Navy_CLEAN_PFAS_FOIA_request_covers.indd

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 2000356

MCAS
Tustin, CA
April 2021

APPROVED FOR PUBLIC RELEASE; DISTRIBUTION UNLIMITED

March 05, 2020

Vista Work Order No. 2000356

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 February 20, 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. 2000356
Case Narrative

Sample Condition on Receipt:

One blank water sample and nine 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 Method

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

Laboratory ID	Sample Name
2000356-02	IS720W02D-20200219
2000356-03	IS720W06D-20200219
2000356-04	IS720W03D-20200219
2000356-05	TW08S-20200219
2000356-06	TW09S-20200219
2000356-07	TW10S-20200219
2000356-08	TW11S-20200219
2000356-09	TW13S-20200219
2000356-10	TW12S-20200219

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

Quality Control

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

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

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

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
B0B0186-BLK1	B0B0186-BLK1	PFAS Isotope Dilution Method	d5-EtFOSAA	H	45.1
B0B0186-BSD1	B0B0186-BSD1	PFAS Isotope Dilution Method	13C2-PFTeDA	H	47.3

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Case Narrative..... 1

Table of Contents..... 4

Sample Inventory..... 5

Analytical Results..... 6

Qualifiers..... 20

Certifications..... 21

Sample Receipt..... 24

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2000356-01	EB04-20200219	19-Feb-20 07:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-02	IS720W02D-20200219	19-Feb-20 08:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-03	IS720W06D-20200219	19-Feb-20 09:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-04	IS720W03D-20200219	19-Feb-20 10:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-05	TW08S-20200219	19-Feb-20 10:50	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-06	TW09S-20200219	19-Feb-20 11:45	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-07	TW10S-20200219	19-Feb-20 12:55	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-08	TW11S-20200219	19-Feb-20 13:25	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-09	TW13S-20200219	19-Feb-20 14:10	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-10	TW12S-20200219	19-Feb-20 15:10	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Method

Client Data

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

Laboratory Data

Lab Sample: B0B0186-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		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFHxA	307-24-4	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
HFPO-DA	13252-13-6	ND	0.00241	0.00300	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFHpA	375-85-9	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
ADONA	919005-14-4	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFHxS	355-46-4	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFOA	335-67-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFNA	375-95-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFOS	1763-23-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
9Cl-PF3ONS	756426-58-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFDA	335-76-2	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
MeFOSAA	2355-31-9	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
EtFOSAA	2991-50-6	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFUnA	2058-94-8	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
11Cl-PF3OUdS	763051-92-9	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFDoA	307-55-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFTrDA	72629-94-8	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFTeDA	376-06-7	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	84.6	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C3-HFPO-DA	IS	61.4	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFHxA	IS	65.2	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C4-PFHpA	IS	65.1	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C3-PFHxS	IS	79.0	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C5-PFNA	IS	71.9	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFOA	IS	71.3	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C8-PFOS	IS	82.7	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFDA	IS	72.5	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
d3-MeFOSAA	IS	60.7	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFUnA	IS	69.1	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
d5-EtFOSAA	IS	45.1	50 - 150	H	B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFDoA	IS	62.1	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFTeDA	IS	55.2	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	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 Method**

Name:	KMEA	Lab Sample:	B0B0186-BS1/B0B0186-BSD1		
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0B0186	Date Extracted:	28-Feb-20
Matrix:	Aqueous	Samp Size:	0.250/0.250 L	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	0.0395	0.0400	98.7		0.0416	0.0400	104	5.17		72-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFHxA	307-24-4	0.0422	0.0400	106		0.0390	0.0400	97.5	7.84		72-129	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
HFPO-DA	13252-13-6	0.0427	0.0400	107		0.0410	0.0400	103	4.11		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFHpA	375-85-9	0.0386	0.0400	96.5		0.0386	0.0400	96.5	0.000981		72-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
ADONA	919005-14-4	0.0368	0.0400	91.9		0.0405	0.0400	101	9.74		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFHxS	355-46-4	0.0364	0.0400	91.1		0.0360	0.0400	89.9	1.30		68-131	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFOA	335-67-1	0.0374	0.0400	93.4		0.0385	0.0400	96.3	3.06		71-133	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFNA	375-95-1	0.0395	0.0400	98.8		0.0394	0.0400	98.4	0.477		69-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFOS	1763-23-1	0.0361	0.0400	90.2		0.0403	0.0400	101	11.1		65-140	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
9Cl-PF3ONS	756426-58-1	0.0373	0.0400	93.1		0.0385	0.0400	96.2	3.21		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFDA	335-76-2	0.0386	0.0400	96.5		0.0435	0.0400	109	11.8		71-129	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
MeFOSAA	2355-31-9	0.0412	0.0400	103		0.0321	0.0400	80.4	24.7		65-136	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
EtFOSAA	2991-50-6	0.0410	0.0400	102		0.0335	0.0400	83.7	20.1		61-135	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFUnA	2058-94-8	0.0401	0.0400	100		0.0413	0.0400	103	2.95		69-133	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
11Cl-PF3OUdS	763051-92-9	0.0417	0.0400	104		0.0445	0.0400	111	6.47		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFDoA	307-55-1	0.0406	0.0400	102		0.0393	0.0400	98.1	3.39		72-134	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFTrDA	72629-94-8	0.0320	0.0400	80.0		0.0331	0.0400	82.7	3.23		65-144	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFTeDA	376-06-7	0.0453	0.0400	113		0.0389	0.0400	97.3	15.2		71-132	30	03-Mar-20 19:32	1	03-Mar-20 19:42	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		91.3		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C3-HFPO-DA	IS	71.1		79.4		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFHxA	IS	78.8		83.9		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C4-PFHpA	IS	84.5		83.0		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C3-PFHxS	IS	87.0		91.5		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C5-PFNA	IS	86.9		90.5		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFOA	IS	86.0		93.8		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C8-PFOS	IS	96.3		91.7		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFDA	IS	90.1		77.7		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
d3-MeFOSAA	IS	84.5		88.3		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFUnA	IS	74.1		64.8		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
d5-EtFOSAA	IS	65.1		62.5		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFDoA	IS	74.9		65.3		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1

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

Name:	KMEA	Lab Sample:	B0B0186-BS1/B0B0186-BSD1		
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0B0186	Date Extracted:	28-Feb-20
Matrix:	Aqueous	Samp Size:	0.250/0.250 L	Column:	BEH C18

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFTeDA	IS	55.9		47.3	H	50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1

Sample ID: EB04-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Blank Water
Date Collected: 19-Feb-20 07:00

Laboratory Data

Lab Sample: 2000356-01
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFHxA	307-24-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
HFPO-DA	13252-13-6	ND	0.00240	0.00299	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFHpA	375-85-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
ADONA	919005-14-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFHxS	355-46-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFOA	335-67-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFNA	375-95-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFOS	1763-23-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFDA	335-76-2	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
MeFOSAA	2355-31-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
EtFOSAA	2991-50-6	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFUnA	2058-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFDoA	307-55-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFTrDA	72629-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFTeDA	376-06-7	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C3-HFPO-DA	IS	75.4	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFHxA	IS	85.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C4-PFHpA	IS	84.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C3-PFHxS	IS	84.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C5-PFNA	IS	88.2	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFOA	IS	89.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C8-PFOS	IS	97.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFDA	IS	90.4	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
d3-MeFOSAA	IS	91.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFUnA	IS	83.7	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
d5-EtFOSAA	IS	72.8	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFDoA	IS	73.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFTeDA	IS	60.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	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: IS720W02D-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 08:00

Laboratory Data

Lab Sample: 2000356-02
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0264	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFHxA	307-24-4	0.206	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
HFPO-DA	13252-13-6	ND	0.00239	0.00298	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFHpA	375-85-9	0.0855	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
ADONA	919005-14-4	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFHxS	355-46-4	0.0754	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFOA	335-67-1	0.446	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFNA	375-95-1	0.00295	0.00136	0.00198	0.00397	J	B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFOS	1763-23-1	0.0192	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFDA	335-76-2	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
MeFOSAA	2355-31-9	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
EtFOSAA	2991-50-6	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFUnA	2058-94-8	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFDoA	307-55-1	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFTrDA	72629-94-8	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFTeDA	376-06-7	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	87.9	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C3-HFPO-DA	IS	77.1	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFHxA	IS	77.7	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C4-PFHpA	IS	89.1	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C3-PFHxS	IS	88.8	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C5-PFNA	IS	92.9	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFOA	IS	89.5	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C8-PFOS	IS	102	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFDA	IS	82.5	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
d3-MeFOSAA	IS	89.8	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFUnA	IS	75.4	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
d5-EtFOSAA	IS	79.3	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFDoA	IS	69.8	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFTeDA	IS	65.3	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	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: IS720W06D-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 09:00

Laboratory Data

Lab Sample: 2000356-03
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0307	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFHxA	307-24-4	0.191	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
HFPO-DA	13252-13-6	ND	0.00237	0.00295	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFHpA	375-85-9	0.0961	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
ADONA	919005-14-4	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFHxS	355-46-4	0.104	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFOA	335-67-1	0.500	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFNA	375-95-1	0.00175	0.00135	0.00197	0.00394	J, Q	B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFOS	1763-23-1	0.0319	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
9Cl-PF3ONS	756426-58-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFDA	335-76-2	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
MeFOSAA	2355-31-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
EtFOSAA	2991-50-6	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFUnA	2058-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
11Cl-PF3OUdS	763051-92-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFDoA	307-55-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFTrDA	72629-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFTeDA	376-06-7	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	93.4	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C3-HFPO-DA	IS	79.9	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFHxA	IS	82.9	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C4-PFHpA	IS	82.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C3-PFHxS	IS	91.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C5-PFNA	IS	90.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFOA	IS	93.1	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C8-PFOS	IS	99.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFDA	IS	90.5	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
d3-MeFOSAA	IS	107	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFUnA	IS	74.0	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
d5-EtFOSAA	IS	86.4	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFDoA	IS	75.1	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFTeDA	IS	67.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	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: IS720W03D-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 10:00

Laboratory Data

Lab Sample: 2000356-04
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0172	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFHxA	307-24-4	0.151	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
HFPO-DA	13252-13-6	ND	0.00244	0.00304	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFHpA	375-85-9	0.0700	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
ADONA	919005-14-4	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFHxS	355-46-4	0.0561	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFOA	335-67-1	0.540	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFNA	375-95-1	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFOS	1763-23-1	0.0169	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
9Cl-PF3ONS	756426-58-1	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFDA	335-76-2	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
MeFOSAA	2355-31-9	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
EtFOSAA	2991-50-6	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFUnA	2058-94-8	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
11Cl-PF3OUdS	763051-92-9	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFDoA	307-55-1	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFTrDA	72629-94-8	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFTeDA	376-06-7	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	79.4	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C3-HFPO-DA	IS	66.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFHxA	IS	70.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C4-PFHpA	IS	67.2	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C3-PFHxS	IS	79.3	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C5-PFNA	IS	82.9	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFOA	IS	75.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C8-PFOS	IS	79.8	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFDA	IS	81.7	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
d3-MeFOSAA	IS	92.2	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFUnA	IS	72.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
d5-EtFOSAA	IS	70.3	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFDoA	IS	64.5	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFTeDA	IS	64.9	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	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: TW08S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 10:50

Laboratory Data

Lab Sample: 2000356-05
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.106	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFHxA	307-24-4	0.291	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
HFPO-DA	13252-13-6	ND	0.00254	0.00316	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFHpA	375-85-9	0.0852	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
ADONA	919005-14-4	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFHxS	355-46-4	1.32	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFOA	335-67-1	2.23	0.00722	0.0105	0.0211	D	B0B0186	28-Feb-20	0.237 L	05-Mar-20 06:44	5
PFNA	375-95-1	0.00262	0.00144	0.00211	0.00422	J, Q	B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFOS	1763-23-1	0.0397	0.00144	0.00211	0.00422	Q	B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
9Cl-PF3ONS	756426-58-1	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFDA	335-76-2	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
MeFOSAA	2355-31-9	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
EtFOSAA	2991-50-6	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFUnA	2058-94-8	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
11Cl-PF3OUdS	763051-92-9	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFDoA	307-55-1	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFTrDA	72629-94-8	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFTeDA	376-06-7	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	97.4	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C3-HFPO-DA	IS	80.3	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFHxA	IS	85.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C4-PFHpA	IS	86.8	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C3-PFHxS	IS	77.2	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C5-PFNA	IS	88.5	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFOA	IS	86.5	50 - 150	D	B0B0186	28-Feb-20	0.237 L	05-Mar-20 06:44	5
13C8-PFOS	IS	98.0	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFDA	IS	95.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
d3-MeFOSAA	IS	115	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFUnA	IS	78.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
d5-EtFOSAA	IS	87.4	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFDoA	IS	76.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFTeDA	IS	77.1	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	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: TW09S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 11:45

Laboratory Data

Lab Sample: 2000356-06
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.152	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFHxA	307-24-4	0.316	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
HFPO-DA	13252-13-6	ND	0.00238	0.00295	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFHpA	375-85-9	0.0720	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
ADONA	919005-14-4	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFHxS	355-46-4	0.647	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFOA	335-67-1	0.343	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFNA	375-95-1	0.00315	0.00135	0.00197	0.00394	J, Q	B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFOS	1763-23-1	0.114	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
9Cl-PF3ONS	756426-58-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFDA	335-76-2	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
MeFOSAA	2355-31-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
EtFOSAA	2991-50-6	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFUnA	2058-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
11Cl-PF3OUdS	763051-92-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFDoA	307-55-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFTrDA	72629-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFTeDA	376-06-7	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	81.8	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C3-HFPO-DA	IS	70.4	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFHxA	IS	68.9	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C4-PFHpA	IS	73.0	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C3-PFHxS	IS	81.4	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C5-PFNA	IS	77.0	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFOA	IS	65.8	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C8-PFOS	IS	83.3	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFDA	IS	81.3	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
d3-MeFOSAA	IS	71.6	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFUnA	IS	72.4	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
d5-EtFOSAA	IS	65.7	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFDoA	IS	66.1	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFTeDA	IS	61.0	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	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: TW10S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 12:55

Laboratory Data

Lab Sample: 2000356-07
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.105	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFHxA	307-24-4	0.266	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
HFPO-DA	13252-13-6	ND	0.00243	0.00302	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFHpA	375-85-9	0.0945	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
ADONA	919005-14-4	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFHxS	355-46-4	0.537	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFOA	335-67-1	0.819	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFNA	375-95-1	0.00418	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFOS	1763-23-1	0.246	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
9Cl-PF3ONS	756426-58-1	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFDA	335-76-2	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
MeFOSAA	2355-31-9	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
EtFOSAA	2991-50-6	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFUnA	2058-94-8	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
11Cl-PF3OUdS	763051-92-9	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFDoA	307-55-1	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFTrDA	72629-94-8	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFTeDA	376-06-7	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	93.4	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C3-HFPO-DA	IS	82.5	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFHxA	IS	85.6	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C4-PFHpA	IS	88.3	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C3-PFHxS	IS	93.3	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C5-PFNA	IS	92.7	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFOA	IS	91.6	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C8-PFOS	IS	101	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFDA	IS	93.0	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
d3-MeFOSAA	IS	118	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFUnA	IS	89.3	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
d5-EtFOSAA	IS	92.1	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFDoA	IS	73.5	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFTeDA	IS	81.0	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	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: TW11S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 13:25

Laboratory Data

Lab Sample: 2000356-08
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.131	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFHxA	307-24-4	0.401	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
HFPO-DA	13252-13-6	ND	0.00240	0.00299	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFHpA	375-85-9	0.148	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
ADONA	919005-14-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFHxS	355-46-4	0.649	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFOA	335-67-1	0.626	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFNA	375-95-1	0.00840	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFOS	1763-23-1	0.786	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFDA	335-76-2	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
MeFOSAA	2355-31-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
EtFOSAA	2991-50-6	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFUnA	2058-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFDoA	307-55-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFTrDA	72629-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFTeDA	376-06-7	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	95.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C3-HFPO-DA	IS	66.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFHxA	IS	72.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C4-PFHpA	IS	76.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C3-PFHxS	IS	80.9	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C5-PFNA	IS	88.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFOA	IS	85.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C8-PFOS	IS	87.9	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFDA	IS	83.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
d3-MeFOSAA	IS	102	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFUnA	IS	73.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
d5-EtFOSAA	IS	81.7	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFDoA	IS	75.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFTeDA	IS	74.8	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	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: TW13S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 14:10

Laboratory Data

Lab Sample: 2000356-09
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.35	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFHxA	307-24-4	6.19	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
HFPO-DA	13252-13-6	ND	0.00242	0.00301	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFHpA	375-85-9	2.28	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
ADONA	919005-14-4	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFHxS	355-46-4	8.11	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
PFOA	335-67-1	10.5	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
PFNA	375-95-1	0.0775	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFOS	1763-23-1	5.60	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
9Cl-PF3ONS	756426-58-1	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFDA	335-76-2	0.00379	0.00137	0.00201	0.00401	J	B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
MeFOSAA	2355-31-9	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
EtFOSAA	2991-50-6	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFUnA	2058-94-8	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
11Cl-PF3OUdS	763051-92-9	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFDoA	307-55-1	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFTrDA	72629-94-8	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFTeDA	376-06-7	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	81.8	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C3-HFPO-DA	IS	76.1	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFHxA	IS	85.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C4-PFHpA	IS	79.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C3-PFHxS	IS	82.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C5-PFNA	IS	86.0	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFOA	IS	86.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C8-PFOS	IS	80.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C2-PFDA	IS	87.3	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
d3-MeFOSAA	IS	109	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFUnA	IS	86.6	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
d5-EtFOSAA	IS	77.9	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFDoA	IS	71.3	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFTeDA	IS	70.0	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	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: TW12S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 15:10

Laboratory Data

Lab Sample: 2000356-10
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.185	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFHxA	307-24-4	1.21	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
HFPO-DA	13252-13-6	ND	0.00236	0.00294	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFHpA	375-85-9	0.626	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
ADONA	919005-14-4	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFHxS	355-46-4	0.916	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFOA	335-67-1	1.16	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFNA	375-95-1	0.0106	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFOS	1763-23-1	0.640	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
9Cl-PF3ONS	756426-58-1	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFDA	335-76-2	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
MeFOSAA	2355-31-9	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
EtFOSAA	2991-50-6	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFUnA	2058-94-8	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
11Cl-PF3OUdS	763051-92-9	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFDoA	307-55-1	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFTrDA	72629-94-8	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFTeDA	376-06-7	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	80.1	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C3-HFPO-DA	IS	74.8	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFHxA	IS	73.2	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C4-PFHpA	IS	75.7	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C3-PFHxS	IS	74.9	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C5-PFNA	IS	73.9	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFOA	IS	71.6	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C8-PFOS	IS	84.8	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFDA	IS	82.2	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
d3-MeFOSAA	IS	81.0	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFUnA	IS	75.0	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
d5-EtFOSAA	IS	71.9	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFDoA	IS	69.5	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFTeDA	IS	61.4	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	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)
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

2000356 0.3°C

Vista PM: Jade White-Dobbs

CHAIN OF CUSTODY RECORD

DATE: 2/19/2020

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 Rulter	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

Samples potentially contain elevated levels of PFAS.
* extra sample volume provided, high turbidity

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	QC Level	PFAS by LC/MS-MS
	EB 04 - 20200219	2/19/20	7:00	BW	2		X
	IS720W02D - 20200219		8:00	GW	2	IV	X
	IS720W06D - 20200219		9:00		2	IV	X
	IS720W030 - 20200219		10:00		2	IV	X
	TW08S - 20200219		10:50		2	IV	X
	TW09S - 20200219		11:45		2	IV	X
	TW10S - 20200219		12:55		3*	IV	X
	TW11S - 20200219		13:25		3*	IV	X
	TW13S - 20200219		14:10		2	IV	X
	TW12S - 20200219	↓	15:10	↓	3*	IV	X

Relinquished by: (Signature) Uly Rulter	Received by: (Signature) / Carrier Tracking Number FedEx	Date: 2/19/20	Time: 17:00
Relinquished by: (Signature) Fedex	Received by: (Signature) Kinsey Sinclair	Date: 02/20/20	Time: 0904
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2000356 TAT 14 days

Samples Arrival:	Date/Time: 02/20/20 0904	Initials: QS	Location: WR-2 Shelf/Rack: N/A

Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None

Temp °C: 0.3 (uncorrected)	Probe used: Y / (N)	Thermometer ID: IR-4
Temp °C: 0.3 (corrected)		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill — Trk # 8101 0952 1830	✓		
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: 02/20/20 1016	Initials: tl	Location: R-13 / WR-2 Shelf/Rack: A-2 / F-4

COC Anomaly/Sample Acceptance Form completed?		✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2000356

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2000356-01	A EB04-20200219		19-Feb-20 07:00	HDPE Bottle, 250 mL	Aqueous	
2000356-01	B EB04-20200219		19-Feb-20 07:00	HDPE Bottle, 250 mL	Aqueous	
2000356-02	A IS720W02D-20200219		19-Feb-20 08:00	HDPE Bottle, 250 mL	Aqueous	
2000356-02	B IS720W02D-20200219		19-Feb-20 08:00	HDPE Bottle, 250 mL	Aqueous	
2000356-03	A IS720W06D-20200219		19-Feb-20 09:00	HDPE Bottle, 250 mL	Aqueous	
2000356-03	B IS720W06D-20200219		19-Feb-20 09:00	HDPE Bottle, 250 mL	Aqueous	
2000356-04	A IS720W03D-20200219		19-Feb-20 10:00	HDPE Bottle, 250 mL	Aqueous	
2000356-04	B IS720W03D-20200219		19-Feb-20 10:00	HDPE Bottle, 250 mL	Aqueous	
2000356-05	A TW08S-20200219		19-Feb-20 10:50	HDPE Bottle, 250 mL	Aqueous	
2000356-05	B TW08S-20200219		19-Feb-20 10:50	HDPE Bottle, 250 mL	Aqueous	
2000356-06	A TW09S-20200219		19-Feb-20 11:45	HDPE Bottle, 250 mL	Aqueous	
2000356-06	B TW09S-20200219		19-Feb-20 11:45	HDPE Bottle, 250 mL	Aqueous	
2000356-07	A TW10S-20200219		19-Feb-20 12:55	HDPE Bottle, 250 mL	Aqueous	
2000356-07	B TW10S-20200219		19-Feb-20 12:55	HDPE Bottle, 250 mL	Aqueous	
2000356-07	C TW10S-20200219		19-Feb-20 12:55	HDPE Bottle, 250 mL	Aqueous	
2000356-08	A TW11S-20200219		19-Feb-20 13:25	HDPE Bottle, 250 mL	Aqueous	
2000356-08	B TW11S-20200219		19-Feb-20 13:25	HDPE Bottle, 250 mL	Aqueous	
2000356-08	C TW11S-20200219		19-Feb-20 13:25	HDPE Bottle, 250 mL	Aqueous	
2000356-09	A TW13S-20200219		19-Feb-20 14:10	HDPE Bottle, 250 mL	Aqueous	
2000356-09	B TW13S-20200219		19-Feb-20 14:10	HDPE Bottle, 250 mL	Aqueous	
2000356-10	A TW12S-20200219		19-Feb-20 15:10	HDPE Bottle, 250 mL	Aqueous	
2000356-10	B TW12S-20200219		19-Feb-20 15:10	HDPE Bottle, 250 mL	Aqueous	
2000356-10	C TW12S-20200219		19-Feb-20 15:10	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	Comments:
Sample Container Intact?	✓			
Sample Custody Seals Intact?	✗	✓	✓	AP 02/20/20
Adequate Sample Volume?	✓			
Container Type Appropriate for Analysis(es)	✓			
Preservation Documented: Na2S2O3 Trizma None Other				
If Chlorinated or Drinking Water Samples, Acceptable Preservation?		✓	✓	

Verifed by/Date: AP 02/24/20

March 05, 2020

Vista Work Order No. 2000356

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 February 20, 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. 2000356
Case Narrative

Sample Condition on Receipt:

One blank water sample and nine 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 Method

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

Laboratory ID	Sample Name
2000356-02	IS720W02D-20200219
2000356-03	IS720W06D-20200219
2000356-04	IS720W03D-20200219
2000356-05	TW08S-20200219
2000356-06	TW09S-20200219
2000356-07	TW10S-20200219
2000356-08	TW11S-20200219
2000356-09	TW13S-20200219
2000356-10	TW12S-20200219

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

Quality Control

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

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

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

QC Anomalies

LabNumber	SampleName	Analysis	Analyte	Flag	%Rec
B0B0186-BLK1	B0B0186-BLK1	PFAS Isotope Dilution Method	d5-EtFOSAA	H	45.1
B0B0186-BSD1	B0B0186-BSD1	PFAS Isotope Dilution Method	13C2-PFTeDA	H	47.3

H = Recovery was outside laboratory acceptance criteria.

TABLE OF CONTENTS

Case Narrative..... 1

Table of Contents..... 4

Sample Inventory..... 5

Analytical Results..... 6

Qualifiers..... 20

Certifications..... 21

Sample Receipt..... 24

Extraction Information..... 28

Sample Data - PFAS Isotope Dilution Method..... 33

IBs and CCVs..... 144

ICAL with ICV and IB..... 225

Tune Checks..... 640

Standards..... 653

Sample Inventory Report

Vista Sample ID	Client Sample ID	Sampled	Received	Components/Containers
2000356-01	EB04-20200219	19-Feb-20 07:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-02	IS720W02D-20200219	19-Feb-20 08:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-03	IS720W06D-20200219	19-Feb-20 09:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-04	IS720W03D-20200219	19-Feb-20 10:00	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-05	TW08S-20200219	19-Feb-20 10:50	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-06	TW09S-20200219	19-Feb-20 11:45	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-07	TW10S-20200219	19-Feb-20 12:55	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-08	TW11S-20200219	19-Feb-20 13:25	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-09	TW13S-20200219	19-Feb-20 14:10	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
2000356-10	TW12S-20200219	19-Feb-20 15:10	20-Feb-20 10:16	HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL
				HDPE Bottle, 250 mL

ANALYTICAL RESULTS

Sample ID: Method Blank

PFAS Isotope Dilution Method

Client Data

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

Laboratory Data

Lab Sample: B0B0186-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		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFHxA	307-24-4	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
HFPO-DA	13252-13-6	ND	0.00241	0.00300	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFHpA	375-85-9	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
ADONA	919005-14-4	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFHxS	355-46-4	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFOA	335-67-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFNA	375-95-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFOS	1763-23-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
9Cl-PF3ONS	756426-58-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFDA	335-76-2	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
MeFOSAA	2355-31-9	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
EtFOSAA	2991-50-6	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFUnA	2058-94-8	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
11Cl-PF3OUdS	763051-92-9	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFDoA	307-55-1	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFTrDA	72629-94-8	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
PFTeDA	376-06-7	ND	0.00137	0.00200	0.00400		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	84.6	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C3-HFPO-DA	IS	61.4	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFHxA	IS	65.2	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C4-PFHpA	IS	65.1	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C3-PFHxS	IS	79.0	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C5-PFNA	IS	71.9	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFOA	IS	71.3	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C8-PFOS	IS	82.7	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFDA	IS	72.5	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
d3-MeFOSAA	IS	60.7	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFUnA	IS	69.1	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
d5-EtFOSAA	IS	45.1	50 - 150	H	B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFDoA	IS	62.1	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	1
13C2-PFTeDA	IS	55.2	50 - 150		B0B0186	28-Feb-20	0.250 L	03-Mar-20 19:21	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 Method**

Name:	KMEA	Lab Sample:	B0B0186-BS1/B0B0186-BSD1
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0B0186
Matrix:	Aqueous	Samp Size:	0.250/0.250 L
		Date Extracted:	28-Feb-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	0.0395	0.0400	98.7		0.0416	0.0400	104	5.17		72-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFHxA	307-24-4	0.0422	0.0400	106		0.0390	0.0400	97.5	7.84		72-129	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
HFPO-DA	13252-13-6	0.0427	0.0400	107		0.0410	0.0400	103	4.11		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFHpA	375-85-9	0.0386	0.0400	96.5		0.0386	0.0400	96.5	0.000981		72-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
ADONA	919005-14-4	0.0368	0.0400	91.9		0.0405	0.0400	101	9.74		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFHxS	355-46-4	0.0364	0.0400	91.1		0.0360	0.0400	89.9	1.30		68-131	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFOA	335-67-1	0.0374	0.0400	93.4		0.0385	0.0400	96.3	3.06		71-133	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFNA	375-95-1	0.0395	0.0400	98.8		0.0394	0.0400	98.4	0.477		69-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFOS	1763-23-1	0.0361	0.0400	90.2		0.0403	0.0400	101	11.1		65-140	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
9Cl-PF3ONS	756426-58-1	0.0373	0.0400	93.1		0.0385	0.0400	96.2	3.21		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFDA	335-76-2	0.0386	0.0400	96.5		0.0435	0.0400	109	11.8		71-129	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
MeFOSAA	2355-31-9	0.0412	0.0400	103		0.0321	0.0400	80.4	24.7		65-136	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
EtFOSAA	2991-50-6	0.0410	0.0400	102		0.0335	0.0400	83.7	20.1		61-135	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFUnA	2058-94-8	0.0401	0.0400	100		0.0413	0.0400	103	2.95		69-133	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
11Cl-PF3OUdS	763051-92-9	0.0417	0.0400	104		0.0445	0.0400	111	6.47		70-130	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFDoA	307-55-1	0.0406	0.0400	102		0.0393	0.0400	98.1	3.39		72-134	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFTrDA	72629-94-8	0.0320	0.0400	80.0		0.0331	0.0400	82.7	3.23		65-144	30	03-Mar-20 19:32	1	03-Mar-20 19:42	1
PFTeDA	376-06-7	0.0453	0.0400	113		0.0389	0.0400	97.3	15.2		71-132	30	03-Mar-20 19:32	1	03-Mar-20 19:42	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		91.3		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C3-HFPO-DA	IS	71.1		79.4		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFHxA	IS	78.8		83.9		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C4-PFHpA	IS	84.5		83.0		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C3-PFHxS	IS	87.0		91.5		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C5-PFNA	IS	86.9		90.5		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFOA	IS	86.0		93.8		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C8-PFOS	IS	96.3		91.7		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFDA	IS	90.1		77.7		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
d3-MeFOSAA	IS	84.5		88.3		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFUnA	IS	74.1		64.8		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
d5-EtFOSAA	IS	65.1		62.5		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1
13C2-PFDoA	IS	74.9		65.3		50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1

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

Name:	KMEA	Lab Sample:	B0B0186-BS1/B0B0186-BSD1		
Project:	MCAS El Toro and Tustin, PFAS	QC Batch:	B0B0186	Date Extracted:	28-Feb-20
Matrix:	Aqueous	Samp Size:	0.250/0.250 L	Column:	BEH C18

Labeled Standards	Type	LCS % Rec	LCS Quals	LCSD % Rec	LCSD Quals	Limits	LCS Analyzed	LCS Dil	LCSD Analyzed	LCSD Dil
13C2-PFTeDA	IS	55.9		47.3	H	50-150	03-Mar-20 19:32	1	03-Mar-20 19:42	1

Vista Analytical Laboratory

Sample ID: EB04-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Blank Water
Date Collected: 19-Feb-20 07:00

Laboratory Data

Lab Sample: 2000356-01
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFHxA	307-24-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
HFPO-DA	13252-13-6	ND	0.00240	0.00299	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFHpA	375-85-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
ADONA	919005-14-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFHxS	355-46-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFOA	335-67-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFNA	375-95-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFOS	1763-23-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFDA	335-76-2	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
MeFOSAA	2355-31-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
EtFOSAA	2991-50-6	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFUnA	2058-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFDoA	307-55-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFTrDA	72629-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
PFTeDA	376-06-7	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	96.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C3-HFPO-DA	IS	75.4	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFHxA	IS	85.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C4-PFHpA	IS	84.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C3-PFHxS	IS	84.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C5-PFNA	IS	88.2	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFOA	IS	89.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C8-PFOS	IS	97.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFDA	IS	90.4	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
d3-MeFOSAA	IS	91.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFUnA	IS	83.7	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
d5-EtFOSAA	IS	72.8	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFDoA	IS	73.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	1
13C2-PFTeDA	IS	60.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 19:53	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: IS720W02D-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 08:00

Laboratory Data

Lab Sample: 2000356-02
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0264	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFHxA	307-24-4	0.206	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
HFPO-DA	13252-13-6	ND	0.00239	0.00298	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFHpA	375-85-9	0.0855	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
ADONA	919005-14-4	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFHxS	355-46-4	0.0754	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFOA	335-67-1	0.446	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFNA	375-95-1	0.00295	0.00136	0.00198	0.00397	J	B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFOS	1763-23-1	0.0192	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFDA	335-76-2	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
MeFOSAA	2355-31-9	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
EtFOSAA	2991-50-6	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFUnA	2058-94-8	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFDoA	307-55-1	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFTrDA	72629-94-8	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
PFTeDA	376-06-7	ND	0.00136	0.00198	0.00397		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	87.9	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C3-HFPO-DA	IS	77.1	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFHxA	IS	77.7	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C4-PFHpA	IS	89.1	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C3-PFHxS	IS	88.8	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C5-PFNA	IS	92.9	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFOA	IS	89.5	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C8-PFOS	IS	102	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFDA	IS	82.5	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
d3-MeFOSAA	IS	89.8	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFUnA	IS	75.4	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
d5-EtFOSAA	IS	79.3	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFDoA	IS	69.8	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	1
13C2-PFTeDA	IS	65.3	50 - 150		B0B0186	28-Feb-20	0.252 L	03-Mar-20 20:03	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: IS720W06D-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 09:00

Laboratory Data

Lab Sample: 2000356-03
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0307	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFHxA	307-24-4	0.191	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
HFPO-DA	13252-13-6	ND	0.00237	0.00295	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFHpA	375-85-9	0.0961	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
ADONA	919005-14-4	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFHxS	355-46-4	0.104	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFOA	335-67-1	0.500	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFNA	375-95-1	0.00175	0.00135	0.00197	0.00394	J, Q	B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFOS	1763-23-1	0.0319	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
9Cl-PF3ONS	756426-58-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFDA	335-76-2	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
MeFOSAA	2355-31-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
EtFOSAA	2991-50-6	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFUnA	2058-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
11Cl-PF3OUdS	763051-92-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFDoA	307-55-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFTrDA	72629-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
PFTeDA	376-06-7	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	93.4	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C3-HFPO-DA	IS	79.9	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFHxA	IS	82.9	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C4-PFHpA	IS	82.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C3-PFHxS	IS	91.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C5-PFNA	IS	90.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFOA	IS	93.1	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C8-PFOS	IS	99.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFDA	IS	90.5	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
d3-MeFOSAA	IS	107	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFUnA	IS	74.0	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
d5-EtFOSAA	IS	86.4	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFDoA	IS	75.1	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	1
13C2-PFTeDA	IS	67.8	50 - 150		B0B0186	28-Feb-20	0.254 L	03-Mar-20 20:14	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: IS720W03D-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 10:00

Laboratory Data

Lab Sample: 2000356-04
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.0172	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFHxA	307-24-4	0.151	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
HFPO-DA	13252-13-6	ND	0.00244	0.00304	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFHpA	375-85-9	0.0700	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
ADONA	919005-14-4	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFHxS	355-46-4	0.0561	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFOA	335-67-1	0.540	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFNA	375-95-1	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFOS	1763-23-1	0.0169	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
9Cl-PF3ONS	756426-58-1	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFDA	335-76-2	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
MeFOSAA	2355-31-9	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
EtFOSAA	2991-50-6	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFUnA	2058-94-8	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
11Cl-PF3OUdS	763051-92-9	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFDoA	307-55-1	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFTrDA	72629-94-8	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
PFTeDA	376-06-7	ND	0.00139	0.00202	0.00405		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	79.4	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C3-HFPO-DA	IS	66.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFHxA	IS	70.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C4-PFHpA	IS	67.2	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C3-PFHxS	IS	79.3	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C5-PFNA	IS	82.9	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFOA	IS	75.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C8-PFOS	IS	79.8	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFDA	IS	81.7	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
d3-MeFOSAA	IS	92.2	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFUnA	IS	72.1	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
d5-EtFOSAA	IS	70.3	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFDoA	IS	64.5	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	1
13C2-PFTeDA	IS	64.9	50 - 150		B0B0186	28-Feb-20	0.247 L	03-Mar-20 20:24	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: TW08S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 10:50

Laboratory Data

Lab Sample: 2000356-05
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.106	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFHxA	307-24-4	0.291	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
HFPO-DA	13252-13-6	ND	0.00254	0.00316	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFHpA	375-85-9	0.0852	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
ADONA	919005-14-4	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFHxS	355-46-4	1.32	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFOA	335-67-1	2.23	0.00722	0.0105	0.0211	D	B0B0186	28-Feb-20	0.237 L	05-Mar-20 06:44	5
PFNA	375-95-1	0.00262	0.00144	0.00211	0.00422	J, Q	B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFOS	1763-23-1	0.0397	0.00144	0.00211	0.00422	Q	B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
9Cl-PF3ONS	756426-58-1	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFDA	335-76-2	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
MeFOSAA	2355-31-9	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
EtFOSAA	2991-50-6	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFUnA	2058-94-8	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
11Cl-PF3OUdS	763051-92-9	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFDoA	307-55-1	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFTrDA	72629-94-8	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
PFTeDA	376-06-7	ND	0.00144	0.00211	0.00422		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	97.4	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C3-HFPO-DA	IS	80.3	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFHxA	IS	85.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C4-PFHpA	IS	86.8	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C3-PFHxS	IS	77.2	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C5-PFNA	IS	88.5	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFOA	IS	86.5	50 - 150	D	B0B0186	28-Feb-20	0.237 L	05-Mar-20 06:44	5
13C8-PFOS	IS	98.0	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFDA	IS	95.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
d3-MeFOSAA	IS	115	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFUnA	IS	78.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
d5-EtFOSAA	IS	87.4	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFDoA	IS	76.9	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	1
13C2-PFTeDA	IS	77.1	50 - 150		B0B0186	28-Feb-20	0.237 L	03-Mar-20 20:35	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: TW09S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 11:45

Laboratory Data

Lab Sample: 2000356-06
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.152	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFHxA	307-24-4	0.316	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
HFPO-DA	13252-13-6	ND	0.00238	0.00295	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFHpA	375-85-9	0.0720	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
ADONA	919005-14-4	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFHxS	355-46-4	0.647	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFOA	335-67-1	0.343	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFNA	375-95-1	0.00315	0.00135	0.00197	0.00394	J, Q	B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFOS	1763-23-1	0.114	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
9Cl-PF3ONS	756426-58-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFDA	335-76-2	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
MeFOSAA	2355-31-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
EtFOSAA	2991-50-6	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFUnA	2058-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
11Cl-PF3OUdS	763051-92-9	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFDoA	307-55-1	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFTrDA	72629-94-8	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
PFTeDA	376-06-7	ND	0.00135	0.00197	0.00394		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	81.8	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C3-HFPO-DA	IS	70.4	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFHxA	IS	68.9	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C4-PFHpA	IS	73.0	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C3-PFHxS	IS	81.4	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C5-PFNA	IS	77.0	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFOA	IS	65.8	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C8-PFOS	IS	83.3	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFDA	IS	81.3	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
d3-MeFOSAA	IS	71.6	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFUnA	IS	72.4	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
d5-EtFOSAA	IS	65.7	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFDoA	IS	66.1	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	1
13C2-PFTeDA	IS	61.0	50 - 150		B0B0186	28-Feb-20	0.254 L	05-Mar-20 06:12	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: TW10S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 12:55

Laboratory Data

Lab Sample: 2000356-07
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.105	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFHxA	307-24-4	0.266	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
HFPO-DA	13252-13-6	ND	0.00243	0.00302	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFHpA	375-85-9	0.0945	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
ADONA	919005-14-4	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFHxS	355-46-4	0.537	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFOA	335-67-1	0.819	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFNA	375-95-1	0.00418	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFOS	1763-23-1	0.246	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
9Cl-PF3ONS	756426-58-1	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFDA	335-76-2	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
MeFOSAA	2355-31-9	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
EtFOSAA	2991-50-6	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFUnA	2058-94-8	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
11Cl-PF3OUdS	763051-92-9	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFDoA	307-55-1	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFTrDA	72629-94-8	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
PFTeDA	376-06-7	ND	0.00138	0.00202	0.00404		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	93.4	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C3-HFPO-DA	IS	82.5	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFHxA	IS	85.6	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C4-PFHpA	IS	88.3	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C3-PFHxS	IS	93.3	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C5-PFNA	IS	92.7	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFOA	IS	91.6	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C8-PFOS	IS	101	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFDA	IS	93.0	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
d3-MeFOSAA	IS	118	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFUnA	IS	89.3	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
d5-EtFOSAA	IS	92.1	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFDoA	IS	73.5	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	1
13C2-PFTeDA	IS	81.0	50 - 150		B0B0186	28-Feb-20	0.248 L	03-Mar-20 20:56	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: TW11S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 13:25

Laboratory Data

Lab Sample: 2000356-08
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.131	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFHxA	307-24-4	0.401	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
HFPO-DA	13252-13-6	ND	0.00240	0.00299	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFHpA	375-85-9	0.148	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
ADONA	919005-14-4	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFHxS	355-46-4	0.649	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFOA	335-67-1	0.626	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFNA	375-95-1	0.00840	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFOS	1763-23-1	0.786	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
9Cl-PF3ONS	756426-58-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFDA	335-76-2	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
MeFOSAA	2355-31-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
EtFOSAA	2991-50-6	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFUnA	2058-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
11Cl-PF3OUdS	763051-92-9	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFDoA	307-55-1	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFTrDA	72629-94-8	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
PFTeDA	376-06-7	ND	0.00136	0.00199	0.00398		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	95.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C3-HFPO-DA	IS	66.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFHxA	IS	72.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C4-PFHpA	IS	76.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C3-PFHxS	IS	80.9	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C5-PFNA	IS	88.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFOA	IS	85.6	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C8-PFOS	IS	87.9	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFDA	IS	83.5	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
d3-MeFOSAA	IS	102	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFUnA	IS	73.3	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
d5-EtFOSAA	IS	81.7	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFDoA	IS	75.0	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	1
13C2-PFTeDA	IS	74.8	50 - 150		B0B0186	28-Feb-20	0.251 L	03-Mar-20 21:06	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: TW13S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 14:10

Laboratory Data

Lab Sample: 2000356-09
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	1.35	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFHxA	307-24-4	6.19	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
HFPO-DA	13252-13-6	ND	0.00242	0.00301	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFHpA	375-85-9	2.28	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
ADONA	919005-14-4	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFHxS	355-46-4	8.11	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
PFOA	335-67-1	10.5	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
PFNA	375-95-1	0.0775	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFOS	1763-23-1	5.60	0.0137	0.0201	0.0401	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
9Cl-PF3ONS	756426-58-1	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFDA	335-76-2	0.00379	0.00137	0.00201	0.00401	J	B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
MeFOSAA	2355-31-9	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
EtFOSAA	2991-50-6	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFUnA	2058-94-8	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
11Cl-PF3OUdS	763051-92-9	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFDoA	307-55-1	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFTrDA	72629-94-8	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
PFTeDA	376-06-7	ND	0.00137	0.00201	0.00401		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	81.8	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C3-HFPO-DA	IS	76.1	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFHxA	IS	85.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C4-PFHpA	IS	79.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C3-PFHxS	IS	82.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C5-PFNA	IS	86.0	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFOA	IS	86.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C8-PFOS	IS	80.0	50 - 150	D	B0B0186	28-Feb-20	0.249 L	05-Mar-20 06:54	10
13C2-PFDA	IS	87.3	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
d3-MeFOSAA	IS	109	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFUnA	IS	86.6	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
d5-EtFOSAA	IS	77.9	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFDoA	IS	71.3	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	1
13C2-PFTeDA	IS	70.0	50 - 150		B0B0186	28-Feb-20	0.249 L	03-Mar-20 21:17	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: TW12S-20200219

PFAS Isotope Dilution Method

Client Data

Name: KMEA
Project: MCAS El Toro and Tustin, PFAS
Matrix: Groundwater
Date Collected: 19-Feb-20 15:10

Laboratory Data

Lab Sample: 2000356-10
Date Received: 20-Feb-20 10:16
Column: BEH C18

Analyte	CAS Number	Conc. (ug/L)	DL	LOD	LOQ	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
PFBS	375-73-5	0.185	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFHxA	307-24-4	1.21	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
HFPO-DA	13252-13-6	ND	0.00236	0.00294	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFHpA	375-85-9	0.626	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
ADONA	919005-14-4	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFHxS	355-46-4	0.916	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFOA	335-67-1	1.16	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFNA	375-95-1	0.0106	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFOS	1763-23-1	0.640	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
9Cl-PF3ONS	756426-58-1	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFDA	335-76-2	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
MeFOSAA	2355-31-9	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
EtFOSAA	2991-50-6	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFUnA	2058-94-8	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
11Cl-PF3OUdS	763051-92-9	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFDoA	307-55-1	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFTrDA	72629-94-8	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
PFTeDA	376-06-7	ND	0.00134	0.00196	0.00392		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1

Labeled Standards	Type	% Recovery	Limits	Qualifiers	Batch	Extracted	Samp Size	Analyzed	Dilution
13C3-PFBS	IS	80.1	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C3-HFPO-DA	IS	74.8	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFHxA	IS	73.2	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C4-PFHpA	IS	75.7	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C3-PFHxS	IS	74.9	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C5-PFNA	IS	73.9	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFOA	IS	71.6	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C8-PFOS	IS	84.8	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFDA	IS	82.2	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
d3-MeFOSAA	IS	81.0	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFUnA	IS	75.0	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
d5-EtFOSAA	IS	71.9	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFDoA	IS	69.5	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	1
13C2-PFTeDA	IS	61.4	50 - 150		B0B0186	28-Feb-20	0.255 L	05-Mar-20 06:23	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)
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

2000356 0.3°C

Vista PM: Jade White-Dobbs

CHAIN OF CUSTODY RECORD

DATE: 2/19/2020

PAGE: 1 OF 1

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

Samples potentially contain elevated levels of PFAS.
* extra sample volume provided, high turbidity

REQUESTED ANALYSIS

LAB USE ONLY	SAMPLE ID	SAMPLING DATE	SAMPLING TIME	Matrix	#Cont	QC Level	PFAS by LC/MS-MS
	EB 04 - 20200219	2/19/20	7:00	BW	2		X
	IS720W02D - 20200219		8:00	GW	2	IV	X
	IS720W06D - 20200219		9:00		2	IV	X
	IS720W030 - 20200219		10:00		2	IV	X
	TW08S - 20200219		10:50		2	IV	X
	TW09S - 20200219		11:45		2	IV	X
	TW10S - 20200219		12:55		3*	IV	X
	TW11S - 20200219		13:25		3*	IV	X
	TW13S - 20200219		14:10		2	IV	X
	TW12S - 20200219		15:10		3*	IV	X

Relinquished by: (Signature) Ulf Rulter	Received by: (Signature) / Carrier Tracking Number FedEx	Date: 2/19/20	Time: 17:00
Relinquished by: (Signature) Fedex	Received by: (Signature) Kinsey Sinclair	Date: 02/20/20	Time: 0904
Relinquished by: (Signature)	Received by: (Signature)	Date:	Time:

Vista Analytical Laboratory

Sample Log-In Checklist

Page # 1 of 1

Vista Work Order #: 2000356 TAT 14 days

Samples Arrival:	**Date/Time** 02/20/20 0904		**Initials:** AS		**Location:** WR-2 **Shelf/Rack:** N/A		
Delivered By:	(FedEx)	UPS	On Trac	GLS	DHL	Hand Delivered	Other
Preservation:	(Ice)		Blue Ice		Dry Ice		None
Temp °C: 0.3 (uncorrected) **Temp °C:** 0.3 (corrected)			**Probe used: Y / (N)**		**Thermometer ID:** IR-4		

	YES	NO	NA
Shipping Container(s) Intact?	✓		
Shipping Custody Seals Intact?	✓		
Airbill — Trk # 8101 0952 1830	✓		
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** 02/20/20 1016	**Initials:** tl	**Location:** R-13 / WR-2 **Shelf/Rack:** A-2 / F-4	
COC Anomaly/Sample Acceptance Form completed?			✓	✓

Comments:

CoC/Label Reconciliation Report WO# 2000356

LabNumber	CoC Sample ID	SampleAlias	Sample Date/Time	Container	BaseMatrix	Sample Comments
2000356-01	A EB04-20200219		19-Feb-20 07:00	HDPE Bottle, 250 mL	Aqueous	
2000356-01	B EB04-20200219		19-Feb-20 07:00	HDPE Bottle, 250 mL	Aqueous	
2000356-02	A IS720W02D-20200219		19-Feb-20 08:00	HDPE Bottle, 250 mL	Aqueous	
2000356-02	B IS720W02D-20200219		19-Feb-20 08:00	HDPE Bottle, 250 mL	Aqueous	
2000356-03	A IS720W06D-20200219		19-Feb-20 09:00	HDPE Bottle, 250 mL	Aqueous	
2000356-03	B IS720W06D-20200219		19-Feb-20 09:00	HDPE Bottle, 250 mL	Aqueous	
2000356-04	A IS720W03D-20200219		19-Feb-20 10:00	HDPE Bottle, 250 mL	Aqueous	
2000356-04	B IS720W03D-20200219		19-Feb-20 10:00	HDPE Bottle, 250 mL	Aqueous	
2000356-05	A TW08S-20200219		19-Feb-20 10:50	HDPE Bottle, 250 mL	Aqueous	
2000356-05	B TW08S-20200219		19-Feb-20 10:50	HDPE Bottle, 250 mL	Aqueous	
2000356-06	A TW09S-20200219		19-Feb-20 11:45	HDPE Bottle, 250 mL	Aqueous	
2000356-06	B TW09S-20200219		19-Feb-20 11:45	HDPE Bottle, 250 mL	Aqueous	
2000356-07	A TW10S-20200219		19-Feb-20 12:55	HDPE Bottle, 250 mL	Aqueous	
2000356-07	B TW10S-20200219		19-Feb-20 12:55	HDPE Bottle, 250 mL	Aqueous	
2000356-07	C TW10S-20200219		19-Feb-20 12:55	HDPE Bottle, 250 mL	Aqueous	
2000356-08	A TW11S-20200219		19-Feb-20 13:25	HDPE Bottle, 250 mL	Aqueous	
2000356-08	B TW11S-20200219		19-Feb-20 13:25	HDPE Bottle, 250 mL	Aqueous	
2000356-08	C TW11S-20200219		19-Feb-20 13:25	HDPE Bottle, 250 mL	Aqueous	
2000356-09	A TW13S-20200219		19-Feb-20 14:10	HDPE Bottle, 250 mL	Aqueous	
2000356-09	B TW13S-20200219		19-Feb-20 14:10	HDPE Bottle, 250 mL	Aqueous	
2000356-10	A TW12S-20200219		19-Feb-20 15:10	HDPE Bottle, 250 mL	Aqueous	
2000356-10	B TW12S-20200219		19-Feb-20 15:10	HDPE Bottle, 250 mL	Aqueous	
2000356-10	C TW12S-20200219		19-Feb-20 15:10	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	Comments:
Sample Container Intact?	✓			
Sample Custody Seals Intact?	✗	✓	✓	AP 02/20/20
Adequate Sample Volume?	✓			
Container Type Appropriate for Analysis(es)	✓			
Preservation Documented: Na2S2O3 Trizma None Other				
If Chlorinated or Drinking Water Samples, Acceptable Preservation?		✓	✓	

Verifed by/Date: AP 02/24/20

EXTRACTION INFORMATION

PRIORITY

Process Sheet

Workorder: 2000356

Prep Expiration: 2020-03-04

Client: KMEA

Workorder Due: 05-Mar-20 00:00

TAT: 14

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

Matrix: **Aqueous**

Prep Batch: BOBQ186

Prep Data Entered: DNL 03/02/20 (Date and Initials)

Version: 537.1 List of 18

DoD: DoD QSM 5.3

Initial Sequence: SQCQQ10

LabSampID	A/B	Prep Rec	Spike Rec	ClientSampleID	Comments	Location	Container
2000356-01	A	☑	☑	EB04-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-02		☑	☑	IS720W02D-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-03		☑	☑	IS720W06D-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-04		☑	☐	IS720W03D-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-05		☑	☑	TW08S-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-06		☑	☑	TW09S-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-07		☑	☑	TW10S-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-08		☑	☑	TW11S-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-09		☑	☑	TW13S-20200219		R-13 A-2	HDPE Bottle, 250 mL
2000356-10		☑	☑	TW12S-20200219		R-13 A-2	HDPE Bottle, 250 mL

Potentially elevated levels - isolate samples.
Instrument - begin w/ dils.
(N) 02/20/20

