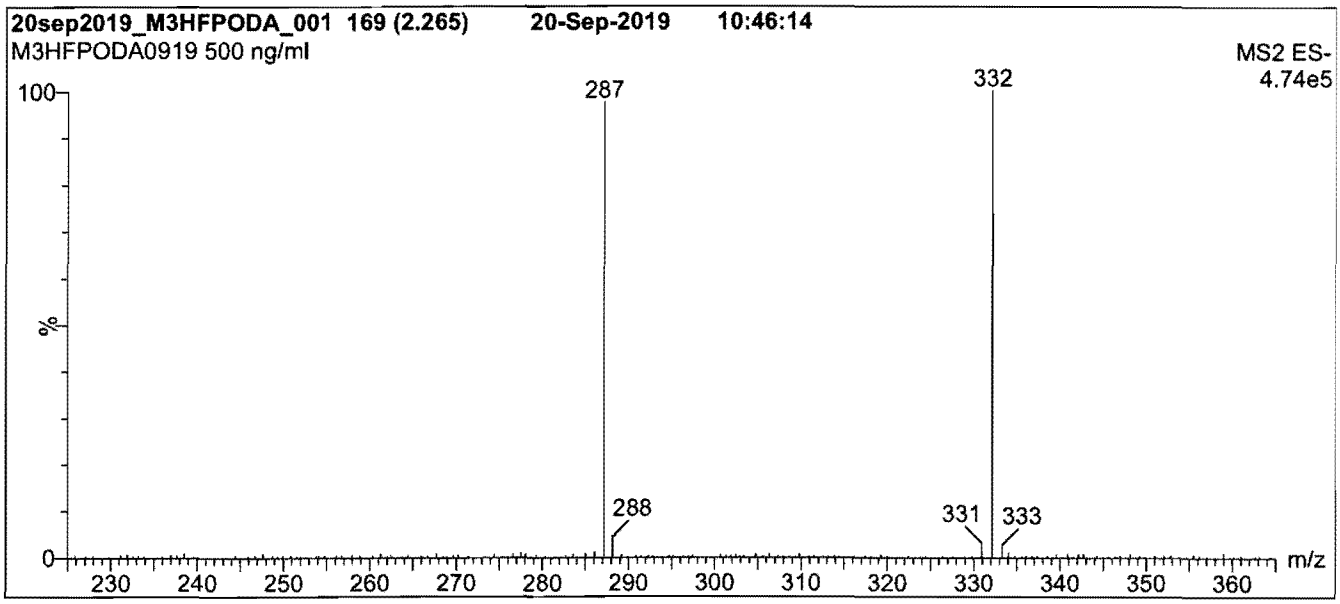
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.60e-3
Collision Energy (eV) = 8

Figure 1: **M3HFPO-DA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 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
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (l/hr) = 1000

19L0621

INTENDED USE:

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HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

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

19L0621

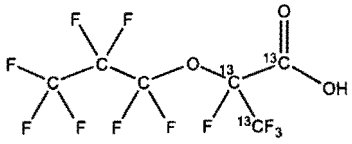
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M3HFPO-DA **LOT NUMBER:** M3HFPODA0919

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-$^{13}C_3$-propanoic acid

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$^{13}C_3{}^{12}C_3HF_{11}O_3$	**MOLECULAR WEIGHT:**	333.03
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_3$)
LAST TESTED: (mm/dd/yyyy)	09/20/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/20/2022		
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.
- Contains ~ 1.9% of the linear M3HFPO-DA isomer.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/30/2019 (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

Analytical Standard Record

Vista Analytical Laboratory

20E1202

Parent Standards used in this standard:

Standard	Description	Prepared	Prepared By	Expires	(mls)
19L0635	PFDoA	06-Dec-19	** Vendor **	23-Jan-24	0.4
19L0636	PFBA	06-Dec-19	** Vendor **	10-Jul-24	0.4
19L0637	PFPeA	06-Dec-19	** Vendor **	04-Sep-24	0.4
19L0638	PFHxA	06-Dec-19	** Vendor **	08-Aug-24	0.4
19L0639	PFDA	06-Dec-19	** Vendor **	01-May-24	0.4
19L0640	PFUdA	06-Dec-19	** Vendor **	19-Mar-24	0.4
19L0641	PFTrDA	06-Dec-19	** Vendor **	26-Sep-24	0.4
19L0642	PFHpA	06-Dec-19	** Vendor **	05-Mar-24	0.4
19L0643	PFOA	06-Dec-19	** Vendor **	06-Sep-24	0.4
19L0644	PFNA	06-Dec-19	** Vendor **	08-Jul-24	0.4
19L0645	PFTeDA	06-Dec-19	** Vendor **	11-Mar-24	0.4
19L0646	PFHxDA	06-Dec-19	** Vendor **	03-Nov-24	0.4
19L0647	PFODA	06-Dec-19	** Vendor **	02-May-24	0.4
19L0648	L-PFBS	06-Dec-19	** Vendor **	10-Jul-24	0.454
19L0649	L-PFPeS	06-Dec-19	** Vendor **	08-Jul-24	0.428
19L0650	L-PFHpS	06-Dec-19	** Vendor **	16-Aug-24	0.42
19L0651	L-PFNS	06-Dec-19	** Vendor **	06-Aug-24	0.418
19L0652	L-PFDS	06-Dec-19	** Vendor **	04-Apr-24	0.415
19L0653	br-PFHxSK	06-Dec-19	** Vendor **	02-Oct-23	0.44
19L0654	br-PFOSK anion	06-Dec-19	** Vendor **	07-Jun-24	0.431
19L0655	4:2 FTS	06-Dec-19	** Vendor **	08-May-24	0.43
19L0656	6:2FTS	06-Dec-19	** Vendor **	09-Sep-24	0.422
19L0657	8:2FTS	06-Dec-19	** Vendor **	11-Sep-24	0.418
19L0658	FOSA-I	06-Dec-19	** Vendor **	12-Sep-24	0.4
19L0659	br-NMeFOSAA	06-Dec-19	** Vendor **	08-Jan-24	0.4
19L0660	br-NEtFOSAA	06-Dec-19	** Vendor **	20-Aug-24	0.4
19L0661	N-MeFOSA-M	06-Dec-19	** Vendor **	07-May-24	2
19L0662	N-EtFOSA-M	06-Dec-19	** Vendor **	07-May-24	2
19L0663	N-MeFOSE-M	06-Dec-19	** Vendor **	08-Apr-24	2
19L0664	N-EtFOSE-M	06-Dec-19	** Vendor **	08-Apr-24	2
19L0665	10:2FTS	06-Dec-19	** Vendor **	11-Jun-22	0.415
19L0666	HFPO-DA	06-Dec-19	** Vendor **	20-Sep-22	0.4
19L0667	11Cl-PF3OUdS	06-Dec-19	** Vendor **	23-Nov-24	0.425
19L0668	9Cl-PF3ONS	06-Dec-19	** Vendor **	30-Oct-24	0.43
19L0669	NaDONA	06-Dec-19	** Vendor **	15-Jul-24	0.425
19L0670	PFECHS	06-Dec-19	** Vendor **	04-Apr-24	0.435
19L0671	L-PFPrS	06-Dec-19	** Vendor **	14-Dec-24	0.438
19L1707	L-PFDoS	17-Dec-19	** Vendor **	06-Dec-23	0.415

Analytical Standard Record

Vista Analytical Laboratory

20E1202

Description:	PFC NS Stock	Expires:	12-May-21
Standard Type:	Analyte Spike	Prepared:	12-May-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	12-May-20 10:53 by BML

Analyte	CAS Number	Concentration	Units
L-PFHpA		1	ug/mL
10:2 FTS	120226-60-0	1	ug/mL
L-MeFOSA	31506-32-8	5	ug/mL
L-MeFOSAA	2355-31-9	0.76	ug/mL
L-MeFOSE	24448-09-7	5	ug/mL
L-PFBA		1	ug/mL
L-PFBS		1	ug/mL
L-PFDA		1	ug/mL
L-PFDoA		1	ug/mL
L-EtFOSAA	2991-50-6	0.776	ug/mL
L-PFDS		1	ug/mL
L-EtFOSA	4151-50-2	5	ug/mL
L-PFHpS		1	ug/mL
L-PFHxA		1	ug/mL
L-PFHxDA		1	ug/mL
L-PFHxS		0.812	ug/mL
L-PFNA		1	ug/mL
L-PFNS	68259-12-1	1	ug/mL
L-PFOA		1	ug/mL
L-PFODA		1	ug/mL
L-PFDoS		1	ug/mL
cis-PFECHS		0.668	ug/mL
11Cl-PF3OUdS	763051-92-9	1	ug/mL
4:2 FTS	757124-72-4	1	ug/mL
6:2 FTS	27619-97-2	1	ug/mL
8:2 FTS	39108-34-4	1	ug/mL
9Cl-PF3ONS	756426-58-1	1	ug/mL
ADONA	919005-14-4	1	ug/mL
Br-EtFOSAA		0.224	ug/mL
Br-MeFOSAA		0.24	ug/mL
L-EtFOSE	1691-99-2	5	ug/mL
Br-PFOS	2795-39-3	0.211	ug/mL
L-PFPeA		1	ug/mL
EtFOSA	4151-50-2	5	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

20E1202

Description:	PFC NS Stock	Expires:	12-May-21
Standard Type:	Analyte Spike	Prepared:	12-May-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	12-May-20 10:53 by BML

Analyte	CAS Number	Concentration	Units
EtFOSAA	2991-50-6	1	ug/mL
EtFOSE	1691-99-2	5	ug/mL
F-53B Total		2	ug/mL
HFPO-DA	13252-13-6	1	ug/mL
L-4:2 FTS	75124-72-4	1	ug/mL
L-6:2 FTS		1	ug/mL
L-8:2FTS		1	ug/mL
Br-PFHxS	3871-99-6	0.189	ug/mL
Total 6:2 FTS		1	ug/mL
PFOA	335-67-1	1	ug/mL
PFODA	16517-11-6	1	ug/mL
PFOS	1763-23-1	1	ug/mL
PFOSA	754-91-6	1	ug/mL
PFPeA	2706-90-3	1	ug/mL
PFPeS	2706-91-4	1	ug/mL
PFPrS	423-41-6	1	ug/mL
PFTeDA	376-06-7	1	ug/mL
L-PFOS		0.789	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFHxS	355-46-4	1	ug/mL
Total EtFOSAA		1	ug/mL
Total MeFOSAA		1	ug/mL
Total PFDS		1	ug/mL
Total PFHpS		1	ug/mL
Total PFHxS		1	ug/mL
Total PFOA		1	ug/mL
Total PFOS		1	ug/mL
Total PFUnA		1	ug/mL
PFTrDA	72629-94-8	1	ug/mL
PFDA	335-76-2	1	ug/mL
trans-PFECHS		0.335	ug/mL
L-PFPeS	2706-91-4	1	ug/mL
L-PFTeDA		1	ug/mL
L-PFTrDA		1	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

20E1202

Description:	PFC NS Stock	Expires:	12-May-21
Standard Type:	Analyte Spike	Prepared:	12-May-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	12-May-20 10:53 by BML

Analyte	CAS Number	Concentration	Units
L-PFUnA		1	ug/mL
MeFOSA	31506-32-8	5	ug/mL
MeFOSAA	2355-31-9	1	ug/mL
MeFOSE	24448-09-7	5	ug/mL
PFNS	68259-12-1	1	ug/mL
PFBS	375-73-5	1	ug/mL
PFNA	375-95-1	1	ug/mL
PFDoA	307-55-1	1	ug/mL
PFDoS	79780-39-5	1	ug/mL
PFDS	335-77-3	1	ug/mL
PFecHS	646-83-3	1	ug/mL
PFHpA	375-85-9	1	ug/mL
PFHpS	375-92-8	1	ug/mL
PFHxA	307-24-4	1	ug/mL
PFHxDA	67905-19-5	1	ug/mL
L-PFOSA		1	ug/mL
PFBA	375-22-4	1	ug/mL

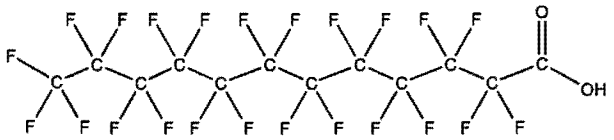
19L0635

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFDoA
COMPOUND: Perfluoro-n-dodecanoic acid
LOT NUMBER: PFDoA0119

STRUCTURE:
CAS #: 307-55-1



MOLECULAR FORMULA: $C_{12}HF_{23}O_2$
MOLECULAR WEIGHT: 614.10
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 01/23/2019
EXPIRY DATE: (mm/dd/yyyy) 01/23/2024
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:** 01/30/2019 (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

19L0635

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

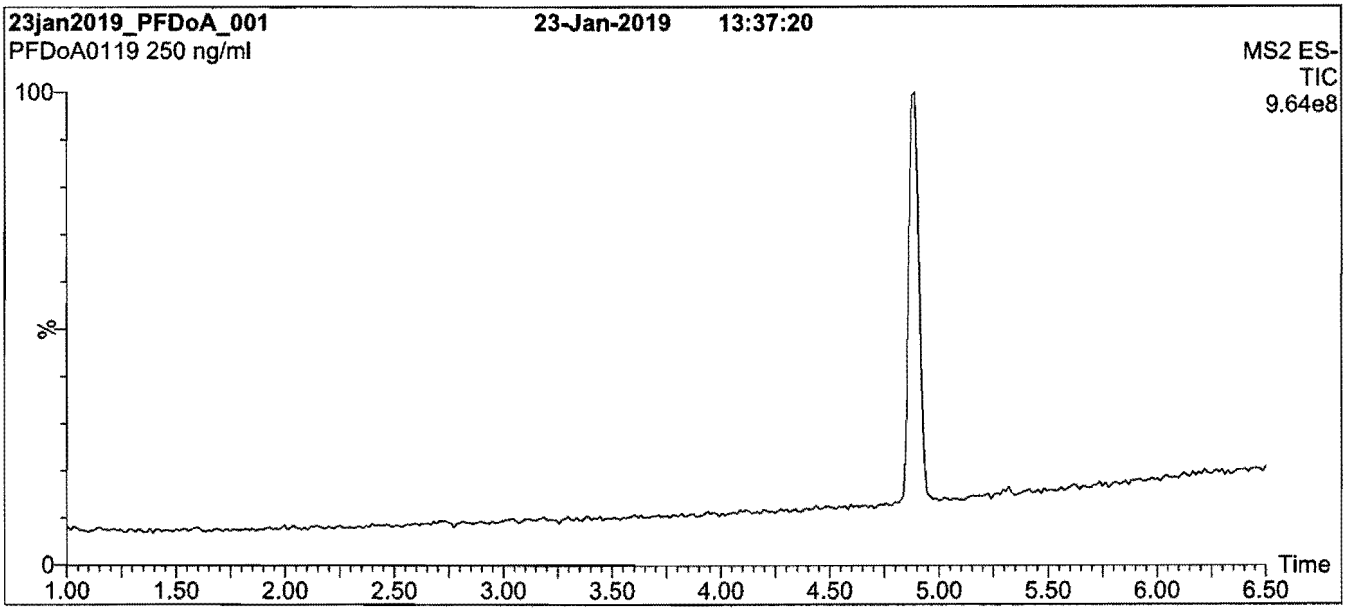
CALA Testing Accreditation No. A 1226

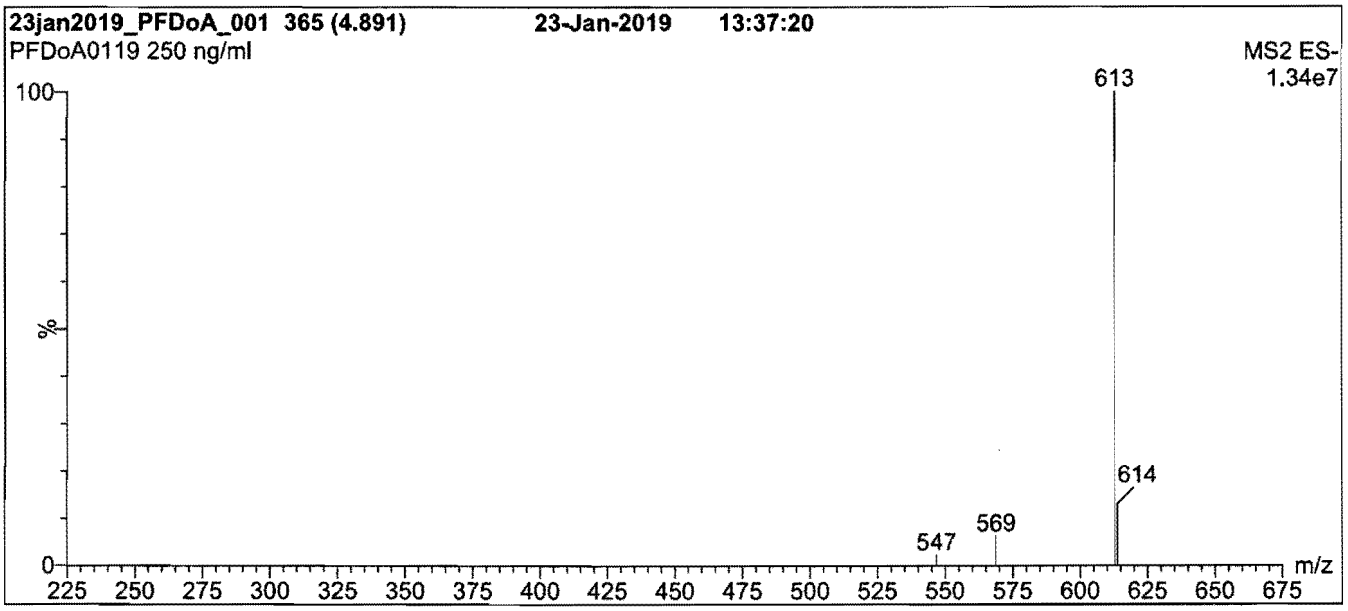
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

19L0635

- **Figure 1:** **PFDoA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

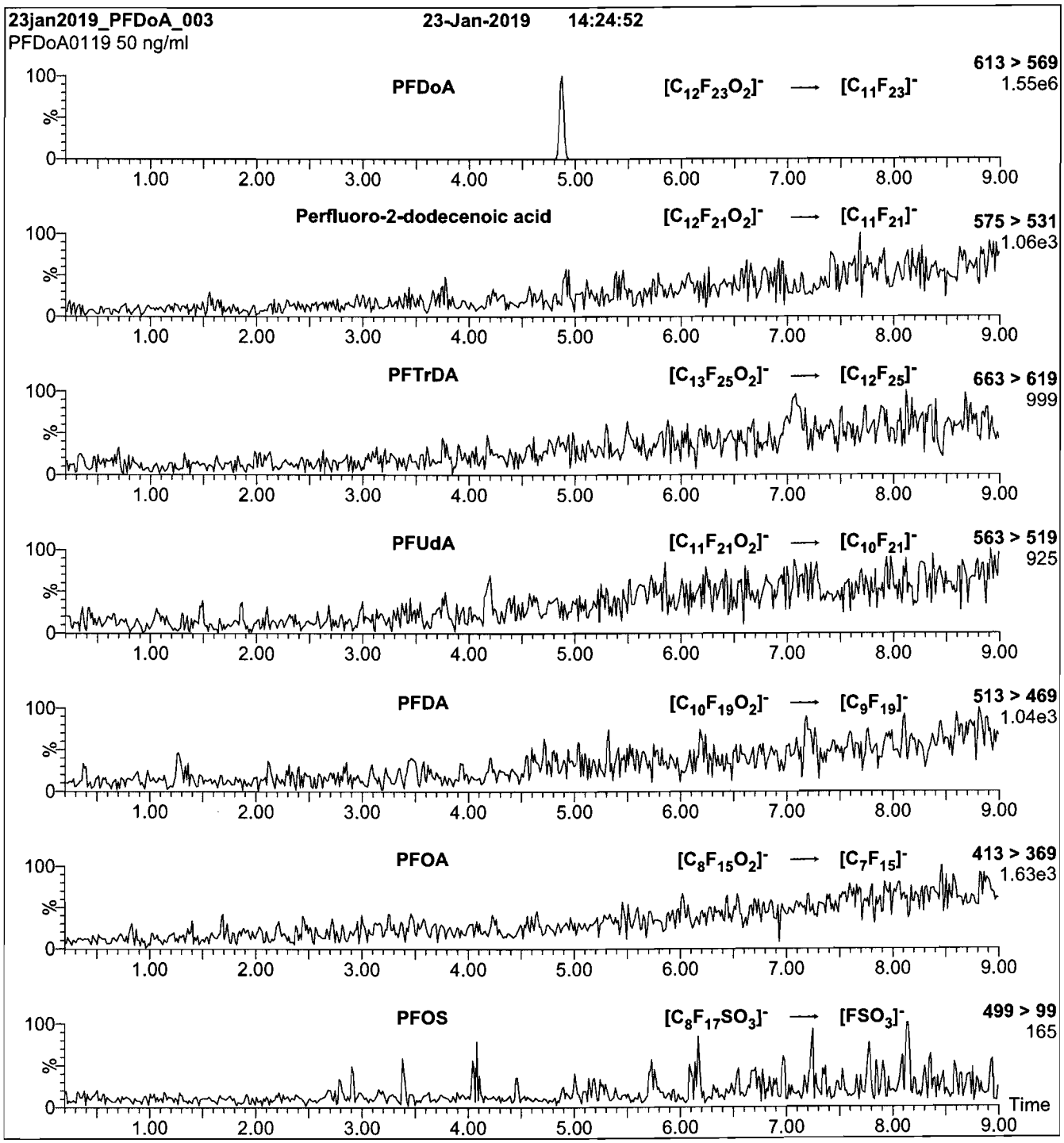
MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Cone Gas Flow (l/hr) = 500
Desolvation Gas Flow (l/hr) = 1000

191L0635

Figure 2: **PFDoA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFDoA)

Mobile phase: Same as Figure 1

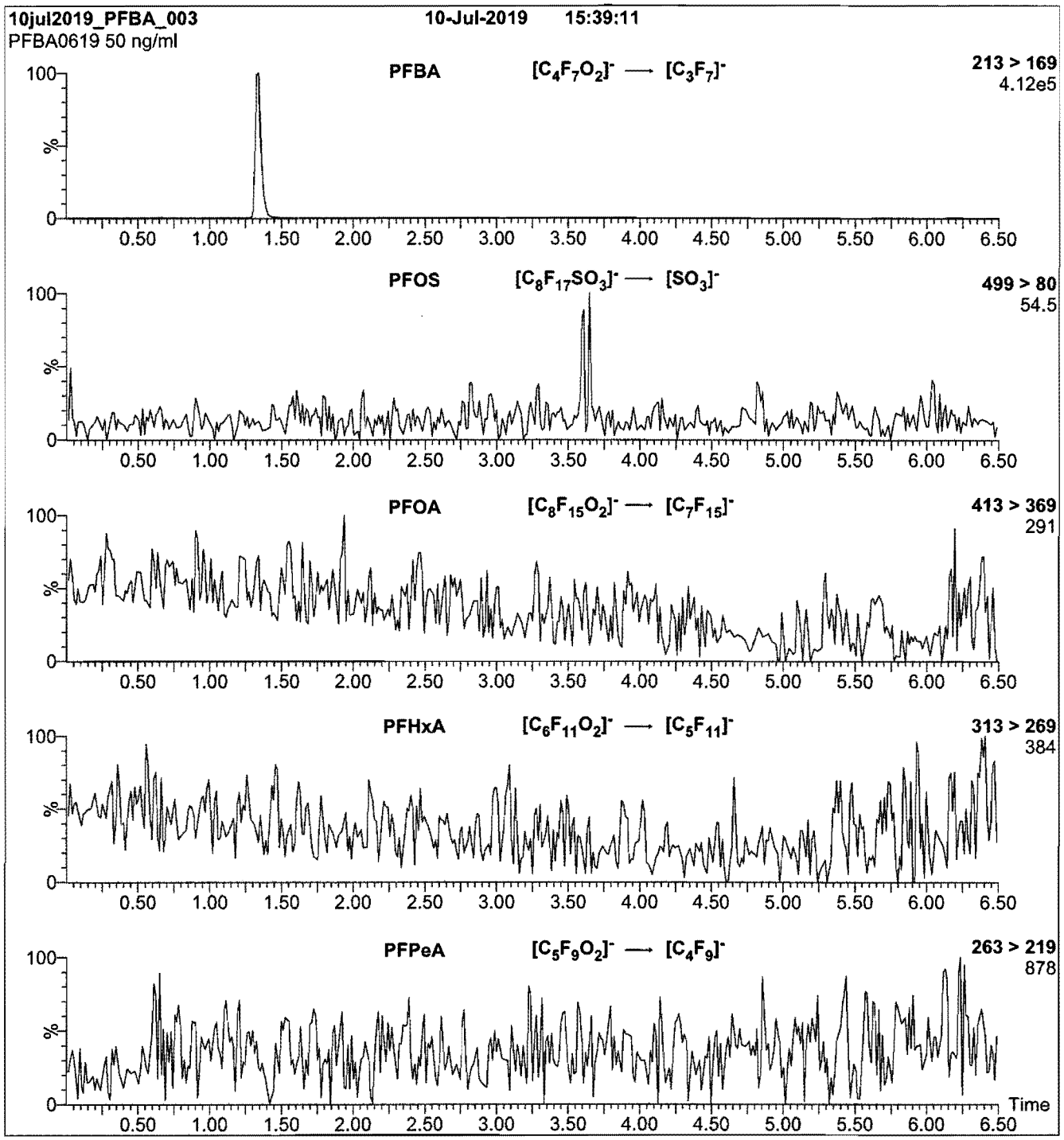
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.72e-3
Collision Energy (eV) = 12

19L0636

Figure 2: **PFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFBA)

Mobile phase: Same as Figure 1

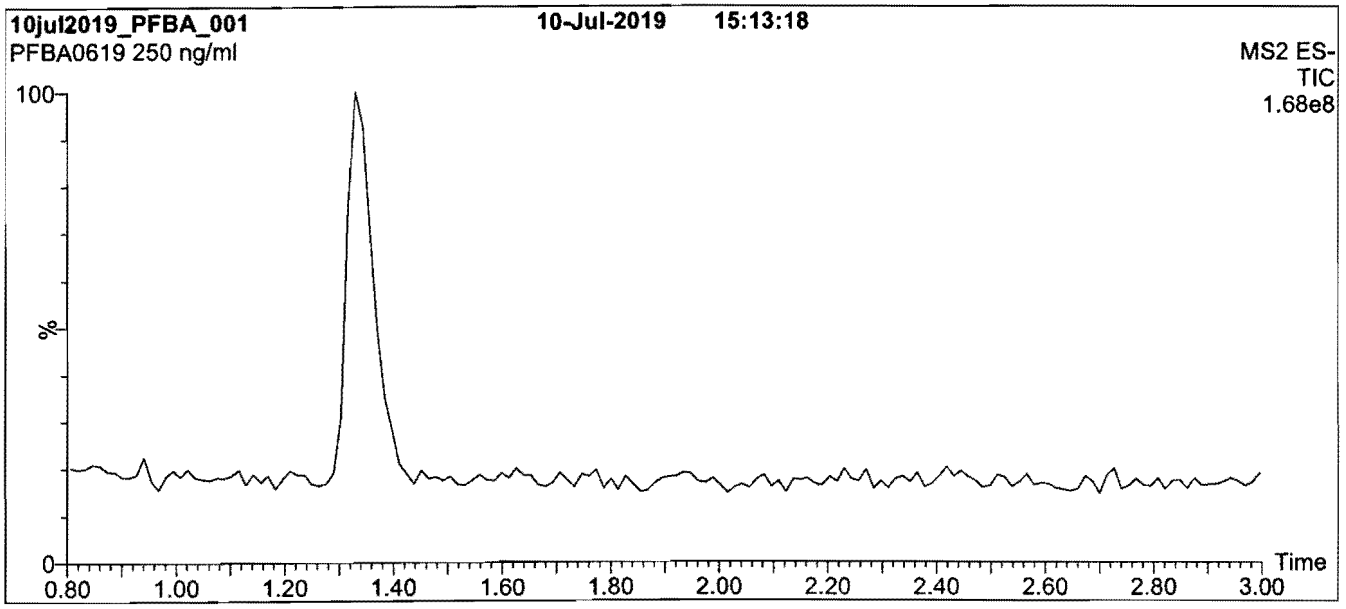
Flow: 300 µl/min

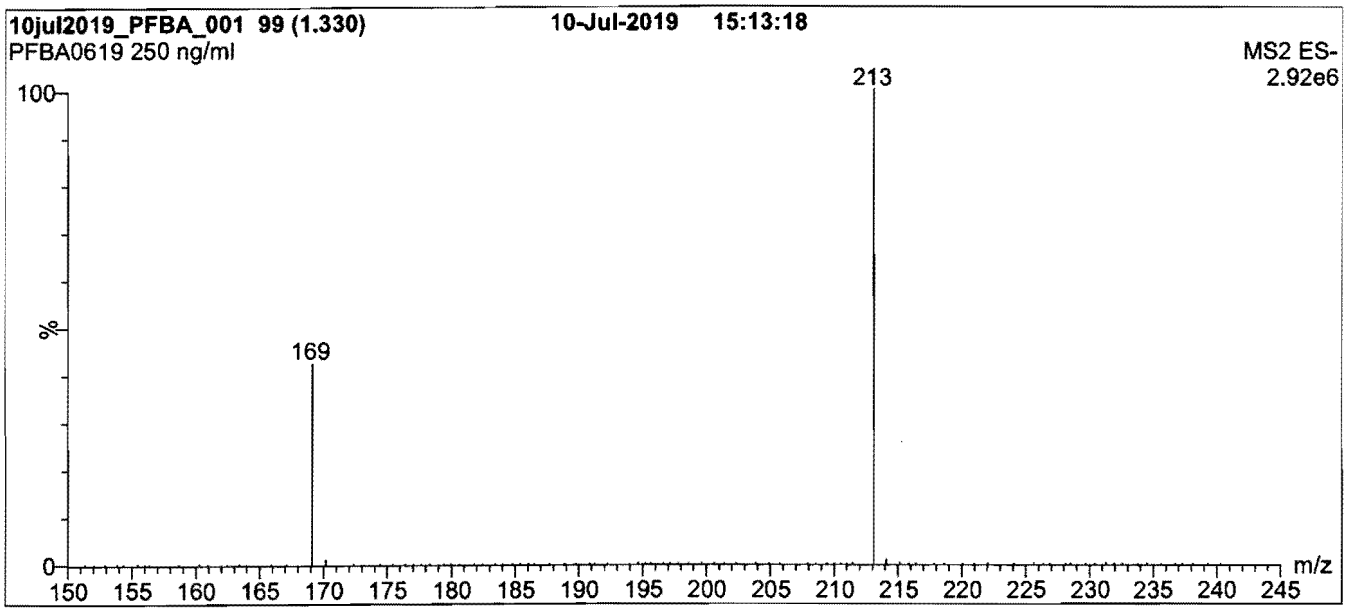
MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 8

1910636

Figure 1: **PFBA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 70% organic over 7 min.
Ramp to 90% organic over 2 min and hold for
1.5 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0636

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

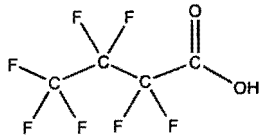
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0636

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFBA	**LOT NUMBER:**	PFBA0619
COMPOUND:	Perfluoro-n-butanoic acid		
STRUCTURE:		**CAS #:**	375-22-4



MOLECULAR FORMULA:	$C_4HF_7O_2$	**MOLECULAR WEIGHT:**	214.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	07/10/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/10/2024		
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:** 07/22/2019 (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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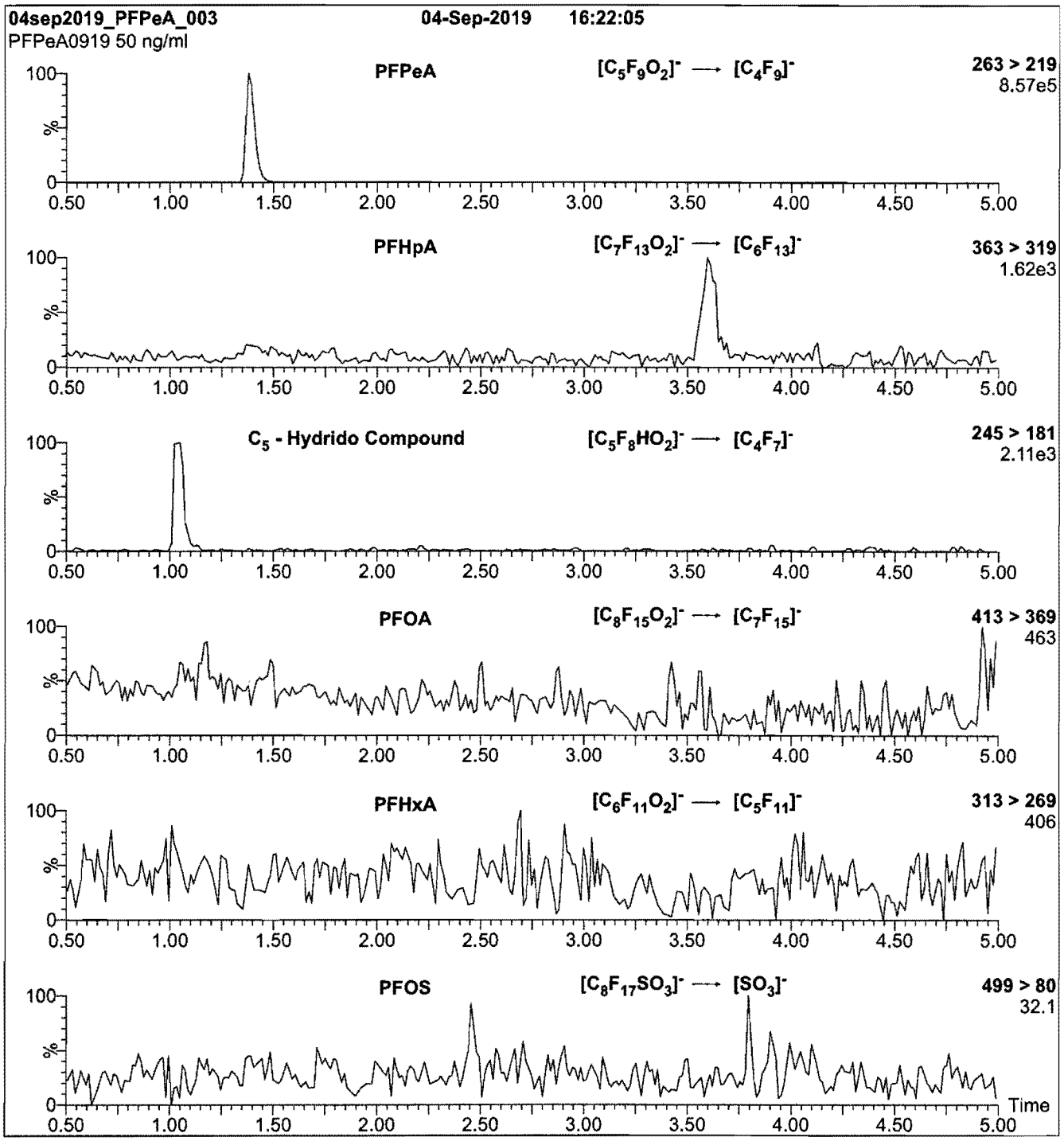
Figure 2: **PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFPeA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.51e-3
Collision Energy (eV) = 8

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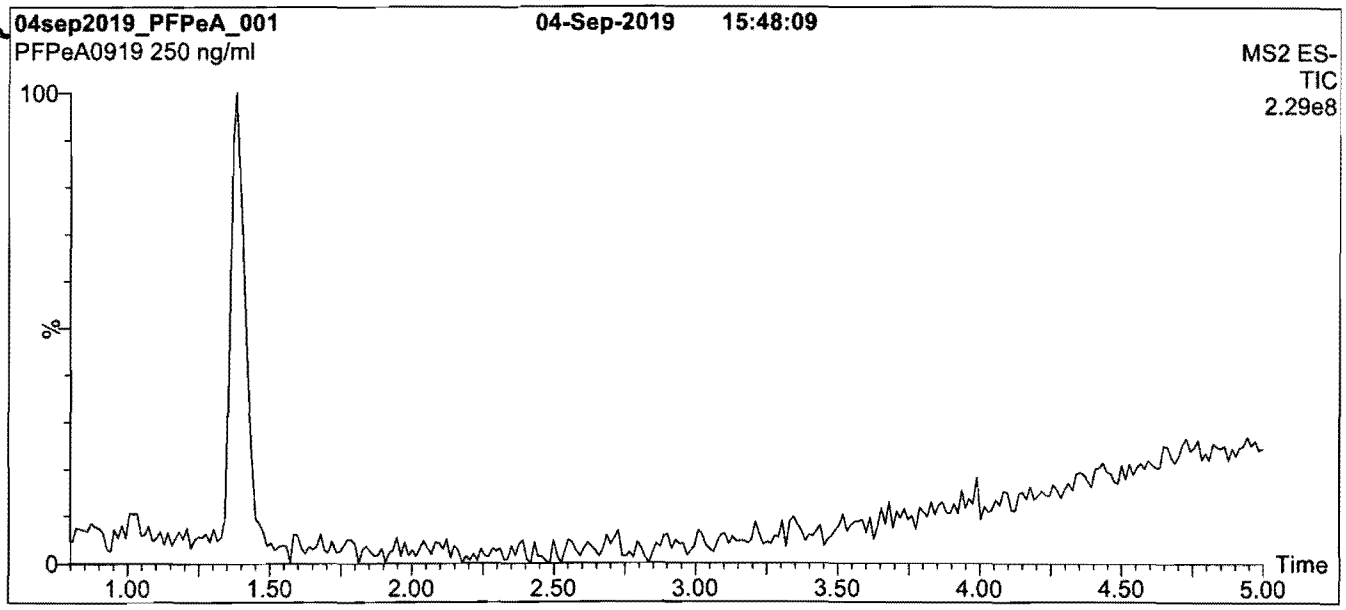
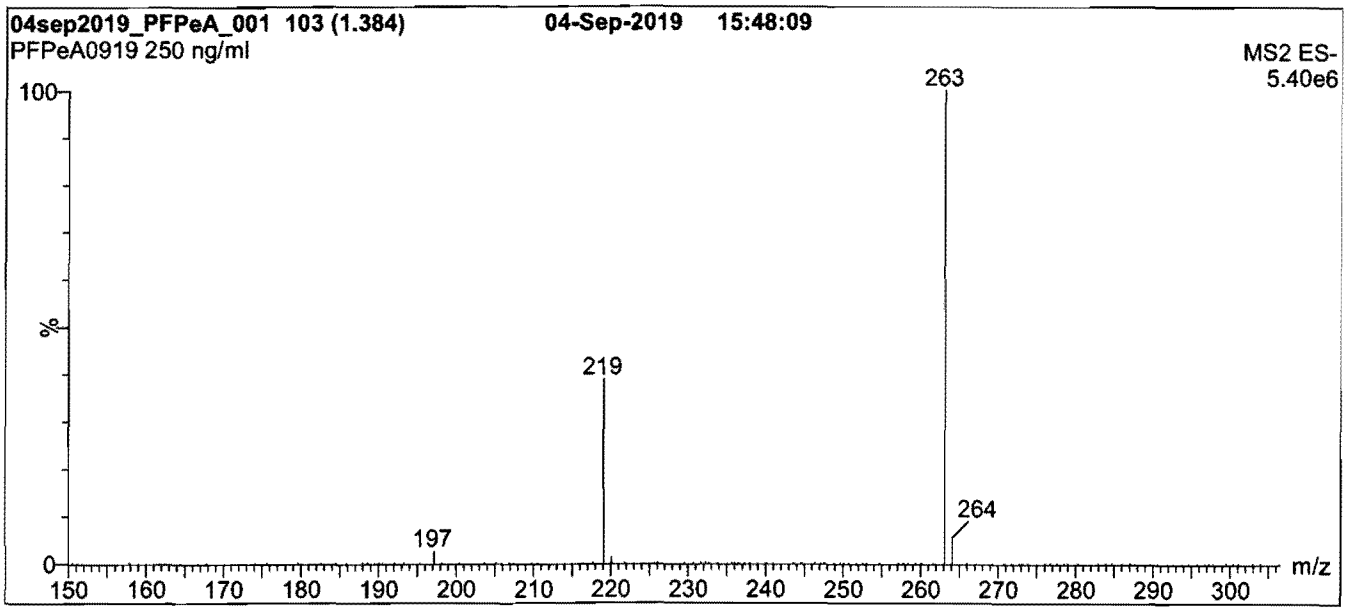
Figure 1: **PFPeA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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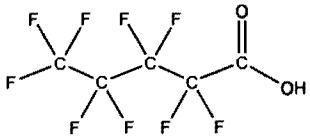
19L0637

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFPeA	**LOT NUMBER:**	PFPeA0919
COMPOUND:	Perfluoro-n-pentanoic acid		
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)	09/04/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/04/2024		
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:

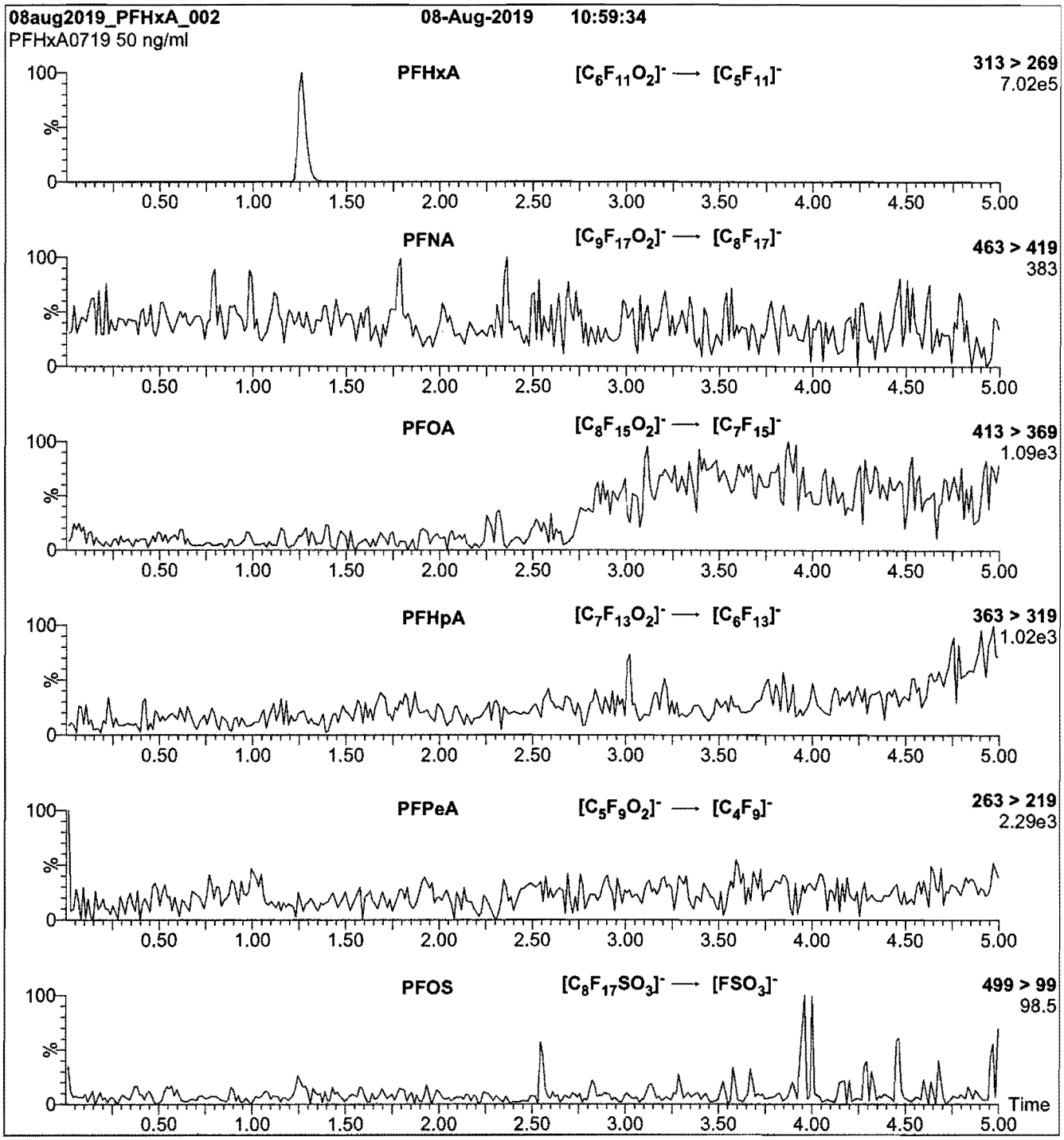
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of Perfluoro-n-heptanoic acid (PFHpA) and ~ 0.2% of $C_5H_2F_8O_2$ (hydrido - derivative) as measured by ^{19}F NMR.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/05/2019 (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

Figure 2: **PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHxA)

Mobile phase: Same as Figure 1

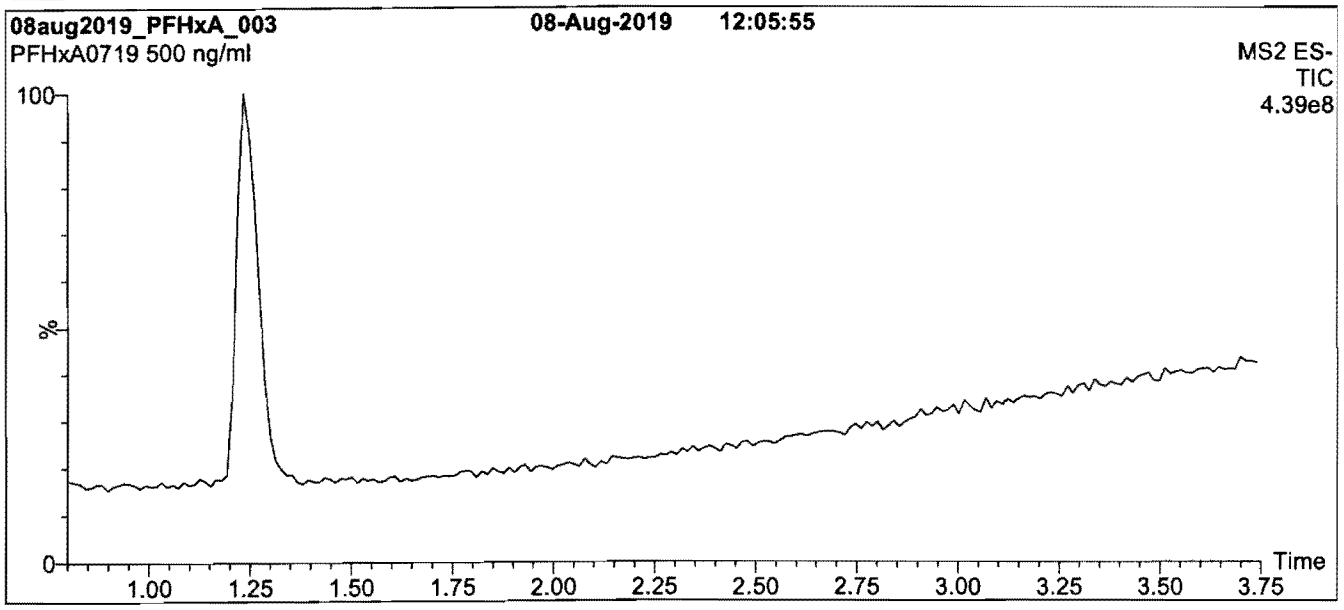
Flow: 300 µl/min

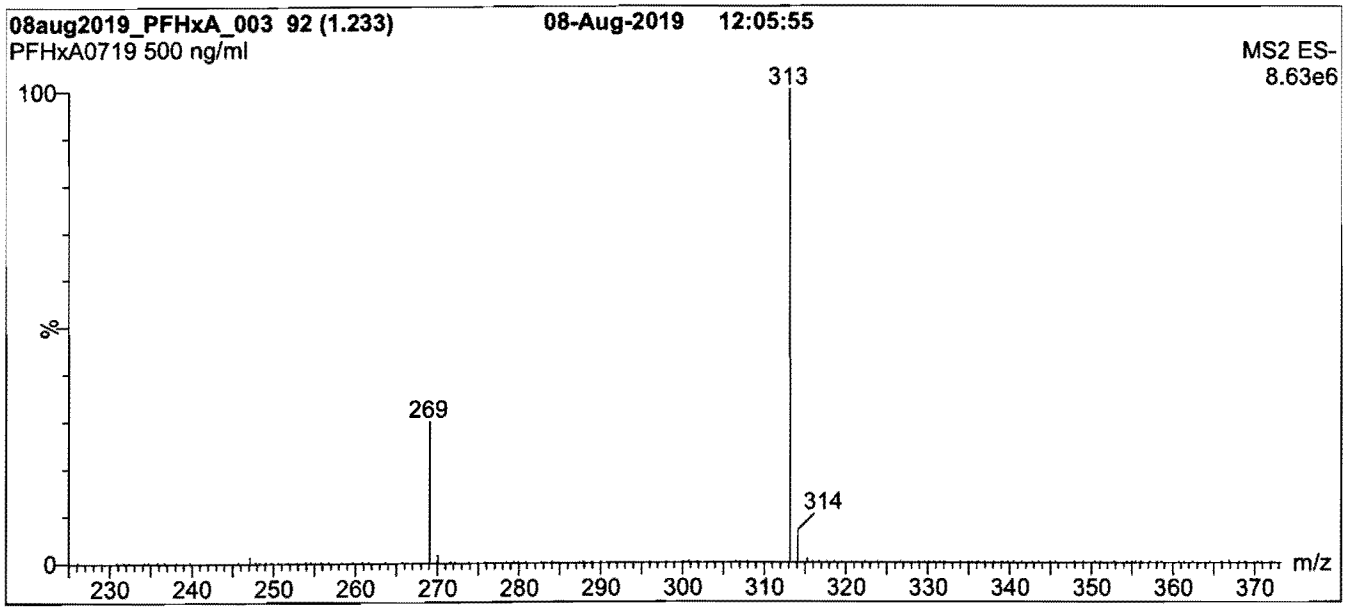
MS Parameters

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 8

19L0638

Figure 1: **PFHxA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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HOMOGENEITY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of ±5% (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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19L0638

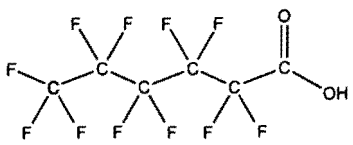
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxA
LOT NUMBER: PFHxA0719
COMPOUND: Perfluoro-n-hexanoic acid

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) 08/08/2019
EXPIRY DATE: (mm/dd/yyyy) 08/08/2024
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:** 08/15/2019 (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

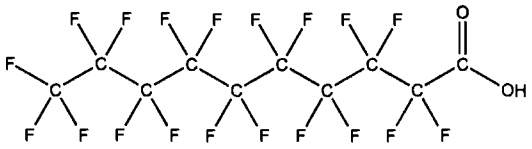
19L0639

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: PFDA
COMPOUND: Perfluoro-n-decanoic acid
LOT NUMBER: PFDA0419

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) 05/01/2019
EXPIRY DATE: (mm/dd/yyyy) 05/01/2024
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:** 05/02/2019 (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

INTENDED USE:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED 17034 REFERENCE MATERIAL PRODUCER

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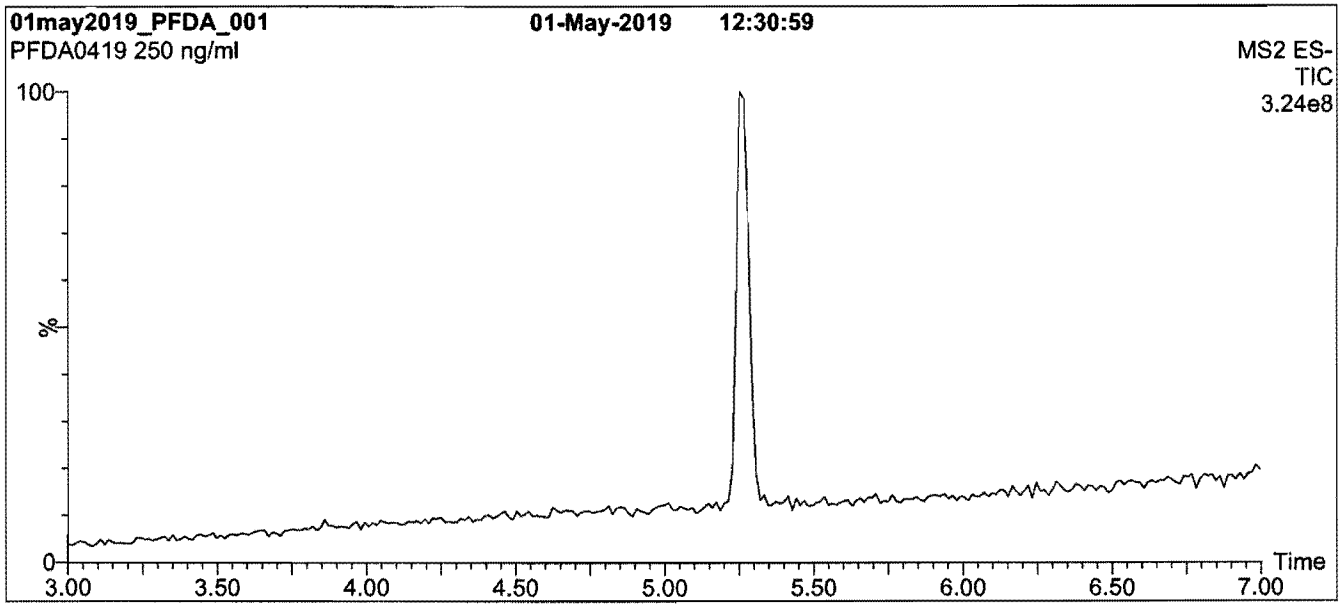
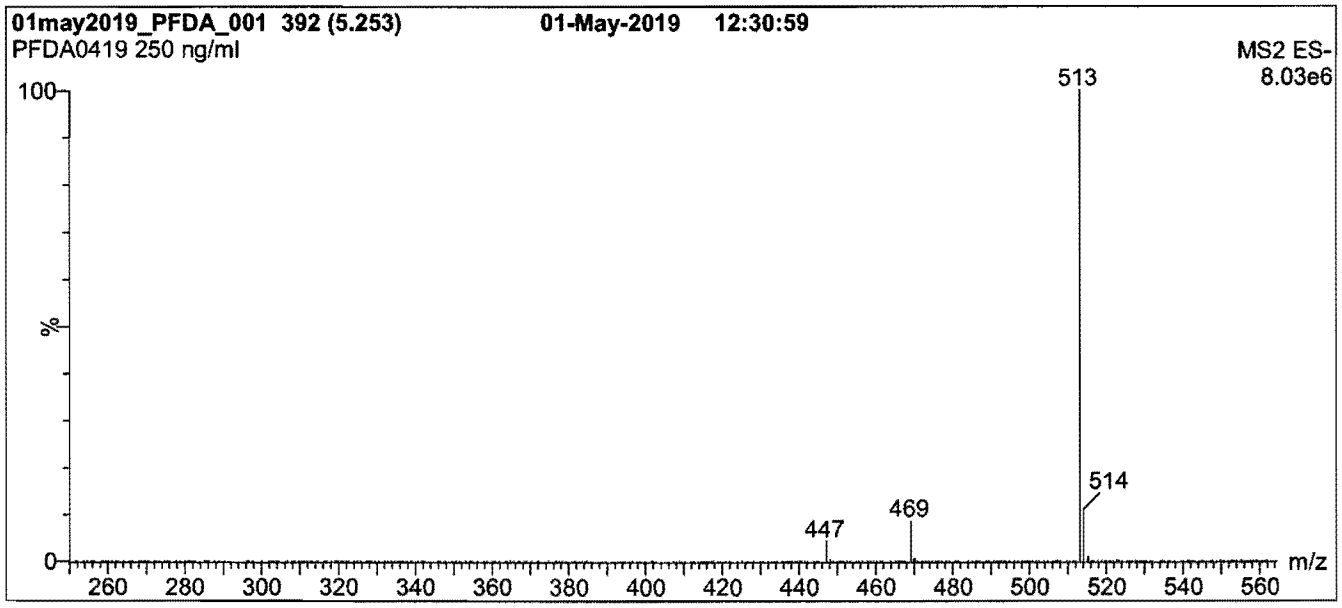
19L0639

Figure 1: **PFDA; LC/MS Data (TIC and Mass Spectrum)**





Condltions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

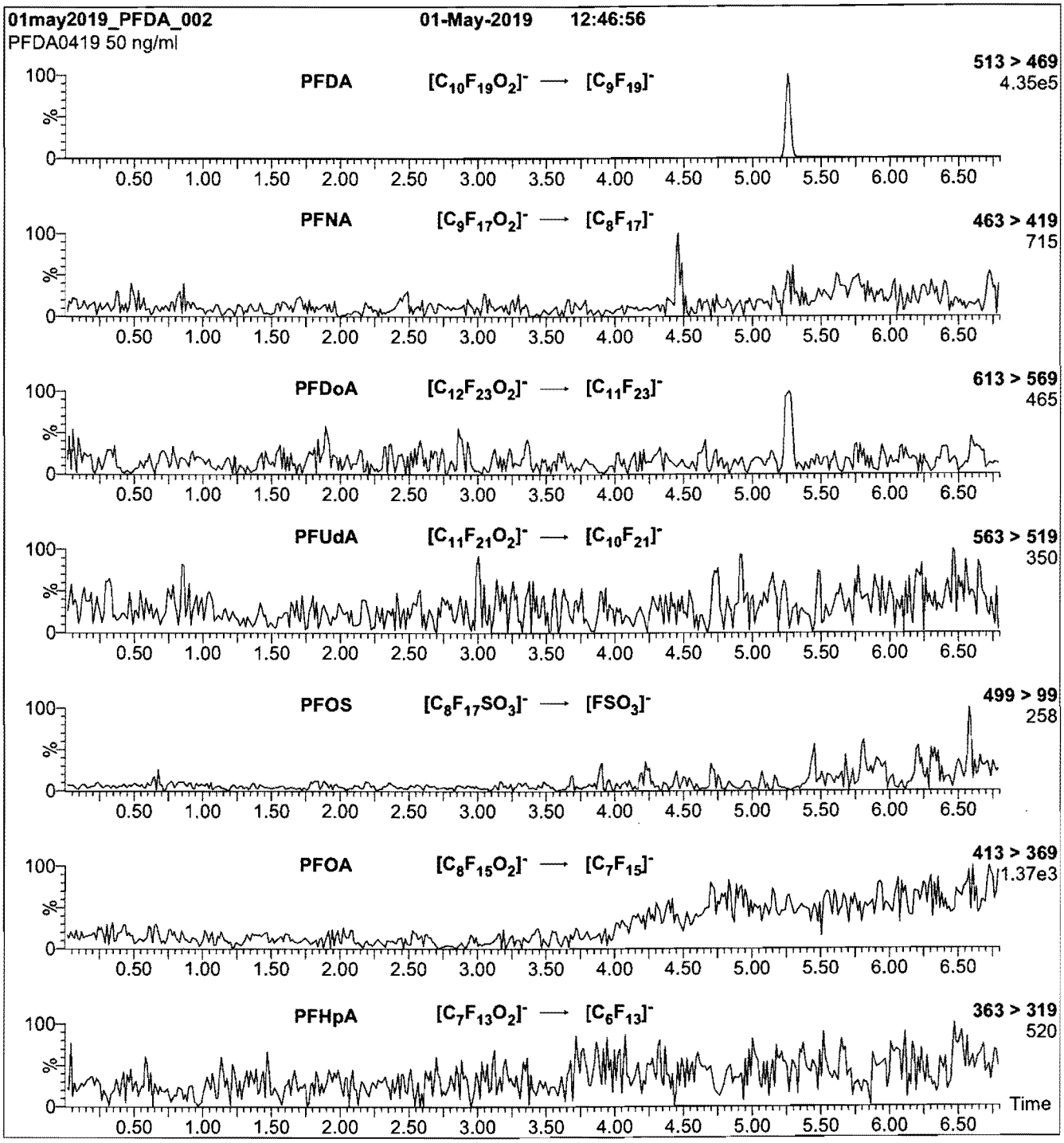
MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0639

Figure 2: **PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFDA)

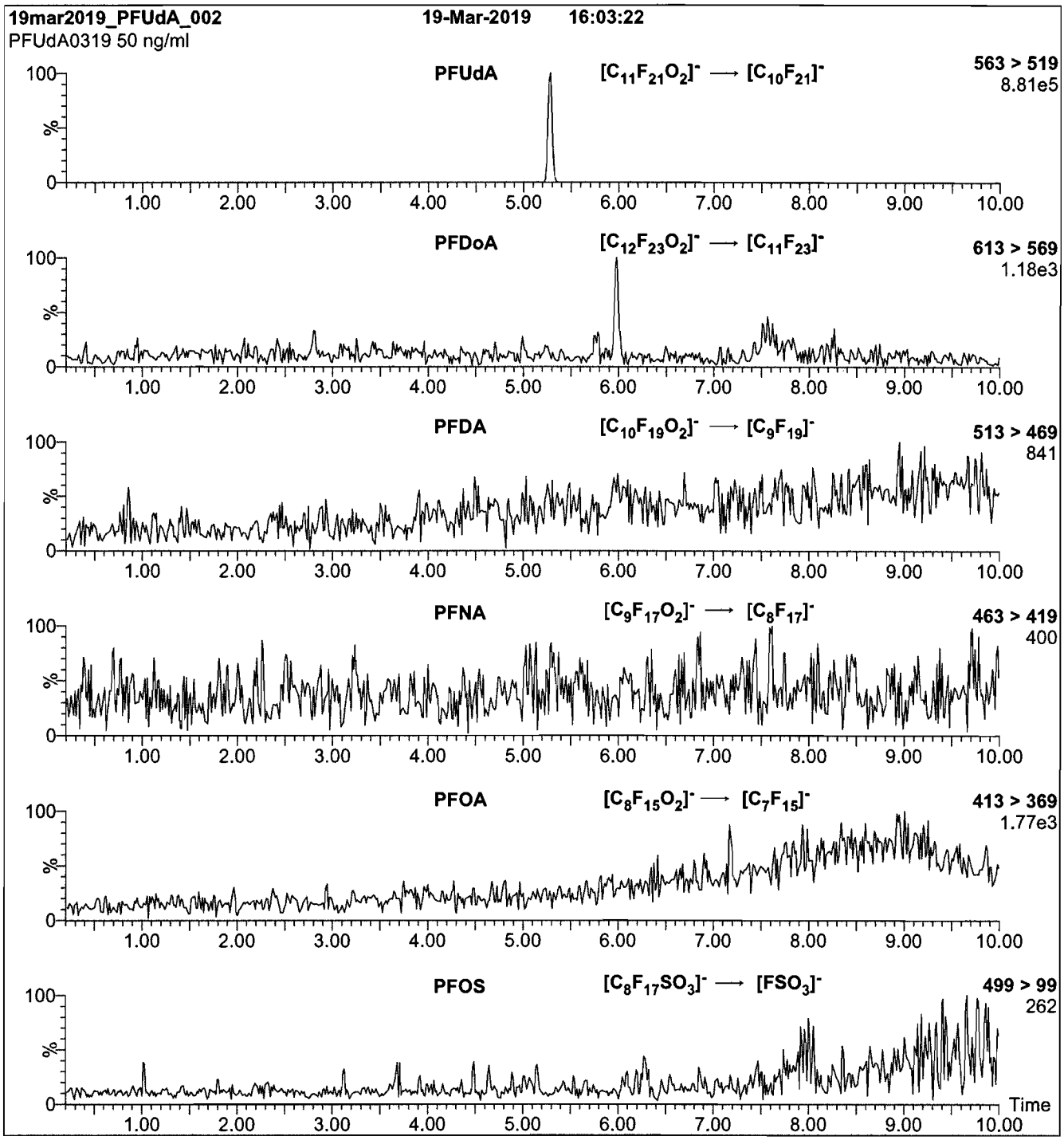
Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 10

Figure 2: **PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFUdA)

Mobile phase: Same as Figure 1

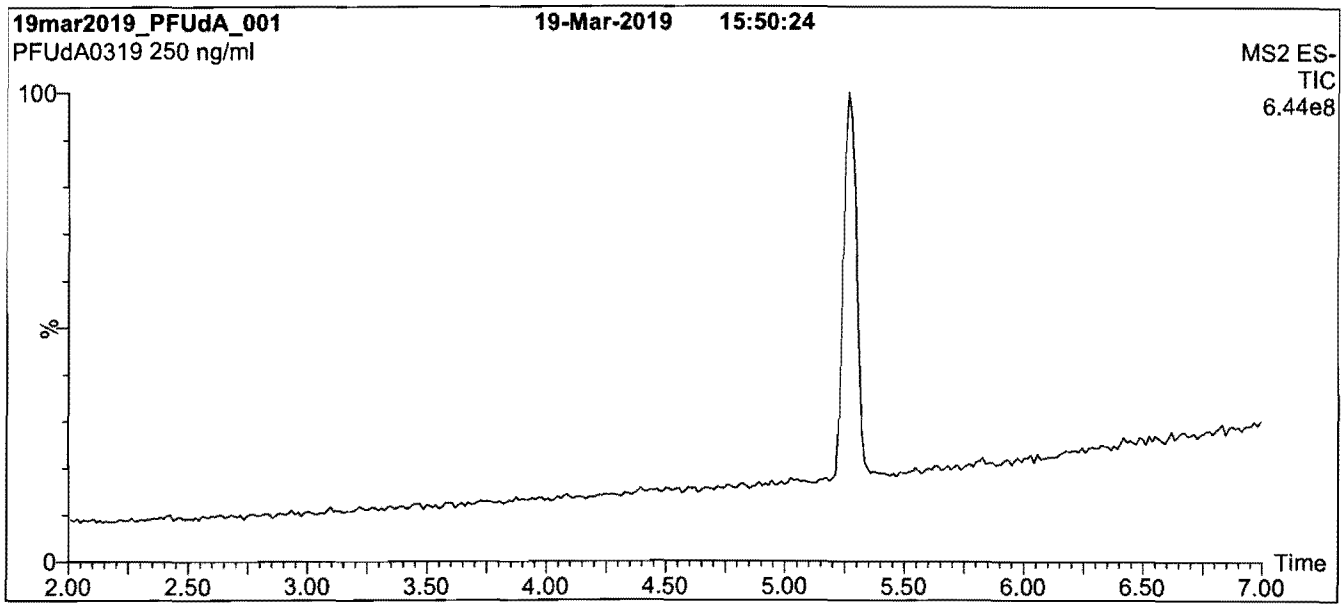
Flow: 300 µl/min

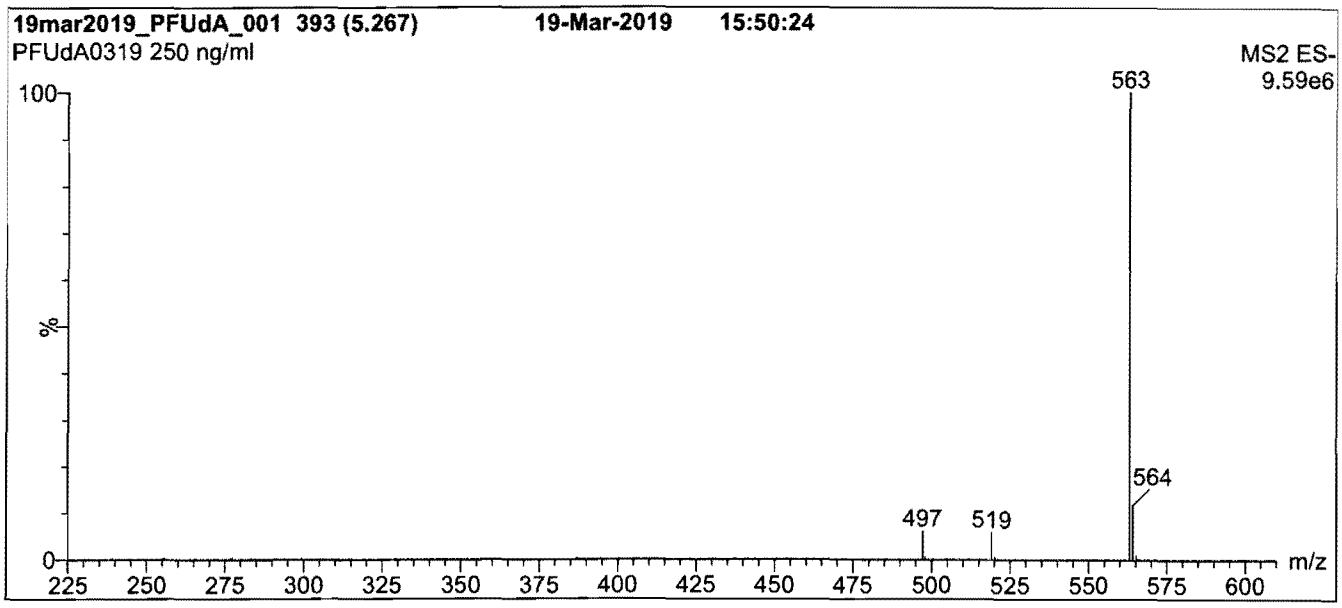
MS Parameters

Collision Gas (mbar) = 3.04e-3
Collision Energy (eV) = 12

19L0690

Figure 1: **PFUdA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for 2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0640

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

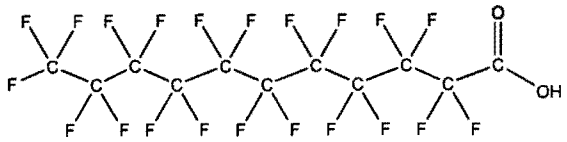
19L0640

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFUdA
COMPOUND: Perfluoro-n-undecanoic acid
LOT NUMBER: PFUdA0319

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) 03/19/2019
EXPIRY DATE: (mm/dd/yyyy) 03/19/2024
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 pefluoro-n-dodecanoic acid (PFDoA).