Pre-Prep Check Out: CHT 02/24/20

Pre-Prep Check In: CHT 02/24/20

Prep Check Out: N 02/28/20

Prep Check In: NA

Prep Reconciled Initals/Date: CHT 02/24/20

Spike Reconciled Initals/Date: N 02/28/20

VialBoxID: HOLD

Matrix: Aqueous

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

Vista Internal Chain-of-Custody

B0B0186

Vista Analytical Laboratory

	Location		L2	R13	L1	R12	L2	R12	L4	L4	
	Reason		Prep	R9	R4	R9	R6	R9	~~VJ~~ R8	R8	
	Initials		CHT	CHT	MC	MC	ME	HP	(A) VJ	VJ	
	Date/Time		02/24/20 0845	02/24/20 0814	02/28/20 0653	02/28/20 1348	03/02/2020 07:04	03/02/20 14:38	03/04/20 11:24	03/04/20 15:49	
Initial Storage	LabNumber	Cont									
R-13 A-2	2000356-01	A	O	O	O	E	E	E			
R-13 A-2	2000356-02										
R-13 A-2	2000356-03										
R-13 A-2	2000356-04										
R-13 A-2	2000356-05										
R-13 A-2	2000356-06										
R-13 A-2	2000356-07										
R-13 A-2	2000356-08										
R-13 A-2	2000356-09										
R-13 A-2	2000356-10										

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

(A) Analyzed on 03/03/20, but time wasn't ~~reported~~ recorded. VJ 03/04/20

Matrix: Aqueous

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

PREPARATION BENCH SHEET

B0B0186

Chemist: N

Prep Date: 02/28/20

Prep Time: 7:04

Hood#:

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

Rec Date/Initals: HP 02/02/20

Date/Initals: 02/24/20 CHT

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	RS CHEM/WIT DATE
☑	B0B0186-BLK1	☑	☑	5	0	NA	NA	(0.250)	N HP 02/28/20	N 02/28/20	N 02/28/20	N LW 02/28/20
☑	B0B0186-BS1 (A)	☑	☑	5	0	↓	↓	(0.250)	↓	↓	↓	↓
☑	B0B0186-BSD1	☑	☑	5	0	↓	↓	(0.250)	↓	↓	↓	↓
☐	2000356-01	☑	☑	5	0	277.15	25.77	0.25138	↓	↓	↓	↓
☑	2000356-02	☑	☑	6	0	277.84	25.92	0.25192	↓	↓	↓	↓
☑	2000356-03	☑	☑	6	0	279.77	25.666	0.25411	↓	↓	↓	↓
☑	2000356-04	☑	☑	6	0	272.80	25.96	0.24684	↓	↓	↓	↓
☑	2000356-05 (9)	☑	☑	6	0	262.59	25.56	0.23703	↓	↓	↓	↓
☑	2000356-06	☑	☑	6	0	279.73	26.14	0.25359	↓	↓	↓	↓
☑	2000356-07	☑	☑	6	0	273.60	25.94	0.24766	↓	↓	↓	↓
☑	2000356-08	☑	☑	6	0	277.27	26.25	0.25102	↓	↓	↓	↓
☑	2000356-09	☑	☑	6	0	275.18	25.95	0.24923	↓	↓	↓	↓
☑	2000356-10	☑	☑	6	0	281.18	25.76	0.25542	↓	↓	↓	↓

IS: 20A0801, 10 mL (N15)

IS SUP: NA

NS: 20A0803, 10 mL (N7)

NS SUP: NA

RS: 20A0804, 10 mL (N15)

SPE Chem: Strata X(AW 100 µm, 200 mg/6mL

SPE Lot#: S18-00686S

ENVI-Carb Lot#: B000391

Ele SOLV: MeOH/0.5%NH4OH in MeOH

Final Volume(s) 1 mL

Notes:
(A) <1mL of sample overflowed when added to centrifuge tube

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: B0B0186

Matrix: Aqueous

LabNumber	WetWeight (Initial)	% Solids (Extraction Solids)	DryWeight	Final	Extracted	Ext By	Spike	SpikeAmount	ClientMatrix	Analysis
2000356-01	0.25138	NA	NA	1000	28-Feb-20 07:04	JJC			Blank Water	537M PFAS DOD QSM 5.3
2000356-02	0.25192			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-03	0.25411			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-04	0.24684			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-05	0.23703			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-06	0.25359			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-07	0.24766			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-08	0.25102			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-09	0.24923			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
2000356-10	0.25542			1000	28-Feb-20 07:04	JJC			Groundwater	537M PFAS DOD QSM 5.3
B0B0186-BLK1	0.25			1000	28-Feb-20 07:04	JJC				QC
B0B0186-BS1	0.25			1000	28-Feb-20 07:04	JJC	20A0803	10		QC
B0B0186-BSD1	0.25			1000	28-Feb-20 07:04	JJC	20A0803	10		QC

All bolded data on report verified against written benchsheet by (initial/date) ONL 03/02/20

Printed: 3/2/2020 7:59:42AM
Page 1 of 1

Sample Data – PFAS Isotope Dilution Method

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-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 > 79.7		7.27e2	0.250		2.56						YES
2	7	PFHxA	313.0 > 269.0		8.65e3	0.250		3.07						YES
3	9	HFPO-DA	285.1 > 168.9		2.12e3	0.250		3.29						YES
4	11	PFHpA	363.0 > 318.9		4.90e3	0.250		3.67						YES
5	12	ADONA	376.8 > 250.9		4.90e3	0.250		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	7.27e2		0.250	68.744	2.62	2.56	727	42.2908	84.6		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	8.65e3		0.250	1061.420	3.07	3.07	8650	32.6092	65.2		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.12e3		0.250	276.115	3.35	3.29	2120	30.6933	61.4		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	4.90e3		0.250	602.105	3.69	3.67	4900	32.5250	65.1		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	4.90e3		0.250	602.105	3.69	3.67	4900	32.5250	65.1		
11	-1													
12	13	L-PFHxS	398.9 > 79.7		1.71e3	0.250		3.82						YES
13	1...	Total PFHxS	398.9 > 79.7	0.00e0	1.71e3	0.250		3.93		0.000				
14	16	L-PFOA	412.8 > 368.9		7.24e3	0.250		4.18						YES
15	1...	Total PFOA	412.8 > 368.9	0.00e0	7.24e3	0.250		4.60		0.000				
16	21	PFNA	463.0 > 418.8		6.43e3	0.250		4.62						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.71e3		0.250	173.666	3.82	3.82	1710	39.4837	79.0		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.71e3		0.250	173.666	3.82	3.82	1710	39.4837	79.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	7.24e3		0.250	812.468	4.18	4.18	7240	35.6449	71.3		
20	69	13C2-PFOA-EIS	414.9 > 369.7	7.24e3		0.250	812.468	4.18	4.18	7240	35.6449	71.3		
21	65	13C5-PFNA-EIS	468.2 > 422.9	6.43e3		0.250	715.290	4.62	4.62	6430	35.9655	71.9		
22	-1													
23	23	L-PFOS	498.9 > 79.7		1.77e3	0.250		4.71						YES
24	1...	Total PFOS	498.9 > 79.7	0.00e0	1.77e3	0.250		5.13		0.000				
25	25	9Cl-PF30NS	530.7 > 350.8		1.77e3	0.250		4.91						YES
26	26	PFDA	513 > 468.8		7.41e3	0.250		5.00						YES
27	33	PFUdA	563.0 > 518.9		9.24e3	0.250		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	1.77e3		0.250	170.914	4.71	4.71	1770	41.3473	82.7		
29	71	13C8-PFOS-EIS	507.0 > 79.7	1.77e3		0.250	170.914	4.71	4.71	1770	41.3473	82.7		
30	71	13C8-PFOS-EIS	507.0 > 79.7	1.77e3		0.250	170.914	4.71	4.71	1770	41.3473	82.7		
31	73	13C2-PFDA-EIS	515.1 > 469.9	7.41e3		0.250	817.432	4.99	5.00	7410	36.2518	72.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	9.24e3		0.250	1068.765	5.32	5.32	9240	34.5693	69.1		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.10e3	0.250		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.10e3	0.250		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		1.50e3	0.250		5.30						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-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	584.1 > 419	0.00e0	1.50e3	0.250		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		8.46e3	0.250		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.10e3		0.250	144.472	5.14	5.15	1100	30.3291	60.7		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.10e3		0.250	144.472	5.14	5.15	1100	30.3291	60.7		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	1.50e3		0.250	265.746	5.29	5.30	1500	22.5487	45.1		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	1.50e3		0.250	265.746	5.29	5.30	1500	22.5487	45.1		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	8.46e3		0.250	1089.820	5.58	5.60	8460	31.0411	62.1		
44	-1													
45	37	PFDoA	612.9 > 569.0		8.46e3	0.250		5.60						YES
46	39	PFTrDA	662.9 > 618.9		8.46e3	0.250		5.85						YES
47	41	PFTeDA	713.0 > 669.0		5.65e3	0.250		6.05						YES
48	1...	TDCA	498.3>106.9			0.250		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	5.13e3	5.13e3	0.250	1.000	1.34	1.34	12.5	50.0000	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	8.46e3		0.250	1089.820	5.58	5.60	8460	31.0411	62.1		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	8.46e3		0.250	1089.820	5.58	5.60	8460	31.0411	62.1		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	5.65e3		0.250	818.597	6.01	6.05	5650	27.6173	55.2		
53	71	13C8-PFOS-EIS	507.0 > 79.7	1.77e3		0.250	170.914	4.71	4.71	1770	41.3473	82.7		
54	1...	13C5-PFHxA	318.0 > 272.9	8.25e3	8.25e3	0.250	1.000	3.06	3.07	12.5	50.0000	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.30e2	7.30e2	0.250	1.000	3.81	3.82	12.5	50.0000	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	8.92e3	8.92e3	0.250	1.000	4.17	4.18	12.5	50.0000	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	8.25e3	8.25e3	0.250	1.000	4.99	4.99	12.5	50.0000	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.07e4	1.07e4	0.250	1.000	5.31	5.32	12.5	50.0000	100.0		
60	1...	13C4-PFOS	503 > 79.7	1.88e3	1.88e3	0.250	1.000	4.70	4.71	12.5	50.0000	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	6.94e3	6.94e3	0.250	1.000	4.62	4.62	12.5	50.0000	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

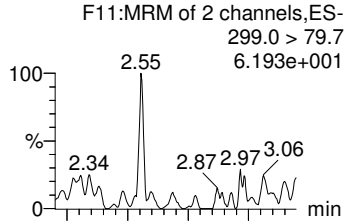
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

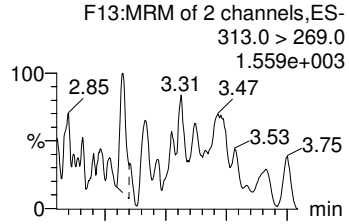
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-BLK1 Method Blank 0.25, Description: Method Blank

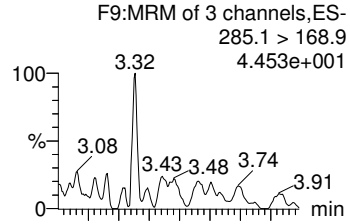
PFBS



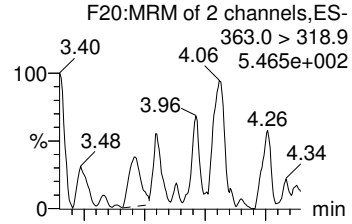
PFHxA



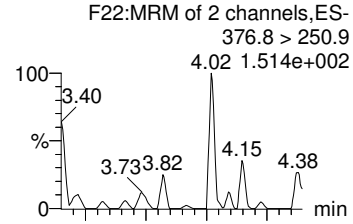
HFPO-DA



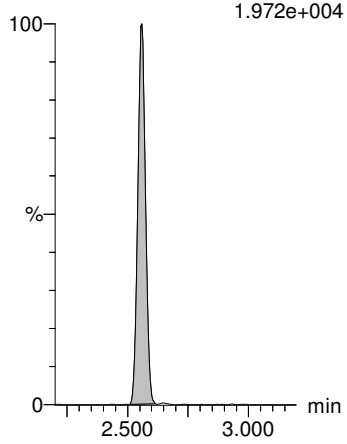
PFHpA



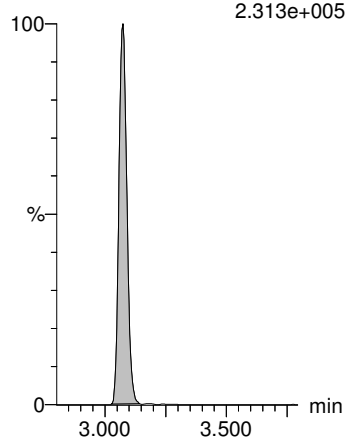
ADONA



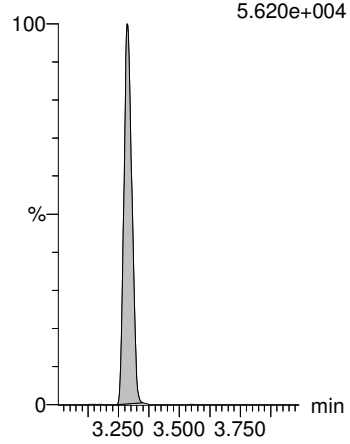
13C3-PFBS-EIS



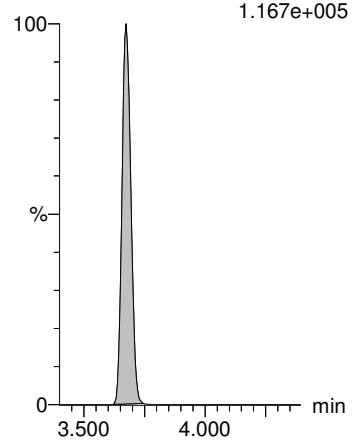
13C2-PFHxA-EIS



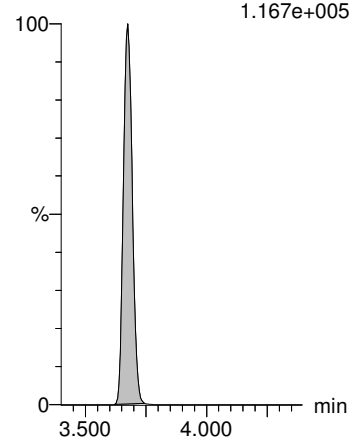
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

Vista Analytical Laboratory L18

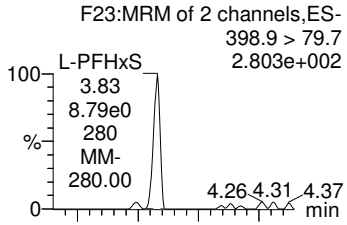
Review: AMR 3/5/2020

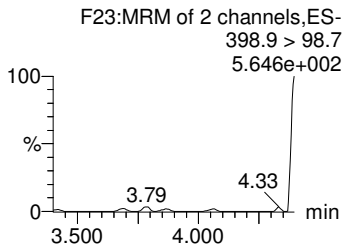
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

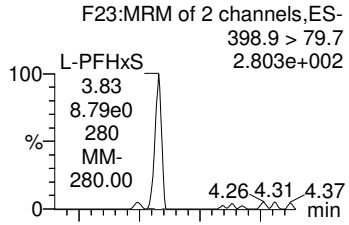
Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-BLK1 Method Blank 0.25, Description: Method Blank

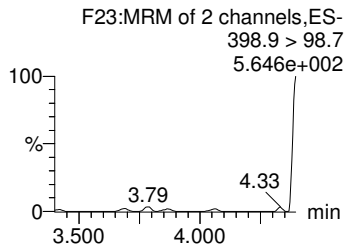
L-PFHxS



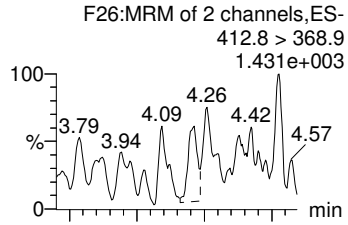


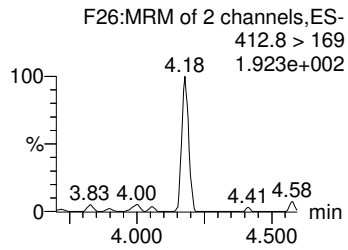
Total PFHxS



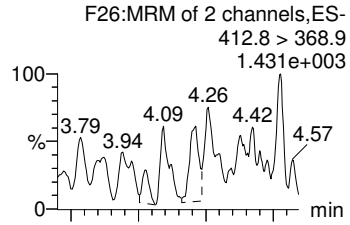


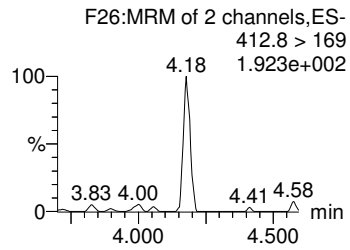
L-PFOA



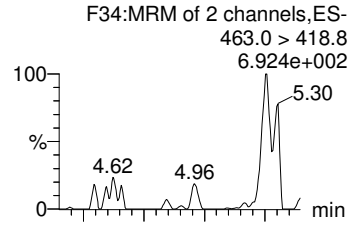


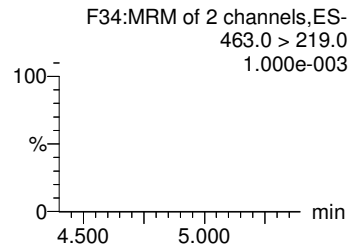
Total PFOA



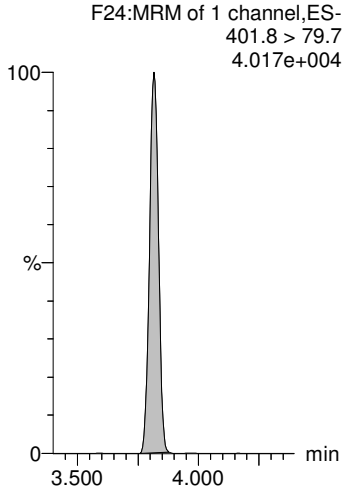


PFNA

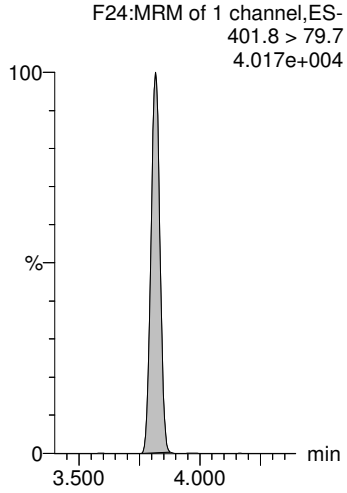




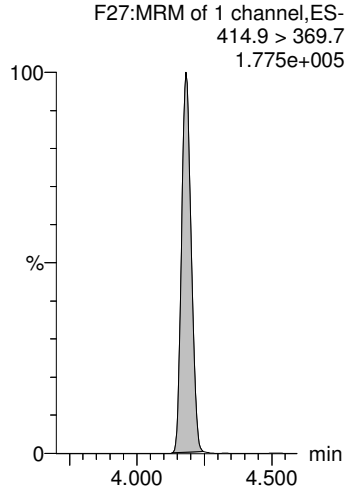
13C3-PFHxS-EIS



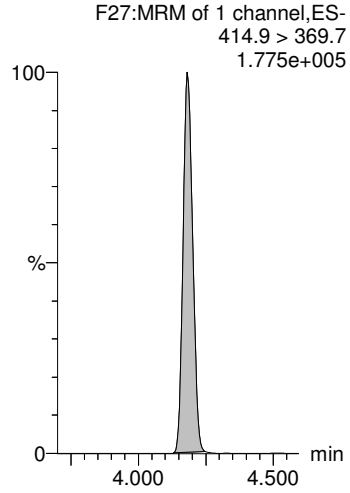
13C3-PFHxS-EIS



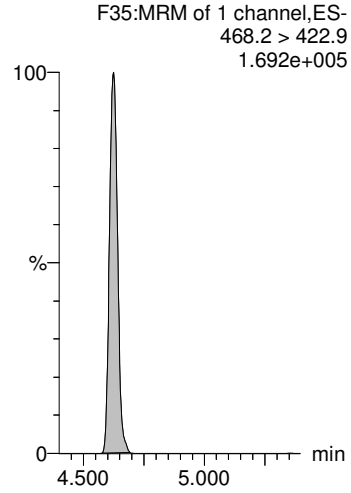
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

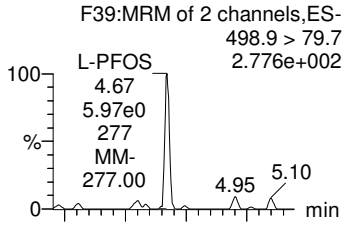
Review: AMR 3/5/2020

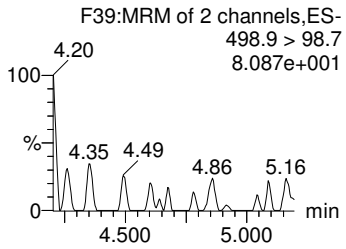
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

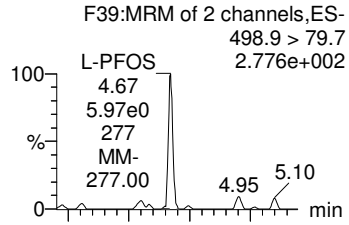
Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-BLK1 Method Blank 0.25, Description: Method Blank

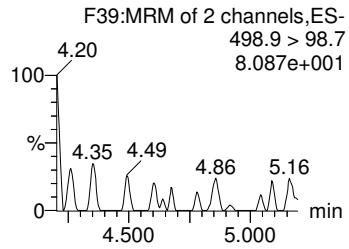
L-PFOS



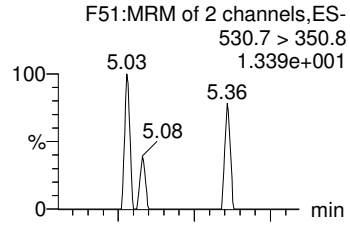


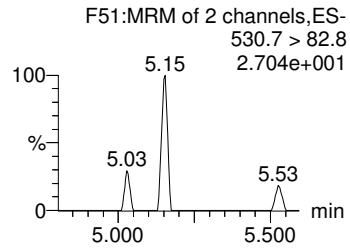
Total PFOS



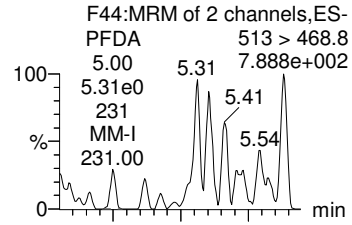


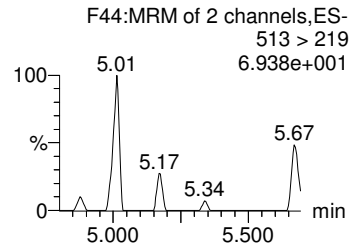
9Cl-PF30NS



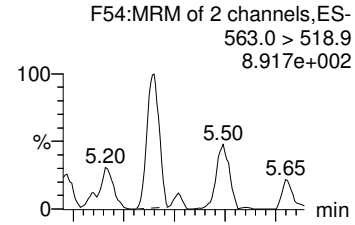


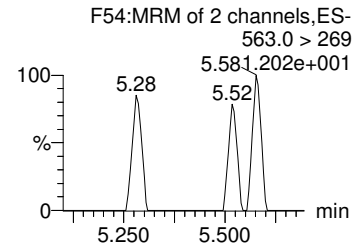
PFDA



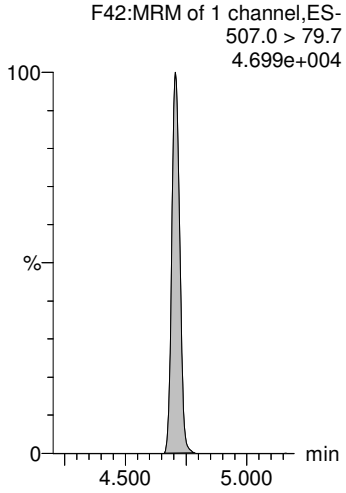


PFUdA

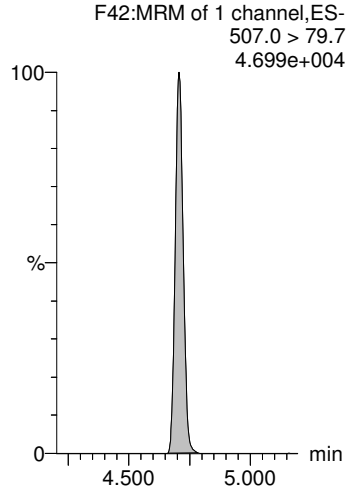




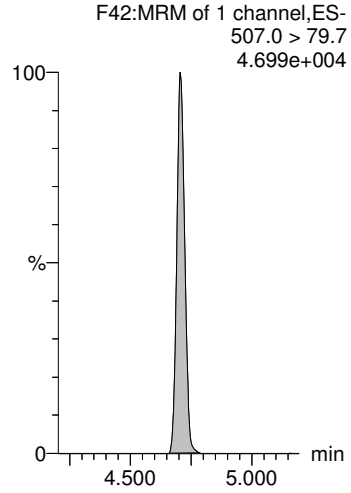
13C8-PFOS-EIS



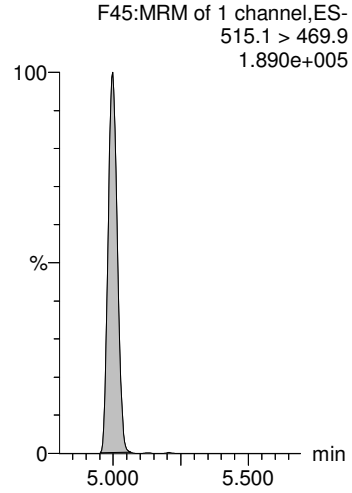
13C8-PFOS-EIS



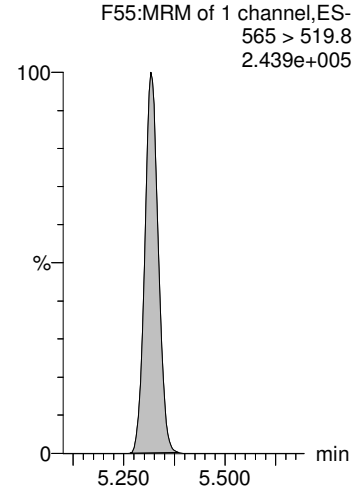
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

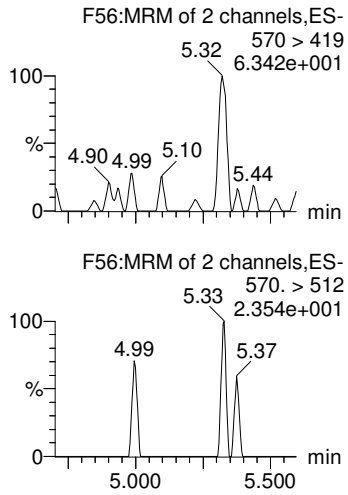
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

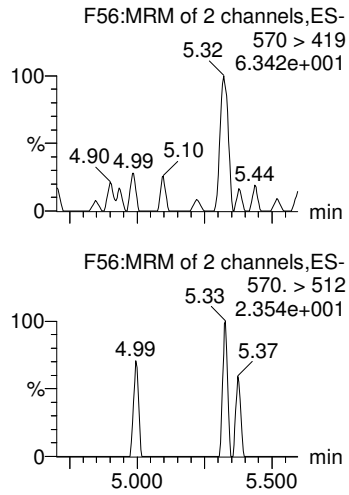
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-BLK1 Method Blank 0.25, Description: Method Blank

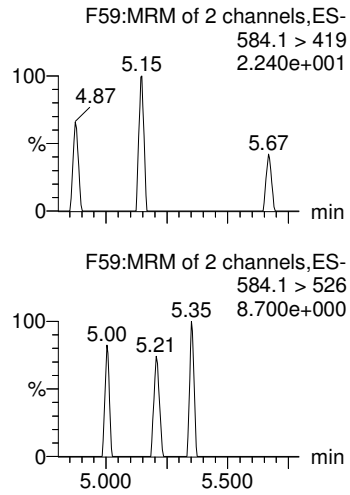
L-MeFOSAA



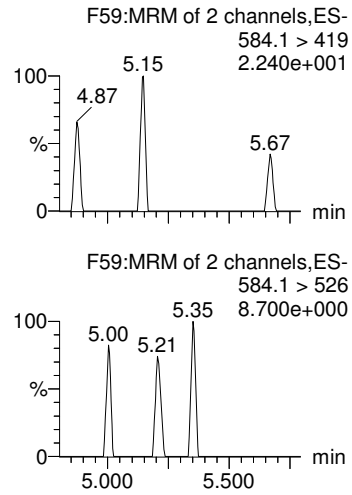
Total N-MeFOSAA



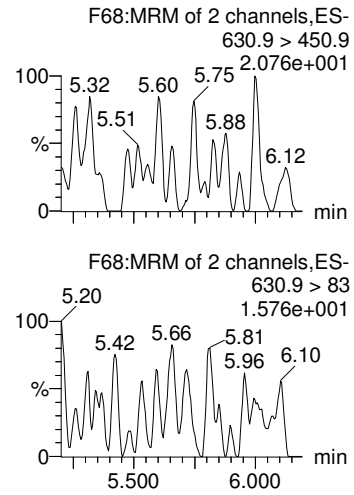
L-EtFOSAA



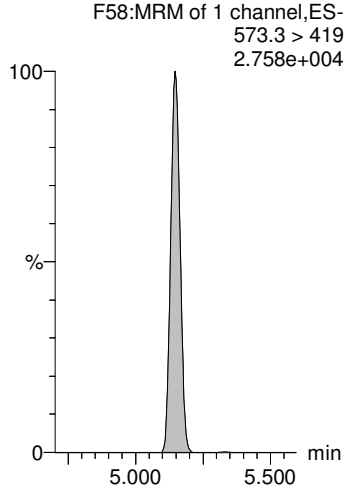
Total N-EtFOSAA



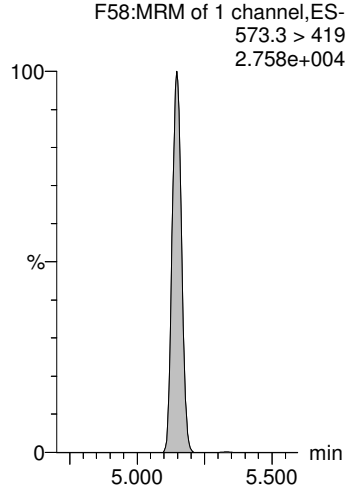
11Cl-PF30UdS



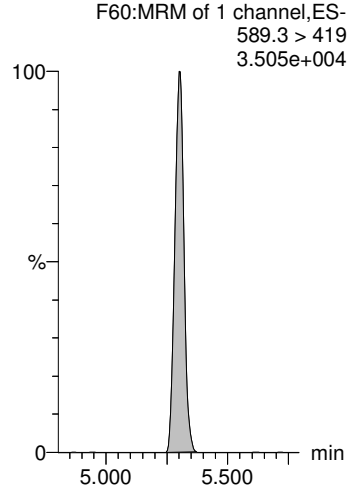
d3-N-MeFOSAA-EIS



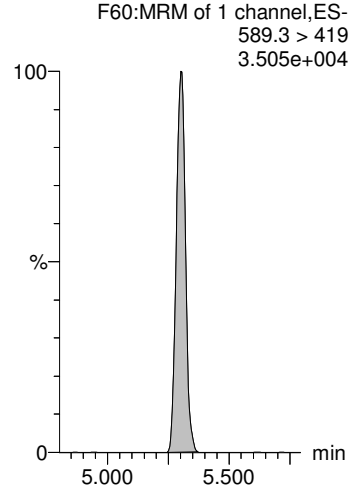
d3-N-MeFOSAA-EIS



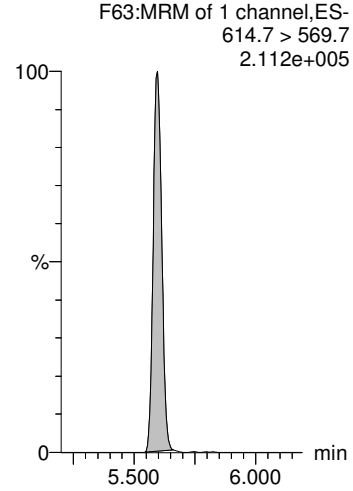
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

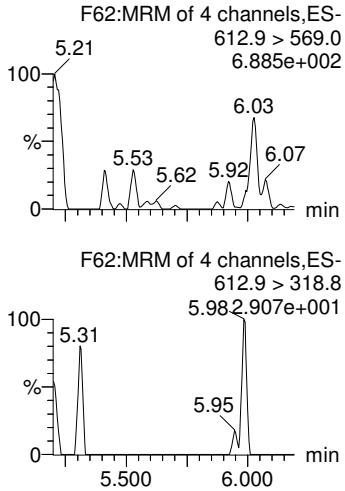
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

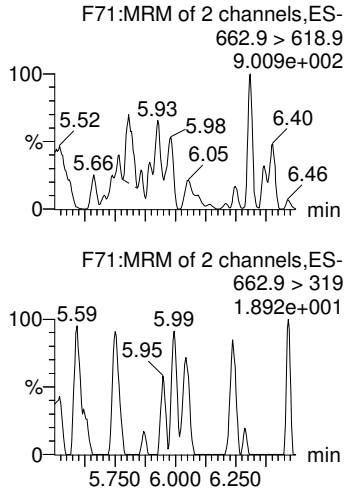
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-BLK1 Method Blank 0.25, Description: Method Blank

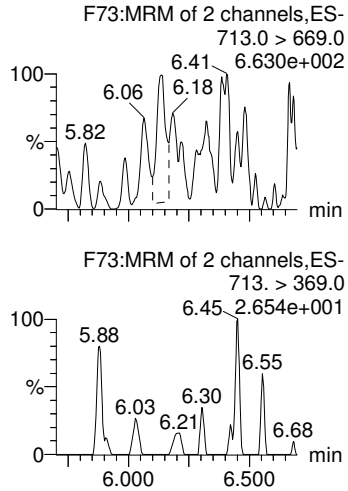
PFDoA



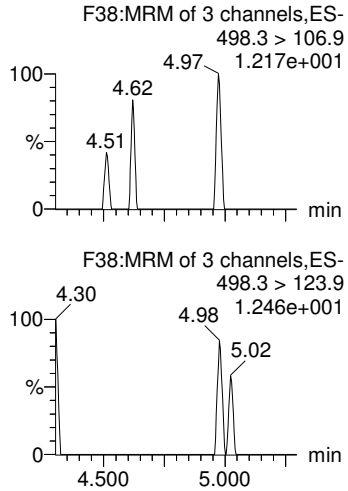
PFTrDA



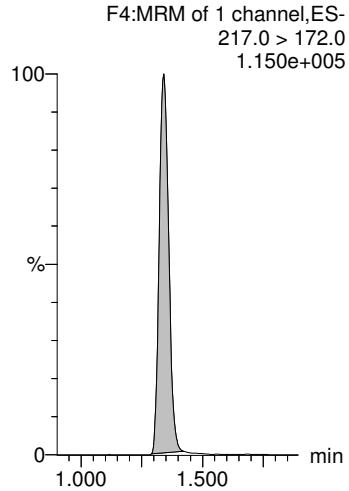
PFTeDA



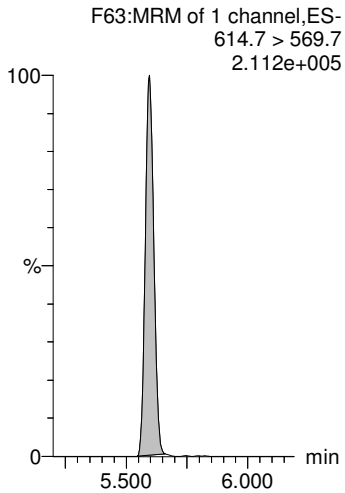
TDCA



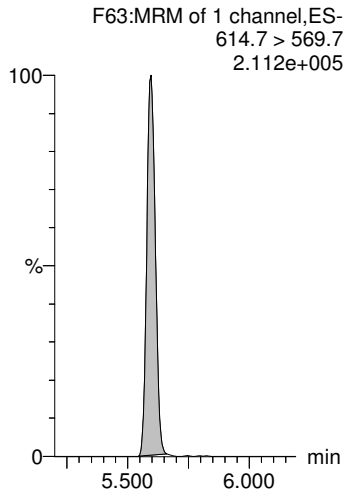
13C4-PFBA



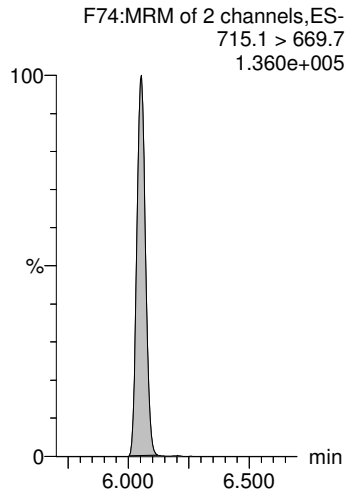
13C2-PFDoA-EIS



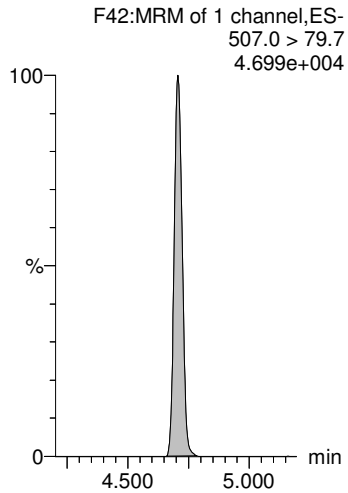
13C2-PFDoA-EIS



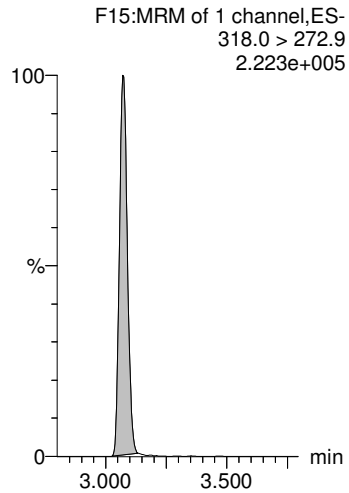
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

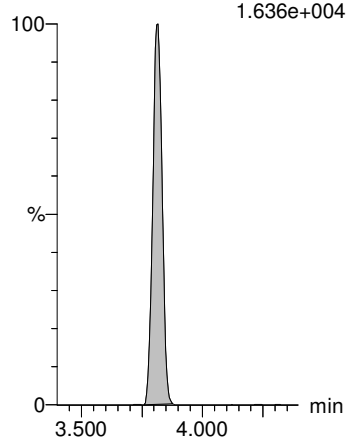
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

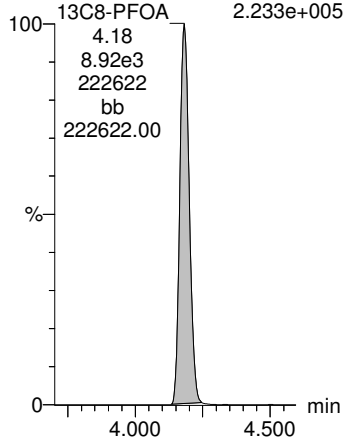
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:04:57 Pacific Standard Time

Name: 200303P2-16, Date: 03-Mar-2020, Time: 19:21:45, ID: B0B0186-BLK1 Method Blank 0.25, Description: Method Blank

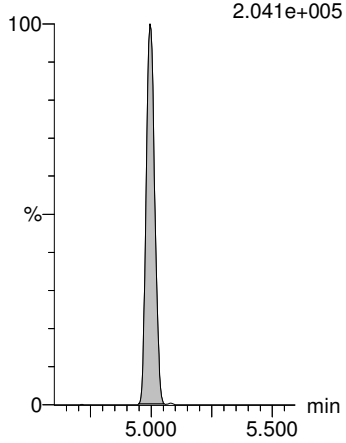
18O2-PFHxS



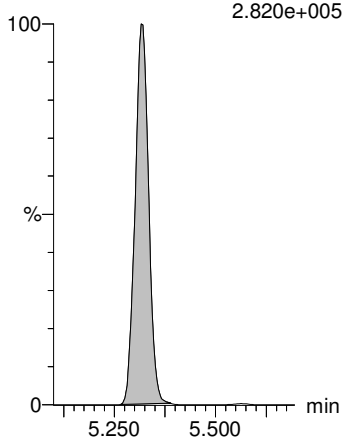
13C8-PFOA



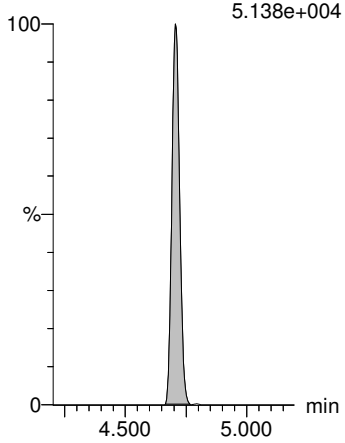
13C6-PFDA



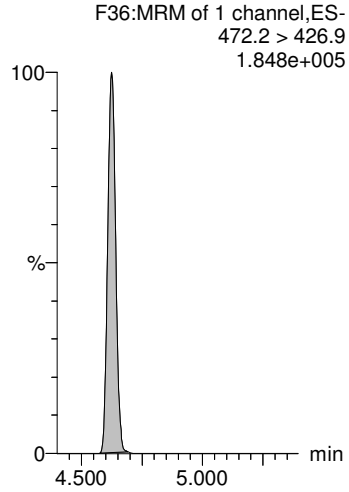
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-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 > 79.7	1.47e3	7.52e2	0.250		2.56	2.56	24.5	39.4984	98.7	3.348	NO
2	7	PFHxA	313.0 > 269.0	7.86e3	1.04e4	0.250		3.07	3.07	9.40	42.2000	105.5	18.082	NO
3	9	HFPO-DA	285.1 > 168.9	2.23e3	2.45e3	0.250		3.29	3.28	11.4	42.7481	106.9	2.990	NO
4	11	PFHpA	363.0 > 318.9	5.91e3	6.36e3	0.250		3.67	3.67	11.6	38.5889	96.5	17.670	NO
5	12	ADONA	376.8 > 250.9	1.60e4	6.36e3	0.250		3.77	3.78	31.4	36.7656	91.9	4.084	NO
6	51	13C3-PFBS-EIS	302.0 > 98.8	7.52e2		0.250	68.744	2.62	2.56	752	43.7422	87.5		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.04e4		0.250	1061.420	3.07	3.07	10400	39.3789	78.8		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.45e3		0.250	276.115	3.35	3.29	2450	35.5491	71.1		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.36e3		0.250	602.105	3.69	3.67	6360	42.2357	84.5		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.36e3		0.250	602.105	3.69	3.67	6360	42.2357	84.5		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	1.42e3	1.89e3	0.250		3.81	3.82	9.43	36.4294	91.1	2.102	NO
13	1...	Total PFHxS	398.9 > 79.7	1.42e3	1.89e3	0.250		3.93		9.43	36.4294			
14	16	L-PFOA	412.8 > 368.9	8.40e3	8.73e3	0.250		4.18	4.18	12.0	37.3567	93.4	3.193	NO
15	1...	Total PFOA	412.8 > 368.9	8.40e3	8.73e3	0.250		4.60		12.0	37.3567			
16	21	PFNA	463.0 > 418.8	7.88e3	7.77e3	0.250		4.62	4.62	12.7	39.5396	98.8	5.667	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.89e3		0.250	173.666	3.82	3.81	1890	43.5097	87.0		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.89e3		0.250	173.666	3.82	3.81	1890	43.5097	87.0		
19	69	13C2-PFOA-EIS	414.9 > 369.7	8.73e3		0.250	812.468	4.18	4.18	8730	42.9809	86.0		
20	69	13C2-PFOA-EIS	414.9 > 369.7	8.73e3		0.250	812.468	4.18	4.18	8730	42.9809	86.0		
21	65	13C5-PFNA-EIS	468.2 > 422.9	7.77e3		0.250	715.290	4.62	4.62	7770	43.4564	86.9		
22	-1													
23	23	L-PFOS	498.9 > 79.7	1.46e3	2.06e3	0.250		4.71	4.71	8.88	36.0825	90.2	2.370	NO
24	1...	Total PFOS	498.9 > 79.7	1.46e3	2.06e3	0.250		5.13		8.88	36.0825			
25	25	9Cl-PF30NS	530.7 > 350.8	2.48e3	2.06e3	0.250		4.91	4.92	15.1	37.2590	93.1	18.358	NO
26	26	PFDA	513 > 468.8	9.73e3	9.20e3	0.250		5.00	5.00	13.2	38.6104	96.5	8.837	NO
27	33	PFUdA	563.0 > 518.9	7.10e3	9.90e3	0.250		5.32	5.32	8.97	40.1082	100.3	17.039	NO
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.06e3		0.250	170.914	4.71	4.71	2060	48.1378	96.3		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.06e3		0.250	170.914	4.71	4.71	2060	48.1378	96.3		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.06e3		0.250	170.914	4.71	4.71	2060	48.1378	96.3		
31	73	13C2-PFDA-EIS	515.1 > 469.9	9.20e3		0.250	817.432	4.99	5.00	9200	45.0422	90.1		
32	79	13C2-PFUdA-EIS	565 > 519.8	9.90e3		0.250	1068.765	5.32	5.32	9900	37.0575	74.1		
33	-1													
34	29	L-MeFOSAA	570 > 419	3.14e3	1.53e3	0.250		5.15	5.15	25.7	41.2286	103.1	2.402	NO
35	1...	Total N-MeFOSAA	570. > 419	3.14e3	1.53e3	0.250		5.19		25.7	41.2286			
36	31	L-EtFOSAA	584.1 > 419	2.57e3	2.16e3	0.250		5.30	5.31	14.9	40.9602	102.4	1.423	NO

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-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	584.1 > 419	2.57e3	2.16e3	0.250		5.37		14.9	40.9602			
38	35	11Cl-PF30UdS	630.9 > 450.9	3.71e3	1.02e4	0.250		5.53	5.52	4.55	41.6818	104.2	19.301	NO
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.53e3		0.250	144.472	5.15	5.15	1530	42.2634	84.5		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.53e3		0.250	144.472	5.15	5.15	1530	42.2634	84.5		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.16e3		0.250	265.746	5.29	5.30	2160	32.5307	65.1		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.16e3		0.250	265.746	5.29	5.30	2160	32.5307	65.1		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.250	1089.820	5.59	5.60	10200	37.4563	74.9		
44	-1													
45	37	PFDoA	612.9 > 569.0	8.28e3	1.02e4	0.250		5.60	5.60	10.1	40.6056	101.5	12.548	NO
46	39	PFTrDA	662.9 > 618.9	6.84e3	1.02e4	0.250		5.85	5.84	8.38	32.0189	80.0	38.334	NO
47	41	PFTeDA	713.0 > 669.0	7.55e3	5.72e3	0.250		6.05	6.05	16.5	45.3178	113.3	17.967	NO
48	1...	TDCA	498.3>106.9			0.250		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.49e3	6.49e3	0.250	1.000	1.34	1.34	12.5	50.0000	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.250	1089.820	5.59	5.60	10200	37.4563	74.9		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.250	1089.820	5.59	5.60	10200	37.4563	74.9		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	5.72e3		0.250	818.597	6.02	6.05	5720	27.9400	55.9		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.06e3		0.250	170.914	4.71	4.71	2060	48.1378	96.3		
54	1...	13C5-PFHxA	318.0 > 272.9	1.08e4	1.08e4	0.250	1.000	3.06	3.07	12.5	50.0000	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.86e2	8.86e2	0.250	1.000	3.81	3.82	12.5	50.0000	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.12e4	1.12e4	0.250	1.000	4.17	4.18	12.5	50.0000	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.02e4	1.02e4	0.250	1.000	4.99	4.99	12.5	50.0000	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.18e4	1.18e4	0.250	1.000	5.31	5.32	12.5	50.0000	100.0		
60	1...	13C4-PFOS	503 > 79.7	1.99e3	1.99e3	0.250	1.000	4.70	4.71	12.5	50.0000	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	9.26e3	9.26e3	0.250	1.000	4.62	4.62	12.5	50.0000	100.0		

BP 3/5/2020

Review: AMR 3/5/2020

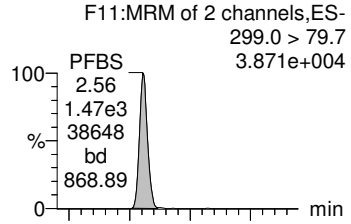
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

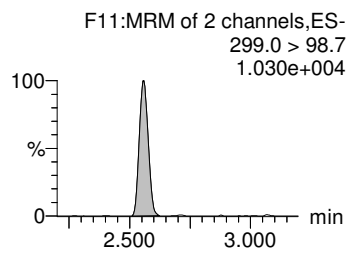
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

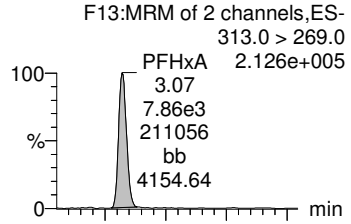
Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-BS1 OPR 0.25, Description: OPR

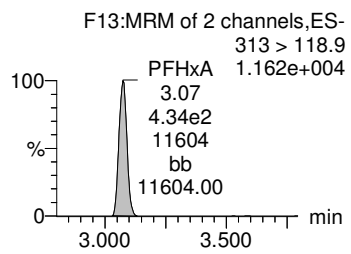
PFBS



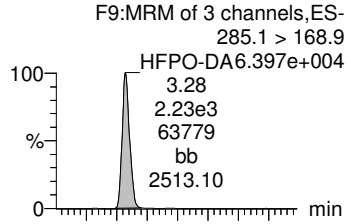


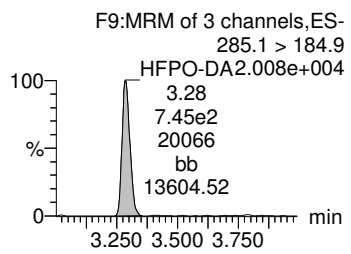
PFHxA



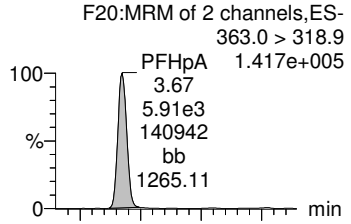


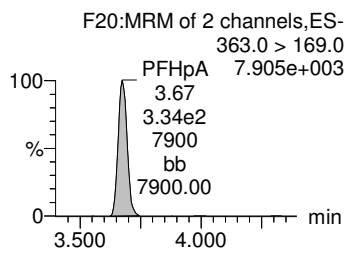
HFPO-DA



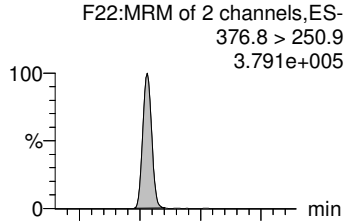


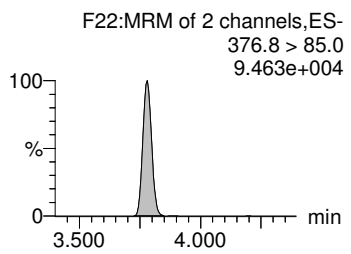
PFHpA



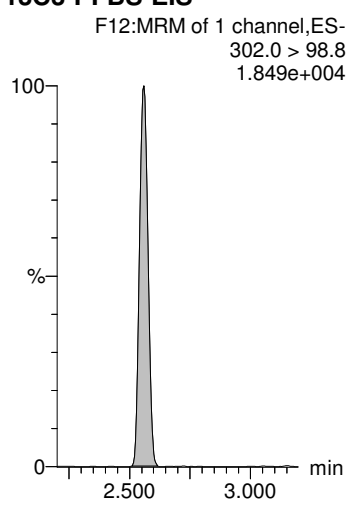


ADONA

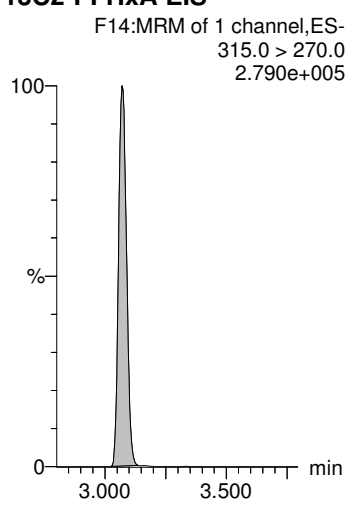




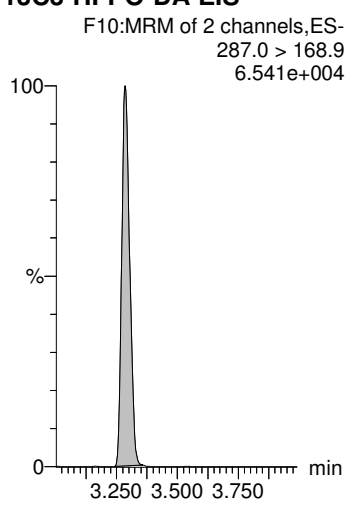
13C3-PFBS-EIS



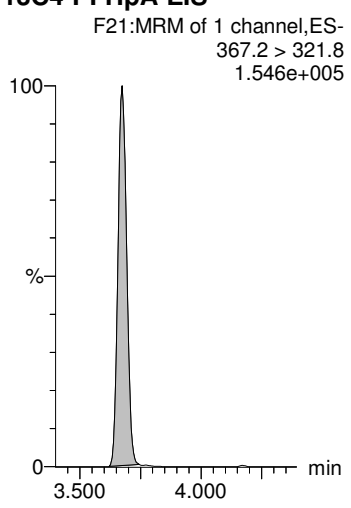
13C2-PFHxA-EIS



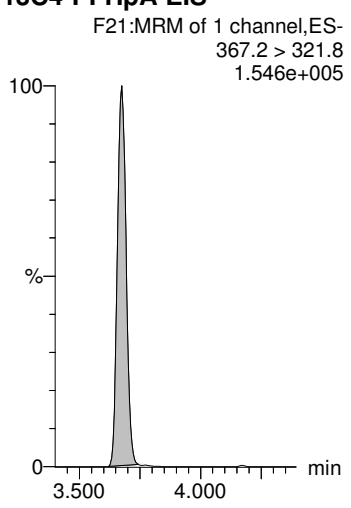
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

Vista Analytical Laboratory L18

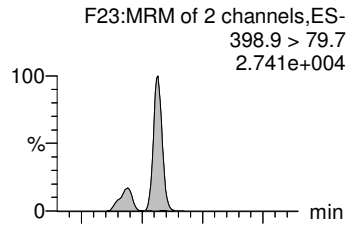
Review: AMR 3/5/2020

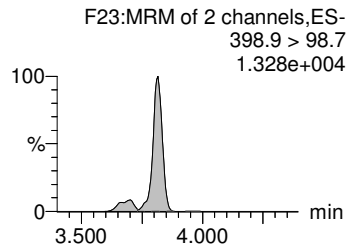
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

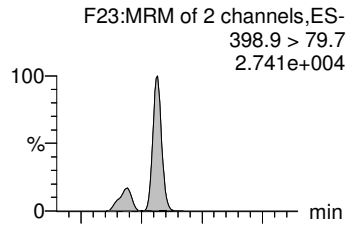
Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-BS1 OPR 0.25, Description: OPR

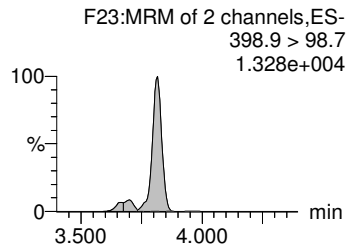
L-PFHxS



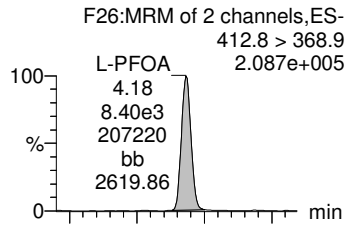


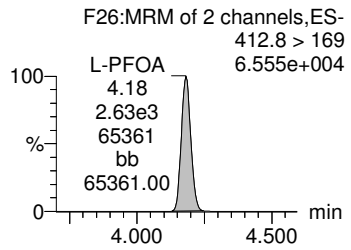
Total PFHxS



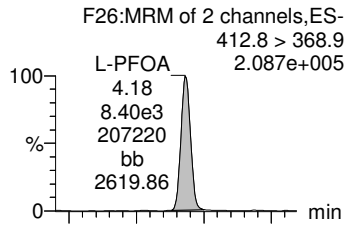


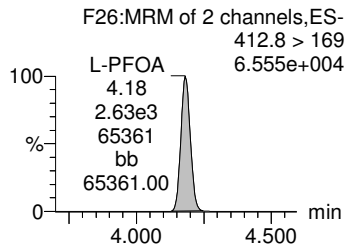
L-PFOA



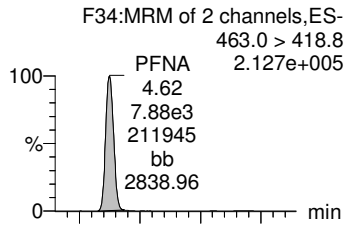


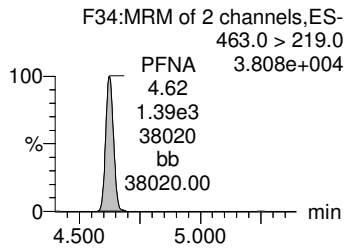
Total PFOA



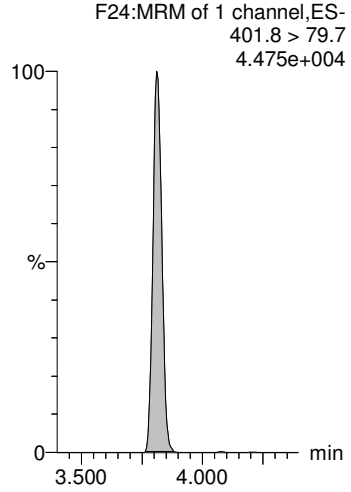


PFNA

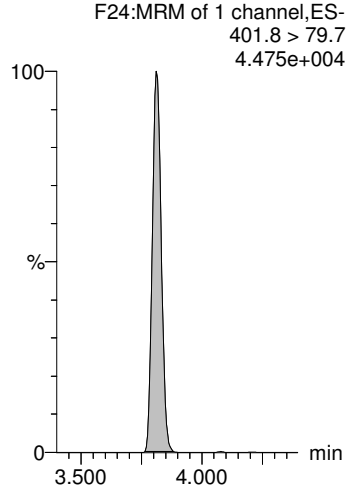




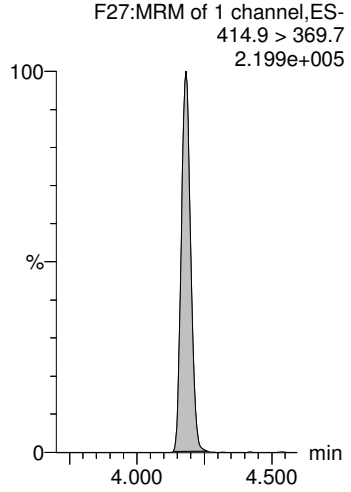
13C3-PFHxS-EIS



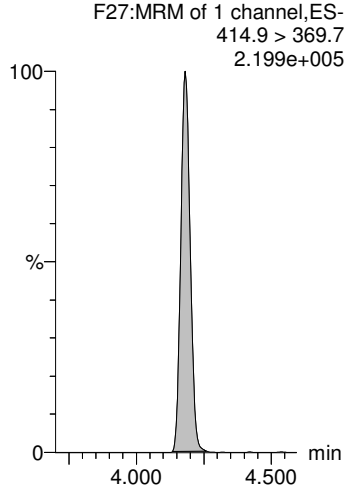
13C3-PFHxS-EIS



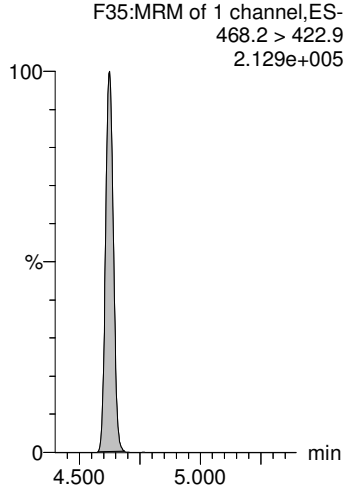
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

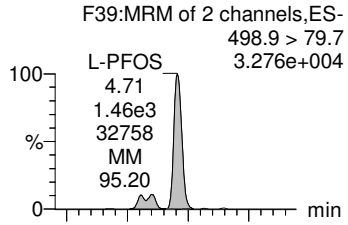
Review: AMR 3/5/2020

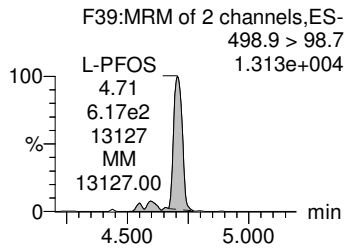
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

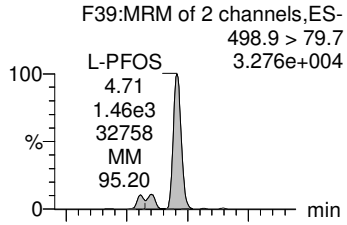
Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-BS1 OPR 0.25, Description: OPR

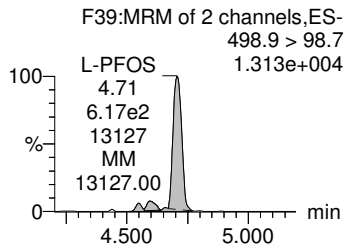
L-PFOS



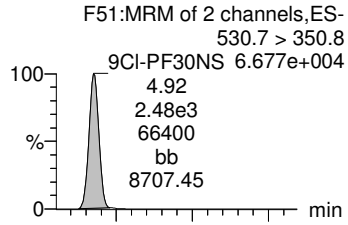


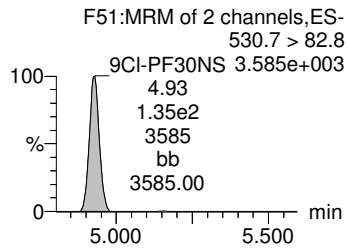
Total PFOS



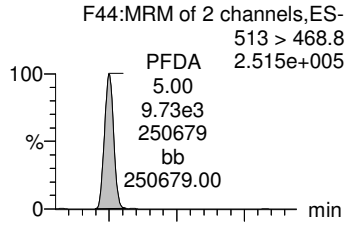


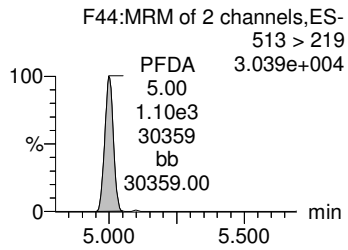
9Cl-PF30NS



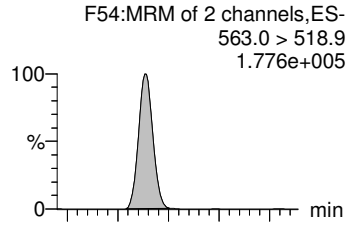


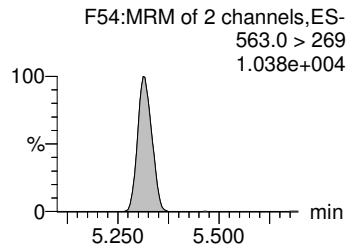
PFDA



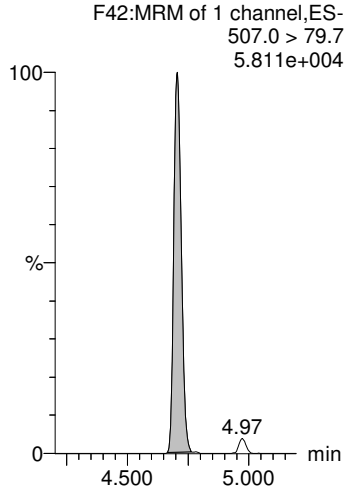


PFUdA

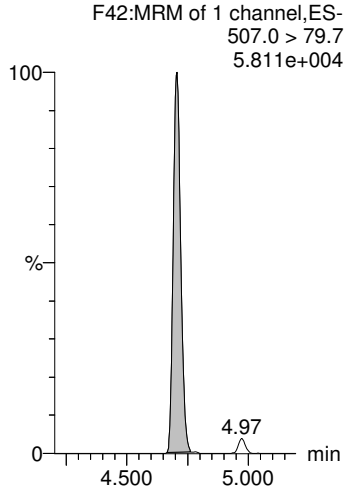




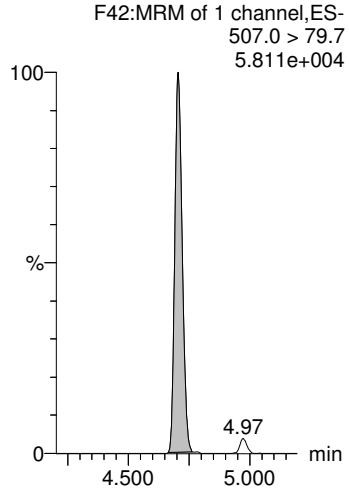
13C8-PFOS-EIS



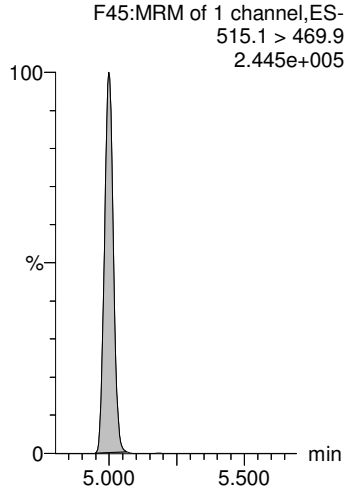
13C8-PFOS-EIS



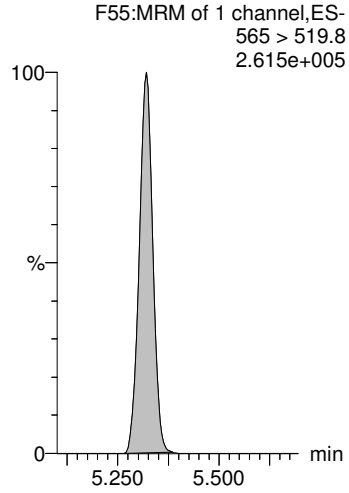
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

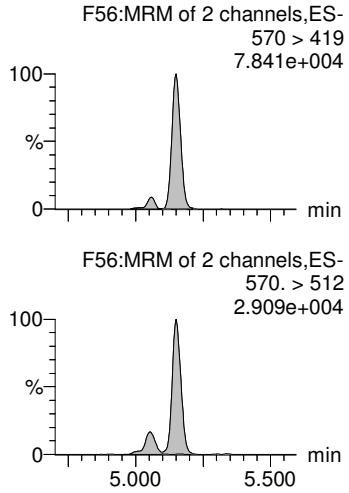
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

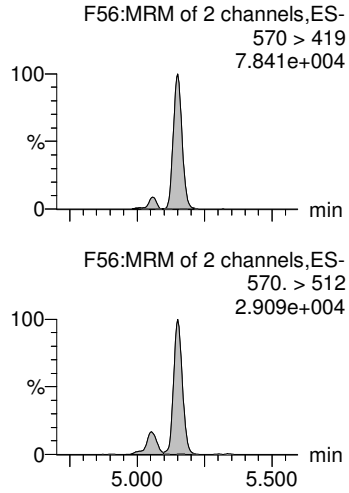
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-BS1 OPR 0.25, Description: OPR

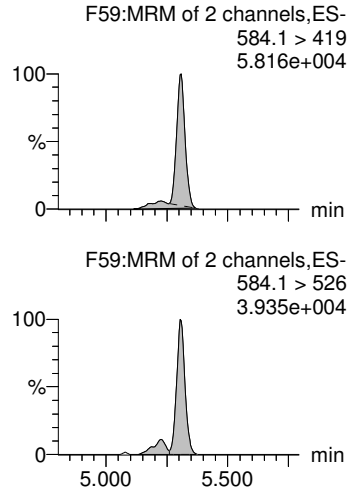
L-MeFOSAA



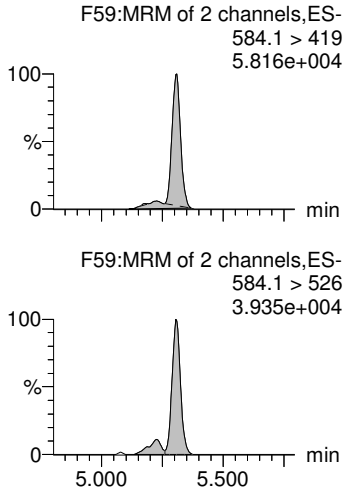
Total N-MeFOSAA



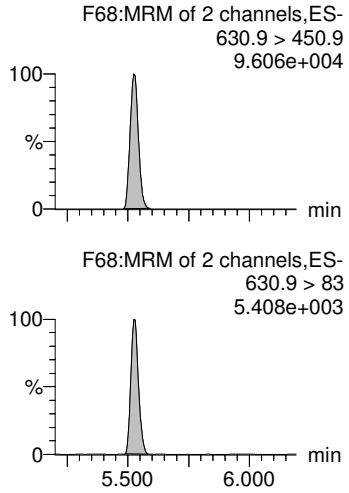
L-EtFOSAA



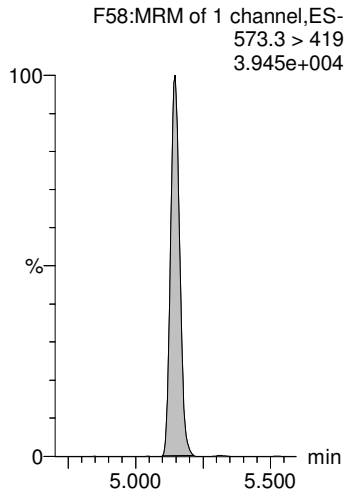
Total N-EtFOSAA



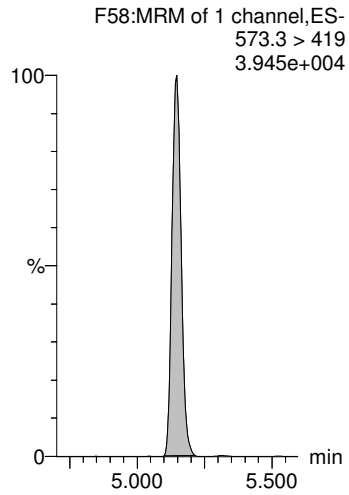
11Cl-PF30UdS



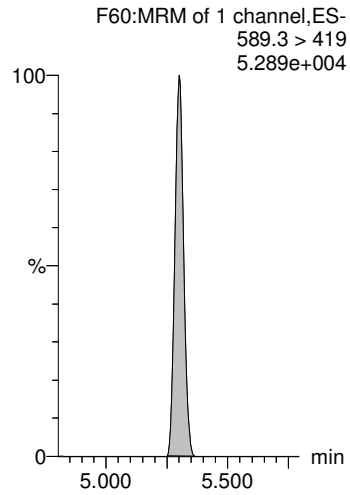
d3-N-MeFOSAA-EIS



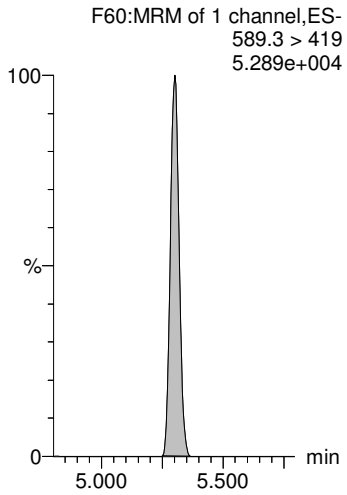
d3-N-MeFOSAA-EIS



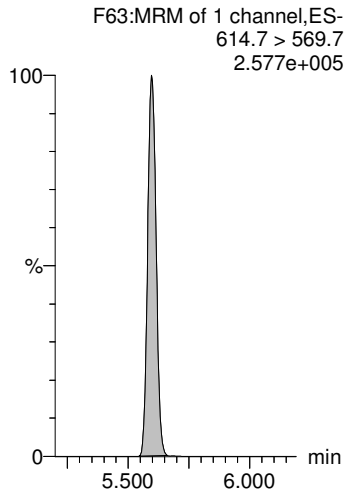
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

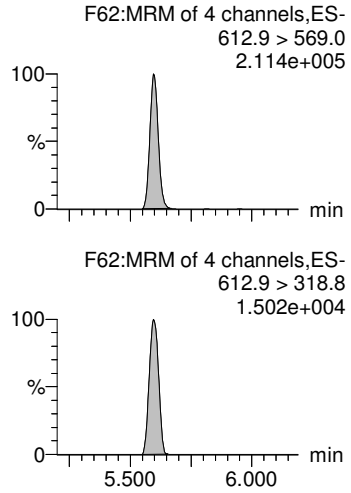
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

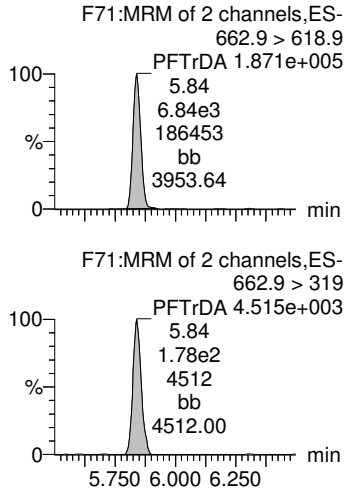
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-BS1 OPR 0.25, Description: OPR

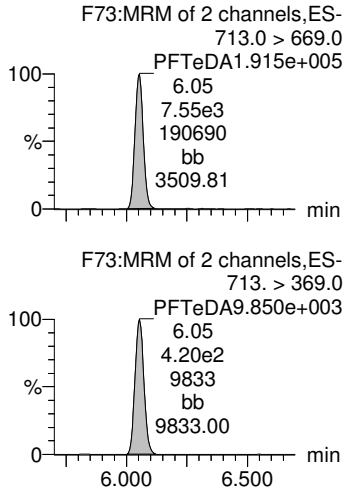
PFDoA



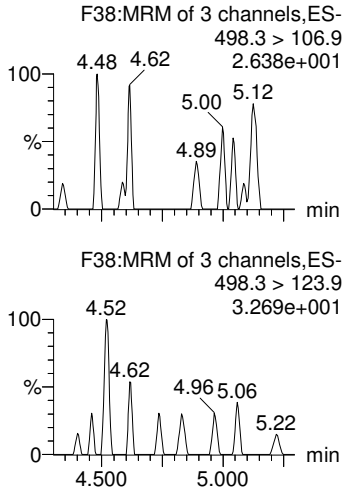
PFTrDA



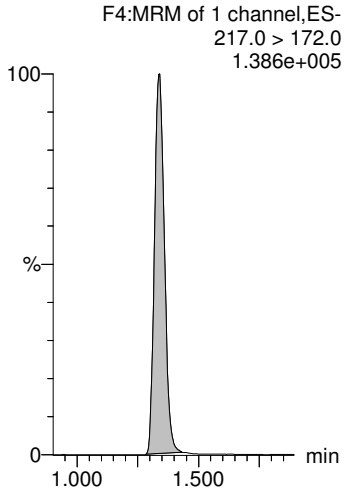
PFTeDA



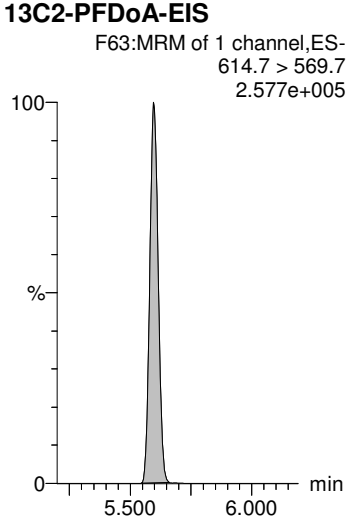
TDCA



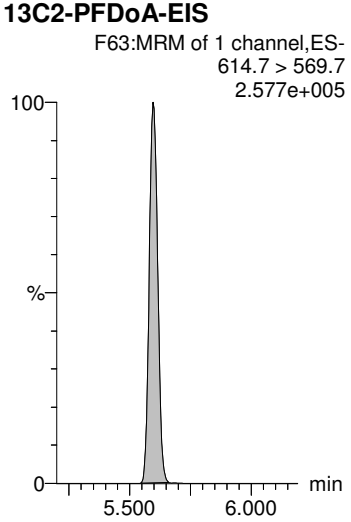
13C4-PFBA



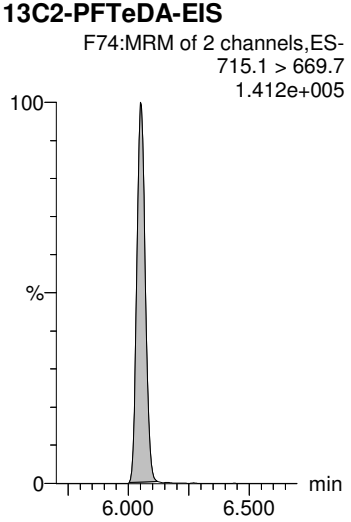
13C2-PFDoA-EIS



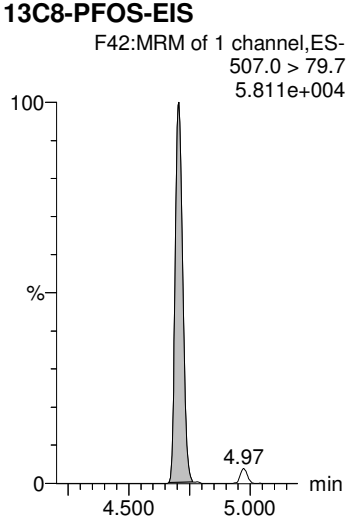
13C2-PFDoA-EIS



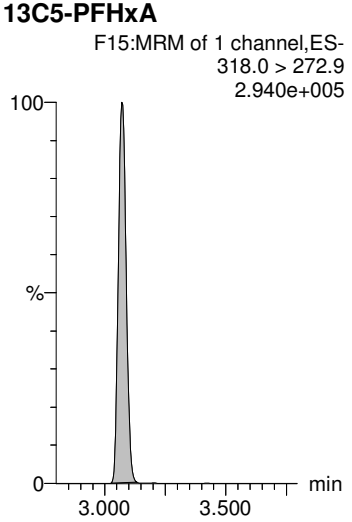
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

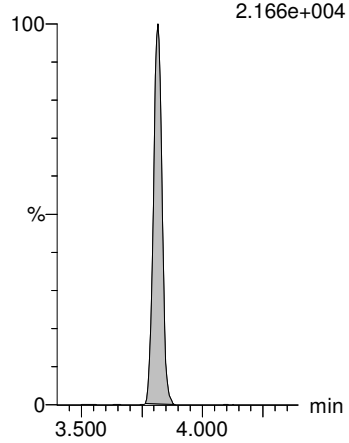
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

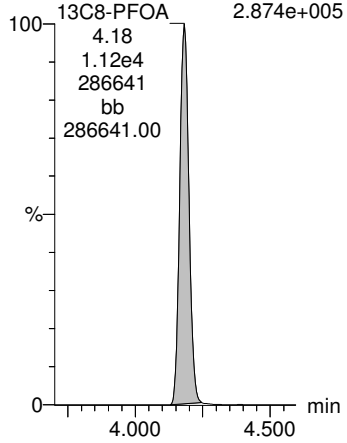
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:00 Pacific Standard Time

Name: 200303P2-17, Date: 03-Mar-2020, Time: 19:32:16, ID: B0B0186-BS1 OPR 0.25, Description: OPR

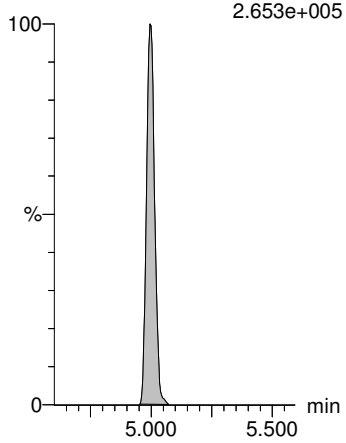
18O2-PFHxS



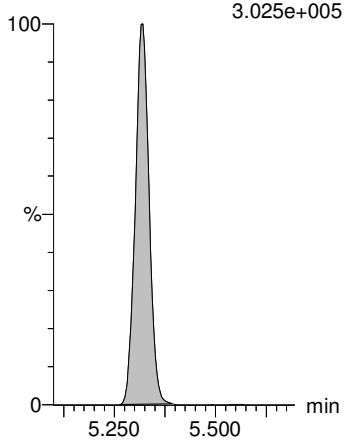
13C8-PFOA



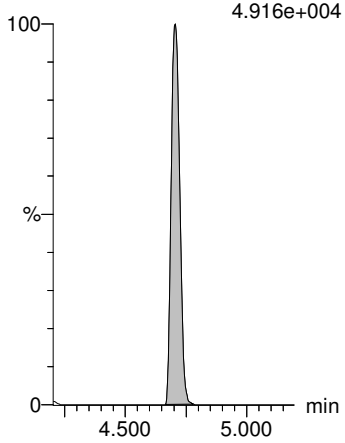
13C6-PFDA



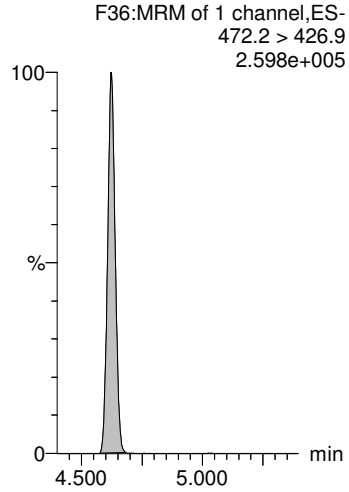
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-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 > 79.7	1.62e3	7.84e2	0.250		2.56	2.56	25.8	41.5951	104.0	3.566	NO
2	7	PFHxA	313.0 > 269.0	7.74e3	1.11e4	0.250		3.07	3.07	8.69	39.0153	97.5	16.497	NO
3	9	HFPO-DA	285.1 > 168.9	2.39e3	2.74e3	0.250		3.29	3.29	10.9	41.0283	102.6	2.710	NO
4	11	PFHpA	363.0 > 318.9	5.81e3	6.25e3	0.250		3.68	3.67	11.6	38.5893	96.5	18.219	NO
5	12	ADONA	376.8 > 250.9	1.73e4	6.25e3	0.250		3.77	3.78	34.6	40.5302	101.3	4.108	NO
6	51	13C3-PFBS-EIS	302.0 > 98.8	7.84e2		0.250	68.744	2.62	2.56	784	45.6303	91.3		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.11e4		0.250	1061.420	3.07	3.07	11100	41.9694	83.9		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.74e3		0.250	276.115	3.35	3.29	2740	39.7218	79.4		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.25e3		0.250	602.105	3.69	3.68	6250	41.4941	83.0		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.25e3		0.250	602.105	3.69	3.68	6250	41.4941	83.0		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	1.48e3	1.99e3	0.250		3.81	3.81	9.31	35.9572	89.9	2.326	NO
13	1...	Total PFHxS	398.9 > 79.7	1.48e3	1.99e3	0.250		3.93		9.31	35.9572			
14	16	L-PFOA	412.8 > 368.9	9.45e3	9.53e3	0.250		4.18	4.18	12.4	38.5178	96.3	3.199	NO
15	1...	Total PFOA	412.8 > 368.9	9.45e3	9.53e3	0.250		4.60		12.4	38.5178			
16	21	PFNA	463.0 > 418.8	8.16e3	8.09e3	0.250		4.62	4.62	12.6	39.3515	98.4	5.771	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.99e3		0.250	173.666	3.81	3.81	1990	45.7701	91.5		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.99e3		0.250	173.666	3.81	3.81	1990	45.7701	91.5		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.53e3		0.250	812.468	4.18	4.18	9530	46.8971	93.8		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.53e3		0.250	812.468	4.18	4.18	9530	46.8971	93.8		
21	65	13C5-PFNA-EIS	468.2 > 422.9	8.09e3		0.250	715.290	4.62	4.62	8090	45.2437	90.5		
22	-1													
23	23	L-PFOS	498.9 > 79.7	1.56e3	1.96e3	0.250		4.71	4.71	9.93	40.3063	100.8	2.099	NO
24	1...	Total PFOS	498.9 > 79.7	1.56e3	1.96e3	0.250		5.13		9.93	40.3063			
25	25	9Cl-PF30NS	530.7 > 350.8	2.44e3	1.96e3	0.250		4.91	4.92	15.6	38.4758	96.2	16.103	NO
26	26	PFDA	513 > 468.8	9.45e3	7.94e3	0.250		5.00	5.00	14.9	43.4678	108.7	8.037	NO
27	33	PFUdA	563.0 > 518.9	6.39e3	8.65e3	0.250		5.31	5.32	9.23	41.3088	103.3	19.369	NO
28	71	13C8-PFOS-EIS	507.0 > 79.7	1.96e3		0.250	170.914	4.71	4.71	1960	45.8586	91.7		
29	71	13C8-PFOS-EIS	507.0 > 79.7	1.96e3		0.250	170.914	4.71	4.71	1960	45.8586	91.7		
30	71	13C8-PFOS-EIS	507.0 > 79.7	1.96e3		0.250	170.914	4.71	4.71	1960	45.8586	91.7		
31	73	13C2-PFDA-EIS	515.1 > 469.9	7.94e3		0.250	817.432	4.99	5.00	7940	38.8731	77.7		
32	79	13C2-PFUdA-EIS	565 > 519.8	8.65e3		0.250	1068.765	5.31	5.31	8650	32.3893	64.8		
33	-1													
34	29	L-MeFOSAA	570 > 419	2.55e3	1.60e3	0.250		5.15	5.15	20.0	32.1496	80.4	2.253	NO
35	1...	Total N-MeFOSAA	570. > 419	2.55e3	1.60e3	0.250		5.19		20.0	32.1496			
36	31	L-EtFOSAA	584.1 > 419	2.01e3	2.08e3	0.250		5.30	5.31	12.1	33.4629	83.7	1.109	NO

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-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	584.1 > 419	2.01e3	2.08e3	0.250		5.37		12.1	33.4629			
38	35	11Cl-PF30UdS	630.9 > 450.9	3.45e3	8.89e3	0.250		5.53	5.52	4.85	44.4686	111.2	25.349	NO
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.60e3		0.250	144.472	5.14	5.15	1600	44.1709	88.3		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.60e3		0.250	144.472	5.14	5.15	1600	44.1709	88.3		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.08e3		0.250	265.746	5.29	5.30	2080	31.2621	62.5		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.08e3		0.250	265.746	5.29	5.30	2080	31.2621	62.5		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	8.89e3		0.250	1089.820	5.58	5.59	8890	32.6409	65.3		
44	-1													
45	37	PFDoA	612.9 > 569.0	6.97e3	8.89e3	0.250		5.59	5.59	9.80	39.2505	98.1	9.288	NO
46	39	PFTrDA	662.9 > 618.9	6.16e3	8.89e3	0.250		5.84	5.84	8.65	33.0695	82.7	37.621	NO
47	41	PFTeDA	713.0 > 669.0	5.49e3	4.84e3	0.250		6.05	6.05	14.2	38.9317	97.3	17.618	NO
48	1...	TDCA	498.3>106.9			0.250		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.94e3	6.94e3	0.250	1.000	1.34	1.34	12.5	50.0000	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	8.89e3		0.250	1089.820	5.58	5.59	8890	32.6409	65.3		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	8.89e3		0.250	1089.820	5.58	5.59	8890	32.6409	65.3		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	4.84e3		0.250	818.597	6.01	6.05	4840	23.6738	47.3		
53	71	13C8-PFOS-EIS	507.0 > 79.7	1.96e3		0.250	170.914	4.71	4.71	1960	45.8586	91.7		
54	1...	13C5-PFHxA	318.0 > 272.9	1.12e4	1.12e4	0.250	1.000	3.06	3.07	12.5	50.0000	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.23e2	8.23e2	0.250	1.000	3.81	3.81	12.5	50.0000	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.23e4	1.23e4	0.250	1.000	4.17	4.18	12.5	50.0000	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	9.90e3	9.90e3	0.250	1.000	4.99	4.99	12.5	50.0000	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.17e4	1.17e4	0.250	1.000	5.31	5.31	12.5	50.0000	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.39e3	2.39e3	0.250	1.000	4.70	4.71	12.5	50.0000	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	9.05e3	9.05e3	0.250	1.000	4.62	4.62	12.5	50.0000	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

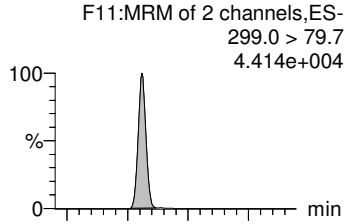
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

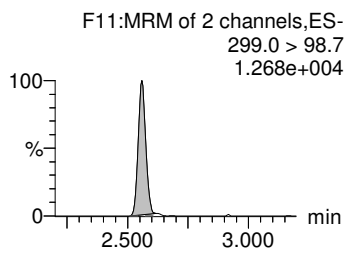
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

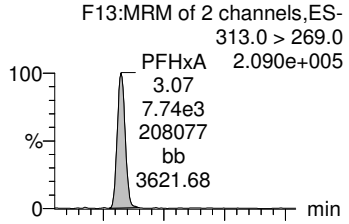
Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-BSD1 LCSD 0.25, Description: LCSD

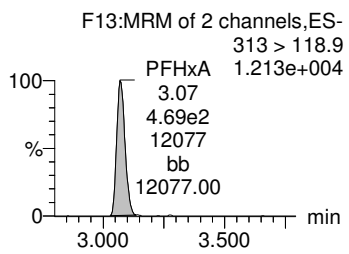
PFBS



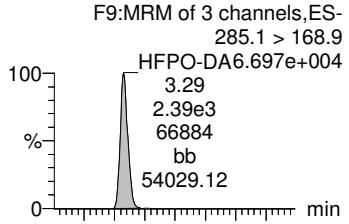


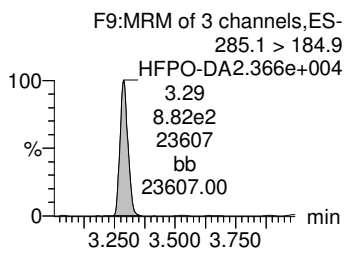
PFHxA



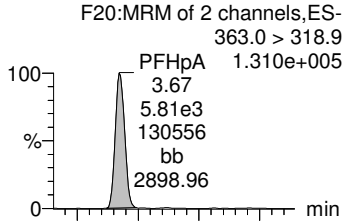


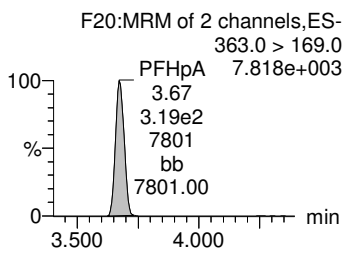
HFPO-DA



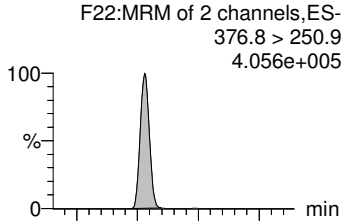


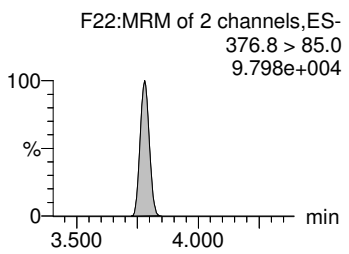
PFHpA



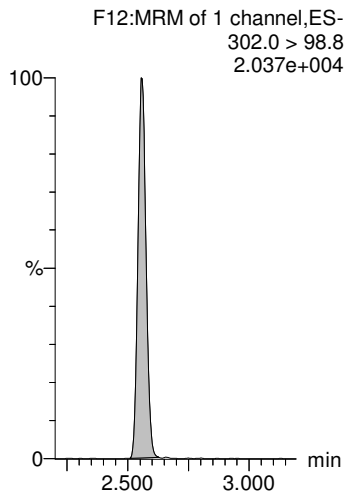


ADONA

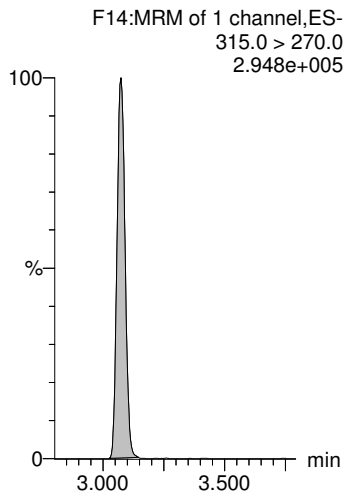




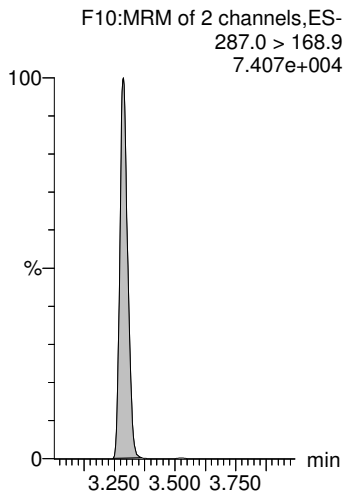
13C3-PFBS-EIS



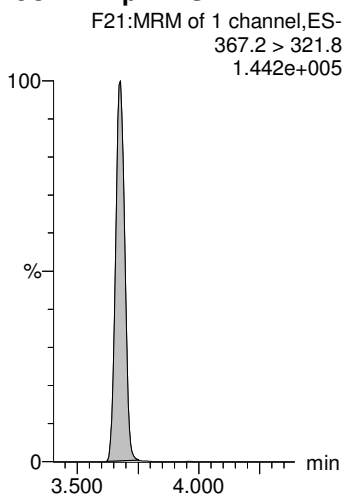
13C2-PFHxA-EIS



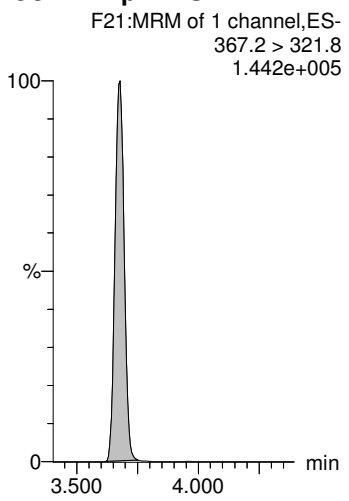
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

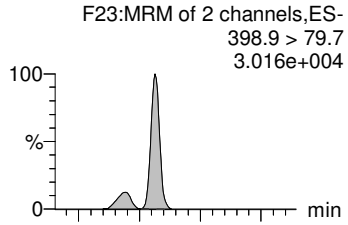
Review: AMR 3/5/2020

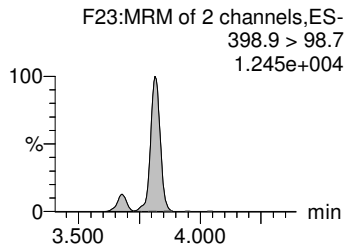
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

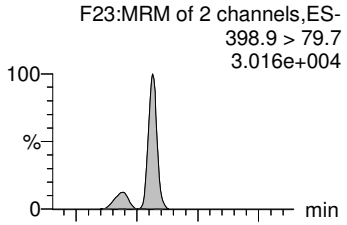
Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-BSD1 LCSD 0.25, Description: LCSD

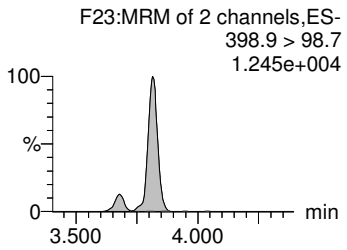
L-PFHxS



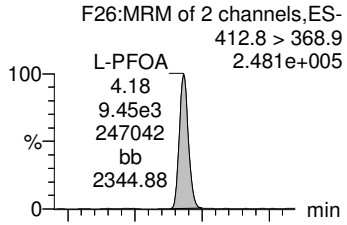


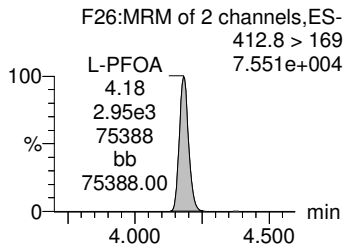
Total PFHxS



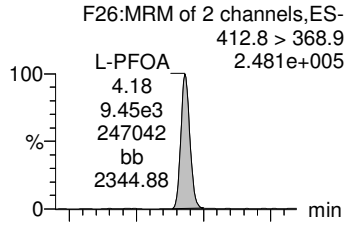


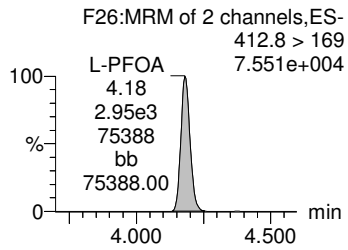
L-PFOA



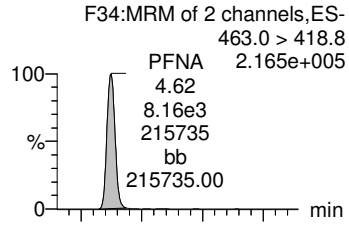


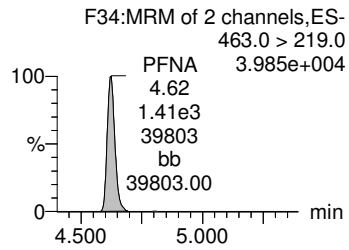
Total PFOA



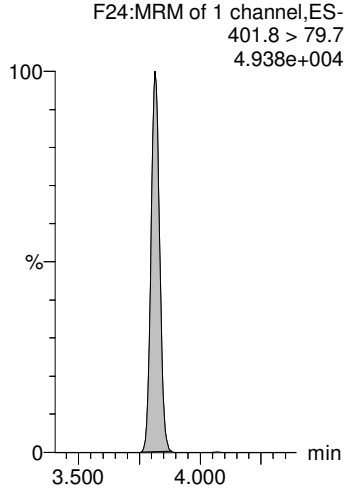


PFNA

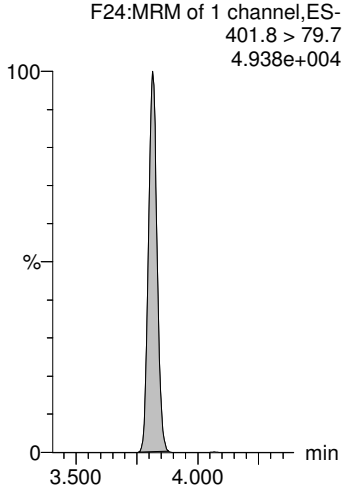




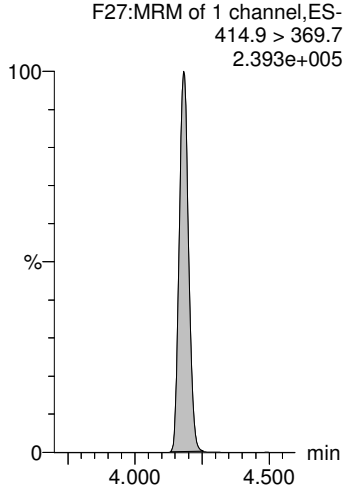
13C3-PFHxS-EIS



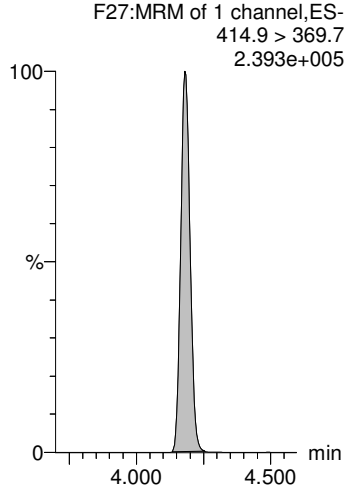
13C3-PFHxS-EIS



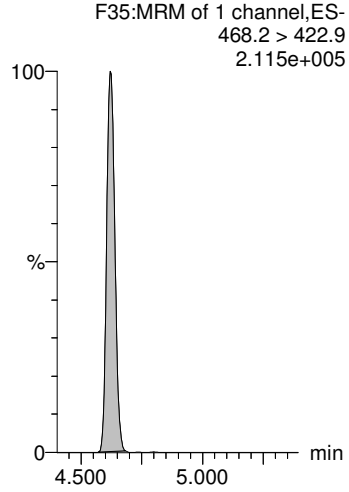
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

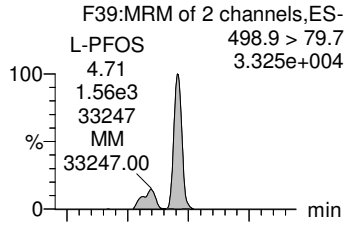
Review: AMR 3/5/2020

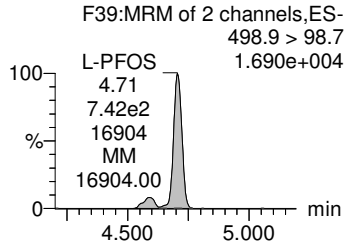
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

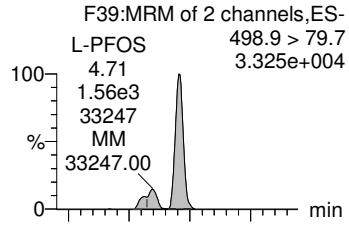
Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-BSD1 LCSD 0.25, Description: LCSD

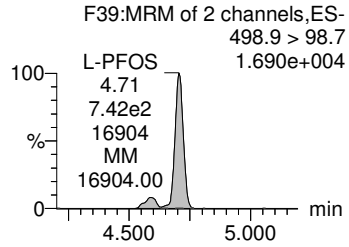
L-PFOS



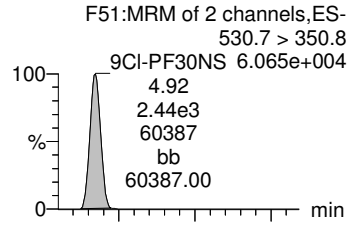


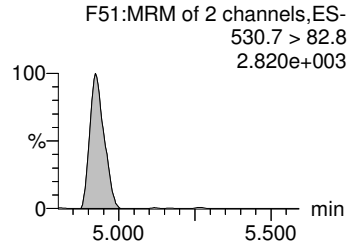
Total PFOS



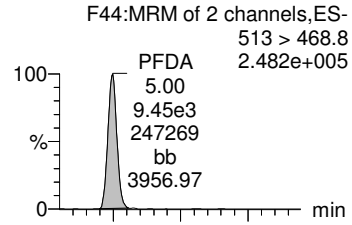


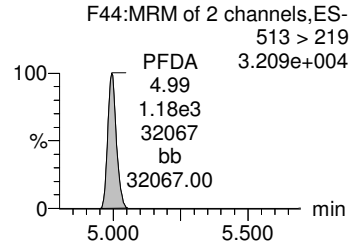
9Cl-PF30NS



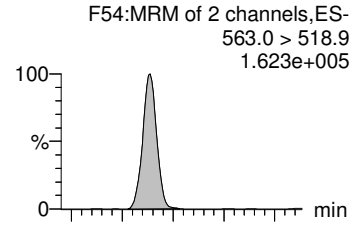


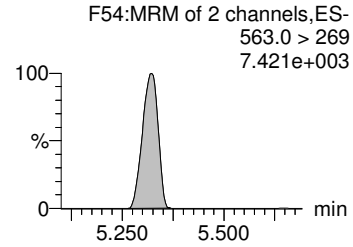
PFDA



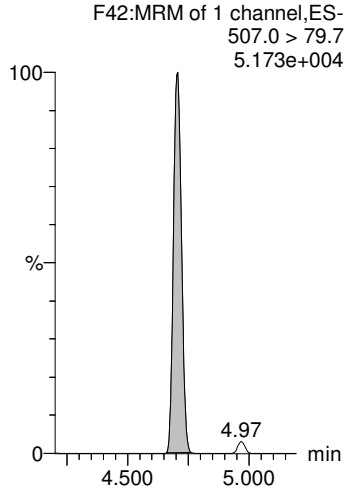


PFUdA

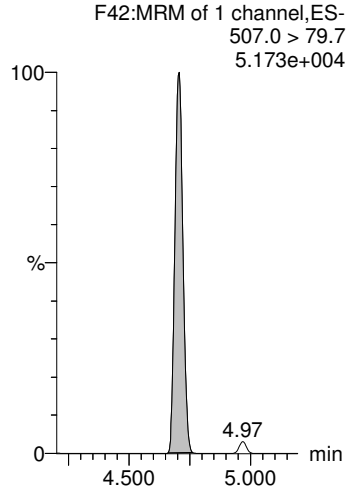




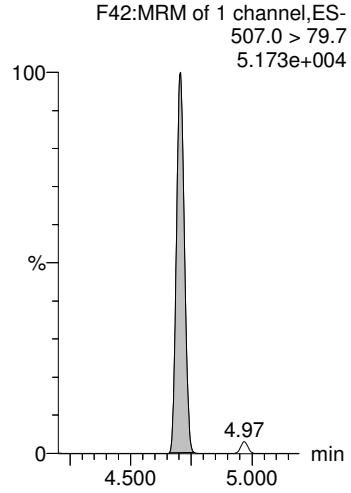
13C8-PFOS-EIS



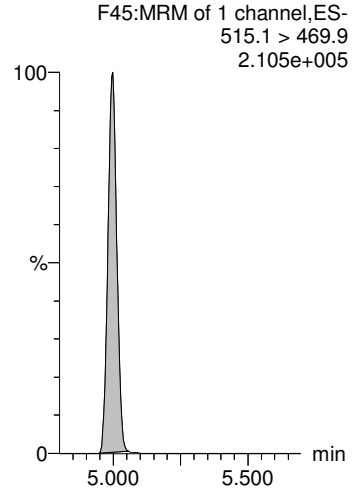
13C8-PFOS-EIS



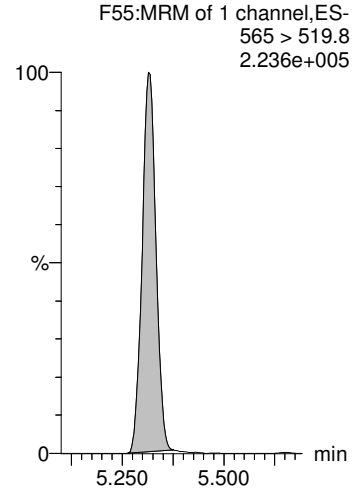
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

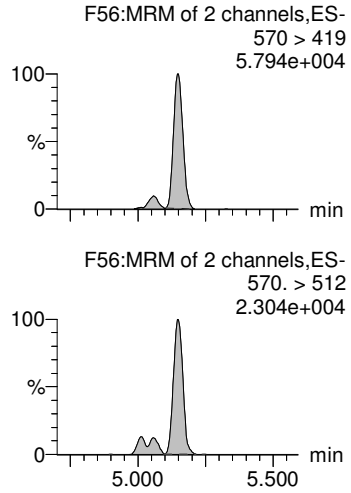
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

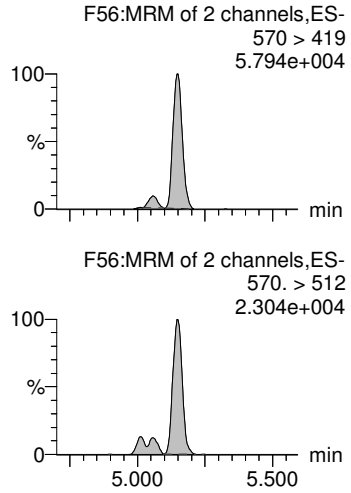
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-BSD1 LCSD 0.25, Description: LCSD