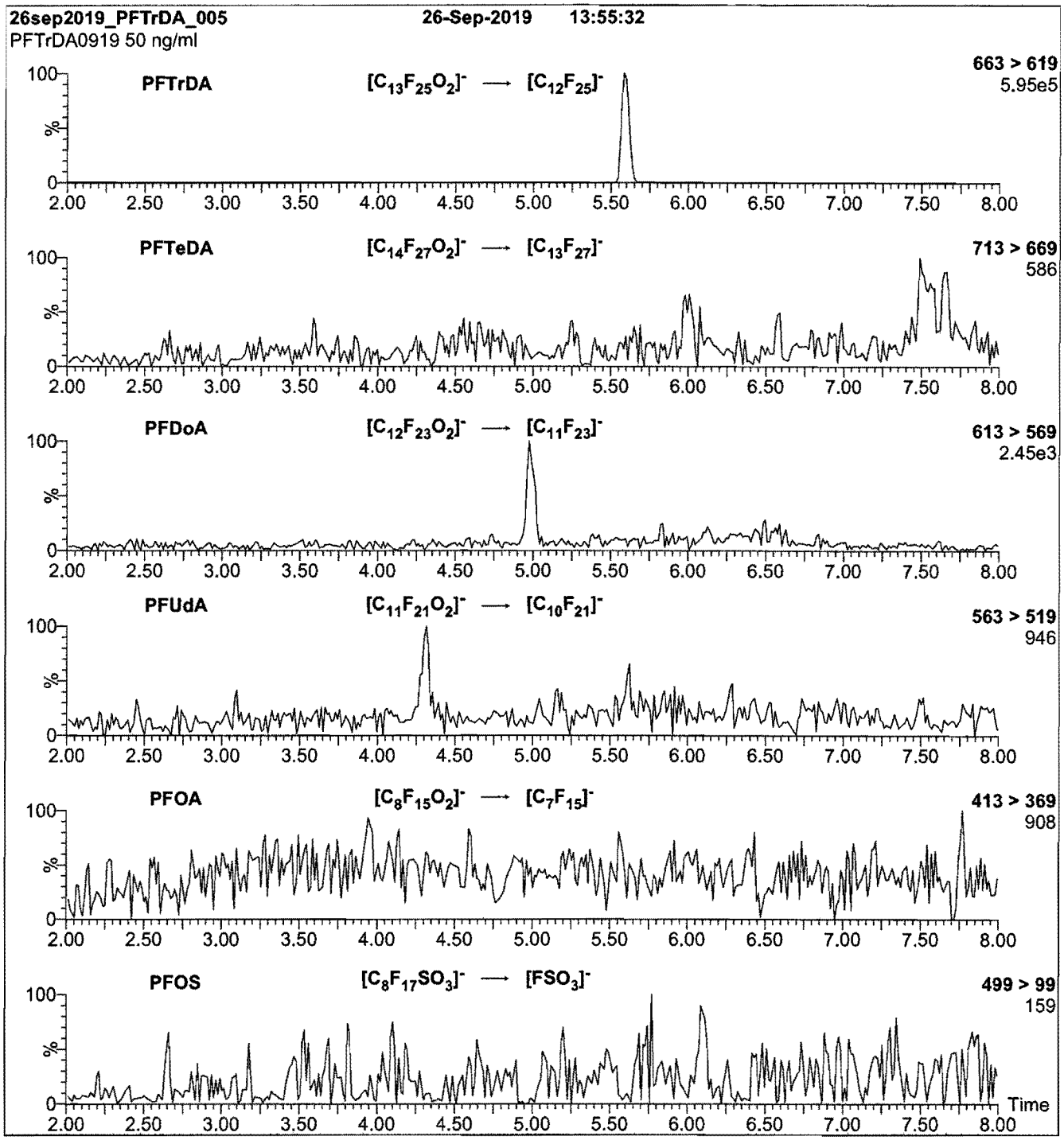
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/21/2019 (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

19L0641

Figure 2: **PFTrDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFTrDA)

Mobile phase: Same as Figure 1

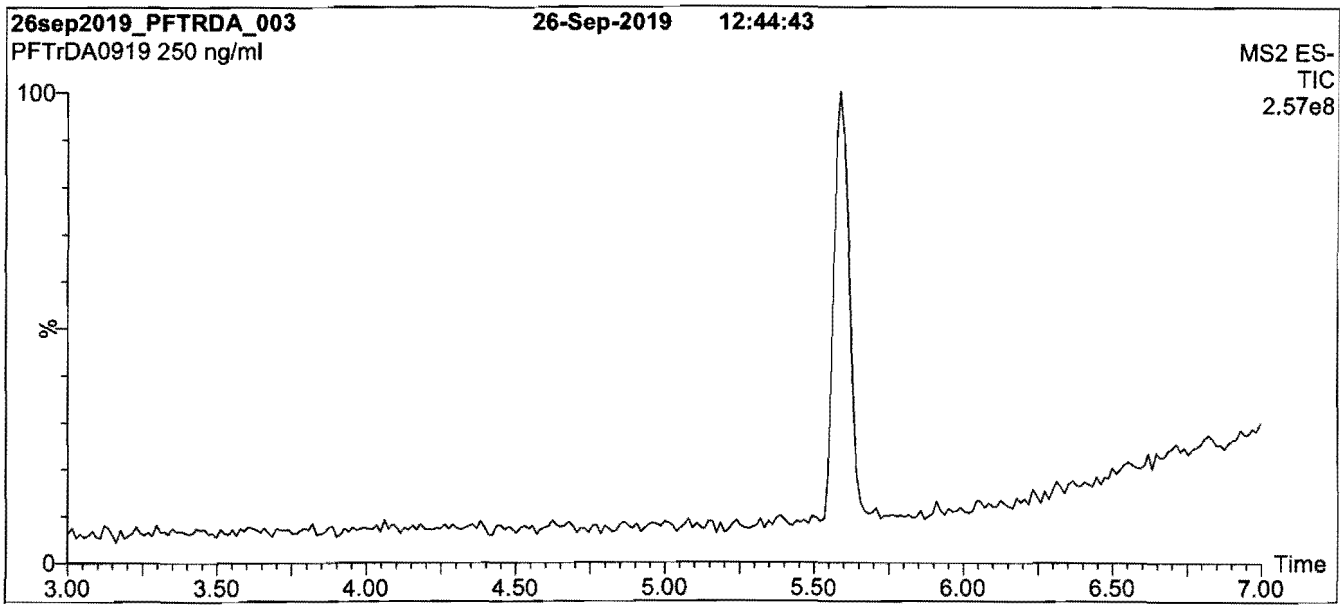
Flow: 300 µl/min

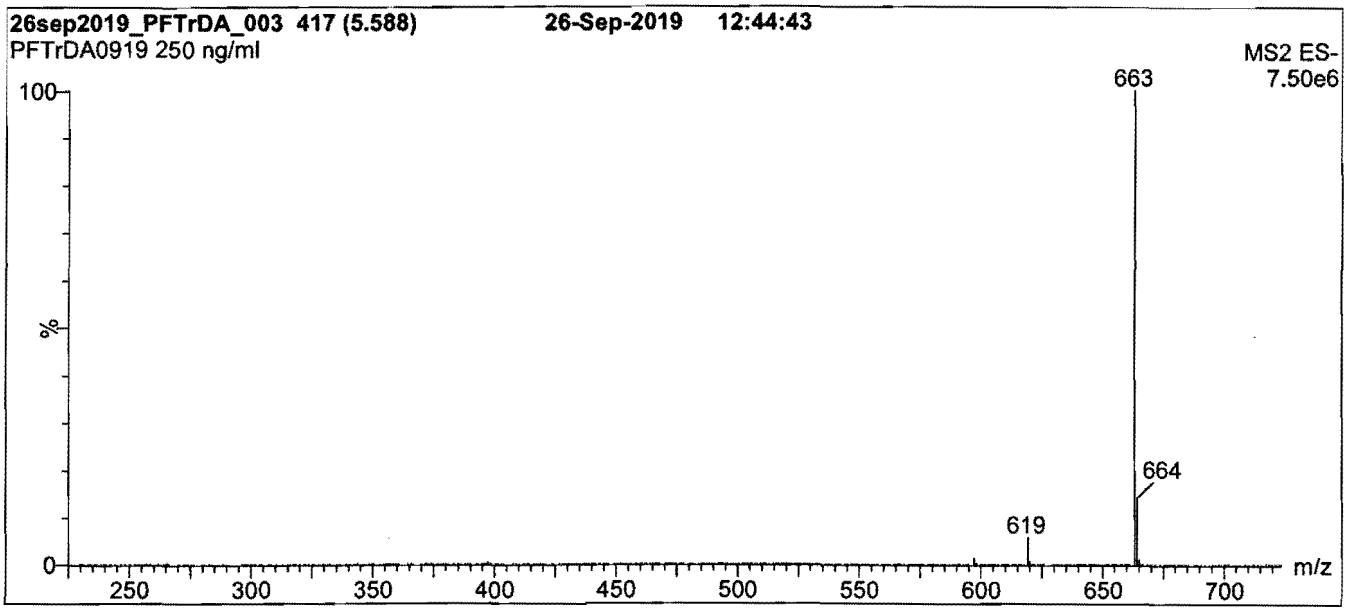
MS Parameters

Collision Gas (mbar) = 3.73e-3
Collision Energy (eV) = 12

1910641

Figure 1: **PFTrDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0641

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

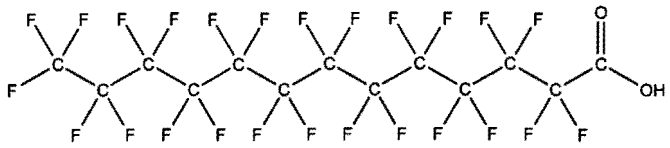
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0691

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFTrDA	**LOT NUMBER:**	PFTrDA0919
COMPOUND:	Perfluoro-n-tridecanoic acid		
STRUCTURE:		**CAS #:**	72629-94-8



MOLECULAR FORMULA:	$C_{13}HF_{25}O_2$	**MOLECULAR WEIGHT:**	664.11
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/26/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/26/2024		
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 ($C_{14}HF_{27}O_2$).

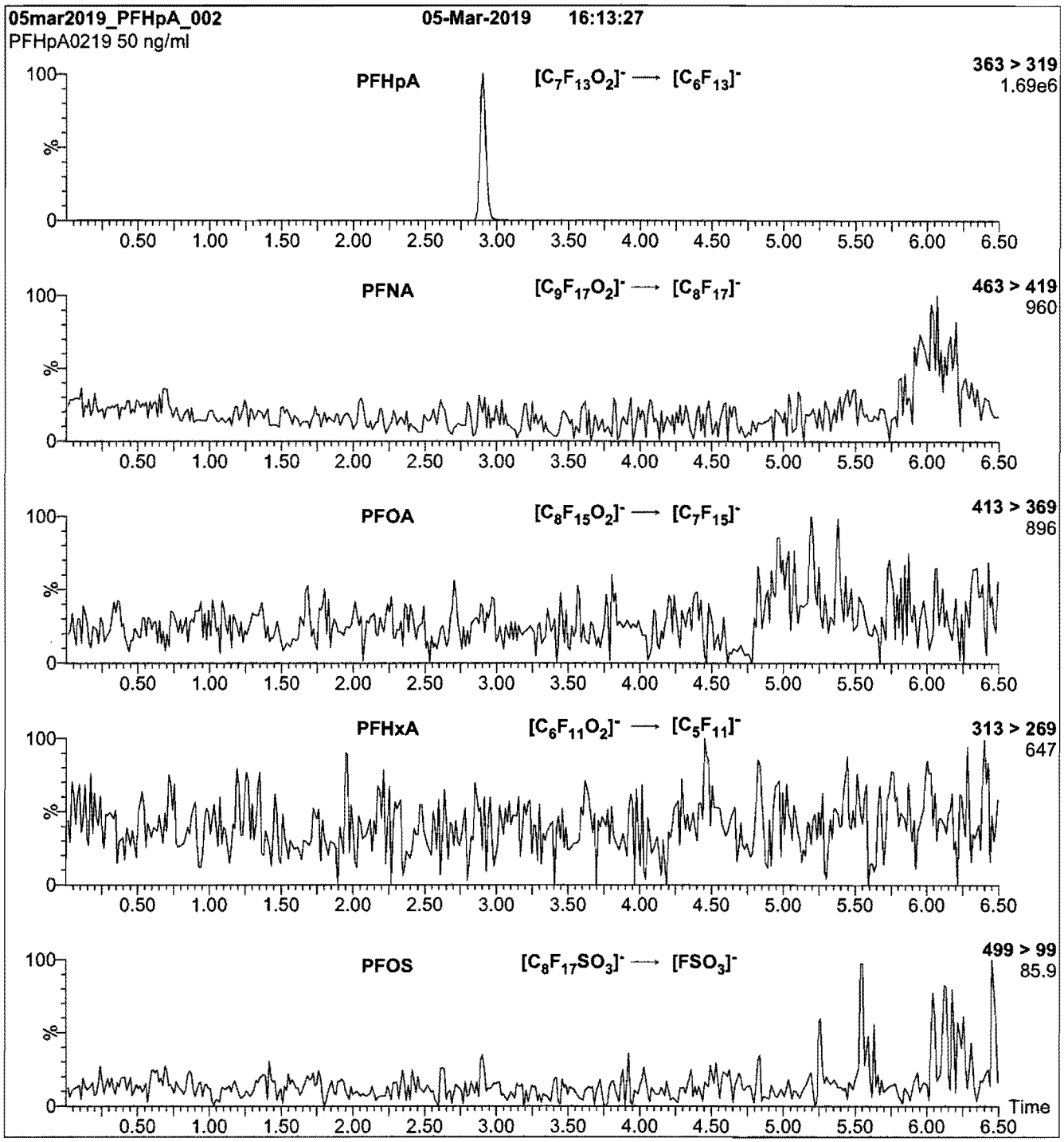
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/03/2019 (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

19L0642

Figure 2: **PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHpA)

Mobile phase: Same as Figure 1

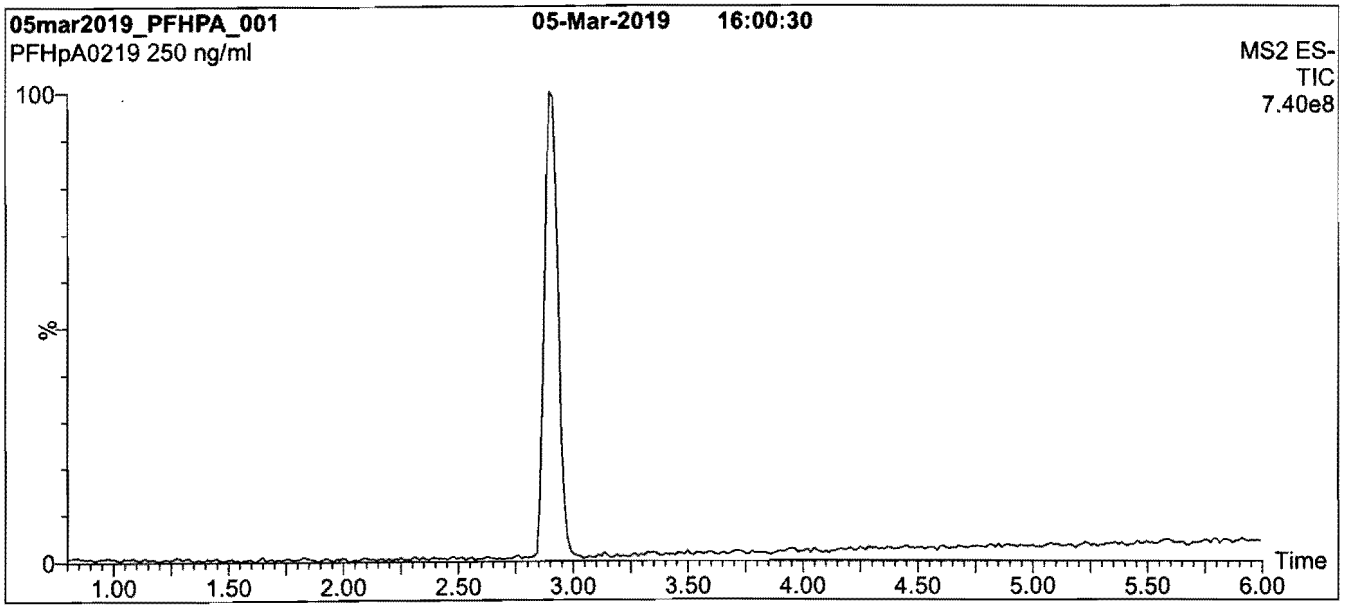
Flow: 300 µl/min

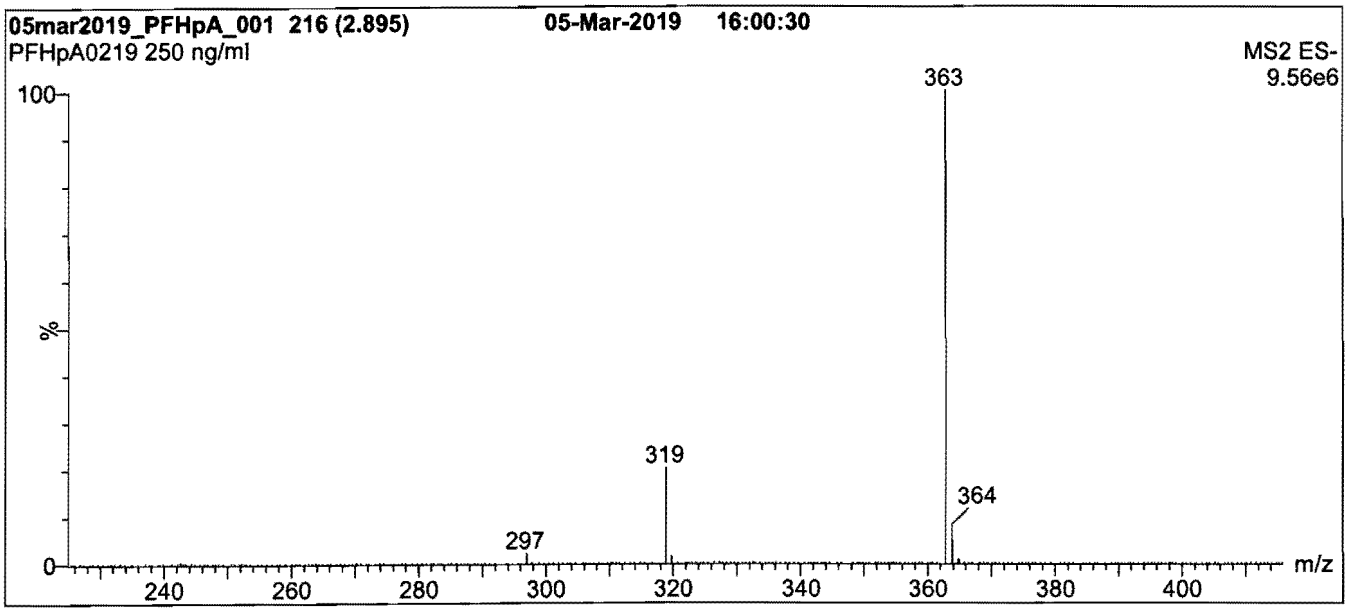
MS Parameters

Collision Gas (mbar) = 2.74e-3
Collision Energy (eV) = 8

19L0642

Figure 1: **PFHpA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

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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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0642

INTENDED USE:

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HANDLING:

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UNCERTAINTY:

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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.

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

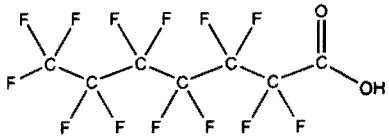
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0642

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFHpA	**LOT NUMBER:**	PFHpA0219
COMPOUND:	Perfluoro-n-heptanoic acid		
STRUCTURE:		**CAS #:**	375-85-9



MOLECULAR FORMULA:	$C_7HF_{13}O_2$	**MOLECULAR WEIGHT:**	364.06
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	03/05/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/05/2024		
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:

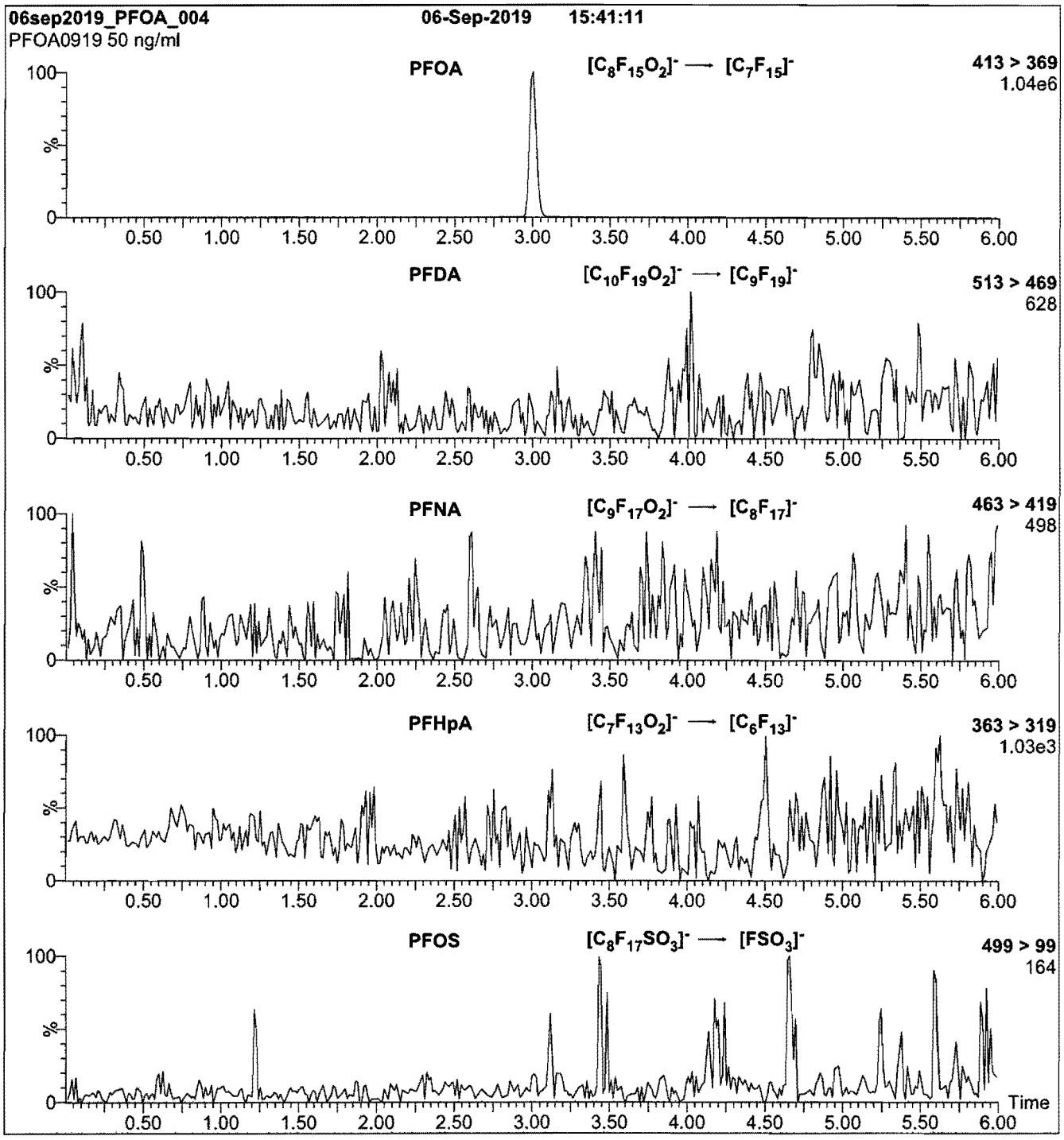
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/18/2019 (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

Figure 2: **PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFOA)

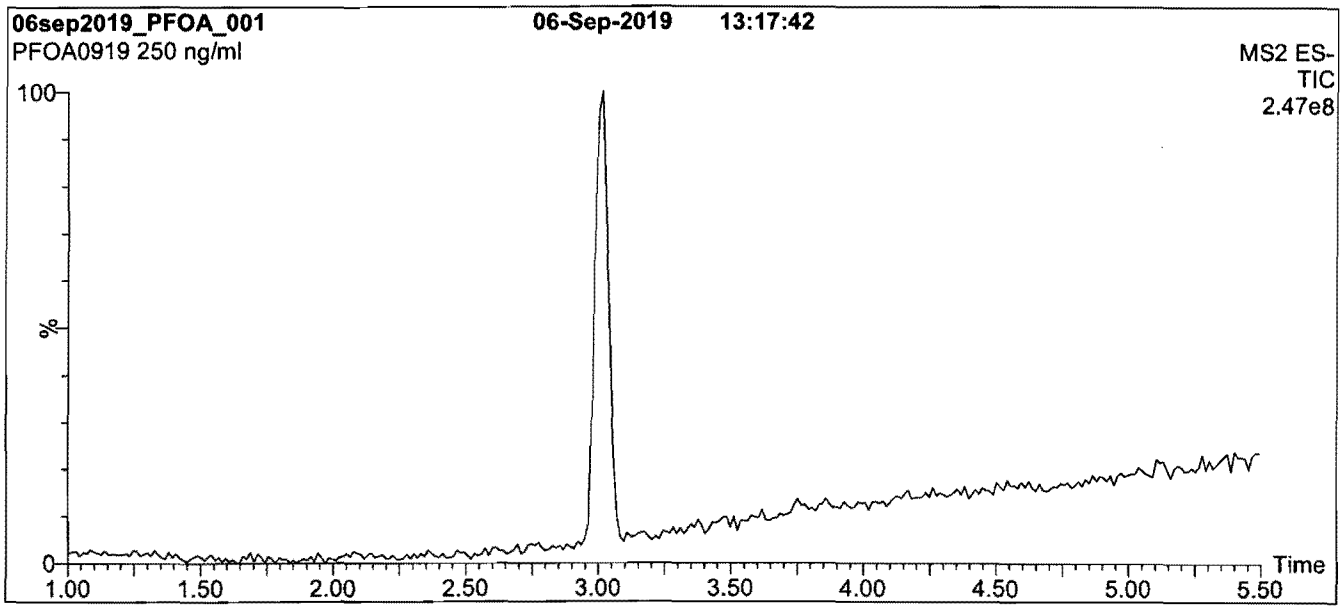
Mobile phase: Same as Figure 1

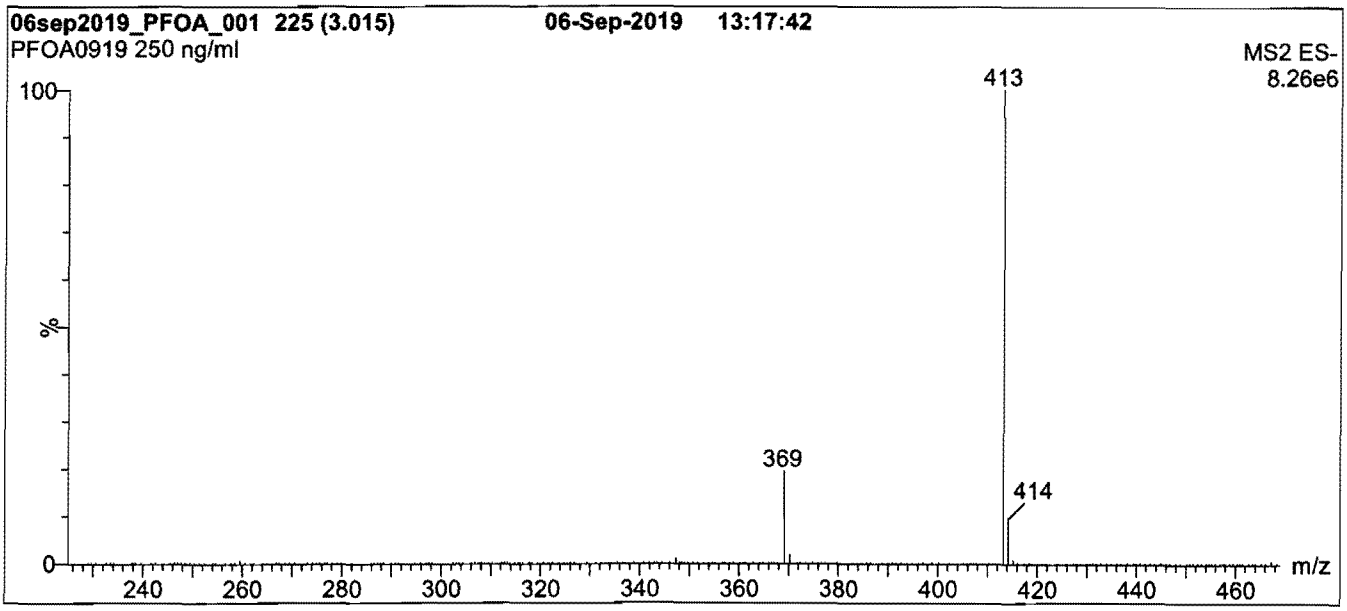
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 8

Figure 1: **PFOA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0643

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

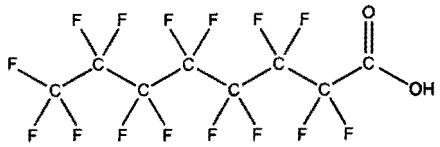
19L0643

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFOA
COMPOUND: Perfluoro-n-octanoic acid
LOT NUMBER: PFOA0919

STRUCTURE:
CAS #: 335-67-1



MOLECULAR FORMULA: $C_8HF_{15}O_2$
MOLECULAR WEIGHT: 414.07
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 09/06/2019
EXPIRY DATE: (mm/dd/yyyy) 09/06/2024
RECOMMENDED STORAGE: Store ampoule in a cool, dark place

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/09/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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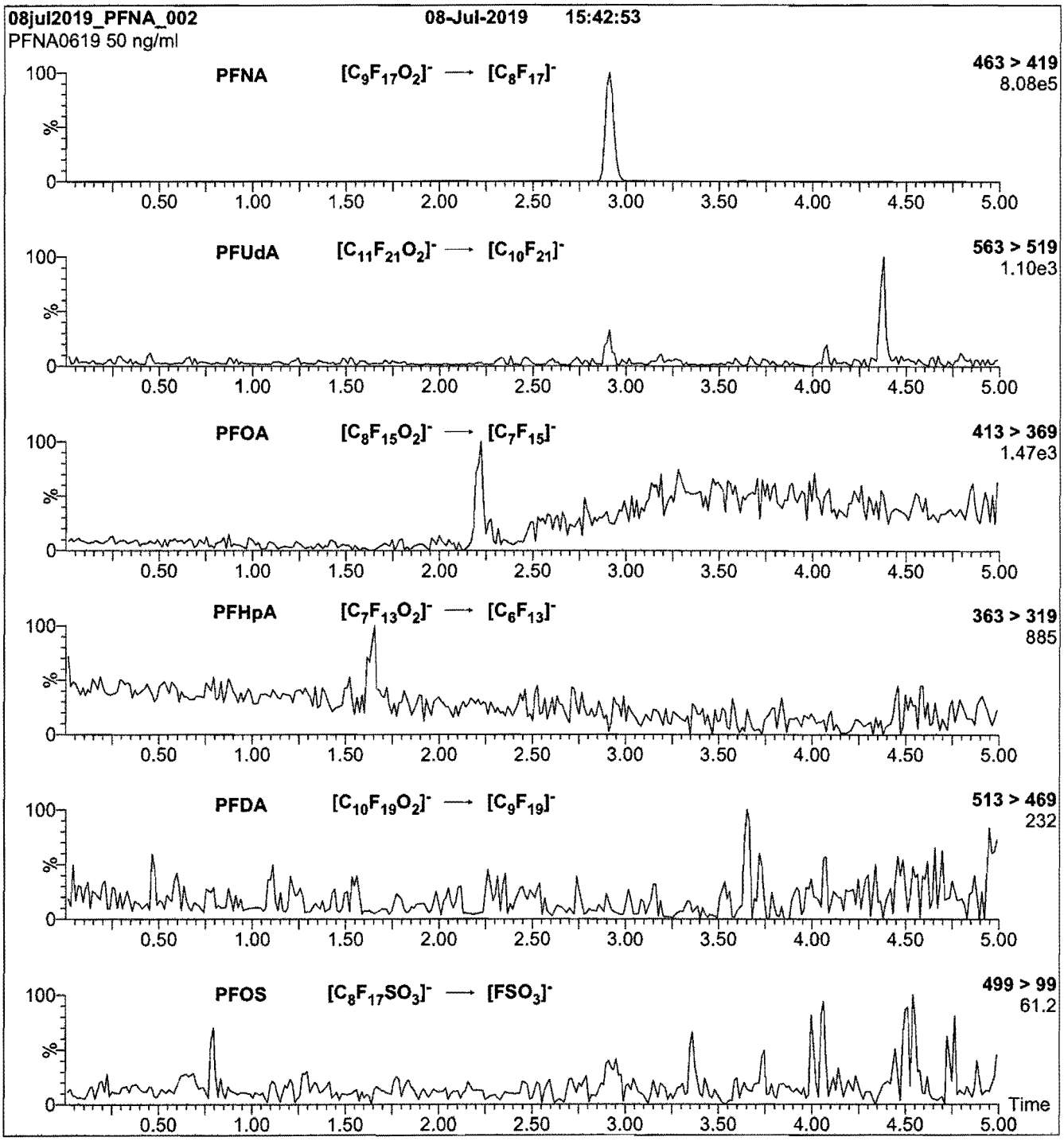
19L0644

Figure 2: **PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFNA)

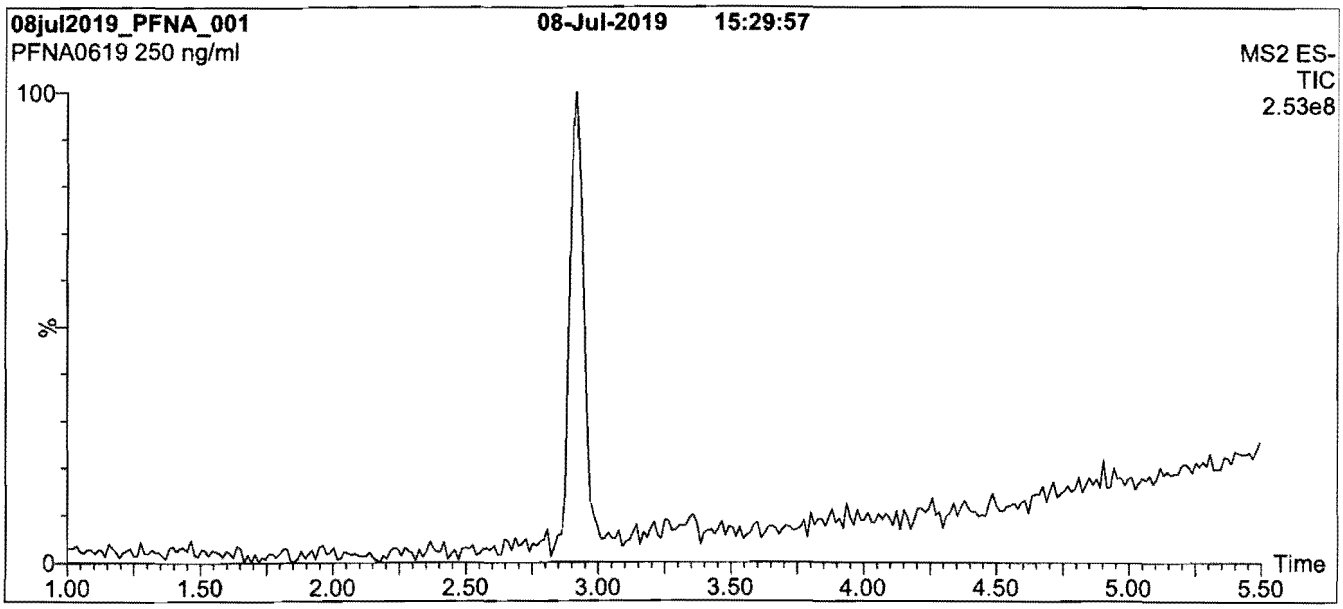
Mobile phase: Same as Figure 1

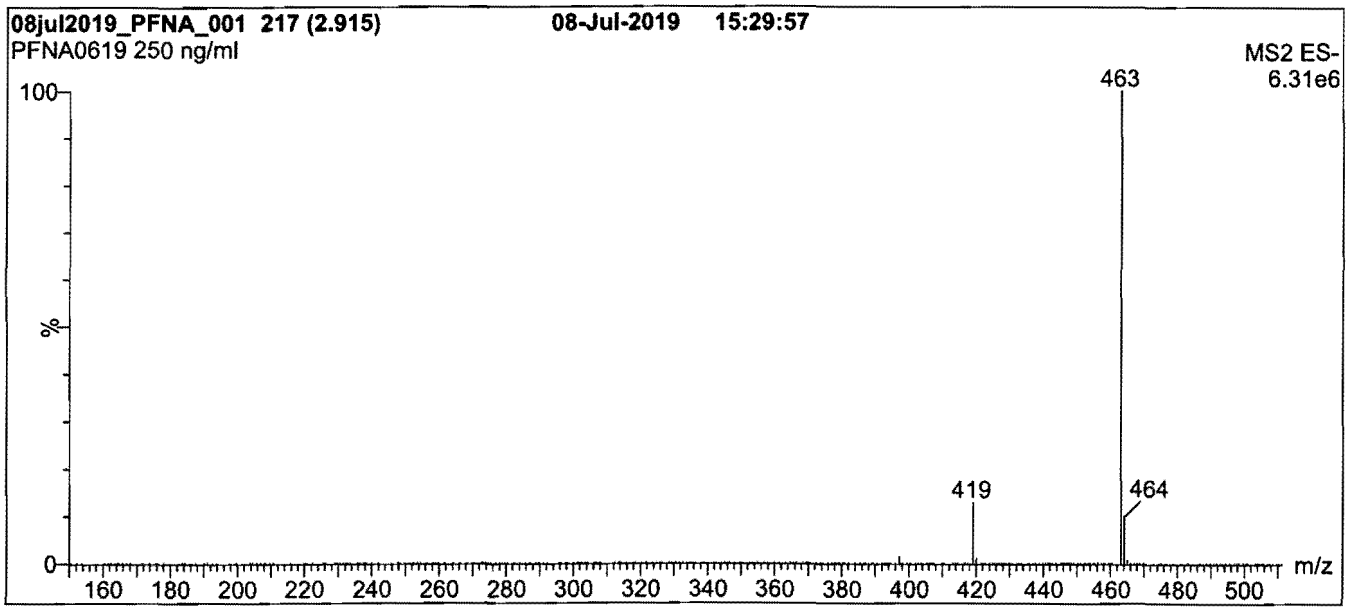
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 10

Figure 1: **PFNA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0644

INTENDED USE:

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HANDLING:

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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:

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:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

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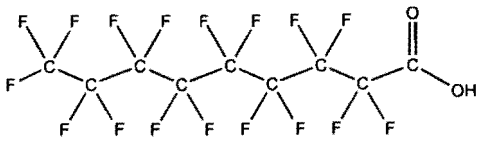
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFNA
LOT NUMBER: PFNA0619
COMPOUND: Perfluoro-n-nonanoic acid
STRUCTURE:
CAS #: 375-95-1



MOLECULAR FORMULA: $C_9HF_{17}O_2$
MOLECULAR WEIGHT: 464.08
CONCENTRATION: 50 ± 2.5 µg/ml
SOLVENT(S): Methanol
Water (<1%)

CHEMICAL PURITY: >98%
LAST TESTED: (mm/dd/yyyy) 07/08/2019
EXPIRY DATE: (mm/dd/yyyy) 07/08/2024
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-octanoic acid (PFOA), < 0.1% of perfluoro-n-heptanoic acid (PFHpA), and < 0.1% of perfluoro-n-undecanoic acid (PFUdA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/11/2019 (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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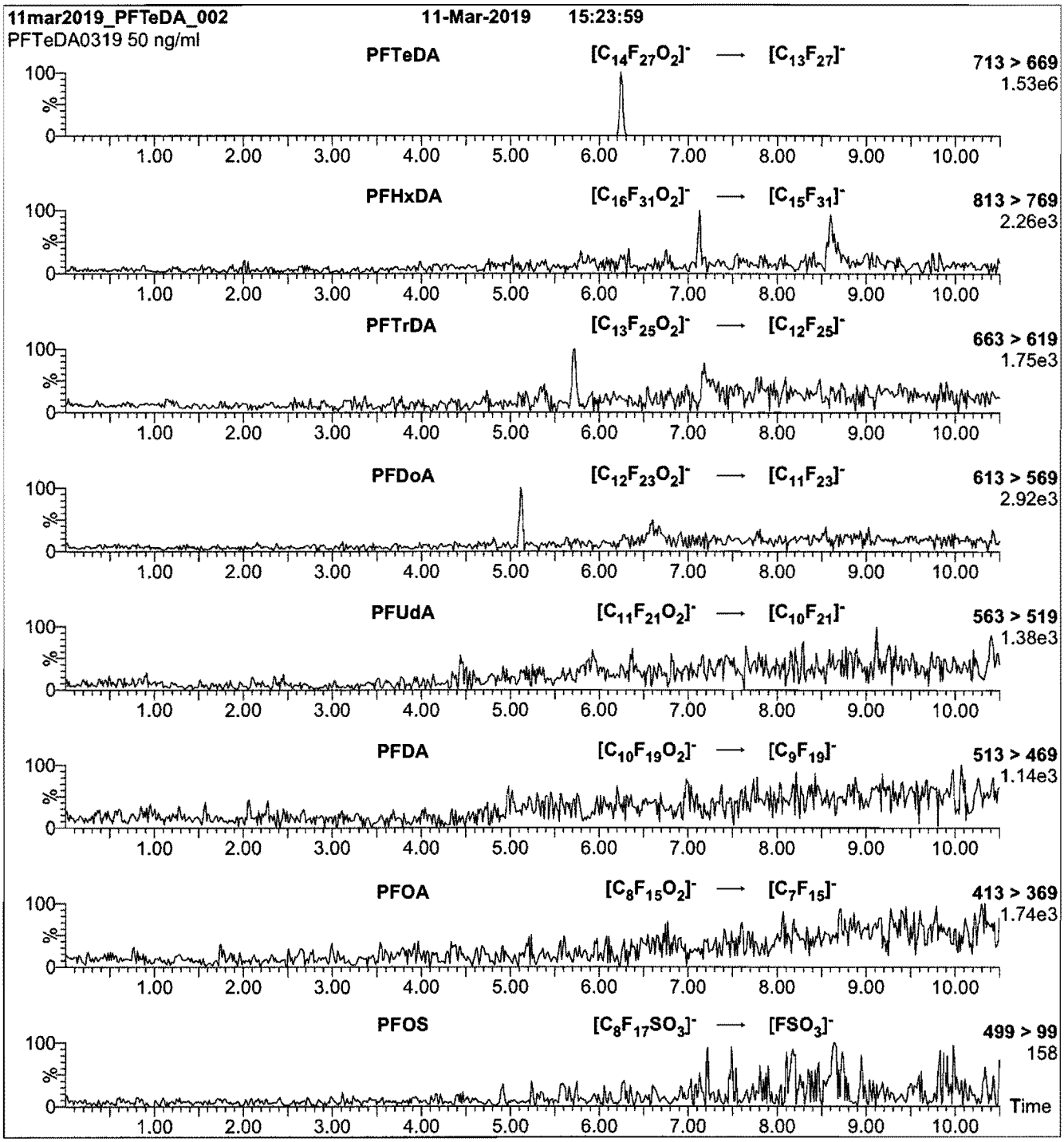
Figure 2: **PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFTeDA)

Mobile phase: Same as Figure 1

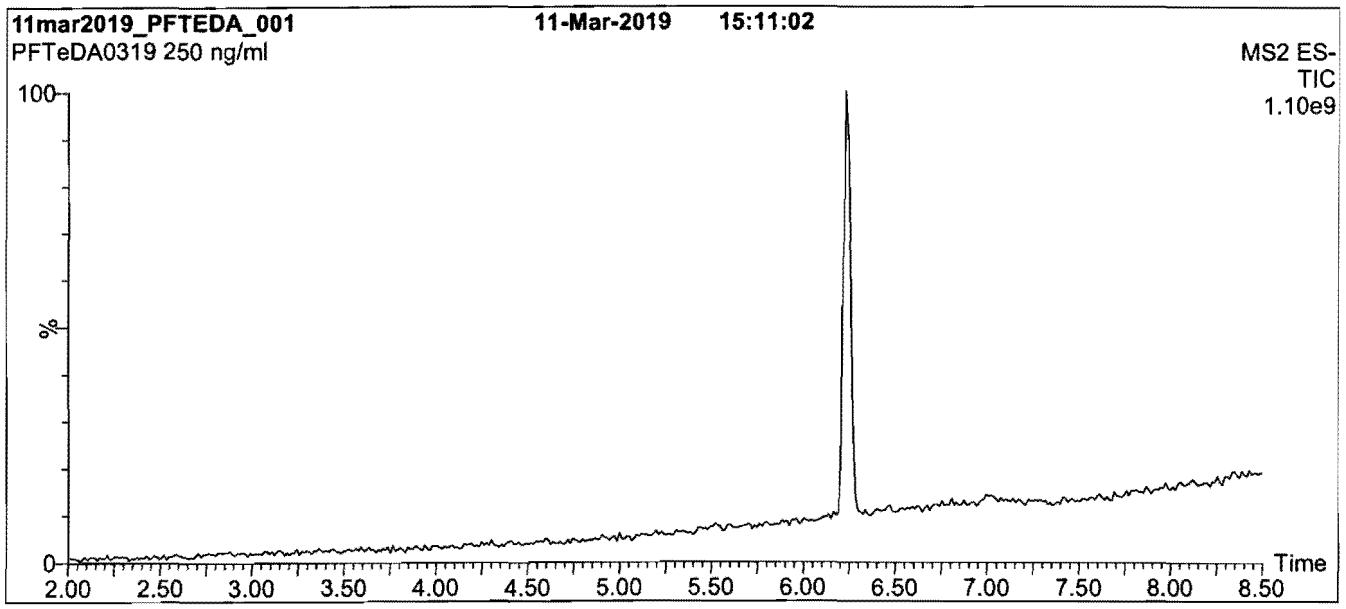
Flow: 300 µl/min

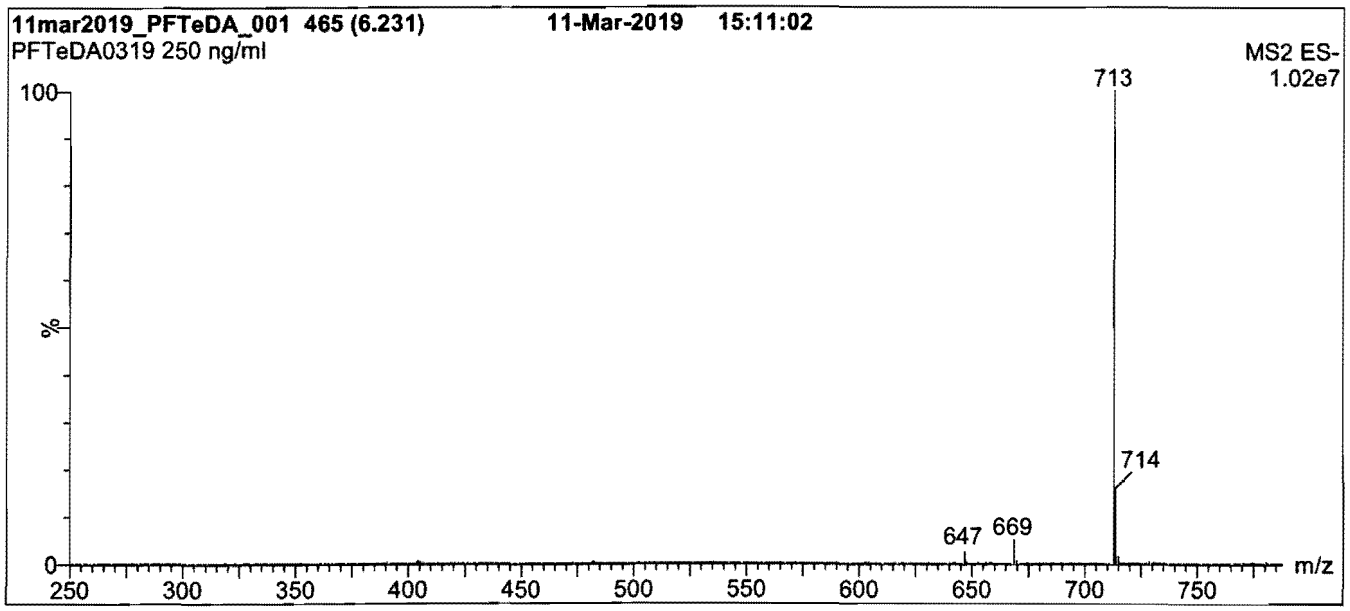
MS Parameters

Collision Gas (mbar) = 3.03e-3
Collision Energy (eV) = 14

1920645

Figure 1: **PFTeDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 1200 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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EXPIRY DATE / PERIOD OF VALIDITY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

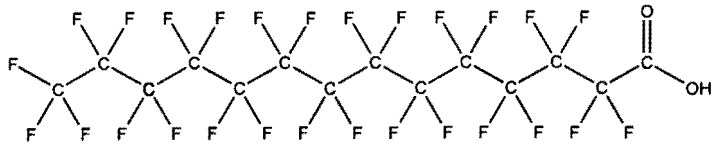
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0645

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	PFTeDA	**LOT NUMBER:**	PFTeDA0319
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)	03/11/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/11/2024		
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 PFDoA ($C_{12}HF_{23}O_2$), ~ 0.1% of PFTrDA ($C_{13}HF_{25}O_2$), and ~ 0.1% of PFHxDA ($C_{16}HF_{31}O_2$).

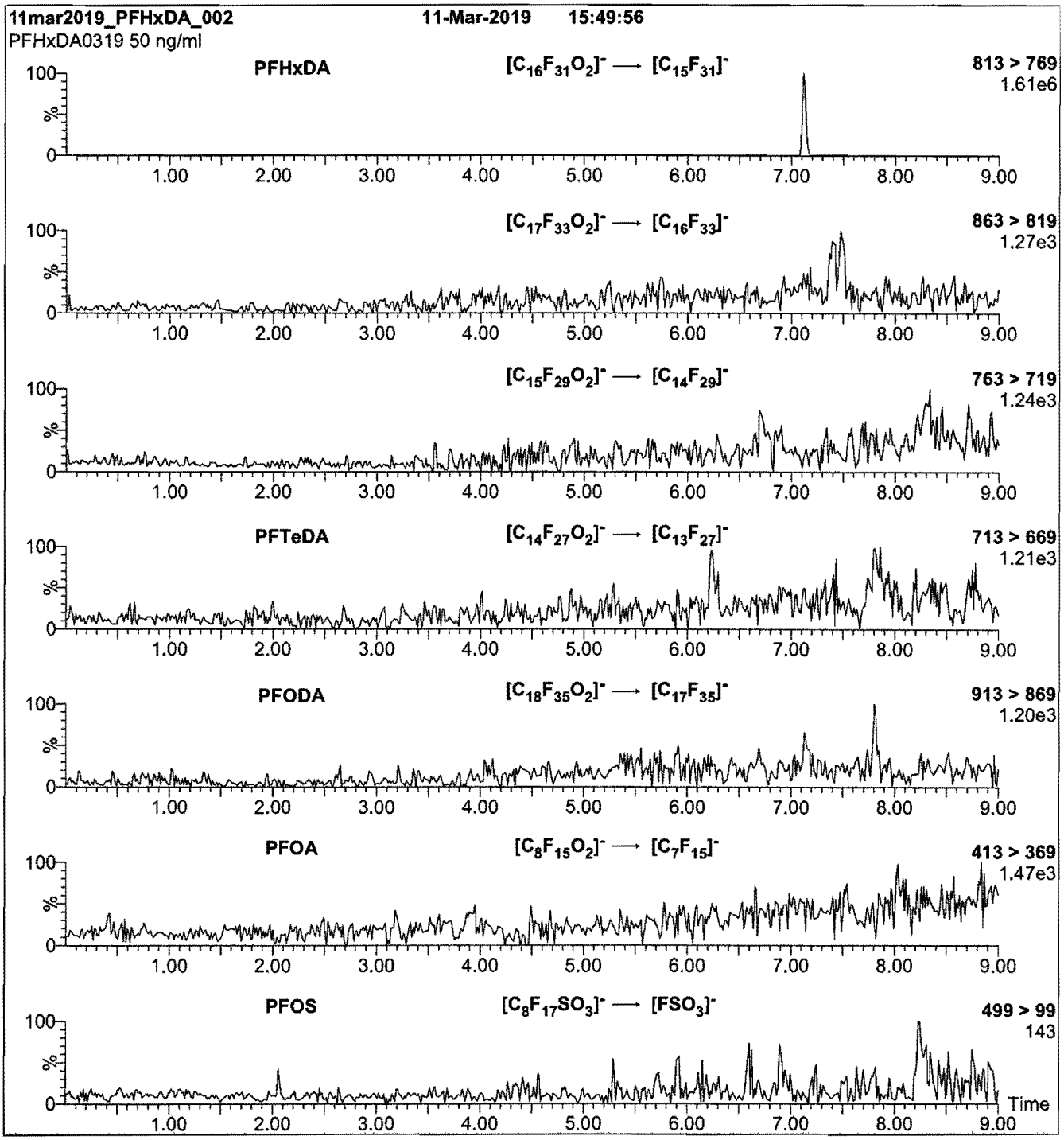
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/28/2019 (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

19L0646

Figure 2: **PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHxDA)

Mobile phase: Same as Figure 1

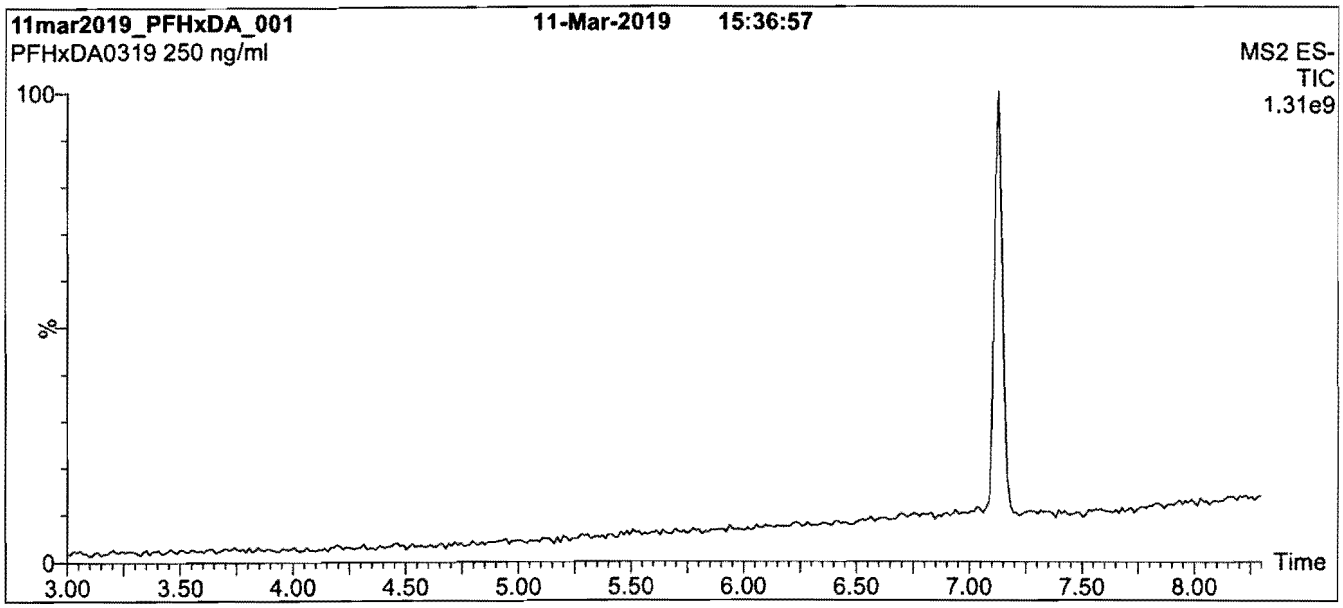
Flow: 300 µl/min

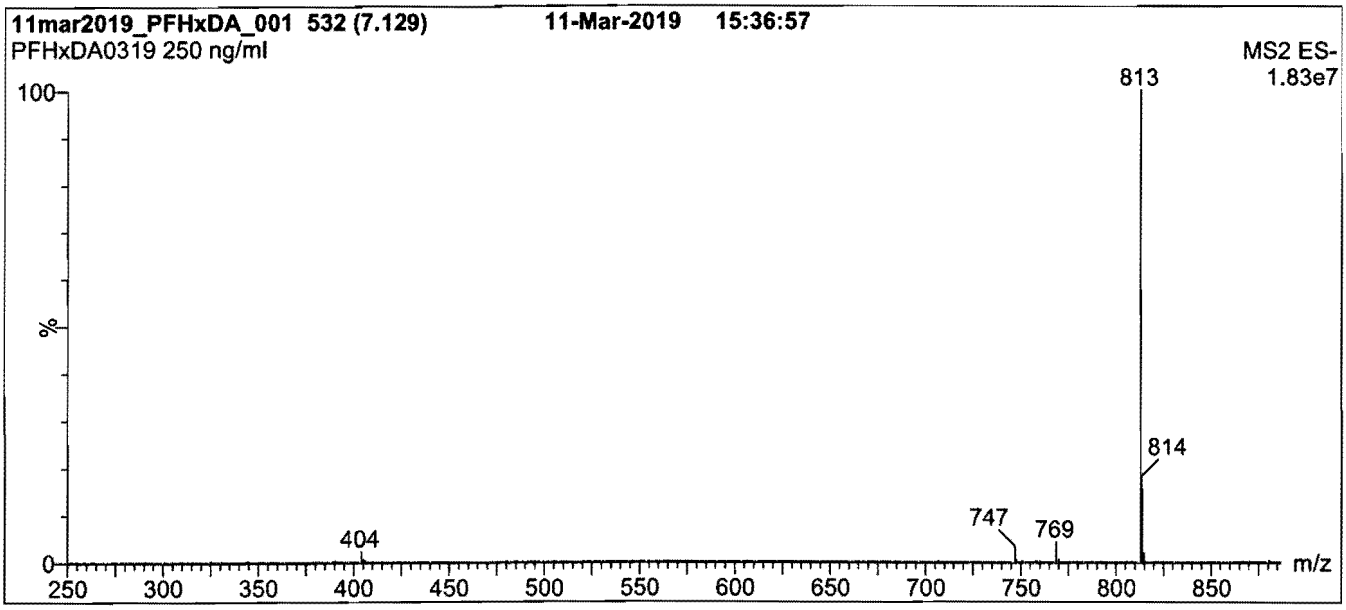
MS Parameters

Collision Gas (mbar) = 3.03e-3
Collision Energy (eV) = 15

19L0646

Figure 1: **PFHxDA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 1200 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0646

INTENDED USE:

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HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

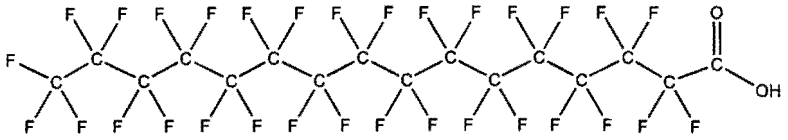
19L0646

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFHxDA
LOT NUMBER: PFHxDA0319
COMPOUND: Perfluoro-n-hexadecanoic acid

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) 03/11/2019
EXPIRY DATE: (mm/dd/yyyy) 03/11/2024
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.

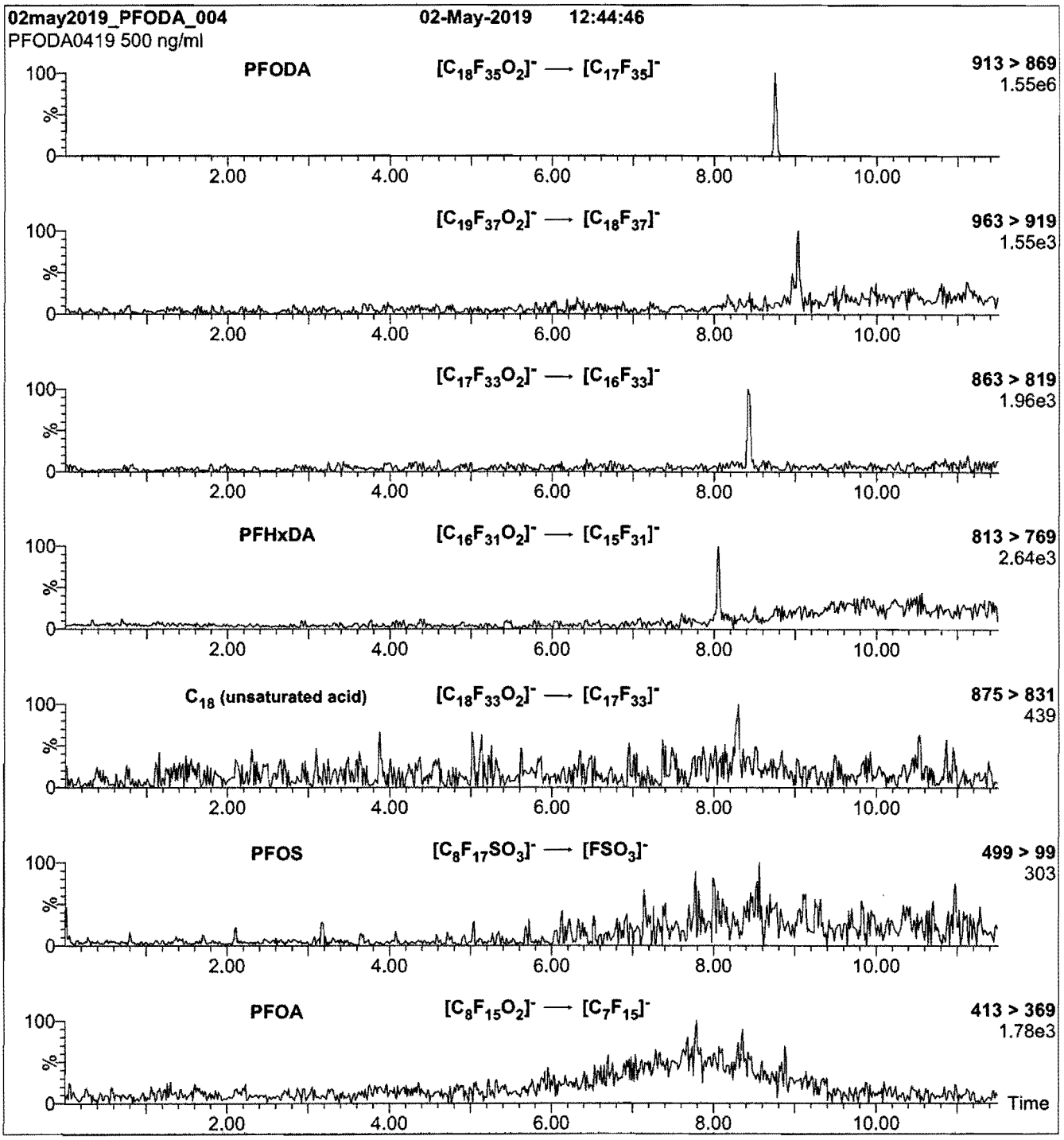
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 03/28/2019 (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

19L0647

Figure 2: **PFODA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFODA)

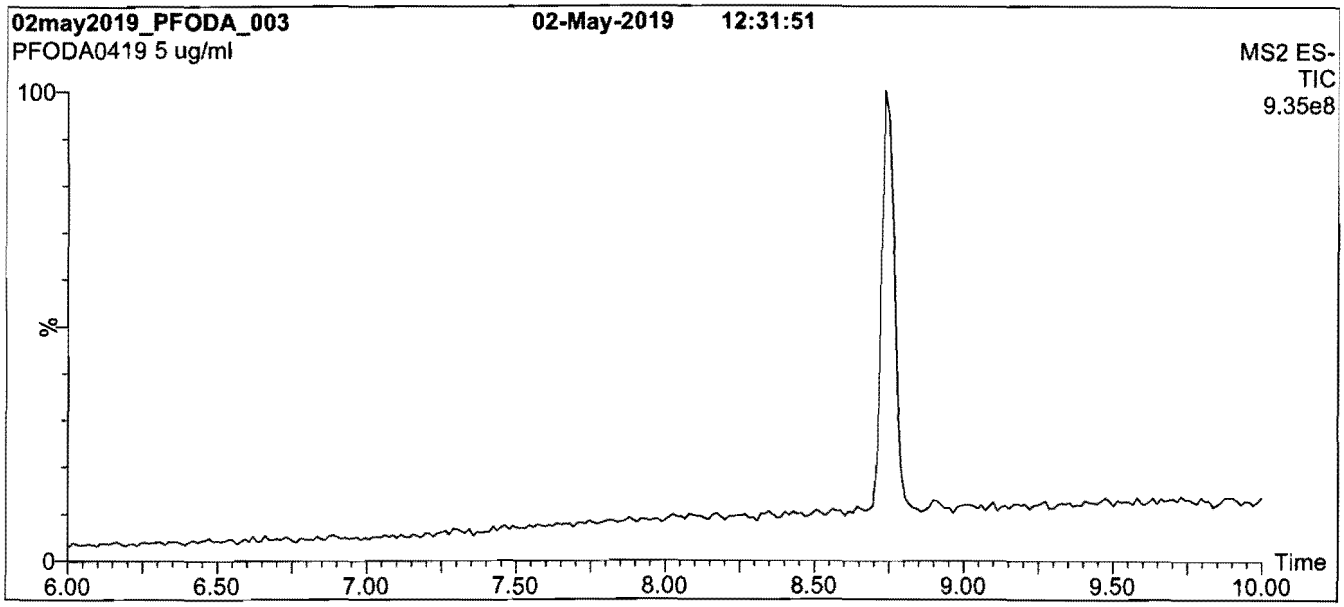
Mobile phase: Same as Figure 1

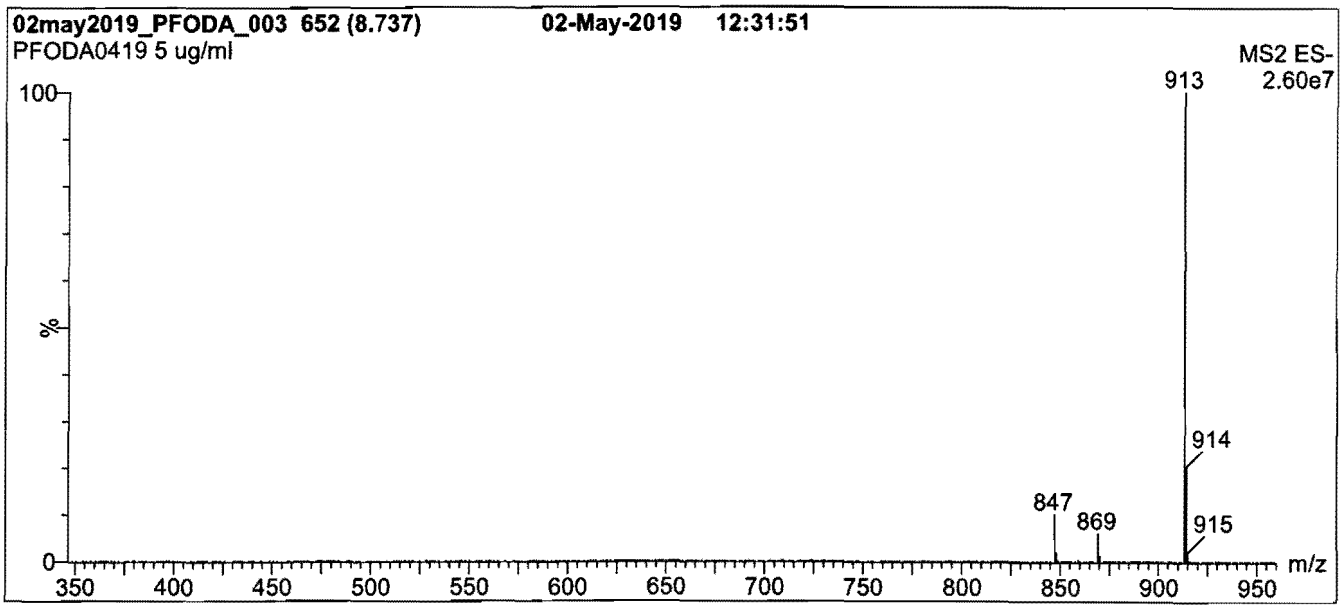
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.92e-3
Collision Energy (eV) = 15

Figure 1: **PFODA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 1200 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0647

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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. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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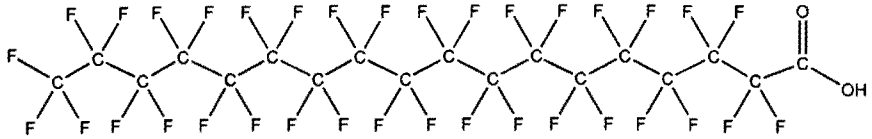
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFODA
COMPOUND: Perfluoro-n-octadecanoic acid
LOT NUMBER: PFODA0419

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) 05/02/2019
EXPIRY DATE: (mm/dd/yyyy) 05/02/2024
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 PFHxDA ($C_{16}HF_{31}O_2$) and ~ 0.1% of PFHpDA ($C_{17}HF_{33}O_2$)

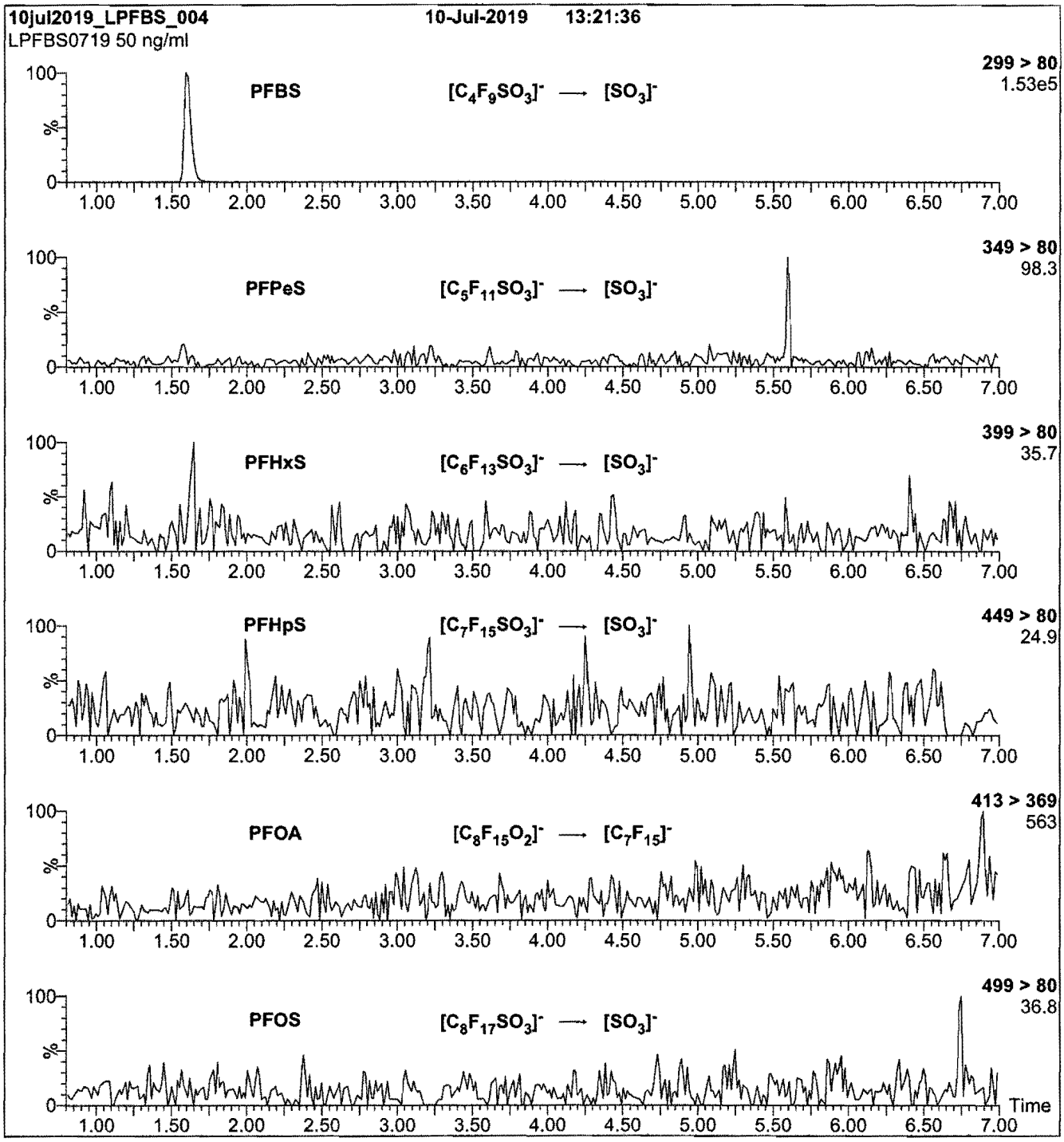
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/16/2019 (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

19L0648

Figure 2: **L-PFBS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFBS)

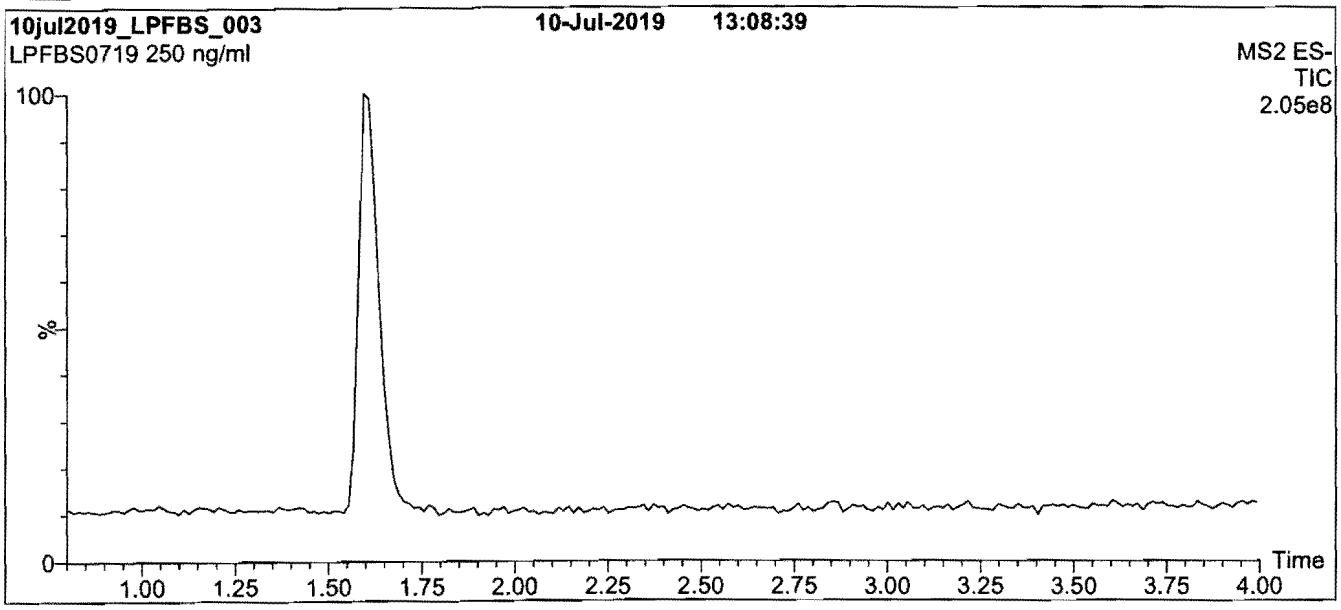
Mobile phase: Same as Figure 1

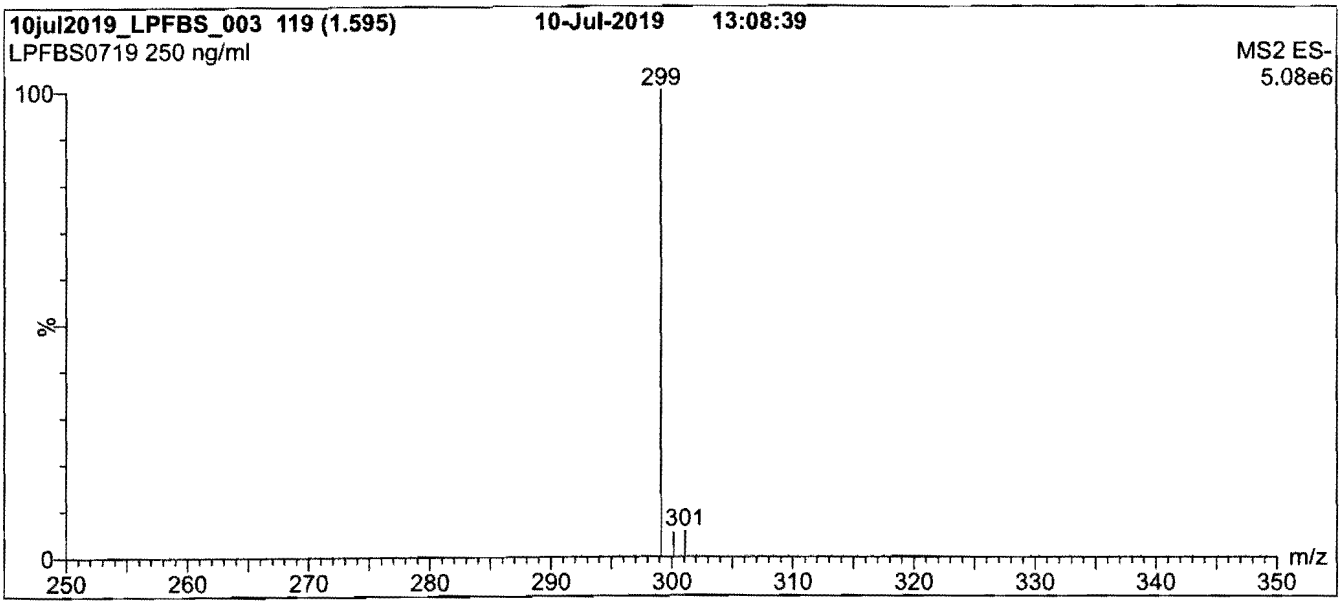
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 30

Figure 1: **L-PFBS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 70% organic over 7 min, then ramp to 90% organic over 2 min and hold for 1.5 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0648

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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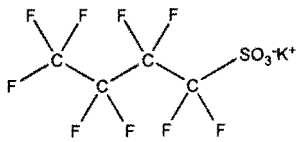
19L0648

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	L-PFBS	**LOT NUMBER:**	LPFBS0719
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)	07/10/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/10/2024		
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 sodium perfluoro-1-nonanesulfonate (L-PFNS).

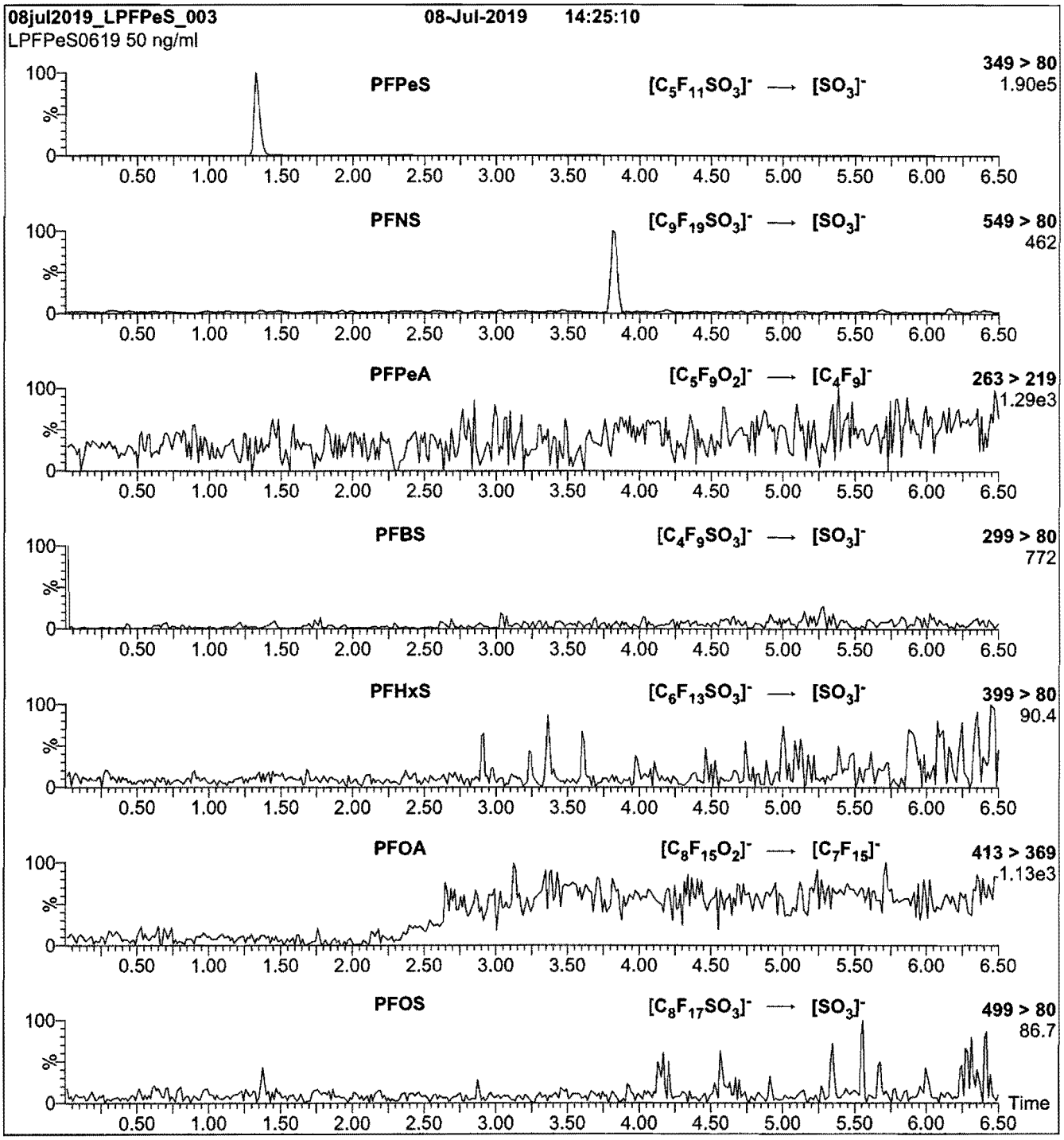
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/06/2019 (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

19L0649

Figure 2: **L-PFPeS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFPeS)

Mobile phase: Same as Figure 1

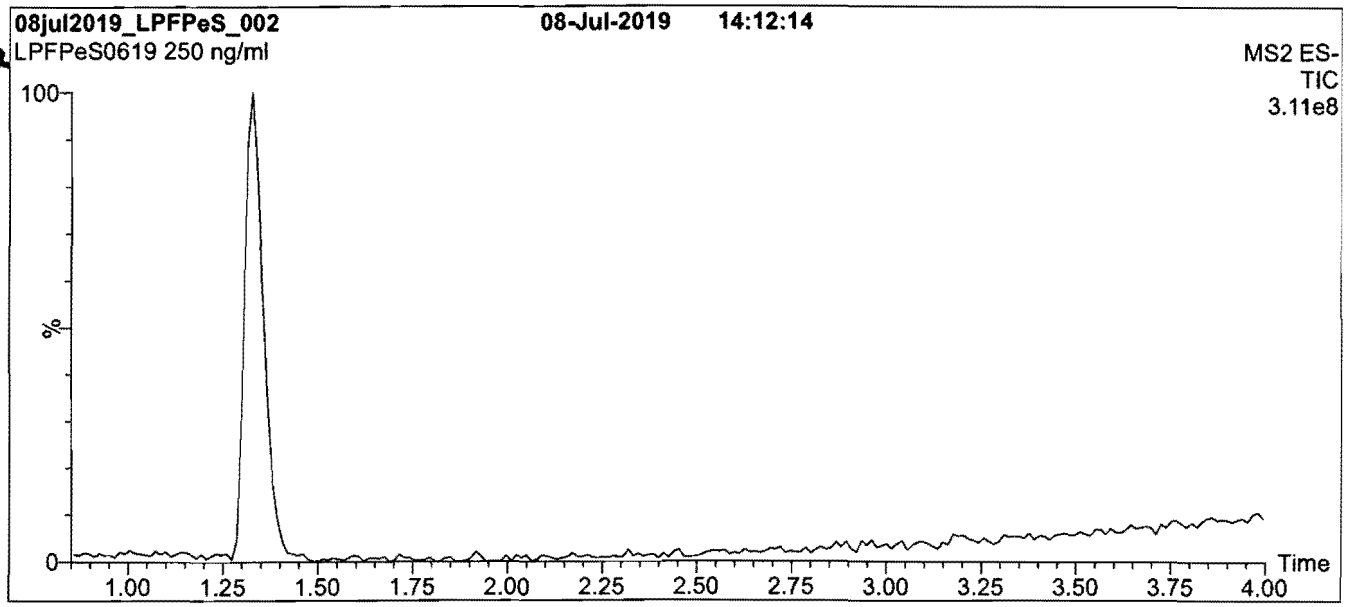
Flow: 300 µl/min

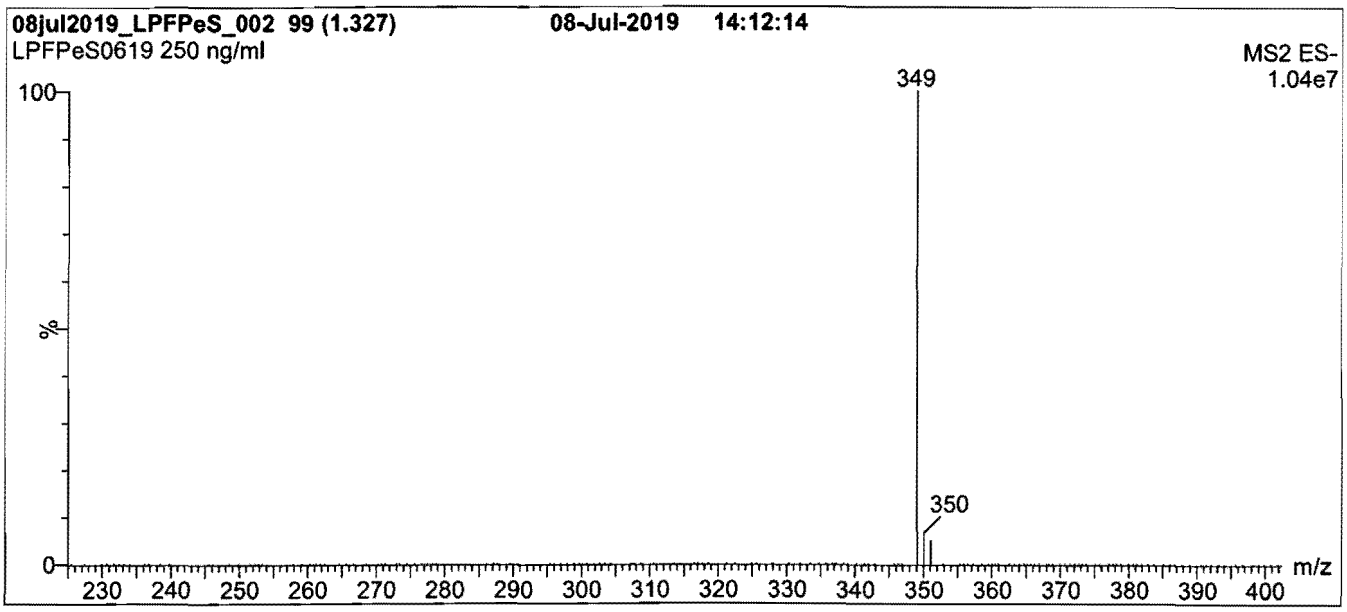
MS Parameters

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 32

19L0649

Figure 1: **L-PFPeS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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Column: Acquity UPLC BEH Shield RP_{18}
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Start: 60% (80:20 MeOH:ACN) / 40% H_2O
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Ramp to 90% organic over 7 min and hold for
3 min before returning to initial conditions in 0.75 min.
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Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
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At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

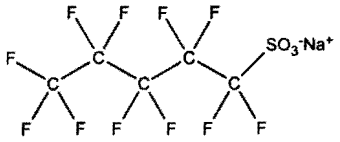
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0619

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	L-PFPeS	**LOT NUMBER:**	LPFPeS0619
COMPOUND:	Sodium perfluoro-1-pentanesulfonate		
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)	07/08/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/08/2024		
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:

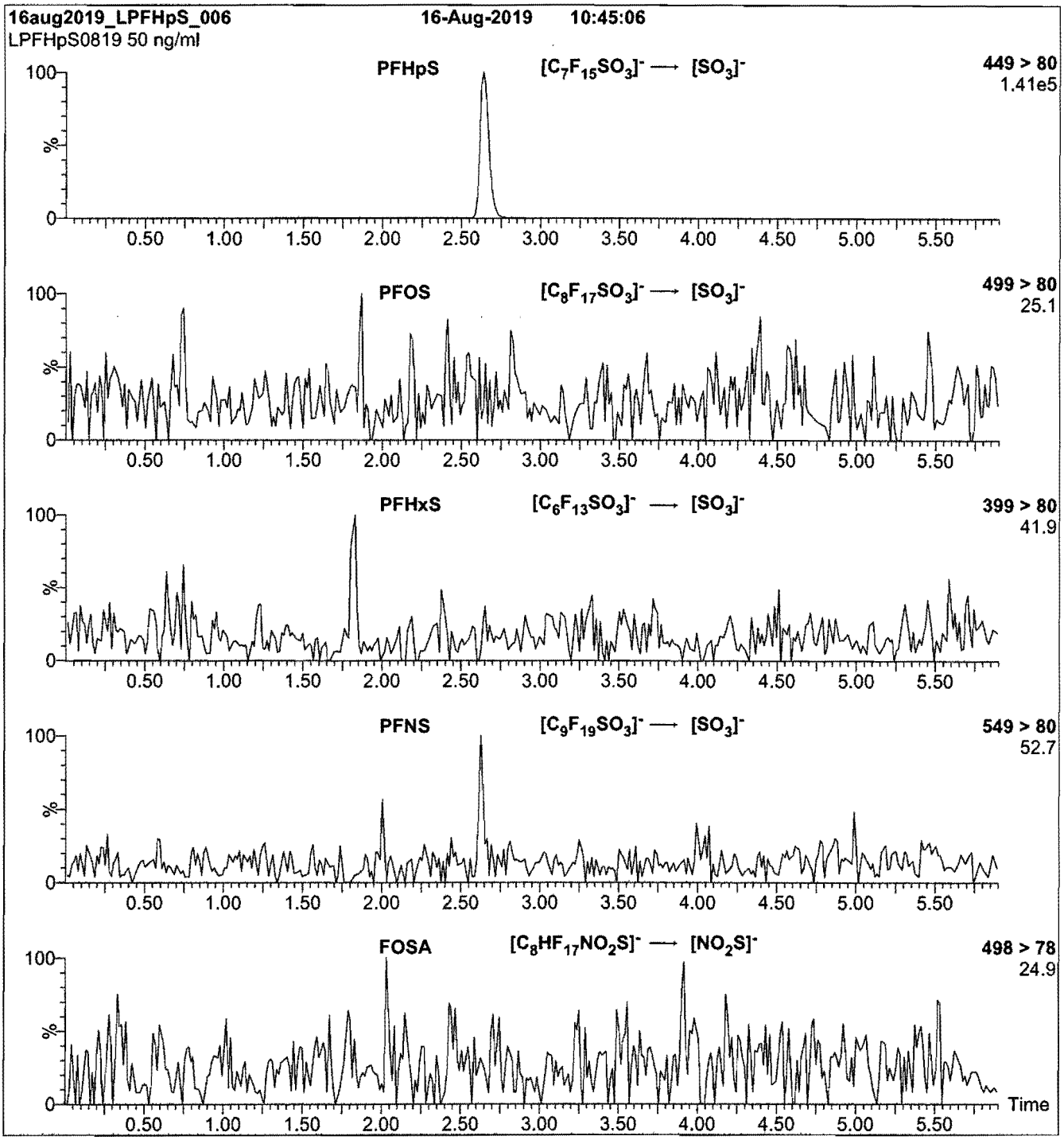
- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/11/2019 (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

Figure 2: **L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

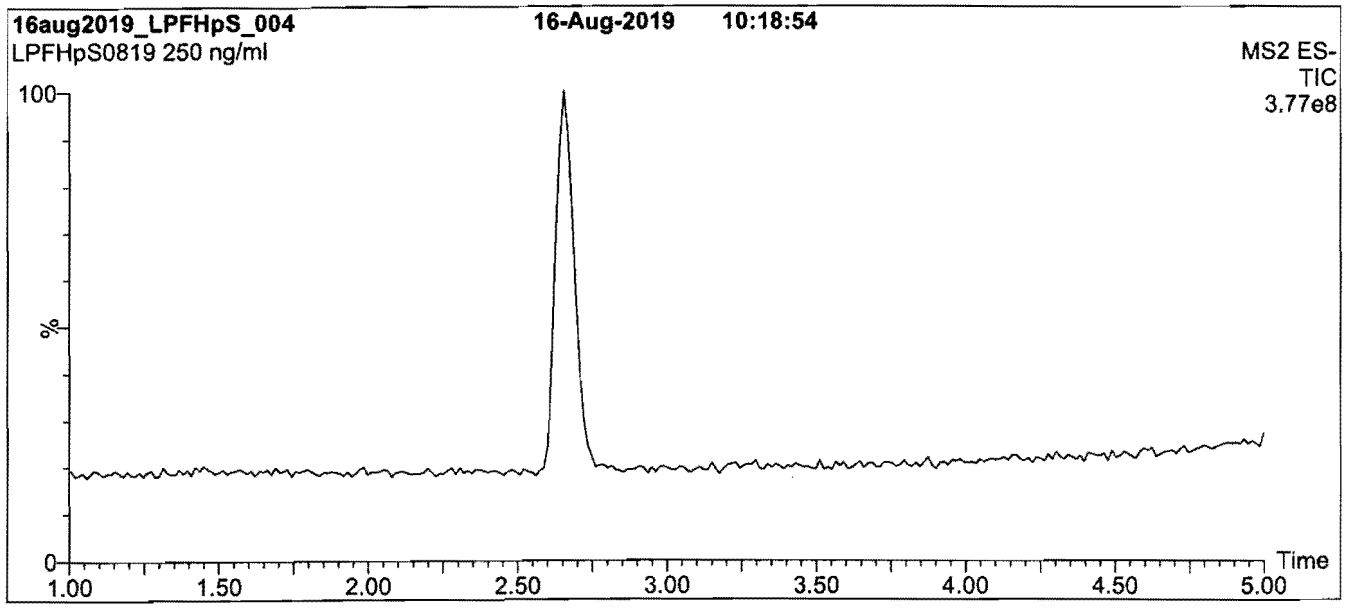
Injection: On-column (L-PFHpS)

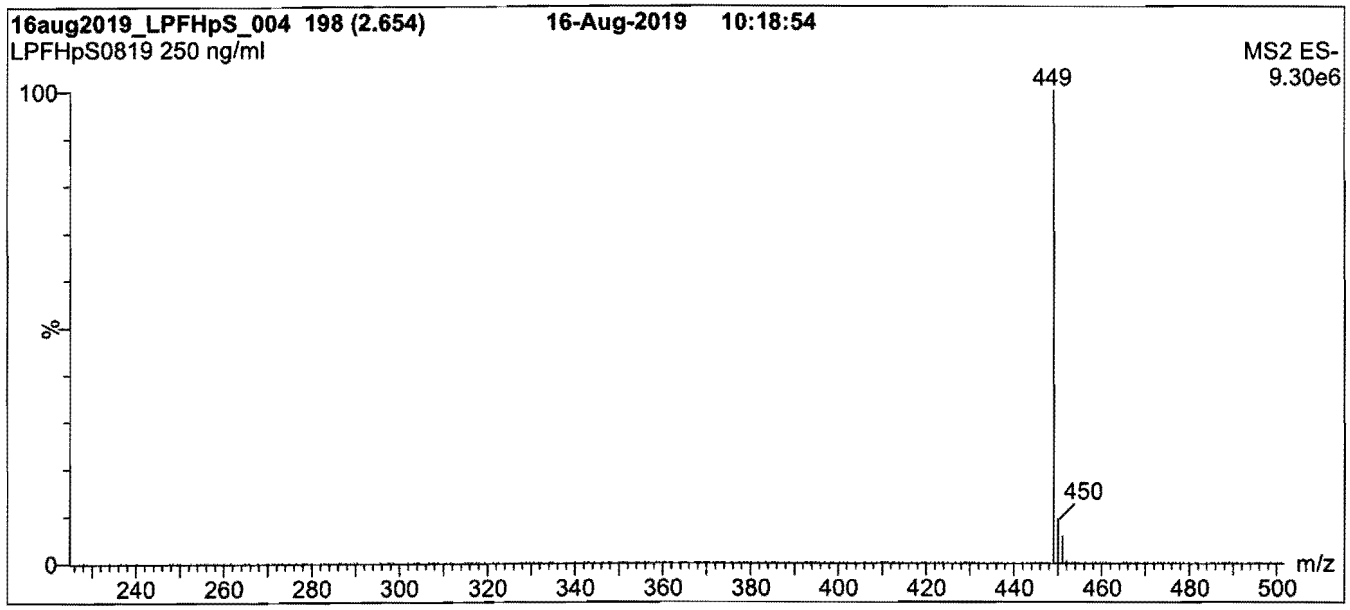
Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters
Collision Gas (mbar) = 3.61e-3
Collision Energy (eV) = 42

Figure 1: **L-PFHpS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0650

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

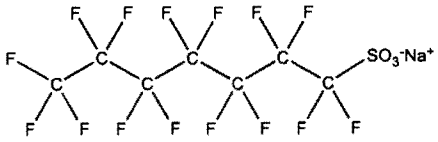
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0650

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	L-PFHpS	**LOT NUMBER:**	LPFHpS0819
COMPOUND:	Sodium perfluoro-1-heptanesulfonate		
STRUCTURE:		**CAS #:**	21934-50-9



MOLECULAR FORMULA:	$C_7F_{15}SO_3Na$	**MOLECULAR WEIGHT:**	472.10
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt)	**SOLVENT(S):**	Methanol
	47.6 ± 2.4 µg/ml (PFHpS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	08/16/2019		
EXPIRY DATE: (mm/dd/yyyy)	08/16/2024		
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:

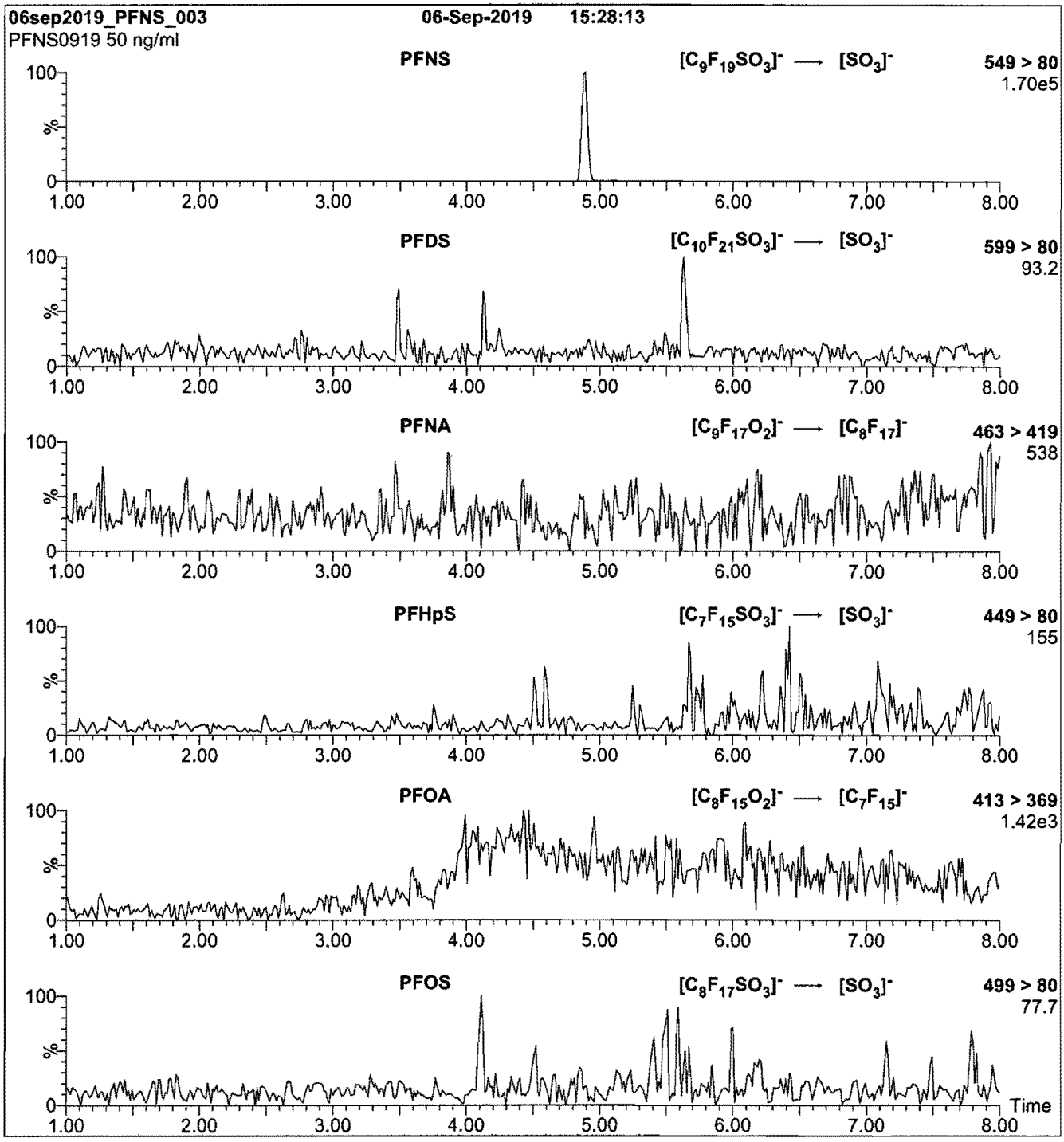
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/29/2019 (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

Figure 2: **L-PFNS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFNS)

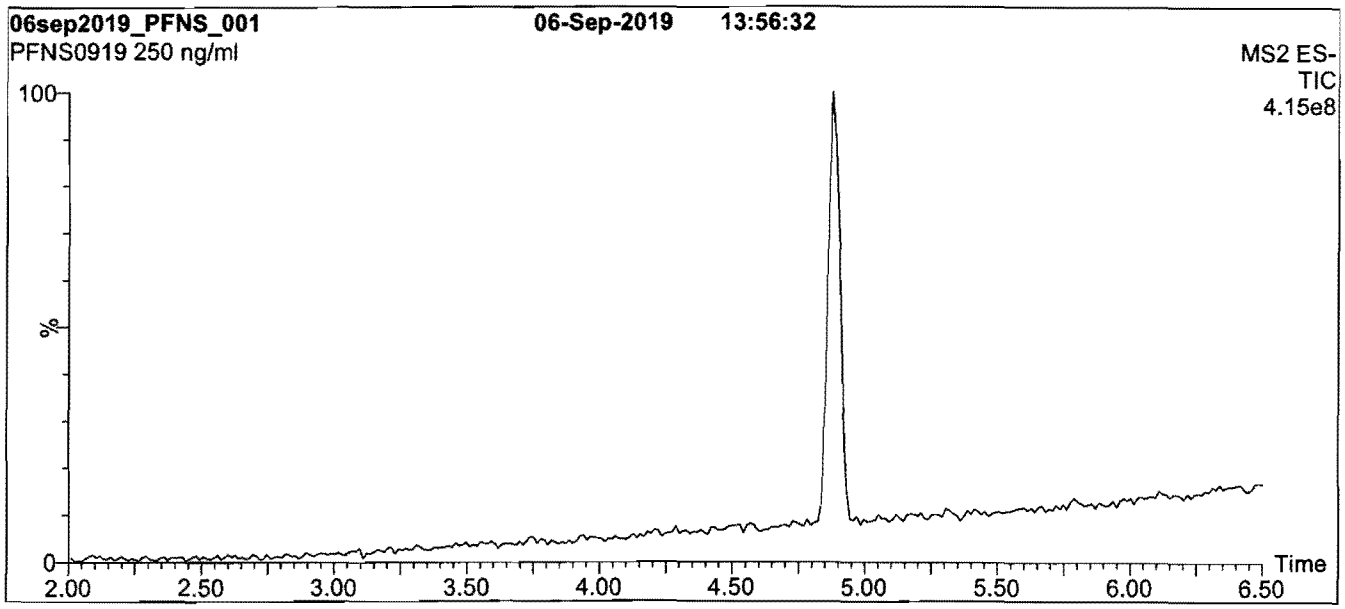
Mobile phase: Same as Figure 1

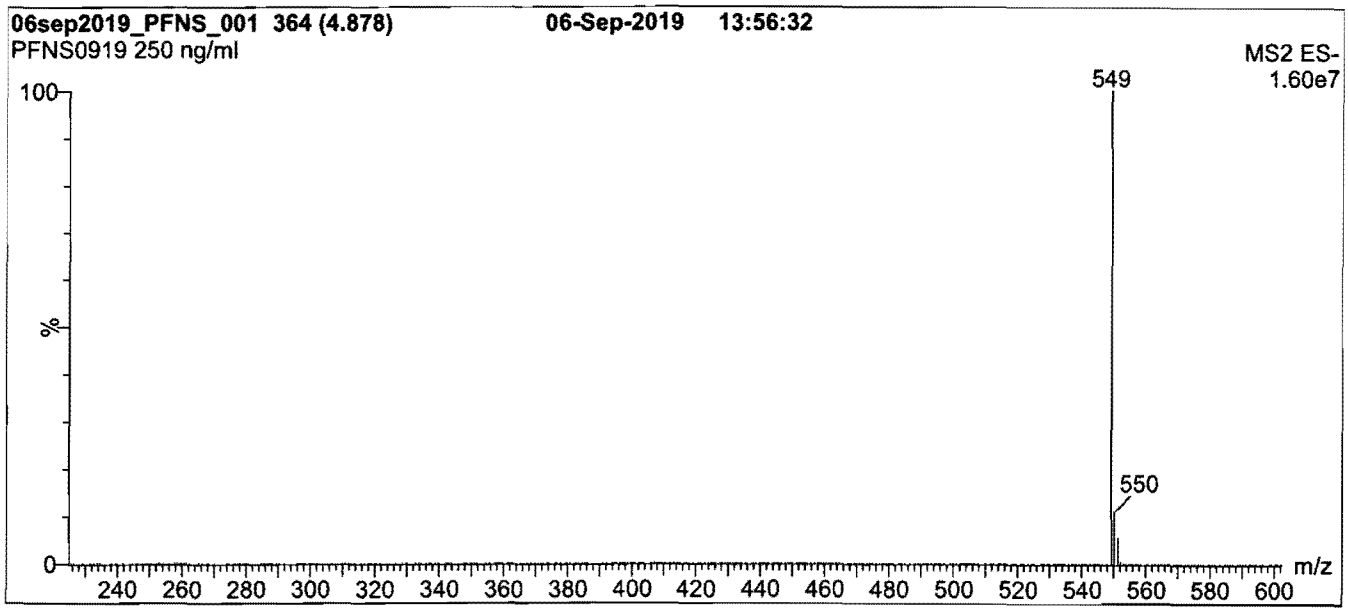
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 64

Figure 1: **L-PFNS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

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HANDLING:

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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,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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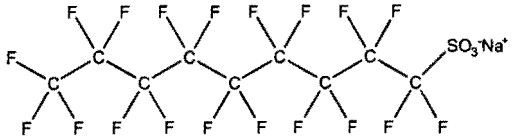
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: L-PFNS
LOT NUMBER: LPFNS0919
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)	09/06/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/06/2024		
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.

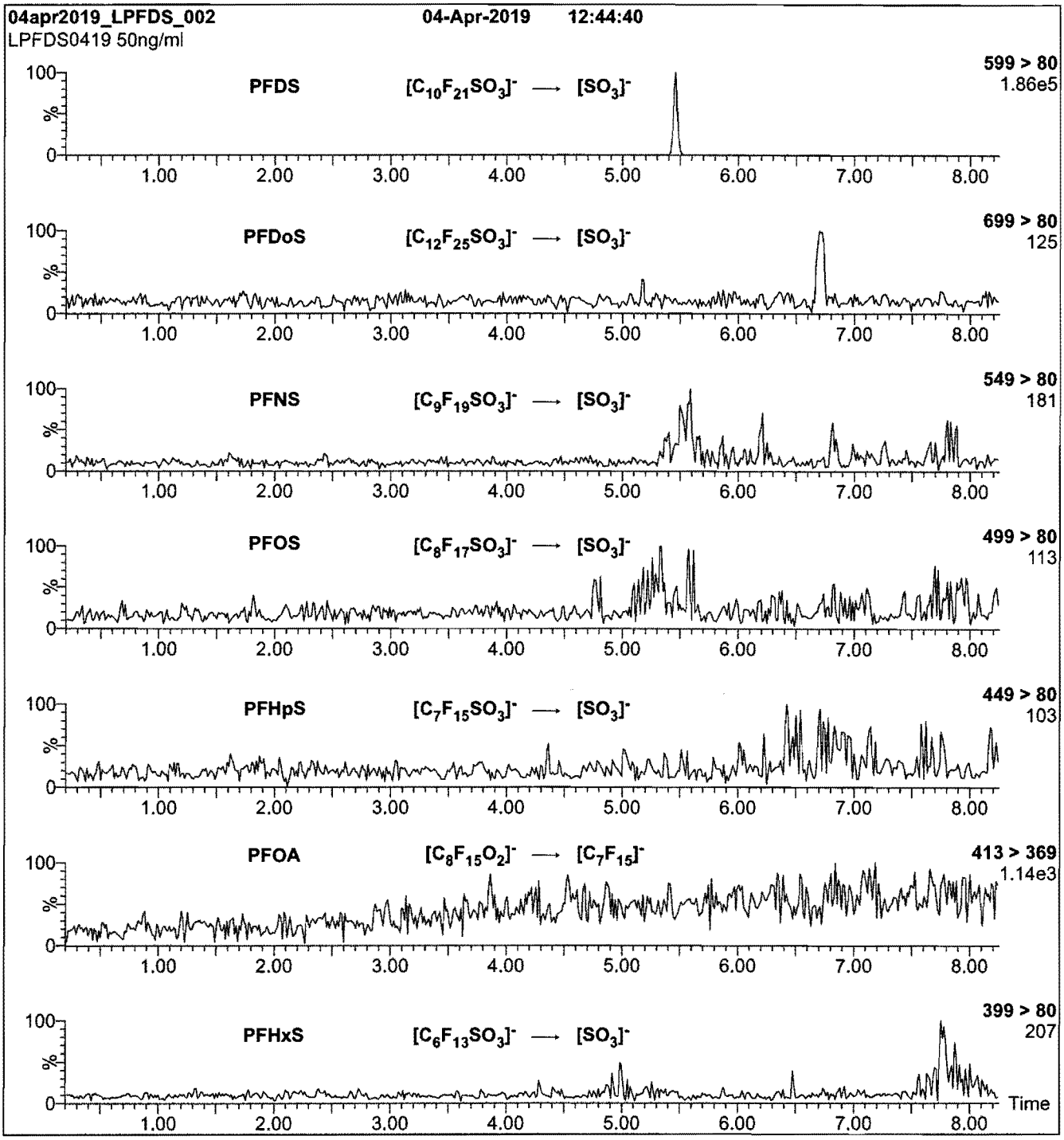
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/09/2019 (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

19L0652

Figure 2: **L-PFDS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFDS)

Mobile phase: Same as Figure 1

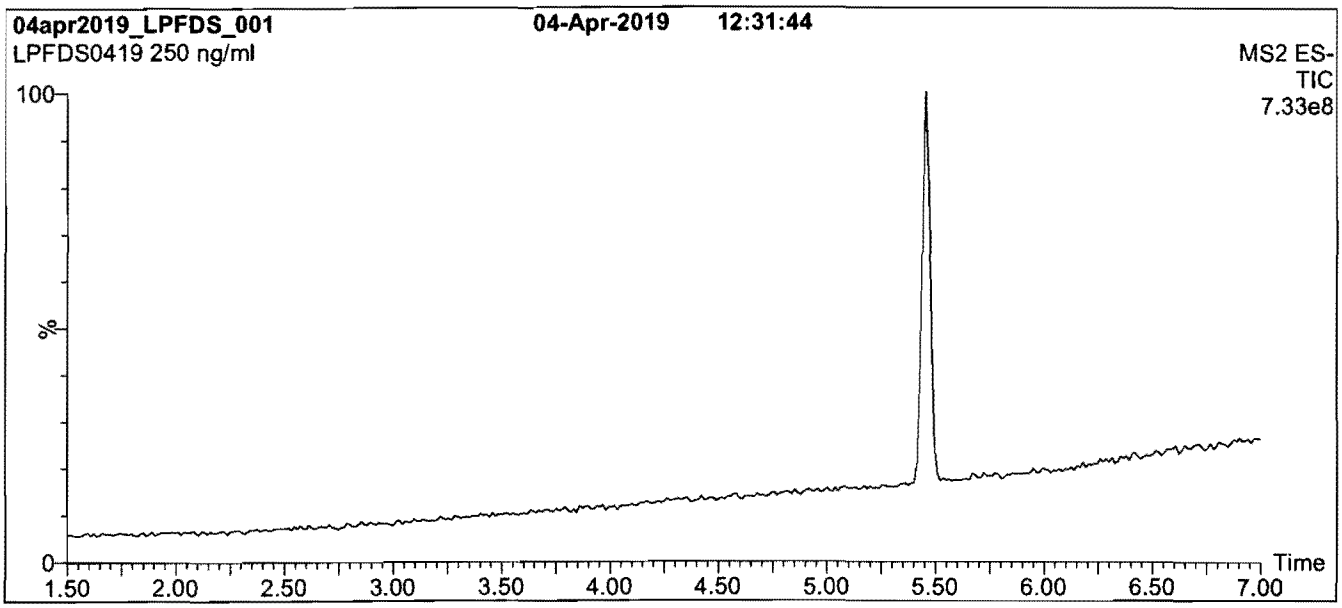
Flow: 300 µl/min

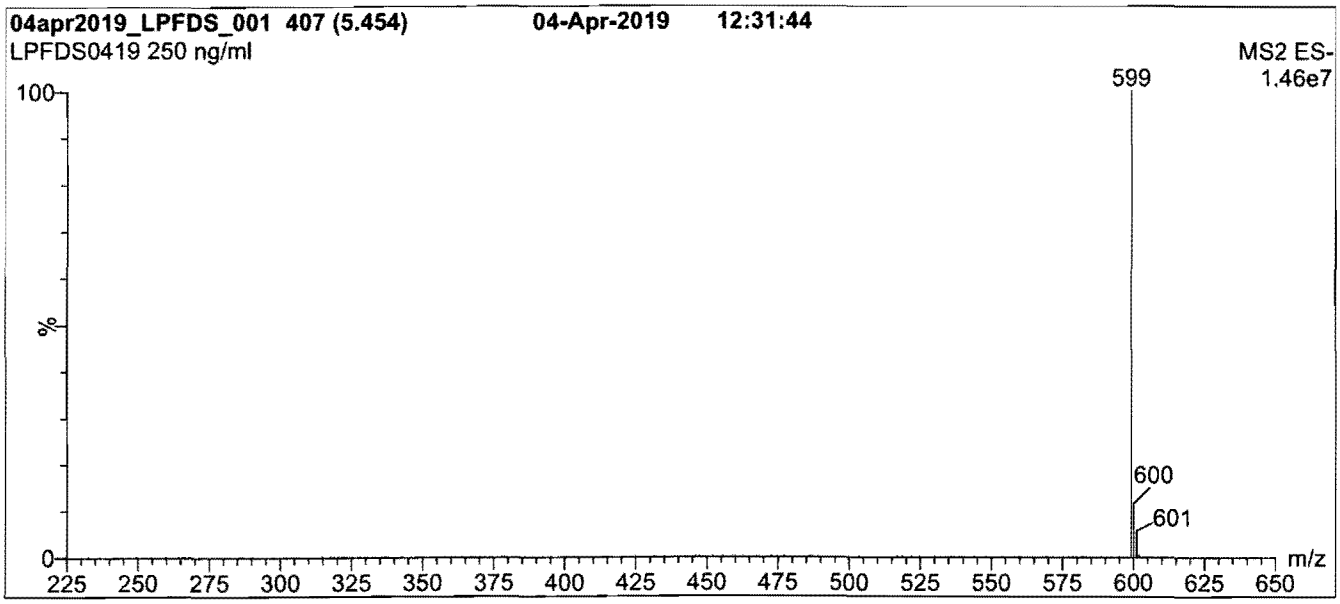
MS Parameters

Collision Gas (mbar) = 2.99e-3
Collision Energy (eV) = 56

19L0652

Figure 1: **L-PFDS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0652

INTENDED USE:

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HANDLING:

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UNCERTAINTY:

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where x is expressed as a relative standard uncertainty of the individual parameter.