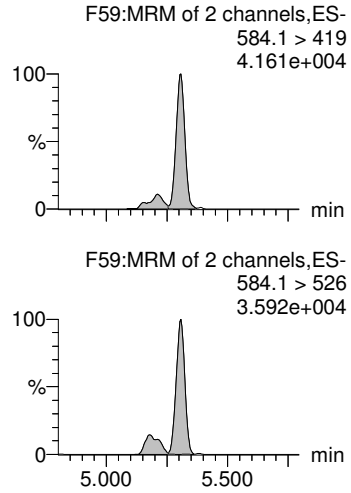
L-MeFOSAA



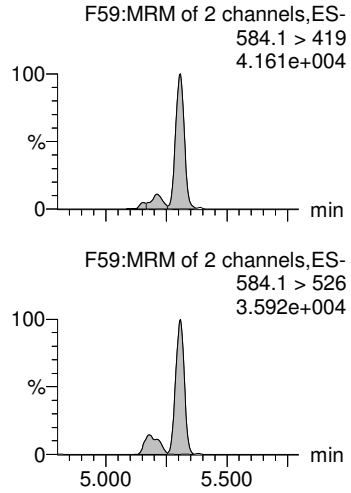
Total N-MeFOSAA



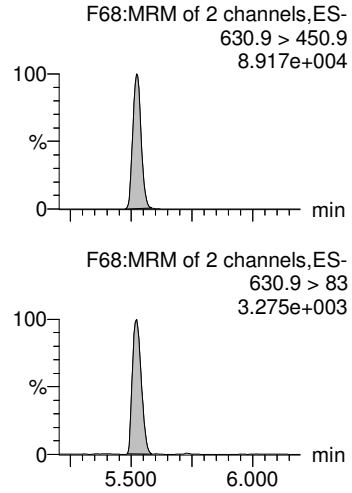
L-EtFOSAA



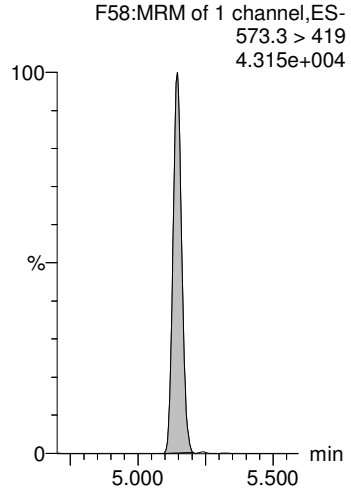
Total N-EtFOSAA



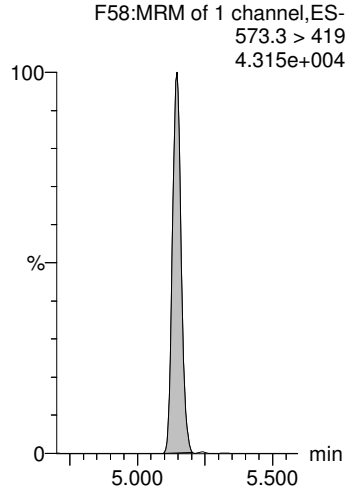
11Cl-PF30UdS



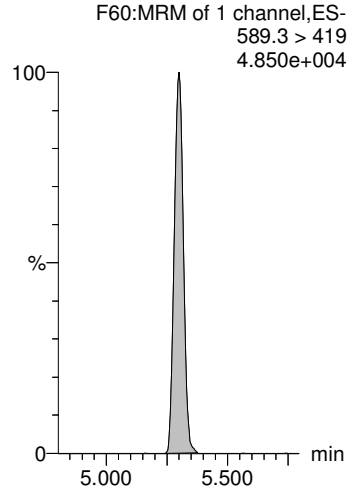
d3-N-MeFOSAA-EIS



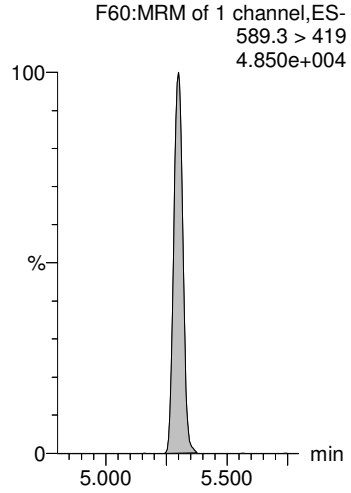
d3-N-MeFOSAA-EIS



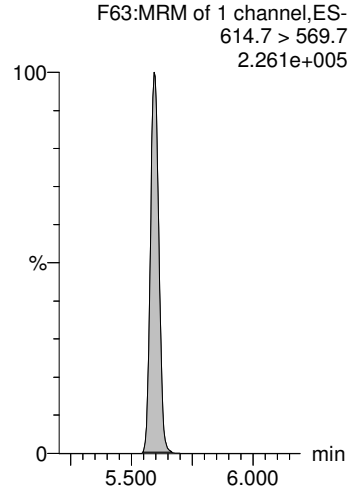
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

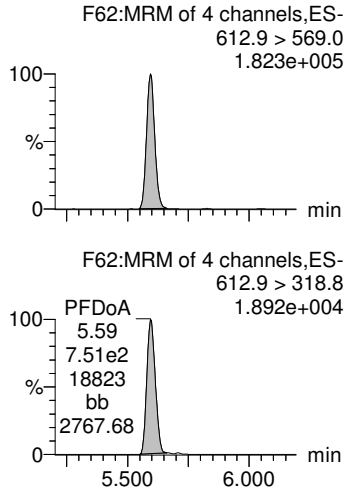
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

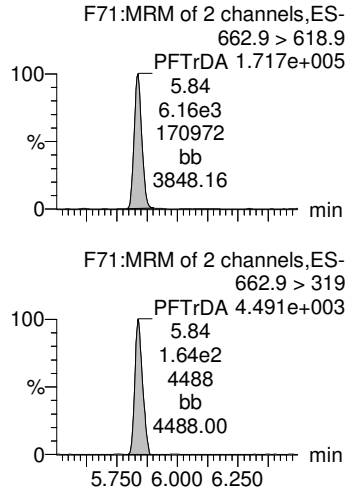
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-BSD1 LCSD 0.25, Description: LCSD

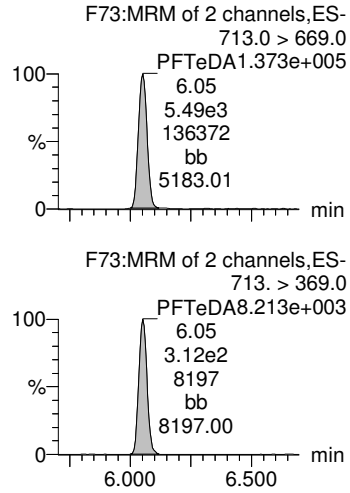
PFDoA



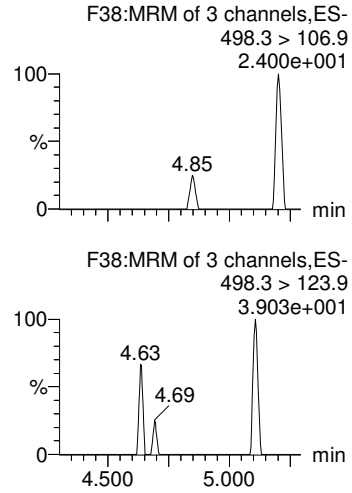
PFTrDA



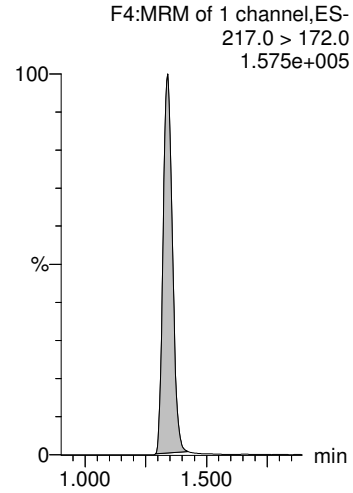
PFTeDA



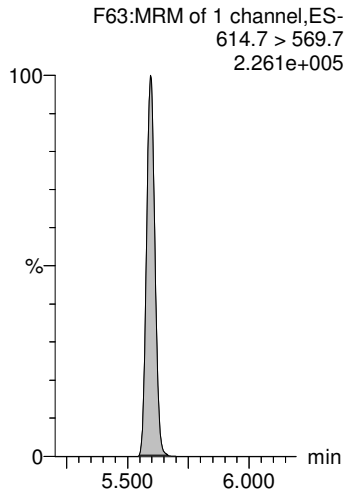
TDCA



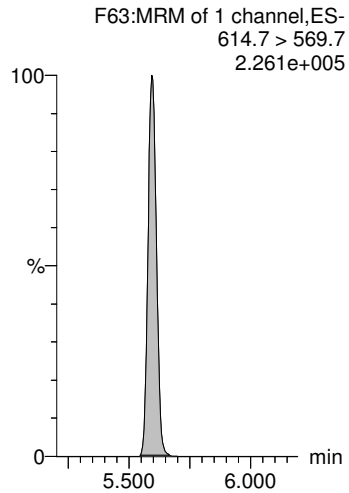
13C4-PFBA



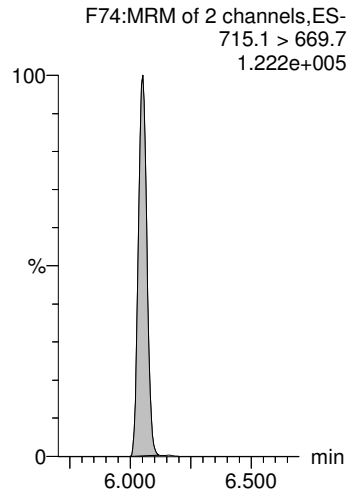
13C2-PFDoA-EIS



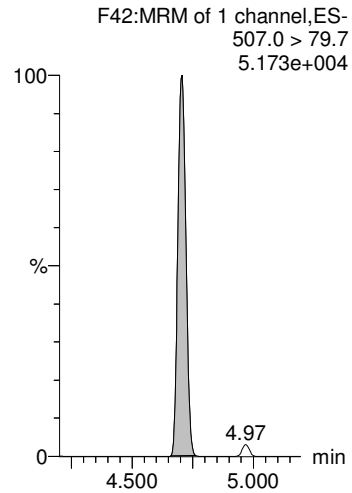
13C2-PFDoA-EIS



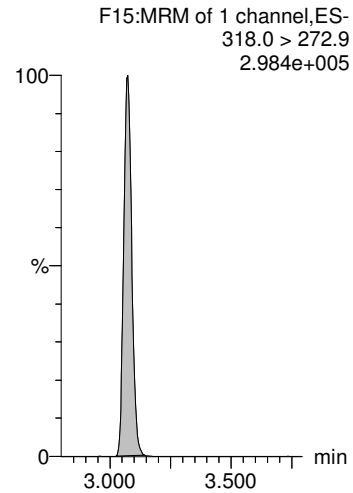
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

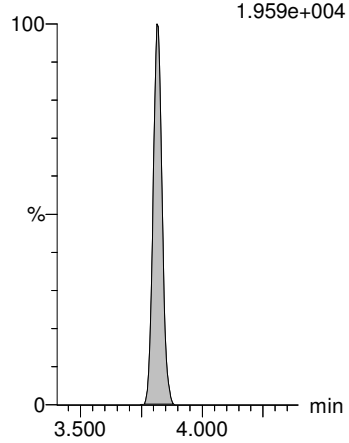
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

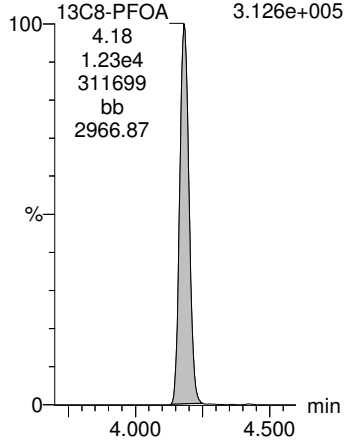
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:05 Pacific Standard Time

Name: 200303P2-18, Date: 03-Mar-2020, Time: 19:42:47, ID: B0B0186-BSD1 LCSD 0.25, Description: LCSD

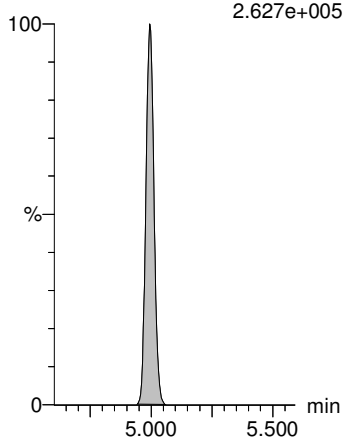
18O2-PFHxS



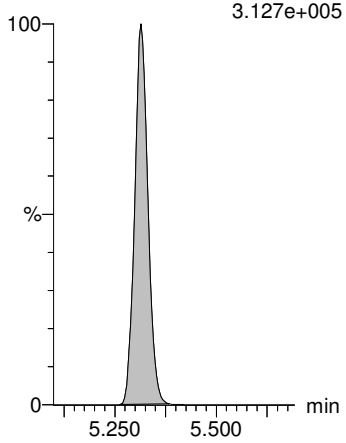
13C8-PFOA



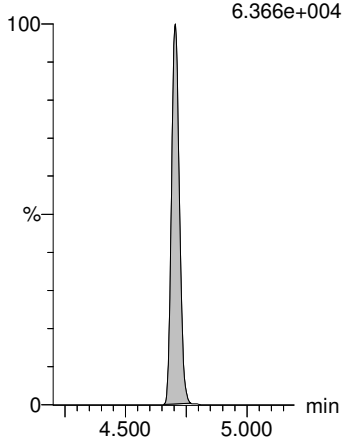
13C6-PFDA



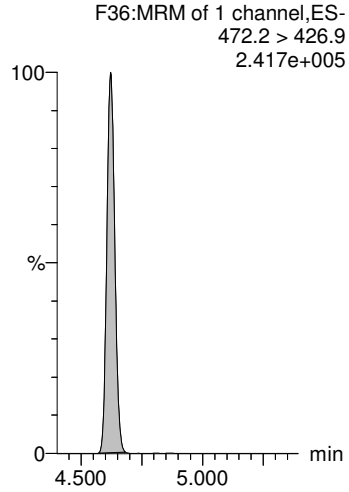
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7		8.29e2	0.251		2.56						YES
2	7	PFHxA	313.0 > 269.0		1.13e4	0.251		3.07						YES
3	9	HFPO-DA	285.1 > 168.9		2.60e3	0.251		3.29						YES
4	11	PFHpA	363.0 > 318.9		6.36e3	0.251		3.67						YES
5	12	ADONA	376.8 > 250.9		6.36e3	0.251		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	8.29e2		0.251	68.744	2.62	2.56	829	47.9718	96.5		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.13e4		0.251	1061.420	3.07	3.07	11300	42.5001	85.5		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.60e3		0.251	276.115	3.35	3.29	2600	37.4910	75.4		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.36e3		0.251	602.105	3.69	3.67	6360	42.0192	84.5		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.36e3		0.251	602.105	3.69	3.67	6360	42.0192	84.5		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	2.21e0	1.83e3	0.251		3.81	3.82	0.0151	0.1120		0.598	YES
13	1...	Total PFHxS	398.9 > 79.7	2.21e0	1.83e3	0.251		3.93		0.0151	0.1120			
14	16	L-PFOA	412.8 > 368.9		9.10e3	0.251		4.18						YES
15	1...	Total PFOA	412.8 > 368.9	0.00e0	9.10e3	0.251		4.60		0.000				
16	21	PFNA	463.0 > 418.8		7.89e3	0.251		4.62						YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.83e3		0.251	173.666	3.81	3.81	1830	42.0121	84.5		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.83e3		0.251	173.666	3.81	3.81	1830	42.0121	84.5		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.10e3		0.251	812.468	4.18	4.18	9100	44.5344	89.6		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.10e3		0.251	812.468	4.18	4.18	9100	44.5344	89.6		
21	65	13C5-PFNA-EIS	468.2 > 422.9	7.89e3		0.251	715.290	4.62	4.62	7890	43.8816	88.2		
22	-1													
23	23	L-PFOS	498.9 > 79.7		2.08e3	0.251		4.71						YES
24	1...	Total PFOS	498.9 > 79.7	0.00e0	2.08e3	0.251		5.13		0.000				
25	25	9Cl-PF30NS	530.7 > 350.8		2.08e3	0.251		4.91						YES
26	26	PFDA	513 > 468.8		9.24e3	0.251		5.00						YES
27	33	PFUdA	563.0 > 518.9		1.12e4	0.251		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.08e3		0.251	170.914	4.71	4.71	2080	48.3917	97.3		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.08e3		0.251	170.914	4.71	4.71	2080	48.3917	97.3		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.08e3		0.251	170.914	4.71	4.71	2080	48.3917	97.3		
31	73	13C2-PFDA-EIS	515.1 > 469.9	9.24e3		0.251	817.432	5.00	5.00	9240	44.9458	90.4		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.12e4		0.251	1068.765	5.32	5.32	11200	41.6410	83.7		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.64e3	0.251		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.64e3	0.251		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.42e3	0.251		5.30						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.42e3	0.251		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.00e4	0.251		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.64e3		0.251	144.472	5.14	5.15	1640	45.2723	91.0		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.64e3		0.251	144.472	5.14	5.15	1640	45.2723	91.0		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.42e3		0.251	265.746	5.29	5.30	2420	36.1842	72.8		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.42e3		0.251	265.746	5.29	5.30	2420	36.1842	72.8		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.251	1089.820	5.58	5.60	10000	36.5853	73.6		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.00e4	0.251		5.60						YES
46	39	PFTrDA	662.9 > 618.9		1.00e4	0.251		5.85						YES
47	41	PFTeDA	713.0 > 669.0		6.17e3	0.251		6.05						YES
48	1...	TDCA	498.3>106.9			0.251		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.68e3	6.68e3	0.251	1.000	1.34	1.34	12.5	49.7255	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.251	1089.820	5.58	5.60	10000	36.5853	73.6		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.251	1089.820	5.58	5.60	10000	36.5853	73.6		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	6.17e3		0.251	818.597	6.01	6.05	6170	30.0015	60.3		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.08e3		0.251	170.914	4.71	4.71	2080	48.3917	97.3		
54	1...	13C5-PFHxA	318.0 > 272.9	1.09e4	1.09e4	0.251	1.000	3.06	3.07	12.5	49.7255	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.01e2	8.01e2	0.251	1.000	3.81	3.81	12.5	49.7255	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.18e4	1.18e4	0.251	1.000	4.17	4.18	12.5	49.7255	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	9.68e3	9.68e3	0.251	1.000	4.99	5.00	12.5	49.7255	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.25e4	1.25e4	0.251	1.000	5.31	5.32	12.5	49.7255	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.36e3	2.36e3	0.251	1.000	4.70	4.71	12.5	49.7255	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	8.36e3	8.36e3	0.251	1.000	4.62	4.62	12.5	49.7255	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

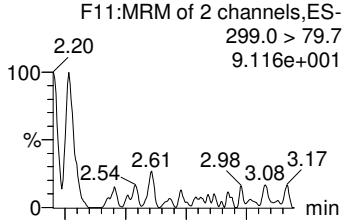
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

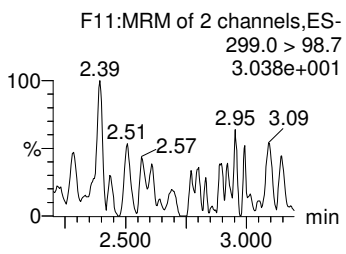
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

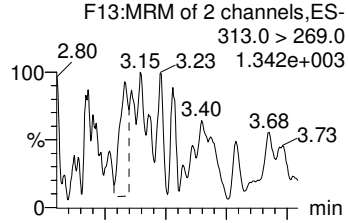
Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

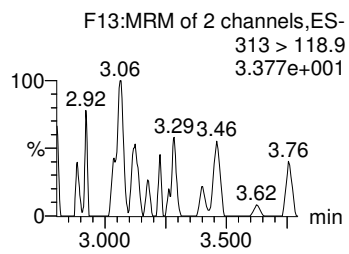
PFBS



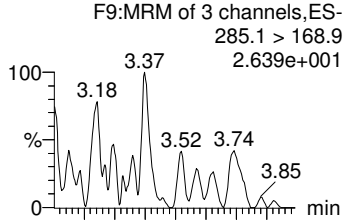


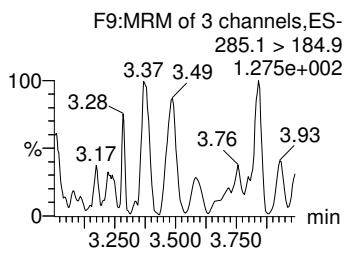
PFHxA



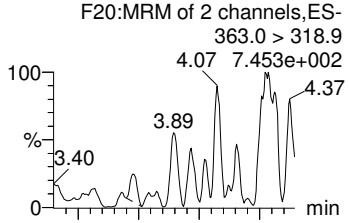


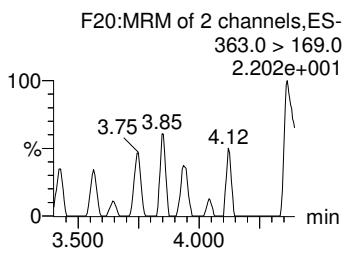
HFPO-DA



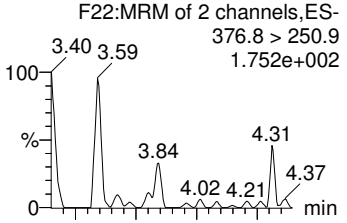


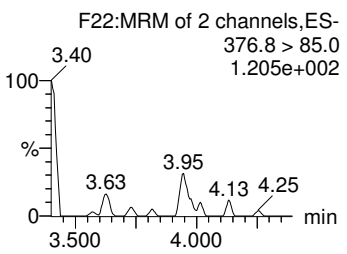
PFHpA



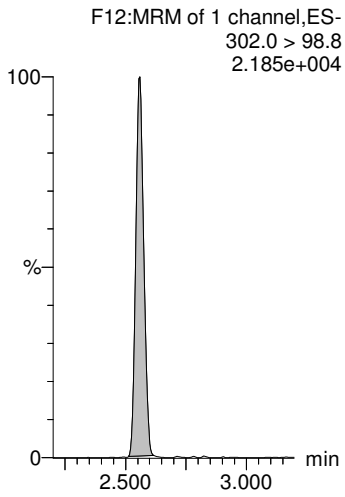


ADONA

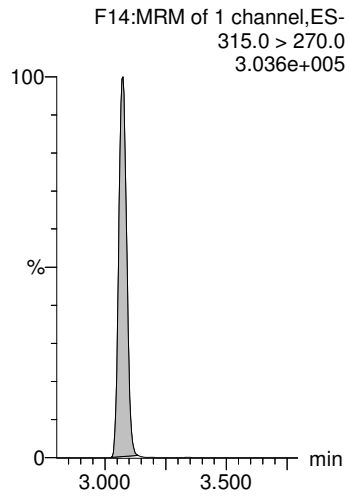




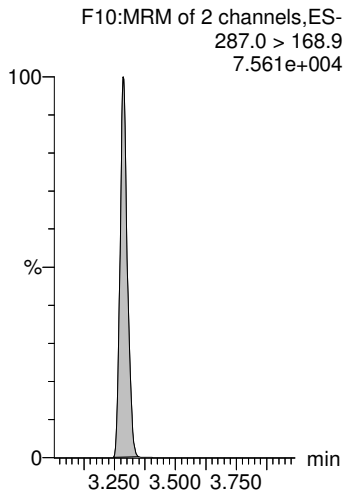
13C3-PFBS-EIS



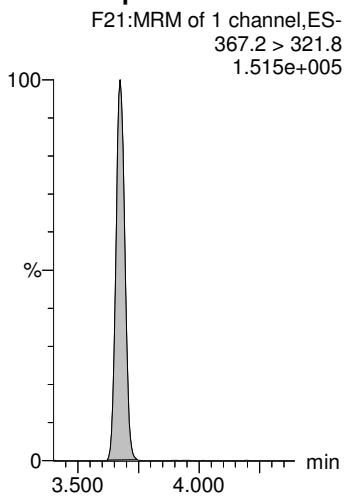
13C2-PFHxA-EIS



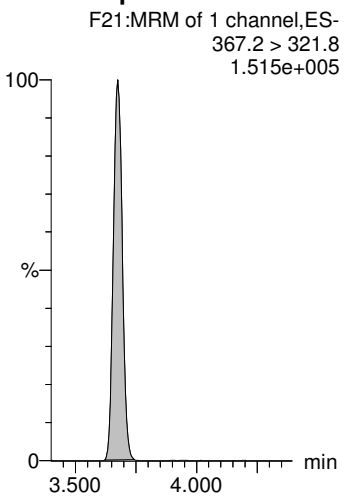
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

Vista Analytical Laboratory L18

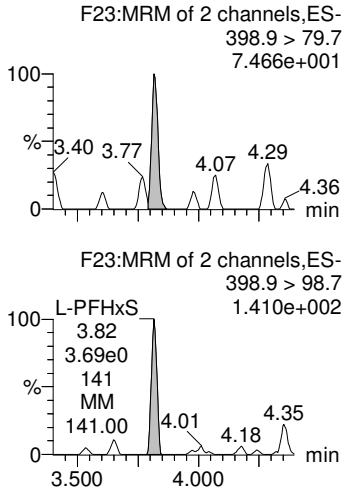
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

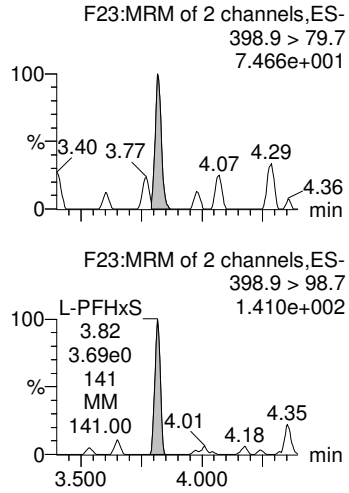
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

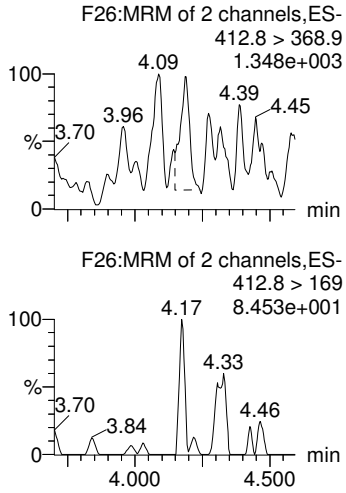
L-PFHxS



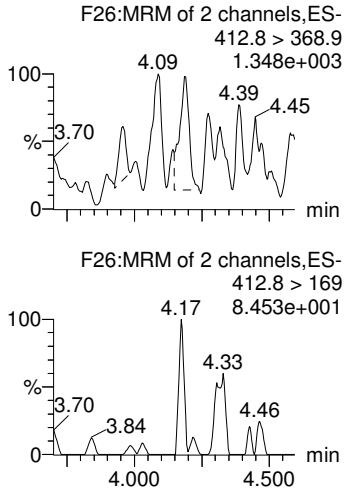
Total PFHxS



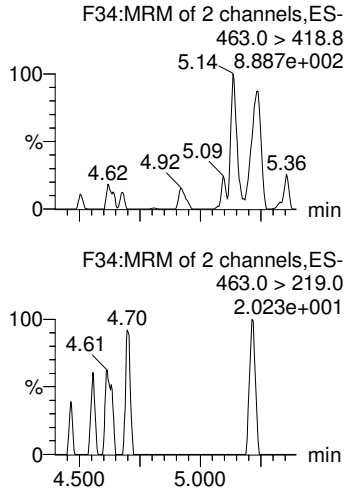
L-PFOA



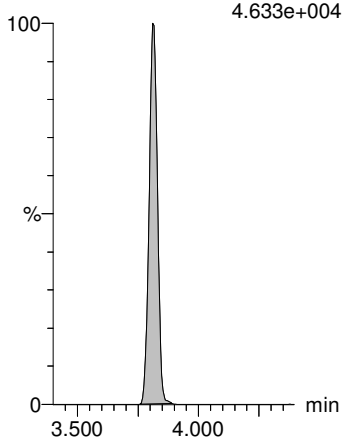
Total PFOA



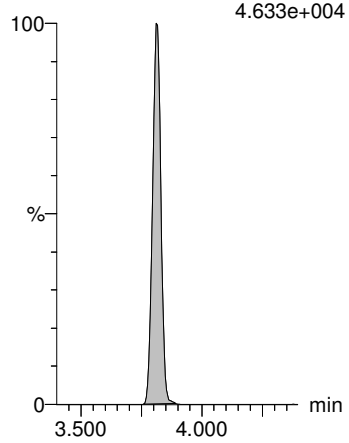
PFNA



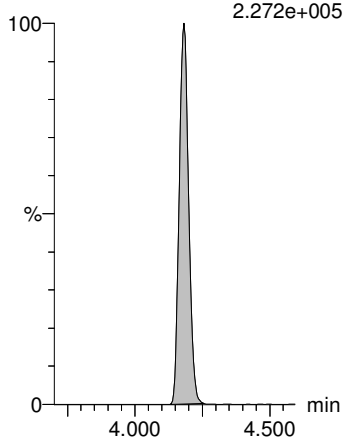
13C3-PFHxS-EIS



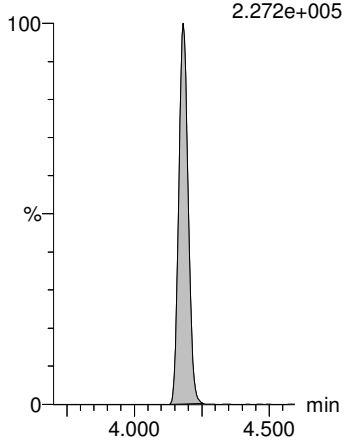
13C3-PFHxS-EIS



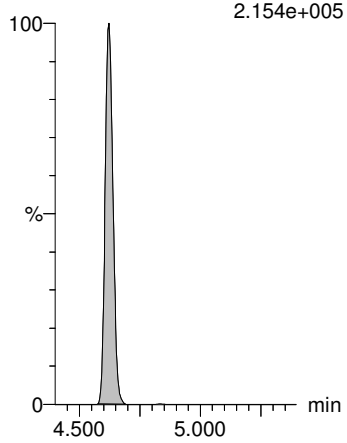
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

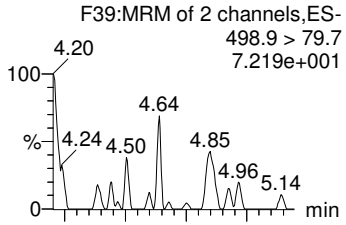
Review: AMR 3/5/2020

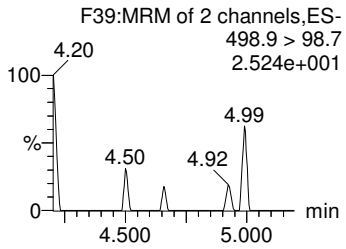
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

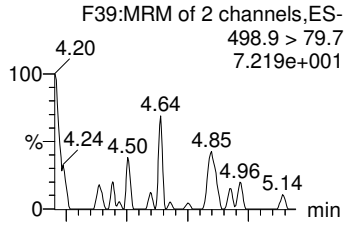
Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

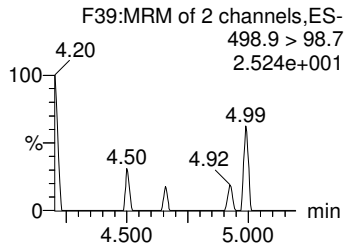
L-PFOS



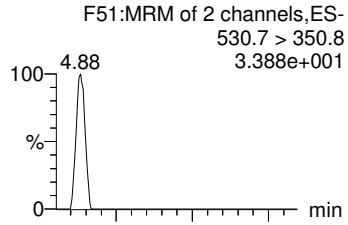


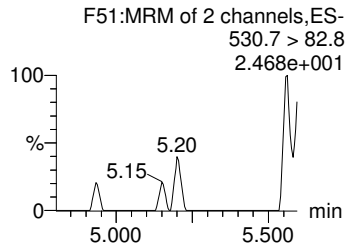
Total PFOS



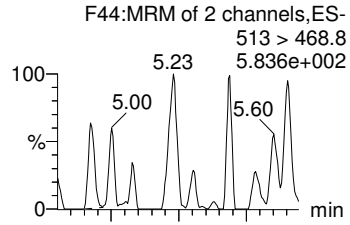


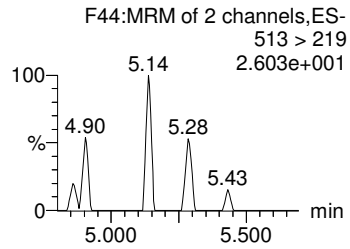
9Cl-PF30NS



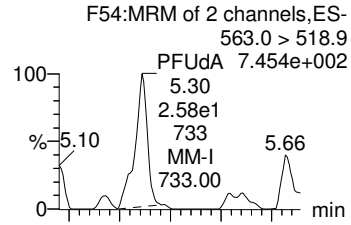


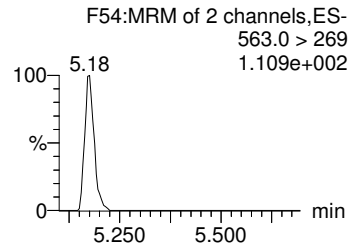
PFDA



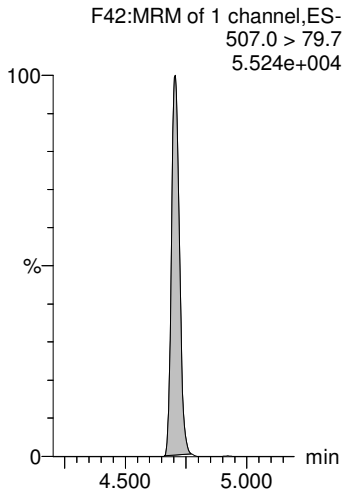


PFUdA

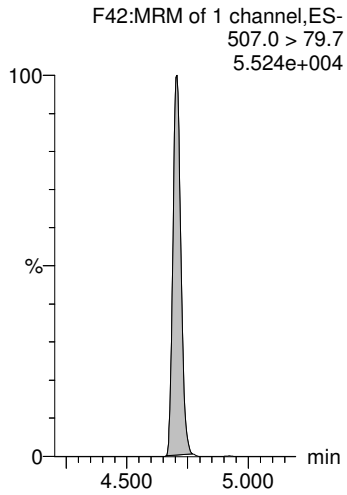




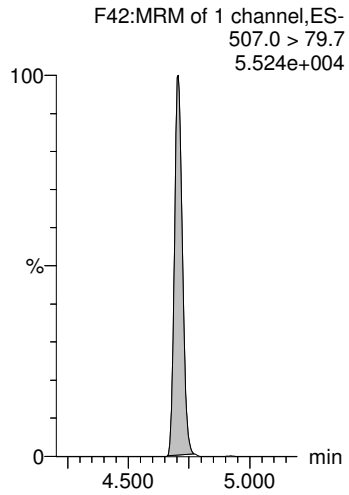
13C8-PFOS-EIS



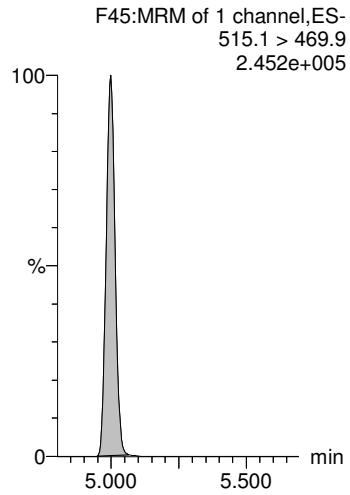
13C8-PFOS-EIS



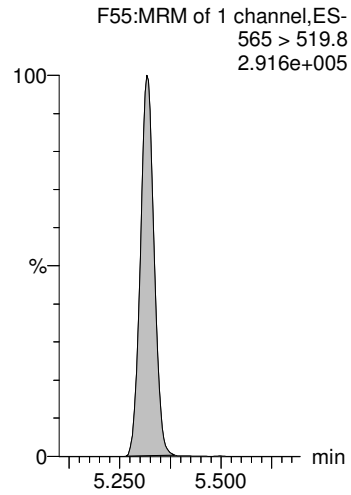
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

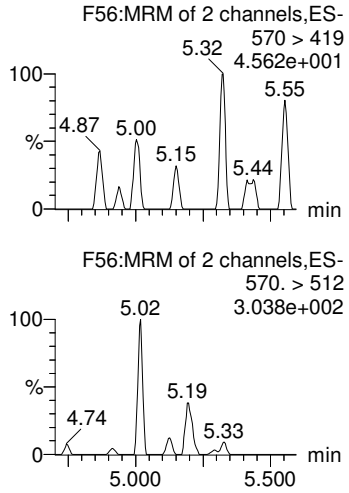
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

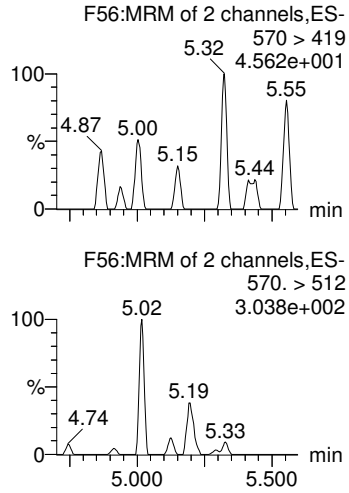
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

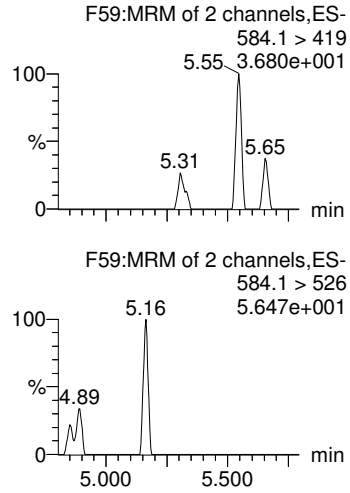
L-MeFOSAA



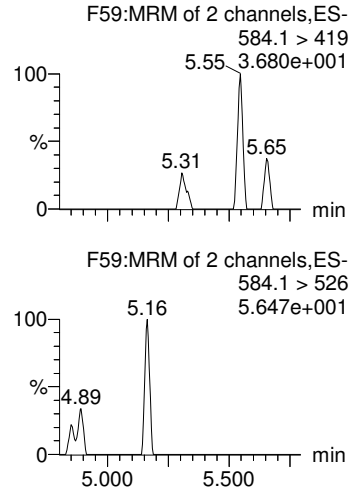
Total N-MeFOSAA



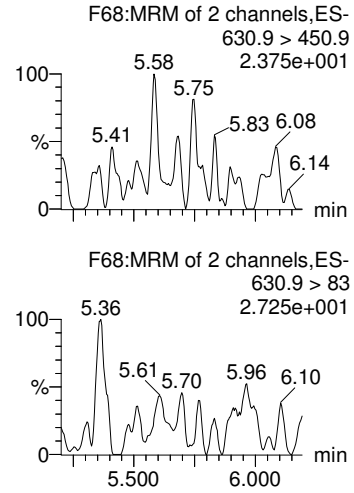
L-EtFOSAA



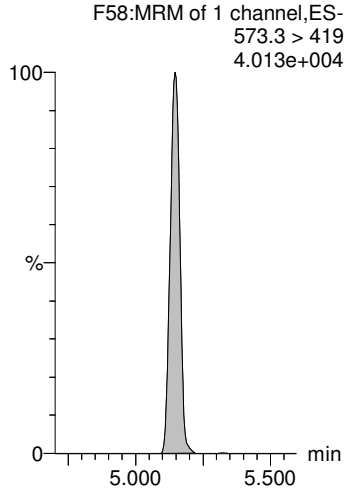
Total N-EtFOSAA



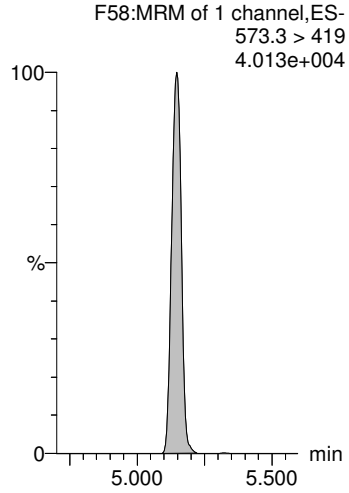
11Cl-PF30UdS



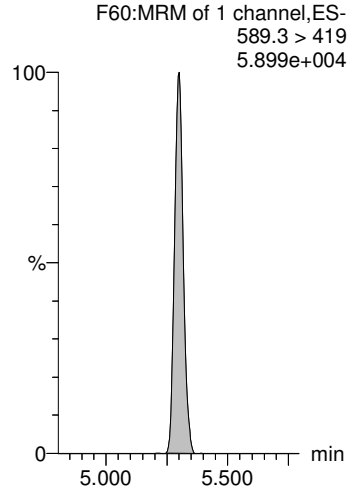
d3-N-MeFOSAA-EIS



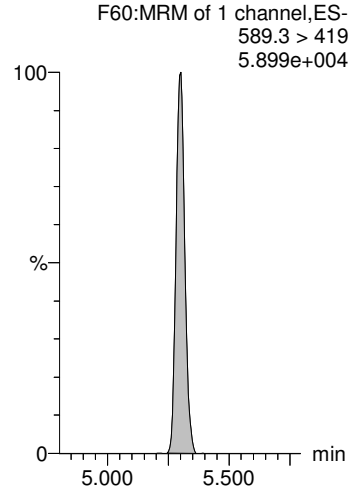
d3-N-MeFOSAA-EIS



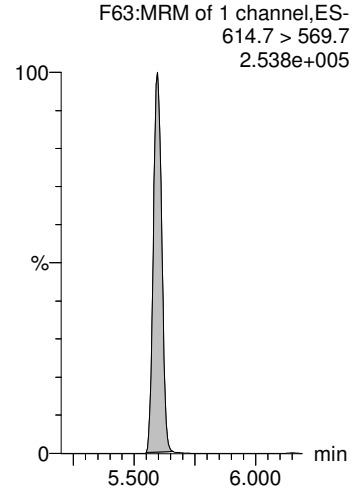
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

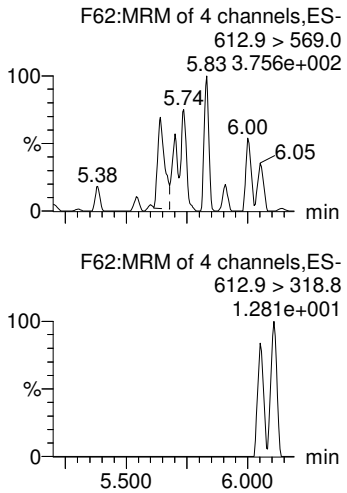
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

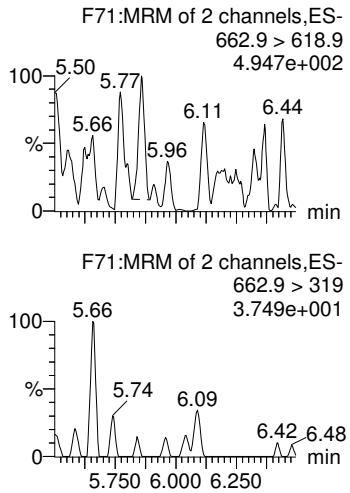
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

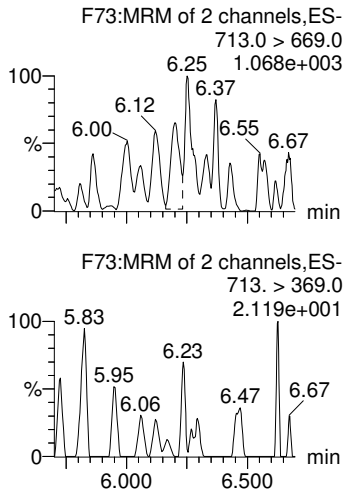
PFDoA



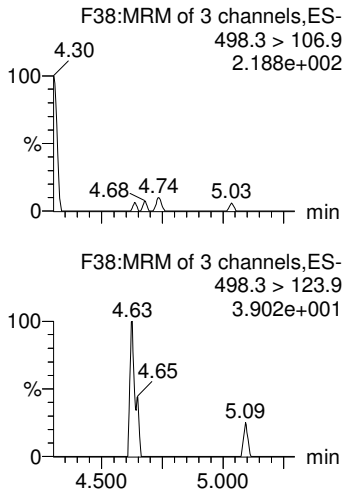
PFTrDA



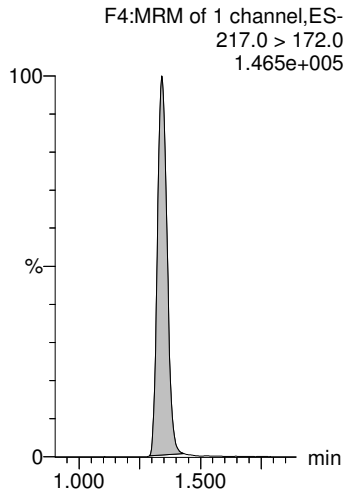
PFTeDA



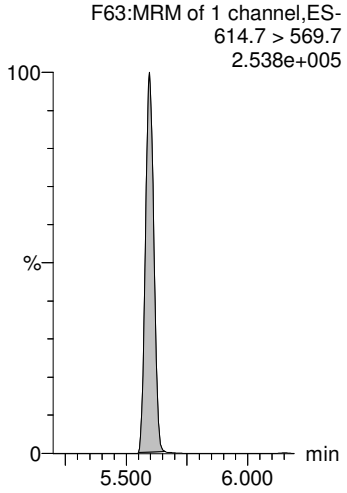
TDCA



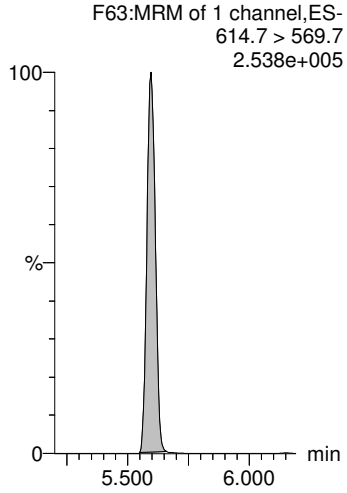
13C4-PFBA



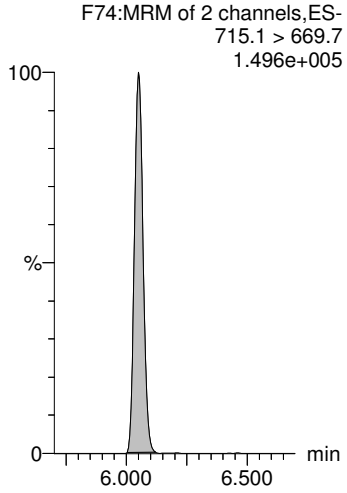
13C2-PFDoA-EIS



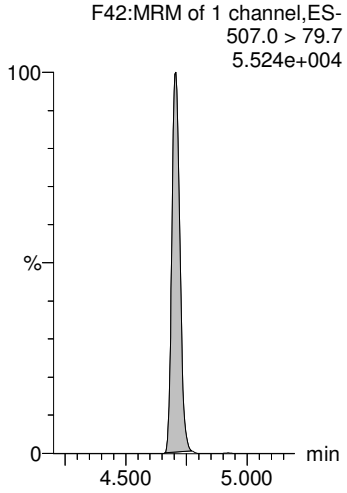
13C2-PFDoA-EIS



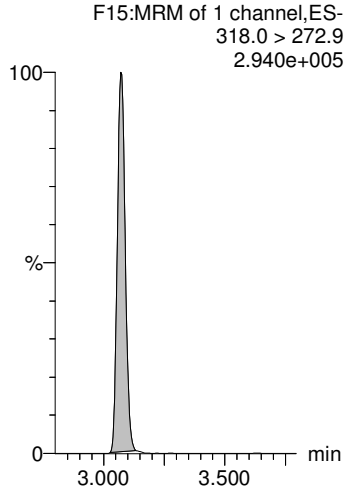
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

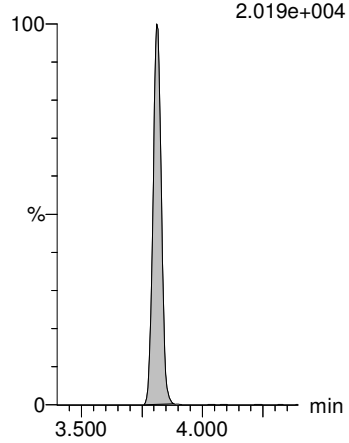
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

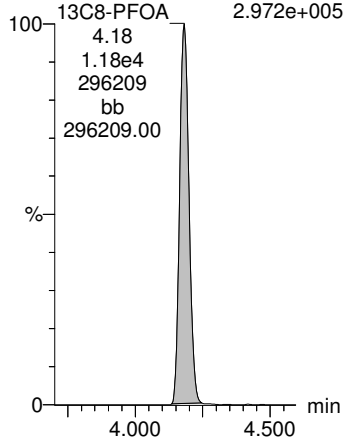
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:13 Pacific Standard Time

Name: 200303P2-19, Date: 03-Mar-2020, Time: 19:53:16, ID: 2000356-01 EB04-20200219 0.25138, Description: EB04-20200219

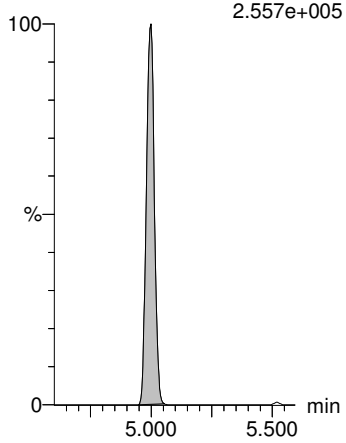
18O2-PFHxS



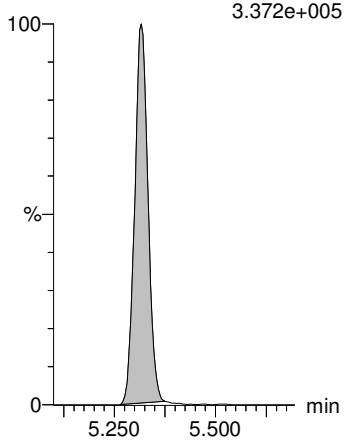
13C8-PFOA



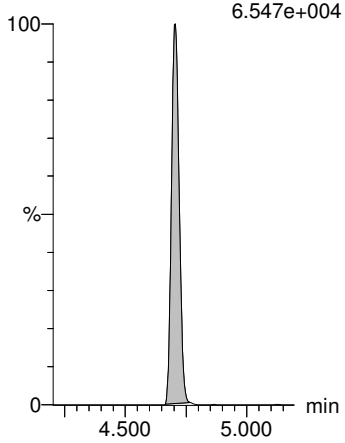
13C6-PFDA



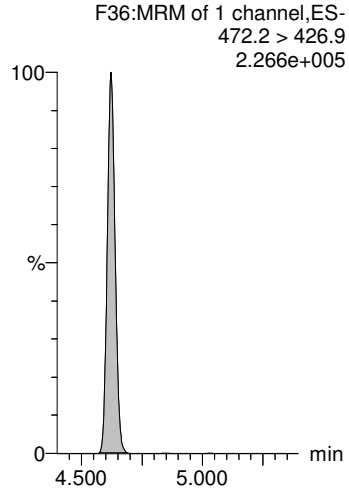
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	9.95e2	7.56e2	0.252		2.56	2.56	16.5	26.3780		3.041	NO
2	7	PFHxA	313.0 > 269.0	3.81e4	1.03e4	0.252		3.07	3.07	46.1	206.0087		17.565	NO
3	9	HFPO-DA	285.1 > 168.9		2.66e3	0.252		3.29						YES
4	11	PFHpA	363.0 > 318.9	1.39e4	6.70e3	0.252		3.67	3.67	25.9	85.4635		14.823	NO
5	12	ADONA	376.8 > 250.9		6.70e3	0.252		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	7.56e2		0.252	68.744	2.62	2.56	756	43.6340	87.9		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.03e4		0.252	1061.420	3.07	3.07	10300	38.5737	77.7		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.66e3		0.252	276.115	3.35	3.29	2660	38.2801	77.1		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.70e3		0.252	602.105	3.69	3.67	6700	44.1934	89.1		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.70e3		0.252	602.105	3.69	3.67	6700	44.1934	89.1		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	3.04e3	1.93e3	0.252		3.81	3.82	19.7	75.4214		2.589	NO
13	1...	Total PFHxS	398.9 > 79.7	3.04e3	1.93e3	0.252		3.93		19.7	75.4214			
14	16	L-PFOA	412.8 > 368.9	1.03e5	9.09e3	0.252		4.18	4.18	142	446.3466		2.832	NO
15	1...	Total PFOA	412.8 > 368.9	1.03e5	9.09e3	0.252		4.60		142	446.3466			
16	21	PFNA	463.0 > 418.8	6.33e2	8.30e3	0.252		4.62	4.62	0.953	2.9524		5.634	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.93e3		0.252	173.666	3.81	3.81	1930	44.0774	88.8		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.93e3		0.252	173.666	3.81	3.81	1930	44.0774	88.8		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.09e3		0.252	812.468	4.18	4.18	9090	44.3977	89.5		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.09e3		0.252	812.468	4.18	4.18	9090	44.3977	89.5		
21	65	13C5-PFNA-EIS	468.2 > 422.9	8.30e3		0.252	715.290	4.62	4.62	8300	46.0844	92.9		
22	-1													
23	23	L-PFOS	498.9 > 79.7	8.30e2	2.19e3	0.252		4.71	4.71	4.74	19.2392		2.805	NO
24	1...	Total PFOS	498.9 > 79.7	8.30e2	2.19e3	0.252		5.13		4.74	19.2392			
25	25	9Cl-PF30NS	530.7 > 350.8		2.19e3	0.252		4.91						YES
26	26	PFDA	513 > 468.8		8.43e3	0.252		4.99						YES
27	33	PFUdA	563.0 > 518.9	3.30e1	1.01e4	0.252		5.32	5.32	0.0409			122.955	YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.19e3		0.252	170.914	4.71	4.71	2190	50.8240	102.4		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.19e3		0.252	170.914	4.71	4.71	2190	50.8240	102.4		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.19e3		0.252	170.914	4.71	4.71	2190	50.8240	102.4		
31	73	13C2-PFDA-EIS	515.1 > 469.9	8.43e3		0.252	817.432	5.00	4.99	8430	40.9219	82.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.01e4		0.252	1068.765	5.32	5.32	10100	37.4364	75.4		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.62e3	0.252		5.14						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.62e3	0.252		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.64e3	0.252		5.30						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.64e3	0.252		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		9.51e3	0.252		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.62e3		0.252	144.472	5.14	5.14	1620	44.5716	89.8		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.62e3		0.252	144.472	5.14	5.14	1620	44.5716	89.8		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.64e3		0.252	265.746	5.29	5.30	2640	39.3693	79.3		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.64e3		0.252	265.746	5.29	5.30	2640	39.3693	79.3		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	9.51e3		0.252	1089.820	5.58	5.60	9510	34.6403	69.8		
44	-1													
45	37	PFDoA	612.9 > 569.0		9.51e3	0.252		5.60						YES
46	39	PFTrDA	662.9 > 618.9		9.51e3	0.252		5.85						YES
47	41	PFTeDA	713.0 > 669.0		6.68e3	0.252		6.05						YES
48	1...	TDCA	498.3>106.9			0.252		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.26e3	6.26e3	0.252	1.000	1.34	1.34	12.5	49.6189	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	9.51e3		0.252	1089.820	5.58	5.60	9510	34.6403	69.8		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	9.51e3		0.252	1089.820	5.58	5.60	9510	34.6403	69.8		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	6.68e3		0.252	818.597	6.01	6.05	6680	32.3766	65.3		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.19e3		0.252	170.914	4.71	4.71	2190	50.8240	102.4		
54	1...	13C5-PFHxA	318.0 > 272.9	9.99e3	9.99e3	0.252	1.000	3.06	3.07	12.5	49.6189	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.59e2	8.59e2	0.252	1.000	3.81	3.81	12.5	49.6189	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.04e4	1.04e4	0.252	1.000	4.17	4.18	12.5	49.6189	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	9.07e3	9.07e3	0.252	1.000	4.99	5.00	12.5	49.6189	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.22e4	1.22e4	0.252	1.000	5.31	5.32	12.5	49.6189	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.37e3	2.37e3	0.252	1.000	4.70	4.71	12.5	49.6189	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	8.61e3	8.61e3	0.252	1.000	4.62	4.62	12.5	49.6189	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

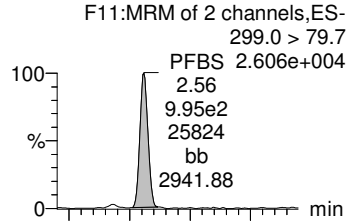
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

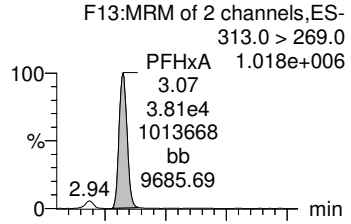
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

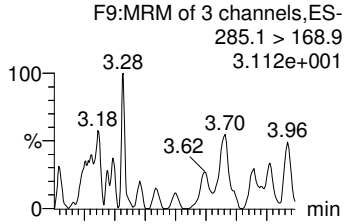
PFBS



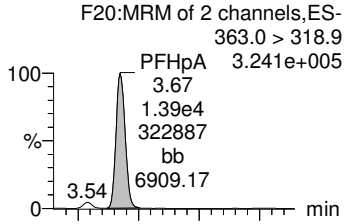
PFHxA



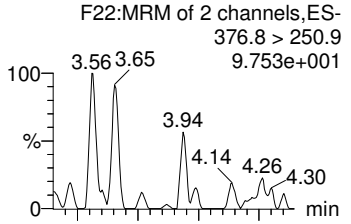
HFPO-DA



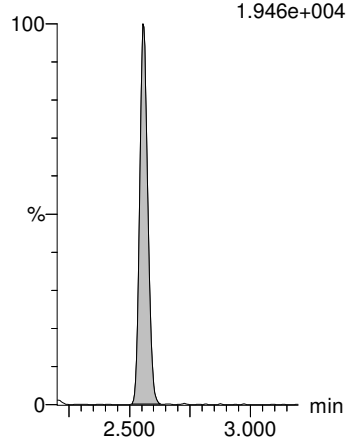
PFHpA



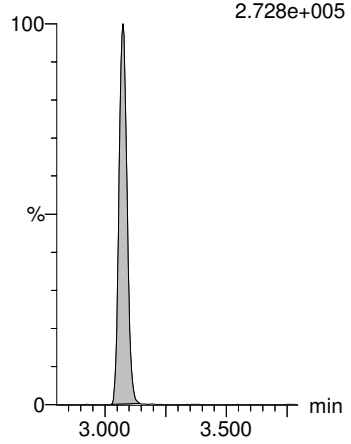
ADONA



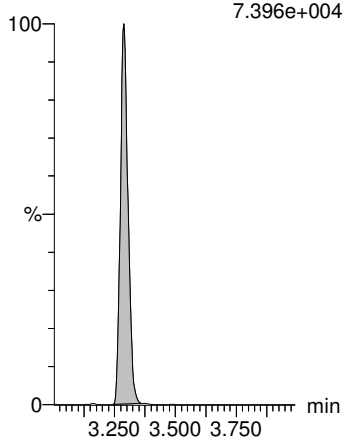
13C3-PFBS-EIS



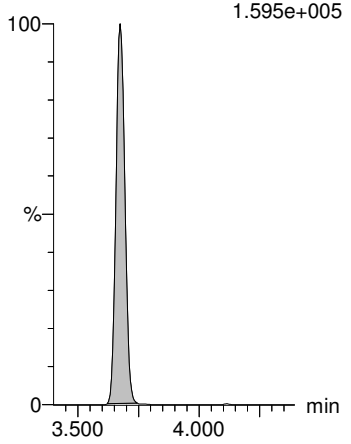
13C2-PFHxA-EIS



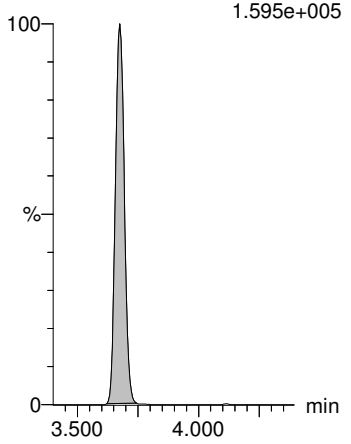
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

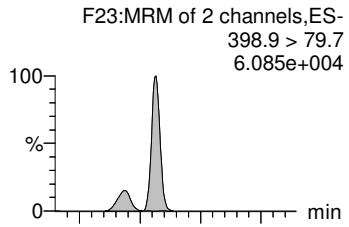
Review: AMR 3/5/2020

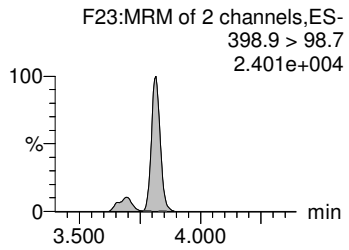
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

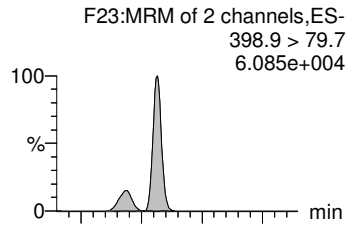
Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

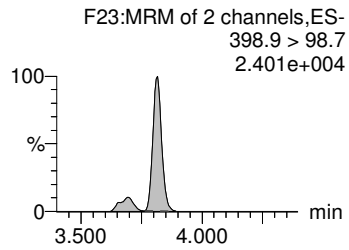
L-PFHxS



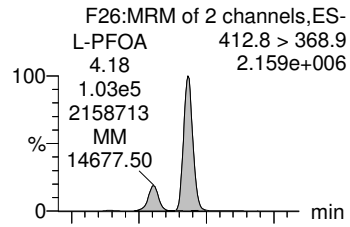


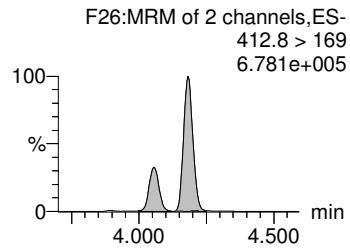
Total PFHxS



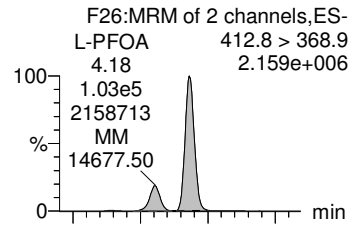


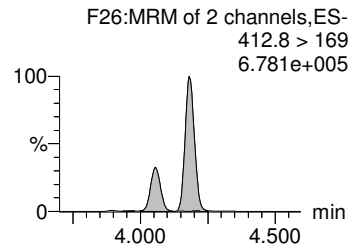
L-PFOA



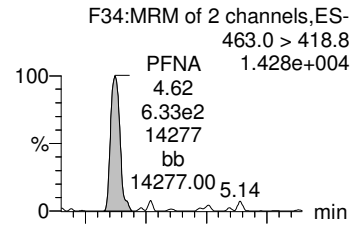


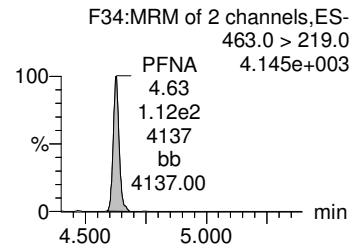
Total PFOA



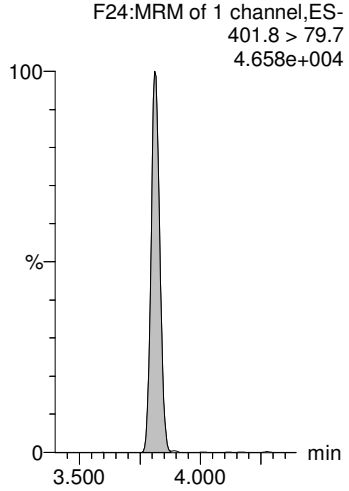


PFNA

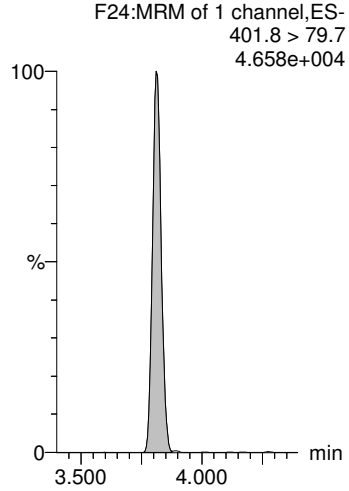




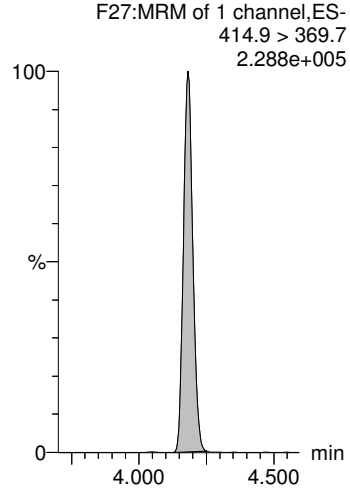
13C3-PFHxS-EIS



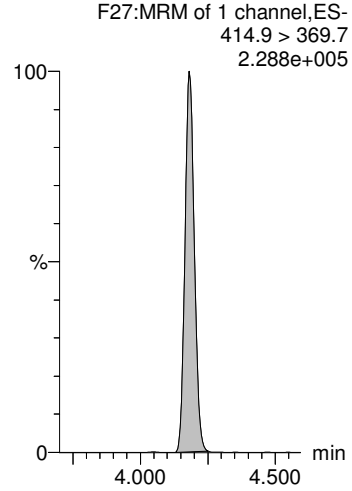
13C3-PFHxS-EIS



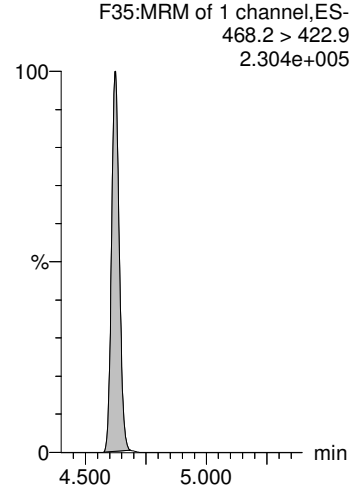
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

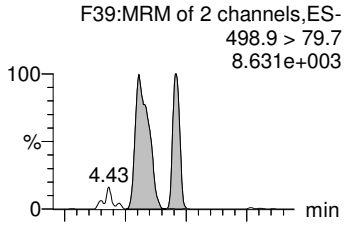
Review: AMR 3/5/2020

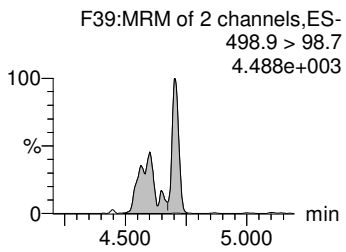
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

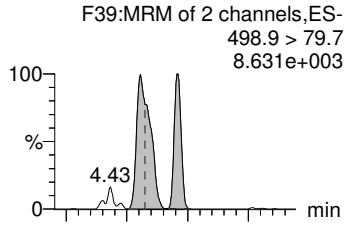
Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

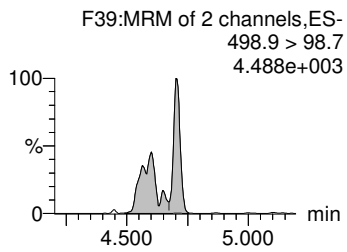
L-PFOS



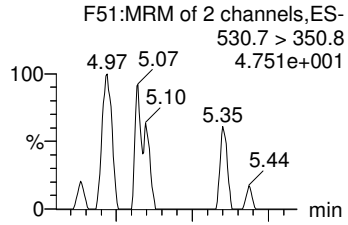


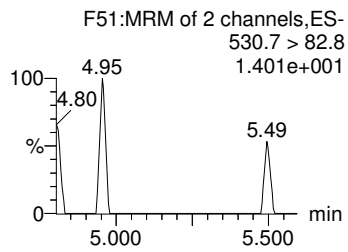
Total PFOS



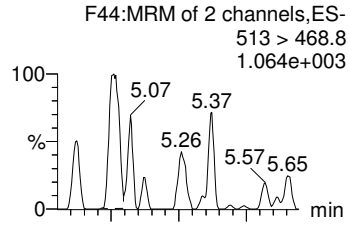


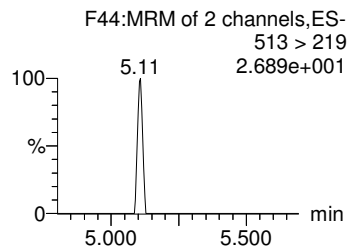
9Cl-PF30NS



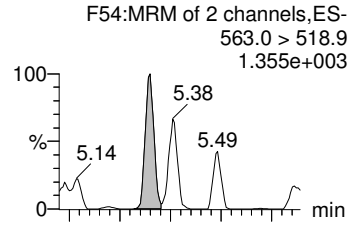


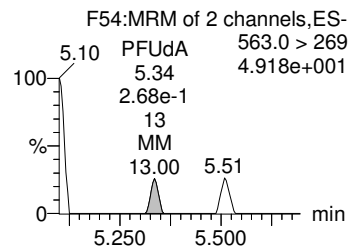
PFDA



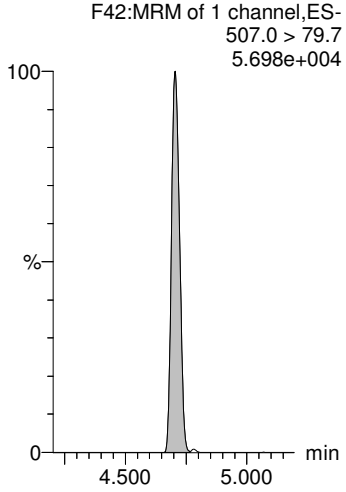


PFUdA

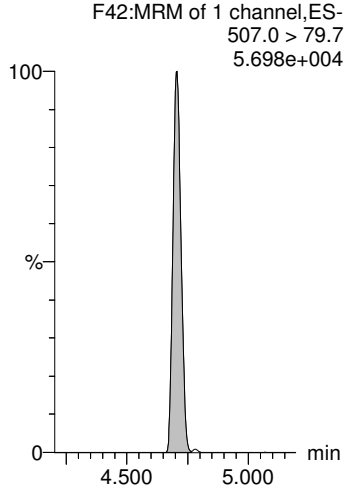




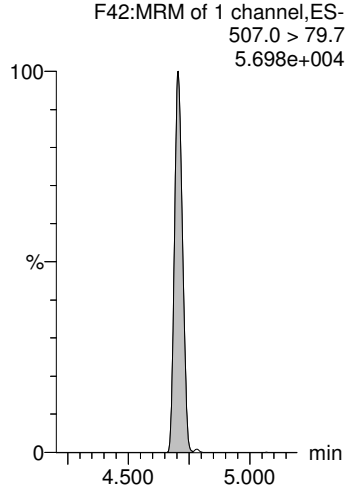
13C8-PFOS-EIS



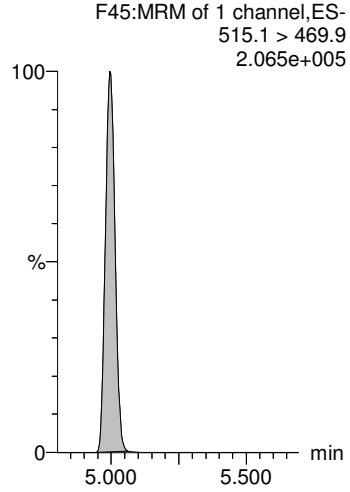
13C8-PFOS-EIS



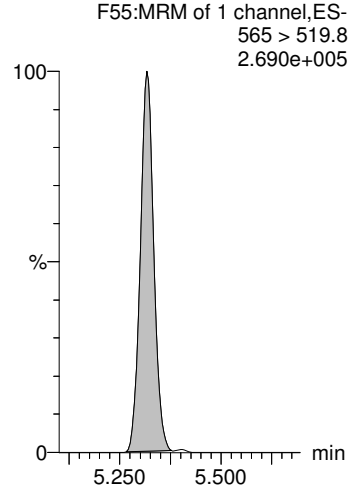
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

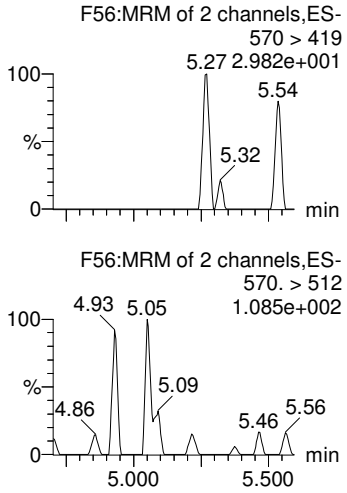
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

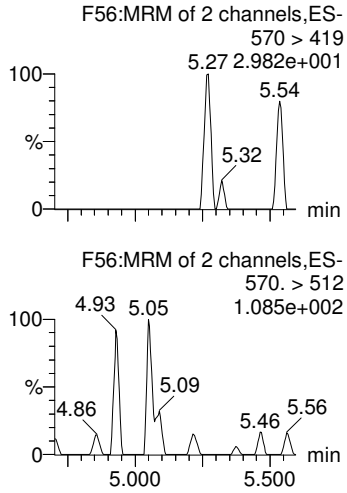
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

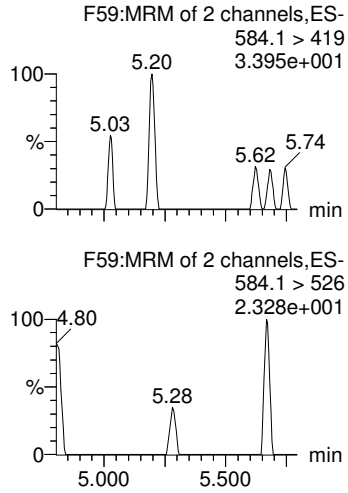
L-MeFOSAA



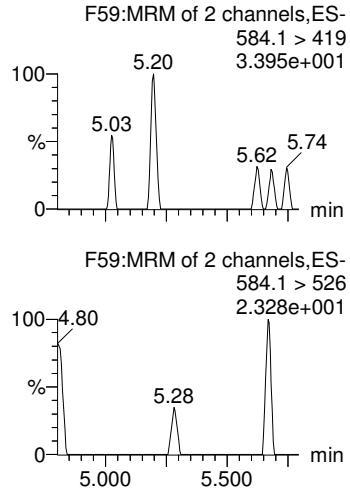
Total N-MeFOSAA



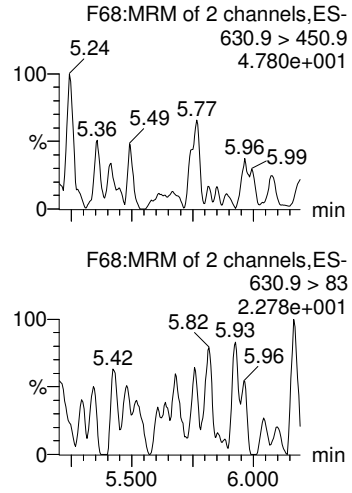
L-EtFOSAA



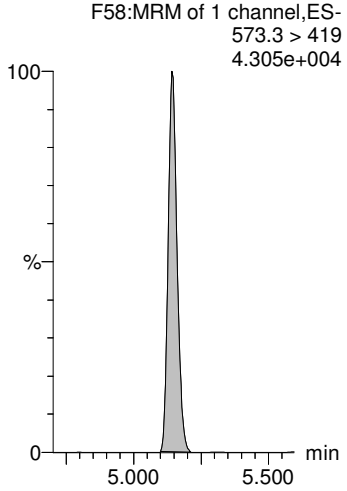
Total N-EtFOSAA



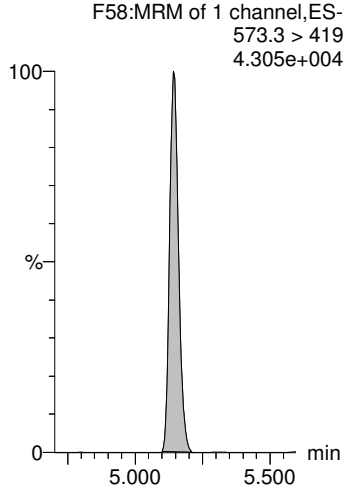
11Cl-PF30UdS



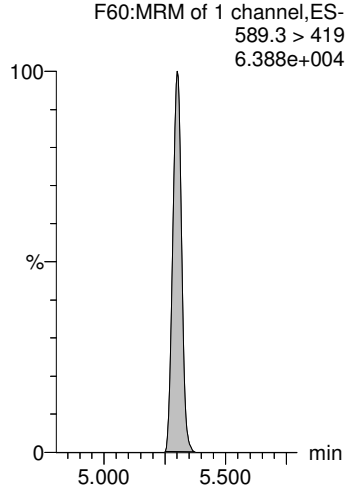
d3-N-MeFOSAA-EIS



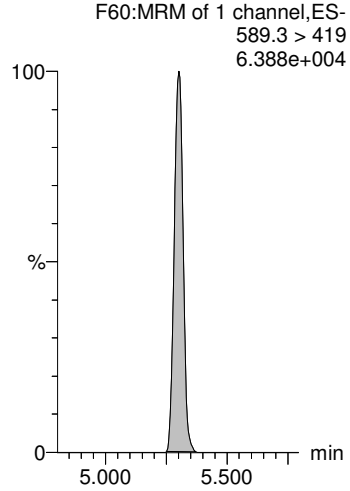
d3-N-MeFOSAA-EIS



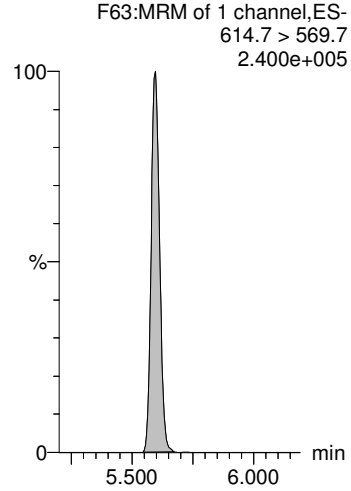
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

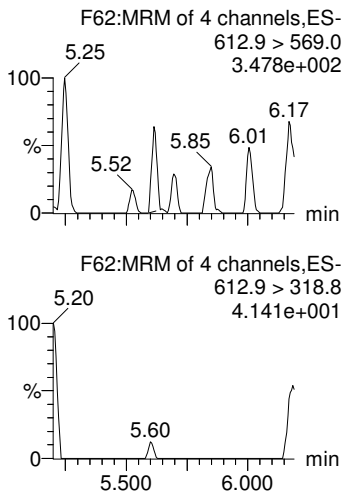
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

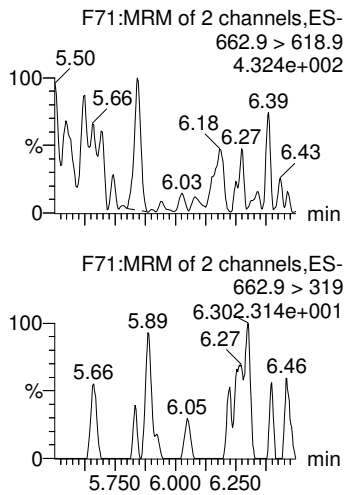
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

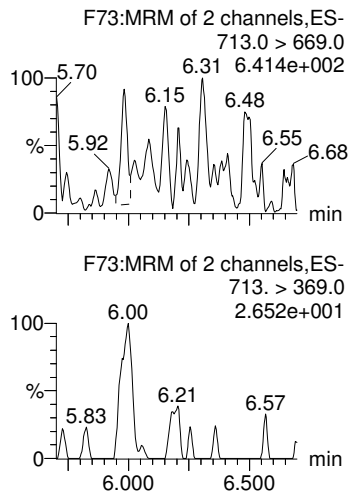
PFDoA



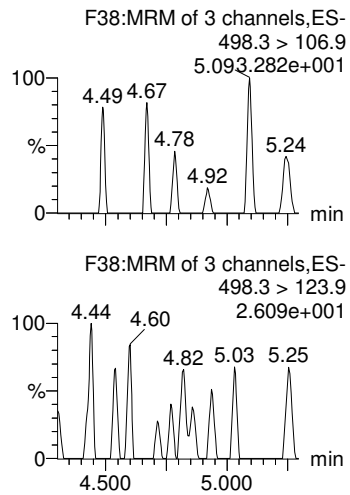
PFTrDA



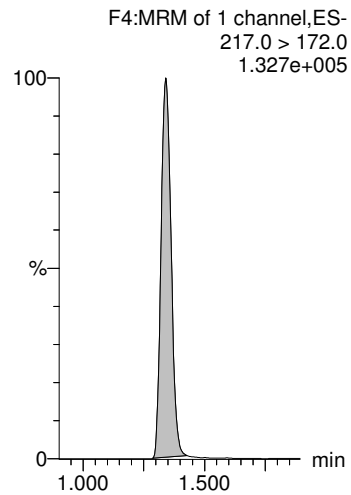
PFTeDA



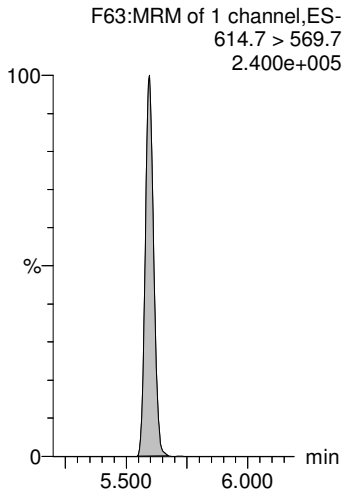
TDCA



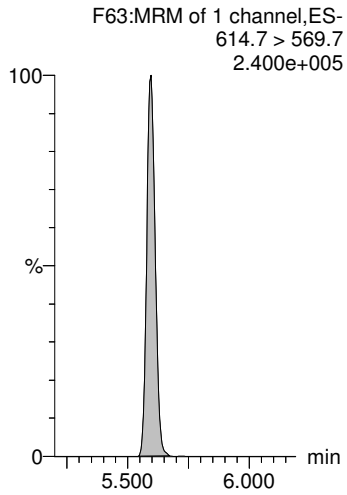
13C4-PFBA



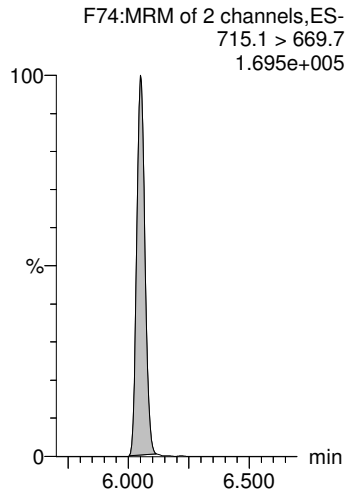
13C2-PFDoA-EIS



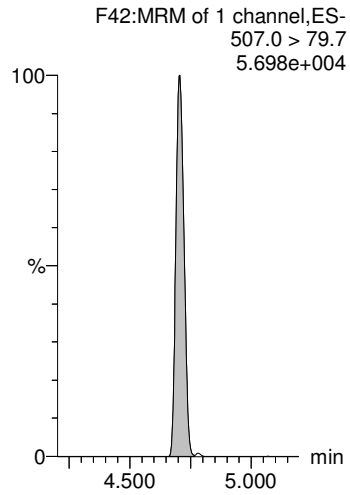
13C2-PFDoA-EIS



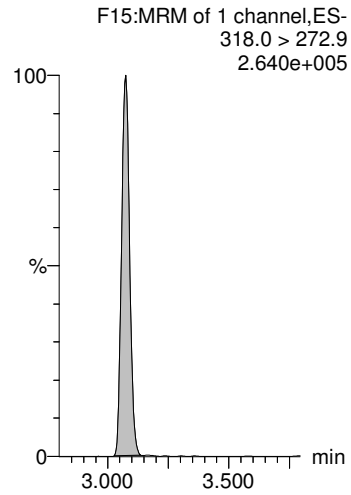
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

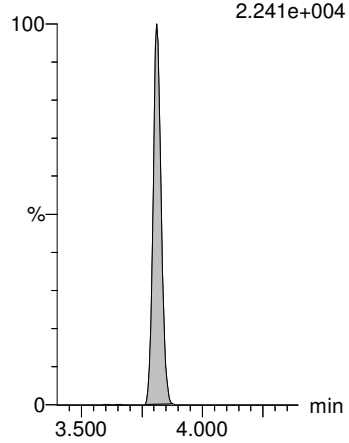
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

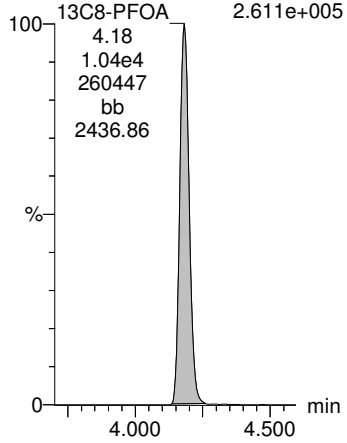
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:18 Pacific Standard Time

Name: 200303P2-20, Date: 03-Mar-2020, Time: 20:03:47, ID: 2000356-02 IS720W02D-20200219 0.25192, Description: IS720W02D-20200219

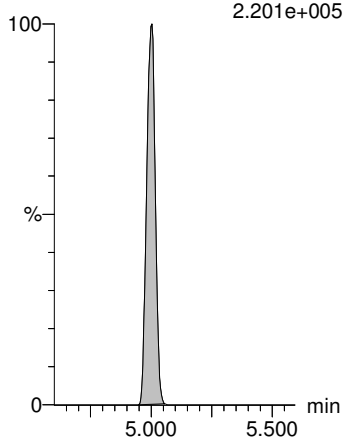
18O2-PFHxS



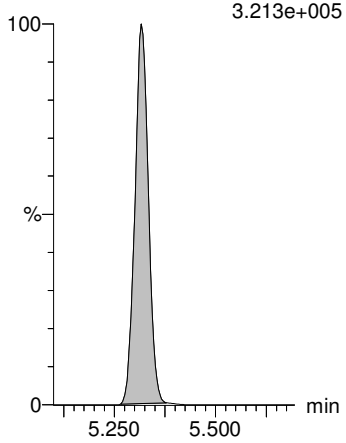
13C8-PFOA



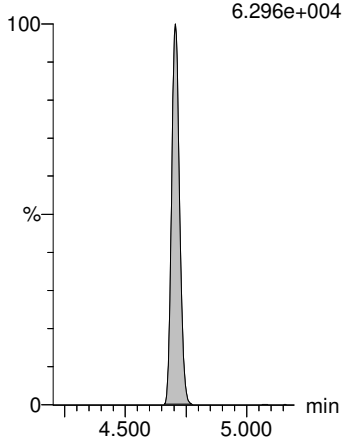
13C6-PFDA



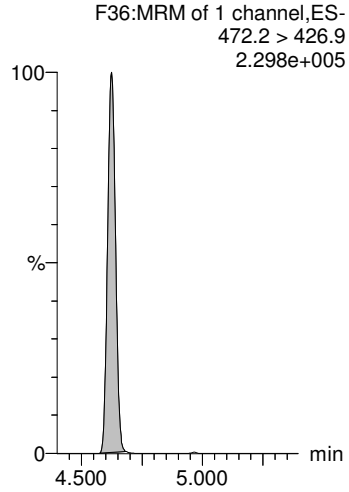
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	1.24e3	8.03e2	0.254		2.56	2.56	19.3	30.7310		3.346	NO
2	7	PFHxA	313.0 > 269.0	3.79e4	1.10e4	0.254		3.08	3.08	43.1	190.8120		16.982	NO
3	9	HFPO-DA	285.1 > 168.9		2.76e3	0.254		3.29						YES
4	11	PFHpA	363.0 > 318.9	1.46e4	6.23e3	0.254		3.68	3.68	29.4	96.1255		14.818	NO
5	12	ADONA	376.8 > 250.9		6.23e3	0.254		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	8.03e2		0.254	68.744	2.62	2.56	803	45.9455	93.4		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.10e4		0.254	1061.420	3.07	3.08	11000	40.7868	82.9		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.76e3		0.254	276.115	3.35	3.29	2760	39.2956	79.9		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.23e3		0.254	602.105	3.69	3.68	6230	40.7407	82.8		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.23e3		0.254	602.105	3.69	3.68	6230	40.7407	82.8		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	4.38e3	1.99e3	0.254		3.81	3.82	27.4	103.7857		2.378	NO
13	1...	Total PFHxS	398.9 > 79.7	4.38e3	1.99e3	0.254		3.93		27.4	103.7857			
14	16	L-PFOA	412.8 > 368.9	1.21e5	9.46e3	0.254		4.18	4.18	160	500.2329		2.845	NO
15	1...	Total PFOA	412.8 > 368.9	1.21e5	9.46e3	0.254		4.60		160	500.2329			
16	21	PFNA	463.0 > 418.8	3.71e2	8.12e3	0.254		4.62	4.62	0.571	1.7538		14.064	YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.99e3		0.254	173.666	3.81	3.81	1990	45.1768	91.8		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.99e3		0.254	173.666	3.81	3.81	1990	45.1768	91.8		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.46e3		0.254	812.468	4.18	4.18	9460	45.7988	93.1		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.46e3		0.254	812.468	4.18	4.18	9460	45.7988	93.1		
21	65	13C5-PFNA-EIS	468.2 > 422.9	8.12e3		0.254	715.290	4.62	4.62	8120	44.6896	90.8		
22	-1													
23	23	L-PFOS	498.9 > 79.7	1.36e3	2.13e3	0.254		4.71	4.71	7.98	31.9369		2.667	NO
24	1...	Total PFOS	498.9 > 79.7	1.36e3	2.13e3	0.254		5.13		7.98	31.9369			
25	25	9Cl-PF30NS	530.7 > 350.8		2.13e3	0.254		4.91						YES
26	26	PFDA	513 > 468.8		9.24e3	0.254		5.00						YES
27	33	PFUdA	563.0 > 518.9		9.89e3	0.254		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.13e3		0.254	170.914	4.71	4.71	2130	49.0843	99.8		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.13e3		0.254	170.914	4.71	4.71	2130	49.0843	99.8		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.13e3		0.254	170.914	4.71	4.71	2130	49.0843	99.8		
31	73	13C2-PFDA-EIS	515.1 > 469.9	9.24e3		0.254	817.432	5.00	5.00	9240	44.5047	90.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	9.89e3		0.254	1068.765	5.31	5.32	9890	36.4226	74.0		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.94e3	0.254		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.94e3	0.254		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.87e3	0.254		5.30						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.87e3	0.254		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.02e4	0.254		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.94e3		0.254	144.472	5.14	5.15	1940	52.7504	107.2		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.94e3		0.254	144.472	5.14	5.15	1940	52.7504	107.2		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.87e3		0.254	265.746	5.29	5.30	2870	42.5074	86.4		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.87e3		0.254	265.746	5.29	5.30	2870	42.5074	86.4		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.254	1089.820	5.58	5.60	10200	36.9185	75.1		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.02e4	0.254		5.60						YES
46	39	PFTrDA	662.9 > 618.9		1.02e4	0.254		5.85						YES
47	41	PFTeDA	713.0 > 669.0		6.94e3	0.254		6.05						YES
48	1...	TDCA	498.3>106.9			0.254		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.61e3	6.61e3	0.254	1.000	1.34	1.34	12.5	49.1913	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.254	1089.820	5.58	5.60	10200	36.9185	75.1		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.254	1089.820	5.58	5.60	10200	36.9185	75.1		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	6.94e3		0.254	818.597	6.01	6.05	6940	33.3645	67.8		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.13e3		0.254	170.914	4.71	4.71	2130	49.0843	99.8		
54	1...	13C5-PFHxA	318.0 > 272.9	1.08e4	1.08e4	0.254	1.000	3.06	3.07	12.5	49.1913	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.67e2	8.67e2	0.254	1.000	3.81	3.81	12.5	49.1913	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.16e4	1.16e4	0.254	1.000	4.17	4.18	12.5	49.1913	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.00e4	1.00e4	0.254	1.000	4.99	5.00	12.5	49.1913	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.24e4	1.24e4	0.254	1.000	5.31	5.31	12.5	49.1913	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.20e3	2.20e3	0.254	1.000	4.70	4.71	12.5	49.1913	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	9.49e3	9.49e3	0.254	1.000	4.62	4.62	12.5	49.1913	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

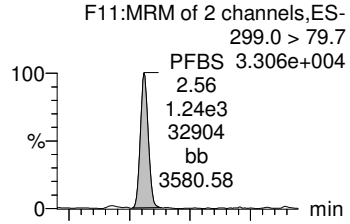
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

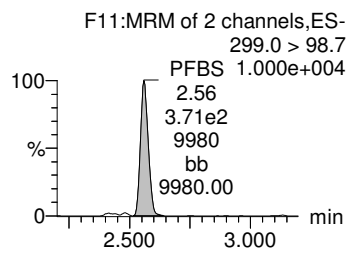
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

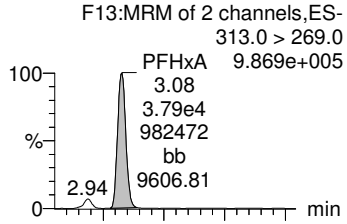
Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

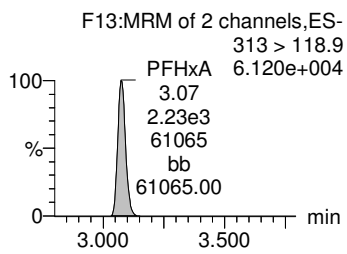
PFBS



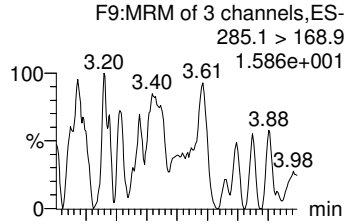


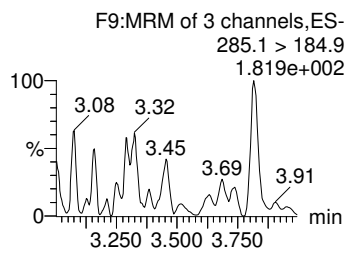
PFHxA



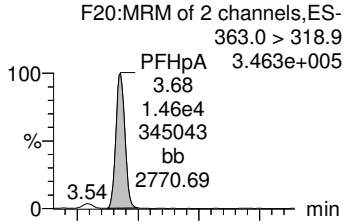


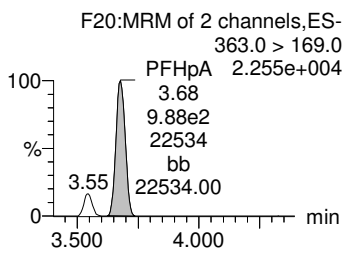
HFPO-DA



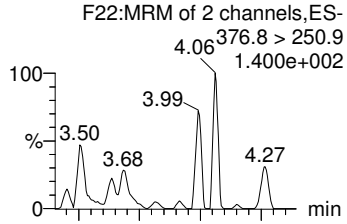


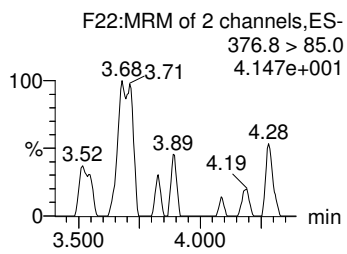
PFHpA



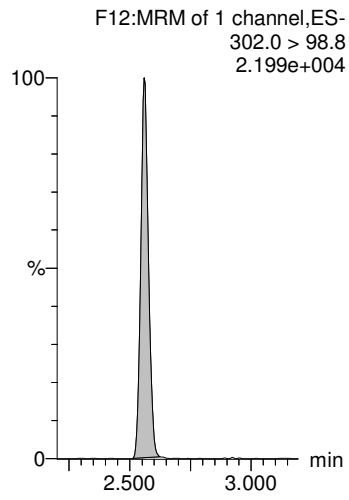


ADONA

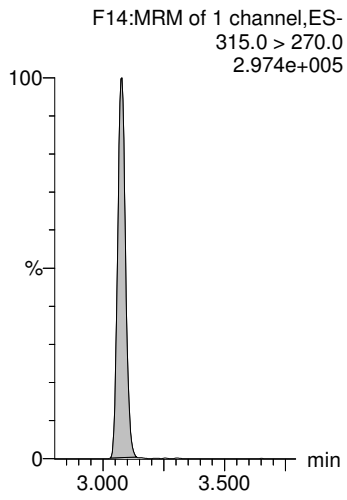




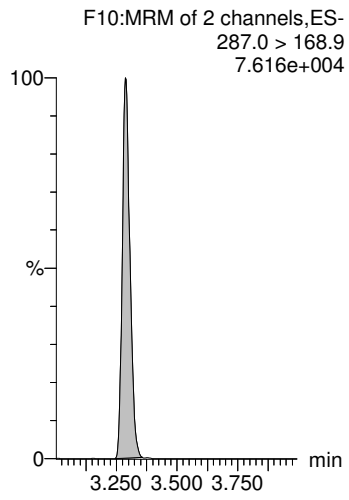
13C3-PFBS-EIS



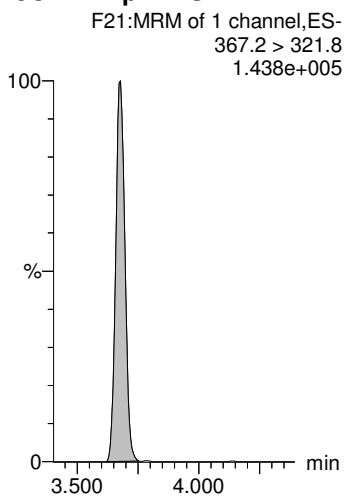
13C2-PFHxA-EIS



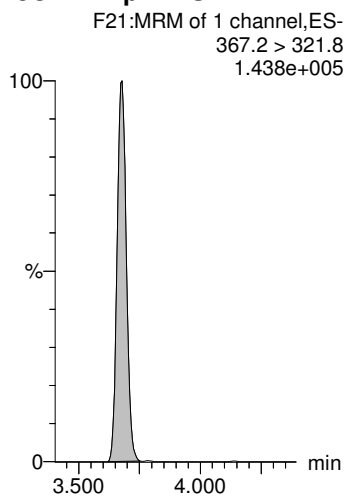
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

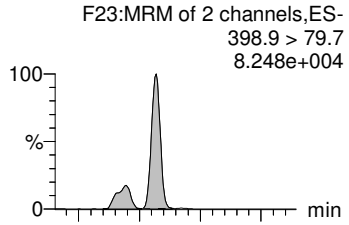
Review: AMR 3/5/2020

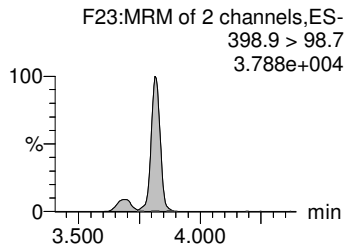
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

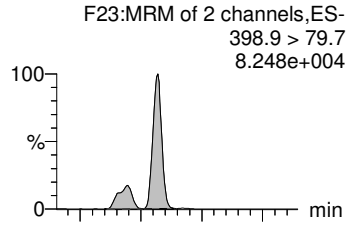
Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

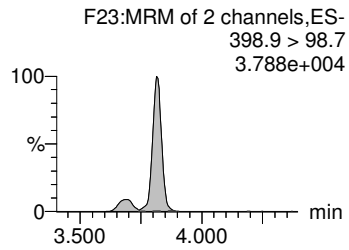
L-PFHxS



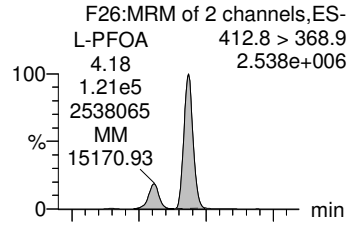


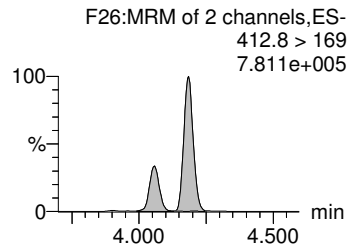
Total PFHxS



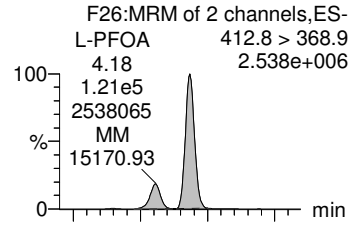


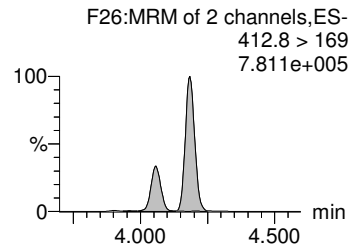
L-PFOA



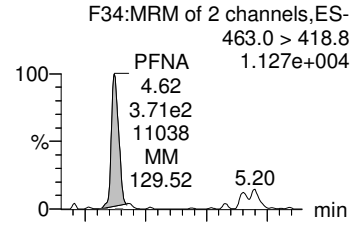


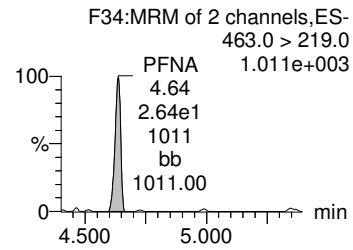
Total PFOA



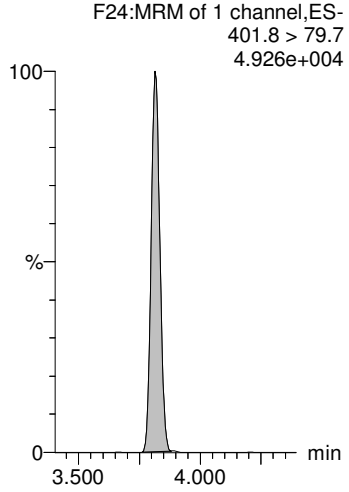


PFNA

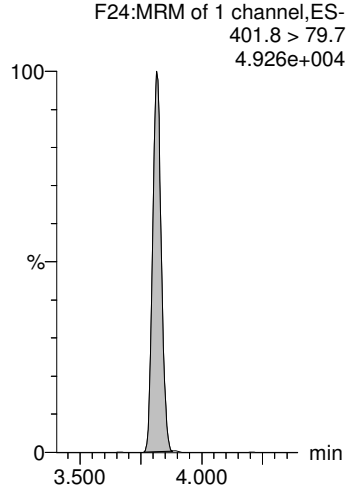




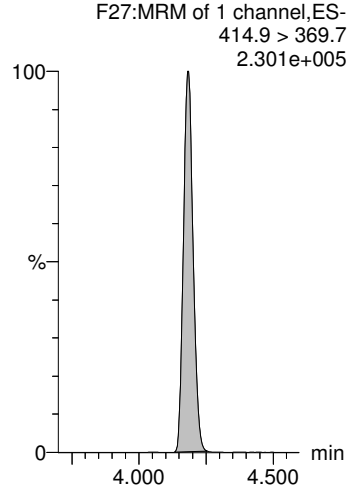
13C3-PFHxS-EIS



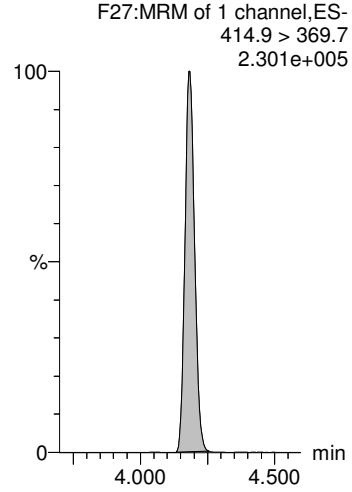
13C3-PFHxS-EIS



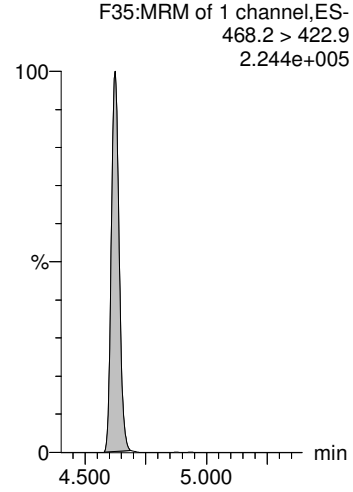
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

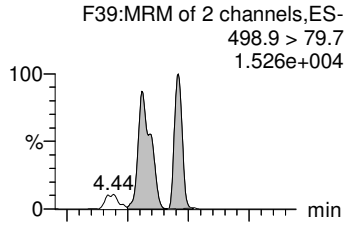
Review: AMR 3/5/2020

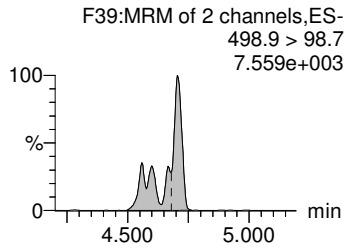
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

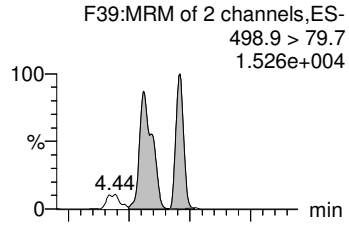
Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