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TRACEABILITY:

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EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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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 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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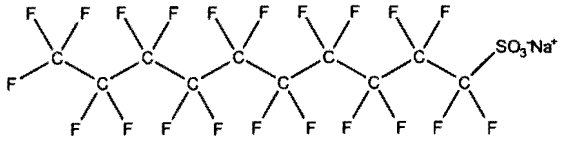
19L0652

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	L-PFDS	**LOT NUMBER:**	LPFDS0419
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)	04/04/2019		
EXPIRY DATE: (mm/dd/yyyy)	04/04/2024		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

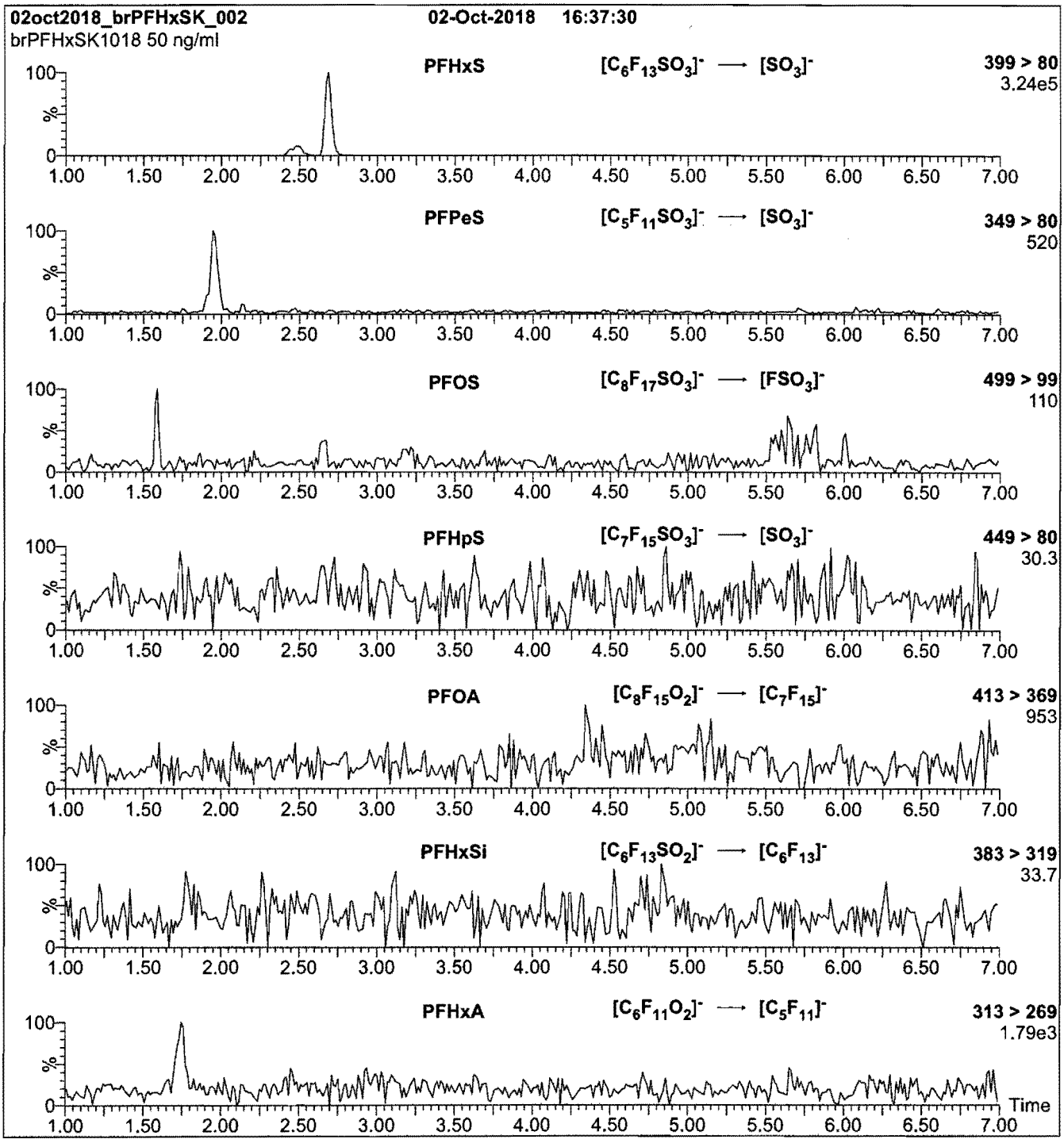
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/30/2019 (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

19L0653

Figure 3: **br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (br-PFHxSK)

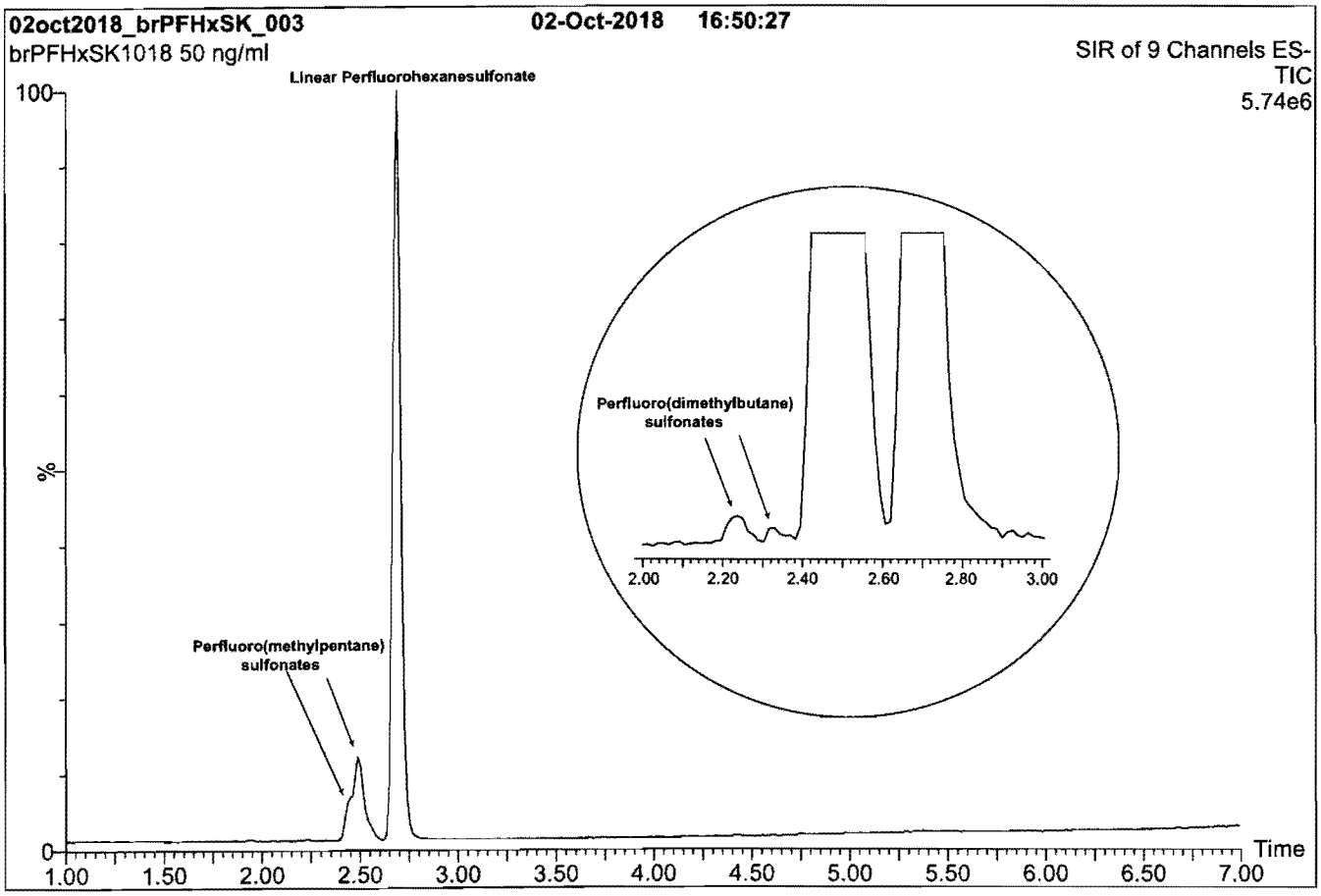
Mobile phase: Same as Figures 1 and 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.87e-3
Collision Energy (eV) = 42

Figure 2: **br-PFHxSK; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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. Hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

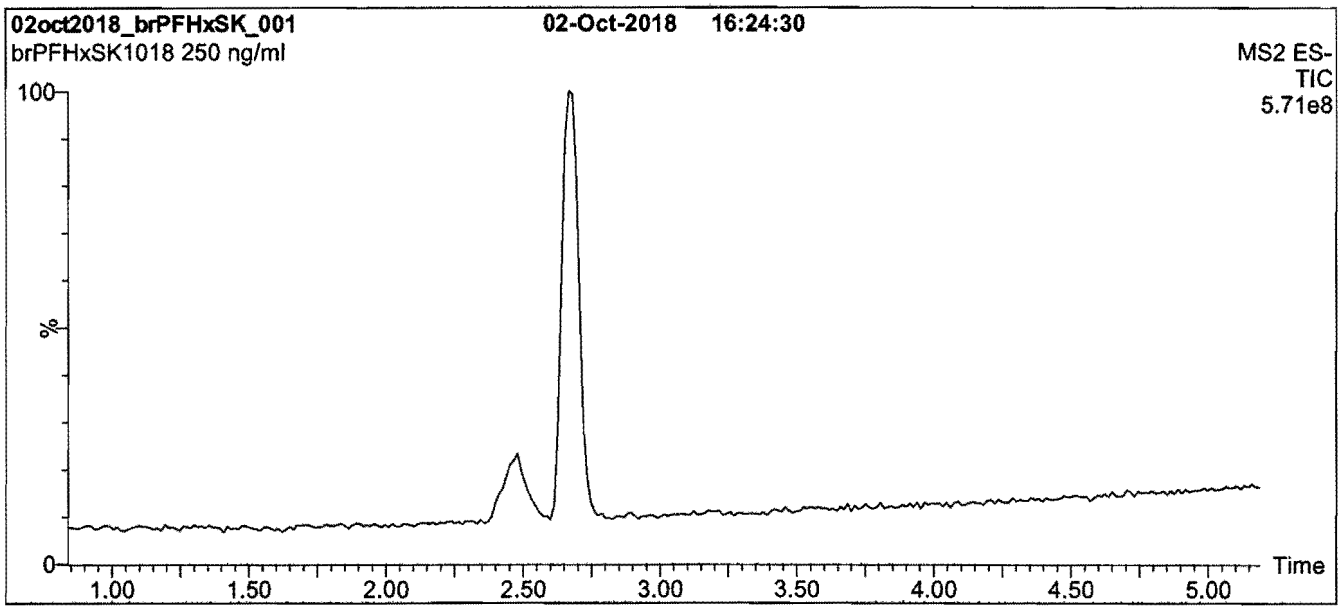
MS Parameters

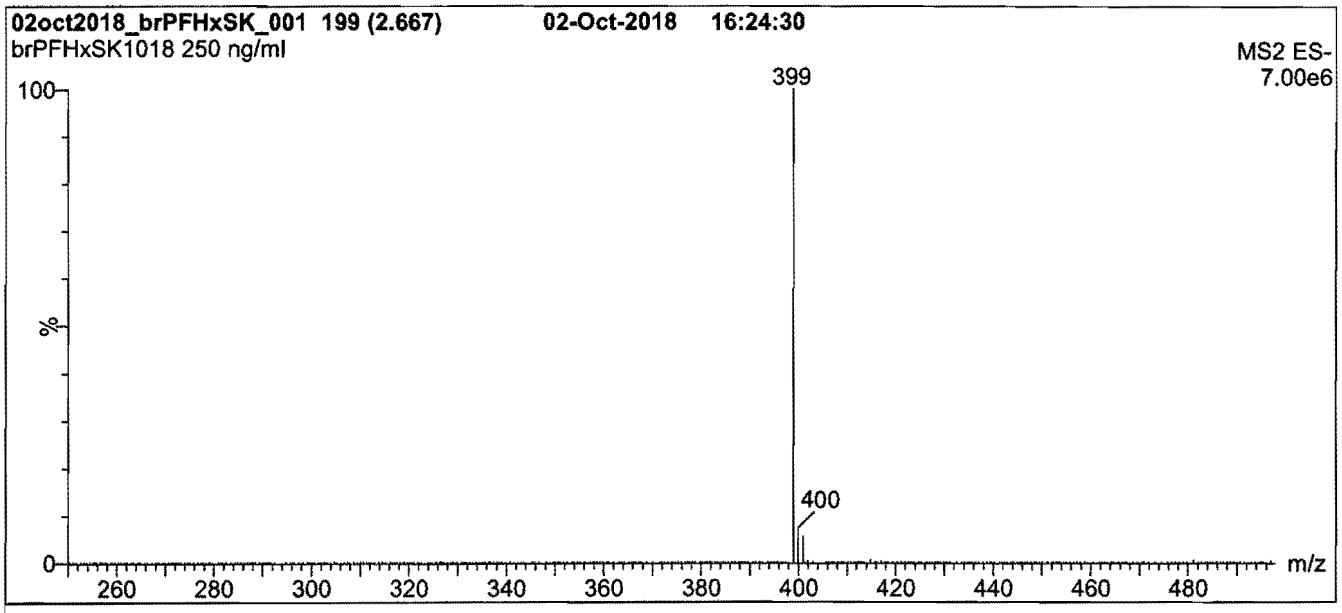
Experiment: SIR (9 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2 - 6)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0653

Figure 1: **br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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. Hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0653

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**	$CF_3CF_2CF_2CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FSO_3^-K^+$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2SO_3^-K^+$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$CF_3CF_2\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2CF_2SO_3^-K^+$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$CF_3\underset{\displaystyle CF_3}{\underset{\vert}{C}}FCF_2CF_2CF_2SO_3^-K^+$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$CF_3\underset{\displaystyle CF_3}{\underset{\vert}{\overset{\displaystyle CF_3}{\overset{\vert}{C}}}}CF_2CF_2SO_3^-K^+$	0.2
7	Other Unidentified Isomers		0.5

* Percent of total perfluorohexanesulfonate isomers only.
** Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By: _____ **Date:** 10/05/2018 (mm/dd/yyyy)
B.G. Chittim, General Manager

19L0653

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

19L0653

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-PFHxSK

Potassium Perfluorohexanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFHxSK
LOT NUMBER:	brPFHxSK1018
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)	10/01/2018
LAST TESTED: (mm/dd/yyyy)	10/02/2018
EXPIRY DATE: (mm/dd/yyyy)	10/02/2023
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 ~ 0.3% of perfluoro-n-hexanoic acid and ~ 0.15% of perfluoro-1-pentanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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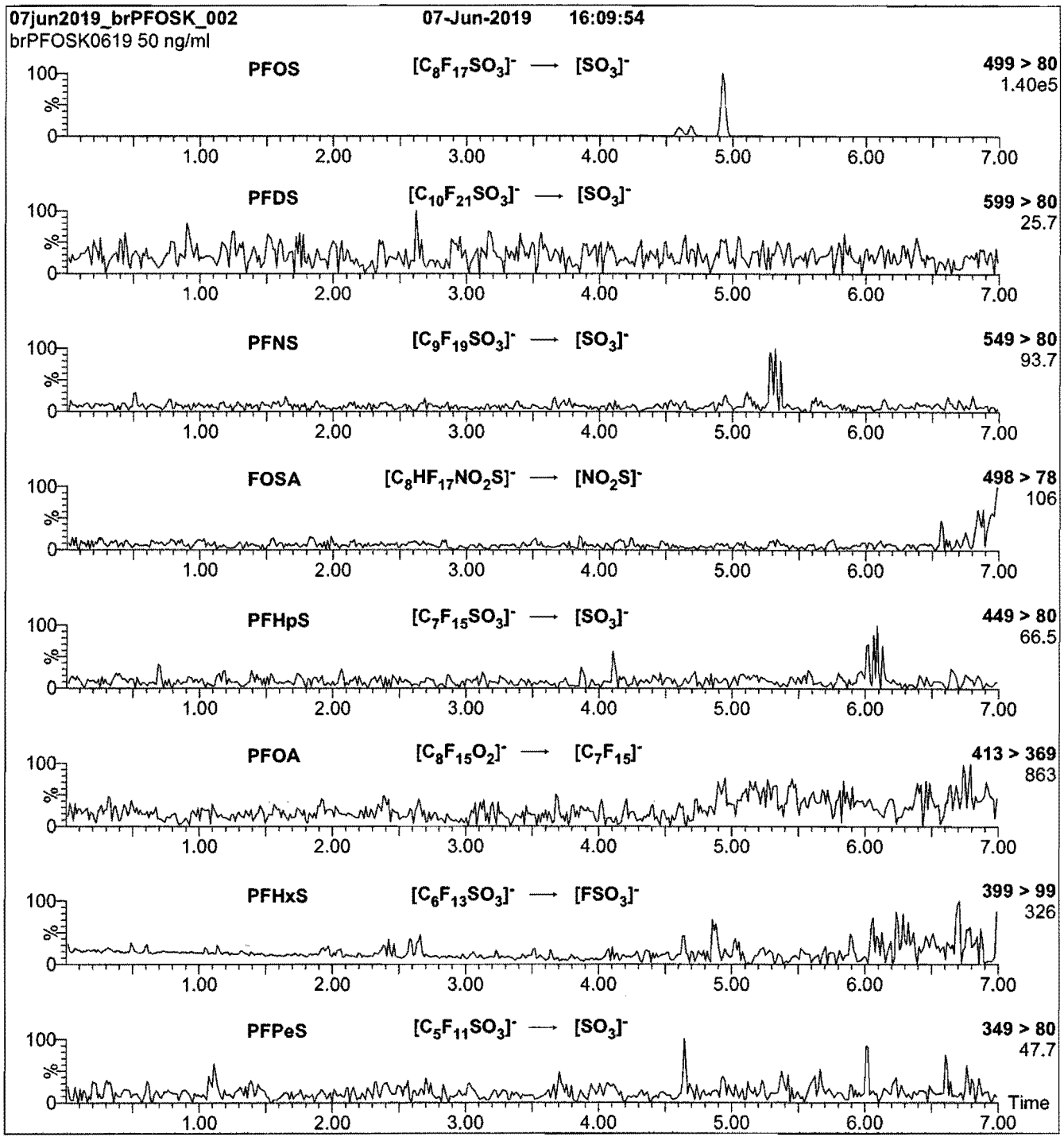
19L0654

Figure 3: **br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (br-PFOSK)

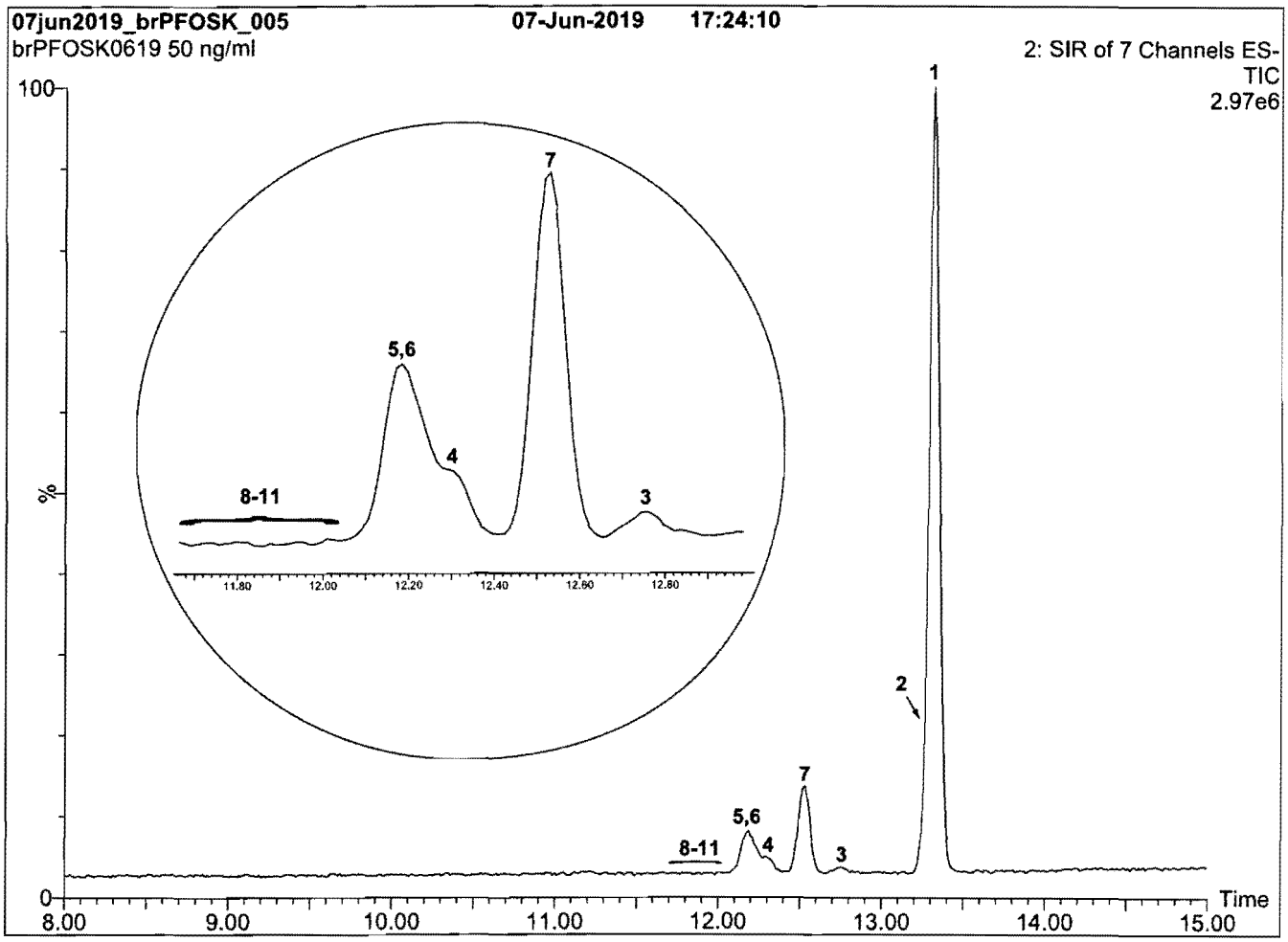
Mobile phase: Same as Figure 2

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 64

Figure 2: **br-PFOSK; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions:

Column: Acquity UPLC BEH Shield RP_{18} (1.7 µm, 2.1 x 100 mm)

Injection: 50 ng/ml of br-PFOSK

Mobile Phase: Gradient
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 2 min.
Return to initial conditions over 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Conditions:

SIR (ES^-)
Source = 120 °C
Desolvation = 500 °C
Cone Voltage = 2.00V

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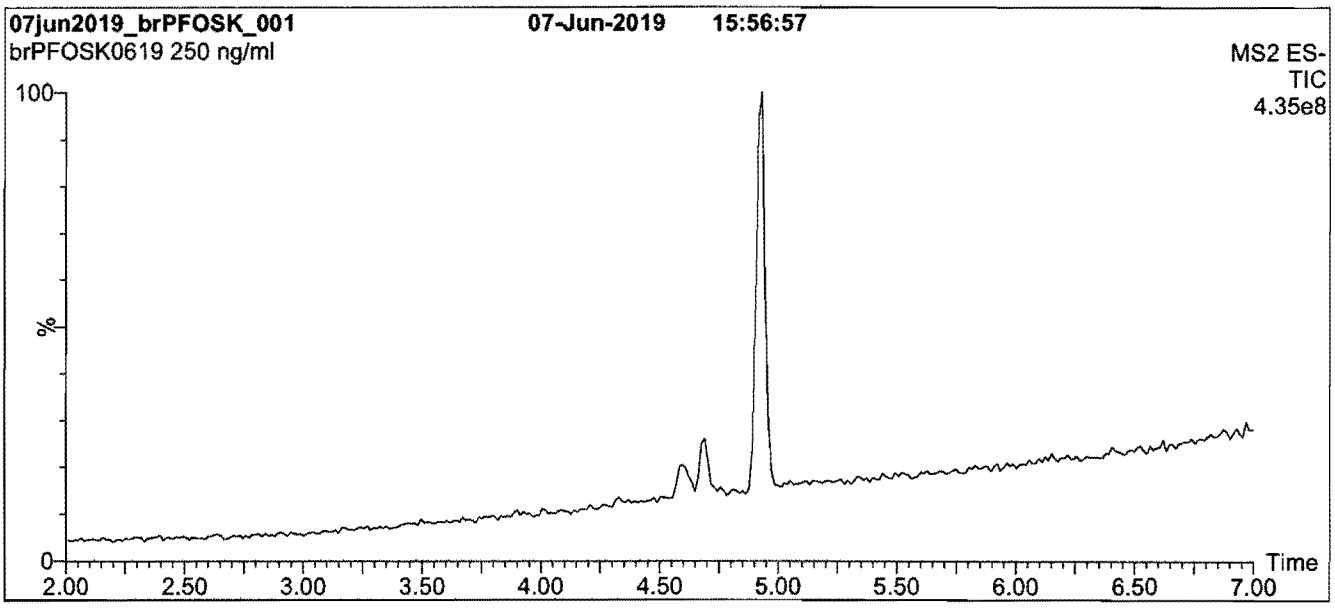
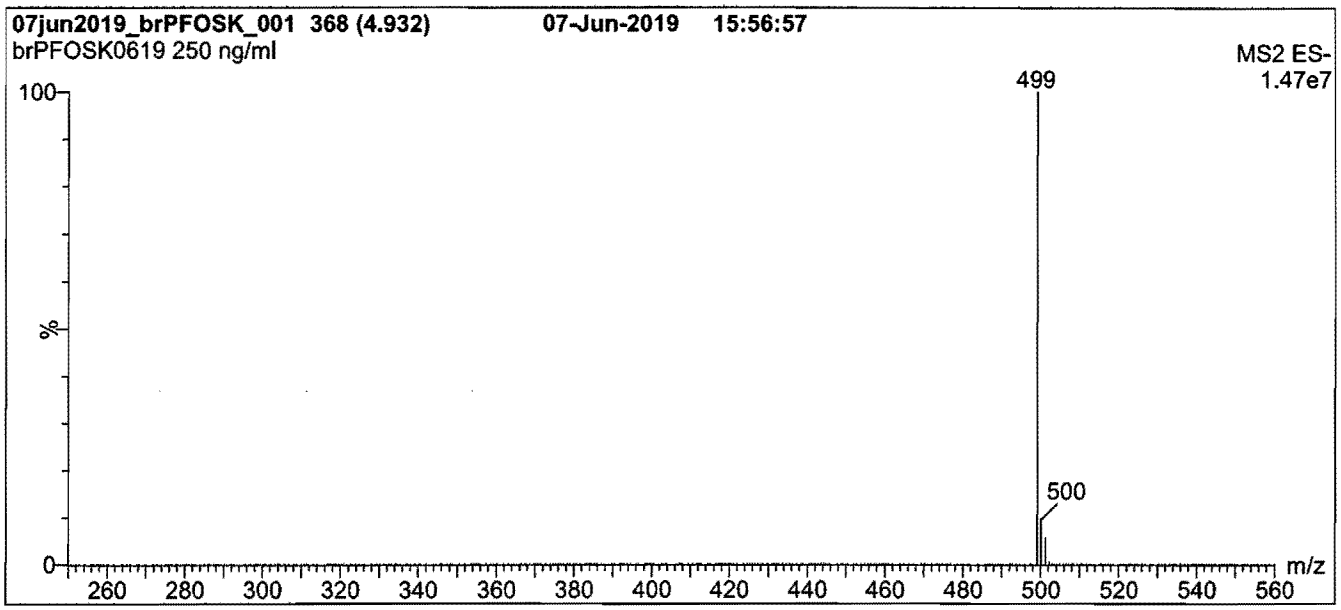
Figure 1: **br-PFOSK; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 2 min.
Return to initial conditions over 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0654

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	$CF_3C(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)CF_2CF_2CF_2SO_3^-K^+$	0.03
10	Potassium 4,5-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF(CF_3)CF_2CF_2CF_2CF_2SO_3^-K^+$	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:** 06/17/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

19L0654

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2,...x_n$ on which it depends is:

$$u_c(y(x_1, x_2,...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A1226

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

br-PFOSK

Potassium Perfluorooctanesulfonate Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-PFOSK
LOT NUMBER:	brPFOSK0619
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)	06/03/2019
LAST TESTED: (mm/dd/yyyy)	06/07/2019
EXPIRY DATE: (mm/dd/yyyy)	06/07/2024
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

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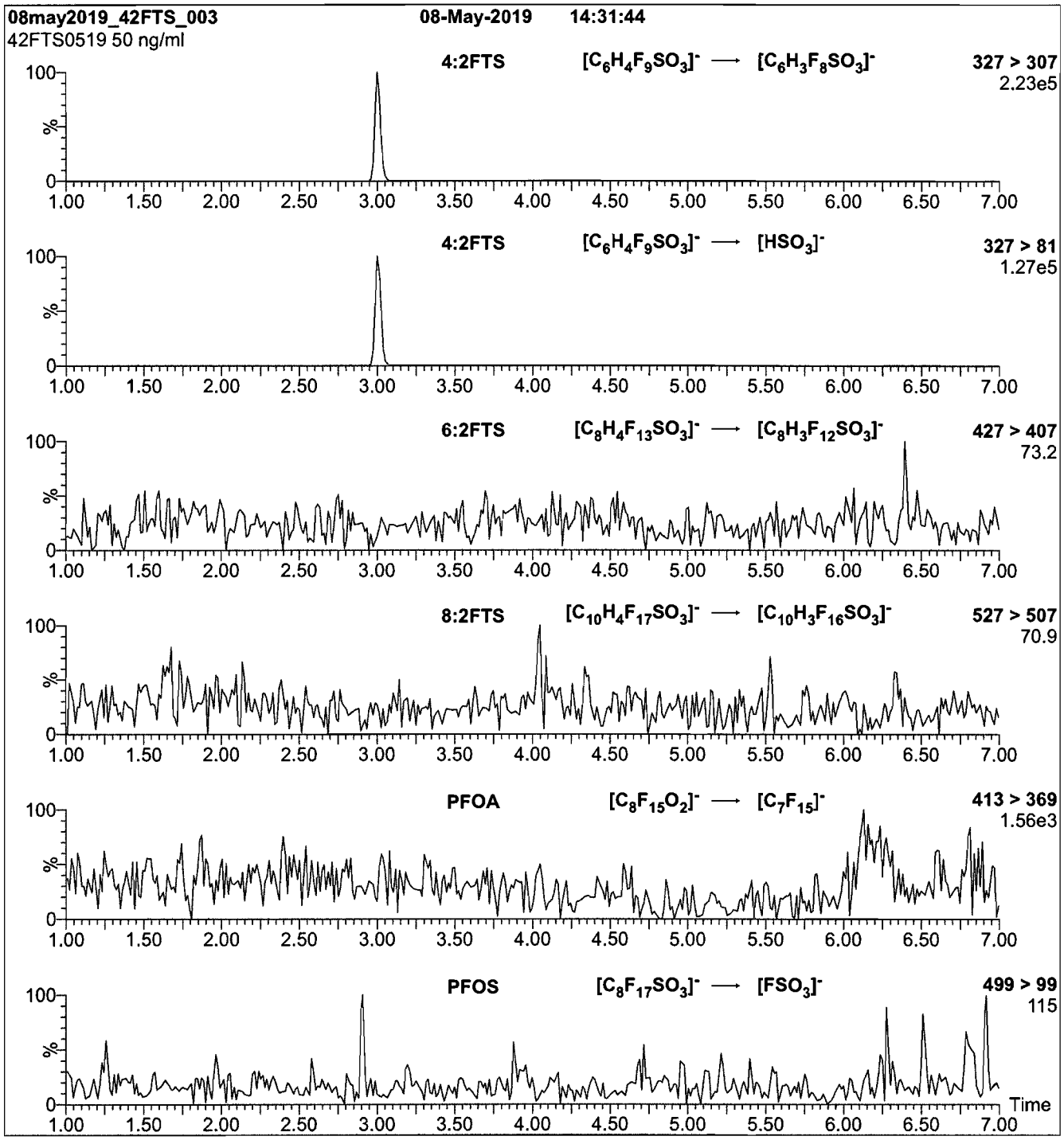
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 2: **4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (4:2FTS)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

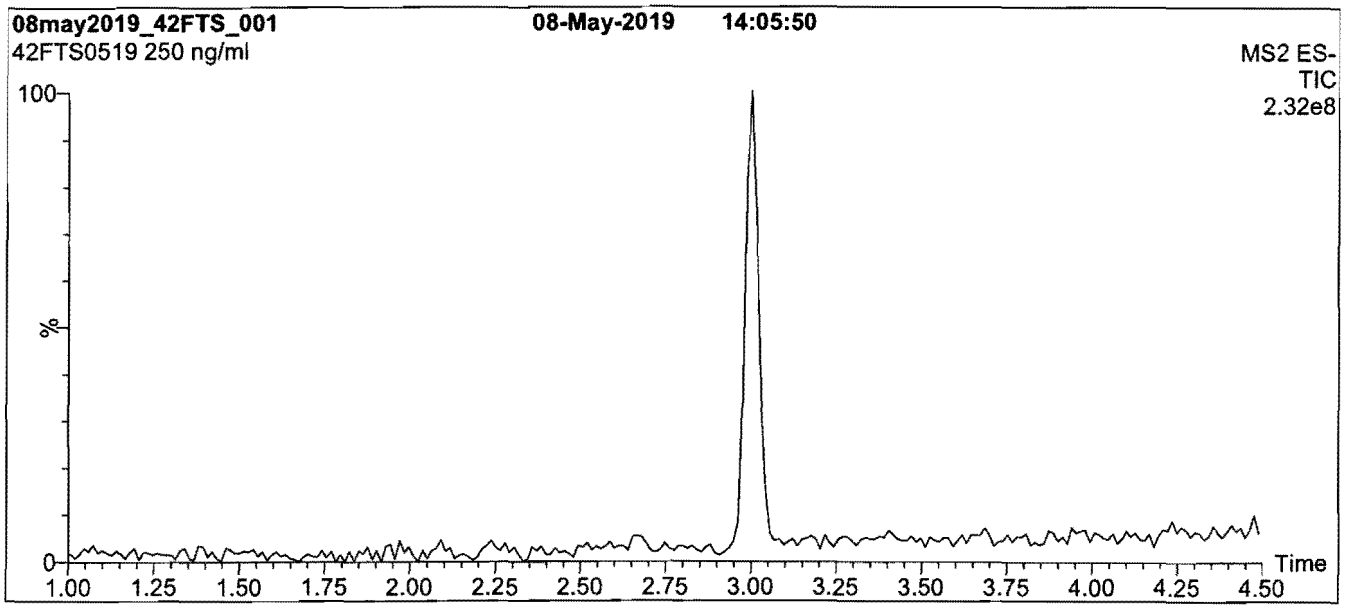
MS Parameters

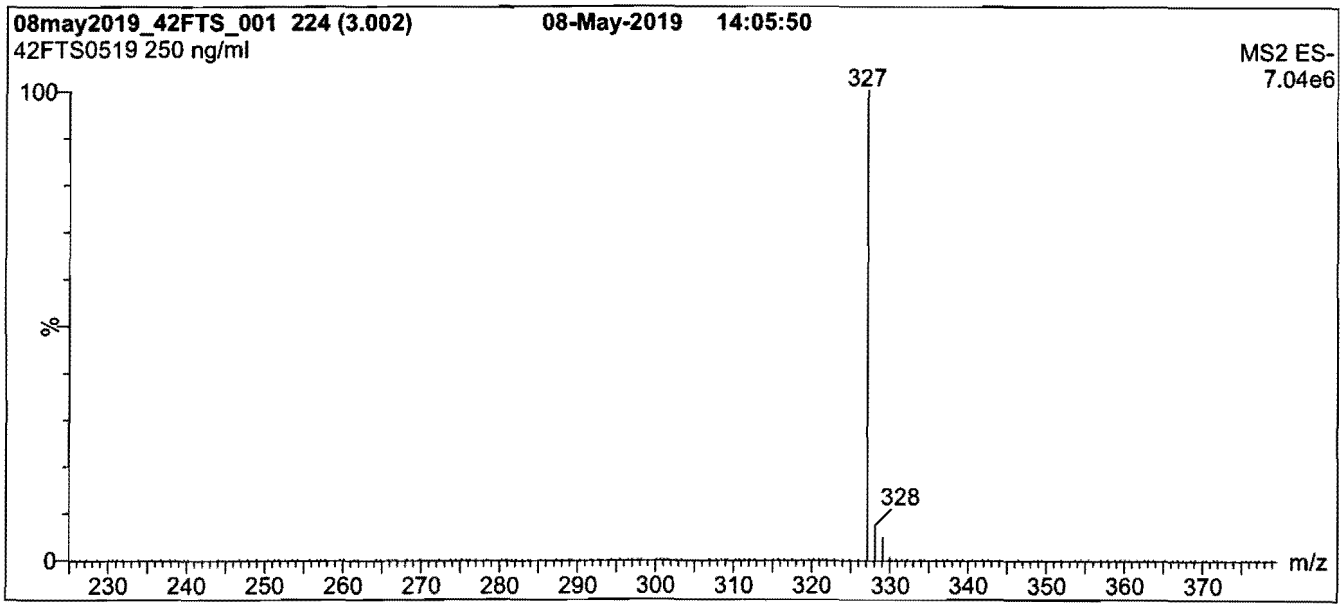
Collision Gas (mbar) = 3.07e-3

Collision Energy (eV) = 18

19L0655

Figure 1: **4:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for 2 min
before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

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HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

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LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

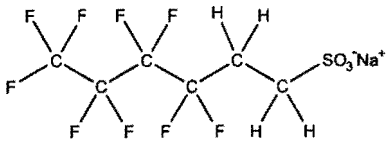
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0655

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	4:2FTS	**LOT NUMBER:**	42FTS0519
COMPOUND:	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate		
STRUCTURE:		**CAS #:**	27619-93-8



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)	05/08/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/08/2024		
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:

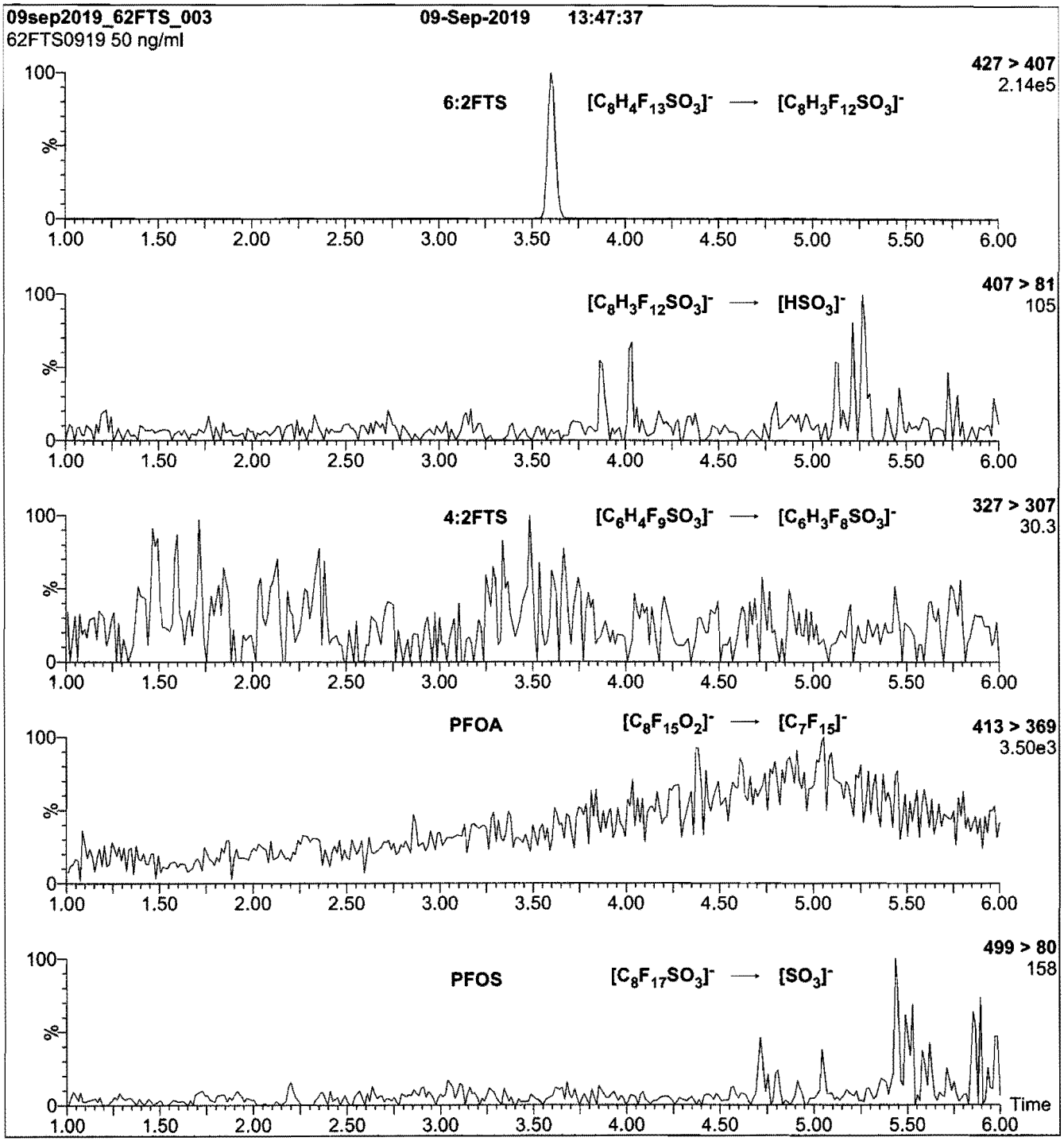
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/09/2019 (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

Figure 2: **6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (6:2FTS)

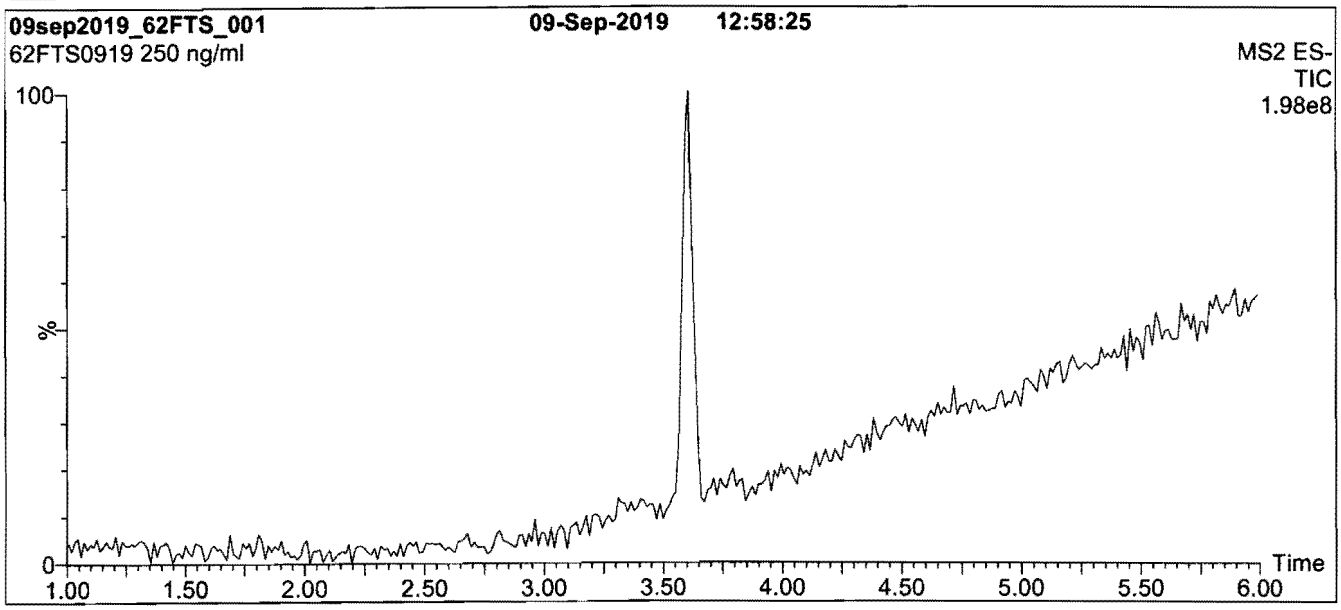
Mobile phase: Same as Figure 1

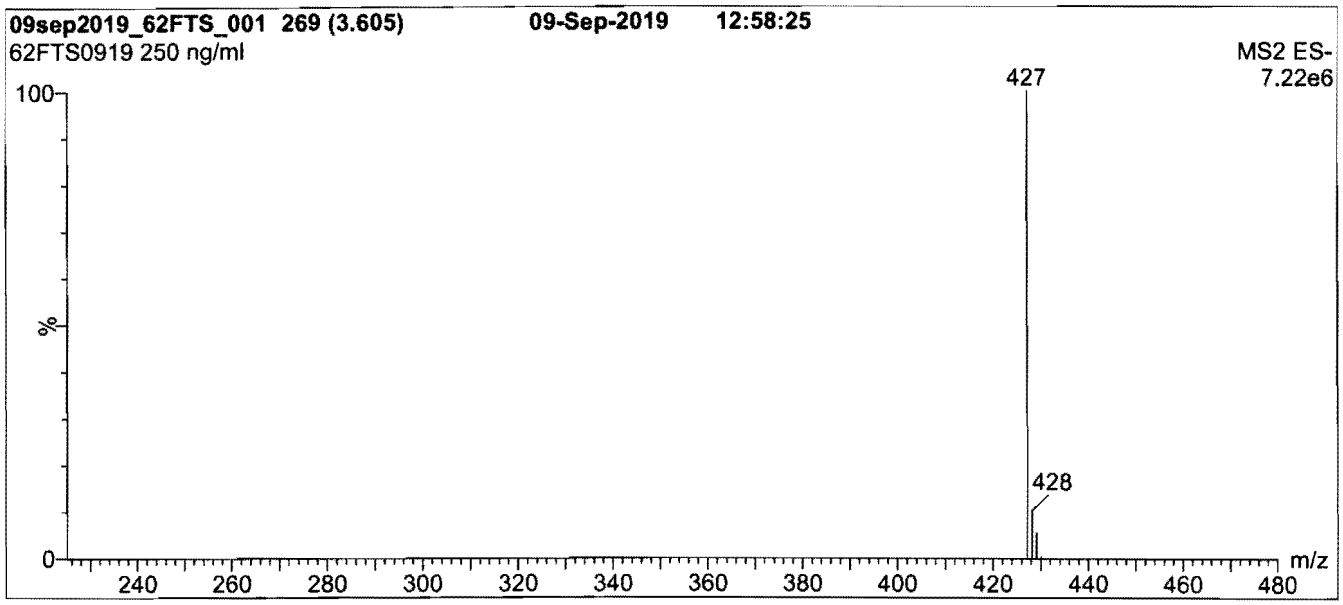
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.61e-3
Collision Energy (eV) = 20

Figure 1: **6:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED 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

19L0656

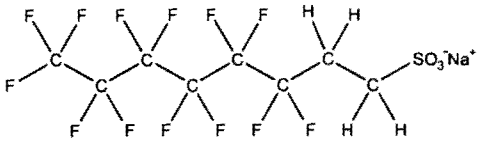
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 6:2FTS **LOT NUMBER:** 62FTS0919

COMPOUND: Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

STRUCTURE: **CAS #:** 27619-94-9



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)	09/09/2019			
EXPIRY DATE: (mm/dd/yyyy)	09/09/2024			
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:

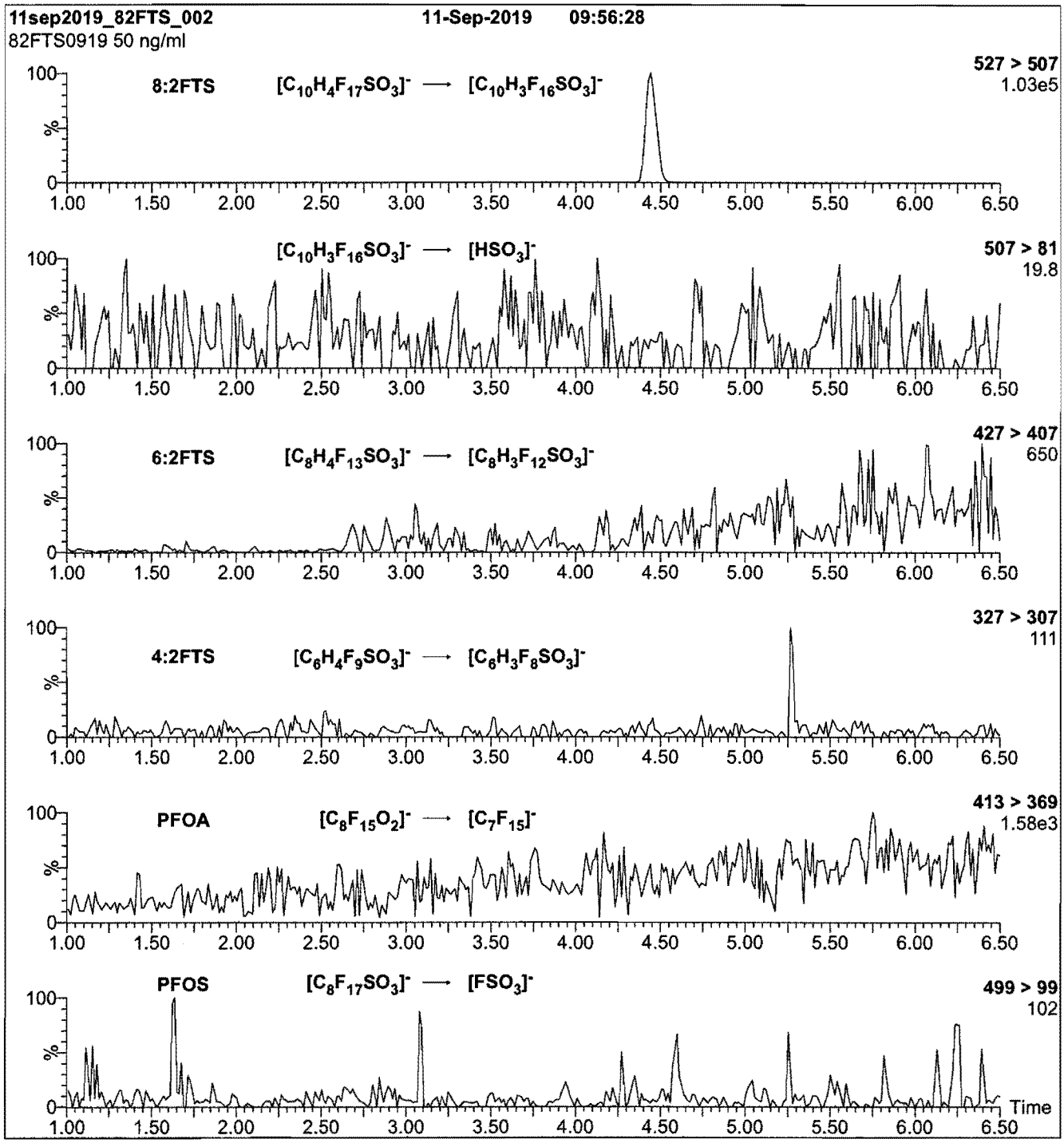
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/09/2019 (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

Figure 2: **8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (8:2FTS)

Mobile phase: Same as Figure 1

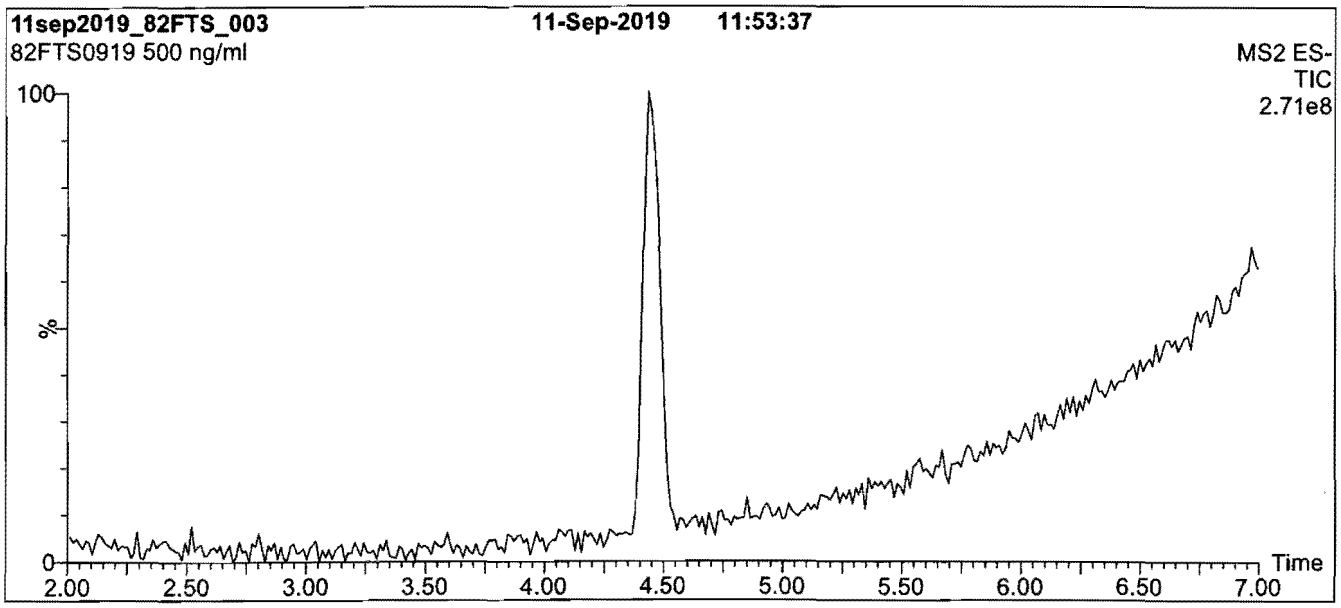
Flow: 300 µl/min

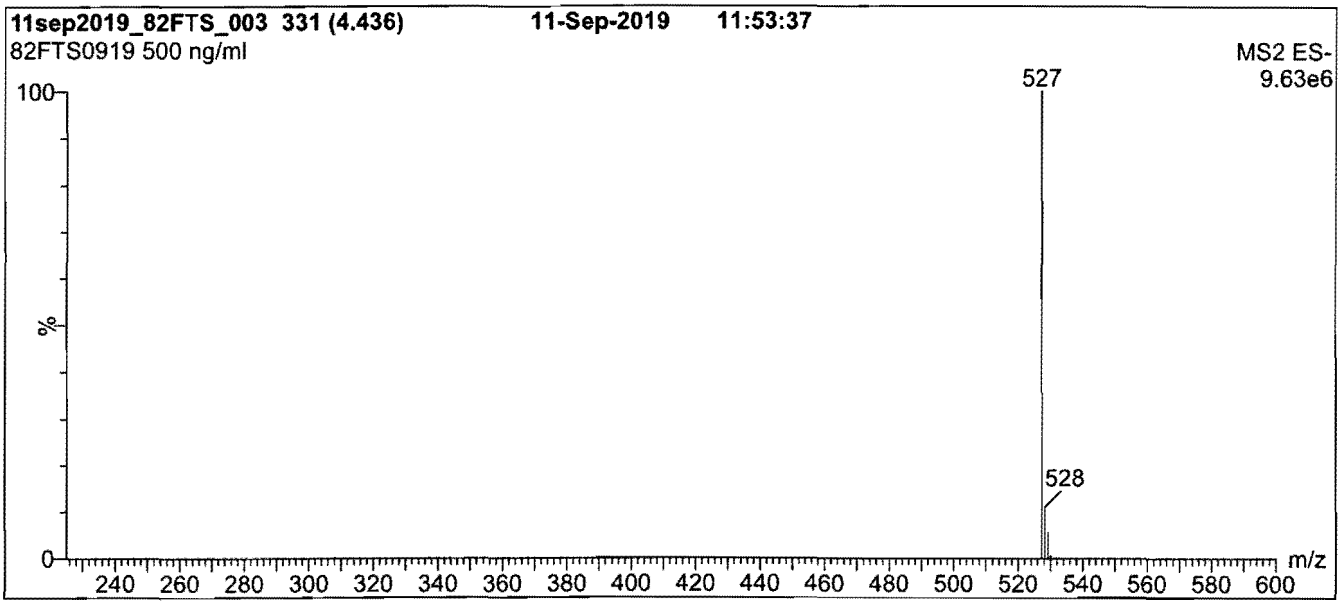
MS Parameters

Collision Gas (mbar) = 3.49e-3
Collision Energy (eV) = 26

19L0657

Figure 1: **8:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0657

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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19L0657

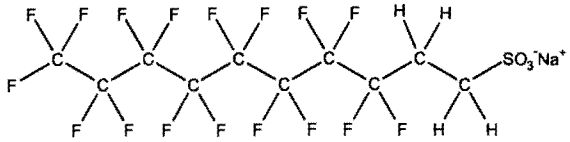
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 8:2FTS **LOT NUMBER:** 82FTS0919

COMPOUND: Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

STRUCTURE: **CAS #:** 27619-96-1



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)	09/11/2019			
EXPIRY DATE: (mm/dd/yyyy)	09/11/2024			
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.