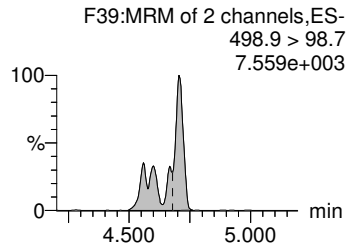
L-PFOS



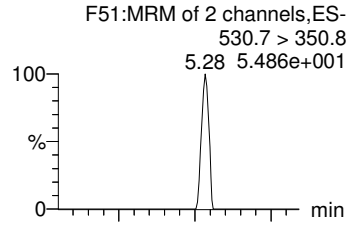


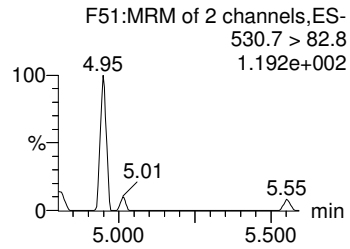
Total PFOS



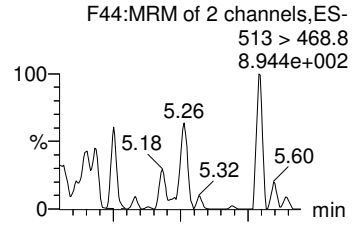


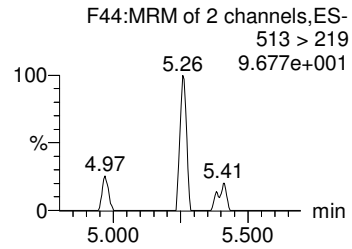
9Cl-PF30NS



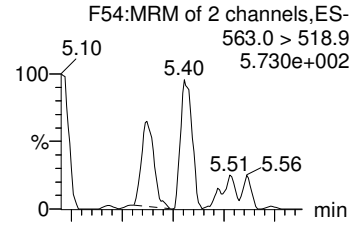


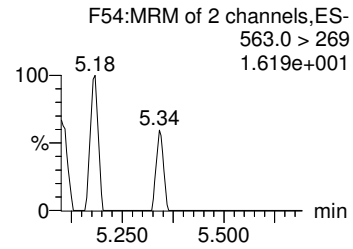
PFDA



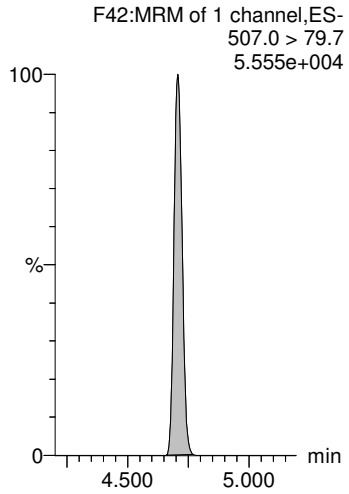


PFUdA

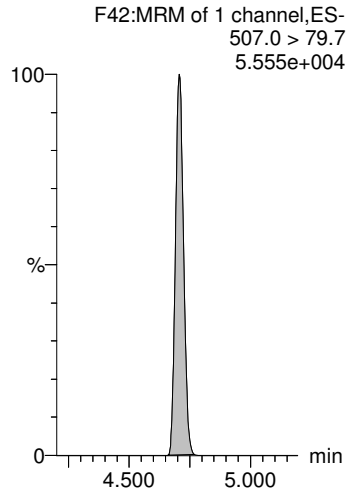




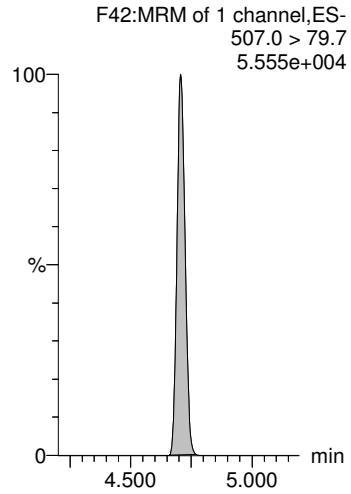
13C8-PFOS-EIS



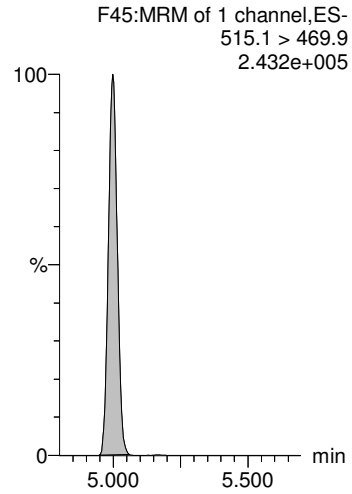
13C8-PFOS-EIS



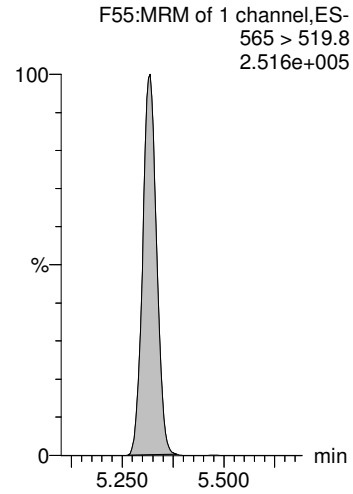
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

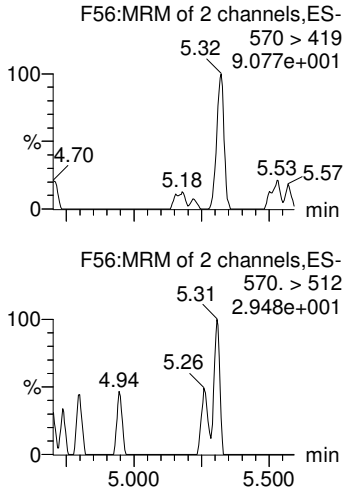
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

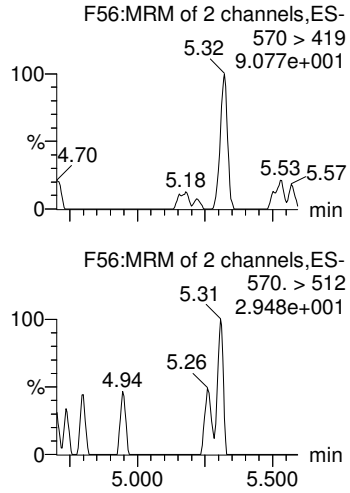
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

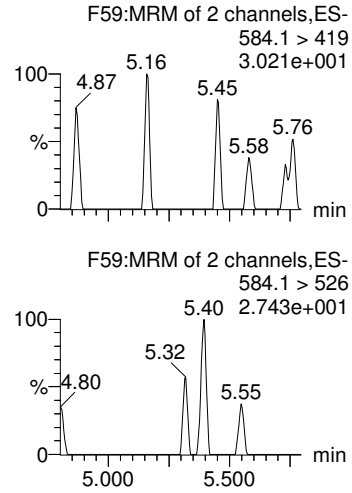
L-MeFOSAA



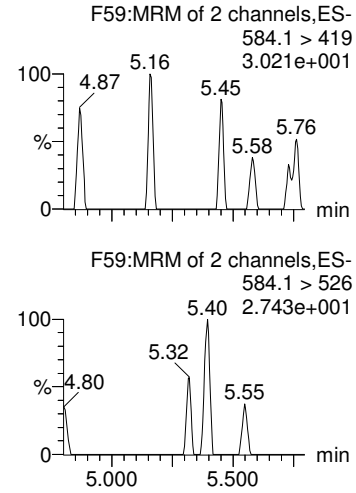
Total N-MeFOSAA



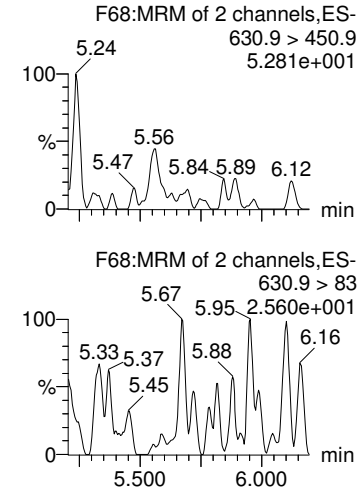
L-EtFOSAA



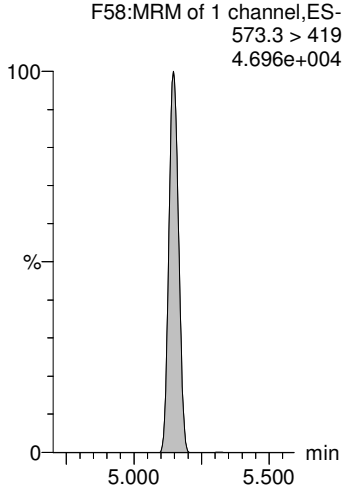
Total N-EtFOSAA



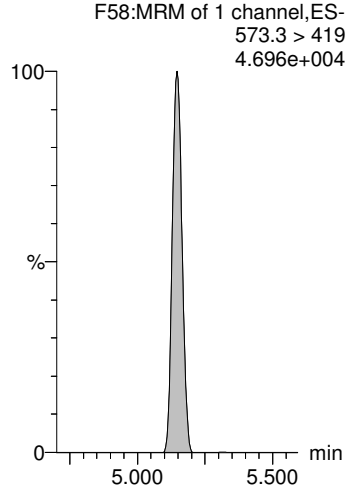
11Cl-PF30UdS



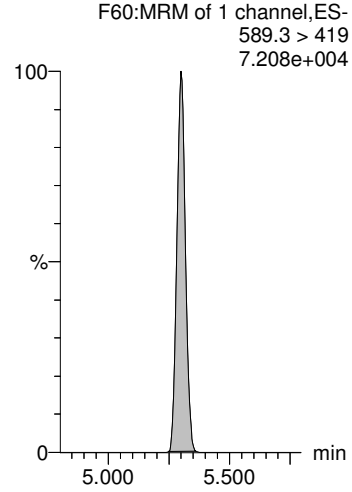
d3-N-MeFOSAA-EIS



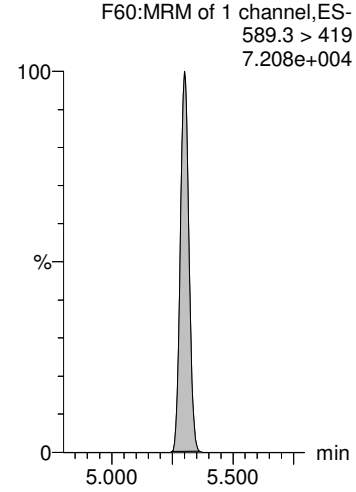
d3-N-MeFOSAA-EIS



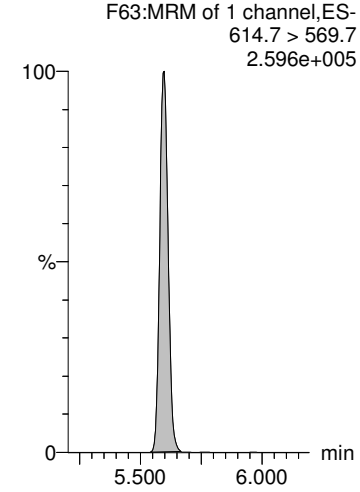
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

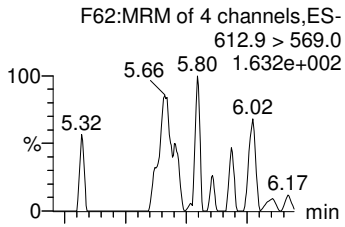
Review: AMR 3/5/2020

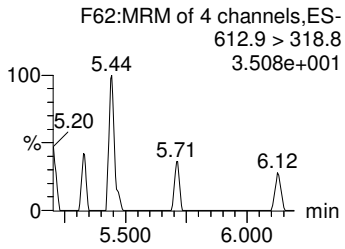
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

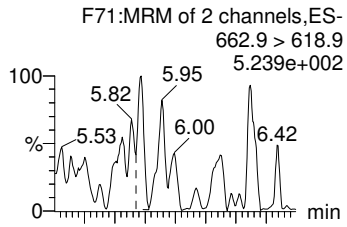
Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

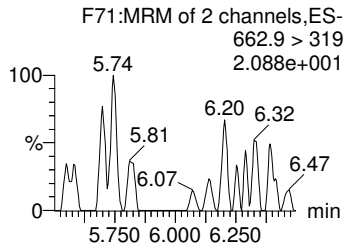
PFDoA



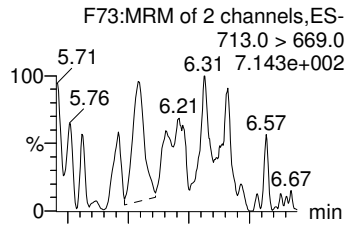


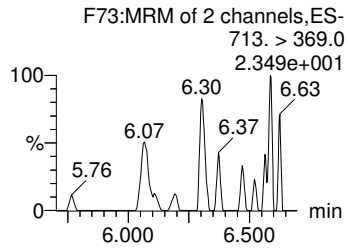
PFTrDA



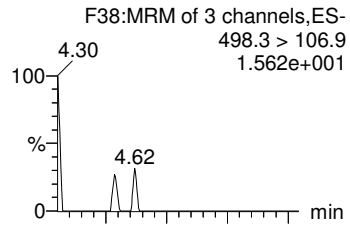


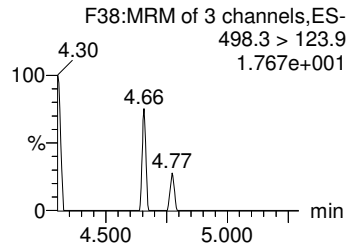
PFTeDA



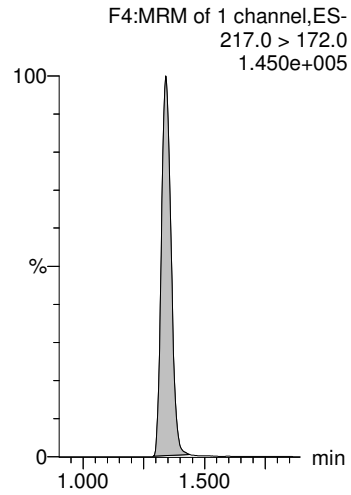


TDCA

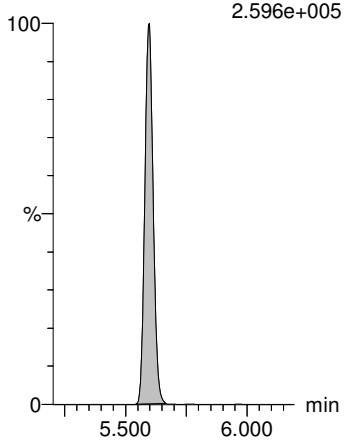




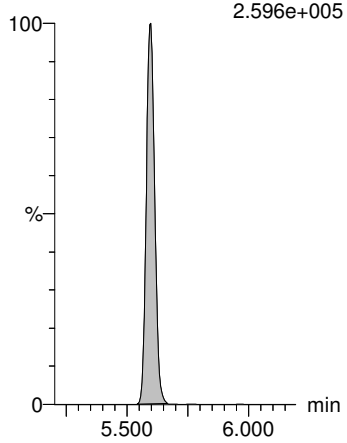
13C4-PFBA



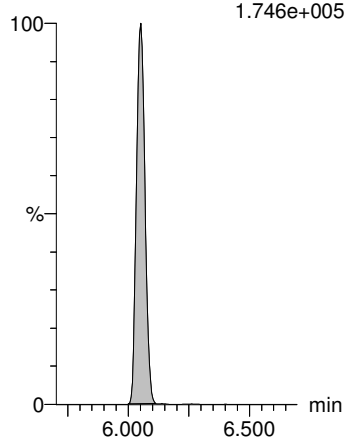
13C2-PFDoA-EIS



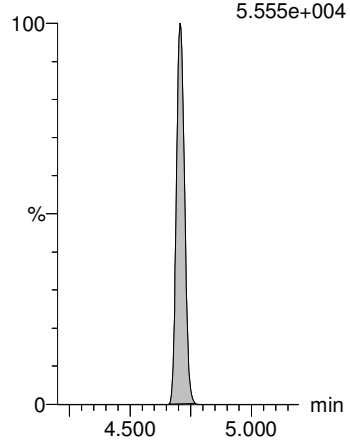
13C2-PFDoA-EIS



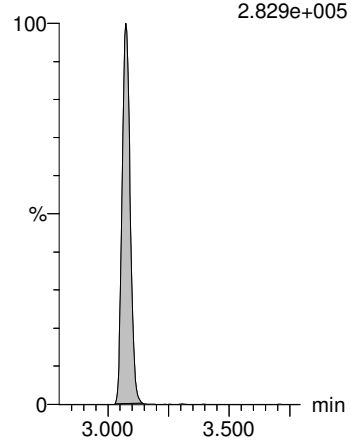
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

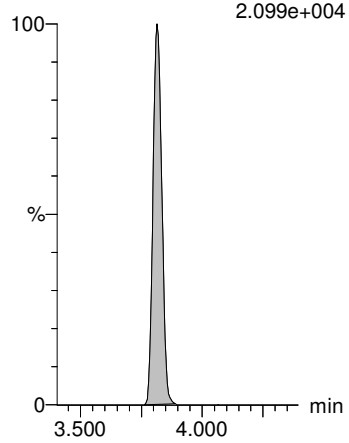
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

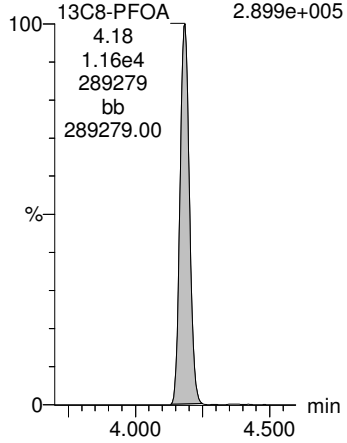
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:23 Pacific Standard Time

Name: 200303P2-21, Date: 03-Mar-2020, Time: 20:14:15, ID: 2000356-03 IS720W06D-20200219 0.25411, Description: IS720W06D-20200219

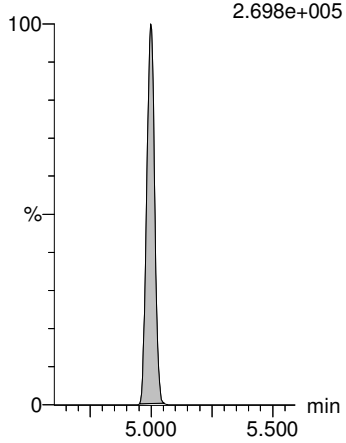
18O2-PFHxS



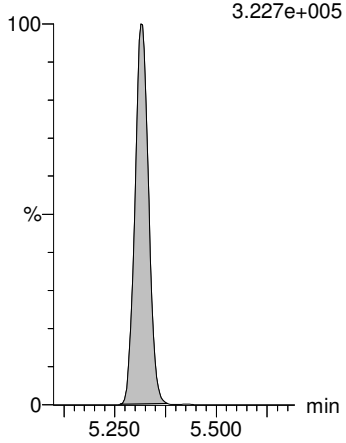
13C8-PFOA



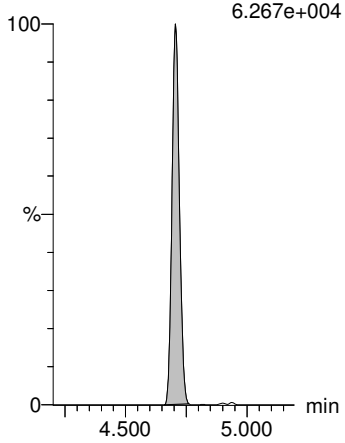
13C6-PFDA



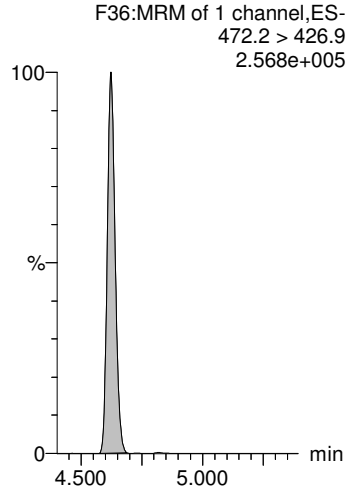
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	5.73e2	6.82e2	0.247		2.56	2.56	10.5	17.1992		3.101	NO
2	7	PFHxA	313.0 > 269.0	2.47e4	9.30e3	0.247		3.07	3.07	33.2	151.0763		17.310	NO
3	9	HFPO-DA	285.1 > 168.9		2.28e3	0.247		3.29						YES
4	11	PFHpA	363.0 > 318.9	8.41e3	5.06e3	0.247		3.67	3.68	20.8	69.9972		14.412	NO
5	12	ADONA	376.8 > 250.9		5.06e3	0.247		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	6.82e2		0.247	68.744	2.62	2.56	682	40.2177	79.4		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	9.30e3		0.247	1061.420	3.07	3.07	9300	35.5036	70.1		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.28e3		0.247	276.115	3.35	3.29	2280	33.4823	66.1		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	5.06e3		0.247	602.105	3.69	3.67	5060	34.0339	67.2		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	5.06e3		0.247	602.105	3.69	3.67	5060	34.0339	67.2		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	1.98e3	1.72e3	0.247		3.82	3.82	14.4	56.1189		2.395	NO
13	1...	Total PFHxS	398.9 > 79.7	1.98e3	1.72e3	0.247		3.93		14.4	56.1189			
14	16	L-PFOA	412.8 > 368.9	1.02e5	7.62e3	0.247		4.18	4.19	168	539.9524		2.822	NO
15	1...	Total PFOA	412.8 > 368.9	1.02e5	7.62e3	0.247		4.60		168	539.9524			
16	21	PFNA	463.0 > 418.8	1.22e2	7.41e3	0.247		4.62	4.63	0.205	0.6487		15.531	YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.72e3		0.247	173.666	3.82	3.82	1720	40.1679	79.3		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.72e3		0.247	173.666	3.82	3.82	1720	40.1679	79.3		
19	69	13C2-PFOA-EIS	414.9 > 369.7	7.62e3		0.247	812.468	4.18	4.18	7620	38.0201	75.1		
20	69	13C2-PFOA-EIS	414.9 > 369.7	7.62e3		0.247	812.468	4.18	4.18	7620	38.0201	75.1		
21	65	13C5-PFNA-EIS	468.2 > 422.9	7.41e3		0.247	715.290	4.62	4.62	7410	41.9864	82.9		
22	-1													
23	23	L-PFOS	498.9 > 79.7	5.54e2	1.71e3	0.247		4.71	4.56	4.06	16.8583		2.490	NO
24	1...	Total PFOS	498.9 > 79.7	5.54e2	1.71e3	0.247		5.13		4.06	16.8583			
25	25	9Cl-PF30NS	530.7 > 350.8		1.71e3	0.247		4.91						YES
26	26	PFDA	513 > 468.8		8.35e3	0.247		5.00						YES
27	33	PFUdA	563.0 > 518.9		9.63e3	0.247		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	1.71e3		0.247	170.914	4.71	4.71	1710	40.4159	79.8		
29	71	13C8-PFOS-EIS	507.0 > 79.7	1.71e3		0.247	170.914	4.71	4.71	1710	40.4159	79.8		
30	71	13C8-PFOS-EIS	507.0 > 79.7	1.71e3		0.247	170.914	4.71	4.71	1710	40.4159	79.8		
31	73	13C2-PFDA-EIS	515.1 > 469.9	8.35e3		0.247	817.432	5.00	5.00	8350	41.3981	81.7		
32	79	13C2-PFUdA-EIS	565 > 519.8	9.63e3		0.247	1068.765	5.32	5.32	9630	36.4921	72.1		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.67e3	0.247		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.67e3	0.247		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.33e3	0.247		5.30						YES

BP 3/5/2020

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.33e3	0.247		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		8.78e3	0.247		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.67e3		0.247	144.472	5.14	5.15	1670	46.6952	92.2		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.67e3		0.247	144.472	5.14	5.15	1670	46.6952	92.2		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.33e3		0.247	265.746	5.29	5.30	2330	35.5871	70.3		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.33e3		0.247	265.746	5.29	5.30	2330	35.5871	70.3		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	8.78e3		0.247	1089.820	5.58	5.60	8780	32.6564	64.5		
44	-1													
45	37	PFDoA	612.9 > 569.0		8.78e3	0.247		5.60						YES
46	39	PFTrDA	662.9 > 618.9		8.78e3	0.247		5.85						YES
47	41	PFTeDA	713.0 > 669.0		6.64e3	0.247		6.05						YES
48	1...	TDCA	498.3>106.9			0.247		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.13e3	6.13e3	0.247	1.000	1.34	1.34	12.5	50.6401	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	8.78e3		0.247	1089.820	5.58	5.60	8780	32.6564	64.5		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	8.78e3		0.247	1089.820	5.58	5.60	8780	32.6564	64.5		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	6.64e3		0.247	818.597	6.01	6.05	6640	32.8438	64.9		
53	71	13C8-PFOS-EIS	507.0 > 79.7	1.71e3		0.247	170.914	4.71	4.71	1710	40.4159	79.8		
54	1...	13C5-PFHxA	318.0 > 272.9	9.68e3	9.68e3	0.247	1.000	3.06	3.07	12.5	50.6401	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.64e2	8.64e2	0.247	1.000	3.81	3.82	12.5	50.6401	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.07e4	1.07e4	0.247	1.000	4.17	4.18	12.5	50.6401	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	9.61e3	9.61e3	0.247	1.000	4.99	5.00	12.5	50.6401	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.27e4	1.27e4	0.247	1.000	5.31	5.32	12.5	50.6401	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.05e3	2.05e3	0.247	1.000	4.70	4.71	12.5	50.6401	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	8.36e3	8.36e3	0.247	1.000	4.62	4.62	12.5	50.6401	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

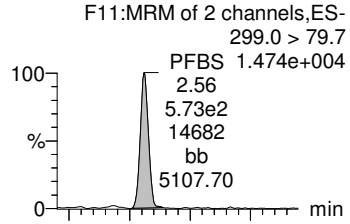
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

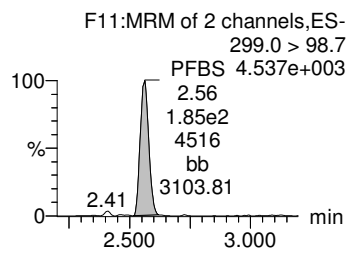
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

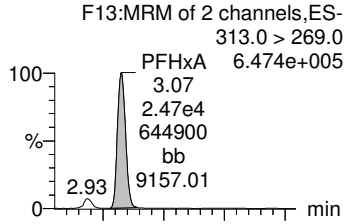
Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

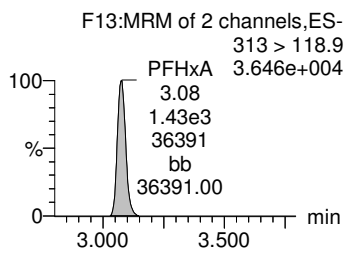
PFBS



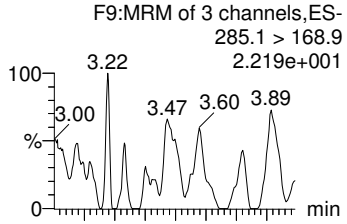


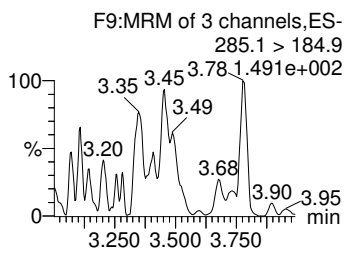
PFHxA



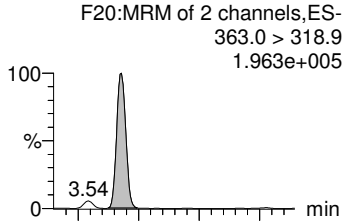


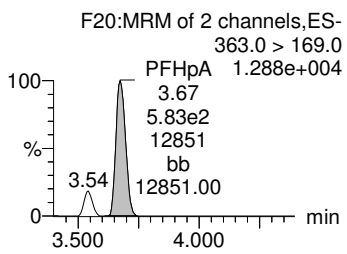
HFPO-DA



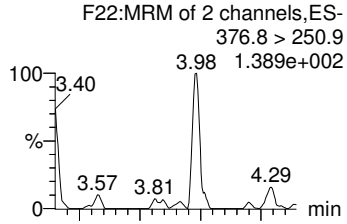


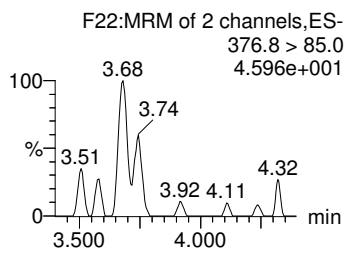
PFHpA



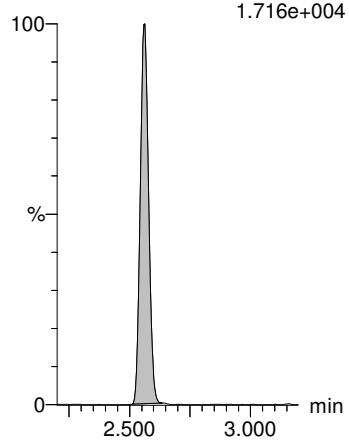


ADONA

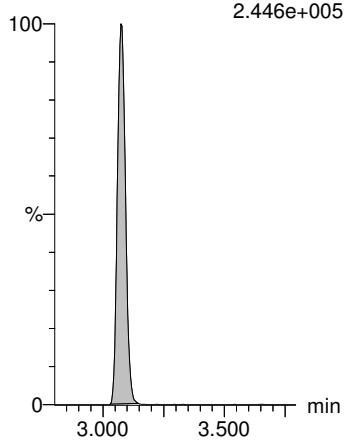




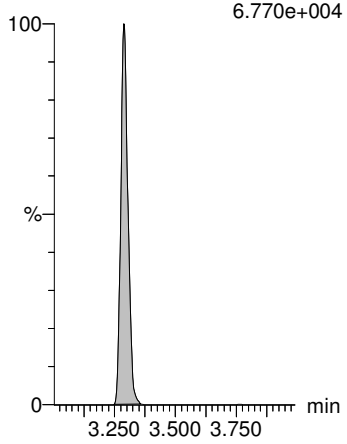
13C3-PFBS-EIS



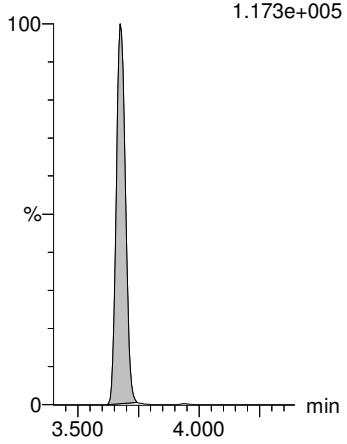
13C2-PFHxA-EIS



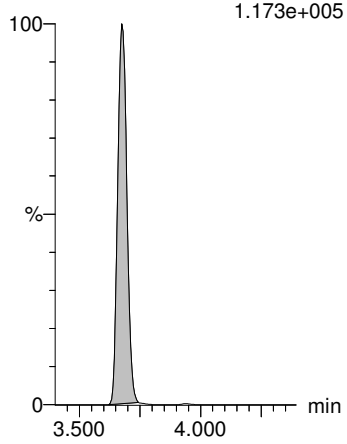
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

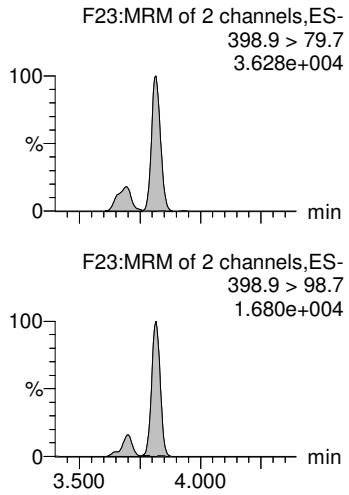
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

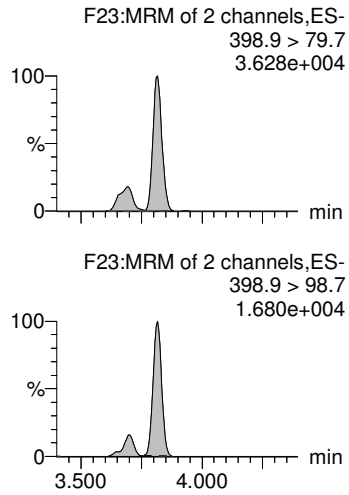
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

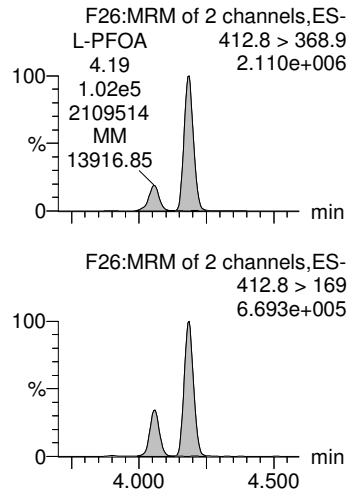
L-PFHxS



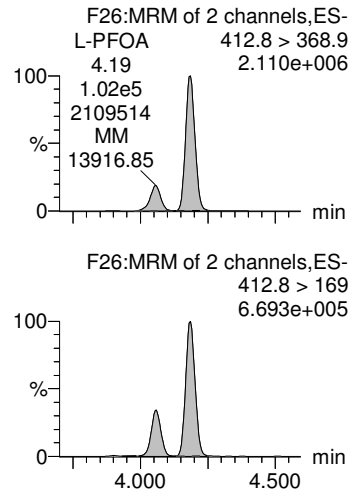
Total PFHxS



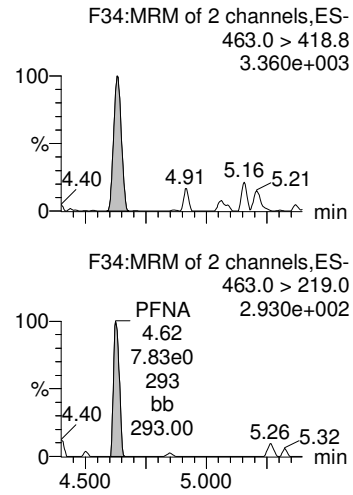
L-PFOA



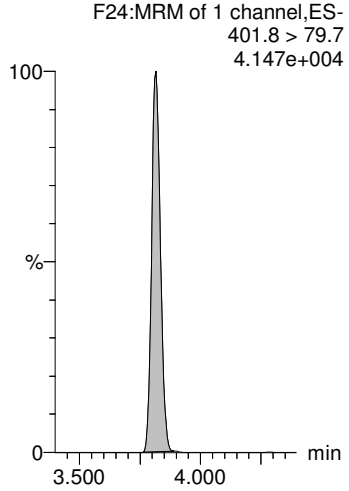
Total PFOA



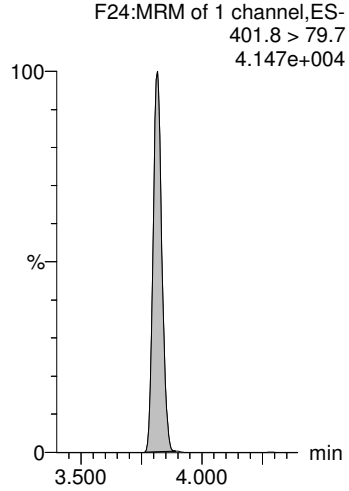
PFNA



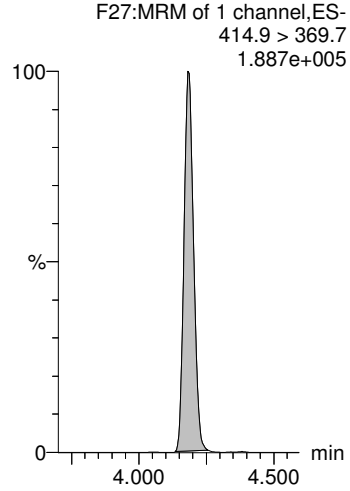
13C3-PFHxS-EIS



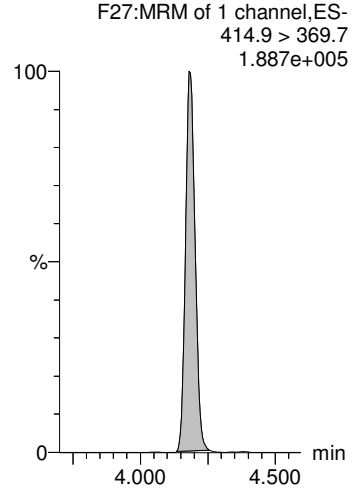
13C3-PFHxS-EIS



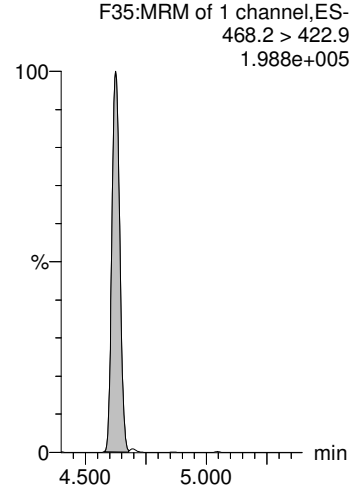
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

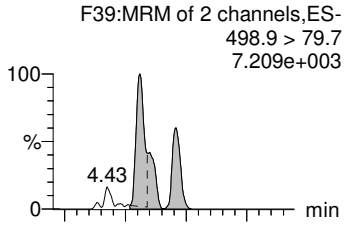
Review: AMR 3/5/2020

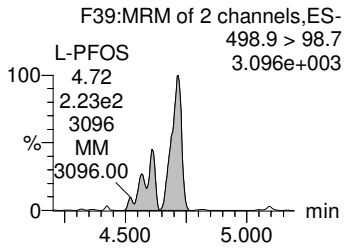
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

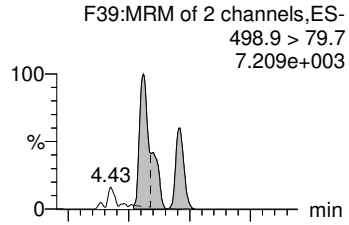
Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

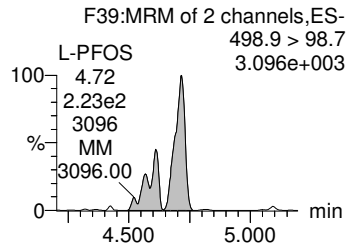
L-PFOS



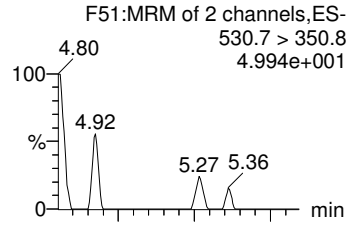


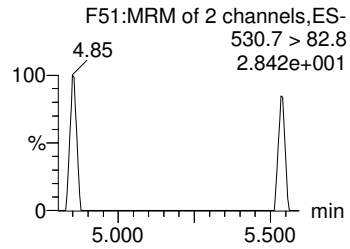
Total PFOS



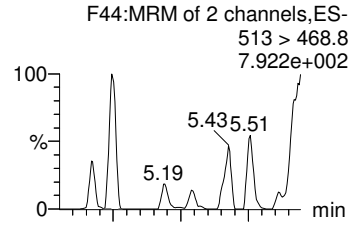


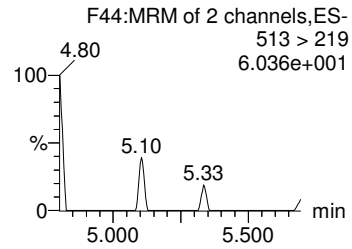
9Cl-PF30NS



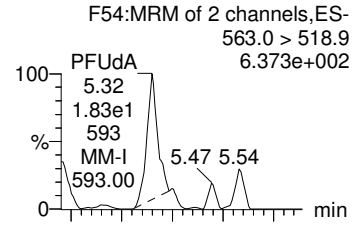


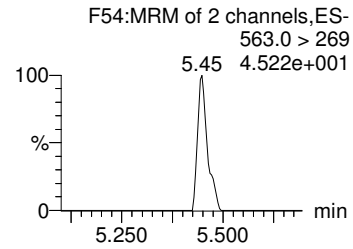
PFDA



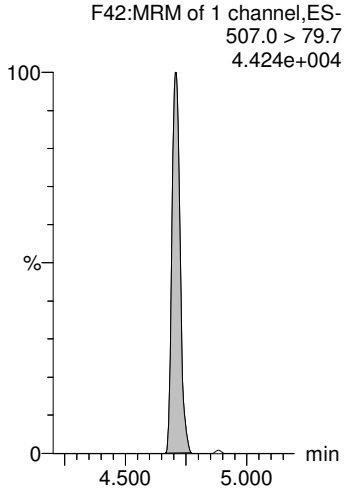


PFUdA

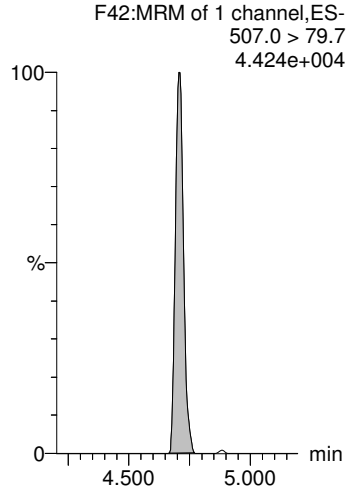




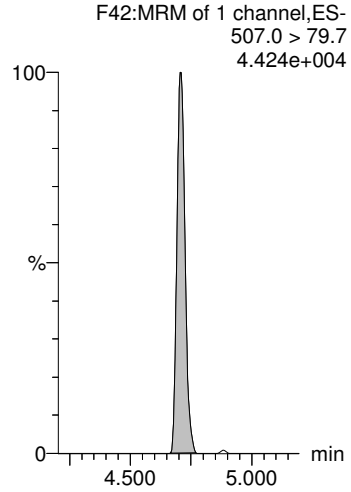
13C8-PFOS-EIS



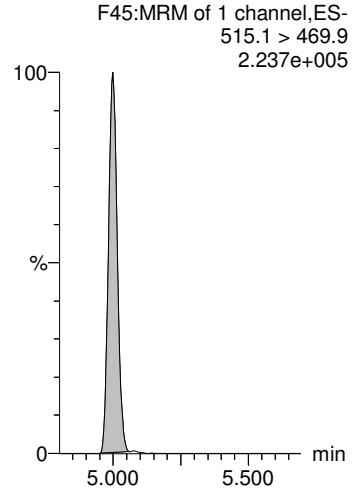
13C8-PFOS-EIS



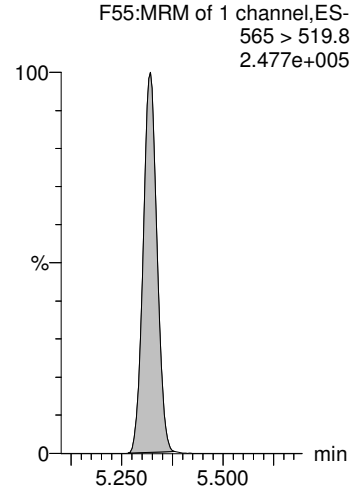
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

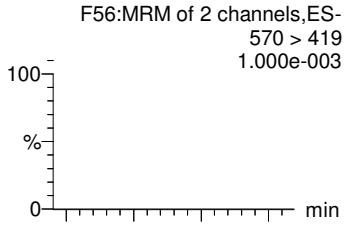
Review: AMR 3/5/2020

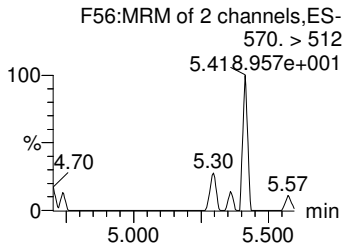
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

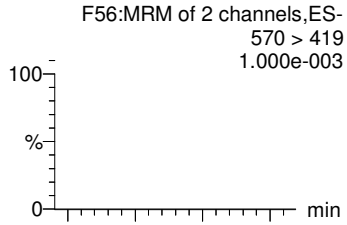
Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

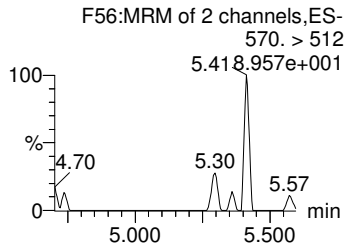
L-MeFOSAA



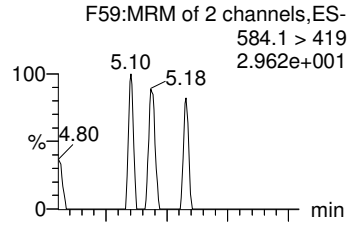


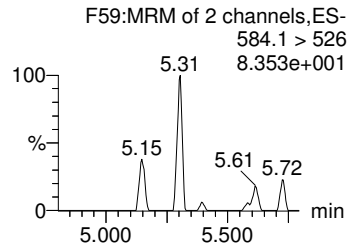
Total N-MeFOSAA



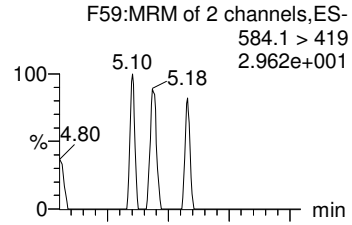


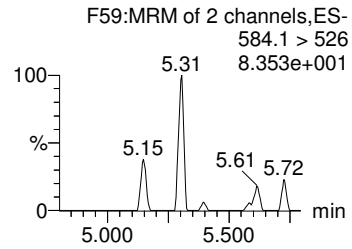
L-EtFOSAA



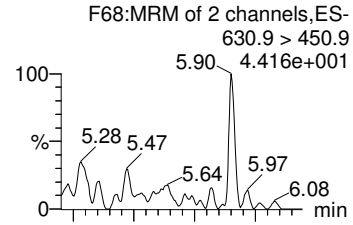


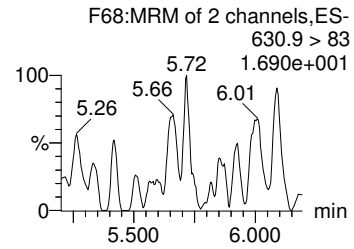
Total N-EtFOSAA



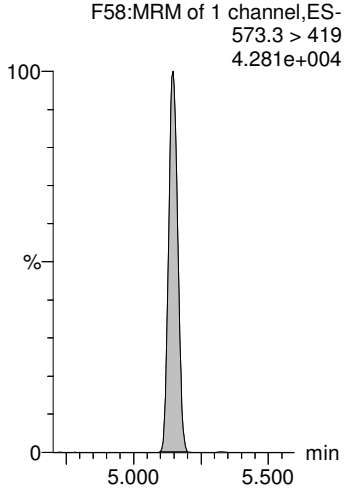


11Cl-PF30UdS

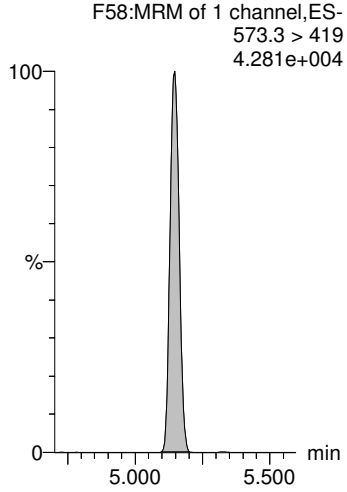




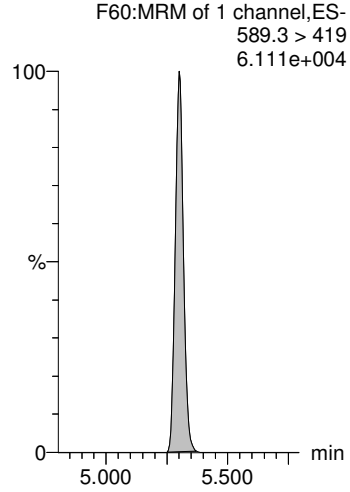
d3-N-MeFOSAA-EIS



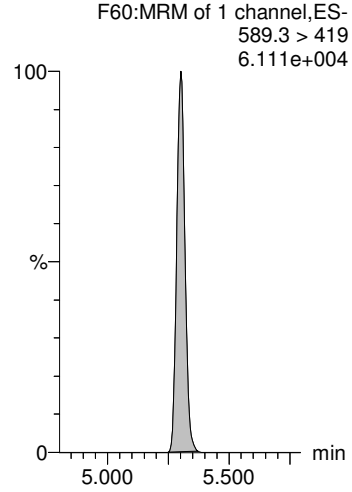
d3-N-MeFOSAA-EIS



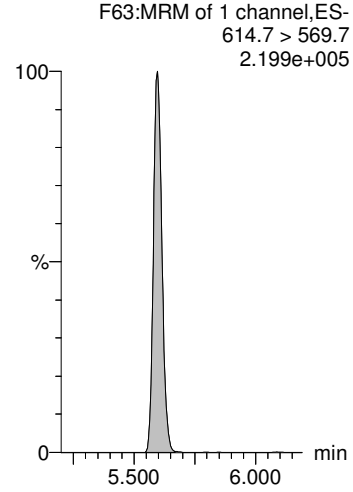
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

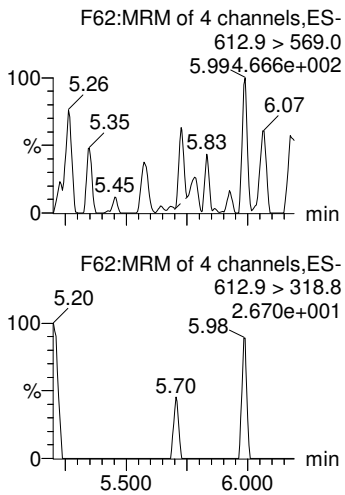
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

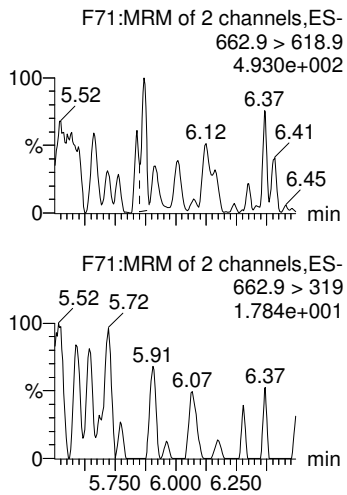
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

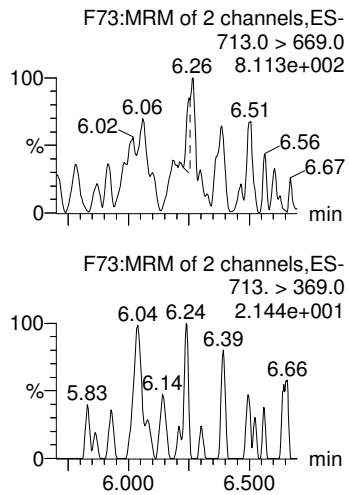
PFDoA



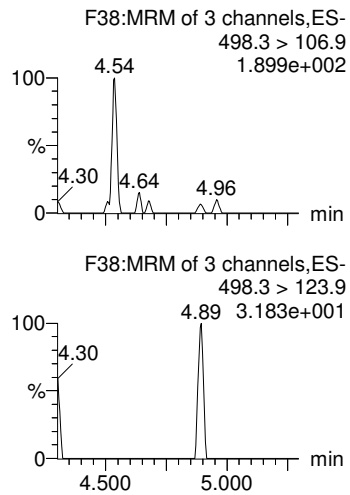
PFTrDA



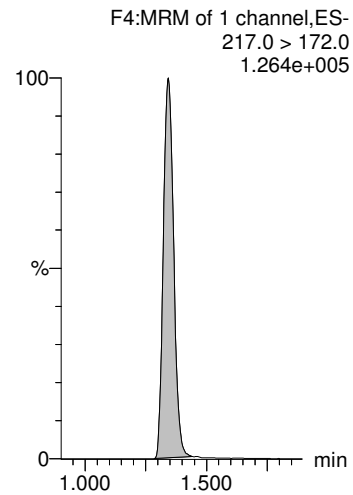
PFTeDA



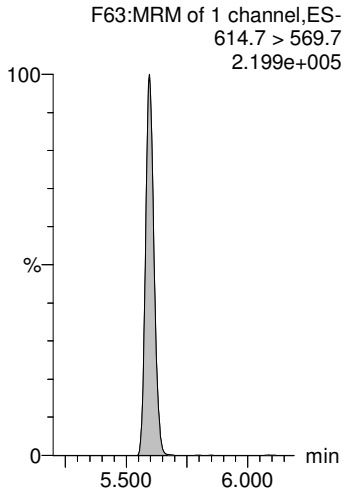
TDCA



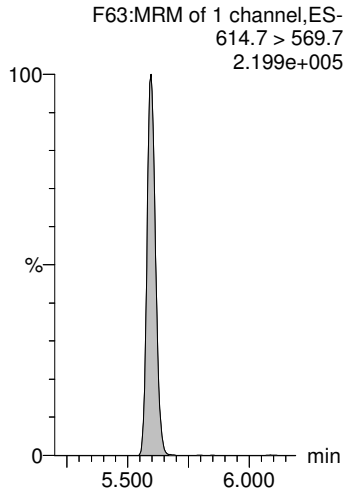
13C4-PFBA



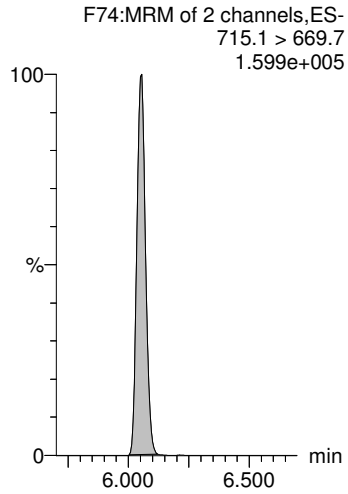
13C2-PFDoA-EIS



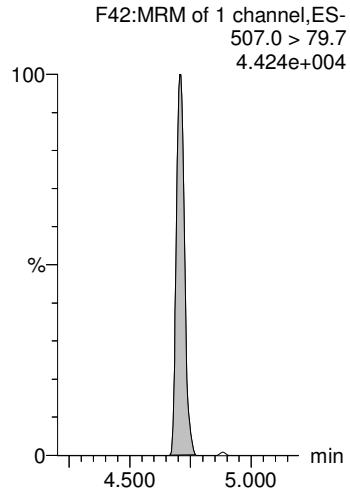
13C2-PFDoA-EIS



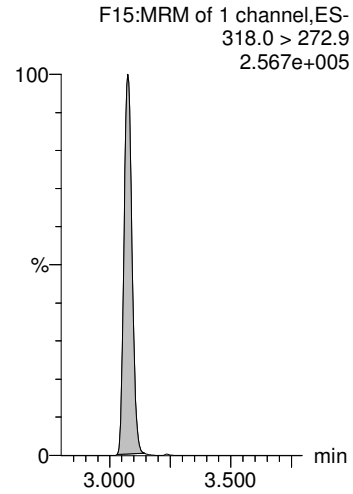
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

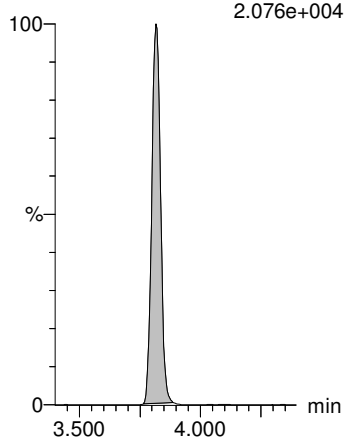
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

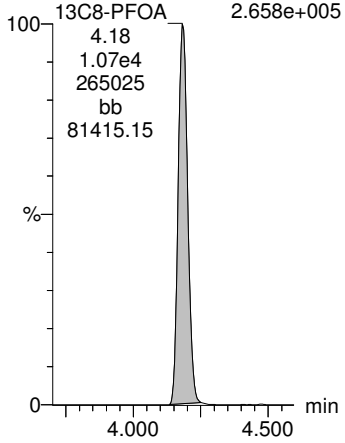
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:30 Pacific Standard Time

Name: 200303P2-22, Date: 03-Mar-2020, Time: 20:24:47, ID: 2000356-04 IS720W03D-20200219 0.24684, Description: IS720W03D-20200219

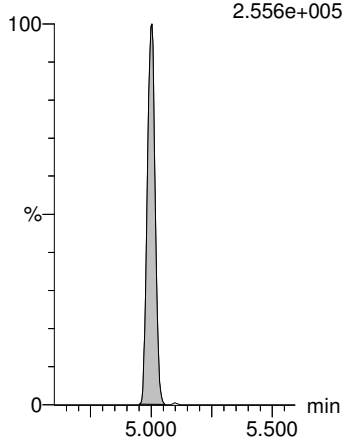
18O2-PFHxS



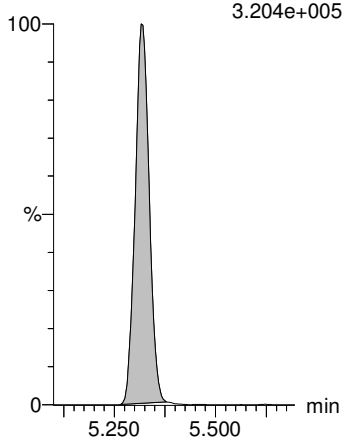
13C8-PFOA



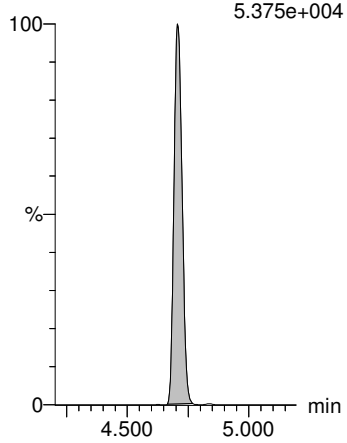
13C6-PFDA



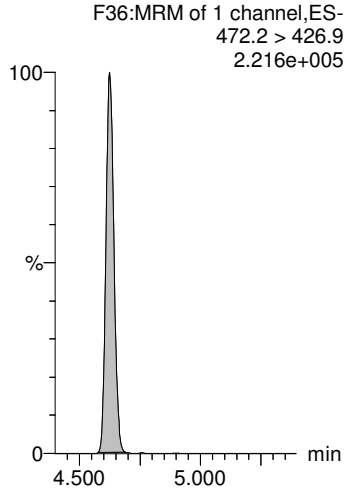
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time *See Dilution
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	4.18e3	8.37e2	0.237		2.56	2.56	62.5	106.1627		3.080	NO
2	7	PFHxA	313.0 > 269.0	5.59e4	1.14e4	0.237		3.07	3.07	61.3	290.8148		17.919	NO
3	9	HFPO-DA	285.1 > 168.9		2.77e3	0.237		3.29						YES
4	11	PFHpA	363.0 > 318.9	1.27e4	6.53e3	0.237		3.67	3.67	24.3	85.1894		14.935	NO
5	12	ADONA	376.8 > 250.9		6.53e3	0.237		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	8.37e2		0.237	68.744	2.62	2.56	837	51.3710	97.4		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.14e4		0.237	1061.420	3.07	3.07	11400	45.2988	85.9		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.77e3		0.237	276.115	3.35	3.29	2770	42.3501	80.3		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.53e3		0.237	602.105	3.69	3.67	6530	45.7630	86.8		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.53e3		0.237	602.105	3.69	3.67	6530	45.7630	86.8		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	4.66e4	1.68e3	0.237		3.82	3.82	348	1319.3922		2.284	NO
13	1...	Total PFHxS	398.9 > 79.7	4.66e4	1.68e3	0.237		3.93		348	1319.3922			
14	16	L-PFOA	412.8 > 368.9	4.95e5	9.04e3	0.237		4.18	4.18	685	2419.7118 *E		2.859	NO
15	1...	Total PFOA	412.8 > 368.9	4.95e5	9.04e3	0.237		4.60		685	2419.7118			
16	21	PFNA	463.0 > 418.8	5.04e2	7.91e3	0.237		4.62	4.62	0.796	2.6216		8.031	YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.68e3		0.237	173.666	3.82	3.82	1680	40.6911	77.2		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.68e3		0.237	173.666	3.82	3.82	1680	40.6911	77.2		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.04e3		0.237	812.468	4.18	4.18	9040	46.9384	89.0		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.04e3		0.237	812.468	4.18	4.18	9040	46.9384	89.0		
21	65	13C5-PFNA-EIS	468.2 > 422.9	7.91e3		0.237	715.290	4.62	4.62	7910	46.6767	88.5		
22	-1													
23	23	L-PFOS	498.9 > 79.7	1.55e3	2.09e3	0.237		4.71	4.56	9.27	39.7166		3.631	YES
24	1...	Total PFOS	498.9 > 79.7	1.55e3	2.09e3	0.237		5.13		9.27	39.7166			
25	25	9Cl-PF30NS	530.7 > 350.8		2.09e3	0.237		4.91						YES
26	26	PFDA	513 > 468.8	1.47e2	9.80e3	0.237		5.00	4.99	0.188	0.5261		367.808	YES
27	33	PFUdA	563.0 > 518.9		1.05e4	0.237		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.09e3		0.237	170.914	4.71	4.71	2090	51.6711	98.0		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.09e3		0.237	170.914	4.71	4.71	2090	51.6711	98.0		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.09e3		0.237	170.914	4.71	4.71	2090	51.6711	98.0		
31	73	13C2-PFDA-EIS	515.1 > 469.9	9.80e3		0.237	817.432	5.00	5.00	9800	50.5879	95.9		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.05e4		0.237	1068.765	5.32	5.32	10500	41.5827	78.9		
33	-1													
34	29	L-MeFOSAA	570 > 419		2.07e3	0.237		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	2.07e3	0.237		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.90e3	0.237		5.30						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.90e3	0.237		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.05e4	0.237		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	2.07e3		0.237	144.472	5.15	5.15	2070	60.3988	114.5		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	2.07e3		0.237	144.472	5.15	5.15	2070	60.3988	114.5		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.90e3		0.237	265.746	5.29	5.30	2900	46.1070	87.4		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.90e3		0.237	265.746	5.29	5.30	2900	46.1070	87.4		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.05e4		0.237	1089.820	5.59	5.60	10500	40.5689	76.9		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.05e4	0.237		5.60						YES
46	39	PFTrDA	662.9 > 618.9		1.05e4	0.237		5.85						YES
47	41	PFTeDA	713.0 > 669.0		7.89e3	0.237		6.05						YES
48	1...	TDCA	498.3>106.9			0.237		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.50e3	6.50e3	0.237	1.000	1.34	1.34	12.5	52.7359	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.05e4		0.237	1089.820	5.59	5.60	10500	40.5689	76.9		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.05e4		0.237	1089.820	5.59	5.60	10500	40.5689	76.9		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	7.89e3		0.237	818.597	6.02	6.05	7890	40.6814	77.1		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.09e3		0.237	170.914	4.71	4.71	2090	51.6711	98.0		
54	1...	13C5-PFHxA	318.0 > 272.9	1.08e4	1.08e4	0.237	1.000	3.06	3.07	12.5	52.7359	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.09e2	7.09e2	0.237	1.000	3.81	3.82	12.5	52.7359	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.00e4	1.00e4	0.237	1.000	4.17	4.18	12.5	52.7359	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.00e4	1.00e4	0.237	1.000	4.99	5.00	12.5	52.7359	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.25e4	1.25e4	0.237	1.000	5.31	5.32	12.5	52.7359	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.25e3	2.25e3	0.237	1.000	4.70	4.71	12.5	52.7359	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	9.19e3	9.19e3	0.237	1.000	4.62	4.62	12.5	52.7359	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

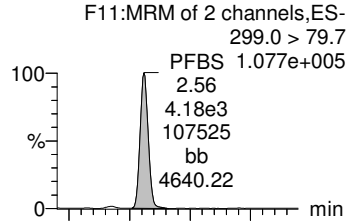
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

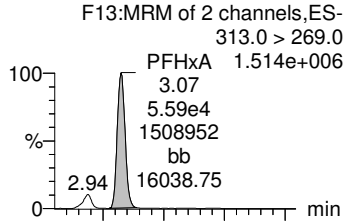
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

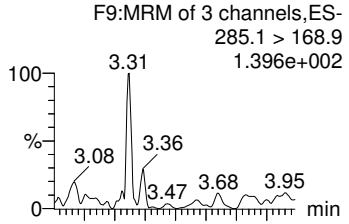
PFBS



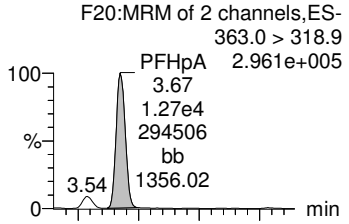
PFHxA



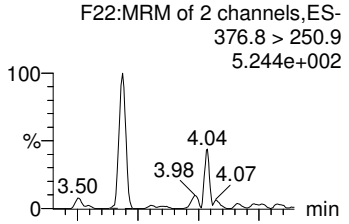
HFPO-DA



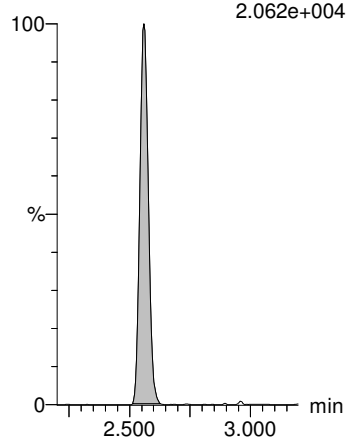
PFHpA



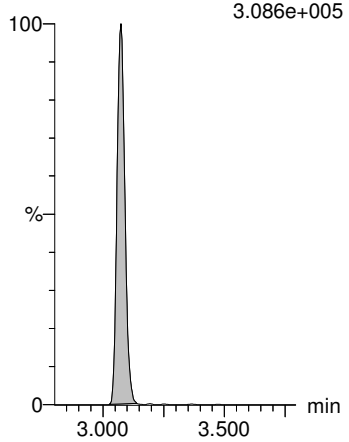
ADONA



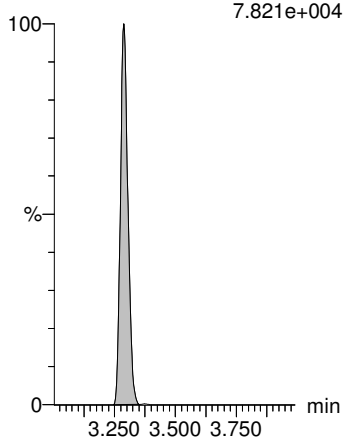
13C3-PFBS-EIS



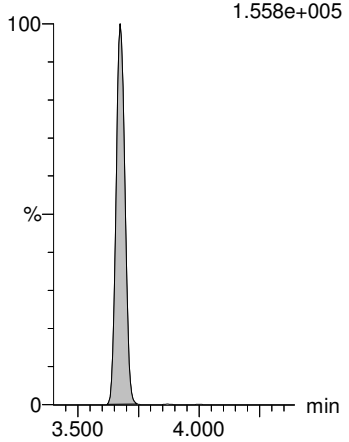
13C2-PFHxA-EIS



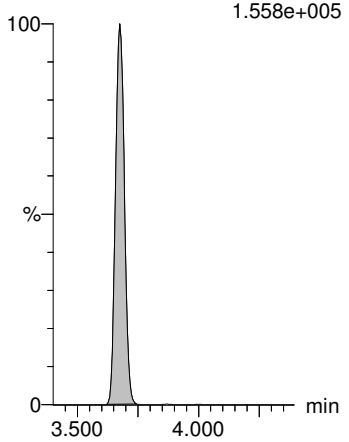
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

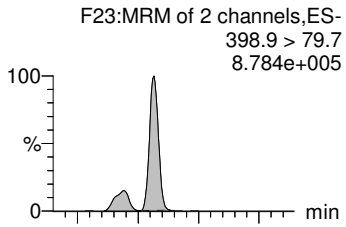
Review: AMR 3/5/2020

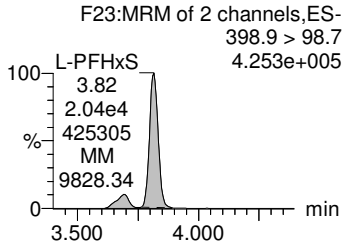
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

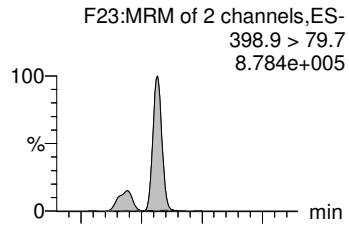
Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

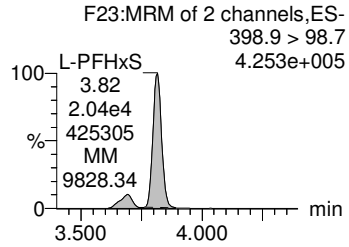
L-PFHxS



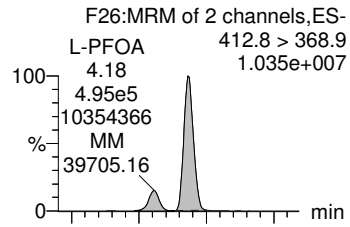


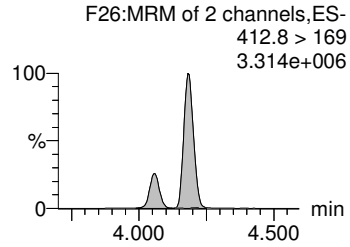
Total PFHxS



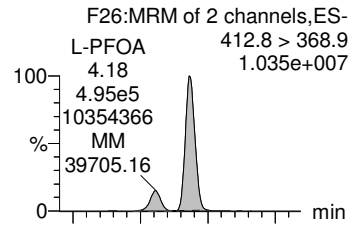


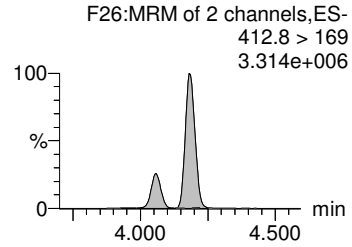
L-PFOA



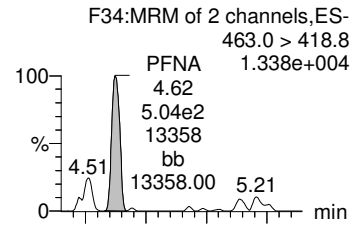


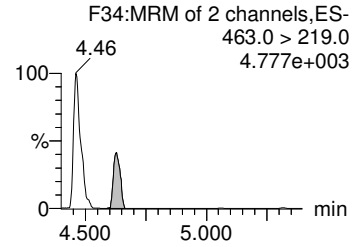
Total PFOA



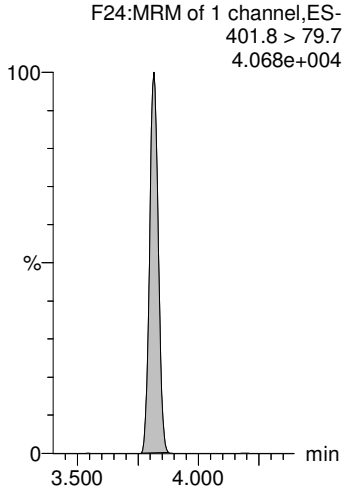


PFNA

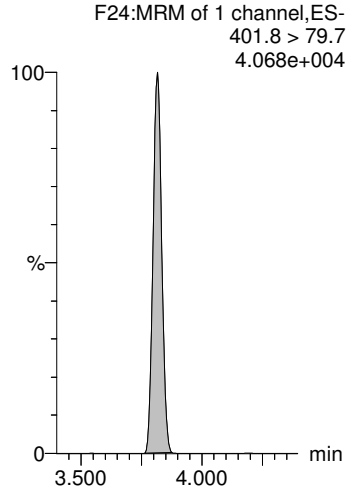




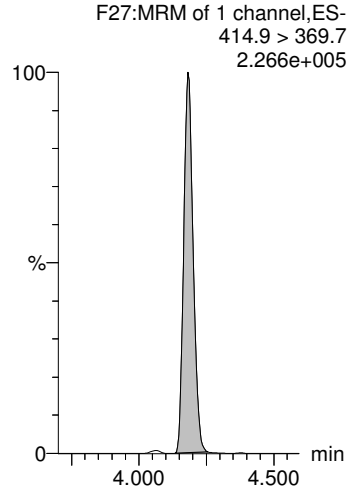
13C3-PFHxS-EIS



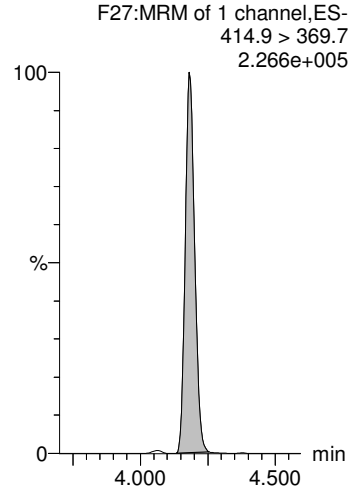
13C3-PFHxS-EIS



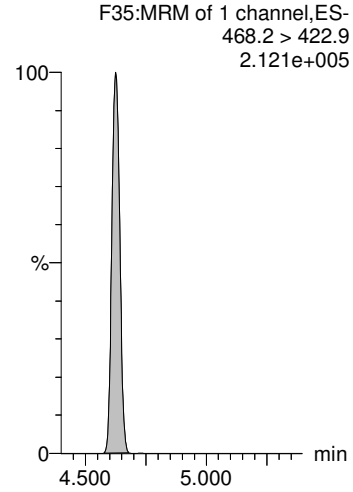
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

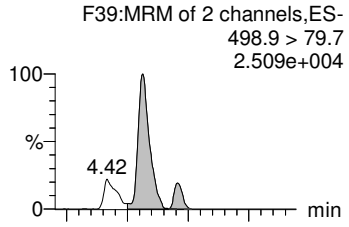
Review: AMR 3/5/2020

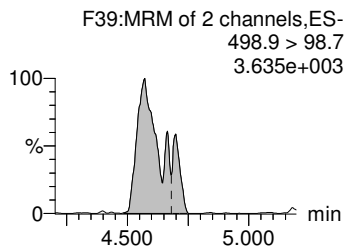
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

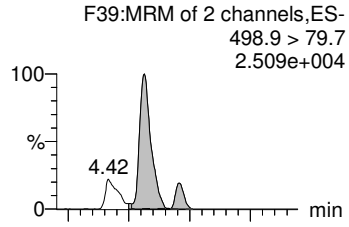
Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

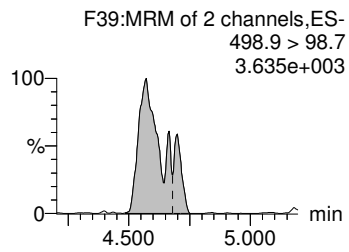
L-PFOS



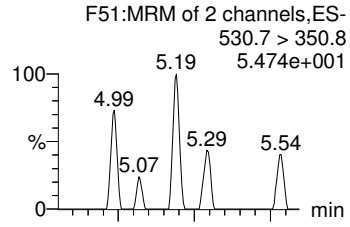


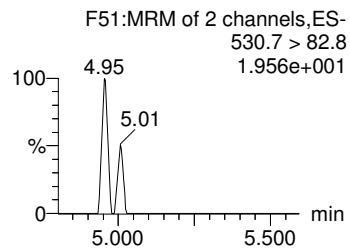
Total PFOS



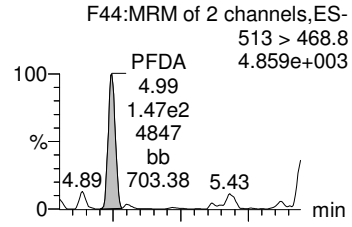


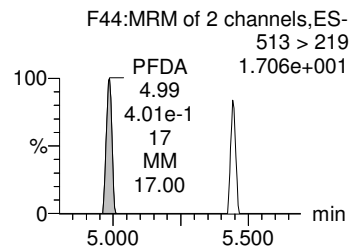
9Cl-PF30NS



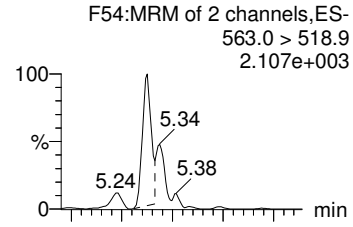


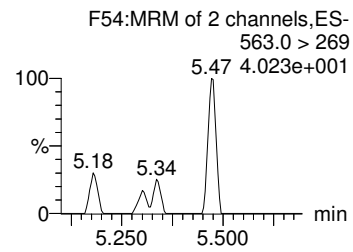
PFDA



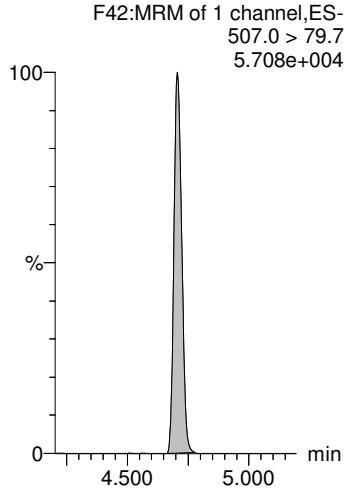


PFUdA

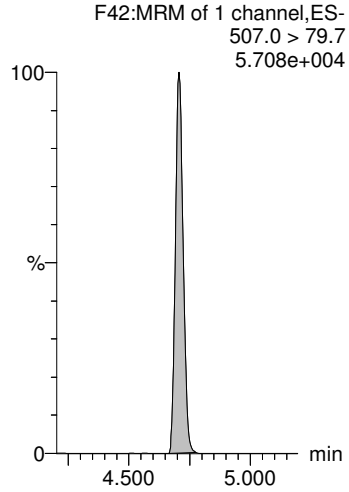




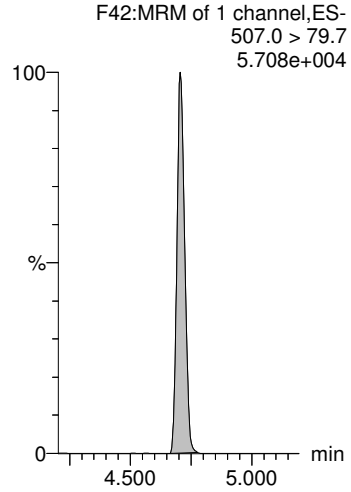
13C8-PFOS-EIS



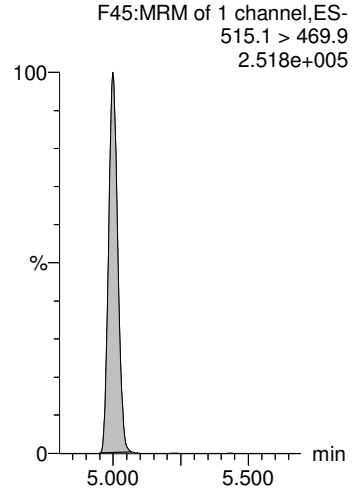
13C8-PFOS-EIS



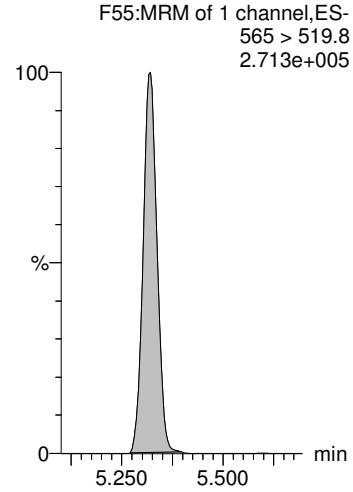
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

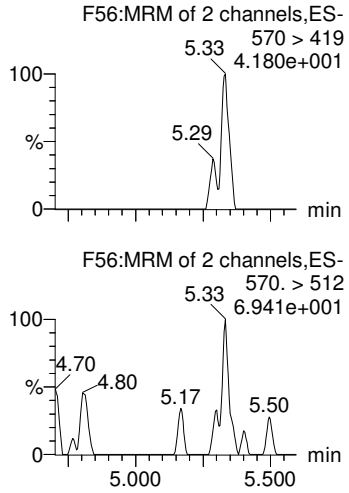
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

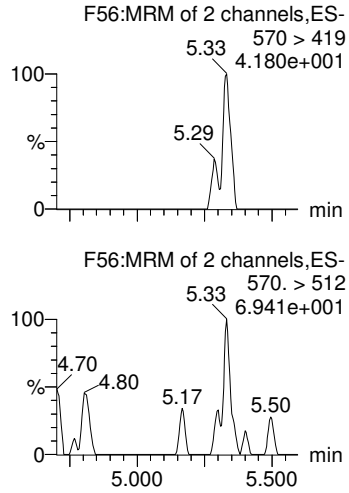
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

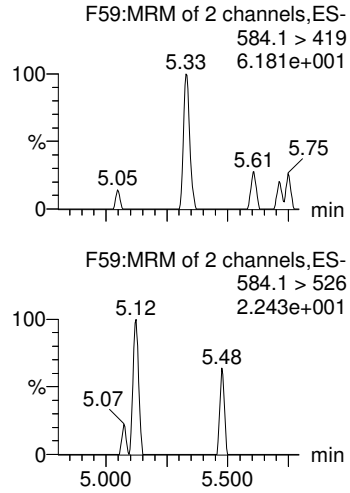
L-MeFOSAA



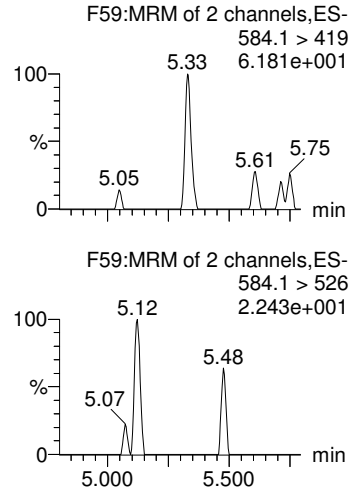
Total N-MeFOSAA



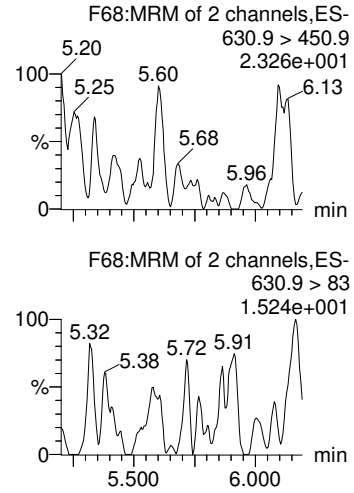
L-EtFOSAA



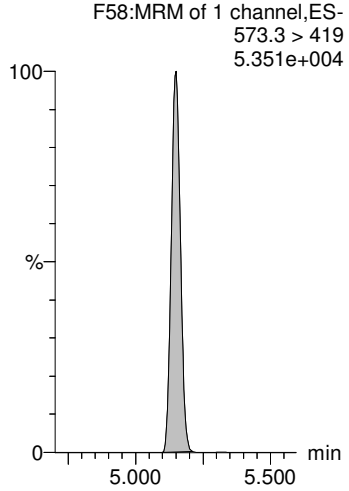
Total N-EtFOSAA



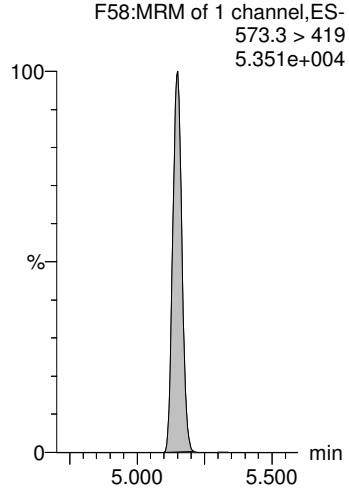
11Cl-PF30UdS



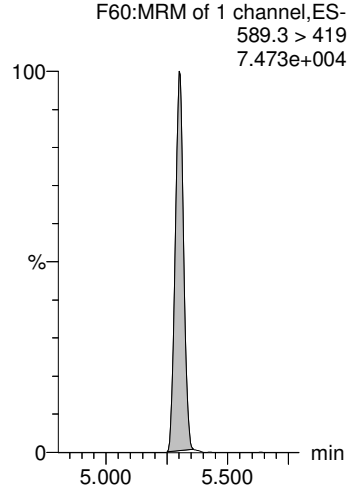
d3-N-MeFOSAA-EIS



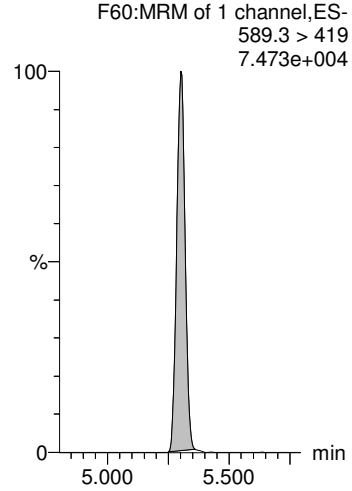
d3-N-MeFOSAA-EIS



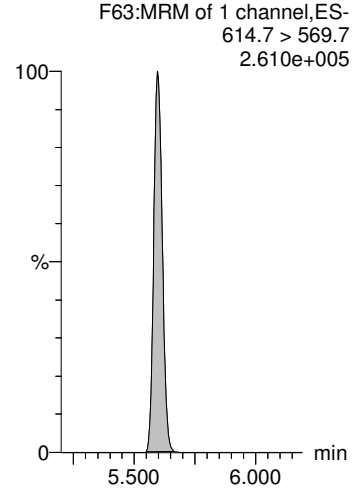
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

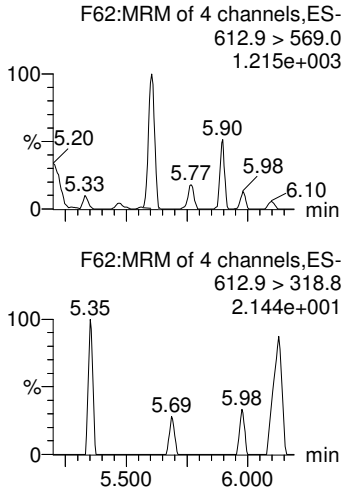
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

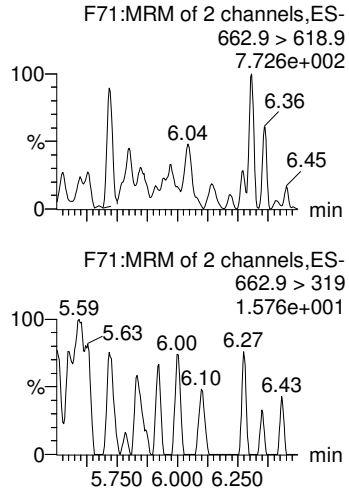
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

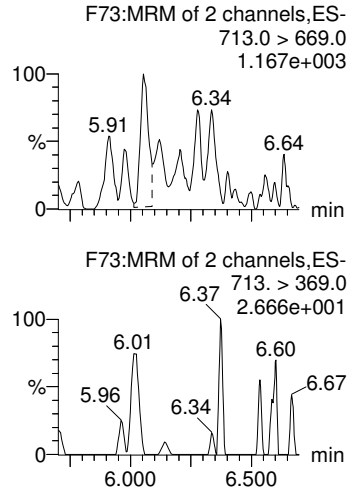
PFDoA



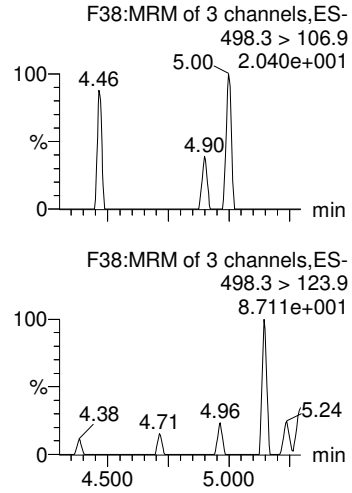
PFTrDA



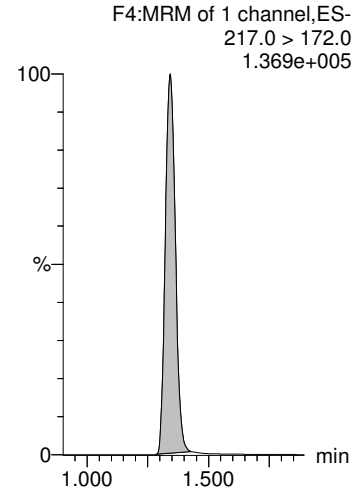
PFTeDA



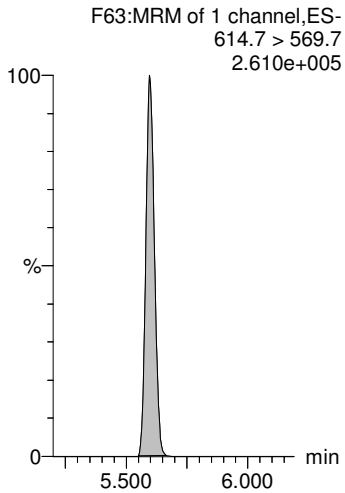
TDCA



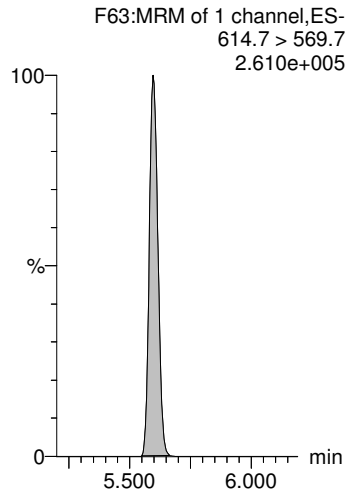
13C4-PFBA



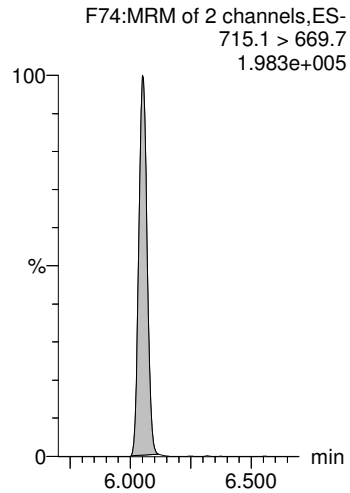
13C2-PFDoA-EIS



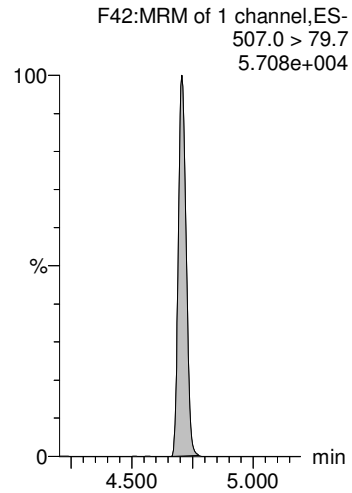
13C2-PFDoA-EIS



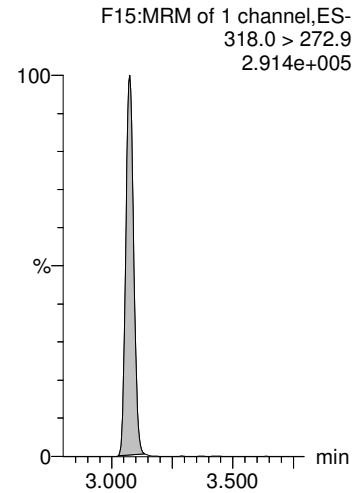
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

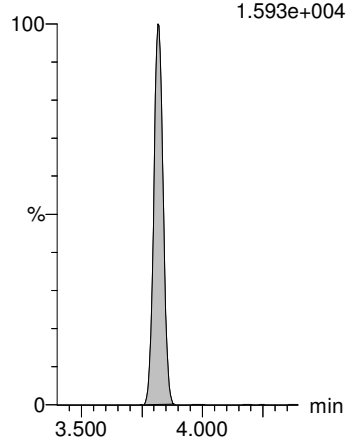
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-16-23.qld

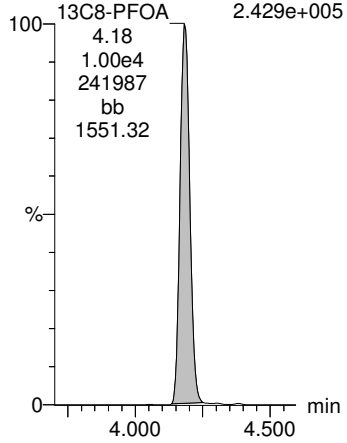
Last Altered: Thursday, March 05, 2020 12:03:00 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:05:35 Pacific Standard Time

Name: 200303P2-23, Date: 03-Mar-2020, Time: 20:35:16, ID: 2000356-05 TW08S-20200219 0.23703, Description: TW08S-20200219

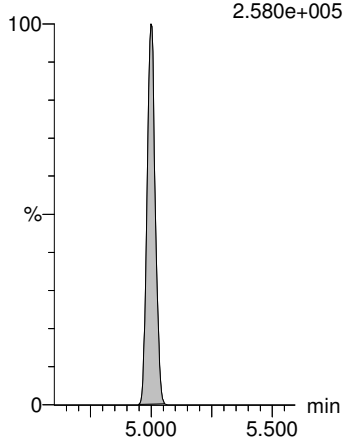
18O2-PFHxS



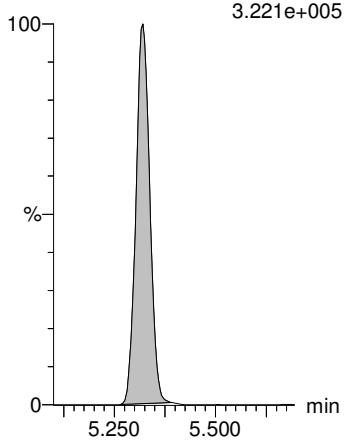
13C8-PFOA



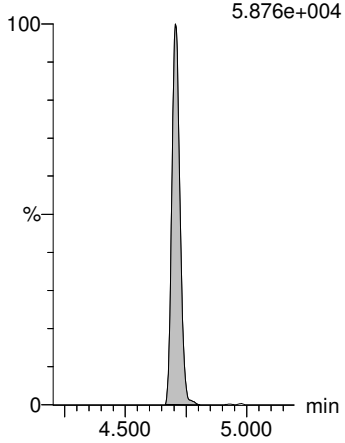
13C6-PFDA



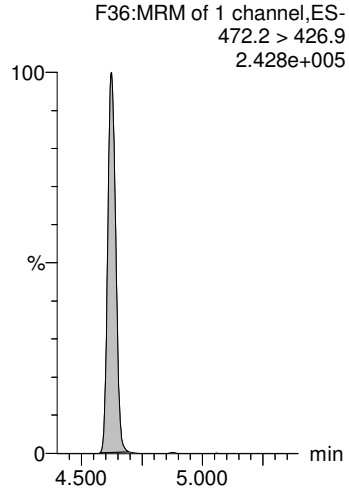
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-67.qld

Last Altered: Thursday, March 05, 2020 12:33:58 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:34:33 Pacific Standard Time

Name: 200304P2-67, Date: 05-Mar-2020, Time: 06:44:10, ID: 2000356-05@5X TW08S-20200219 0.23703, Description: TW08S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	16	L-PFOA	412.8 > 368.9	113872.086	2195.199	0.237		4.06	648.416	2230		NO	2.965	NO
2	1...	Total PFOA	412.8 > 368.9	113872.086	2195.199	0.237			648.416	2230		NO		
3	1...	13C8-PFOA	420.9 > 376.0	2441.594	2441.594	0.237	1.000	4.06	12.500	52.7	100.0	NO		
4	69	13C2-PFOA-EIS	414.9 > 369.7	2195.199		0.237	1016.548	4.06	2195.199	9.11	17.3	YES		
5	69	13C2-PFOA-EIS	414.9 > 369.7	2195.199		0.237	1016.548	4.06	2195.199	9.11	17.3	YES		

BP 3/5/2020

Vista Analytical Laboratory

Review: AMR 3/5/2020

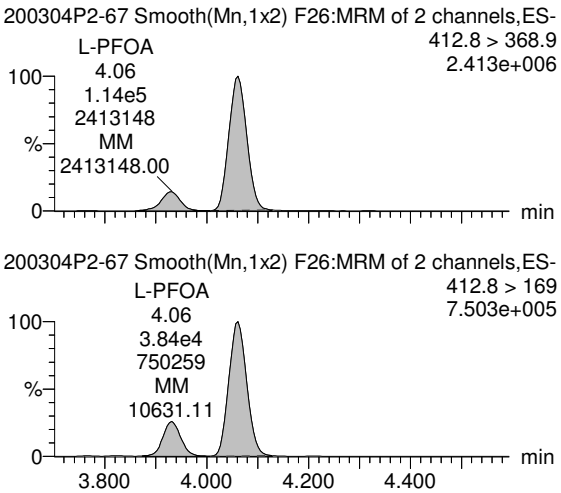
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-67.qld

Last Altered: Thursday, March 05, 2020 12:33:58 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:34:33 Pacific Standard Time

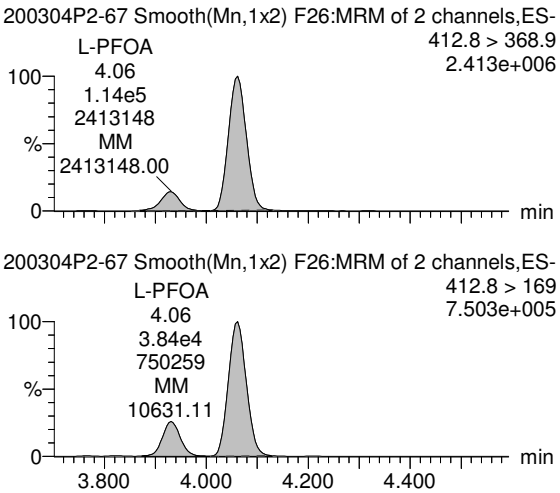
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-67, Date: 05-Mar-2020, Time: 06:44:10, ID: 2000356-05@5X TW08S-20200219 0.23703, Description: TW08S-20200219

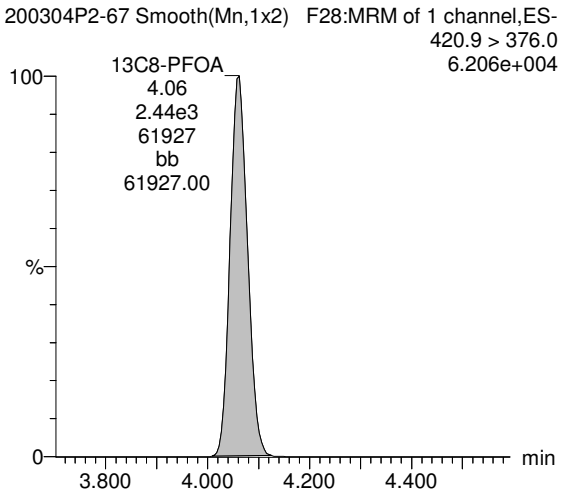
L-PFOA



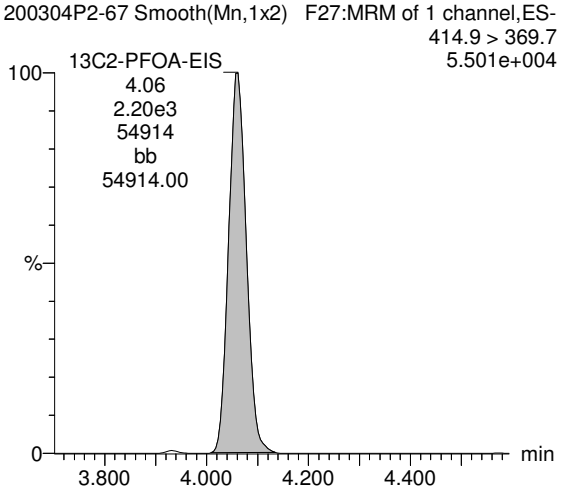
Total PFOA



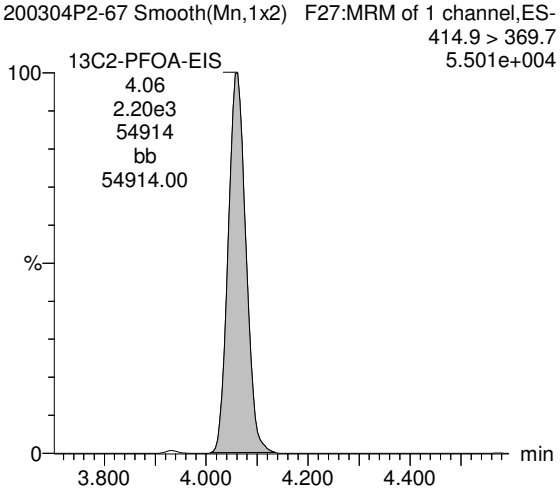
13C8-PFOA



13C2-PFOA-EIS



13C2-PFOA-EIS



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	6.76e3	8.45e2	0.254		2.42	2.41	99.9	152.3129		3.124	NO
2	7	PFHxA	313.0 > 269.0	5.88e4	1.04e4	0.254		2.95	2.95	70.4	316.3335		17.015	NO
3	9	HFPO-DA	285.1 > 168.9		2.47e3	0.254		3.15						YES
4	11	PFHpA	363.0 > 318.9	1.08e4	6.17e3	0.254		3.54	3.54	22.0	71.9937		15.401	NO
5	12	ADONA	376.8 > 250.9		6.17e3	0.254		3.63						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	8.45e2		0.254	82.647	2.53	2.42	845	40.3262	81.8		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.04e4		0.254	1213.080	2.95	2.95	10400	33.9396	68.9		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.47e3		0.254	280.215	3.25	3.15	2470	34.7028	70.4		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.17e3		0.254	676.004	3.59	3.54	6170	35.9764	73.0		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.17e3		0.254	676.004	3.59	3.54	6170	35.9764	73.0		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	2.61e4	1.93e3	0.254		3.68	3.69	168	646.5488		2.427	NO
13	1...	Total PFHxS	398.9 > 79.7	2.61e4	1.93e3	0.254		3.93		168	646.5488			
14	16	L-PFOA	412.8 > 368.9	7.35e4	8.36e3	0.254		4.06	4.06	110	343.1454		2.849	NO
15	1...	Total PFOA	412.8 > 368.9	7.35e4	8.36e3	0.254		4.60		110	343.1454			
16	21	PFNA	463.0 > 418.8	6.87e2	8.35e3	0.254		4.51	4.51	1.03	3.1491		8.314	YES
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.93e3		0.254	190.058	3.68	3.68	1930	40.1110	81.4		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.93e3		0.254	190.058	3.68	3.68	1930	40.1110	81.4		
19	69	13C2-PFOA-EIS	414.9 > 369.7	8.36e3		0.254	1016.548	4.06	4.06	8360	32.4274	65.8		
20	69	13C2-PFOA-EIS	414.9 > 369.7	8.36e3		0.254	1016.548	4.06	4.06	8360	32.4274	65.8		
21	65	13C5-PFNA-EIS	468.2 > 422.9	8.35e3		0.254	867.408	4.51	4.51	8350	37.9596	77.0		
22	-1													
23	23	L-PFOS	498.9 > 79.7	4.71e3	2.16e3	0.254		4.61	4.60	27.2	114.4420		2.311	NO
24	1...	Total PFOS	498.9 > 79.7	4.71e3	2.16e3	0.254		5.13		27.2	114.4420			
25	25	9Cl-PF30NS	530.7 > 350.8		2.16e3	0.254		4.81						YES
26	26	PFDA	513 > 468.8		9.61e3	0.254		4.91						YES
27	33	PFUdA	563.0 > 518.9		1.11e4	0.254		5.24						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.16e3		0.254	207.944	4.60	4.61	2160	41.0364	83.3		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.16e3		0.254	207.944	4.60	4.61	2160	41.0364	83.3		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.16e3		0.254	207.944	4.60	4.61	2160	41.0364	83.3		
31	73	13C2-PFDA-EIS	515.1 > 469.9	9.61e3		0.254	944.999	4.91	4.91	9610	40.0850	81.3		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.11e4		0.254	1226.695	5.24	5.24	11100	35.6681	72.4		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.74e3	0.254		5.06						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.74e3	0.254		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.37e3	0.254		5.22						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.37e3	0.254		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.00e4	0.254		5.46						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.74e3		0.254	195.067	5.07	5.06	1740	35.2711	71.6		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.74e3		0.254	195.067	5.07	5.06	1740	35.2711	71.6		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.37e3		0.254	288.034	5.21	5.22	2370	32.3787	65.7		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.37e3		0.254	288.034	5.21	5.22	2370	32.3787	65.7		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.254	1212.024	5.50	5.53	10000	32.5820	66.1		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.00e4	0.254		5.53						YES
46	39	PFTrDA	662.9 > 618.9		1.00e4	0.254		5.77						YES
47	41	PFTeDA	713.0 > 669.0		8.16e3	0.254		6.00						YES
48	1...	TDCA	498.3>106.9			0.254		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.90e3	6.90e3	0.254	1.000	1.23	1.22	12.5	49.2922	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.254	1212.024	5.50	5.53	10000	32.5820	66.1		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.254	1212.024	5.50	5.53	10000	32.5820	66.1		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	8.16e3		0.254	1069.279	5.92	6.00	8160	30.0920	61.0		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.16e3		0.254	207.944	4.60	4.61	2160	41.0364	83.3		
54	1...	13C5-PFHxA	318.0 > 272.9	1.10e4	1.10e4	0.254	1.000	2.94	2.95	12.5	49.2922	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	8.09e2	8.09e2	0.254	1.000	3.67	3.68	12.5	49.2922	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.10e4	1.10e4	0.254	1.000	4.05	4.06	12.5	49.2922	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.06e4	1.06e4	0.254	1.000	4.90	4.91	12.5	49.2922	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.26e4	1.26e4	0.254	1.000	5.23	5.24	12.5	49.2922	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.55e3	2.55e3	0.254	1.000	4.60	4.60	12.5	49.2922	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	9.29e3	9.29e3	0.254	1.000	4.51	4.51	12.5	49.2922	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

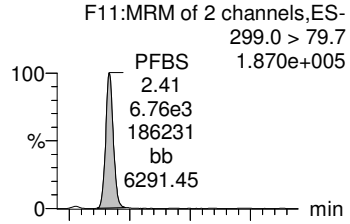
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

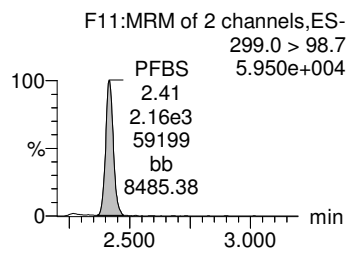
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

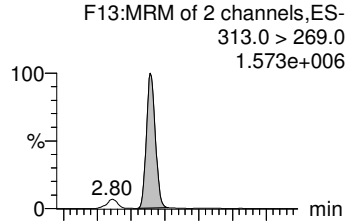
Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