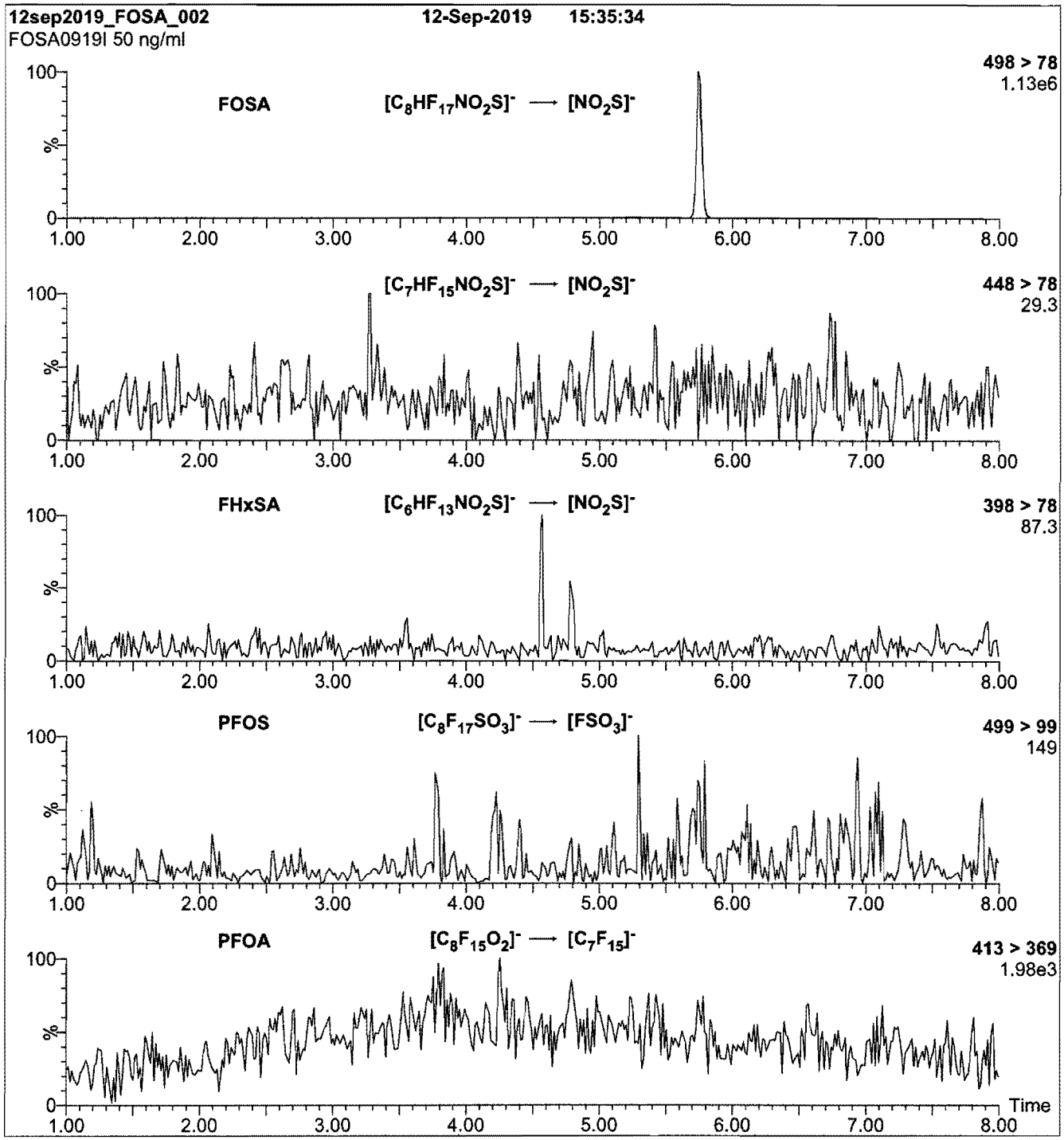
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/11/2019 (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

19L0658

Figure 2: **FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (FOSA-I)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

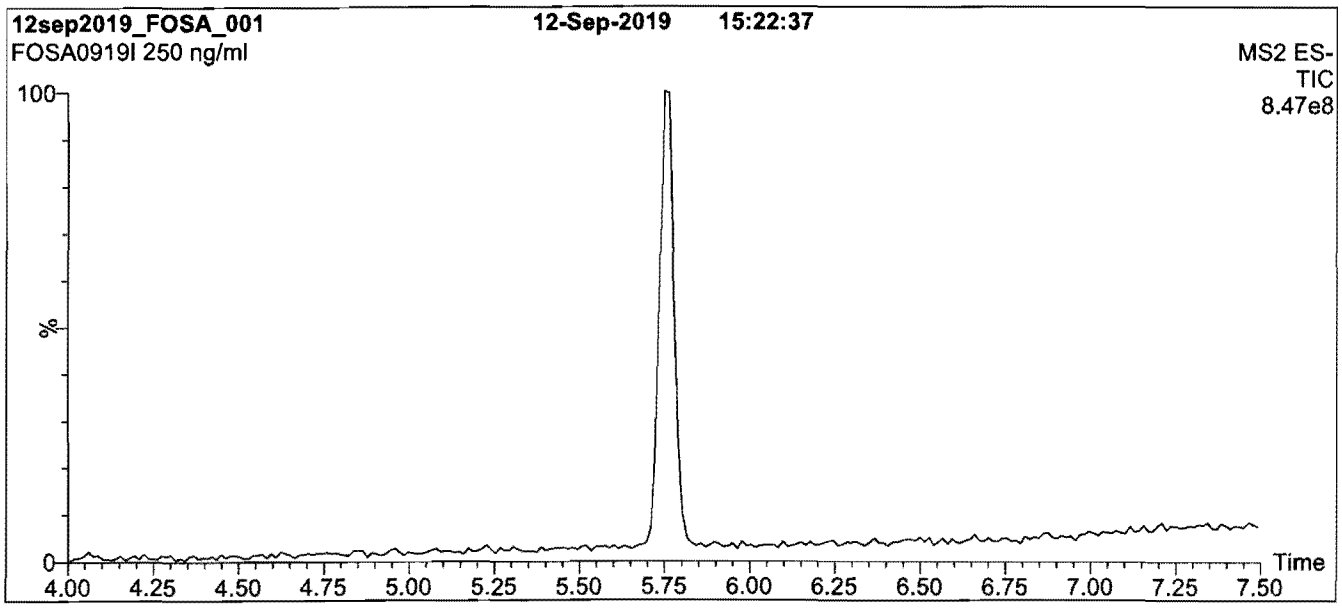
MS Parameters

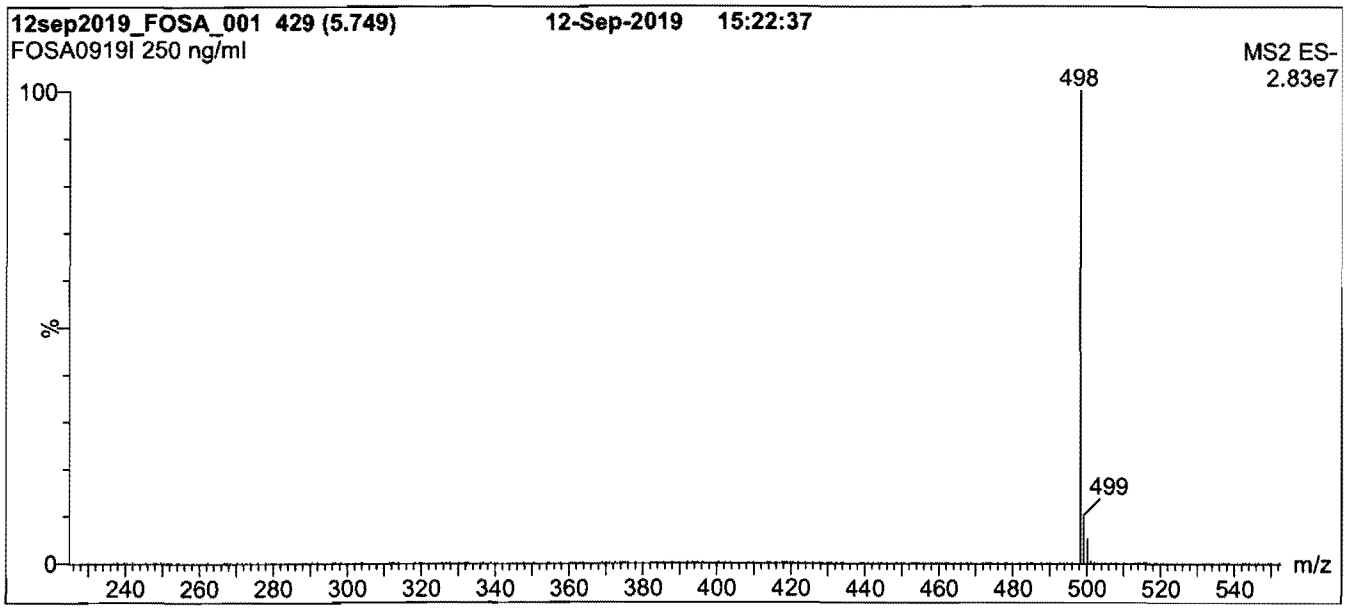
Collision Gas (mbar) = 3.57e-3

Collision Energy (eV) = 30

19L0658

Figure 1: **FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 60% (80:20 MeOH:ACN) / 40% H_2O
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Ramp to 90% organic over 7 min and hold for 3 min
before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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19L0658

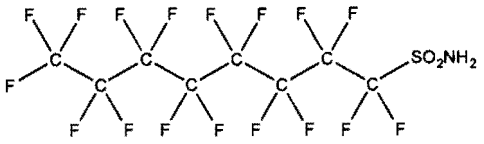
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: FOSA-I
COMPOUND: Perfluoro-1-octanesulfonamide
LOT NUMBER: FOSA0919I

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)	09/12/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/12/2024		
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.

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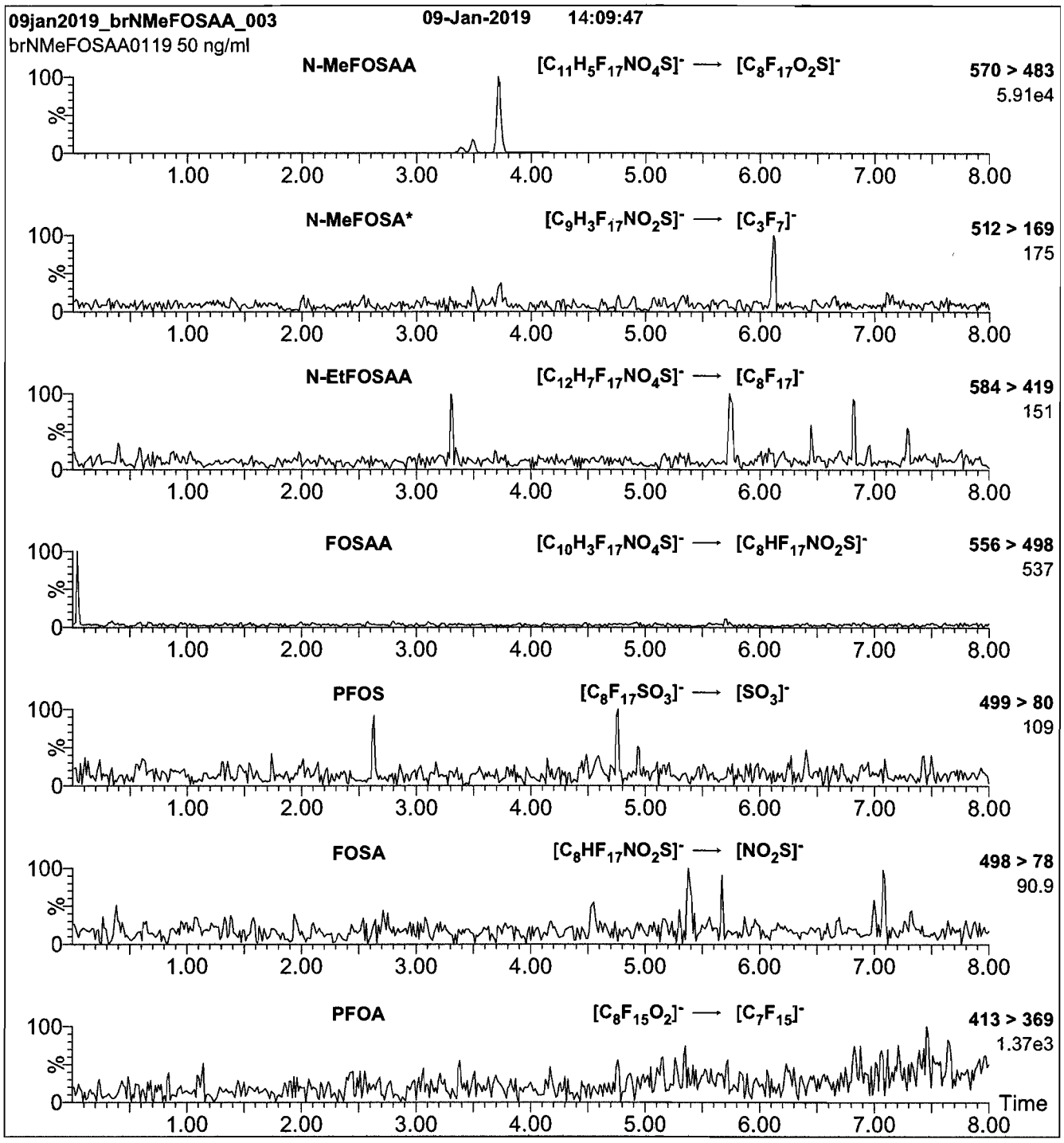
Certified By: _____ **Date:** 09/13/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 3: **br-NMeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



***Note**: N-MeFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column (br-NMeFOSAA)

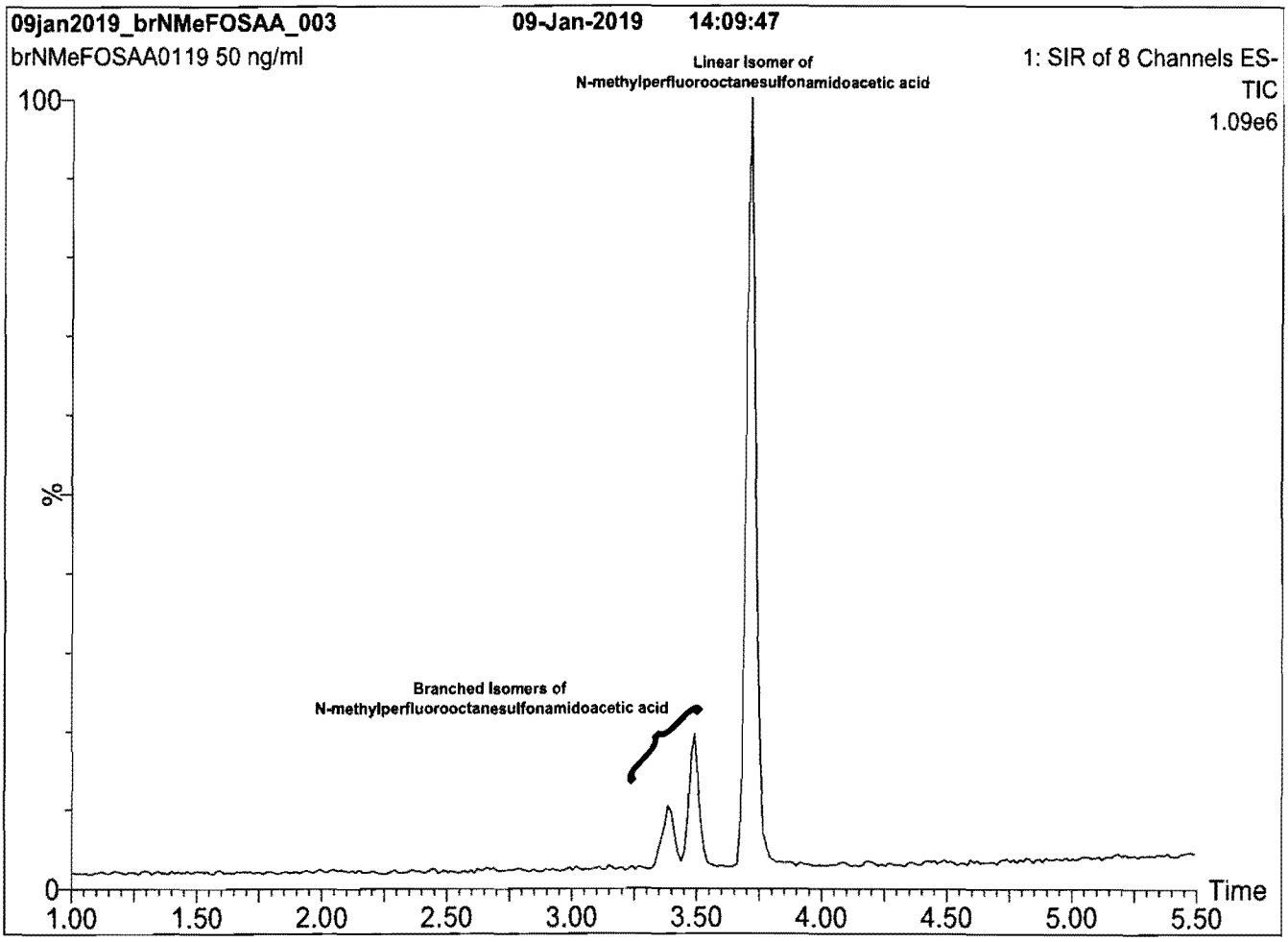
Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.79e-3
Collision Energy (eV) = 16

Figure 2: **br-NMeFOSAA; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

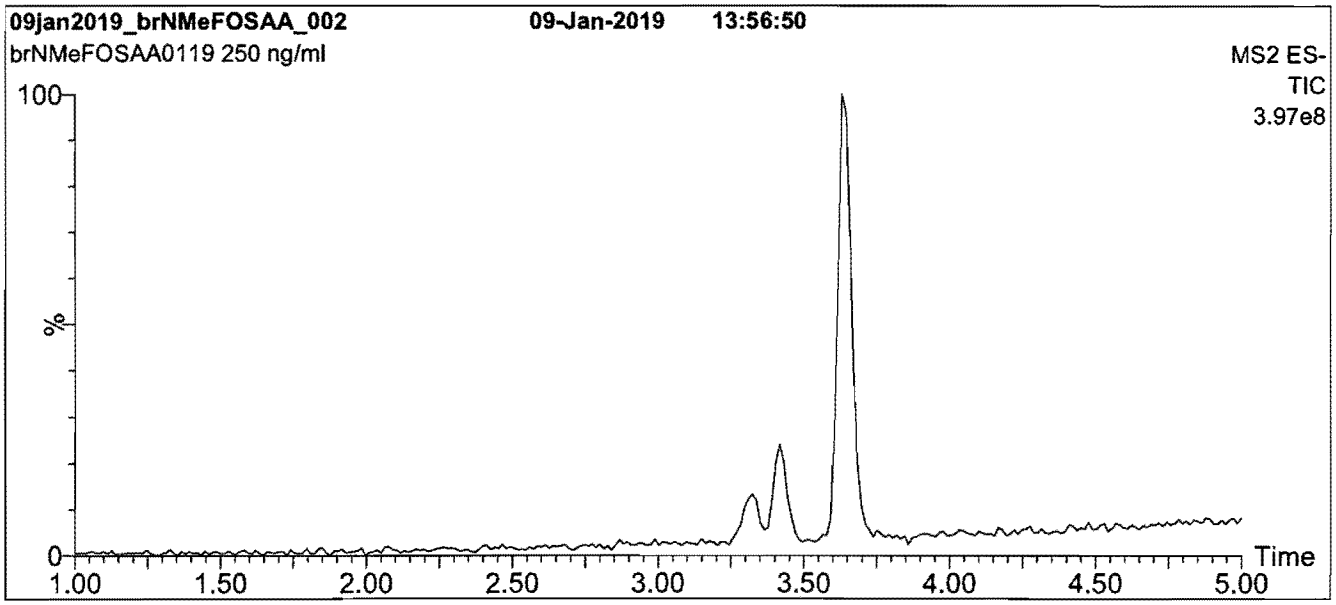
Flow: 300 µl/min

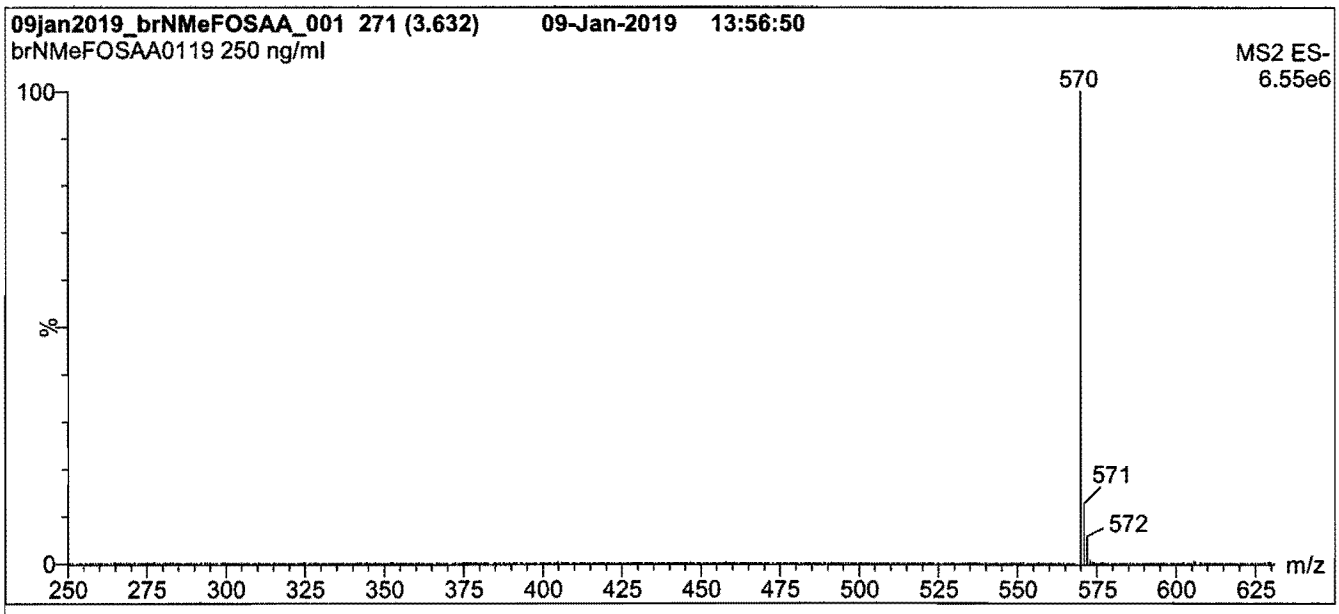
MS Parameters

Experiment: SIR (8 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 2-64
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Figure 1: **br-NMeFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

Table A: **br-NMeFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	N-methylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(CH_3)CH_2CO_2H$	76.0
2	N-methylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(CH_3)CH_2CO_2H$	0.7
3	N-methylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(CH_3)CH_2CO_2H$	2.0
4	N-methylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	6.0
5	N-methylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(CH_3)CH_2CO_2H$	14.0
6	N-methylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(CH_3)CH_2CO_2H$	0.2
7	Other Unidentified Isomers		1.1

* Percent of total N-methylperfluorooctanesulfonamidoacetic acid isomers only.

Certified By: _____ **Date:** 01/16/2019 (mm/dd/yyyy)

B.G. Chittim, General Manager

19L0659

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

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

19L0659

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NMeFOSAA

N-Methylperfluorooctanesulfonamidoacetic Acid Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-NMeFOSAA
LOT NUMBER:	brNMeFOSAA0119
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	01/02/2019
LAST TESTED: (mm/dd/yyyy)	01/09/2019
EXPIRY DATE: (mm/dd/yyyy)	01/09/2024
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-methylperfluorooctanesulfonamidoacetic acid (linear and branched isomers). The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{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)

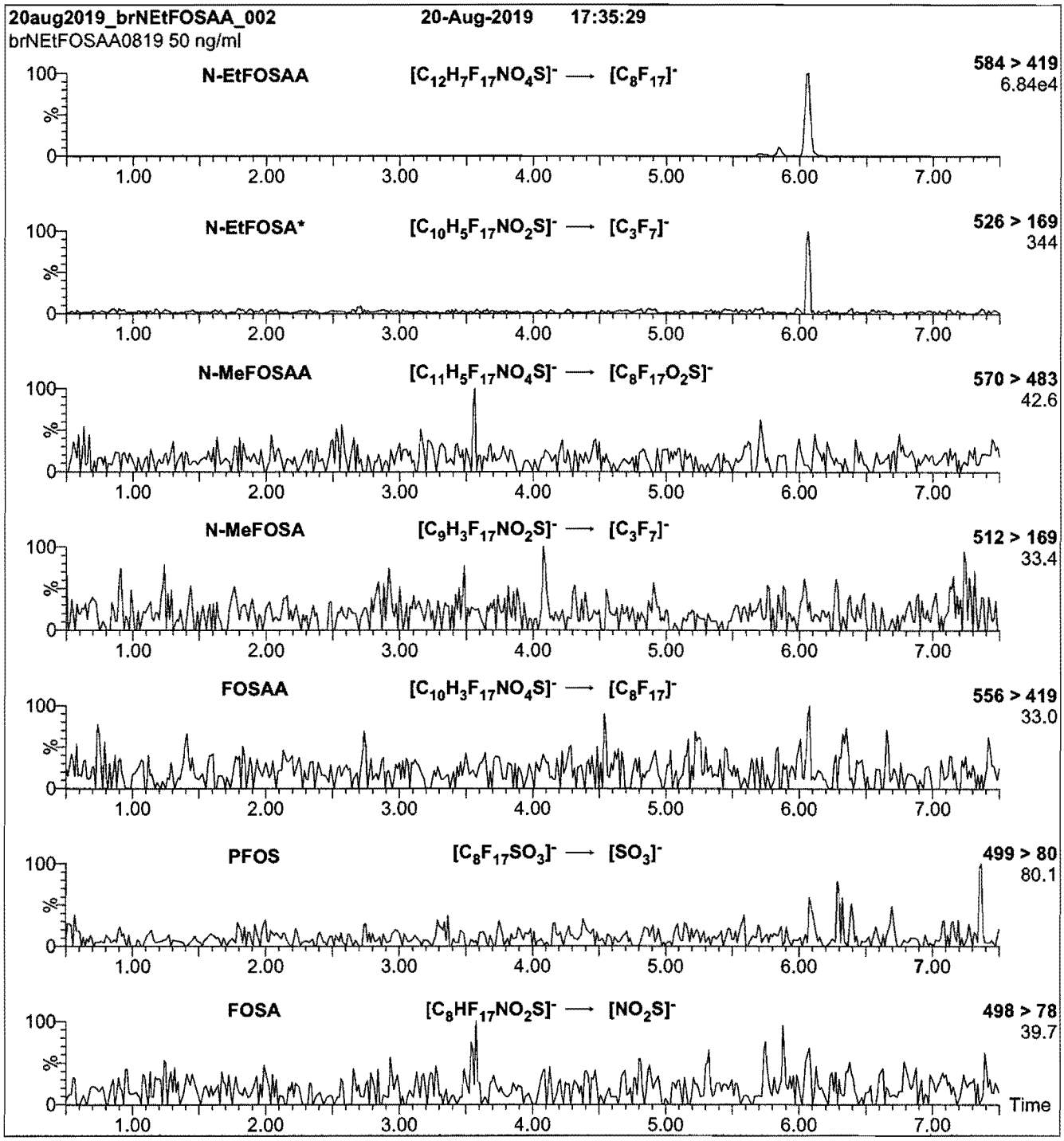
ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.

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

Figure 3: **br-NEtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



*Note: N-EtFOSA is formed by in-source fragmentation.

Conditions for Figure 3:

Injection: On-column (br-NEtFOSAA)

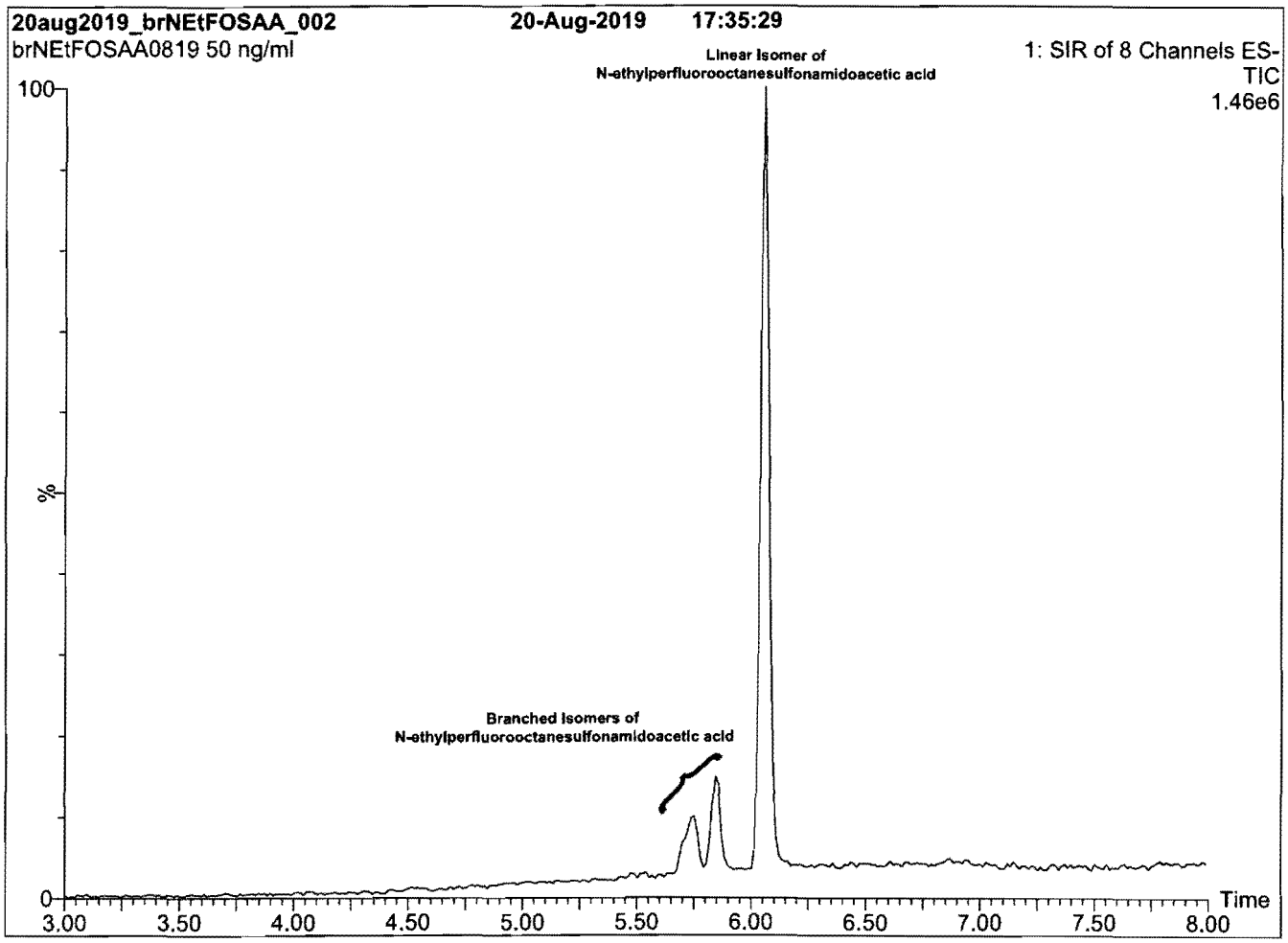
Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.53e-3
Collision Energy (eV) = 18

Figure 2: **br-NEtFOSAA; LC/MS Data (SIR)**



Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

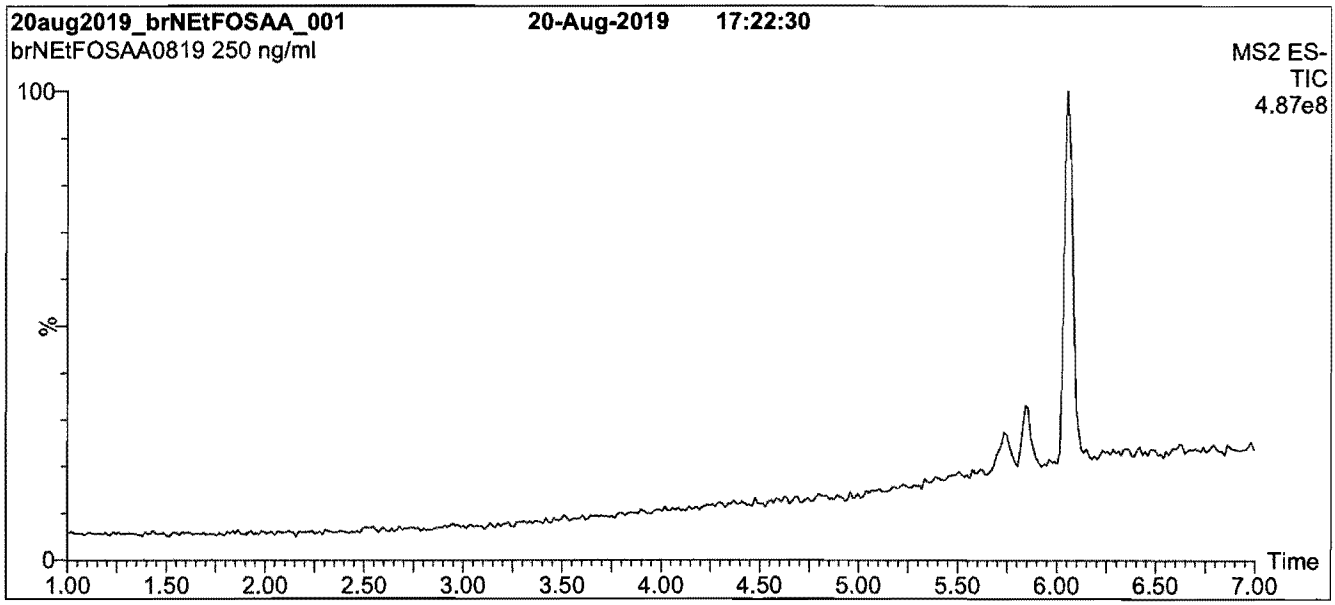
MS Parameters

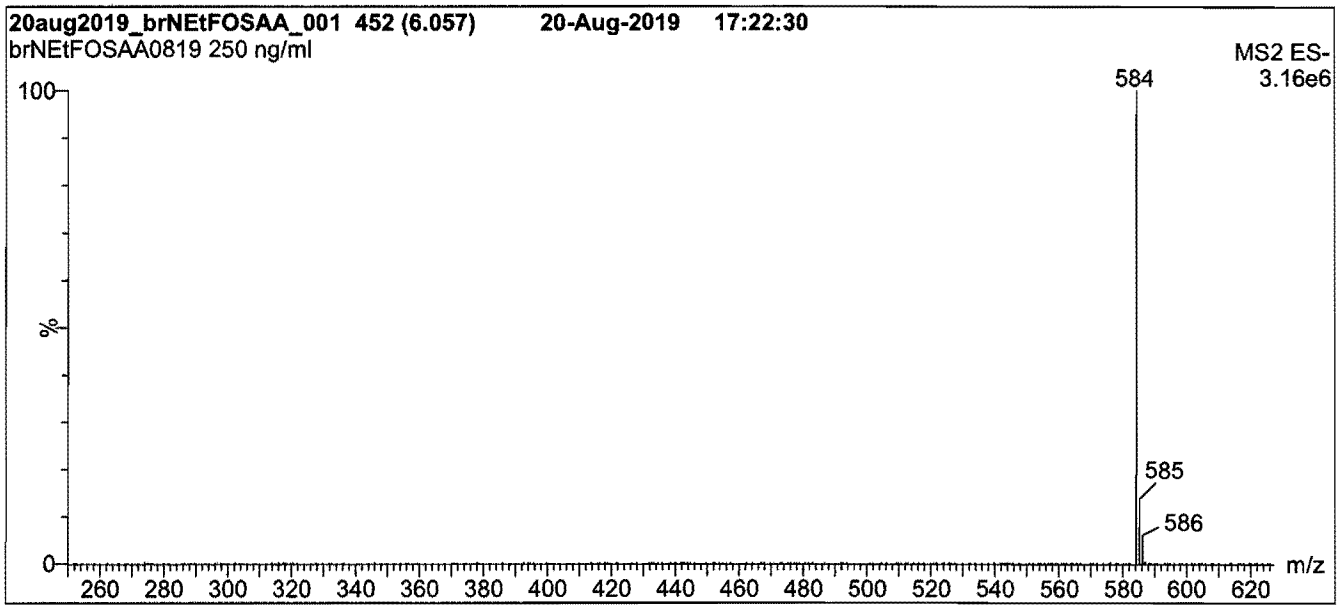
Experiment: SIR (8 channels)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = variable (2-64)
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0660

Figure 1: **br-NEtFOSAA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 20
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0660

Table A: **br-NEtFOSAA; Isomeric Components and Percent Composition (by ^{19}F-NMR)***

Isomer	Name	Structure	Percent Composition by ^{19}F-NMR
1	N-ethylperfluoro-1-octanesulfonamidoacetic acid	$CF_3(CF_2)_7SO_2N(C_2H_5)CH_2CO_2H$	77.5
2	N-ethylperfluoro-3-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_3CF(CF_3)(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	2.3
3	N-ethylperfluoro-4-methylheptanesulfonamidoacetic acid	$CF_3(CF_2)_2CF(CF_3)(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	2.2
4	N-ethylperfluoro-5-methylheptanesulfonamidoacetic acid	$CF_3CF_2CF(CF_3)(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	5.4
5	N-ethylperfluoro-6-methylheptanesulfonamidoacetic acid	$CF_3CF(CF_3)(CF_2)_5SO_2N(C_2H_5)CH_2CO_2H$	10.4
6	N-ethylperfluoro-5,5-dimethylhexanesulfonamidoacetic acid	$CF_3C(CF_3)_2(CF_2)_4SO_2N(C_2H_5)CH_2CO_2H$	0.3
7	N-ethylperfluoro-4,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF(CF_2)_3SO_2N(C_2H_5)CH_2CO_2H$	0.3
8	N-ethylperfluoro-3,5-dimethylhexanesulfonamidoacetic acid	$CF_3CF(CF_3)CF_2CF(CF_2)_2SO_2N(C_2H_5)CH_2CO_2H$	0.3
9	Other Unidentified Isomers		1.3

* Percent of total N-ethylperfluorooctanesulfonamidoacetic acid isomers only.

Certified By: _____ **Date:** 08/29/2019
(mm/dd/yyyy)

B.G. Chittim, General Manager

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products, as well as mixtures and calibration solutions, are compared to older lots in a similar manner. This further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

br-NEtFOSAA

N-Ethylperfluorooctanesulfonamidoacetic Acid Solution/Mixture of Linear and Branched Isomers

PRODUCT CODE:	br-NEtFOSAA
LOT NUMBER:	brNEtFOSAA0819
CONCENTRATION:	50.0 ± 2.5 µg/ml
SOLVENT(S):	Methanol/Water (<1%)
DATE PREPARED: (mm/dd/yyyy)	08/20/2019
LAST TESTED: (mm/dd/yyyy)	08/20/2019
EXPIRY DATE: (mm/dd/yyyy)	08/20/2024
RECOMMENDED STORAGE:	Refrigerate ampoule

DESCRIPTION:

The chemical purity has been determined to be ≥98% N-ethylperfluorooctanesulfonamidoacetic acid (linear and branched isomers). The full name, structure and percent composition for each of the identified isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by ^{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)

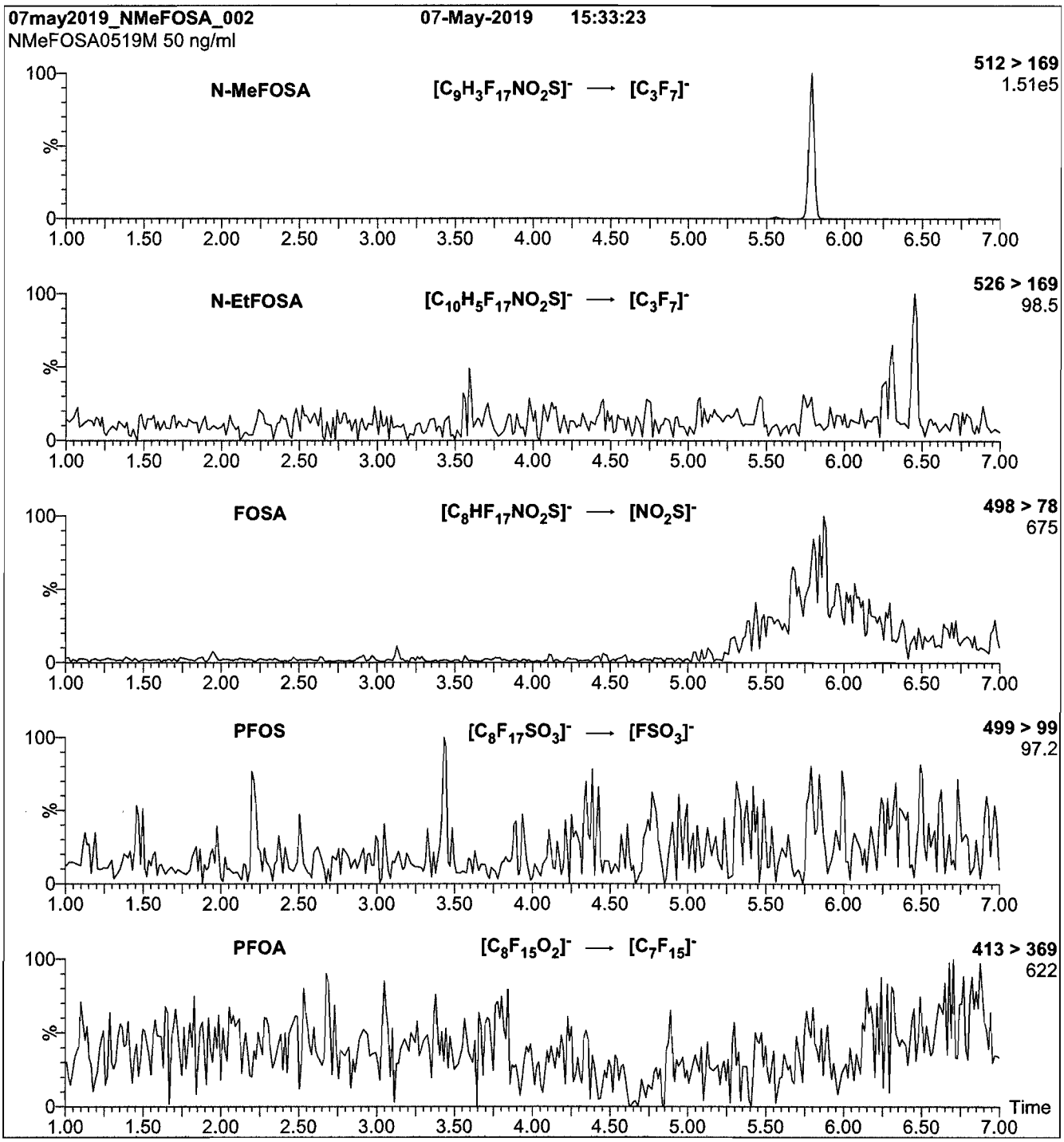
ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the acetic acid moiety to its respective methyl ester.

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

Figure 2: **N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-MeFOSA-M)

Mobile phase: Same as Figure 1

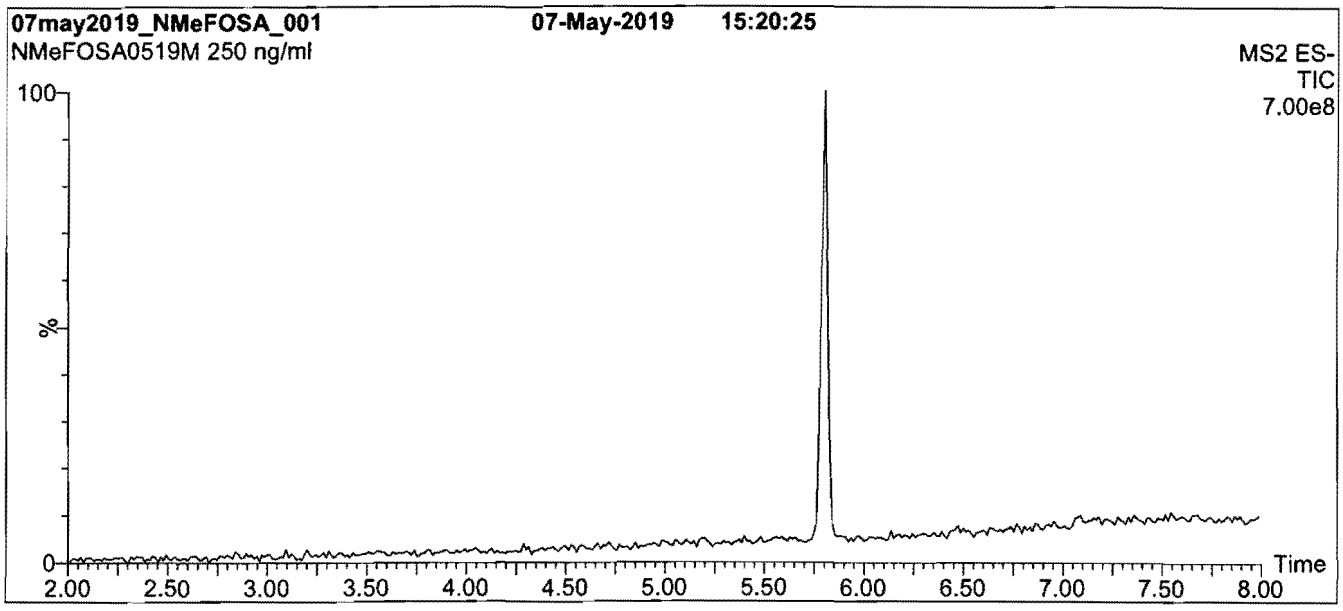
Flow: 300 µl/min

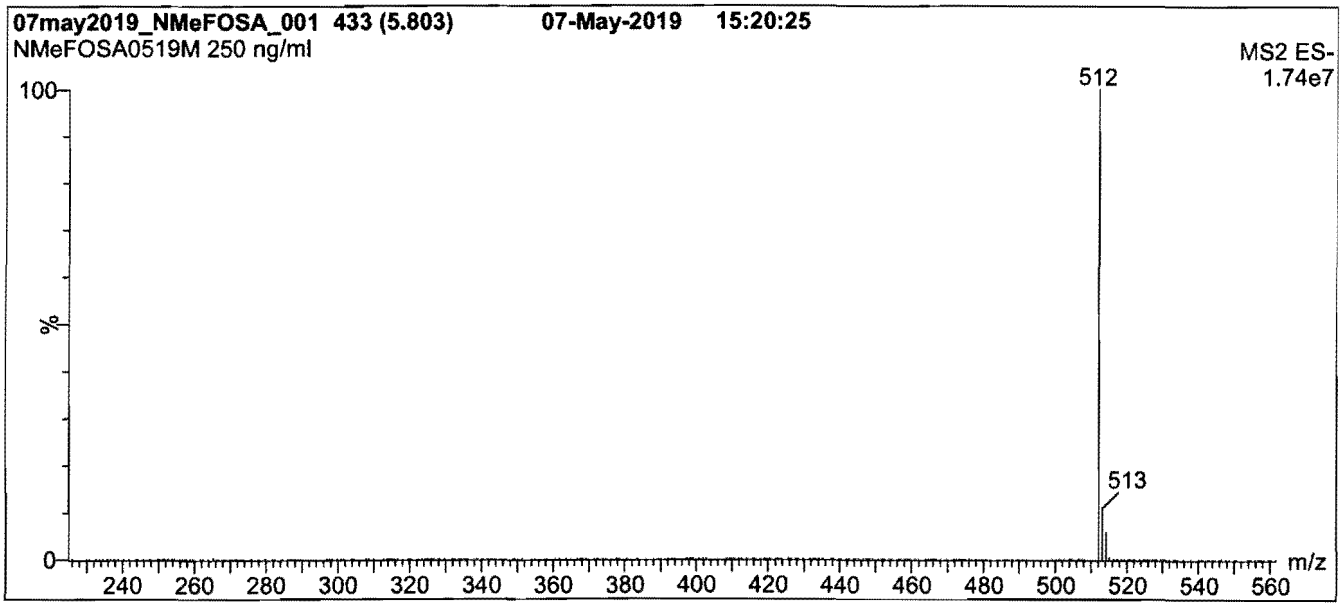
MS Parameters

Collision Gas (mbar) = 2.99e-3
Collision Energy (eV) = 24

19L0661

Figure 1: **N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0661

INTENDED USE:

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HANDLING:

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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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

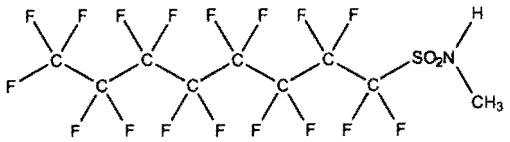
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0661

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	N-MeFOSA-M	**LOT NUMBER:**	NMeFOSA0519M
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)	05/07/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/07/2024		
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:

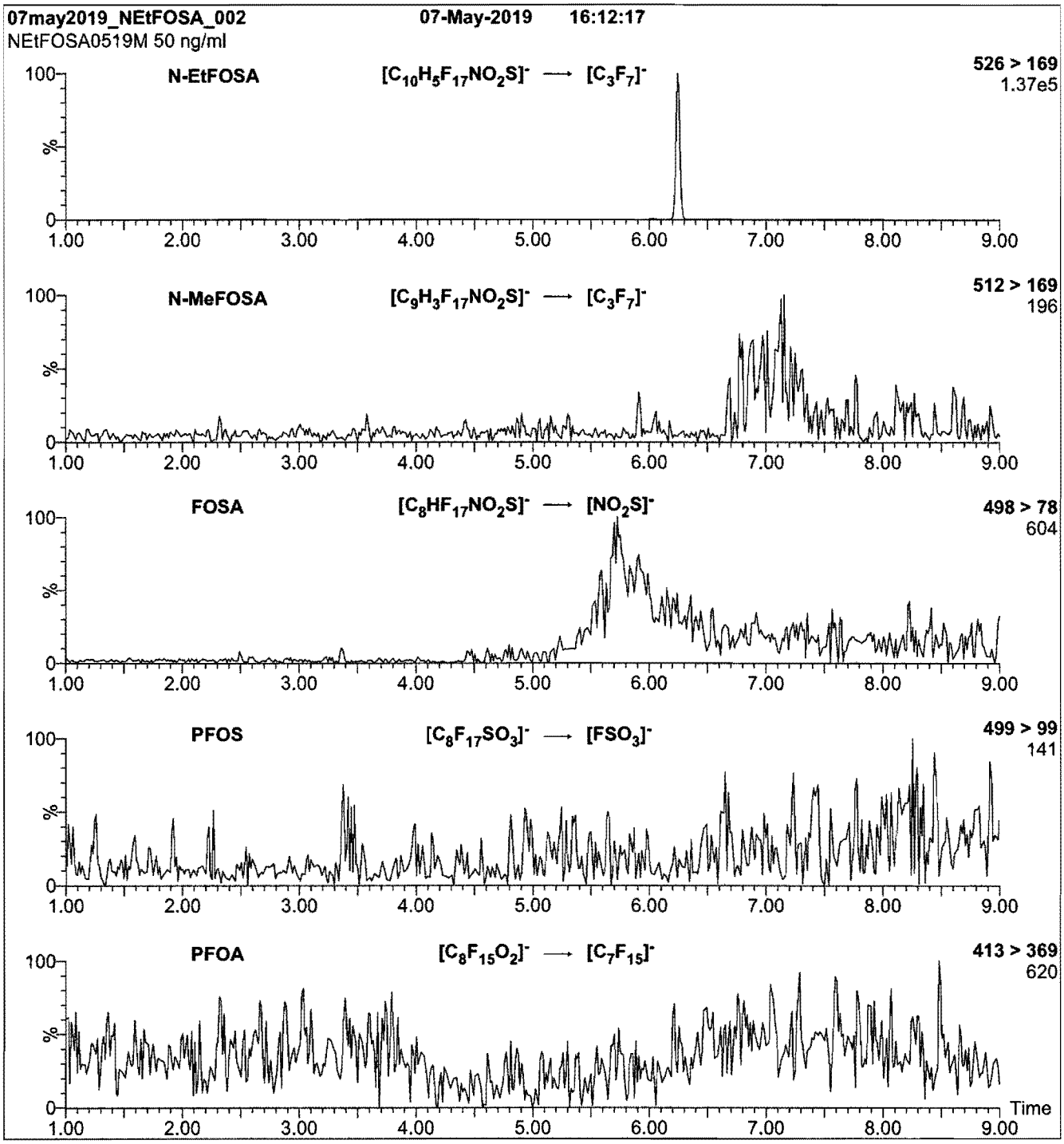
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/09/2019 (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

Figure 2: **N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (N-EtFOSA-M)

Mobile phase: Same as Figure 1

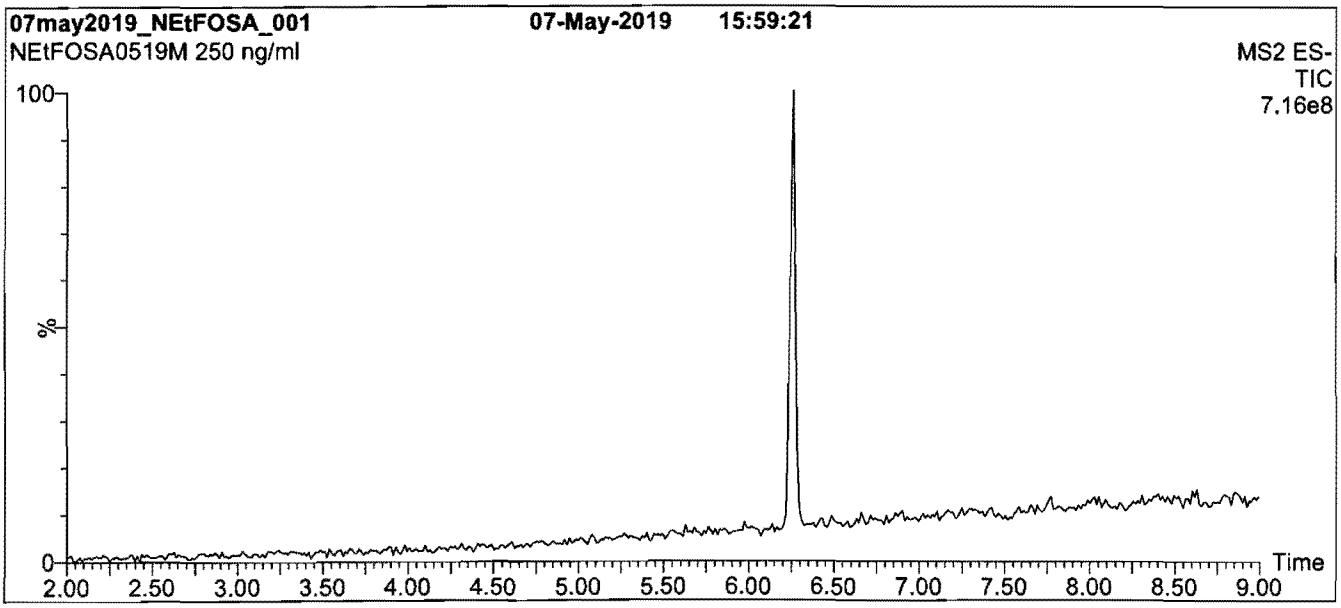
Flow: 300 µl/min

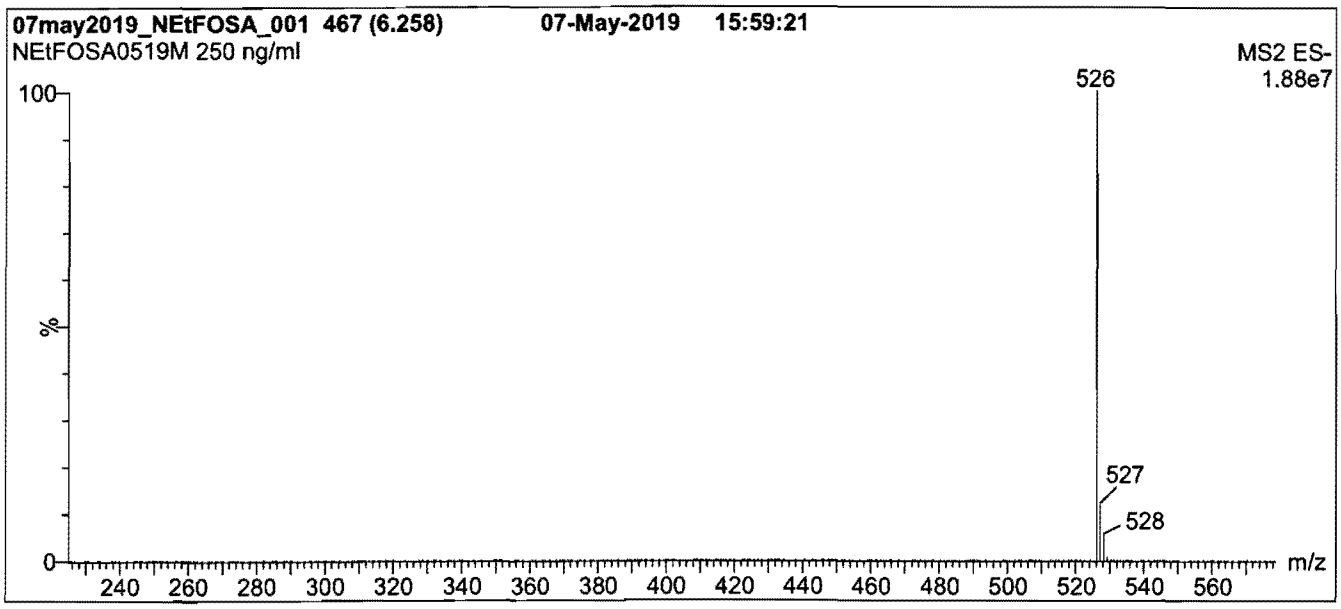
MS Parameters

Collision Gas (mbar) = 3.00e-3
Collision Energy (eV) = 24

19L0662

Figure 1: **N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 11 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0662

INTENDED USE:

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HANDLING:

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SYNTHESIS / CHARACTERIZATION:

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HOMOGENEITY:

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UNCERTAINTY:

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The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters $x_1, x_2, \ldots x_n$ 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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CALA Testing Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

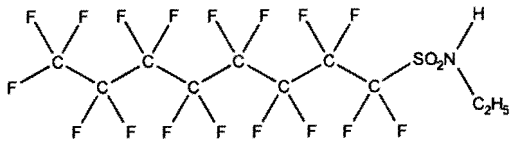
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1910662

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	N-EtFOSA-M	**LOT NUMBER:**	NEtFOSA0519M
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)	05/07/2019		
EXPIRY DATE: (mm/dd/yyyy)	05/07/2024		
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:

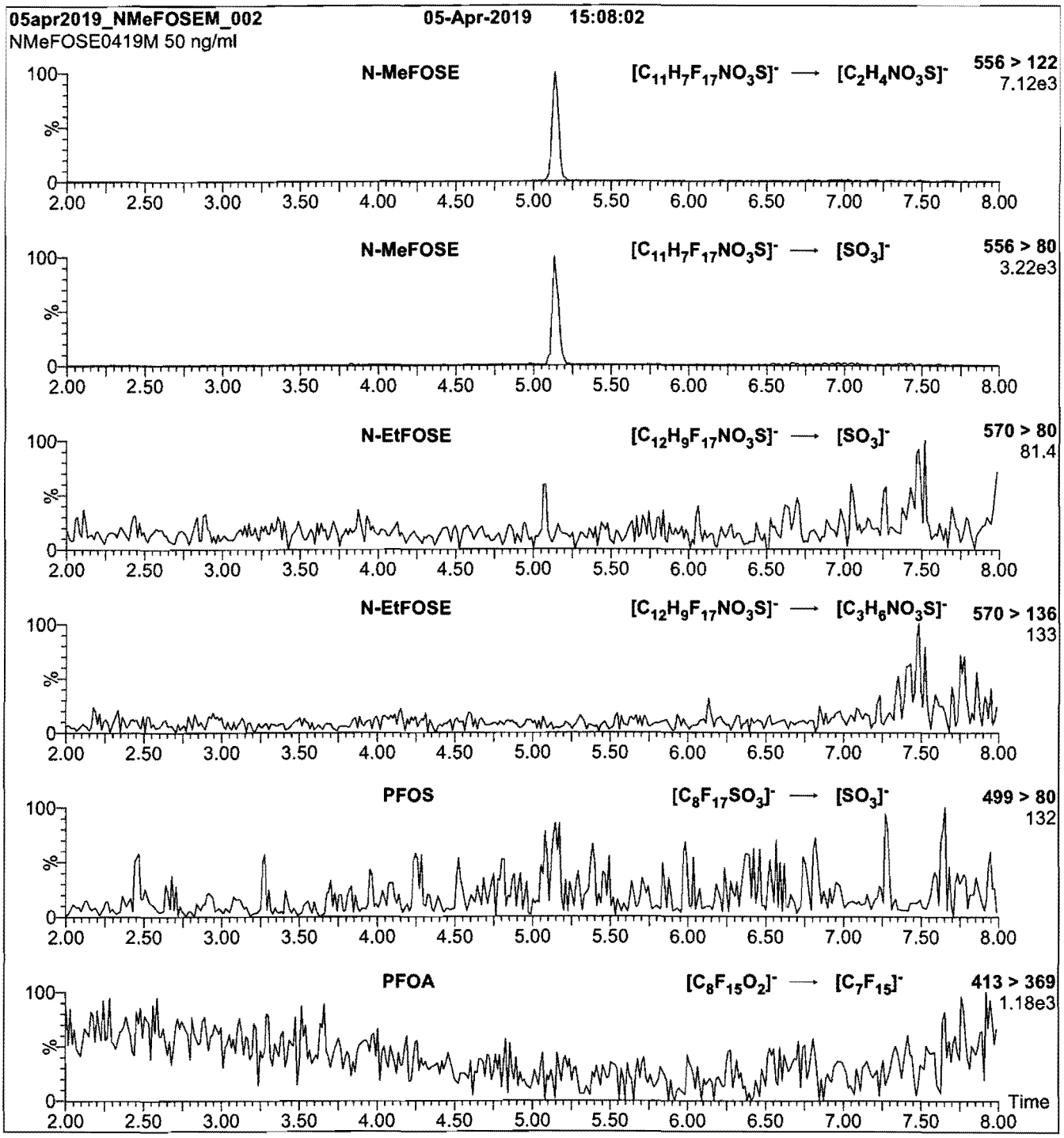
- See page 2 for further details.
- Contains ~ 0.5% branched isomers of N-ethylperfluorooctanesulfonamide.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 05/09/2019 (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

Figure 3: **N-MeFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-MeFOSE-M)

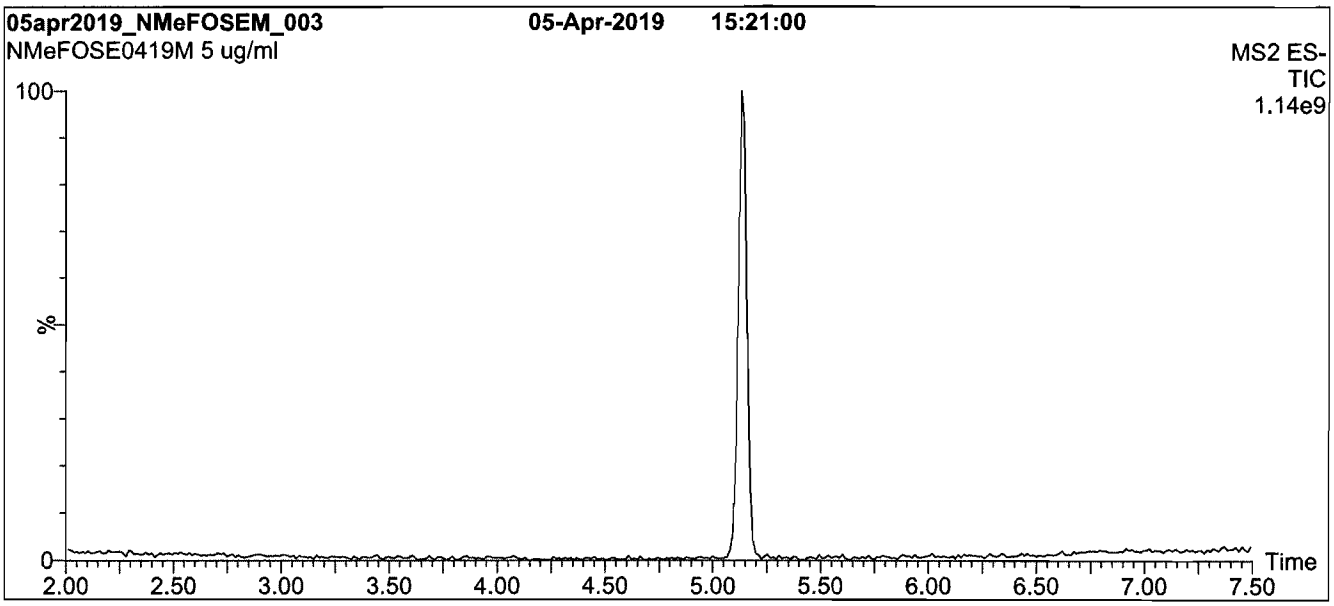
Mobile phase: Same as Figure 2

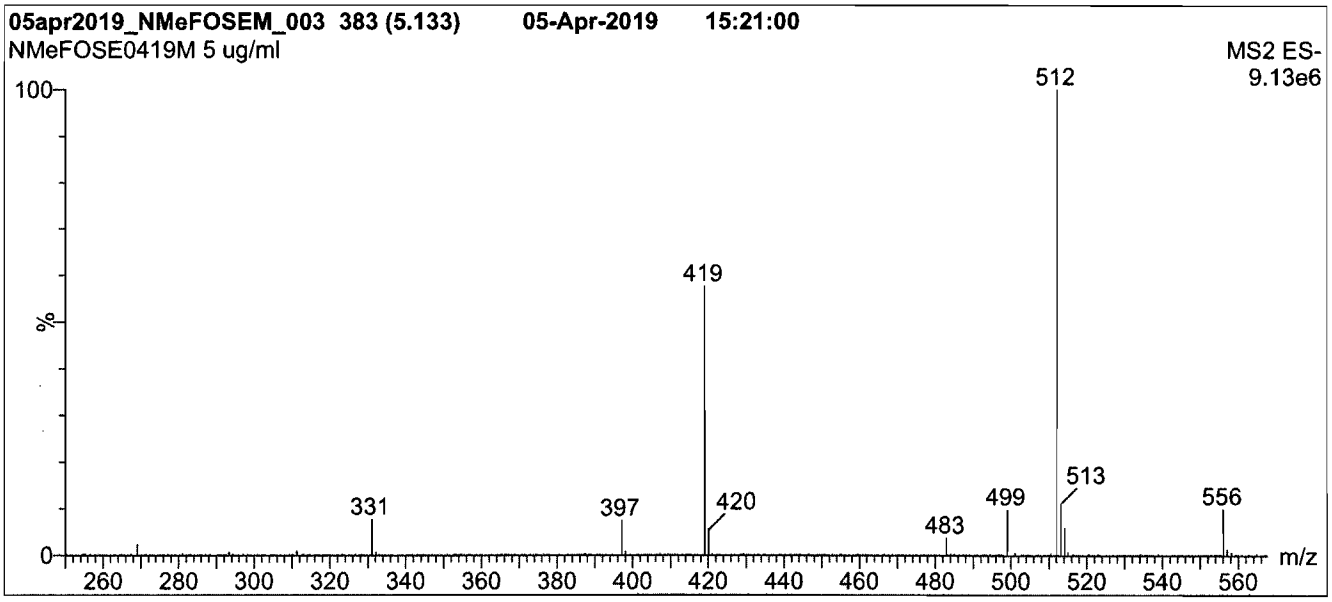
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.94e-3
Collision Energy (eV) = 36

Figure 2: **N-MeFOSE-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% MeOH / 35% H_2O
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

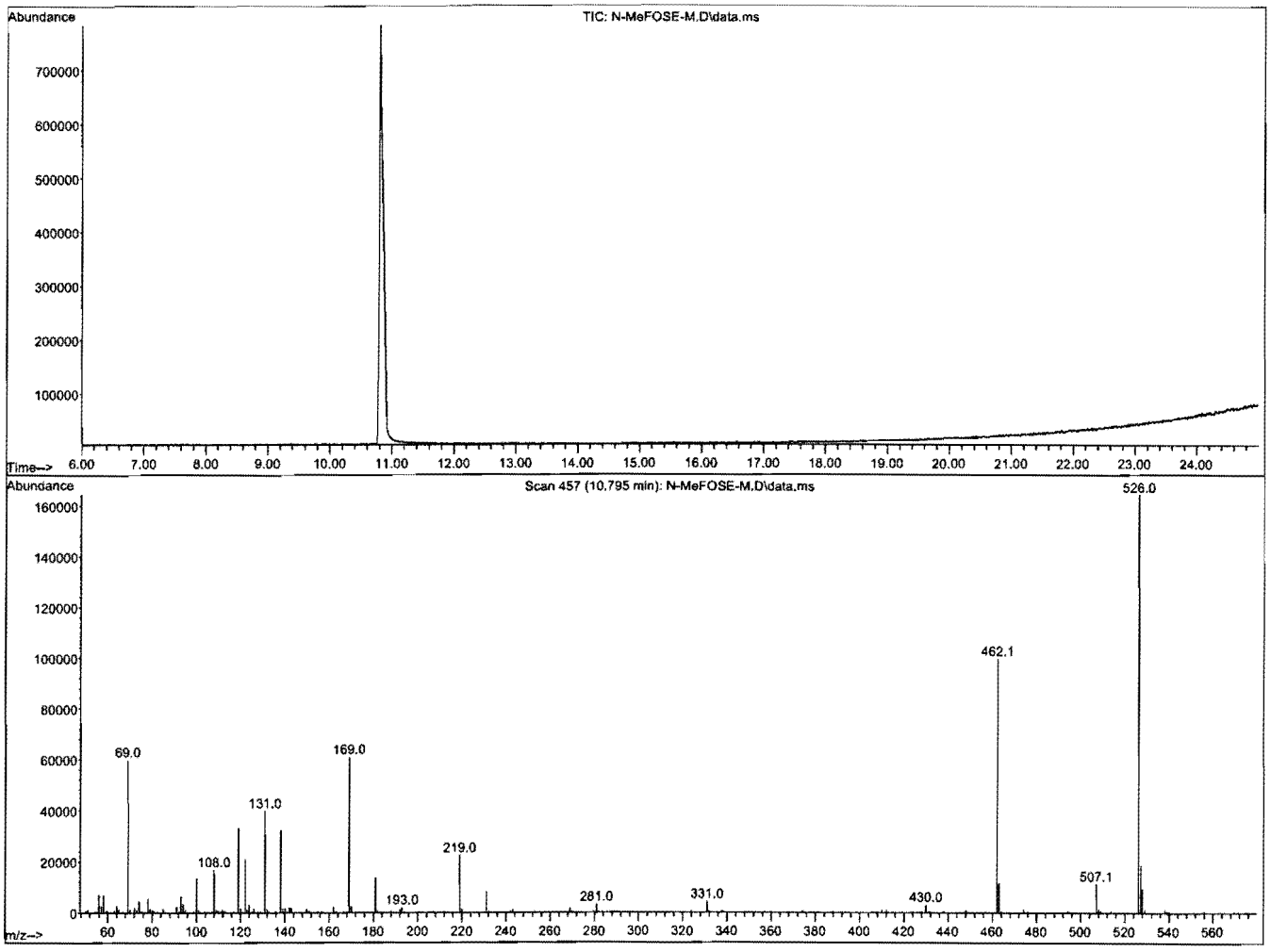
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (l/hr) = 1000

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)

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where x is expressed as a relative standard uncertainty of the individual parameter.

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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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1910663

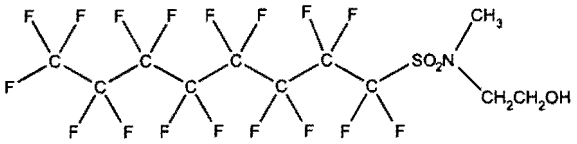
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: N-MeFOSE-M **LOT NUMBER:** NMeFOSE0419M

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)	04/08/2019 (HRGC/LRMS) 04/05/2019 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	04/08/2024		
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:** 04/12/2019 (mm/dd/yyyy)
B.G. Chittim, General Manager

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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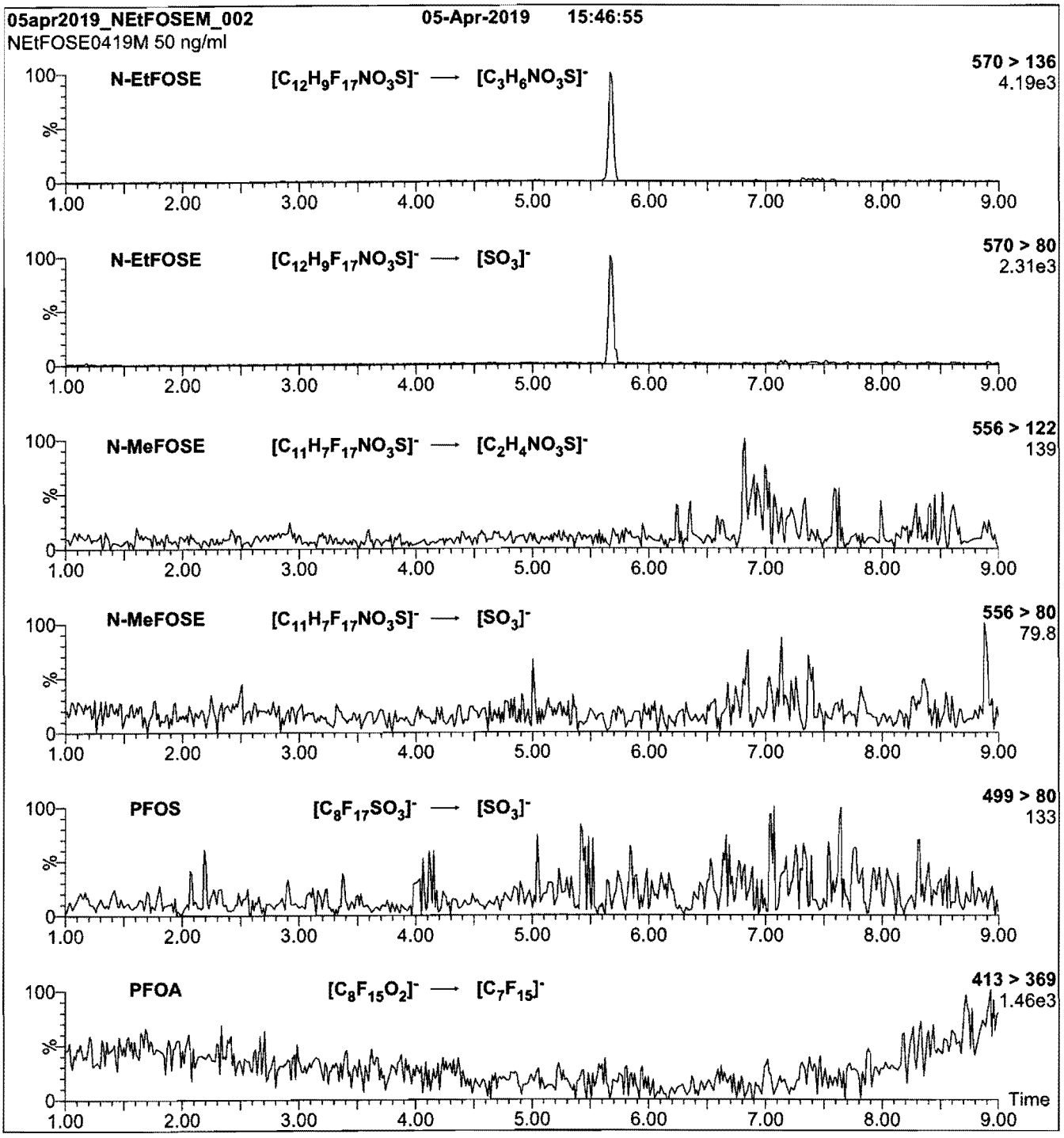
Figure 3: **N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-EtFOSE-M)

Mobile phase: Same as Figure 2

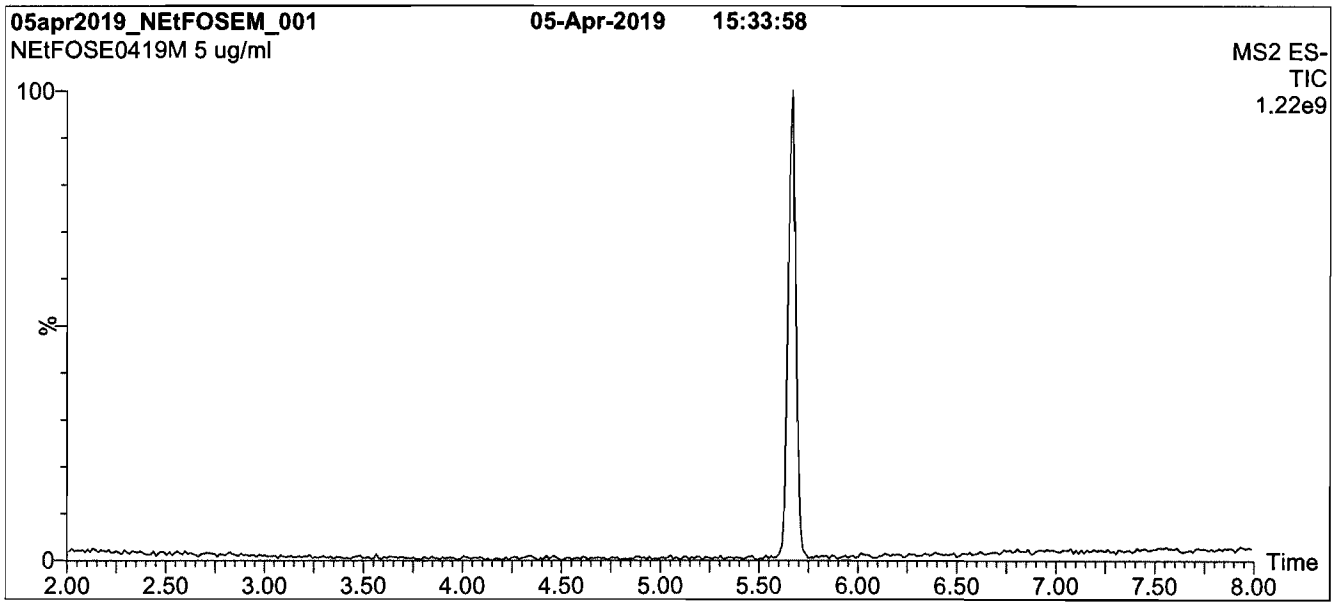
Flow: 300 µl/min

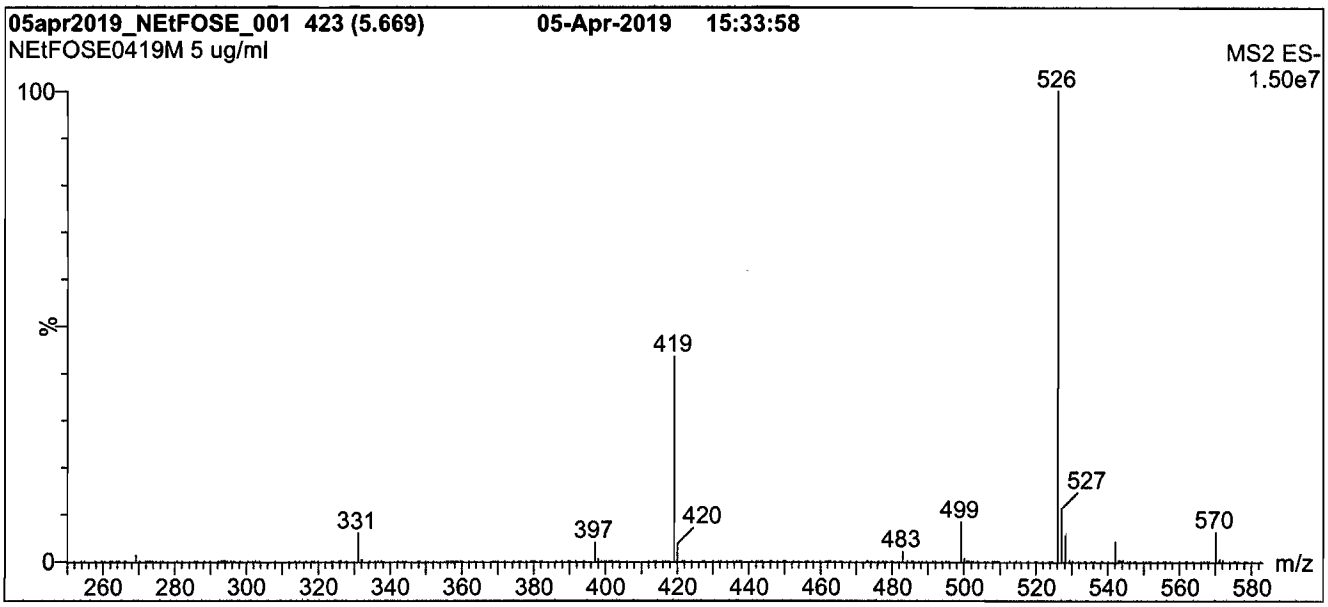
MS Parameters

Collision Gas (mbar) = 2.76e-3
Collision Energy (eV) = 32

19L0664

Figure 2: **N-EtFOSE-M; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 2:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity UPLC BEH Shield RP_{18}
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 65% MeOH / 35% H_2O
Ramp to 90% organic over 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

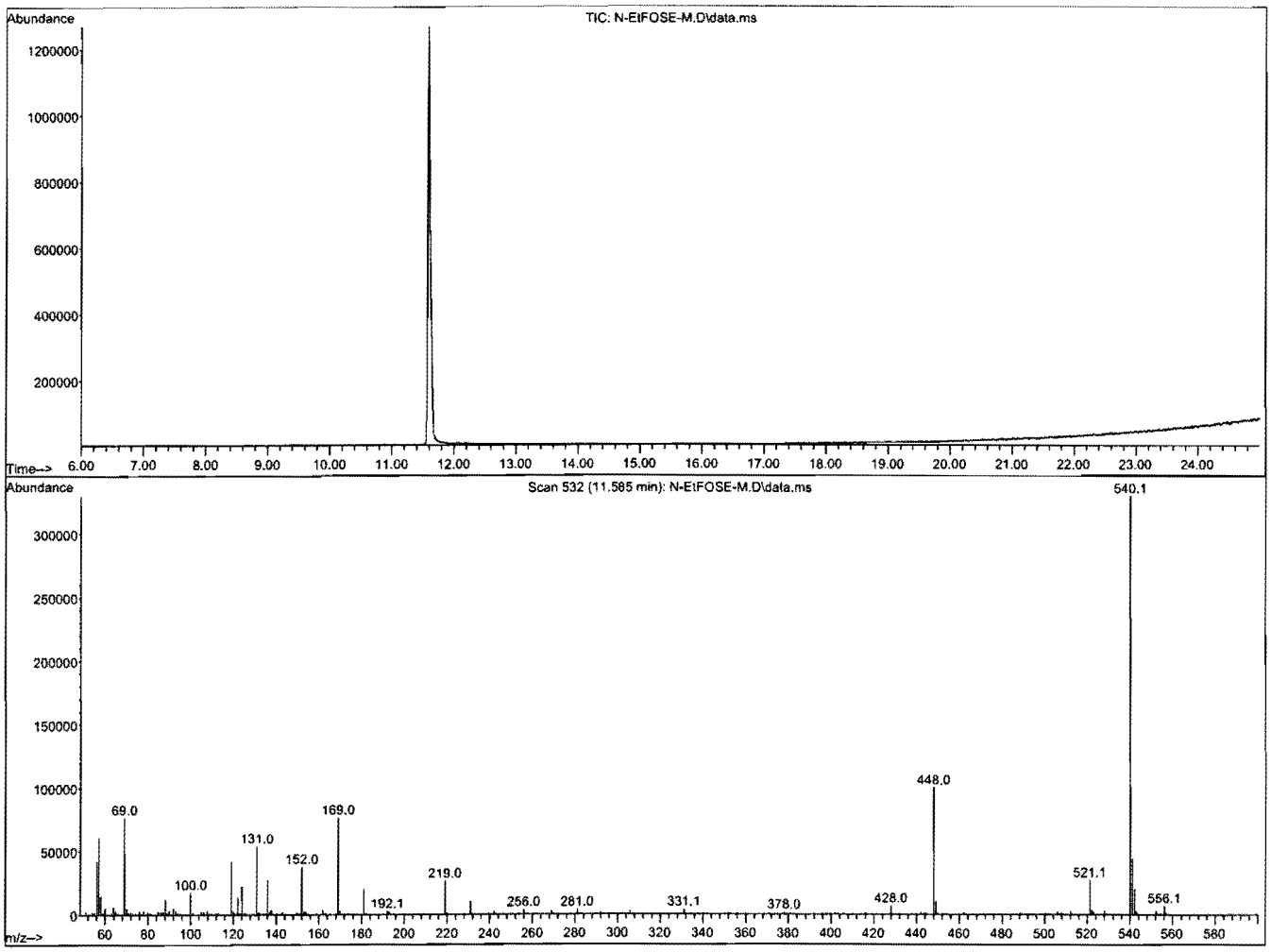
Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 65.00
Desolvation Temperature (°C) = 450
Desolvation Gas Flow (l/hr) = 1000

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)

19L0564

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HANDLING:

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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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LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

19L0664

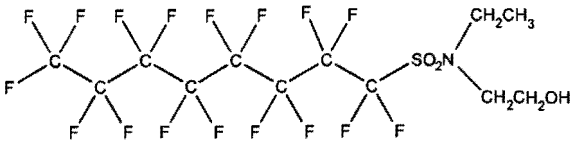
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: N-EtFOSE-M **LOT NUMBER:** NEtFOSE0419M

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)	04/08/2019 (HRGC/LRMS) 04/05/2019 (LC/MS)		
EXPIRY DATE: (mm/dd/yyyy)	04/08/2024		
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.

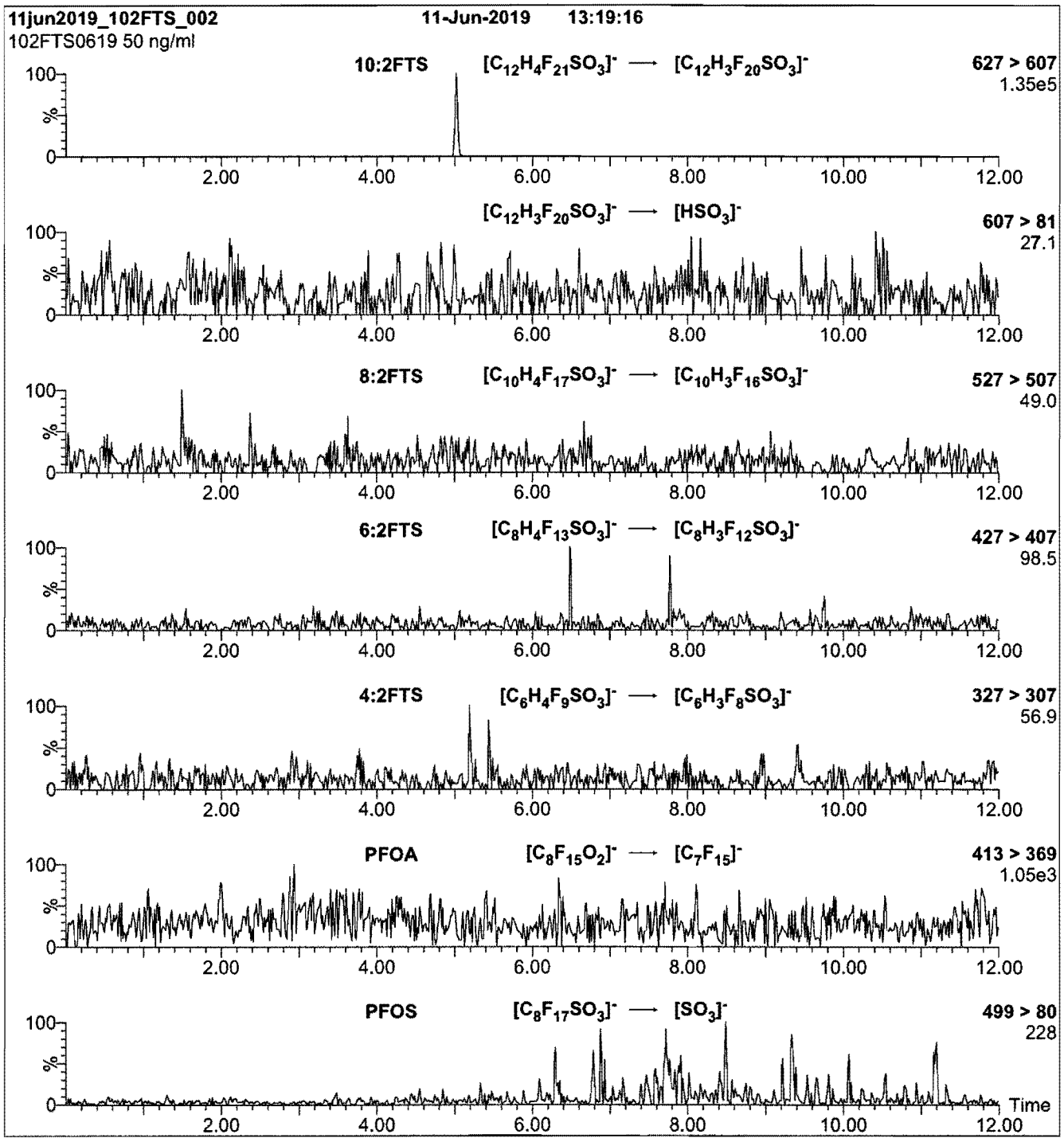
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/15/2019 (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

19L0665

Figure 2: **10:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (10:2FTS)

Mobile phase: Same as Figure 1

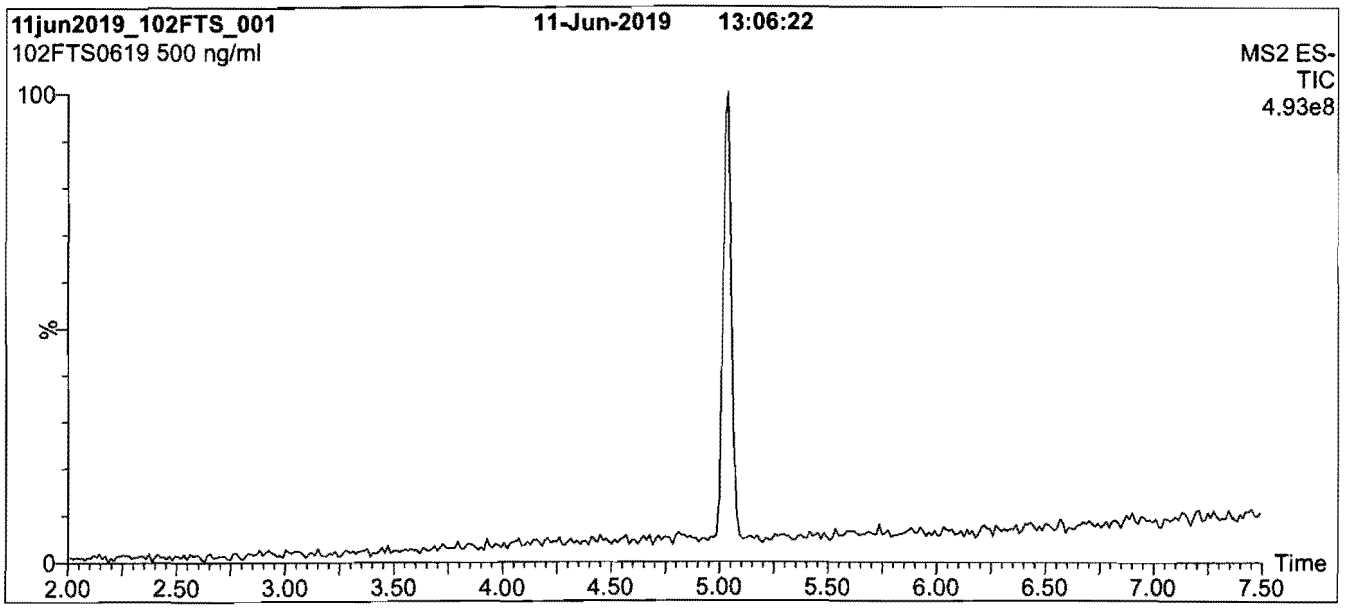
Flow: 300 µl/min

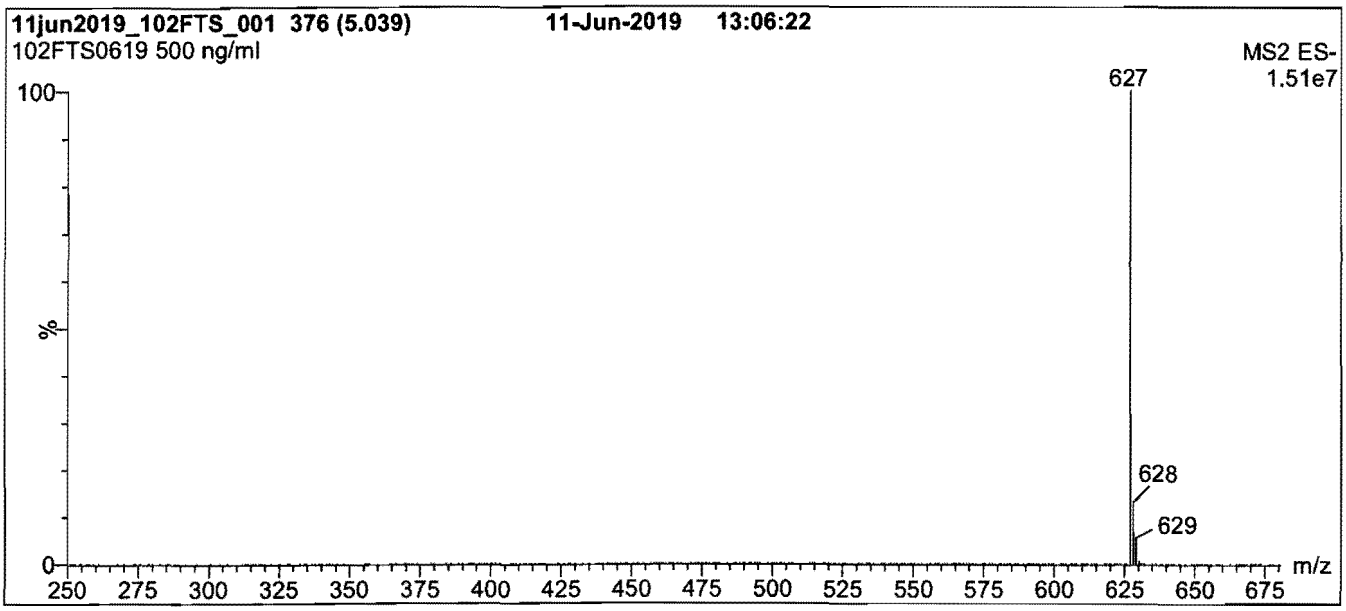
MS Parameters

Collision Gas (mbar) = 2.92e-3
Collision Energy (eV) = 25

19L0665

Figure 1: **10:2FTS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 0.50
Cone Voltage (V) = 25.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

Our products are synthesized using single-product unambiguous routes whenever possible. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

HOMOGENEITY:

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS, and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

UNCERTAINTY:

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty, $u_c(y)$, of a value y and the uncertainty of the independent parameters x_1, x_2,...x_n on which it depends is:

$$u_c(y(x_1, x_2, ...x_n)) = \sqrt{\sum_{i=1}^{n} u(y, x_i)^2}$$

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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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QUALITY MANAGEMENT:

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CALA Testing Accreditation No. A 1226

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

19L0665

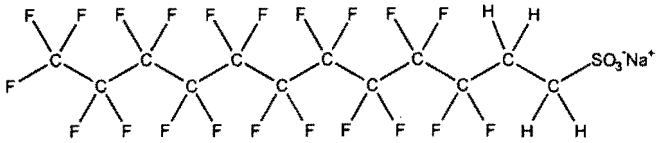
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 10:2FTS **LOT NUMBER:** 102FTS0619

COMPOUND: Sodium 1H,1H,2H,2H-perfluorododecane sulfonate

STRUCTURE: **CAS #:** Not available



MOLECULAR FORMULA:	$C_{12}H_4F_{21}SO_3Na$		**MOLECULAR WEIGHT:**	650.18
CONCENTRATION:	50.0 ± 2.5 µg/ml	(Na salt)	**SOLVENT(S):**	Methanol
	48.2 ± 2.4 µg/ml	(10:2FTS anion)		
CHEMICAL PURITY:	>98%			
LAST TESTED: (mm/dd/yyyy)	06/11/2019			
EXPIRY DATE: (mm/dd/yyyy)	06/11/2022			
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.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 06/18/2019 (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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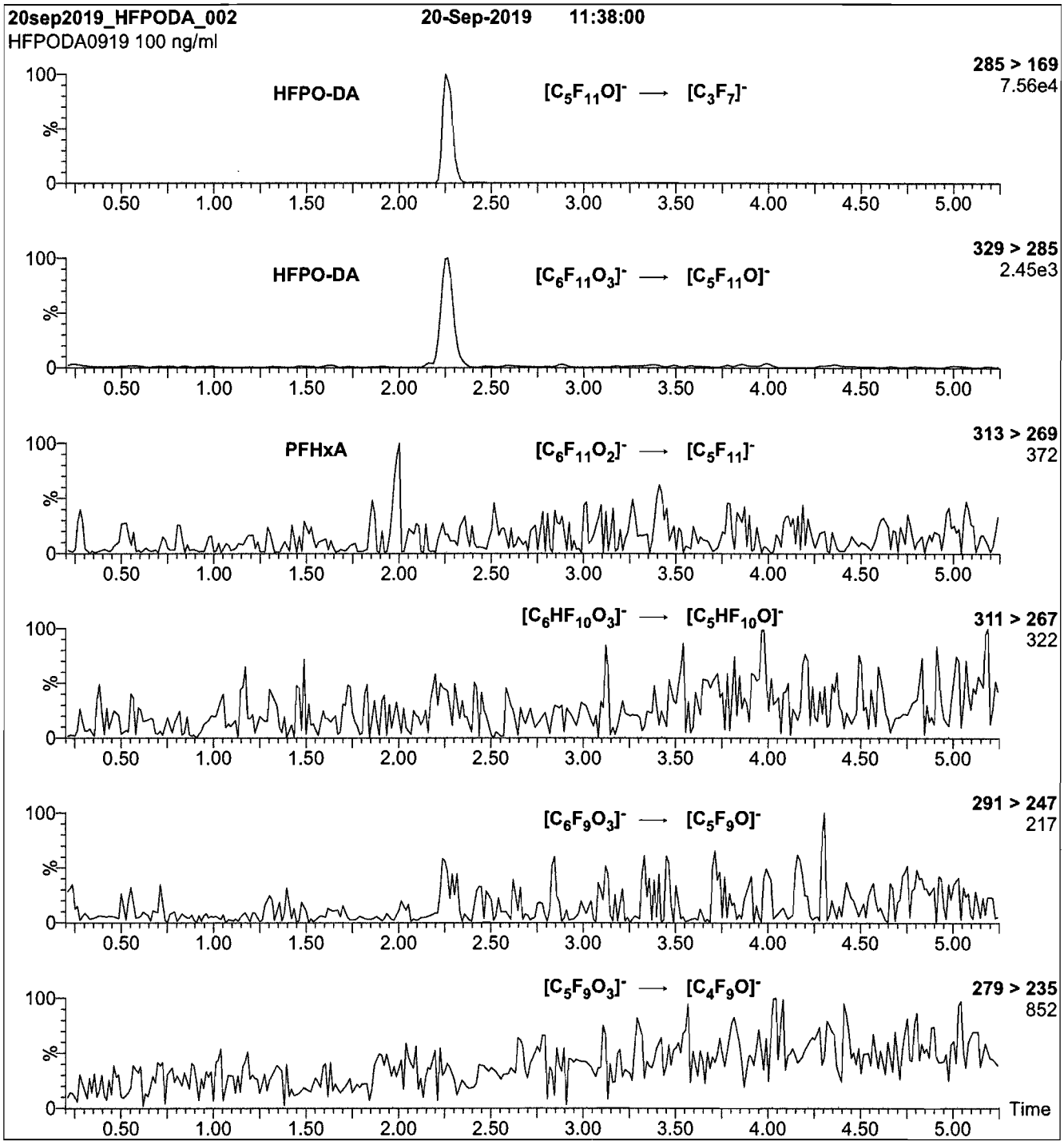
Figure 2: **HFPO-DA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (HFPO-DA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.60e-3
Collision Energy (eV) = 8

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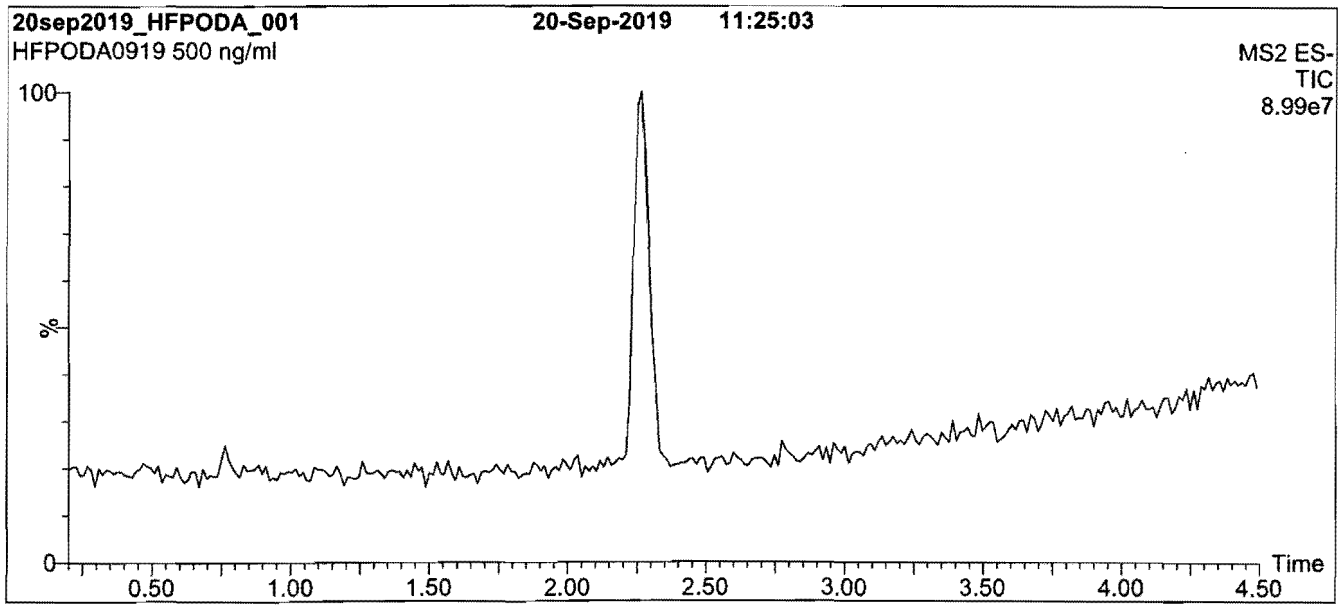
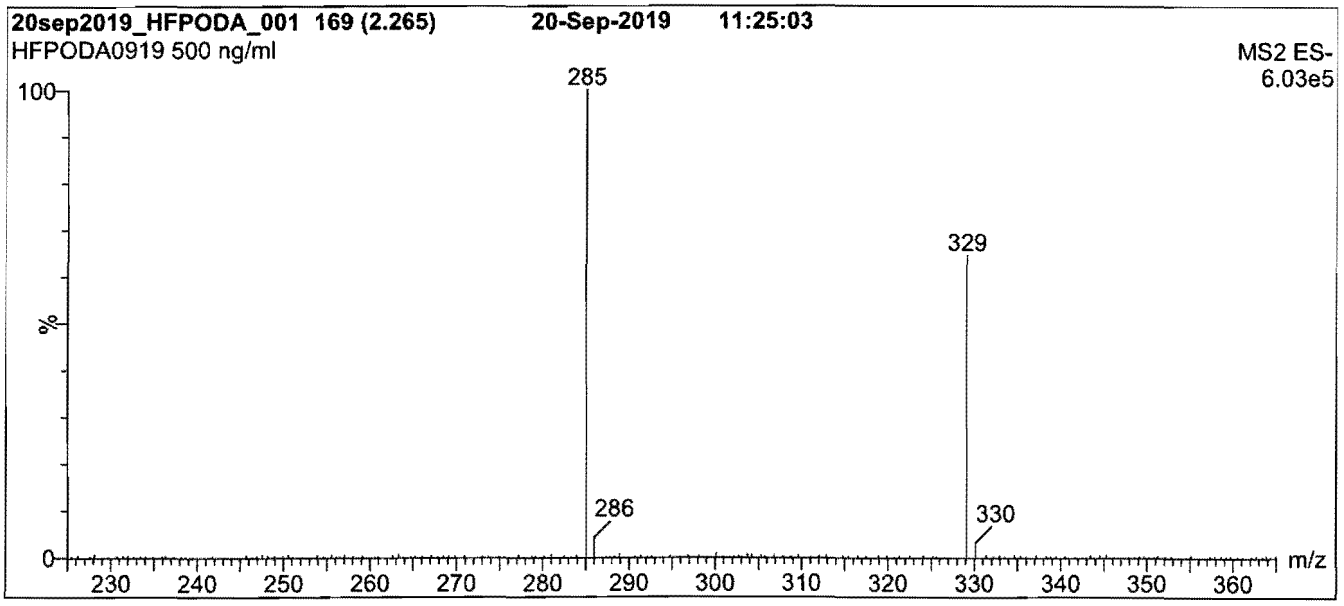
Figure 1: **HFPO-DA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 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
Desolvation Temperature (°C) = 325
Desolvation Gas Flow (l/hr) = 1000

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INTENDED USE:

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HANDLING:

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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:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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19L0666

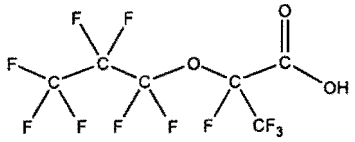
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: HFPO-DA **LOT NUMBER:** HFPODA0919

COMPOUND: 2,3,3,3-Tetrafluoro-2-(1,1,2,2,3,3,3-heptafluoropropoxy)-propanoic acid

STRUCTURE: **CAS #:** 13252-13-6



MOLECULAR FORMULA:	$C_6HF_{11}O_3$	**MOLECULAR WEIGHT:**	330.05
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	09/20/2019		
EXPIRY DATE: (mm/dd/yyyy)	09/20/2022		
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:

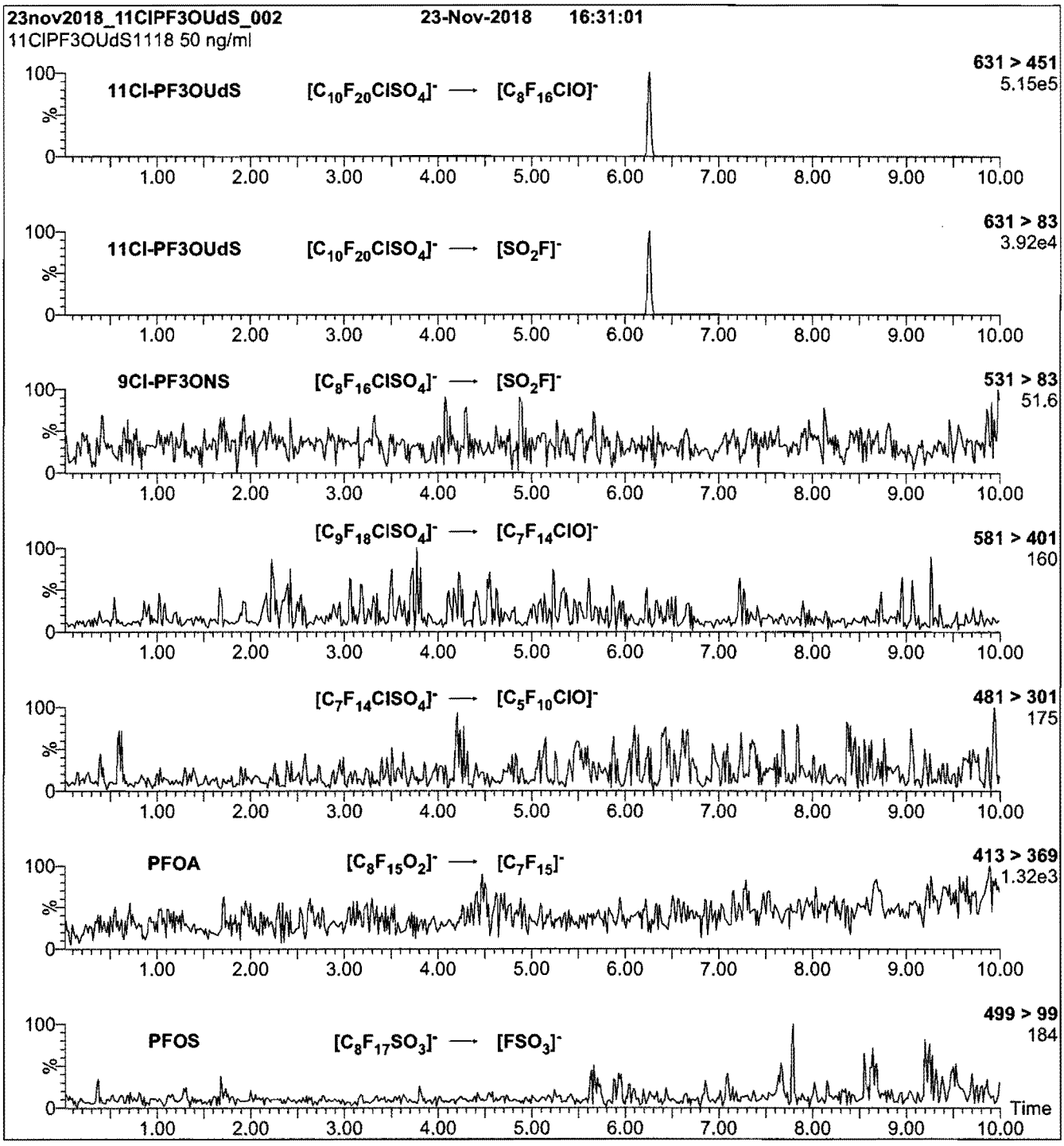
- See page 2 for further details.
- Product is commercially known as GenX.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/30/2019
(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

Figure 2: **11Cl-PF3OUdS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (11Cl-PF3OUdS)

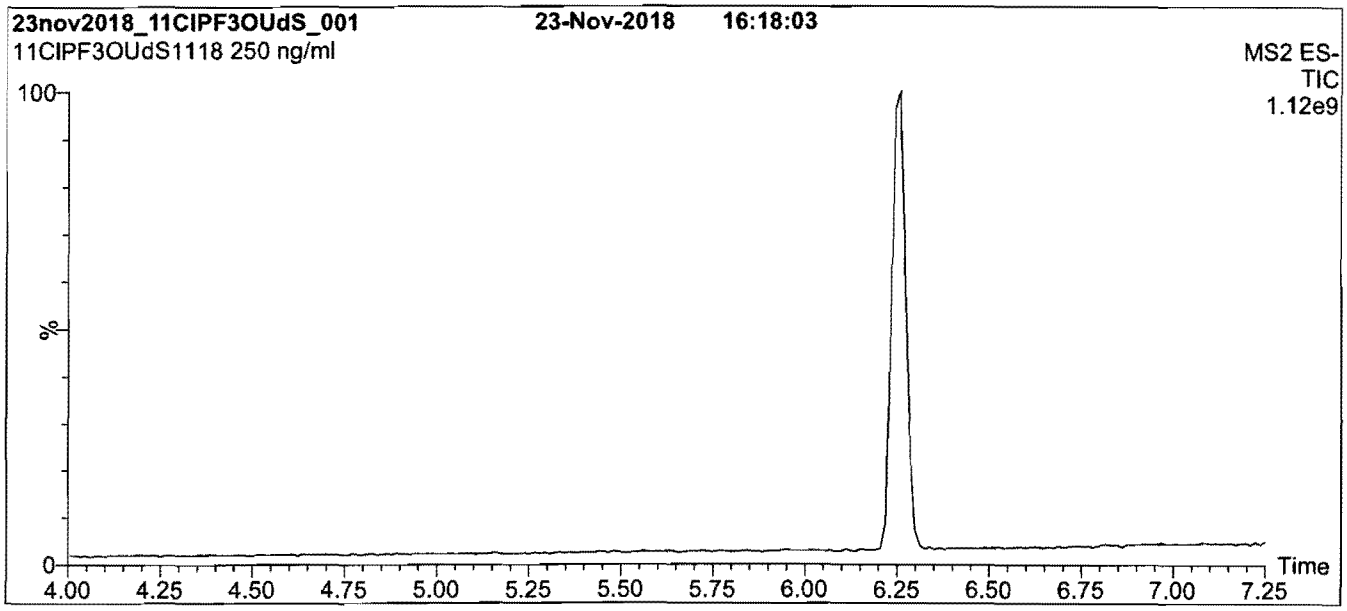
Mobile phase: Same as Figure 1

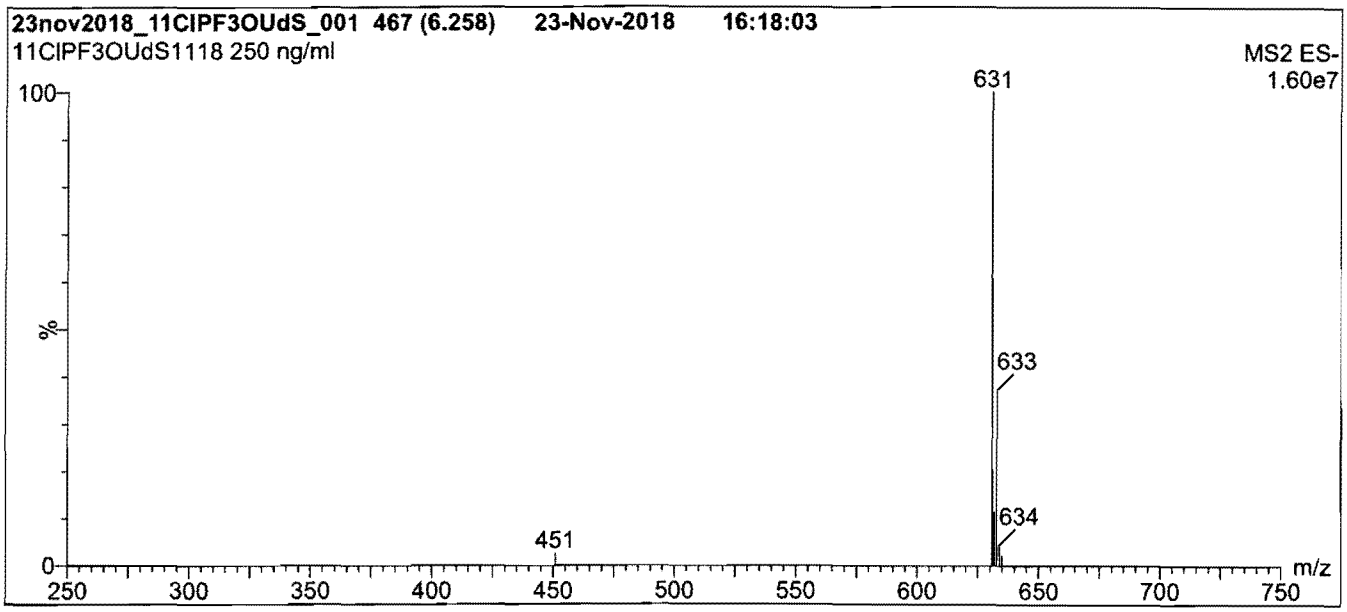
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.84e-3
Collision Energy (eV) = 24

Figure 1: **11Cl-PF3OUdS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 70.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

19L0667

INTENDED USE:

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HANDLING:

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CALA Testing Accreditation No. A1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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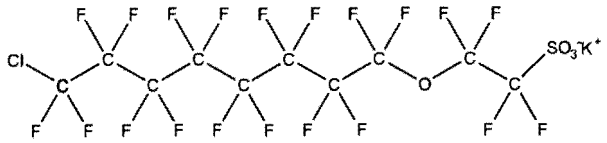
19L0667

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: 11Cl-PF3OUdS **LOT NUMBER:** 11ClPF3OUdS1118
COMPOUND: Potassium 11-chloroeicosafluoro-3-oxaundecane-1-sulfonate

STRUCTURE: **CAS #:** 83329-89-9



MOLECULAR FORMULA:	$C_{10}F_{20}ClSO_4K$	**MOLECULAR WEIGHT:**	670.69
CONCENTRATION:	50.0 ± 2.5 µg/ml (K Salt)	**SOLVENT(S):**	Methanol
	47.1 ± 2.4 µg/ml (11Cl-PF3OUdS anion)		
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	11/23/2018		
EXPIRY DATE: (mm/dd/yyyy)	11/23/2023		
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.
- This compound is a minor component of the commercial formulation known as F-53B.

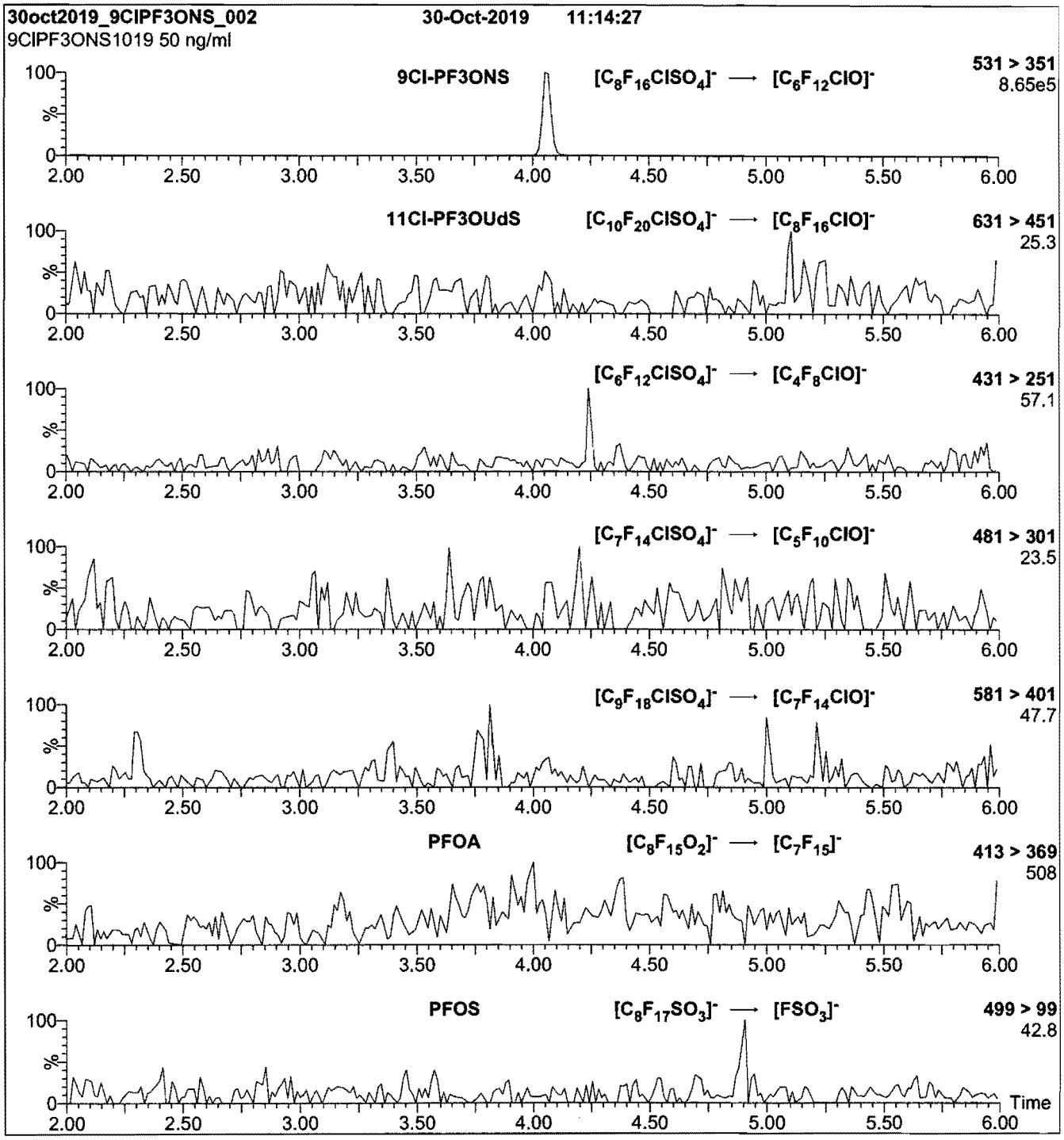
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/28/2018 (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

1910668

Figure 2: **9Cl-PF3ONS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (9Cl-PF3ONS)

Mobile phase: Same as Figure 1

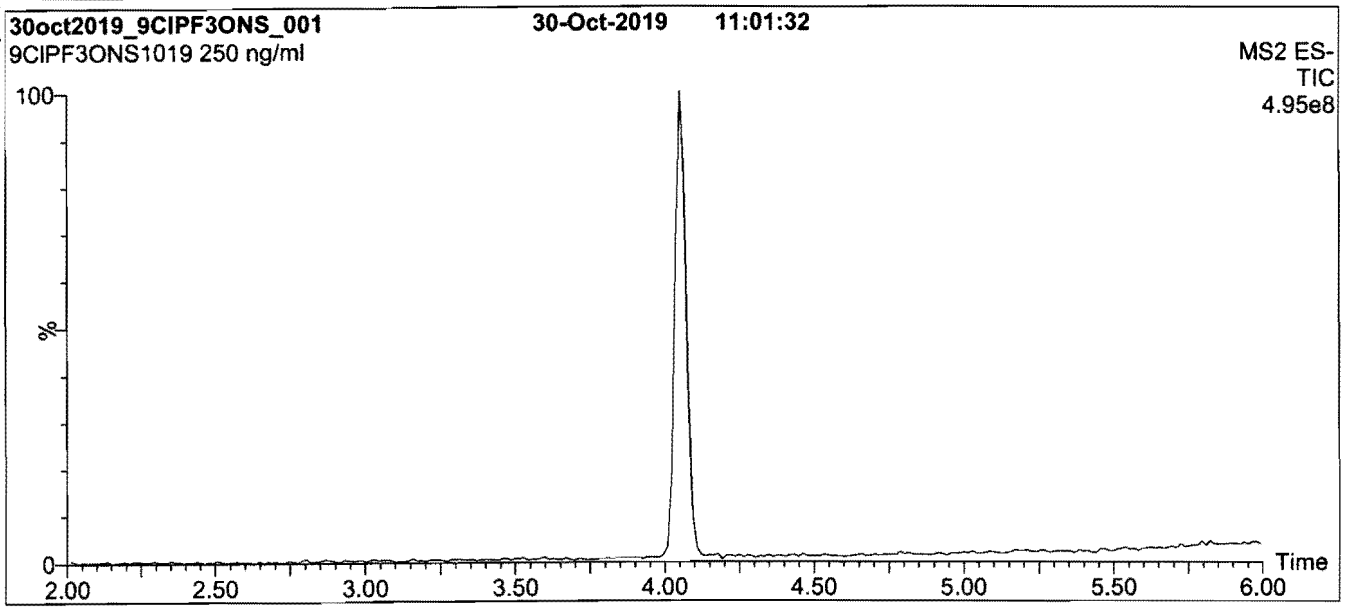
Flow: 300 µl/min

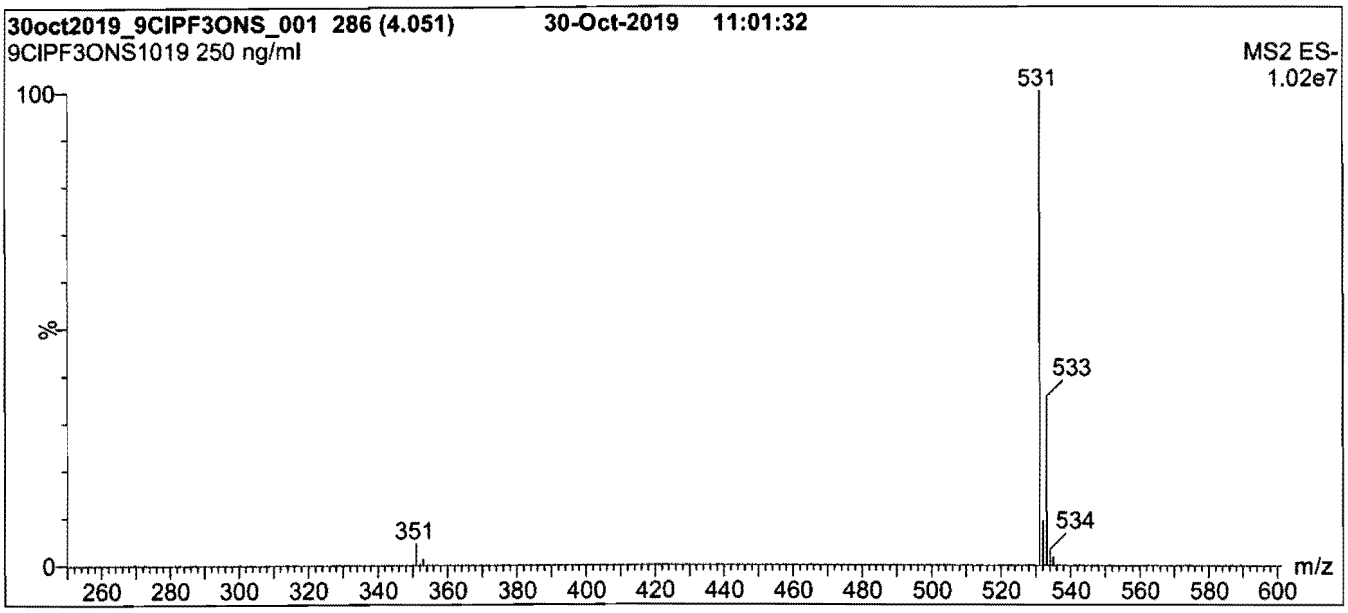
MS Parameters

Collision Gas (mbar) = 3.25e-3
Collision Energy (eV) = 20

19L0668

Figure 1: **9Cl-PF3ONS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (250 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 70.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

19L0668

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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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.

TRACEABILITY:

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

CALA Testing Accreditation No. A 1226

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

19L0668

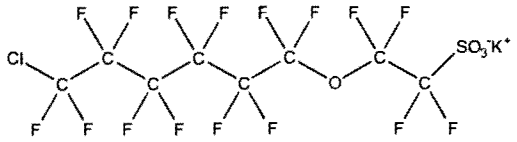
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: 9Cl-PF3ONS **LOT NUMBER:** 9ClPF3ONS1019

COMPOUND: Potassium 9-chlorohexadecafluoro-3-oxanonane-1-sulfonate

STRUCTURE: **CAS #:** 73606-19-6



MOLECULAR FORMULA:	$C_8F_{16}ClSO_4K$	**MOLECULAR WEIGHT:**	570.67
CONCENTRATION:	50.0 ± 2.5 µg/ml (K Salt) 46.6 ± 2.3 µg/ml (9Cl-PF3ONS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	10/30/2019		
EXPIRY DATE: (mm/dd/yyyy)	10/30/2024		
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.
- This compound is the major component of the commercial formulation known as F-53B.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

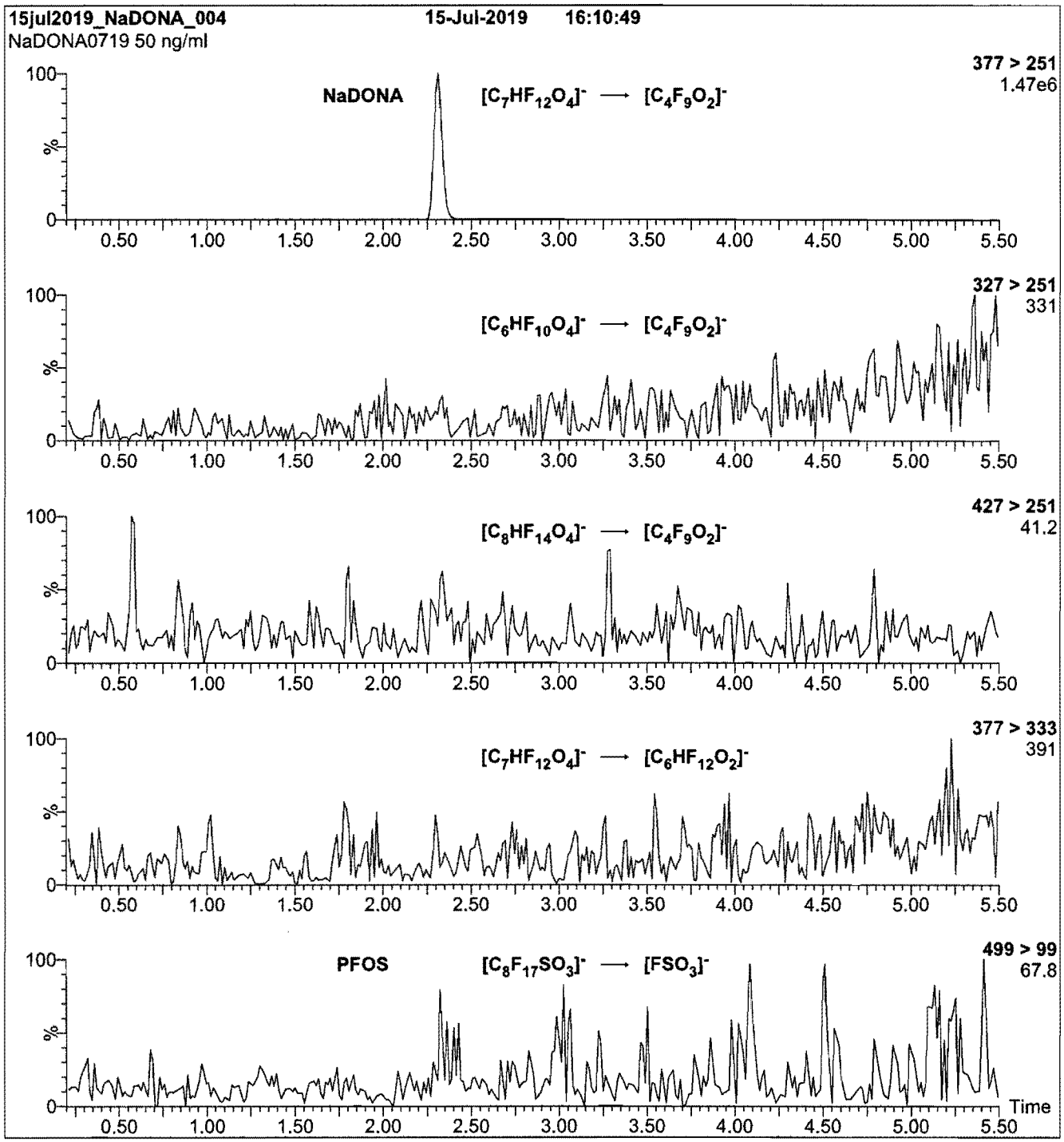
Certified By: _____ **Date:** 11/04/2019 (mm/dd/yyyy)

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

19L0669

Figure 2: **NaDONA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (NaDONA)

Mobile phase: Same as Figure 1

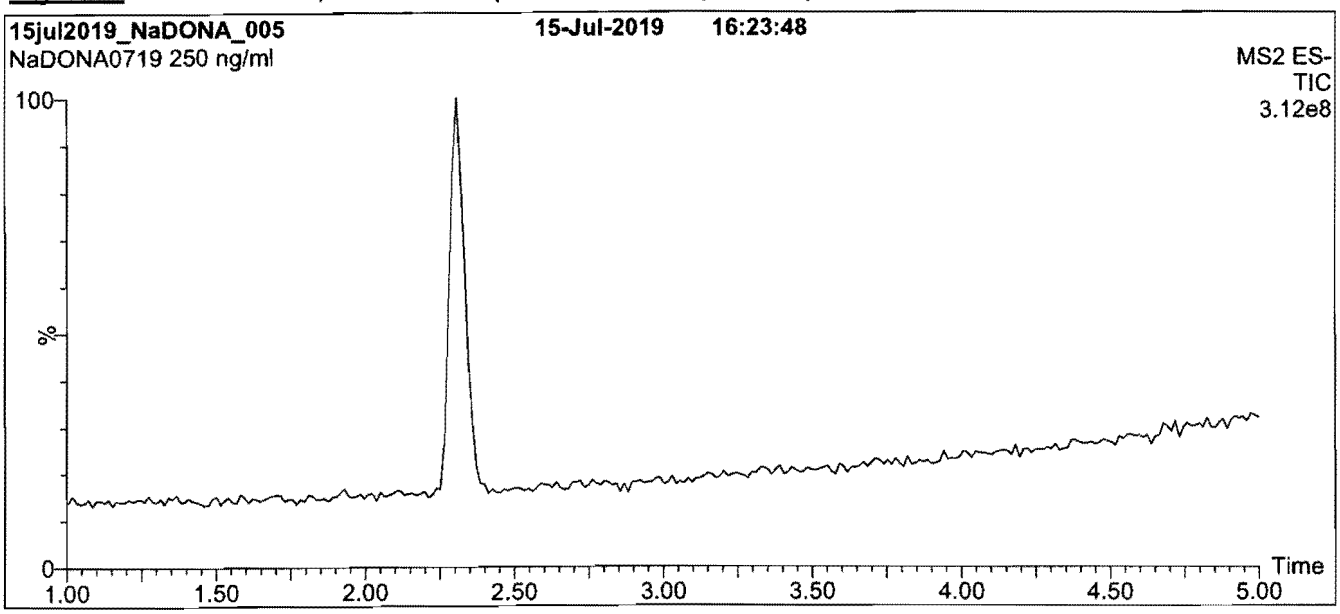
Flow: 300 µl/min

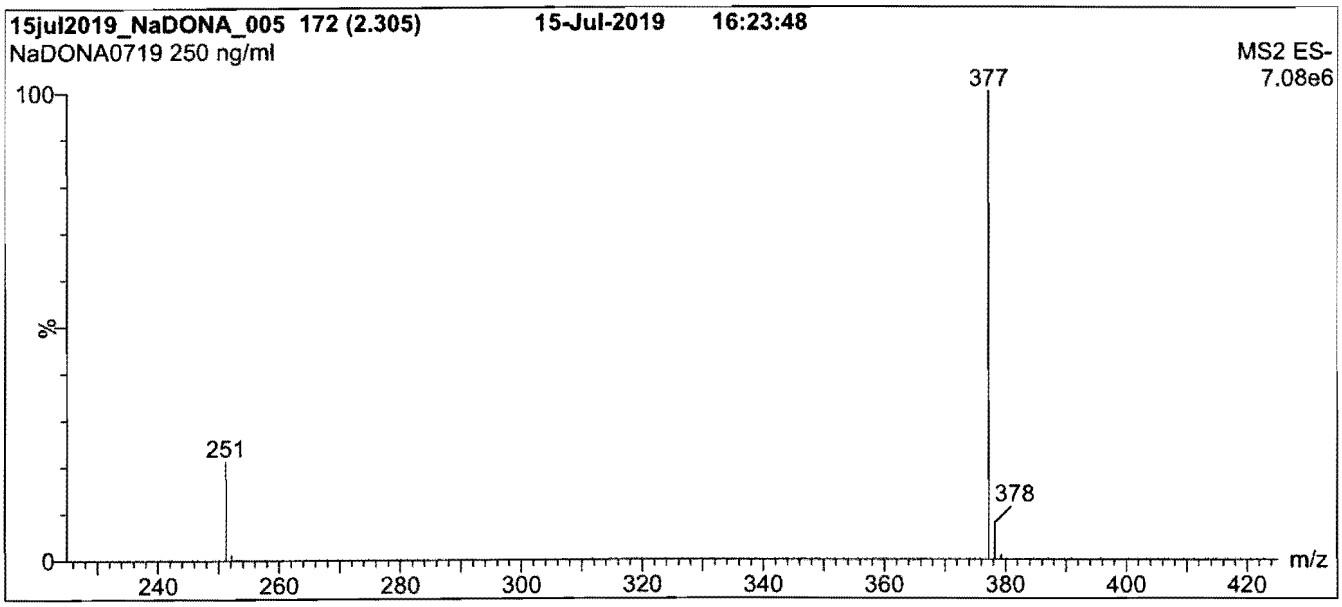
MS Parameters

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 10

19L0669

Figure 1: **NaDONA; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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 8 min and hold for
2 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.70
Cone Voltage (V) = 20.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0669

INTENDED USE:

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

HANDLING:

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

SYNTHESIS / CHARACTERIZATION:

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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,...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 calibrated by an external ISO/IEC 17025 accredited laboratory. In addition, their calibration is verified prior to each weighing using calibrated external weights traceable to an ISO/IEC 17025 accredited laboratory. All volumetric glassware used is calibrated, of Class A tolerance, and traceable to an ISO/IEC 17025 accredited laboratory. For certain products, traceability to international interlaboratory studies has also been established.

EXPIRY DATE / PERIOD OF VALIDITY:

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

LIMITED WARRANTY:

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

QUALITY MANAGEMENT:

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

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

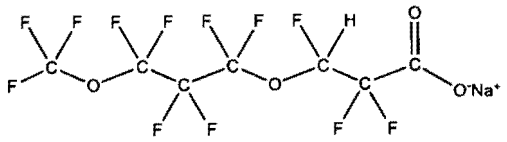
19L0669

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE: NaDONA
LOT NUMBER: NaDONA0719
COMPOUND: Sodium dodecafluoro-3H-4,8-dioxanonanoate

STRUCTURE:



CAS #: 958445-44-8 (ammonium salt)

MOLECULAR FORMULA:	$C_7HF_{12}O_4Na$	**MOLECULAR WEIGHT:**	400.05
CONCENTRATION:	50 ± 2.5 µg/ml (Na Salt)	**SOLVENT(S):**	Methanol
	47.1 ± 2.4 µg/ml (NaDONA anion)		Water (<1%)
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	07/15/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/15/2024		
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.
- Product is commercially known as ADONA.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

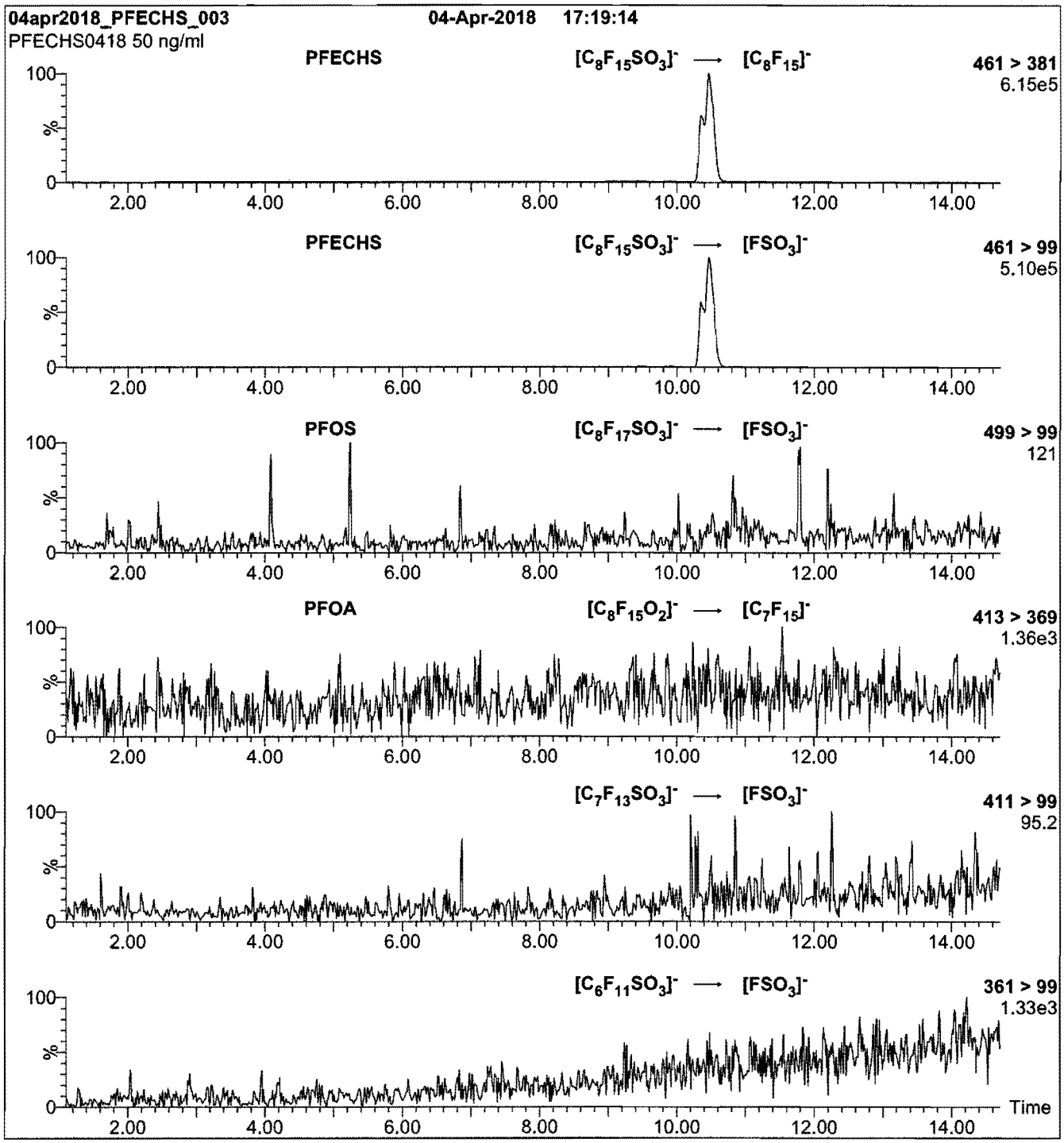
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/25/2019 (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

1910670

Figure 2: **PFECHS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFECHS)

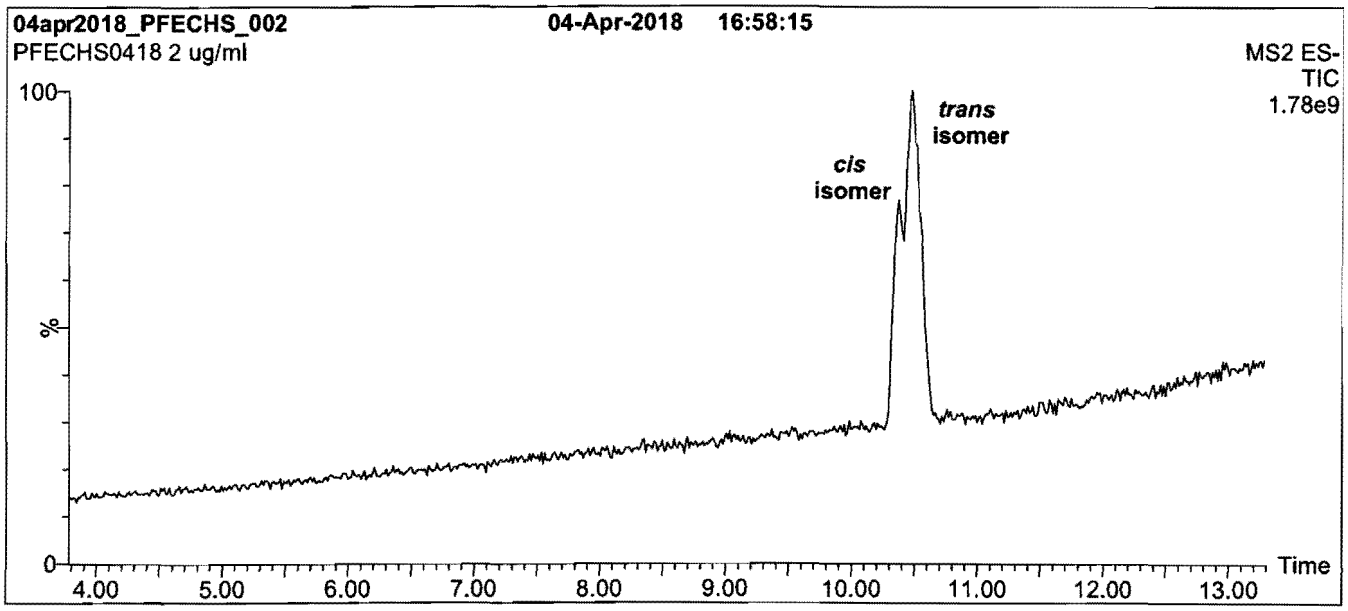
Mobile phase: Same as Figure 1

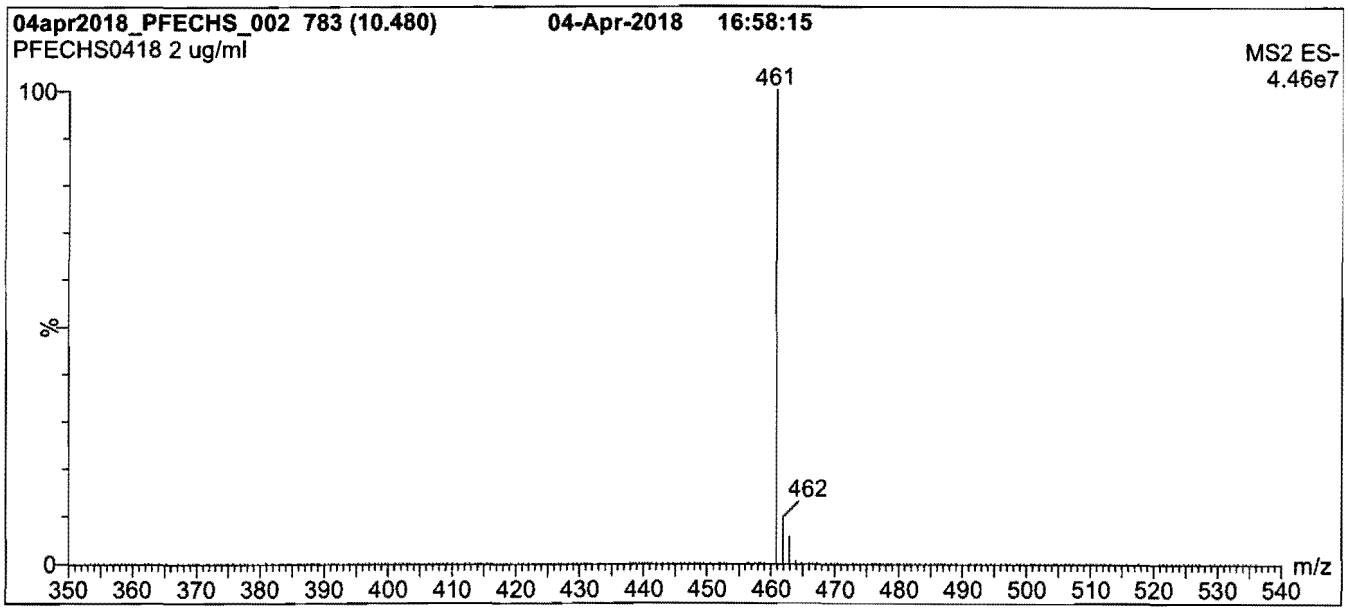
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 24

Figure 1: **PFECHS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro MS**

Chromatographic Conditions

Column: Acquity CSH Fluoro-Phenyl
1.7 µm, 2.1 x 100 mm

Mobile phase: Gradient
Start: 25% (80:20 MeOH:ACN) / 75% H_2O
(both with 10 mM NH_4OAc buffer)
Ramp to 60% organic over 13 min.
Ramp to 80% organic over 2 min and hold for
2 min before returning to initial conditions in 1 min.
Time: 20 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (350 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 45.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 750

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where x is expressed as a relative standard uncertainty of the individual parameter.

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EXPIRY DATE / PERIOD OF VALIDITY:

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CALA Testing Accreditation No. A1226

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

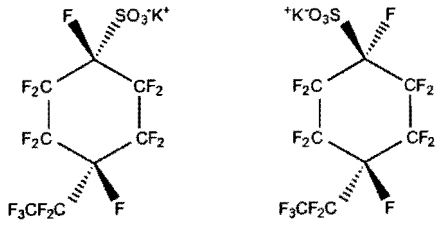
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: PFECHS **LOT NUMBER:** PFECHS0418

COMPOUND: Potassium perfluoro-4-ethylcyclohexanesulfonate (isomeric mixture)

STRUCTURE:



cis-isomer *trans*-isomer

CAS #: 67584-42-3

MOLECULAR FORMULA:	$C_8F_{15}SO_3K$	**MOLECULAR WEIGHT:**	500.22
CONCENTRATION:	50.0 ± 2.5 µg/ml (K salt) 46.1 ± 2.3 µg/ml (PFECHS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	04/04/2018		
EXPIRY DATE: (mm/dd/yyyy)	04/04/2023		
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 a mixture of the *cis*/*trans* isomers of PFECHS at a ratio of 2:3 (*cis*:*trans*).
- Contains ~ 1.5% of other isomeric impurities.

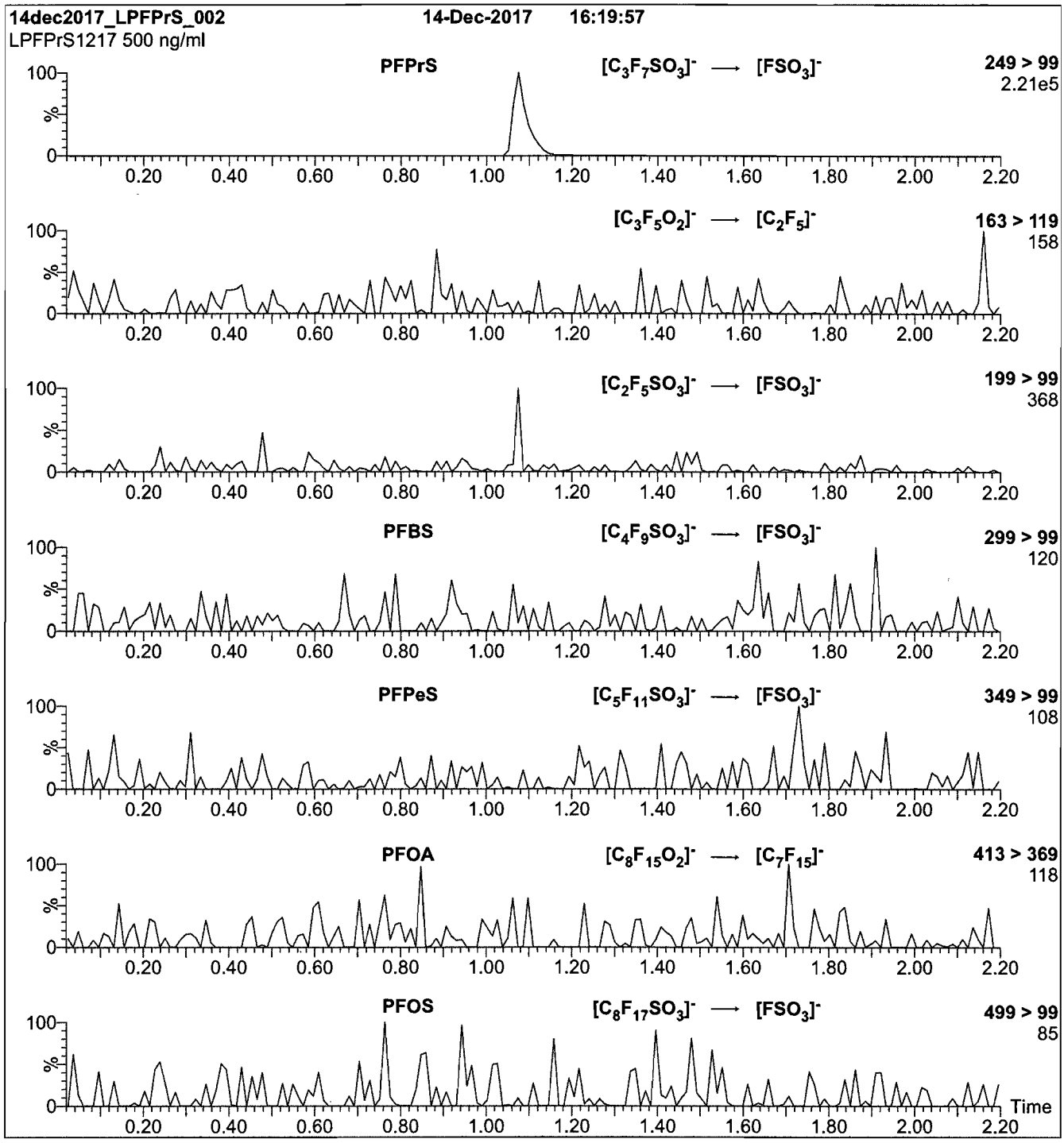
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 04/09/2018 (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

Figure 2: **L-PFPrS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: Direct loop injection
10 µl (500 ng/ml L-PFPrS)

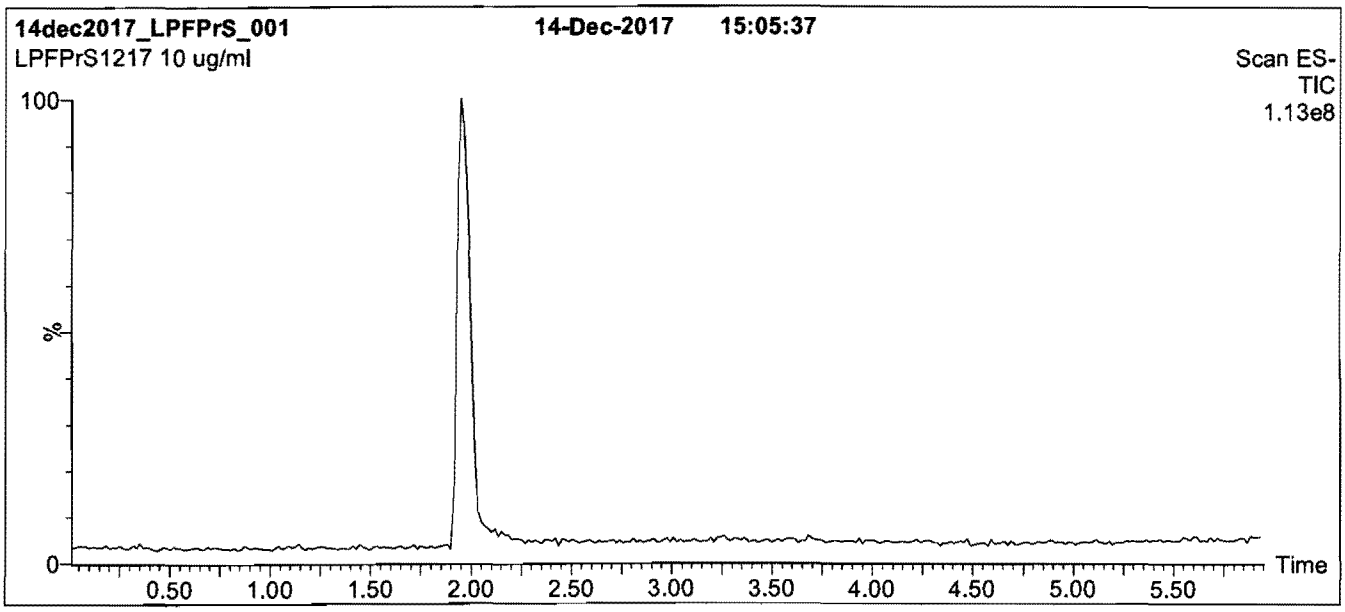
Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

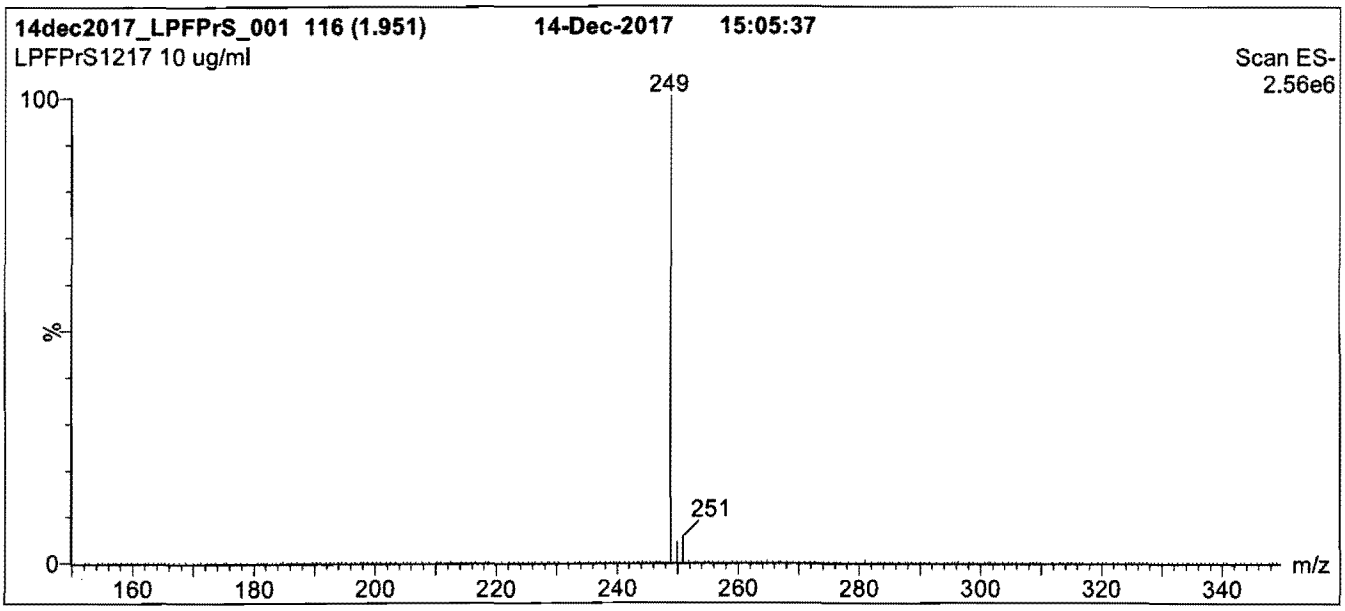
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.43e-3
Collision Energy (eV) = 25

Figure 1: **L-PFPrS; 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 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) = 3.00
Cone Voltage (V) = 40.00
Cone Gas Flow (l/hr) = 50
Desolvation Gas Flow (l/hr) = 750

191067

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 Accreditation No. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

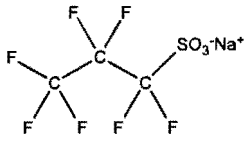
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

1L0671

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	L-PFPrS	**LOT NUMBER:**	LPFPrS1217
COMPOUND:	Sodium perfluoro-1-propanesulfonate		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$C_3F_7SO_3Na$	**MOLECULAR WEIGHT:**	272.07
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 45.8 ± 2.3 µg/ml (PFPrS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	12/14/2017		
EXPIRY DATE: (mm/dd/yyyy)	12/14/2022		
RECOMMENDED STORAGE:	Store ampoule in a cool, dark place		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/18/2017 (mm/dd/yyyy)
B.G. Chittim, General Manager

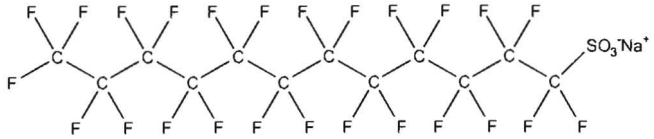
Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

19L1707

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	L-PFDoS	**LOT NUMBER:**	LPFDoS1218
COMPOUND:	Sodium perfluoro-1-dodecanesulfonate		
STRUCTURE:		**CAS #:**	1260224-54-1



MOLECULAR FORMULA:	$C_{12}F_{25}SO_3Na$	**MOLECULAR WEIGHT:**	722.14
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 48.4 ± 2.4 µg/ml (PFDoS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%		
LAST TESTED: (mm/dd/yyyy)	12/06/2018		
EXPIRY DATE: (mm/dd/yyyy)	12/06/2023		
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:

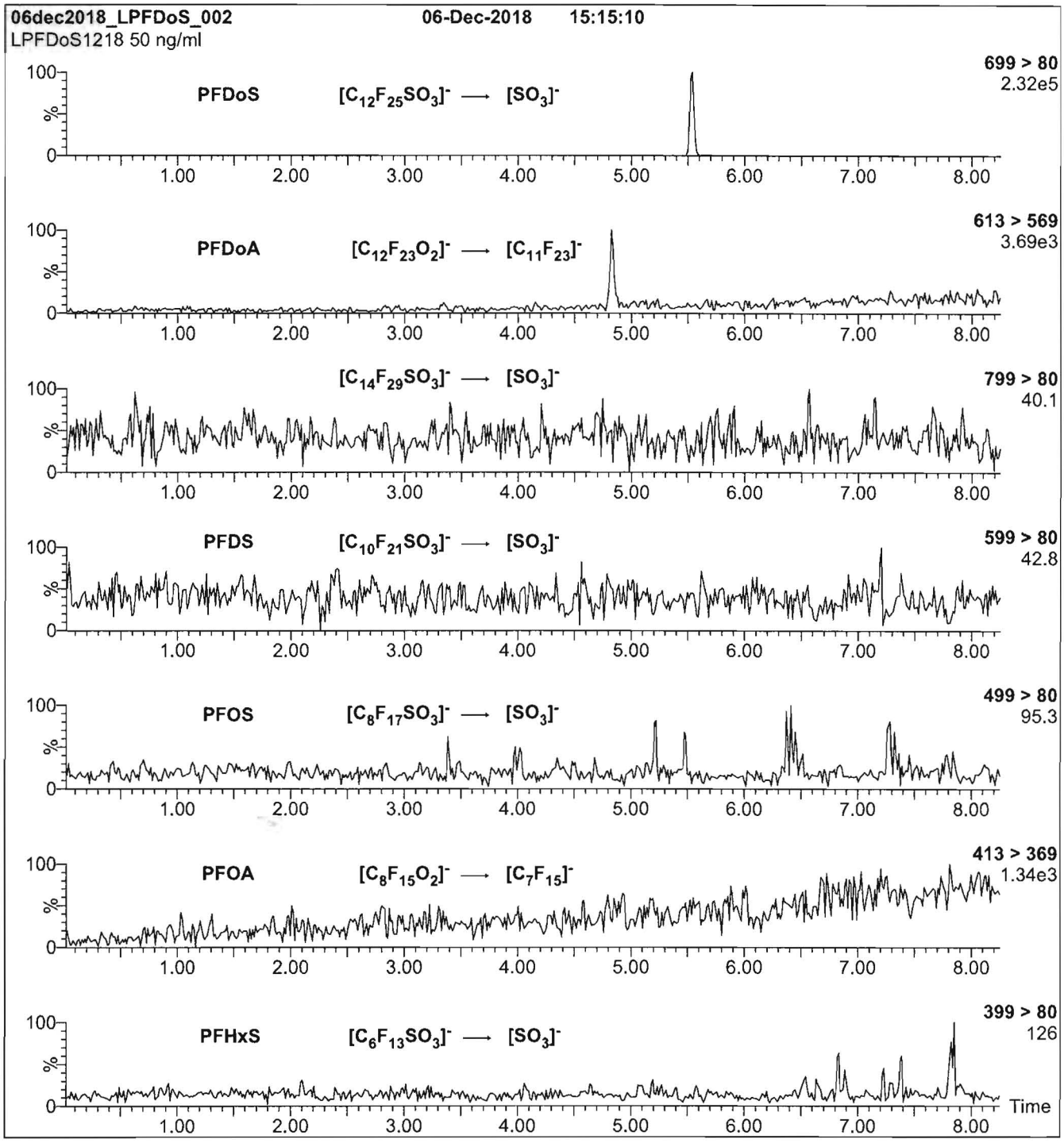
- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-dodecanoic acid (PFDoA).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/20/2018 (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

Figure 2: **L-PFDoS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (L-PFDoS)

Mobile phase: Same as Figure 1

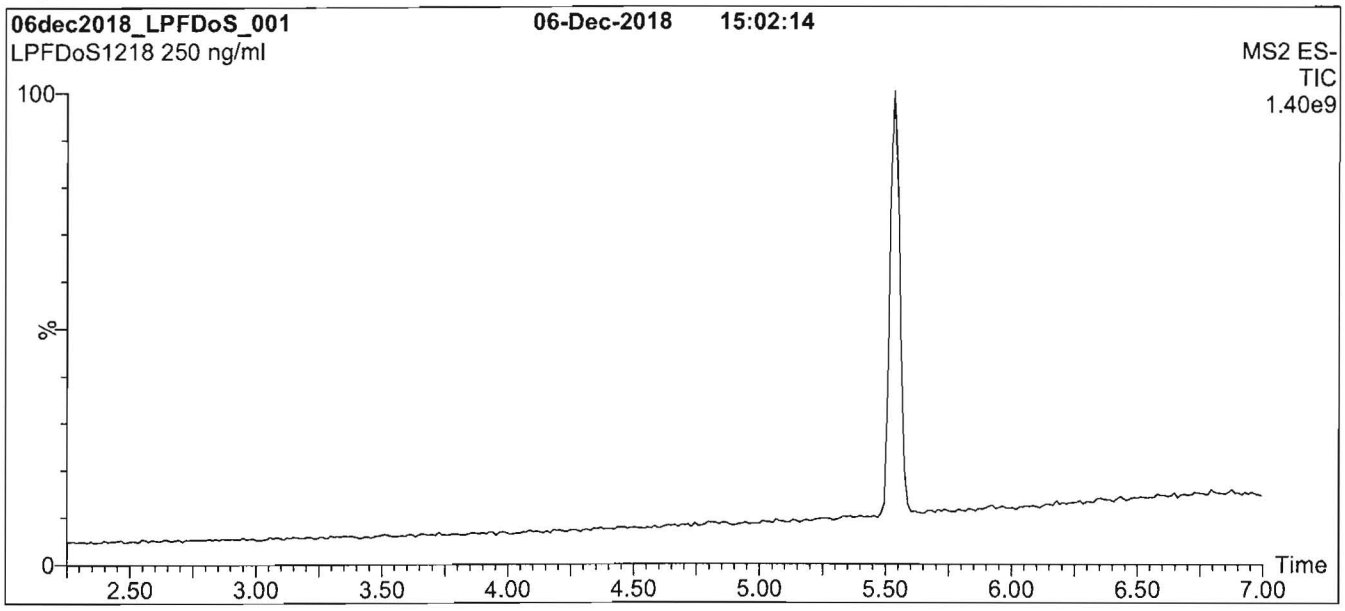
Flow: 300 µl/min

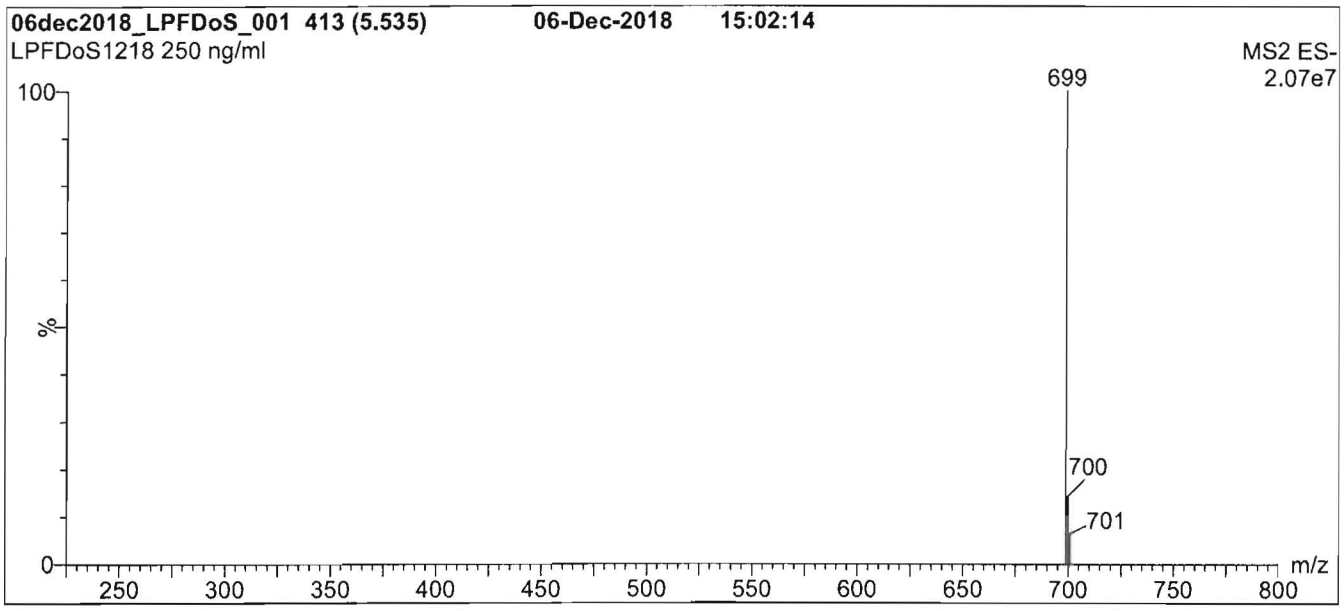
MS Parameters

Collision Gas (mbar) = 3.27e-3
Collision Energy (eV) = 60

19L1707

Figure 1: **L-PFDoS; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

LC: **Waters Acquity Ultra Performance LC**
MS: **Waters Xevo TQ-S micro 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
3 min before returning to initial conditions in 0.75 min.
Time: 12 min

Flow: 300 µl/min

MS Parameters

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)
Capillary Voltage (kV) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

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CALA Testing Accreditation No. A 1226

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

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"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.00266","","TRG","Yes","Y","J","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.00226","","TRG","Yes","Y","J","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","
"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","72629-94-8","PFTrDA","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","

"TW15D-20200710","537_MOD","07/23/20","13:18","N","NA","000","376-06-7","PFTeDA","","","TRG","Yes","N","U","Y","0.00120","0.00176","0.00352","UG_L","UG_L","","","

","","","","","","","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.00114","","TRG","Yes","Y","J","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.00271","","TRG","Yes","Y","J","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","72629-94-8","PFTrDA","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","376-06-7","PFTeDA","","","TRG","Yes","N","U","Y","0.000976","0.00142","0.00285","UG_L","UG_L","
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C3-PFBS","13C3-

PFBS","64.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","64.5","64.5","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","66.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","66.1","66.1","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C2-PFHxA","13C2-PFHxA","66.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","66.2","66.2","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C4-PFHpA","13C4-PFHpA","64.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","64.2","64.2","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C3-PFHxS","13C3-PFHxS","74.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","74.0","74.0","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C5-PFNA","13C5-PFNA","70.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","70.7","70.7","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C2-PFOA","13C2-PFOA","70.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","70.0","70.0","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C8-PFOS","13C8-PFOS","62.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","62.3","62.3","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C2-PFDA","13C2-PFDA","61.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","61.5","61.5","","","","","","50","150","","","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","49.9","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","49.9","49.9","","","","","","50","150","","*","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C2-PFUnA","13C2-PFUnA","44.2","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","44.2","44.2","","","","","","50","150","","*","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","46.5","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","46.5","46.5","","","","","","50","150","","*","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C2-PFDoA","13C2-PFDoA","28.8","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","28.8","28.8","","","","","","50","150","","*","","",""
"TW16D-20200710","537_MOD","07/21/20","23:32","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","5.50","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","5.50","5.50","","","","","","50","150","","*","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","375-73-5","PFBS","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","","","

"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","

"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C2-PFHxA","13C2-PFHxA","88.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.1","88.1","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C4-PFHpA","13C4-PFHpA","88.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.1","88.1","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C3-PFHxS","13C3-PFHxS","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C5-PFNA","13C5-PFNA","94.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","94.3","94.3","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C2-PFOA","13C2-PFOA","88.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.1","88.1","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C8-PFOS","13C8-PFOS","91.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","91.1","91.1","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C2-PFDA","13C2-PFDA","84.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","84.5","84.5","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","80.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","80.2","80.2","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C2-PFUnA","13C2-PFUnA","77.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","77.3","77.3","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","81.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","81.3","81.3","","","","","","50","150","","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C2-PFDoA","13C2-PFDoA","80.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","80.0","80.0","","","","","","50","150","","","","",""
"B0G0090-BLK1","537_MOD","07/21/20","20:22","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","76.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","76.4","76.4","","","","","","50","150","","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","375-73-5","PFBS","0.0413","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0413","103","","","","","","72","130","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.0411","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0411","103","","","","","","72","129","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","0.0388","","TRG","Yes","Y","","Y","0.00241","0.00300","0.00400","UG_L","UG_L","","","","0.0400","0.0388","96.9","","","","","","","70","130","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0392","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0392","98.0","","","","","","","72","130","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","0.0401","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0401","100","","","","","","","70","130","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC

ACID
(PFHXS)","0.0410","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0410","103","","","","","","","68","131","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","0.0381","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0381","95.3","","","","","","","71","133","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)","0.0385","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0385","96.2","","","","","","","69","130","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","0.0417","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0417","104","","","","","","","65","140","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","756426-58-1","9-
CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-
PF3ONS)","0.0383","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0383","95.7","","","","","","","70","130","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","0.0419","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0419","105","","","","","","","71","129","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","2355-31-
9","MeFOSAA","0.0408","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0408","102","","","","","","","65","136","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","2991-50-
6","EtFOSAA","0.0473","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0473","118","","","","","","","61","135","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID
(PFUNA)","0.0379","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0379","94.7","","","","","","","69","133","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-
OXAUNDECANE-1-SULFONIC ACID (11Cl-
PF3OUdS)","0.0402","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0402","100","","","","","","","70","130","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID
(PFDOA)","0.0394","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0394","98.5","","","","","","","72","134","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","72629-94-
8","PFTrDA","0.0412","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0412","103","","","","","","","65","144","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","376-06-
7","PFTeDA","0.0409","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0409","102","","","","","","","71","132","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C3-PFBS","13C3-
PFBS","87.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.5","87.5","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C3-HFPO-DA","13C3-HFPO-
DA","79.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","79.2","79.2","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C2-PFHxA","13C2-
PFHxA","80.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","80.7","80.7","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C4-PFHpA","13C4-
PFHpA","83.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.4","83.4","","","","","","50","150","","","","",""

"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C3-PFHxS","13C3-PFHxS","93.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","93.0","93.0","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C5-PFNA","13C5-PFNA","91.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","91.4","91.4","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C2-PFOA","13C2-PFOA","86.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.5","86.5","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C8-PFOS","13C8-PFOS","83.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.3","83.3","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C2-PFDA","13C2-PFDA","84.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","84.0","84.0","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","70.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","70.9","70.9","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C2-PFUnA","13C2-PFUnA","73.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","73.0","73.0","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","65.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","65.6","65.6","","","","","","50","150","","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C2-PFDoA","13C2-PFDoA","69.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","69.4","69.4","","","","","","50","150","","","","",""
"B0G0090-BS1","537_MOD","07/21/20","20:32","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","71.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","71.5","71.5","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","375-73-5","PFBS","0.0386","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0386","96.5","","","","","6.84","72","130","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.0395","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0395","98.7","","","","","3.97","72","129","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","0.0379","","TRG","Yes","Y","","Y","0.00241","0.00300","0.00400","UG_L","UG_L","","","","0.0400","0.0379","94.8","","","","","2.25","70","130","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0390","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0390","97.6","","","","","0.406","72","130","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","0.0375","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0375","93.8","","","","","6.63","70","130","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.0377","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0377","94.4","","","","","8.33","68","131","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.0380","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0380","94.9","","","","","0.339","71","133","","","","",""

"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","0.0370","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0370","92.6","","","","","3.81","69","130","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.0357","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0357","89.2","","","","","15.6","65","140","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","0.0349","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0349","87.2","","","","","9.39","70","130","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","0.0404","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0404","101","","","","","3.59","71","129","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","2355-31-9","MeFOSAA","0.0383","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0383","95.8","","","","","6.41","65","136","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","2991-50-6","EtFOSAA","0.0381","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0381","95.2","","","","","21.5","61","135","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","0.0388","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0388","97.1","","","","","2.52","69","133","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","0.0382","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0382","95.4","","","","","5.22","70","130","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","0.0376","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0376","93.9","","","","","4.77","72","134","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","72629-94-8","PFTrDA","0.0407","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0407","102","","","","","1.23","65","144","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","376-06-7","PFTeDA","0.0377","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0377","94.3","","","","","8.06","71","132","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C3-PFBS","13C3-PFBS","92.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","92.6","92.6","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","83.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.4","83.4","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C2-PFHxA","13C2-PFHxA","82.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","82.1","82.1","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C4-PFHpA","13C4-PFHpA","89.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","89.0","89.0","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C3-PFHxS","13C3-PFHxS","104","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","104","104","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C5-PFNA","13C5-PFNA","93.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","93.8","93.8","","","","","","50","150","",

,"","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C2-PFOA","13C2-PFOA","89.8","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","89.8","89.8","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C8-PFOS","13C8-PFOS","93.2","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","93.2","93.2","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C2-PFDA","13C2-PFDA","84.1","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","84.1","84.1","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","74.0","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","74.0","74.0","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C2-PFUnA","13C2-PFUnA","76.5","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","76.5","76.5","","","","","","50","150","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","78.9","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","78.9","78.9","","","","","","50","150","","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C2-PFDoA","13C2-PFDoA","76.4","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","76.4","76.4","","","","","","50","150","","","","","",""
"B0G0090-BSD1","537_MOD","07/21/20","20:43","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","77.9","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","77.9","77.9","","","","","","50","150","","","","","",""

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Wood Environment & Infrastructure Solutions, Inc.
7376 SW Durham Road
Portland, OR 97224
Attn: Ms. Kimberly Shiroodi
Kimberly.Shiroodi@woodplc.com

September 3, 2020

SUBJECT: Revised MCAS El Toro & Tustin PFAs, Data Validation

Dear Ms. Shiroodi,

Enclosed are the revised validation reports for the fraction listed below. These SDGs were received on August 4th and 19th, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #48792_RV2:

SDG #	Fraction
2001357, 2001409, 2001417 2001436, 2001444, 2001472	Perfluoroalkyl & Polyfluoroalkyl Substances

The data validation was performed under Stage 4 guidelines. The analyses were validated using the following documents, as applicable to each method:

- Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances in Groundwater in Carve-Outs 2,5,6 and 9 and Groundwater and Surface Water Near Operable Unit 3, Former Marine Corps Air Station Tustin, Tustin, California with Addendum #02 to Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances Sampling for Groundwater Remedial Action at Operable Unit 3, Installation Restoration Program Site 1; February 2020
- U.S. Department of Defense Quality Systems Manual for Environmental Laboratories, Version 5.3, 2019
- DoD General Validation Guidelines, February 2018

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Pei Geng
Pgeng@lab-data.com
Project Manager/Senior Chemist

167 pages-ADV (100% Stage 4 for this job) (RV-F added) Attachment 1

Stage 2B/4 - do not validate QC samples **LDC #48792 (Wood/KMEA - National City, CA / MCAS El Toro & Tustin PFAs)** **PO001184**

LDC	SDG#	DATE REC'D	(2) DATE DUE	PFAs (537M/ QSM 5.3)																															
Matrix: Water/Soil				W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	2001357	08/04/20	08/18/20	2	0																														
B	2001409	08/04/20	08/18/20	12	0																														
C	2001417	08/04/20	08/18/20	4	0																														
D	2001436	08/04/20	08/18/20	6	0																														
E	2001444	08/04/20	08/18/20	7	0																														
F	2001472	08/19/20	09/02/20	4	0																														
Total	J/PG			35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35

Shaded cells indicate Stage 4 validation (all other cells are Stage 2B validation). These sample counts do not include MS/MSD, and DUPs

L:\Wood Environmental\El Toro\48792ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: August 25, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2001357

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
I006MW06S-20200624	2001357-03	Water	06/24/20
DUP01-20200624	2001357-04	Water	06/24/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances in Groundwater in Carve-Outs 2, 5, 6, and 9 and Groundwater and Surface Water Near Operable Unit 3, Former Marine Corps Air Station Tustin, Tustin, California, with Addendum #02 to Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances Sampling for Groundwater Remedial Action at Operable Unit 3, Installation Restoration Program Site 1 (February 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the methods.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention time windows were established as required by the methods.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration and Instrument Sensitivity Check

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB01-20200624 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200624 was identified as a source blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

Samples I006MW06S-20200624 and DUP01-20200624 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	222MW09D-20200701	DUP02-20200701				
PFBS	0.0819	0.0824	1 (≤30)	-	-	-
PFHxA	0.6050	0.5880	3 (≤30)	-	-	-
PFHpA	0.3370	0.339	1 (≤30)	-	-	-
PFHxS	0.5150	0.5350	4 (≤30)	-	-	-
PFOA	0.2680	0.3150	16 (≤30)	-	-	-
PFNA	0.0044	0.0049	-	0.00049 (≤0.00394)	-	-
PFOS	0.0906	0.1060	16 (≤30)	-	-	-

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits.

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2001357

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2001357

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2001357

No Sample Data Qualified in this SDG

LDC #: 48792A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/14/20

SDG #: 2001357 Stage 4 Page: 1 of 1

Laboratory: Vista Analytical Laboratory Reviewer: [signature]

2nd Reviewer: [signature]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M/QSM 5.3 Table B-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	r TV/ICV ≤ 30
IV.	Continuing calibration/ISC	A/A	D ≤ 30
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	SB01-20200624 EB01-20200624
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	SW	D= 1+2
X.	Labeled Compounds	A	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	I006MW06S-20200624	2001357-03	Water	06/24/20
2	DUP01-20200624	2001357-04	Water	06/24/20
3				
4				
5				
6				
7				
8				
9				
10				

Notes:

	BOF0257						

LDC #: 48792A90

VALIDATION FINDINGS CHECKLIST

Reviewer:
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Were cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
III. Initial calibration and Initial calibration verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) $\leq$ 20%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of $\geq$ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) $\leq$30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	✓			
Were all ICV percent differences (%D) of the initial calibration verification $\leq$ 30%?	✓			
IV. Continuing calibration and Instrument sensitivity check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration $\leq$ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check $\leq$ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		

LDC #: 48792A96

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	✓			
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?	✓			
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFBS		
B. PFHxA		
C. PFHpA		
D. PFHxS		
E. PFOA		
F. PFNA		
G. PFOS		
H. PFDA		
I. MeFOSAA		
J. EtFOSAA		
K. PFUnA		
L. PFDoA		
M. PFTrDA		
N. PFTeDA		
O. HFPO-DA		
P. ADONA		
Q. 9Cl-PF3ØNS		
R. 11Cl-PF3ØUdS		

LDC #: 48792A96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound	Concentration (ug/L)		RPD≤30	Difference (<5XLOQ)	Difference (<LOQ)	Qualification
	1	2				
A	0.0819	0.0824	1			
B	0.6050	0.5880	3			
C	0.3370	0.339	1			
D	0.5150	0.5350	4			
E	0.2680	0.3150	16			
F	0.0044	0.0049		0.00049	0.00394	
G	0.0906	0.1060	16			

LDC # 48792A96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/6/2020	SCN977	PFOA	1	0.0283	0.02	0.00040
			2	0.0513	0.04	0.0016
			3	0.0937	0.08	0.0064
			4	0.1952	0.16	0.0256
			5	0.4739	0.40	0.1600
			6	0.8828	0.80	0.6400
			7	4.5622	4.00	16.0000
			8	9.3191	8.00	64.0000
			9	20.7411	20.00	400.0000
			10	41.4806	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.09230	c	0.0543225
Std Err of Y Est				.
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.09128	-0.0014190	1.13013	-0.000202972
Std Err of Coef.				
Correlation Coefficient		0.999825		
Coefficient of Determination (r^2)		0.999651		0.999173

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/6/2020	SCN977	PFOS	1	0.0184	0.02	0.00040
			2	0.0397	0.04	0.0016
			3	0.0806	0.08	0.0064
			4	0.1980	0.16	0.0256
			5	0.4633	0.40	0.1600
			6	1.0057	0.80	0.6400
			7	4.8637	4.00	16.0000
			8	10.3716	8.00	64.0000
			9	24.6679	20.00	400.0000
			10	47.3616	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.03049	c	-0.0944633
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.28839	-0.0026132	1.27905	-0.0001870130
Std Err of Coef.				
Correlation Coefficient		0.999980		
Coefficient of Determination (r^2)		0.999959		0.999703

LDC #: 48792A96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (aveRRF - RRF)/aveRRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
aveRRF = initial calib average RRF
RRF = continuing calib RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Conc	Reported Conc	Recalculated Conc	Reported %R	Recalculated %R
1	200706P1_48	6/30/2020	PFOA (13C2-PFOA)	10.0	9.81	9.81	98.1	98.1
			PFOS (13C8-PFOS)	10.0	9.91	9.89	99.1	98.9
2			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
3			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
4			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
5			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
6			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					

LDC #: 48792A96

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: B0F0257-BS/D1

Compound	SA (ug/L)		SSC (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0400	0.0400	0.0391	0.0393	97.7	97.8	98.2	98.3	0.463	0.510
PFOS	0.0400	0.0400	0.0386	0.0384	96.5	96.5	96.1	96.0	0.435	0.519

LDC #: 47924B6

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliliters (mL)
RRF = Average relative response factor
Vo = Volume of sample in liters (L)

Sample #	Compound	Ax	Ais	Cis	DF	RRF	Vt (mL)	Vo (mL)	Calculated Concentration (ug/L)	Reported Concentration (ug/L)	% Diff
1	PFOS	5.670E+03	2.408E+03	12.5	1	curve	1	255.63	0.0906	0.0906	0

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: August 25, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2001409

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
IS72MW16DR-20200701	2001409-02	Water	07/01/20
IS72MW15D-20200701	2001409-03	Water	07/01/20
222MW09D-20200701	2001409-04	Water	07/01/20
DUP02-20200701	2001409-05	Water	07/01/20
IS72MW17D-20200701	2001409-06	Water	07/01/20
DUP03-20200701	2001409-07	Water	07/01/20
I003MW01D-20200701	2001409-08	Water	07/01/20
I003MW02D-20200701	2001409-09	Water	07/01/20
DUP04-20200701	2001409-10	Water	07/01/20
I003MW05D-20200701	2001409-11	Water	07/01/20
TW07D-20200702	2001409-13	Water	07/02/20
TW05D-20200702	2001409-14	Water	07/02/20
IS72MW16DR-20200701MS	2001409-02MS	Water	07/01/20
IS72MW16DR-20200701MSD	2001409-02MSD	Water	07/01/20
I003MW01D-20200701MS	2001409-08MS	Water	07/01/20
I003MW01D-20200701MSD	2001409-08MSD	Water	07/01/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances in Groundwater in Carve-Outs 2, 5, 6, and 9 and Groundwater and Surface Water Near Operable Unit 3, Former Marine Corps Air Station Tustin, Tustin, California, with Addendum #02 to Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances Sampling for Groundwater Remedial Action at Operable Unit 3, Installation Restoration Program Site 1 (February 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the methods.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention time windows were established as required by the methods.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration and Instrument Sensitivity Check

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Samples EB02-20200701 and EB03-20200702 were identified as equipment blanks. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
I003MW01D-20200701MS/MSD (I003MW01D-20200701)	PFNA	133 (69-130)	-	J (all detects)	A

For I003MW01D-20200701MS/MSD, no data were qualified for PFBS and PFHpA percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

PFHxA, PFHxS, PFOA, and PFOS percent recoveries (%R) and PFHxA, PFHxS, and PFOS relative percent differences (RPD) were not within the QC limits for I003MW01D-20200701MS/MSD. No data were qualified for MS/MSD samples analyzed greater than or equal to a 5X dilution.

Relative percent differences (RPD) were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples 222MW09D-20200701 and DUP02-20200701, samples IS72MW17D-20200701 and DUP03-20200701, and samples I003MW02D-20200701 and DUP04-20200701 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	222MW09D-20200701	DUP02-20200701				
PFBS	0.0105	0.0105	-	0 (≤0.00405)	-	-
PFHxA	0.0207	0.0226	9 (≤30)	-	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	222MW09D-20200701	DUP02-20200701				
PFHpA	0.00555	0.00521	-	0.0003 (≤0.00405)	-	-
PFHxS	0.0702	0.0610	14 (≤30)	-	-	-
PFOA	0.0839	0.0822	2 (≤30)	-	-	-
PFOS	0.0150	0.0154	-	0.0004 (≤0.00405)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	IS72MW17D-20200701	DUP03-20200701				
PFBS	0.0262	0.0285	8 (≤30)	-	-	-
PFHxA	0.185	0.189	2 (≤30)	-	-	-
PFHpA	0.0980	0.0945	4 (≤30)	-	-	-
PFHxS	0.0788	0.0737	7 (≤30)	-	-	-
PFOA	0.781	0.755	3 (≤30)	-	-	-
PFNA	0.00477	0.00546	-	0.00069 (≤0.00409)	-	-
PFOS	0.0432	0.0418	3 (≤30)	-	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	I003MW02D-20200701	DUP04-20200701				
PFBS	0.364	0.397	9 (≤30)	-	-	-
PFHxA	2.59	2.57	1 (≤30)	-	-	-
PFHpA	0.537	0.529	2 (≤30)	-	-	-
PFHxS	2.49	2.59	4 (≤30)	-	-	-
PFOA	11.1	11.0	1 (≤30)	-	-	-
PFNA	0.00392	0.00425	-	0.00033 (≤0.00400)	-	-
PFOS	0.879	0.972	10 (≤30)	-	-	-

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
TW07D-20200702	13C2-PFDoA 13C2-PFTeDA	46.2 (50-150) 12.6 (50-150)	PFDoA PFTrDA 11Cl-PF30UdS PFTeDA	NA	-
TW05D-20200702	13C2-PFTeDA	28.0 (50-150)	PFTeDA	NA	-

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
222MW09D-20200701	PFOS	3.506 (1.003-3.008)	J (all detects)	P
DUP02-20200701	PFOS	3.255 (1.003-3.008)	J (all detects)	P

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to MS/MSD %R and ion abundance ratio, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2001409

Sample	Compound	Flag	A or P	Reason
I003MW01D-20200701	PFNA	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
222MW09D-20200701 DUP02-20200701	PFOS	J (all detects)	P	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2001409

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2001409

No Sample Data Qualified in this SDG

LDC #: 48792B96 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/14/20

SDG #: 2001409 Stage 4 Page: 1 of 2

Laboratory: Vista Analytical Laboratory Reviewer: M

2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M/QSM 5.3 Table B-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	%D TV/ICV ≤ 30
IV.	Continuing calibration/ISC	A/A	%D ≤ 30
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB02-20200701, EB03-20200702
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D = 3+4, 5+6, 8+9
X.	Labeled Compounds	SW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	SW	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	IS72MW16DR-20200701	2001409-02	Water	07/01/20
2	IS72MW15D-20200701	2001409-03	Water	07/01/20
3	222MW09D-20200701	2001409-04	Water	07/01/20
4	DUP02-20200701	2001409-05	Water	07/01/20
5	IS72MW17D-20200701	2001409-06	Water	07/01/20
6	DUP03-20200701	2001409-07	Water	07/01/20
7	I003MW01D-20200701	2001409-08	Water	07/01/20
8	I003MW02D-20200701	2001409-09	Water	07/01/20
9	DUP04-20200701	2001409-10	Water	07/01/20
10	I003MW05D-20200701	2001409-11	Water	07/01/20
11	TW07D-20200702	2001409-13	Water	07/02/20
12	TW05D-20200702	2001409-14	Water	07/02/20
13	IS72MW16DR-20200701MS	2001409-02MS	Water	07/01/20
14	IS72MW16DR-20200701MSD	2001409-02MSD	Water	07/01/20
15	I003MW01D-20200701MS	2001409-08MS	Water	07/01/20

LDC #: 48792B96 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/14/20

SDG #: 2001409 Stage 4 Page: 2 of 2

Laboratory: Vista Analytical Laboratory Reviewer:

2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M/QSM 5.3 Table B-15)

16	I003MW01D-20200701MSD	2001409-08MSD	Water	07/01/20
17				
18				
19				

Notes:

	BOGD034						

LDC #: 48795B96

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Were cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
III. Initial calibration and Initial calibration verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) $\leq$ 20%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of $\geq$ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) $\leq$30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	✓			
Were all ICV percent differences (%D) of the initial calibration verification $\leq$ 30%?	✓			
IV. Continuing calibration and Instrument sensitivity check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration $\leq$ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check $\leq$ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		

LDC #: 46792B96

VALIDATION FINDINGS CHECKLIST

Reviewer: IV
2nd Reviewer: IV

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?	✓			
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?		✓		
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	✓			
Were target compounds detected in the field duplicates?	✓			
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?		✓		
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFBS		
B. PFHxA		
C. PFHpA		
D. PFHxS		
E. PFOA		
F. PFNA		
G. PFOS		
H. PFDA		
I. MeFOSAA		
J. EtFOSAA		
K. PFUnA		
L. PFDoA		
M. PFTrDA		
N. PFTeDA		
O. HFPO-DA		
P. ADONA		
Q. 9Cl-PF30NS		
R. 11Cl-PF30UdS		

LDC #: 49792B96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results

Page: 1 of 1
Reviewer:
2nd Reviewer:

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DOD QSM 5.1
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were a matrix spike (MS) and matrix spike duplicate (MSD) or duplicate sample analyzed for each matrix in this SDG?
(Y) N N/A Was a MS/MSD analyzed every 20 samples of each matrix?
Y (N) N/A Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	Date	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
		15/16	A		48.3 (72-130)		7 (dets)	No qual. >4x
			C	250 (72-130)	265 ↓			↓
			F	133 (69-130				J dets/A
		15/16 (10x)	B, D, E, G	%RS out			7 (dets)	No qual. >4x
			B			32 (≤30)		
			D			39 ↓		
			G			31		

Reported RPDs based on %RS. RPDs evaluated using conc.

LDC #: 48792B96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: SC
2nd Reviewer: [illegible]

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.1

Compound	Concentration (ug/L)		RPD≤30	Difference (<5XLOQ)	Difference (<LOQ)	Qualification
	1	2				
A	0.0105	0.0105		0	0.00405	
B	0.0207	0.0226	9			
C	0.00555	0.00521		0.0003	0.00405	
D	0.0702	0.0610	14			
E	0.0839	0.0822	2			
G	0.0150	0.0154		0.0004	0.00405	

Compound	Concentration (ug/L)		RPD≤30	Difference (<5XLOQ)	Difference (<LOQ)	Qualification
	5	6				
A	0.0262	0.0285	8			
B	0.185	0.189	2			
C	0.0980	0.0945	4			
D	0.0788	0.0737	7			
E	0.781	0.755	3			
F	0.00477	0.00546		0.00069	0.00409	
G	0.0432	0.0418	3			

Compound	Concentration (ug/L)		RPD≤30	Difference (<5XLOQ)	Difference (<LOQ)	Qualification
	8	9				
A	0.364	0.397	9			
B	2.59	2.57	1			
C	0.537	0.529	2			
D	2.49	2.59	4			
E	11.1	11.0	1			
F	0.00392	0.00425		0.00033	0.00400	
G	0.879	0.972	10			

LDC #: 48792B96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: π
2nd Reviewer: T

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery (Limit)	Qualifications
		11TB4 (ND)	DDA	46.2 (50-150)	Jdet/P (L, M, R)
			TDA	12.6	(N)
		12TB4		28.0	(N)

BS = 13C3-PFBS HXS = 13C3-PFHxS OS = 13C8-PFOS TDA = 13C2-PFTeDA EFOS = d5-EtFOSAA
HXA = 13C2-PFHxA NA = 13C5-PFNA DA = 13C2-PFDA DDA = 13C2-PFDoA
HPA = 13C4-PFHpA OA = 13C2-PFOA UDA = 13C2-PFUnA MFOS = d3-MeFOSAA

LDC #: 48792B96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Reviewer: MG
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y (N) N/A Was the signal to noise (S/N) ratio for all compounds within the validation criteria?
Y (N) N/A Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?
Y (N) N/A Were ion ratios within QC limits and between 50-150%?

#	Date	Sample ID	Associated Compound	Ion ratio (~~%D≤50~~ limit)	Qualifications
		3	G	3.506 (1.003-3.008)	J (det)/P
		↓	↓	↓	↓
		4	↓	3.255	↓

LDC # 48792B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/14/2020	SCN945/960	PFOA	1	0.0391	0.02	0.00040
			2	0.0607	0.04	0.0016
			3	0.1111	0.08	0.0064
			4	0.2362	0.16	0.0256
			5	0.6220	0.40	0.1600
			6	1.1520	0.80	0.6400
			7	6.2166	4.00	16.0000
			8	11.3946	8.00	64.0000
			9	26.3657	20.00	400.0000
			10	53.5565	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.15850	c	0.1102520
Std Err of Y Est				.
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.36351	-0.0006947	1.42944	-0.000207503
Std Err of Coef.				
Correlation Coefficient		0.999826		
Coefficient of Determination (r^2)		0.999652		0.99882

LDC #: 18792B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/14/2020	SCN945/960	PFOS	1	0.0227	0.02	0.00040
			2	0.0317	0.04	0.0016
			3	0.0814	0.08	0.0064
			4	0.1498	0.16	0.0256
			5	0.4309	0.40	0.1600
			6	0.7906	0.80	0.6400
			7	4.2751	4.00	16.0000
			8	8.1452	8.00	64.0000
			9	19.0425	20.00	400.0000
			10	38.9489	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.08248	c	-0.0037090
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.970908	0.0000222	1.008000	-0.0000832828
Std Err of Coef.				
Correlation Coefficient		0.999885		
Coefficient of Determination (r^2)		0.999771		0.998246

LDC # 47862 B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/15/2020	SCN945/960	PFOA	1	0.0339	0.02	0.00040
			2	0.0701	0.04	0.0016
			3	0.1254	0.08	0.0064
			4	0.2383	0.16	0.0256
			5	0.6010	0.40	0.1600
			6	1.2023	0.80	0.6400
			7	6.0452	4.00	16.0000
			8	11.7530	8.00	64.0000
			9	27.7324	20.00	400.0000
			10	51.9259	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.03546	c	0.0669438
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.49055	-0.0048287	1.50337	-0.000416136
Std Err of Coef.				
Correlation Coefficient		0.999991		
Coefficient of Determination (r^2)		0.999981		0.999939

LDC #: 48972B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/15/2020	SCN945/960	PFOS	1	0.0161	0.02	0.00040
			2	0.0303	0.04	0.0016
			3	0.0746	0.08	0.0064
			4	0.1589	0.16	0.0256
			5	0.4236	0.40	0.1600
			6	0.8187	0.80	0.6400
			7	4.1694	4.00	16.0000
			8	7.9315	8.00	64.0000
			9	20.4718	20.00	400.0000
			10	38.8811	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.03613	c	-0.0860112
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.051162	-0.0019514	1.03891	-0.0001274520
Std Err of Coef.				
Correlation Coefficient		0.999955		
Coefficient of Determination (r^2)		0.999911		0.999761

LDC #: 48792B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/16/2020	SCN945/960	PFOA	1	0.0305	0.02	0.00040
			2	0.0521	0.04	0.0016
			3	0.1192	0.08	0.0064
			4	0.2380	0.16	0.0256
			5	0.5742	0.40	0.1600
			6	1.1541	0.80	0.6400
			7	5.8217	4.00	16.0000
			8	11.3244	8.00	64.0000
			9	26.9039	20.00	400.0000
			10	49.4671	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.00837	c	-0.0054419
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.45774	-0.0055315	1.46173	-0.000451650
Std Err of Coef.				
Correlation Coefficient		0.999999		
Coefficient of Determination (r^2)		0.999998		0.999976

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/16/2020	SCN945/960	PFOS	1	0.0152	0.02	0.00040
			2	0.0407	0.04	0.0016
			3	0.0966	0.08	0.0064
			4	0.1510	0.16	0.0256
			5	0.4276	0.40	0.1600
			6	0.7511	0.80	0.6400
			7	4.2366	4.00	16.0000
			8	7.8487	8.00	64.0000
			9	18.9035	20.00	400.0000
			10	38.4993	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.06995	c	0.0058948
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.95629	0.0001198	0.98734	-0.0000616685
Std Err of Coef.				
Correlation Coefficient		0.999926		
Coefficient of Determination (r^2)		0.999853		0.999295

LDC #: 48792B96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (aveRRF - RRF)/aveRRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
aveRRF = initial calib average RRF
RRF = continuing calib RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Conc	Reported Conc	Recalculated Conc	Reported %R	Recalculated %R
1	200714M1_63	7/15/2020	PFOA (13C2-PFOA)	1.00	0.997	0.997	99.4	99.7
			PFOS (13C8-PFOS)	1.00	1.160	1.159	115.9	115.9
2	200714M1_83	7/15/2020	PFOA (13C2-PFOA)	10.00	9.23	9.23	92.3	92.3
			PFOS (13C8-PFOS)	10.00	11.6	11.6	116.3	116.2
3	200716M1_27	7/16/2020	PFOA (13C2-PFOA)	10.00	10.50	10.49	104.9	104.9
			PFOS (13C8-PFOS)	10.00	10.20	10.20	102.1	102.0
4			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
5			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
6			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					

LDC #: 45792B96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * (SSC - SC)/SA

Where: SSC = Spiked concentration; SA = Spike added; SC = Sample concentration

RPD = | MS - MSD | * 2/(MS + MSD)

MS = Matrix spike recovery; MSD = Matrix spike duplicate recovery

MS/MSD ID: 13/14

Compound	SA (ug/L)		SC (ug/L)	SSC (ug/L)		MS Percent Recovery		MSD Percent Recovery		MS/MSD RPD	
	MS	MSD		MS	MSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0414	0.0409	0.1670	0.2120	0.2060	109	109	95.0	95.4	13.7	2.87
PFOS	0.0414	0.0409	0.0650	0.1150	0.1070	121	121	102	103	17.0	7.21

LDC #: 48792B96

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: B0G0034-BS1

Compound	SA (ng/L)		SSC (ng/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0400		0.0414		104	104				
PFOS	0.0400		0.0355		88.7	88.8				

LDC #: 48792B96

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SG
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliters (mL)
RRF = Average relative response factor
Vo = Volume of sample in liters (L)

Sample #	Compound	Ax	Ais	Cis	DF	RRF	Vt (mL)	Vo (L)	Calculated Concentration (ug/L)	Reported Concentration (ug/L)	% Diff
1	PFOA	6.129E+04	1.362E+04	12.5	1	curve	1	236.45	0.167	0.167	0

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: August 25, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2001417

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TW06D-20200706	2001417-02	Water	07/06/20
TW25D-20200706	2001417-03	Water	07/06/20
TW26D-20200706	2001417-04	Water	07/06/20
TW08D-20200706	2001417-05	Water	07/06/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances in Groundwater in Carve-Outs 2, 5, 6, and 9 and Groundwater and Surface Water Near Operable Unit 3, Former Marine Corps Air Station Tustin, Tustin, California, with Addendum #02 to Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances Sampling for Groundwater Remedial Action at Operable Unit 3, Installation Restoration Program Site 1 (February 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the methods.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention time windows were established as required by the methods.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration and Instrument Sensitivity Check

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB04-20200706 was identified as an equipment blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits.

Relative percent differences (RPD) were within QC limits with the following exceptions:

LCS ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
BOG0039-BS1/BSD1 (All samples in SDG 2001417)	PFTeDA	35.7 (≤30)	NA	-

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
TW06D-20200706	13C2-PFTeDA	27.0 (50-150)	PFTeDA	NA	-
TW25D-20200706	d5-EtFOSAA 13C2-PFDoA 13C2-PFTeDA	46.4 (50-150) 42.7 (50-150) 17.3 (50-150)	EtFOSAA PFDoA PFTrDA 11Cl-PF30UdS PFTeDA	NA	-
TW26D-20200706	13C2-PFTeDA	24.3 (50-150)	PFTeDA	NA	-

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2001417

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2001417

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2001417

No Sample Data Qualified in this SDG

LDC #: 48792C96 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/14/20

SDG #: 2001417 Stage 4 Page: 1 of 1

Laboratory: Vista Analytical Laboratory Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M/QSM 5.3 Table B-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	r² ≥0.99 ≤30
IV.	Continuing calibration/ISC	A/A	D ≤30
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB04-20200706
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	SW	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; ND = No compounds detected; D = Duplicate; SB=Source blank
N = Not provided/applicable; R = Rinsate; TB = Trip blank; OTHER:
SW = See worksheet; FB = Field blank; EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	TW06D-20200706	2001417-02	Water	07/06/20
2	TW25D-20200706	2001417-03	Water	07/06/20
3	TW26D-20200706	2001417-04	Water	07/06/20
4	TW08D-20200706	2001417-05	Water	07/06/20
5				
6				
7				
8				
9				
10				

Notes:

	B0G0039						

LDC #: 48792Q96

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Were cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
III. Initial calibration and Initial calibration verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?		✓	✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	✓			
Were all ICV percent differences (%D) of the initial calibration verification ≤ 30%?	✓			
IV. Continuing calibration and Instrument sensitivity check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?		✓		
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?	•	✓		
Were target compounds detected in the field duplicates?			✓	
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?	✓			
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFBS		
B. PFHxA		
C. PFHpA		
D. PFHxS		
E. PFOA		
F. PFNA		
G. PFOS		
H. PFDA		
I. MeFOSAA		
J. EtFOSAA		
K. PFUnA		
L. PFDoA		
M. PFTrDA		
N. PFTeDA		
O. HFPO-DA		
P. ADONA		
Q. 9Cl-PF30NS		
R. 11Cl-PF30UdS		

LDC #: 48792C96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Samples (LCS)

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DOD QSM 5.3

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a LCS required?

Y N N/A Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?

#	LCS/LCSD ID	Compound	LCS %R (Limits)	LCSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	BOG0039-BS/BSD1	N			35.7 (≤30)	All (ND)	Jdets/P

LDC #: 48792C96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery (Limit)	Qualifications
		1 (ND)	TDA	27.0 (50-150)	Jdets/P (N)
		2	EFOS	46.4	(J)
			DDA	42.7	(L, M, R)
			TDA	17.3	(N)
		3 (ND)	TDA	24.3	

BS = 13C3-PFBS HXS = 13C3-PFHxS OS = 13C8-PFOS TDA = 13C2-PFTeDA EFOS = d5-EtFOSAA
HXA = 13C2-PFHxA NA = 13C5-PFNA DA = 13C2-PFDA DDA = 13C2-PFDoA
HPA = 13C4-PFHpA OA = 13C2-PFOA UDA = 13C2-PFUnA MFOS = d3-MeFOSAA

LDC # 48792096

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/10/2020	SCN982	PFOA	1	0.0371	0.02	0.00040
			2	0.0615	0.04	0.0016
			3	0.1197	0.08	0.0064
			4	0.2327	0.16	0.0256
			5	0.6277	0.40	0.1600
			6	1.1434	0.80	0.6400
			7	5.5884	4.00	16.0000
			8	11.6240	8.00	64.0000
			9	26.4062	20.00	400.0000
			10	51.9666	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.08117	c	0.1077220
Std Err of Y Est				.
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.38891	-0.0022976	1.42034	-0.000256585
Std Err of Coef.				
Correlation Coefficient		0.999908		
Coefficient of Determination (r^2)		0.999815		0.999514

LDC #: 48192096

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/10/2020	SCN982	PFOS	1	0.0181	0.02	0.00040
			2	0.0367	0.04	0.0016
			3	0.0751	0.08	0.0064
			4	0.1287	0.16	0.0256
			5	0.4089	0.40	0.1600
			6	0.8490	0.80	0.6400
			7	4.3716	4.00	16.0000
			8	8.7038	8.00	64.0000
			9	21.4254	20.00	400.0000
			10	38.6788	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.06963	c	-0.0940027
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.153191	-0.0046289	1.126310	-0.0003080400
Std Err of Coef.				
Correlation Coefficient		0.999967		
Coefficient of Determination (r^2)		0.999933		0.999556

LDC #: 48792 c96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (aveRRF - RRF)/aveRRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
aveRRF = initial calib average RRF
RRF = continuing calib RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Conc	Reported Conc	Recalculated Conc	Reported %R	Recalculated %R
1	200710M1_109	7/11/2020	PFOA (13C2-PFOA)	10.00	10.7	10.7	106.5	106.5
			PFOS (13C8-PFOS)	10.00	8.57	8.55	85.7	85.5
2			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
3			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
4			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
5			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
6			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					

LDC #: 48792C96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/16/2020	SCN945/960	PFOA	1	0.0307	0.02	0.00040
			2	0.0628	0.04	0.0016
			3	0.1341	0.08	0.0064
			4	0.2594	0.16	0.0256
			5	0.5827	0.40	0.1600
			6	1.2264	0.80	0.6400
			7	6.2227	4.00	16.0000
			8	11.8314	8.00	64.0000
			9	27.9818	20.00	400.0000
			10	55.1083	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.09022	c	0.0619264
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.45746	-0.0020386	1.49503	-0.000249651
Std Err of Coef.				
Correlation Coefficient		0.999949		
Coefficient of Determination (r^2)		0.999898		0.99964

LDC #: 48792C9v

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer: [illegible]

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/16/2020	SCN982	PFOS	1	0.0183	0.02	0.00040
			2	0.0368	0.04	0.0016
			3	0.0855	0.08	0.0064
			4	0.1639	0.16	0.0256
			5	0.4212	0.40	0.1600
			6	0.8879	0.80	0.6400
			7	4.2126	4.00	16.0000
			8	8.8898	8.00	64.0000
			9	20.8350	20.00	400.0000
			10	37.5574	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.03856	c	-0.0882230
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.14010	-0.0050221	1.12687	-0.0003708350
Std Err of Coef.				
Correlation Coefficient		0.999978		
Coefficient of Determination (r^2)		0.999957		0.999734

LDC #: 48792C96

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC
2nd Reviewer: CJ

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: B0G0039-BS/D

Compound	SA (ug/L)		SSC (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0400	0.0400	0.0431	0.0411	108	108	103	103	4.76	4.75
PFOS	0.0400	0.0400	0.0397	0.0398	99.1	99.3	99.4	99.5	0.260	0.252

LDC #: 48792096

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SC
2nd Reviewer: 9

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliliters (mL)
RRF = Average relative response factor
Vo = Volume of sample in liters (L)

Sample #	Compound	Ax	Ais	Cis	DF	RRF	Vt (mL)	Vo (L)	Calculated Concentration (ug/L)	Reported Concentration (ug/L)	% Diff
1	PFOS	4.907E+02	3.402E+03	12.5	1	curve	1	261.96	0.00643	0.00643	0

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: September 3, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2001436

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TW21D-20200707	2001436-02	Water	07/07/20
TW09D-20200707	2001436-03	Water	07/07/20
TW22D-20200707	2001436-04	Water	07/07/20
TW23D-20200708	2001436-06	Water	07/08/20
TW24D-20200708	2001436-07	Water	07/08/20
TW17D-20200708	2001436-08	Water	07/08/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances in Groundwater in Carve-Outs 2, 5, 6, and 9 and Groundwater and Surface Water Near Operable Unit 3, Former Marine Corps Air Station Tustin, Tustin, California, with Addendum #02 to Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances Sampling for Groundwater Remedial Action at Operable Unit 3, Installation Restoration Program Site 1 (February 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

X The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team, but exclusion of the data is recommended.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the methods.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention time windows were established as required by the methods.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration and Instrument Sensitivity Check

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Samples EB05-20200707 and EB06-20200708 were identified as equipment blanks. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
TW21D-20200707	13C2-PFTeDA	32.1 (50-150)	PFTeDA	NA	-
TW09D-20200707	d5-EtFOSAA 13C2-PFDoA 13C2-PFTeDA	42.0 (50-150) 38.5 (50-150) 11.4 (50-150)	EtFOSAA PFDoA PFTrDA 11Cl-PF30UdS PFTeDA	NA	-
TW22D-20200707	d3-MeFOSAA 13C2-PFUnA d5-EtFOSAA 13C2-PFDoA	30.9 (50-150) 35.7 (50-150) 23.3 (50-150) 13.5 (50-150)	MeFOSAA PFUnA EtFOSAA PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW22D-20200707	13C2-PFTeDA	6.30 (50-150)	PFTeDA	X	P
TW23D-20200708	d5-EtFOSAA 13C2-PFDoA	48.0 (50-150) 35.0 (50-150)	EtFOSAA PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW23D-20200708	13C2-PFTeDA	5.40 (50-150)	PFTeDA	X	P

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
TW24D-20200708	13C2-PFDoA	45.9 (50-150)	PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW24D-20200708	13C2-PFTeDA	7.80 (50-150)	PFTeDA	X	P
TW17D-20200708	13C3-PFBS 13C2-PFHxA 13C4-PFHpA 13C3-PFHxS 13C5-PFNA 13C8-PFOS	44.4 (50-150) 42.2 (50-150) 45.2 (50-150) 44.2 (50-150) 41.9 (50-150) 45.5 (50-150)	PFBS PFHxA PFHpA PFHxS PFNA PFOS	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	P
TW17D-20200708	13C3-HFPO-DA 13C4-PFHpA 13C8-PFOS 13C2-PFDA D3-MeFOSAA 13C2-PFUnA D5-EtFOSAA 13C2-PFDoA	39.6 (50-150) 45.2 (50-150) 45.5 (50-150) 39.0 (50-150) 27.8 (50-150) 28.3 (50-150) 22.3 (50-150) 15.3 (50-150)	HFPO-DA ADONA 9Cl-PF30NS PFDA MeFOSAA PFUnA EtFOSAA PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW17D-20200708	13C2-PFTeDA	3.30 (50-150)	PFTeDA	X	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to labeled compound %R, data were qualified for recommended exclusion in four samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2001436

Sample	Compound	Flag	A or P	Reason
TW22D-20200707 TW23D-20200708 TW24D-20200708 TW17D-20200708	PFTeDA	X	P	Labeled compounds (%R)
TW17D-20200708	PFBS PFHxA PFHpA PFHxS PFNA PFOS	J (all detects) J (all detects) J (all detects) J (all detects) J (all detects) J (all detects)	P	Labeled compounds (%R)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2001436

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2001436

No Sample Data Qualified in this SDG

LDC #: 48792D96 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/14/20

SDG #: 2001436 Stage 4 Page: 1 of 1

Laboratory: Vista Analytical Laboratory Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M/QSM 5.3 Table B-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	%r TV/ICV ≤ 30
IV.	Continuing calibration/ISC	A/A	D ≤ 30
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB05-20200707, EB06-20200708
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCSD
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	TW21D-20200707	2001436-02	Water	07/07/20
2	TW09D-20200707	2001436-03	Water	07/07/20
3	TW22D-20200707	2001436-04	Water	07/07/20
4	TW23D-20200708	2001436-06	Water	07/08/20
5	TW24D-20200708	2001436-07	Water	07/08/20
6	TW17D-20200708	2001436-08	Water	07/08/20
7				
8				
9				
10				

Notes:

	B0G0058						

LDC #: 48192D96

VALIDATION FINDINGS CHECKLIST

Reviewer:
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Were cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
III. Initial calibration and Initial calibration verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	✓			
Were all ICV percent differences (%D) of the initial calibration verification ≤ 30%?	✓			
IV. Continuing calibration and Instrument sensitivity check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		

LDC #: 48792D96

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?	✓			
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?	✓			
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFBS		
B. PFHxA		
C. PFHpA		
D. PFHxS		
E. PFOA		
F. PFNA		
G. PFOS		
H. PFDA		
I. MeFOSAA		
J. EtFOSAA		
K. PFUnA		
L. PFDoA		
M. PFTrDA		
N. PFTeDA		
O. HFPO-DA		
P. ADONA		
Q. 9Cl-PF30NS		
R. 11Cl-PF30UdS		

LDC #: 48793D96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery (Limit)	Qualifications
		1 (ND)	TDA	32.1 (50-150)	J (all ts/p) (N)
		2	EFOS	42.0	(J)
			DDA	38.5	(L, M, R)
			TDA	11.4	
		3 (ND)	MFOS	30.9	(I)
			UDA	35.7	(k)
			EFOS	23.3	
			DDA	13.5	
			TDA	6.30	J (all ts/p) x/p
		4 (ND)	EFOS	48.0	J (all ts/p)
			DDA	35.0	
			TDA	5.40	J (all ts/p) x/p
		5 (ND)	DDA	45.9	J (all ts/p)
			TDA	7.80	J (all ts/p) x/p

BS = 13C3-PFBS HXS = 13C3-PFHxS OS = 13C8-PFOS TDA = 13C2-PFTeDA EFOS = d5-EtFOSAA
HXA = 13C2-PFHxA NA = 13C5-PFNA DA = 13C2-PFDA DDA = 13C2-PFDoA
HPA = 13C4-PFHpA OA = 13C2-PFOA UDA = 13C2-PFUnA MFOS = d3-MeFOSAA

LDC #: 48792D96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery (Limit)	Qualifications
		6 (dets/~~ND~~)	BS	44.4 (50-150)	J dets/P (A)
		(ND)	13C3-HFPO-DA	39.6	(O)
	~~C(dets), P(ND)~~	(dets)	HXA	42.2	(B)
	C(dets), P(ND)		HPA	45.2	(C, P)
		(dets)	HXS	44.2	(D)
			NA	41.9	(F)
			OA	47.8	No qual. 5x (E)
	G(dets), Q(ND)	~~(dets)~~	OS	45.5	J dets/P (G, Q)
		(ND)	DA	39.0	(H)
			MFOS	27.8	(I)
			UDA	28.3	(K)
			EFOS	22.3	(J)
			DDA	15.3	(L, M, R)
		(ND)	TDA	3.30	~~J/X/P~~ ~~D~~ J/X/P (N)

BS = 13C3-PFBS HXS = 13C3-PFHxS OS = 13C8-PFOS TDA = 13C2-PFTeDA EFOS = d5-EtFOSAA
HXA = 13C2-PFHxA NA = 13C5-PFNA DA = 13C2-PFDA DDA = 13C2-PFDoA
HPA = 13C4-PFHpA OA = 13C2-PFOA UDA = 13C2-PFUnA MFOS = d3-MeFOSAA

LDC # 48792D96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/14/2020	SCN977	PFOA	1	0.0152	0.02	0.00040
			2	0.0354	0.04	0.0016
			3	0.0774	0.08	0.0064
			4	0.1611	0.16	0.0256
			5	0.3921	0.40	0.1600
			6	0.7570	0.80	0.6400
			7	3.7452	4.00	16.0000
			8	7.3709	8.00	64.0000
			9	18.0513	20.00	400.0000
			10	35.0945	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.01292	c	-0.0058451
Std Err of Y Est				.
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.93049	-0.0013317	0.93654	-0.000120375
Std Err of Coef.				
Correlation Coefficient		0.999999		
Coefficient of Determination (r^2)		0.999998		0.999948

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/14/2020	SCN977	PFOS	1	0.0189	0.02	0.00040
			2	0.0436	0.04	0.0016
			3	0.0960	0.08	0.0064
			4	0.2164	0.16	0.0256
			5	0.4446	0.40	0.1600
			6	1.0272	0.80	0.6400
			7	5.1463	4.00	16.0000
			8	9.7792	8.00	64.0000
			9	23.9122	20.00	400.0000
			10	52.3992	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.11969	c	-0.0060877
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.132454	0.0043764	1.186310	0.0002266170
Std Err of Coef.				
Correlation Coefficient		0.999890		
Coefficient of Determination (r^2)		0.999781		0.999166

LDC # 48792D96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer: 4

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/15/2020	SCN977	PFOA	1	0.0206	0.02	0.00040
			2	0.0425	0.04	0.0016
			3	0.0812	0.08	0.0064
			4	0.1617	0.16	0.0256
			5	0.3638	0.40	0.1600
			6	0.7654	0.80	0.6400
			7	3.8409	4.00	16.0000
			8	7.7159	8.00	64.0000
			9	18.3778	20.00	400.0000
			10	33.7891	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.01377	c	0.0065121
Std Err of Y Est				.
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.99146	-0.0036659	0.98500	-0.000278493
Std Err of Coef.				
Correlation Coefficient		0.999998		
Coefficient of Determination (r^2)		0.999996		0.999925

LDC #: 48792D96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer: A

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/15/2020	SCN977	PFOS	1	0.0194	0.02	0.00040
			2	0.0507	0.04	0.0016
			3	0.0999	0.08	0.0064
			4	0.2036	0.16	0.0256
			5	0.5553	0.40	0.1600
			6	1.0030	0.80	0.6400
			7	5.2162	4.00	16.0000
			8	10.0225	8.00	64.0000
			9	22.5872	20.00	400.0000
			10	48.0572	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.17286	c	0.0162657
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.138001	0.0014902	1.214650	-0.0000566898
Std Err of Coef.				
Correlation Coefficient		0.999708		
Coefficient of Determination (r^2)		0.999416		0.998321

LDC #: 48792D96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: SC
2nd Reviewer: A

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (aveRRF - RRF)/aveRRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
aveRRF = initial calib average RRF
RRF = continuing calib RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Conc	Reported Conc	Recalculated Conc	Reported %R	Recalculated %R
1	200714P1_42	7/15/2020	PFOA	(13C2-PFOA)	10.00	9.99	9.99	99.9	99.9
			PFOS	(13C8-PFOS)	10.00	10.70	10.75	107.2	107.5
2			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					
3			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					
4			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					
5			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					
6			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					

LDC #: 48792D96

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: B0G0058-BS/D

Compound	SA (ug/L)		SSC (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0400	0.0400	0.0380	0.0422	95.1	95.0	105	106	10.4	10.5
PFOS	0.0400	0.0400	0.0365	0.0485	91.2	91.3	121.0	121	28.4	28.2

LDC #: 48792B9C

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliters (mL)
RRF = Average relative response factor
Vo = Volume of sample in liters (L)

Sample #	Compound	Ax	Ais	Cis	DF	RRF	Vt (mL)	Vo (L)	Calculated Concentration (ug/L)	Reported Concentration (ug/L)	% Diff
1	PFOA	4.611E+03	1.596E+04	12.5	1	curve	1	246.85	0.0157	0.0157	0

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: September 3, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2001444

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TW27S-20200709	2001444-02	Water	07/09/20
TW22S-20200709	2001444-03	Water	07/09/20
TW10D-20200709	2001444-04	Water	07/09/20
TW11D-20200709	2001444-05	Water	07/09/20
TW12D-20200709	2001444-06	Water	07/09/20
TW13D-20200709	2001444-07	Water	07/09/20
TW14D-20200709	2001444-08	Water	07/09/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances in Groundwater in Carve-Outs 2, 5, 6, and 9 and Groundwater and Surface Water Near Operable Unit 3, Former Marine Corps Air Station Tustin, Tustin, California, with Addendum #02 to Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances Sampling for Groundwater Remedial Action at Operable Unit 3, Installation Restoration Program Site 1 (February 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

X The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team, but exclusion of the data is recommended.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the methods.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention time windows were established as required by the methods.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration and Instrument Sensitivity Check

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample EB07-20200709 was identified as an equipment blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
TW10D-20200709	13C2-PFTeDA	14.5 (50-150)	PFTeDA	NA	-
TW11D-20200709	d3-MeFOSAA 13C2-PFUnA d5-EtFOSAA 13C2-PFDoA	40.0 (50-150) 43.6 (50-150) 42.9 (50-150) 27.5 (50-150)	MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW11D-20200709	13C2-PFTeDA	6.00 (50-150)	PFTeDA	X	P
TW12D-20200709	d3-MeFOSAA 13C2-PFUnA d5-EtFOSAA 13C2-PFDoA	44.9 (50-150) 42.9 (50-150) 41.2 (50-150) 24.1 (50-150)	MeFOSAA EtFOSAA PFUnA PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW12D-20200709	13C2-PFTeDA	5.20 (50-150)	PFTeDA	X	P
TW13D-20200709	13C2-PFTeDA	10.8 (50-150)	PFTeDA	NA	-

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
TW13D-20200709	PFNA	26.223 (6.217-18.651)	J (all detects)	P

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to labeled compound %R, data were qualified for recommended exclusion in two samples.

Due to labeled compounds %R and ion abundance ratio, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2001444

Sample	Compound	Flag	A or P	Reason
TW11D-20200709 TW12D-20200709	PFTeDA	X	P	Labeled compounds (%R)
TW13D-20200709	PFNA	J (all detects)	P	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2001444

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2001444

No Sample Data Qualified in this SDG

LDC #: 48792E96 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/14/20
SDG #: 2001444 Stage 4 Page: 1 of 1
Laboratory: Vista Analytical Laboratory Reviewer:
2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M/QSM 5.3 Table B-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	r² TV/CV ≤ 30
IV.	Continuing calibration/ISC	A / A	≤ 30
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB07-20200709
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	SW	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable ND = No compounds detected D = Duplicate SB=Source blank
N = Not provided/applicable R = Rinsate TB = Trip blank OTHER:
SW = See worksheet FB = Field blank EB = Equipment blank

	Client ID	Lab ID	Matrix	Date
1	TW27S-20200709	2001444-02	Water	07/09/20
2	TW22S-20200709	2001444-03	Water	07/09/20
3	TW10D-20200709	2001444-04	Water	07/09/20
4	TW11D-20200709	2001444-05	Water	07/09/20
5	TW12D-20200709	2001444-06	Water	07/09/20
6	TW13D-20200709	2001444-07	Water	07/09/20
7	TW14D-20200709	2001444-08	Water	07/09/20
8				
9				
10				

Notes:

	BOG0090						

LDC #: 48792E96

VALIDATION FINDINGS CHECKLIST

Reviewer:
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Were cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
III. Initial calibration and Initial calibration verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) $\leq$ 20%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of $\geq$ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) $\leq$30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	✓			
Were all ICV percent differences (%D) of the initial calibration verification $\leq$ 30%?	✓			
IV. Continuing calibration and Instrument sensitivity check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration $\leq$ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check $\leq$ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		

LDC #: 48792E96

VALIDATION FINDINGS CHECKLIST

Reviewer: MK
2nd Reviewer:

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?		✓		
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFBS		
B. PFHxA		
C. PFHpA		
D. PFHxS		
E. PFOA		
F. PFNA		
G. PFOS		
H. PFDA		
I. MeFOSAA		
J. EtFOSAA		
K. PFUnA		
L. PFDoA		
M. PFTrDA		
N. PFTeDA		
O. HFPO-DA		
P. ADONA		
Q. 9Cl-PF30NS		
R. 11Cl-PF30UdS		

LDC #: 48792E96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: M
2nd Reviewer: A

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y (N) N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery (Limit)	Qualifications
		3 (NB)	TDA	14.5 (50-150)	Jdets/P (N)
		4 (NB)	MFOS	40.0	(I)
			UDA	43.6	(K)
			EFOS	42.9	(J)
			DDA	27.5	(L, M, R)
			TDA	6.00	~~J-det/P~~ ~~J-det/P~~
		5 (NB)	MFOS	44.9	Jdets/P
			UDA	42.9	
			EFOS	41.2	
			DDA	24.1	
			TDA	5.20	~~J-det/P~~ ~~J-det/P~~
		6 (NB)	TDA	10.8	Jdets/P

BS = 13C3-PFBS HXS = 13C3-PFHxS OS = 13C8-PFOS TDA = 13C2-PFTeDA EFOS = d5-EtFOSAA
HXA = 13C2-PFHxA NA = 13C5-PFNA DA = 13C2-PFDA DDA = 13C2-PFDoA
HPA = 13C4-PFHpA OA = 13C2-PFOA UDA = 13C2-PFUnA MFOS = d3-MeFOSAA

LDC #: 48792E96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

M N N/A Was the signal to noise (S/N) ratio for all compounds within the validation criteria?
Y N N/A Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?
Y N N/A Were ion ratios within QC limits and between 50-150%?

#	Date	Sample ID	Associated Compound	Ion ratio (%D≤50) limit	Qualifications
		6	F	26.223 (6.217-8.651)	Jdets/A

LDC # 48792E96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer: A

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/21/2020	SCN977	PFOA	1	0.0278	0.02	0.00040
			2	0.0469	0.04	0.0016
			3	0.0823	0.08	0.0064
			4	0.1593	0.16	0.0256
			5	0.3971	0.40	0.1600
			6	0.7486	0.80	0.6400
			7	3.7233	4.00	16.0000
			8	7.8135	8.00	64.0000
			9	18.9803	20.00	400.0000
			10	36.5156	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.01706	c	0.0565111
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.98243	-0.0017341	0.972216	-0.000115660
Std Err of Coef.				
Correlation Coefficient		0.999989		
Coefficient of Determination (r^2)		0.999978		0.999818

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/21/2020	SCN977	PFOS	1	0.0210	0.02	0.00040
			2	0.0340	0.04	0.0016
			3	0.1120	0.08	0.0064
			4	0.1911	0.16	0.0256
			5	0.5292	0.40	0.1600
			6	0.9517	0.80	0.6400
			7	5.0005	4.00	16.0000
			8	10.7860	8.00	64.0000
			9	25.6408	20.00	400.0000
			10	52.0437	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.00376	c	-0.0631930
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.287640	0.0003101	1.292200	0.0000147461
Std Err of Coef.				
Correlation Coefficient		0.999957		
Coefficient of Determination (r^2)		0.999913		0.99958

LDC # 48792E96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/23/2020	SCN977	PFOA	1	0.0232	0.02	0.00040
			2	0.0463	0.04	0.0016
			3	0.0863	0.08	0.0064
			4	0.1615	0.16	0.0256
			5	0.3900	0.40	0.1600
			6	0.7723	0.80	0.6400
			7	3.8020	4.00	16.0000
			8	7.3944	8.00	64.0000
			9	19.1260	20.00	400.0000
			10	36.7968	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.02577	c	0.0499833
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.97078	-0.0012466	0.956964	-0.0000683589
Std Err of Coef.				
Correlation Coefficient		0.999962		
Coefficient of Determination (r^2)		0.999925		0.999795

LDC #: 48792E96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/23/2020	SCN977	PFOS	1	0.0175	0.02	0.00040
			2	0.0388	0.04	0.0016
			3	0.1035	0.08	0.0064
			4	0.2072	0.16	0.0256
			5	0.5466	0.40	0.1600
			6	0.8809	0.80	0.6400
			7	5.1093	4.00	16.0000
			8	9.5918	8.00	64.0000
			9	25.5339	20.00	400.0000
			10	60.0403	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.10878	c	0.0102665
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.089828	0.0102330	1.138060	0.0007079480
Std Err of Coef.				
Correlation Coefficient		0.999939		
Coefficient of Determination (r^2)		0.999877		0.999249

LDC # 48792E96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/24/2020	SCN977	PFOA	1	0.0257	0.02	0.00040
			2	0.0357	0.04	0.0016
			3	0.0821	0.08	0.0064
			4	0.1614	0.16	0.0256
			5	0.4081	0.40	0.1600
			6	0.7089	0.80	0.6400
			7	3.6827	4.00	16.0000
			8	7.6180	8.00	64.0000
			9	19.7474	20.00	400.0000
			10	38.9385	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.04915	c	0.0306828
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.97842	-0.0000964	0.955014	0.0000457658
Std Err of Coef.				
Correlation Coefficient		0.999962		
Coefficient of Determination (r^2)		0.999925		0.999663

LDC #: 48792E96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/24/2020	SCN977	PFOS	1	0.0154	0.02	0.00040
			2	0.0500	0.04	0.0016
			3	0.0828	0.08	0.0064
			4	0.2236	0.16	0.0256
			5	0.4951	0.40	0.1600
			6	0.9308	0.80	0.6400
			7	4.7375	4.00	16.0000
			8	9.4045	8.00	64.0000
			9	27.8957	20.00	400.0000
			10	50.8200	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.24946	c	-0.0790602
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.386808	-0.0027533	1.278740	0.0000281280
Std Err of Coef.				
Correlation Coefficient		0.999343		
Coefficient of Determination (r^2)		0.998686		0.996689

LDC #: 48792E96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (aveRRF - RRF)/aveRRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
aveRRF = initial calib average RRF
RRF = continuing calib RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound	(IS)	Conc	Reported Conc	Recalculated Conc	Reported %R	Recalculated %R
1	200721P1_38	7/21/2020	PFOA	(13C2-PFOA)	10.00	9.17	9.17	91.7	91.7
			PFOS	(13C8-PFOS)	10.00	9.15	9.16	91.5	91.6
2	200724P1_48	7/24/2020	PFOA	(13C2-PFOA)	10.00	9.37	9.35	93.7	93.5
			PFOS	(13C8-PFOS)	10.00	9.19	9.19	91.9	91.9
3			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					
4			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					
5			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					
6			PFOA	(13C2-PFOA)					
			PFOS	(13C8-PFOS)					

LDC #: 48792E96

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: B0G0090-BS/D

Compound	SA (ug/L)		SSC (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0400	0.0400	0.0381	0.0380	95.3	95.3	94.9	95.0	0.339	0.263
PFOS	0.0400	0.0400	0.0417	0.0357	104	104	89.2	89.3	15.6	15.5

LDC #: 48792E96

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliliters (mL)
RRF = Average relative response factor
Vo = Volume of sample in liters (L)

Sample #	Compound	Ax	Ais	Cis	DF	RRF	Vt (mL)	Vo (mL)	Calculated Concentration (ug/L)	Reported Concentration (ug/L)	% Diff
1	PFOS	5.300E+04	1.611E+02	12.5	15	curve	1	247.75	12.2	12.2	0

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: September 3, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2001472

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TW23S-20200710	2001472-02	Water	07/10/20
TW24S-20200710	2001472-03	Water	07/10/20
TW15D-20200710	2001472-04	Water	07/10/20
TW16D-20200710	2001472-05	Water	07/10/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances in Groundwater in Carve-Outs 2, 5, 6, and 9 and Groundwater and Surface Water Near Operable Unit 3, Former Marine Corps Air Station Tustin, Tustin, California, with Addendum #02 to Final Sampling and Analysis Plan for Per- and Polyfluoroalkyl Substances Sampling for Groundwater Remedial Action at Operable Unit 3, Installation Restoration Program Site 1 (February 2020), the U.S. Department of Defense (DoD) Quality Systems Manual (QSM) for Environmental Laboratories, Version 5.3 (2019), and the DoD General Validation Guidelines (February 2018). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following methods:

Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) by Environmental Protection Agency (EPA) Method 537 Modified and LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

All sample results were subjected to Stage 4 data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

X The sample results (including non-detects) were affected by serious deficiencies in the ability to analyze the sample and to meet published method and project quality control criteria. The presence or absence of the analyte cannot be substantiated by the data provided. Acceptance or rejection of the data should be decided by the project team, but exclusion of the data is recommended.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition and cooler temperatures upon receipt met validation criteria.

All technical holding time requirements were met.

II. LC/MS Instrument Performance Check

Instrument performance was checked and the requirements were met.

III. Initial Calibration and Initial Calibration Verification

Initial calibration was performed as required by the methods.

A curve fit, based on the initial calibration, was established for quantitation. The coefficient of determination (r^2) was greater than or equal to 0.990.

For each calibration standard, all compounds were within 70-130% of their true value.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

Retention time windows were established as required by the methods.

The percent differences (%D) of the initial calibration verification (ICV) standard were less than or equal to 30.0% for all compounds.

IV. Continuing Calibration and Instrument Sensitivity Check

Continuing calibration was performed at required frequencies.

The percent differences (%D) were less than or equal to 30.0% for all compounds.

The signal to noise (S/N) ratio was within validation criteria for all compounds.

The percent differences (%D) of the instrument sensitivity check (ISC) were less than or equal to 30.0% for all compounds.

Retention times of all compounds in the calibration standards were within the established retention time windows.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the methods. No contaminants were found in the laboratory blanks.

VI. Field Blanks

Sample 08-2020710 was identified as an equipment blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control samples duplicates (LCSD) were analyzed as required by the methods. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. Labeled Compounds

All percent recoveries (%R) for labeled compounds used to quantitate target compounds were within QC limits with the following exceptions:

Sample	Labeled Compound	%R (Limits)	Affected Compound	Flag	A or P
TW24S-20200710	13C2-PFTeDA	36.1 (50-150)	PFTeDA	NA	-
TW15D-20200710	13C2-PFDoA	46.9 (50-150)	PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW15D-20200710	13C2-PFTeDA	6.90 (50-150)	PFTeDA	X	P
TW16D-20200710	d3-MeFOSAA 13C2-PFUnA d5-EtFOSAA 13C2-PFDoA	49.9 (50-150) 44.2 (50-150) 46.5 (50-150) 28.8 (50-150)	MeFOSAA PFUnA EtFOSAA PFDoA PFTrDA 11Cl-PF30UdS	NA	-
TW16D-20200710	13C2-PFTeDA	5.50 (50-150)	PFTeDA	X	P

XI. Compound Quantitation

All compound quantitations met validation criteria.

XII. Target Compound Identifications

All target compound identifications met validation criteria.

XIII. System Performance

The system performance was acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the methods. No results were rejected in this SDG.

Due to labeled compounds %R, data were qualified for recommended exclusion in two samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Data Qualification Summary - SDG 2001472

Sample	Compound	Flag	A or P	Reason
TW15D-20200710 TW16D-20200710	PFTeDA	X	P	Labeled compounds (%R)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2001472

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2001472

No Sample Data Qualified in this SDG

LDC #: 48792F96 **VALIDATION COMPLETENESS WORKSHEET** Date: 8/30/20
SDG #: 2001472 Stage 4 Page: 1 of 1
Laboratory: Vista Analytical Laboratory Reviewer: M
2nd Reviewer: G

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M/QSM 5.3 Table B-15)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A / A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	r TN/10/≤30
IV.	Continuing calibration/ISC	A/A	D≤30
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB08-20200710
VII.	Matrix spike/Matrix spike duplicates	N	
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	SW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	A	
XIII.	System performance	A	
XIV.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	TW23S-20200710	2001472-02	Water	07/10/20
2	TW24S-20200710	2001472-03	Water	07/10/20
3	TW15D-20200710	2001472-04	Water	07/10/20
4	TW16D-20200710	2001472-05	Water	07/10/20
5				
6				
7				
8				
9				
10				

Notes:

	BoG0090						

LDC #: 48792F9C

VALIDATION FINDINGS CHECKLIST

Reviewer: N
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Validation Area	Yes	No	NA	Findings/Comments
I. Technical holding times				
Were all technical holding times met?	✓			
Were cooler temperature criteria met?	✓			
II. LC/MS Instrument performance check				
Were the instrument performance reviewed and found to be within the validation criteria?	✓			
III. Initial calibration and Initial calibration verification				
Did the laboratory perform a 5-point calibration prior to sample analysis?	✓			
Were all percent relative standard deviations (%RSD) ≤ 20%?			✓	
Was a curve fit used for evaluation? If yes, did the initial calibration meet the coefficient of determination (r^2) criteria of ≥ 0.990?	✓			
Were all analytes within 70-130% or percent differences (%D) ≤30% of their true value for each calibration standard?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were the retention time windows properly established?	✓			
Was an initial calibration verification (ICV) standard analyzed after each initial calibration for each instrument?	✓			
Were all ICV percent differences (%D) of the initial calibration verification ≤ 30%?	✓			
IV. Continuing calibration and Instrument sensitivity check				
Was a continuing calibration analyzed prior to sample analysis, after every 10 samples and at the end of the analytical sequence?	✓			
Were all percent differences (%D) of the continuing calibration ≤ 30%?	✓			
Were all the retention times within the acceptance windows?	✓			
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were all percent differences (%D) of the Instrument Sensitivity Check ≤ 30%?	✓			
V. Laboratory Blanks				
Was a laboratory blank associated with every sample in this SDG?	✓			
Was a laboratory blank analyzed for each matrix and concentration?	✓			
Was there contamination in the laboratory blanks?		✓		
VI. Field blanks				
Were field blanks identified in this SDG?	✓			
Were target compounds detected in the field blanks?		✓		

LDC #: 48792F96

VALIDATION FINDINGS CHECKLIST

Reviewer: [illegible]
2nd Reviewer: [illegible]

Validation Area	Yes	No	NA	Findings/Comments
VII. Matrix spike/Matrix spike duplicates				
Were matrix spike (MS) and matrix spike duplicate (MSD) analyzed in this SDG?		✓		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?			✓	
VIII. Laboratory control samples				
Was an LCS analyzed per extraction batch for this SDG?	✓			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	✓			
IX. Field duplicates				
Were field duplicate pairs identified in this SDG?		✓		
Were target compounds detected in the field duplicates?			✓	
X. Labeled compounds				
Were labeled compound percent recoveries (%R) within the QC limits?		✓		
Were retention times within 0.4 minutes of the associated calibration standard?	✓			
XI. Compound quantitation				
Did the laboratory reporting limits (i.e. DL, LOD, LOQ) meet the QAPP?	✓			
Did reported results include both branched and linear isomers?	✓			
Were the correct ion transition, labeled compound and relative response factor (RRF) used to quantitate the compound?	✓			
Were compound retention times within 0.1 minutes of the associated labeled compound for compounds with a labeled analog?	✓			
Were compound quantitation and reporting limits adjusted to reflect all sample dilutions and dry weight factors applicable to Stage 4 validation?	✓			
XII. Target compound identification				
Was the signal to noise (S/N) ratio for all compounds within the validation criteria?	✓			
Were two transitions and the ion transition ratio per analyte monitored and documented with the exception of PFBA and PFPeA?	✓			
Were ion ratios between 50-150%?	✓			
XIII. System performance				
System performance was found to be acceptable.	✓			
XIV. Overall assessment of Data				
Overall assessment of data was found to be acceptable.	✓			

TARGET COMPOUND WORKSHEET

METHOD: PFAS

A. PFBS		
B. PFHxA		
C. PFHpA		
D. PFHxS		
E. PFOA		
F. PFNA		
G. PFOS		
H. PFDA		
I. MeFOSAA		
J. EtFOSAA		
K. PFUnA		
L. PFDoA		
M. PFTrDA		
N. PFTeDA		
O. HFPO-DA		
P. ADONA		
Q. 9Cl-PF30NS		
R. 11Cl-PF30UdS		

LDC #: 48792F96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Page: 1 of 1
Reviewer: X
2nd Reviewer: [illegible]

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3
Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".
Y N N/A Were all labeled compound recoveries within the QC criteria?

#	Date	Lab ID/Reference	Labeled Compound	% Recovery (Limit)	Qualifications
		2 (ND)	TDA	36.1 (50-150)	Jdyk/P (N)
		3	DDA	46.9	
			TDA	6.90	J/X/P
		4	MFOS	49.9	(I)
			UDA	44.2	(K)
			EFOS	46.5	(J)
			DDA	28.8	(L, M, R)
			TDA	5.50	J/X/P (N)

BS = 13C3-PFBS HXS = 13C3-PFHxS OS = 13C8-PFOS TDA = 13C2-PFTeDA EFOS = d5-EtFOSAA
HXA = 13C2-PFHxA NA = 13C5-PFNA DA = 13C2-PFDA DDA = 13C2-PFDoA
HPA = 13C4-PFHpA OA = 13C2-PFOA UDA = 13C2-PFUnA MFOS = d3-MeFOSAA

LDC # 48792F96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/21/2020	SCN977	PFOA	1	0.0278	0.02	0.00040
			2	0.0469	0.04	0.0016
			3	0.0823	0.08	0.0064
			4	0.1593	0.16	0.0256
			5	0.3971	0.40	0.1600
			6	0.7486	0.80	0.6400
			7	3.7233	4.00	16.0000
			8	7.8135	8.00	64.0000
			9	18.9803	20.00	400.0000
			10	36.5156	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.01706	c	0.0565111
Std Err of Y Est				.
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.98243	-0.0017341	0.972216	-0.000115660
Std Err of Coef.				
Correlation Coefficient		0.999989		
Coefficient of Determination (r^2)		0.999978		0.999818

LDC #: 48792F96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/21/2020	SCN977	PFOS	1	0.0210	0.02	0.00040
			2	0.0340	0.04	0.0016
			3	0.1120	0.08	0.0064
			4	0.1911	0.16	0.0256
			5	0.5292	0.40	0.1600
			6	0.9517	0.80	0.6400
			7	5.0005	4.00	16.0000
			8	10.7860	8.00	64.0000
			9	25.6408	20.00	400.0000
			10	52.0437	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.00376	c	-0.0631930
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.287640	0.0003101	1.292200	0.0000147461
Std Err of Coef.				
Correlation Coefficient		0.999957		
Coefficient of Determination (r^2)		0.999913		0.99958

LDC # 48792F96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/23/2020	SCN977	PFOA	1	0.0232	0.02	0.00040
			2	0.0463	0.04	0.0016
			3	0.0863	0.08	0.0064
			4	0.1615	0.16	0.0256
			5	0.3900	0.40	0.1600
			6	0.7723	0.80	0.6400
			7	3.8020	4.00	16.0000
			8	7.3944	8.00	64.0000
			9	19.1260	20.00	400.0000
			10	36.7968	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	-0.02577	c	0.0499833
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.97078	-0.0012466	0.956964	-0.0000683589
Std Err of Coef.				
Correlation Coefficient		0.999962		
Coefficient of Determination (r^2)		0.999925		0.999795

LDC #: 48792F96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Calibration Date	Instrument	Compound	Standard	(Y) Response ratio	(X) Conc. Ratio	(X^2) Conc. Ratio
7/23/2020	SCN977	PFOS	1	0.0175	0.02	0.00040
			2	0.0388	0.04	0.0016
			3	0.1035	0.08	0.0064
			4	0.2072	0.16	0.0256
			5	0.5466	0.40	0.1600
			6	0.8809	0.80	0.6400
			7	5.1093	4.00	16.0000
			8	9.5918	8.00	64.0000
			9	25.5339	20.00	400.0000
			10	60.0403	40.00	1600.0000

Regression Output	Calculated		Reported	
Constant	c	0.10878	c	0.0102665
Std Err of Y Est				
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.089828	0.0102330	1.138060	0.0007079480
Std Err of Coef.				
Correlation Coefficient		0.999939		
Coefficient of Determination (r^2)		0.999877		0.999249

LDC #: 48792F9b

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Calculation Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (aveRRF - RRF)/aveRRF
RRF = (Ax)(Cis)/(Ais)(Cx)

Where:
aveRRF = initial calib average RRF
RRF = continuing calib RRF
Ax = Area of compound
Cx = Concentration of compound,
Ais = Area of associated internal standard
Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Conc	Reported Conc	Recalculated Conc	Reported %R	Recalculated %R
1	200721P1_38	7/21/2020	PFOA (13C2-PFOA)	10.00	9.17	9.17	91.7	91.7
			PFOS (13C8-PFOS)	10.00	9.15	9.16	91.5	91.6
2			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
3			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
4			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
5			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					
6			PFOA (13C2-PFOA)					
			PFOS (13C8-PFOS)					

LDC #: 4792F96

VALIDATION FINDINGS WORKSHEET
LCS Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

The percent recoveries (%R) and relative percent differences (RPD) of the laboratory control sample and laboratory control duplicate were recalculated for the compounds identified below using the following calculation:

SSC = (Area spike) (Conc IS) / (Area IS) (average RRF spike)
%Recovery = 100 * SSC/SA

Where:
SSC = Spiked concentration
SA = Spike added
LCS = Laboratory control spike recovery
LCSD = Laboratory control spike duplicate recovery

RPD = | LCS - LCSD | * 2/(LCS + LCSD)

LCS/LCSD ID: B0G0090-BS/D

Compound	SA (ug/L)		SSC (ug/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalc.
PFOA	0.0400	0.0400	0.0381	0.0380	95.3	95.3	94.9	95.0	0.339	0.263
PFOS	0.0400	0.0400	0.0417	0.0357	104	104	89.2	89.3	15.6	15.5

LDC #: 48792F96

VALIDATION FINDINGS WORKSHEET
Sample Results Verification

Reviewer: SC
2nd Reviewer:

Method: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound results for all Level IV samples reported with a positive detect were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(Ax)\,(Cis)\,(Vt)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where:

Ax = Area or height of the peak for the compound to be measured
Ais = Area or height of the peak for the internal standard
Cis = Concentration of the internal standard
DF = Dilution factor
Vt = Volume of extract in milliters (mL)
RRF = Average relative response factor
Vo = Volume of sample in liters (L)

Sample #	Compound	Ax	Ais	Cis	DF	RRF	Vt (mL)	Vo (mL)	Calculated Concentration (ug/L)	Reported Concentration (ug/L)	% Diff
1	PFOA	3.013E+05	1.304E+03	12.5	10	curve	1	241.84	18.2	18.2	0

INSTALLATION_ID	SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	SAMPLE_NAME	SAMPLE_MATRIX_DESC	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC	SDG
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
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TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW16D	Temporary well point	6082727.061	2202364.726	TW16D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
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TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472

INSTALLATION_ID	SITE_NAME	LOCATION_NAME	LOCATION_TYPE_DESC	COORD_X	COORD_Y	SAMPLE_NAME	SAMPLE_MATRIX_DESC	COLLECT_DATE	ANALYTICAL_METHOD_GRP_DESC	SDG
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
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TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW15D	Temporary well point	6082608.364	2202802.101	TW15D-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
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TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
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TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
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TUSTIN_MCAS	OU 0000001B SOUTH	TW24S	Temporary well point	6083508.489	2203234.156	TW24S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472
TUSTIN_MCAS	OU 0000001B SOUTH	TW23S	Temporary well point	6083085.315	2203475.97	TW23S-20200710	Ground water	10-Jul-20	Perfluoroalkyl Compounds	2001472