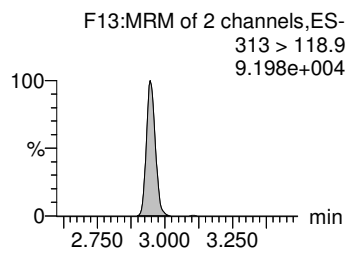
PFBS



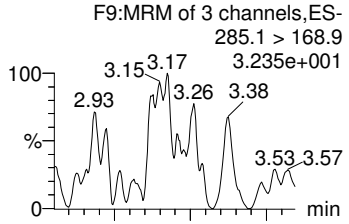


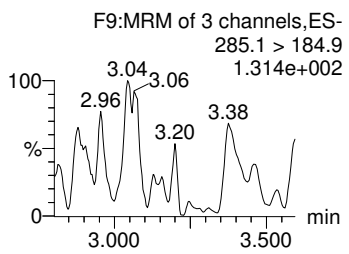
PFHxA



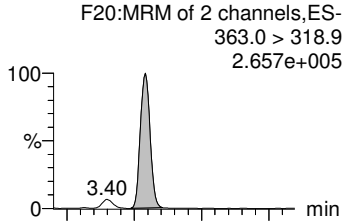


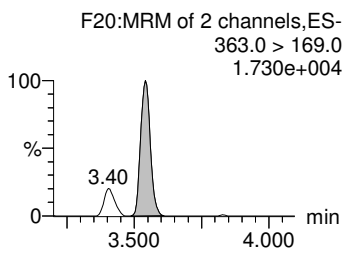
HFPO-DA



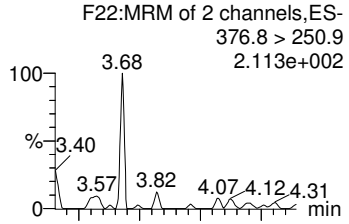


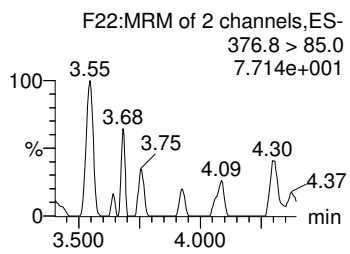
PFHpA



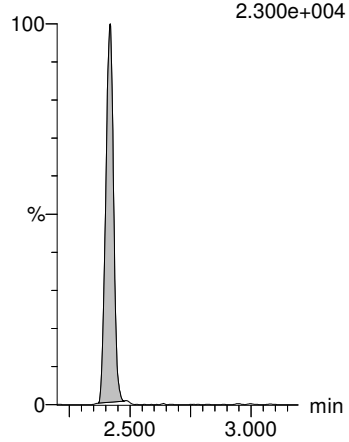


ADONA

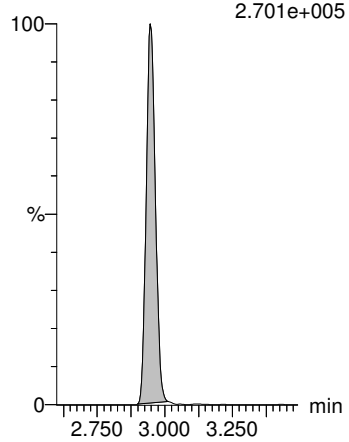




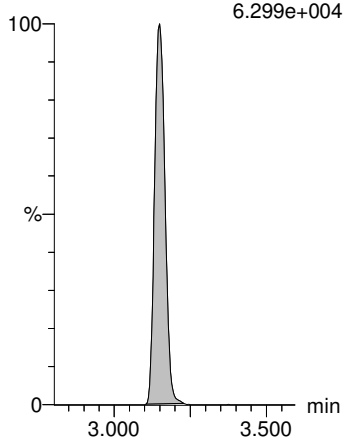
13C3-PFBS-EIS



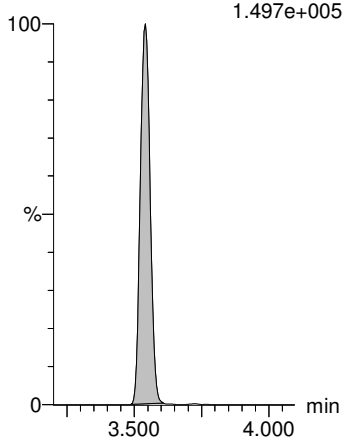
13C2-PFHxA-EIS



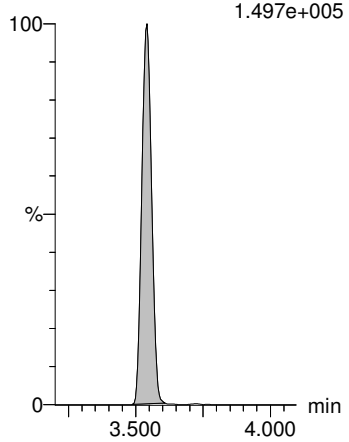
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

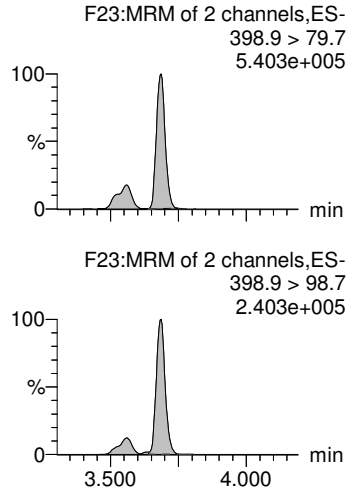
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

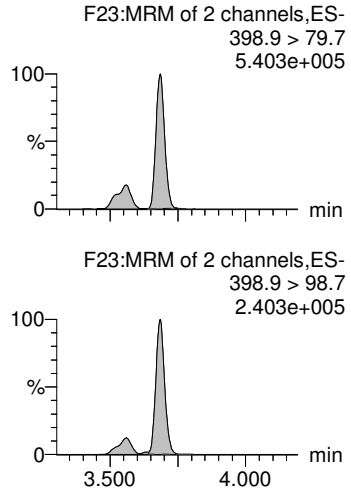
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

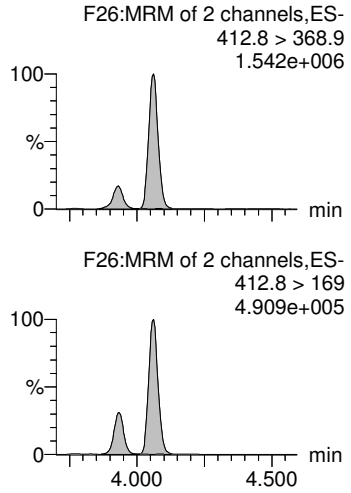
L-PFHxS



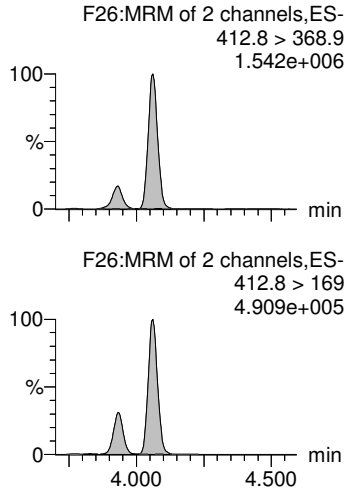
Total PFHxS



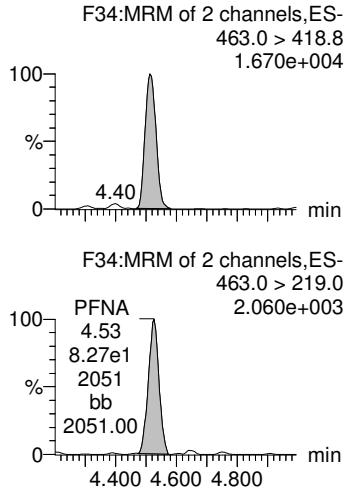
L-PFOA



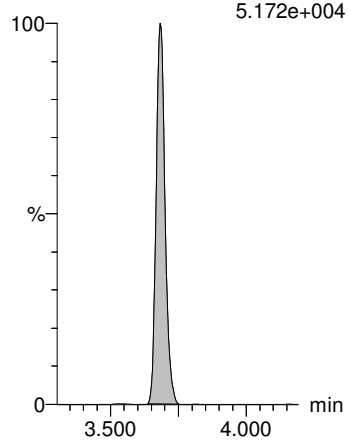
Total PFOA



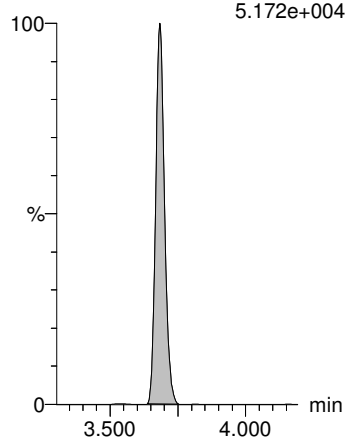
PFNA



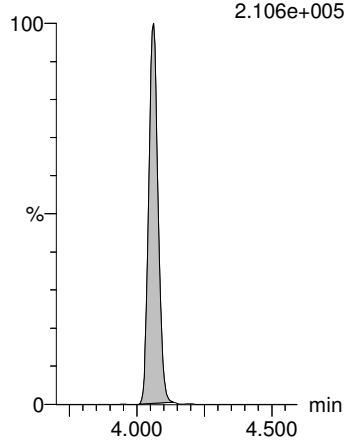
13C3-PFHxS-EIS



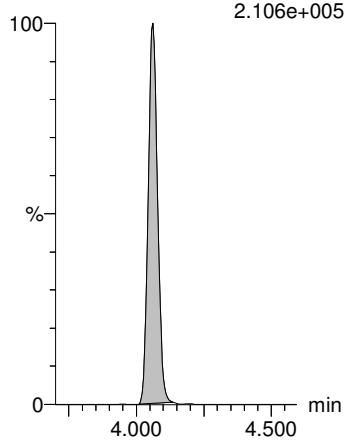
13C3-PFHxS-EIS



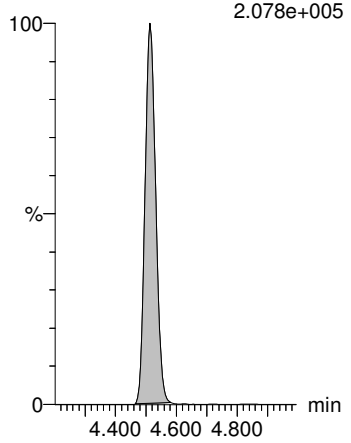
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

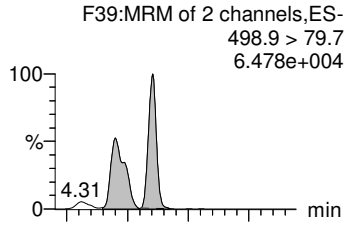
Review: AMR 3/5/2020

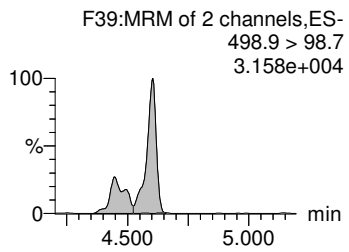
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

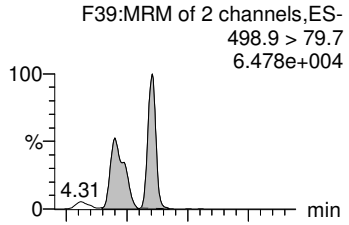
Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

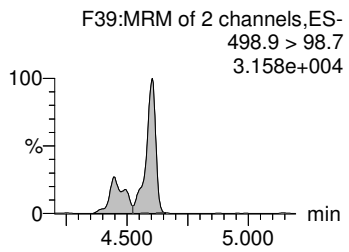
L-PFOS



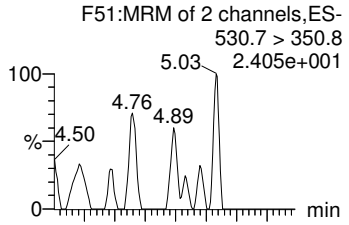


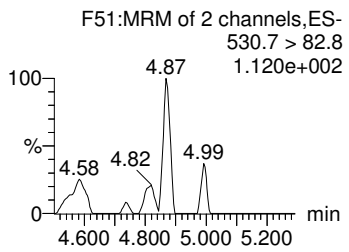
Total PFOS



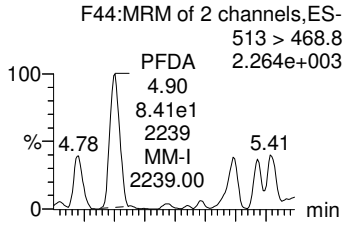


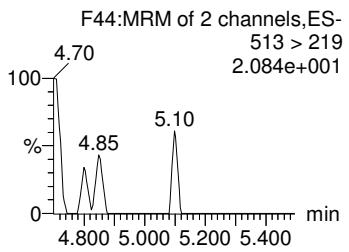
9Cl-PF30NS



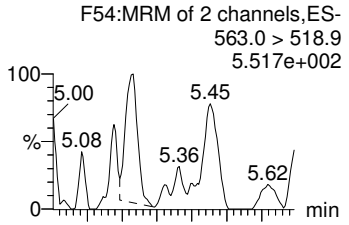


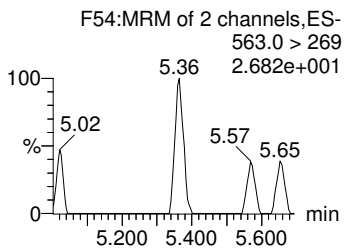
PFDA



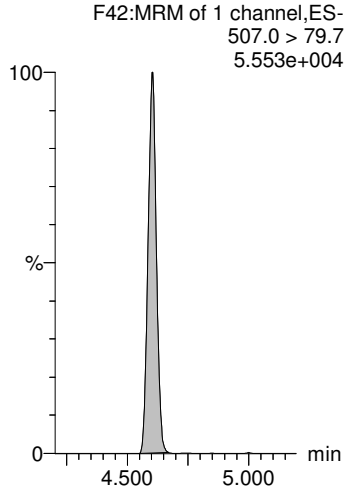


PFUdA

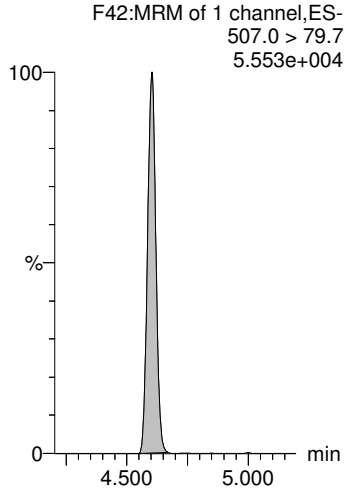




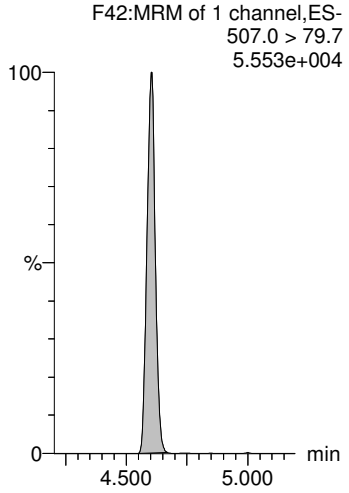
13C8-PFOS-EIS



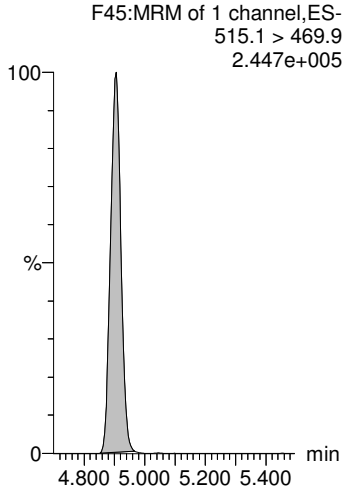
13C8-PFOS-EIS



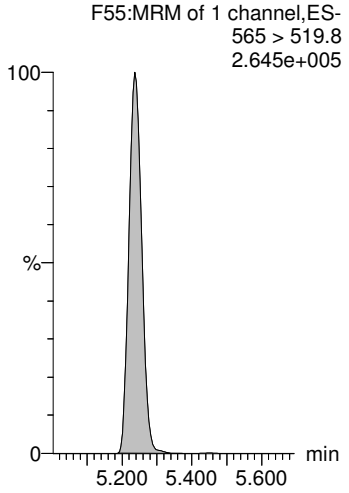
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

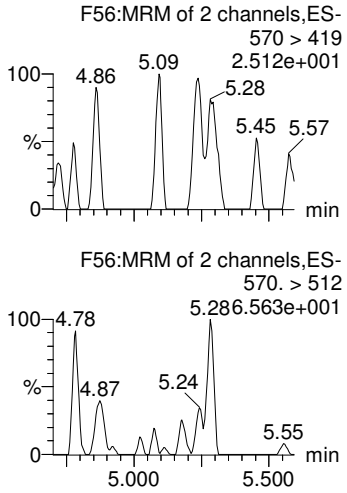
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

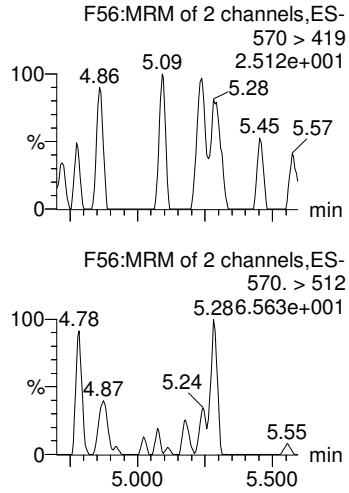
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

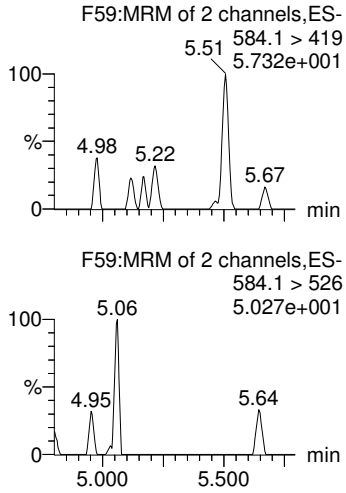
L-MeFOSAA



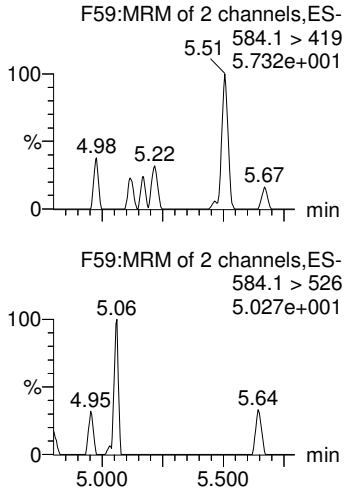
Total N-MeFOSAA



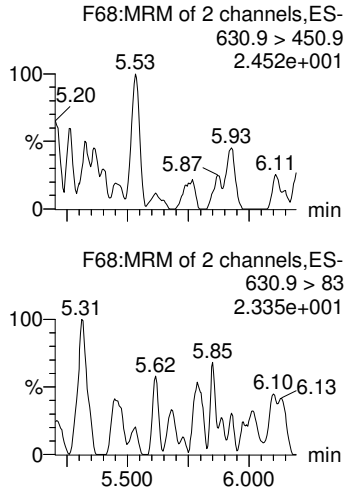
L-EtFOSAA



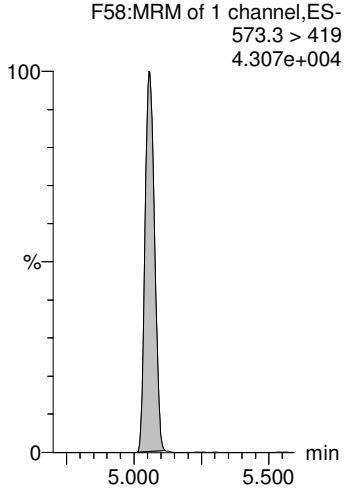
Total N-EtFOSAA



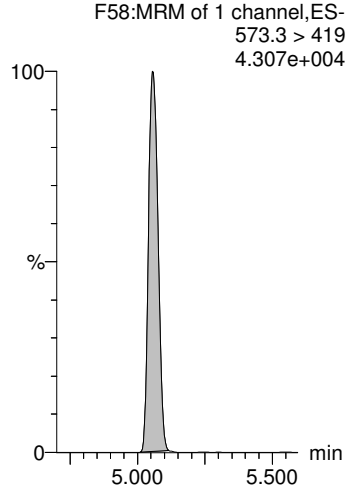
11Cl-PF30UdS



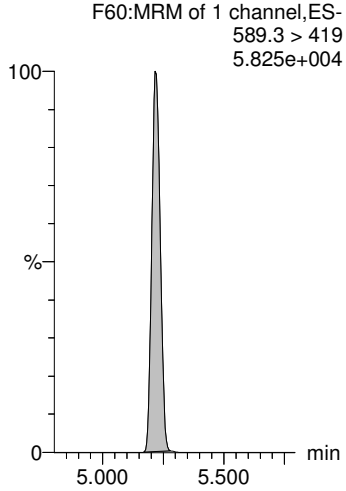
d3-N-MeFOSAA-EIS



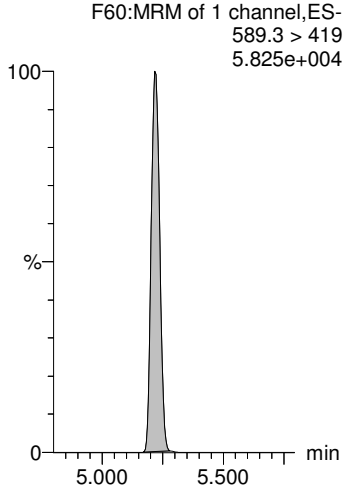
d3-N-MeFOSAA-EIS



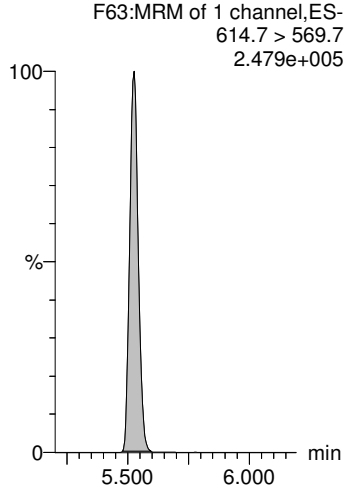
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

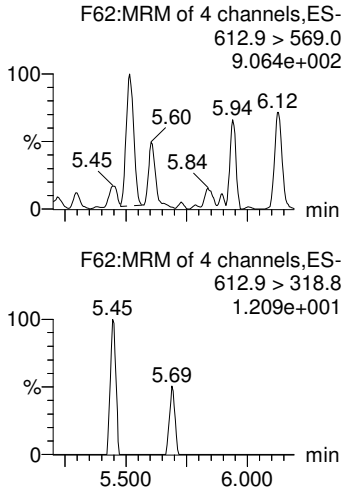
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

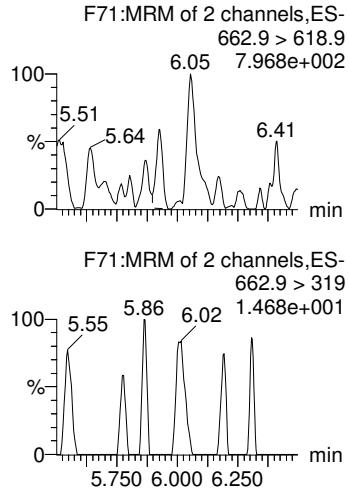
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

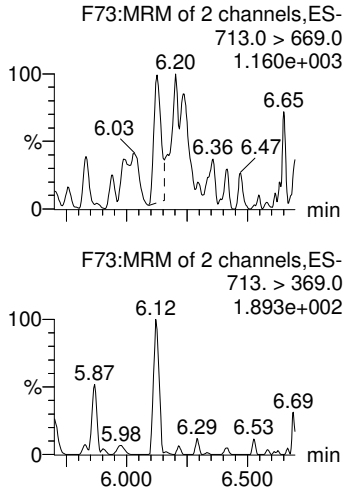
PFDoA



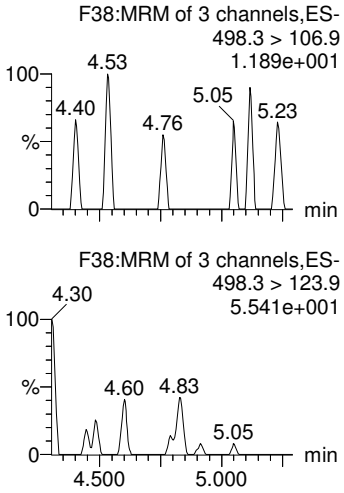
PFTrDA



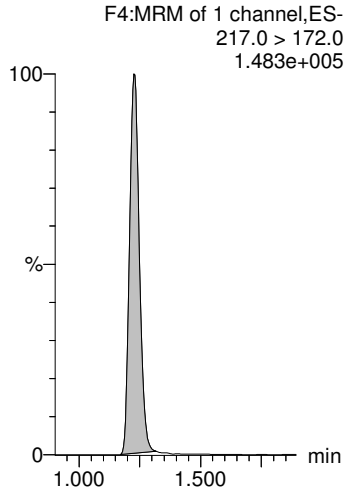
PFTeDA



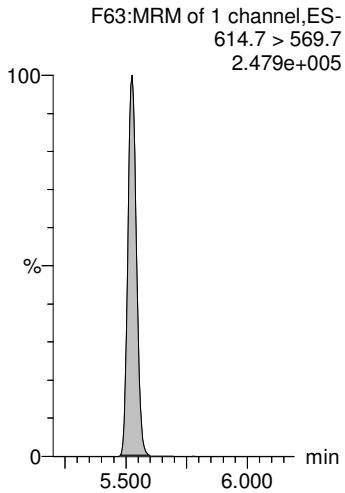
TDCA



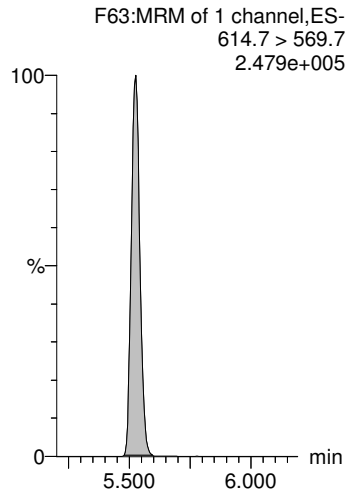
13C4-PFBA



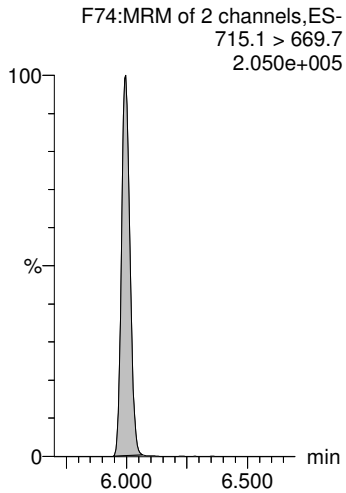
13C2-PFDoA-EIS



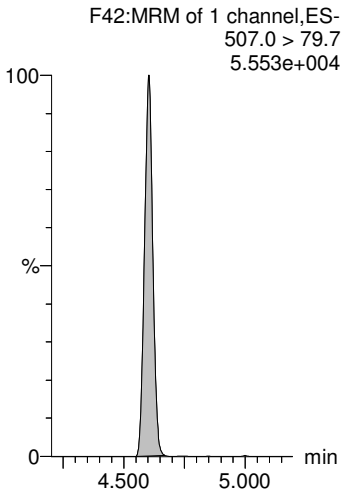
13C2-PFDoA-EIS



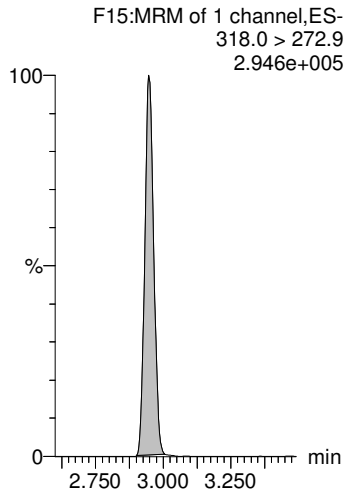
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

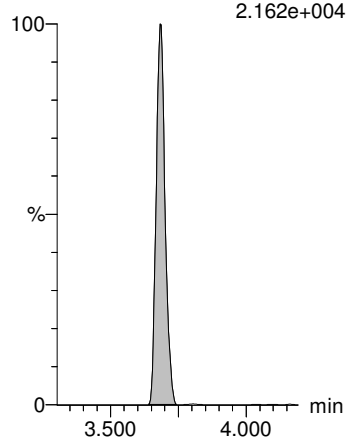
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

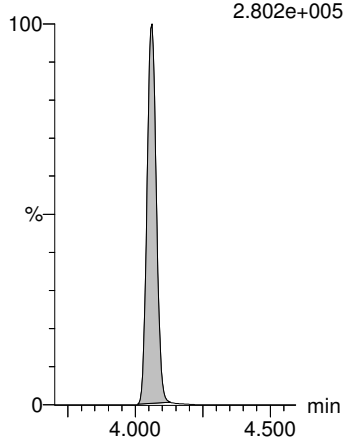
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:36 Pacific Standard Time

Name: 200304P2-64, Date: 05-Mar-2020, Time: 06:12:41, ID: 2000356-06 TW09S-20200219 0.25359, Description: TW09S-20200219

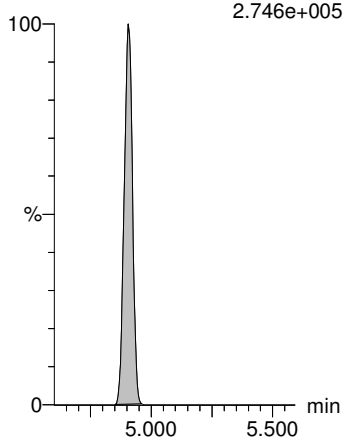
18O2-PFHxS



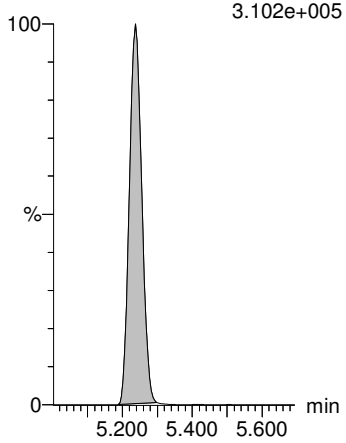
13C8-PFOA



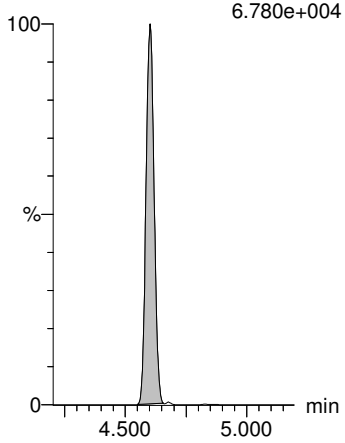
13C6-PFDA



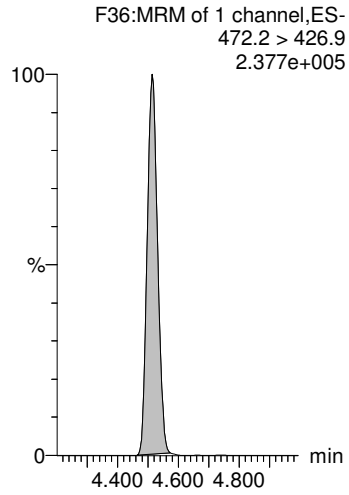
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	4.13e3	8.03e2	0.248		2.56	2.56	64.4	104.6905		3.001	NO
2	7	PFHxA	313.0 > 269.0	5.31e4	1.14e4	0.248		3.07	3.07	58.5	265.6701		17.525	NO
3	9	HFPO-DA	285.1 > 168.9		2.85e3	0.248		3.29						YES
4	11	PFHpA	363.0 > 318.9	1.50e4	6.65e3	0.248		3.67	3.67	28.1	94.5188		16.533	NO
5	12	ADONA	376.8 > 250.9		6.65e3	0.248		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	8.03e2		0.248	68.744	2.62	2.56	803	47.1488	93.4		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.14e4		0.248	1061.420	3.07	3.07	11400	43.2140	85.6		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.85e3		0.248	276.115	3.35	3.29	2850	41.6575	82.5		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.65e3		0.248	602.105	3.69	3.67	6650	44.5696	88.3		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.65e3		0.248	602.105	3.69	3.67	6650	44.5696	88.3		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	2.30e4	2.03e3	0.248		3.82	3.82	142	536.8985		2.516	NO
13	1...	Total PFHxS	398.9 > 79.7	2.30e4	2.03e3	0.248		3.93		142	536.8985			
14	16	L-PFOA	412.8 > 368.9	1.89e5	9.31e3	0.248		4.18	4.19	254	819.4770		2.891	NO
15	1...	Total PFOA	412.8 > 368.9	1.89e5	9.31e3	0.248		4.60		254	819.4770			
16	21	PFNA	463.0 > 418.8	8.80e2	8.29e3	0.248		4.62	4.63	1.33	4.1830		4.456	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	2.03e3		0.248	173.666	3.82	3.82	2030	47.1075	93.3		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	2.03e3		0.248	173.666	3.82	3.82	2030	47.1075	93.3		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.31e3		0.248	812.468	4.18	4.18	9310	46.2465	91.6		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.31e3		0.248	812.468	4.18	4.18	9310	46.2465	91.6		
21	65	13C5-PFNA-EIS	468.2 > 422.9	8.29e3		0.248	715.290	4.62	4.62	8290	46.7710	92.7		
22	-1													
23	23	L-PFOS	498.9 > 79.7	1.05e4	2.15e3	0.248		4.71	4.71	60.9	245.6717		2.290	NO
24	1...	Total PFOS	498.9 > 79.7	1.05e4	2.15e3	0.248		5.13		60.9	245.6717			
25	25	9Cl-PF30NS	530.7 > 350.8		2.15e3	0.248		4.91						YES
26	26	PFDA	513 > 468.8	3.67e2	9.50e3	0.248		5.00	5.00	0.482	1.3713		6.970	NO
27	33	PFUdA	563.0 > 518.9		1.19e4	0.248		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.15e3		0.248	170.914	4.71	4.71	2150	50.7962	100.6		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.15e3		0.248	170.914	4.71	4.71	2150	50.7962	100.6		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.15e3		0.248	170.914	4.71	4.71	2150	50.7962	100.6		
31	73	13C2-PFDA-EIS	515.1 > 469.9	9.50e3		0.248	817.432	5.00	5.00	9500	46.9486	93.0		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.19e4		0.248	1068.765	5.32	5.32	11900	45.0890	89.3		
33	-1													
34	29	L-MeFOSAA	570 > 419		2.13e3	0.248		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	2.13e3	0.248		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		3.06e3	0.248		5.30						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	3.06e3	0.248		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.00e4	0.248		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	2.13e3		0.248	144.472	5.14	5.15	2130	59.4347	117.8		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	2.13e3		0.248	144.472	5.14	5.15	2130	59.4347	117.8		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.06e3		0.248	265.746	5.29	5.30	3060	46.4724	92.1		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	3.06e3		0.248	265.746	5.29	5.30	3060	46.4724	92.1		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.248	1089.820	5.58	5.60	10000	37.0922	73.5		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.00e4	0.248		5.60						YES
46	39	PFTrDA	662.9 > 618.9		1.00e4	0.248		5.85						YES
47	41	PFTeDA	713.0 > 669.0		8.28e3	0.248		6.05						YES
48	1...	TDCA	498.3>106.9			0.248		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.93e3	6.93e3	0.248	1.000	1.34	1.34	12.5	50.4724	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.248	1089.820	5.58	5.60	10000	37.0922	73.5		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.00e4		0.248	1089.820	5.58	5.60	10000	37.0922	73.5		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	8.28e3		0.248	818.597	6.01	6.05	8280	40.8646	81.0		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.15e3		0.248	170.914	4.71	4.71	2150	50.7962	100.6		
54	1...	13C5-PFHxA	318.0 > 272.9	1.12e4	1.12e4	0.248	1.000	3.06	3.07	12.5	50.4724	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.82e2	7.82e2	0.248	1.000	3.81	3.82	12.5	50.4724	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.20e4	1.20e4	0.248	1.000	4.17	4.18	12.5	50.4724	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.16e4	1.16e4	0.248	1.000	4.99	5.00	12.5	50.4724	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.36e4	1.36e4	0.248	1.000	5.31	5.32	12.5	50.4724	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.15e3	2.15e3	0.248	1.000	4.70	4.71	12.5	50.4724	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	8.79e3	8.79e3	0.248	1.000	4.62	4.62	12.5	50.4724	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

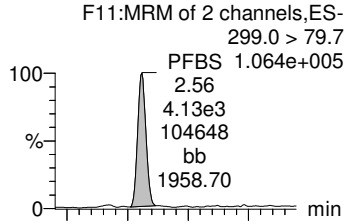
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

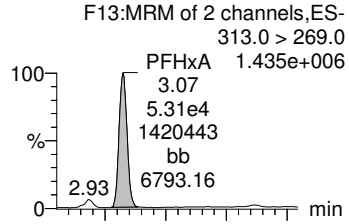
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

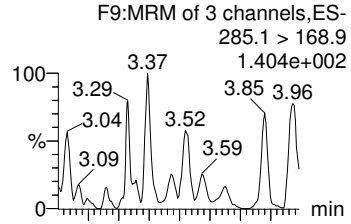
PFBS



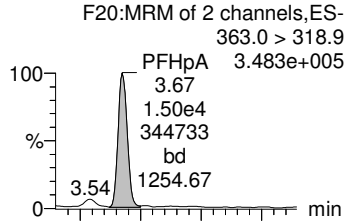
PFHxA



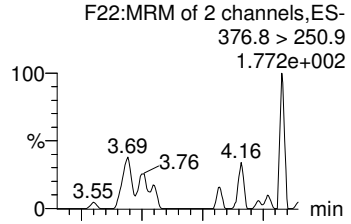
HFPO-DA



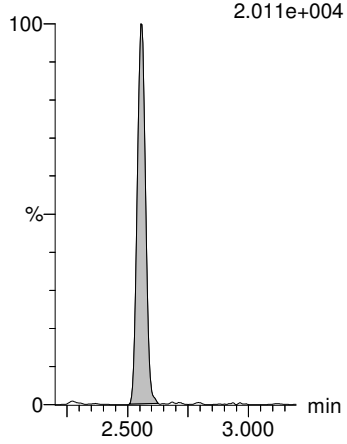
PFHpA



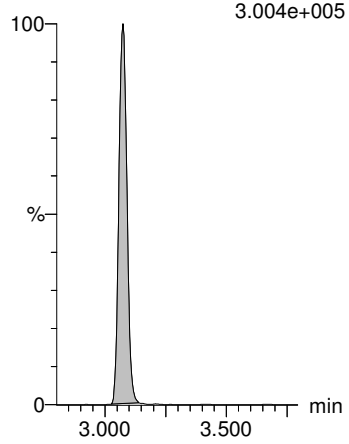
ADONA



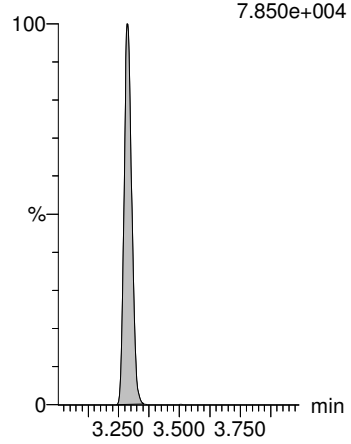
13C3-PFBS-EIS



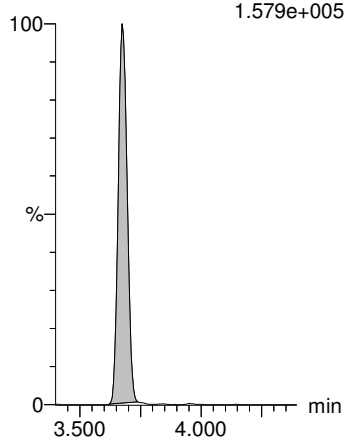
13C2-PFHxA-EIS



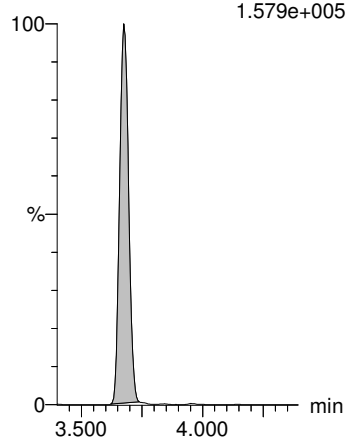
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

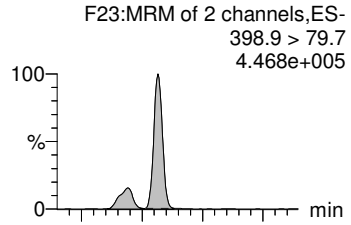
Review: AMR 3/5/2020

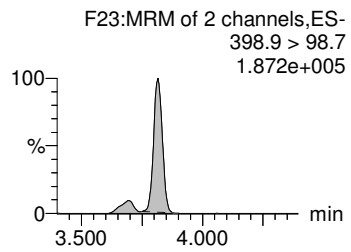
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

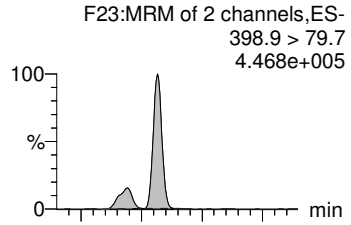
Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

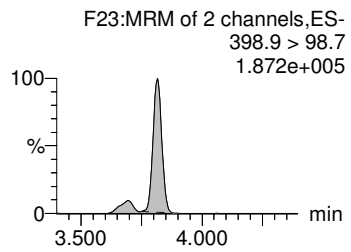
L-PFHxS



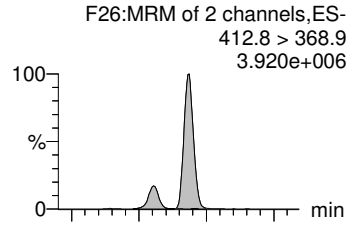


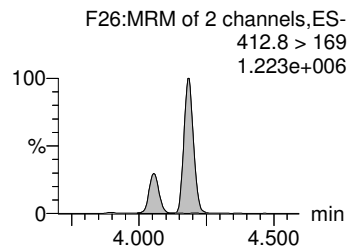
Total PFHxS



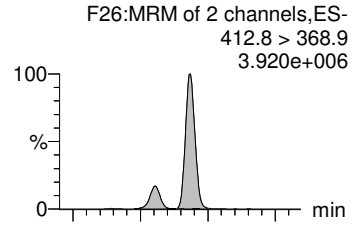


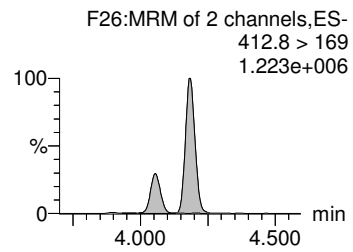
L-PFOA



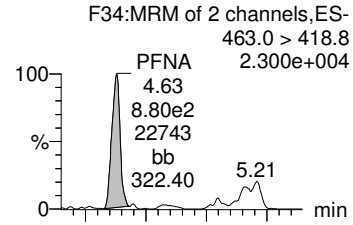


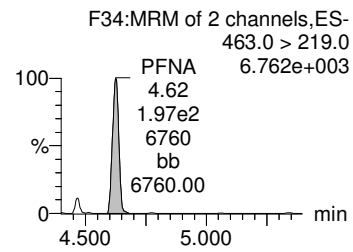
Total PFOA



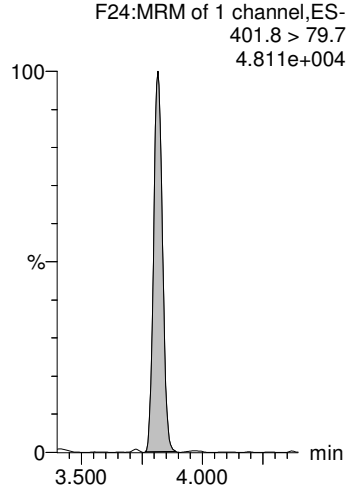


PFNA

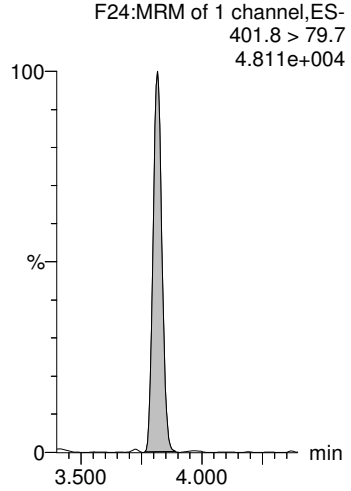




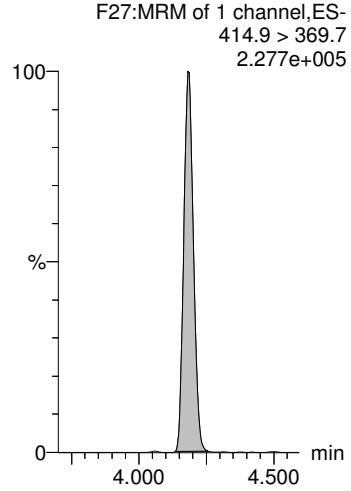
13C3-PFHxS-EIS



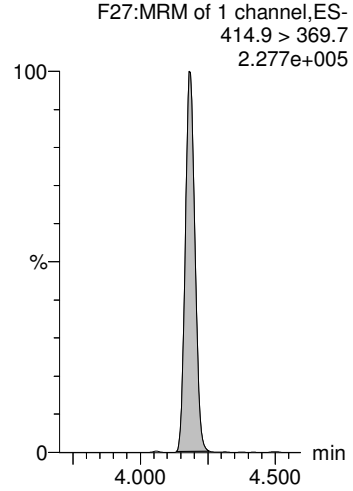
13C3-PFHxS-EIS



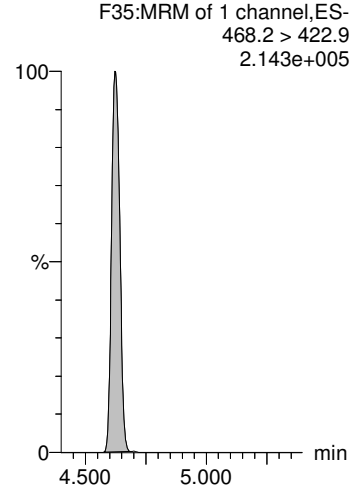
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

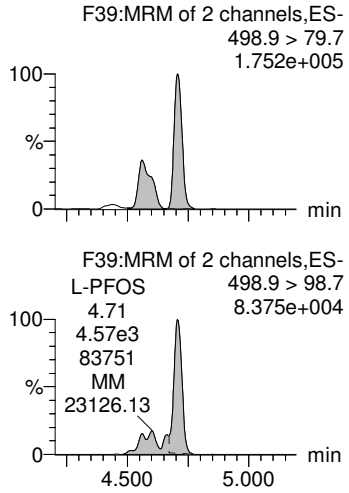
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

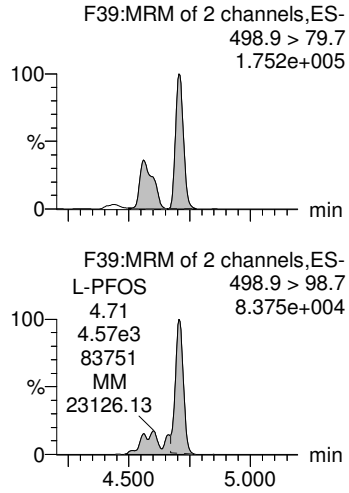
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

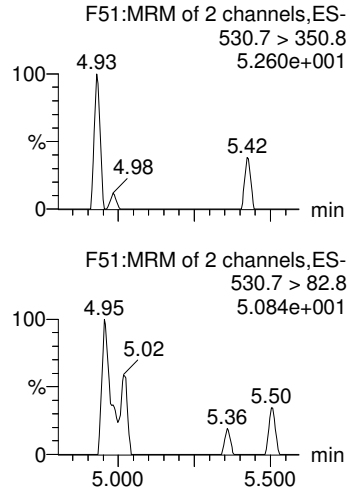
L-PFOS



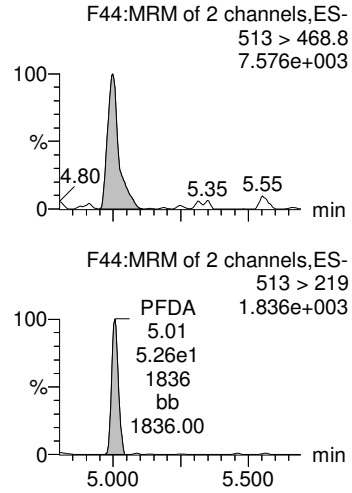
Total PFOS



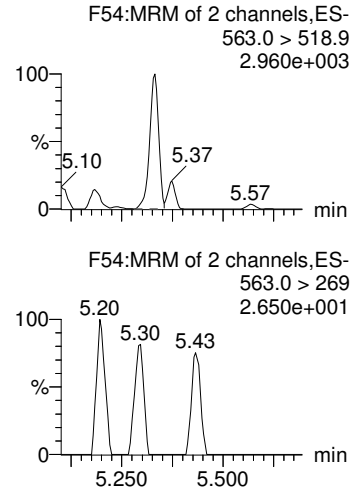
9Cl-PF30NS



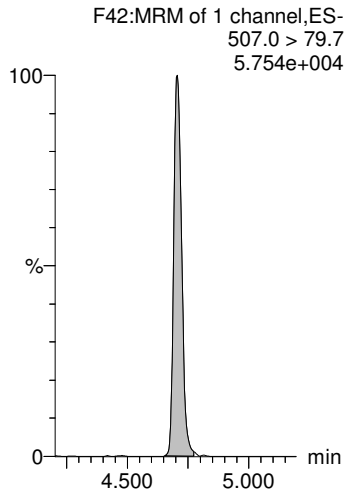
PFDA



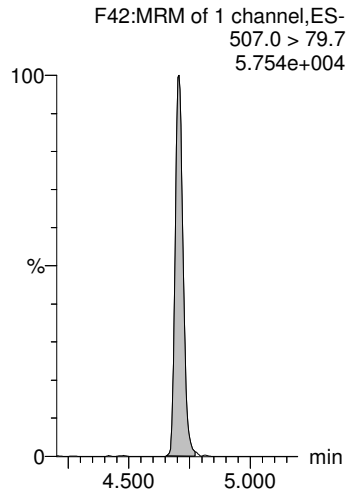
PFUdA



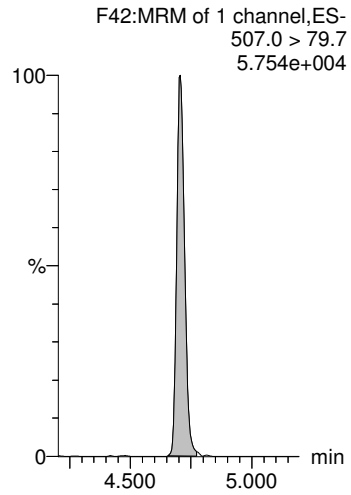
13C8-PFOS-EIS



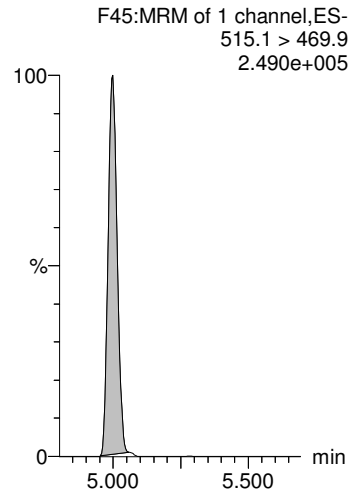
13C8-PFOS-EIS



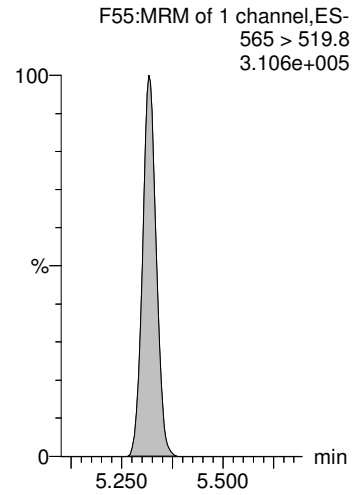
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

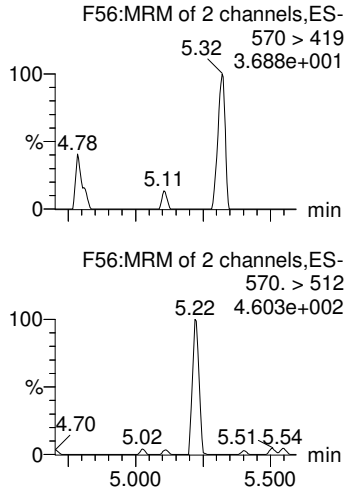
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

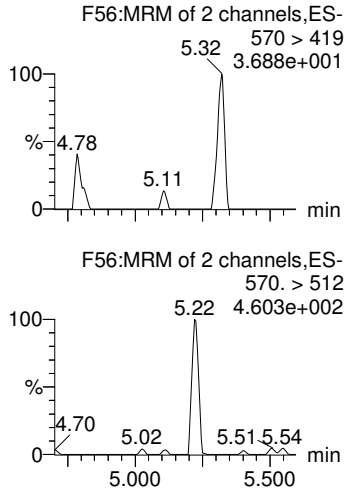
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

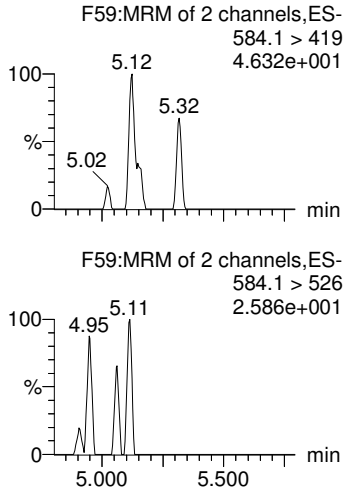
L-MeFOSAA



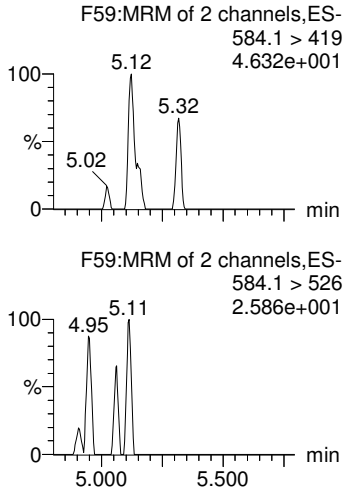
Total N-MeFOSAA



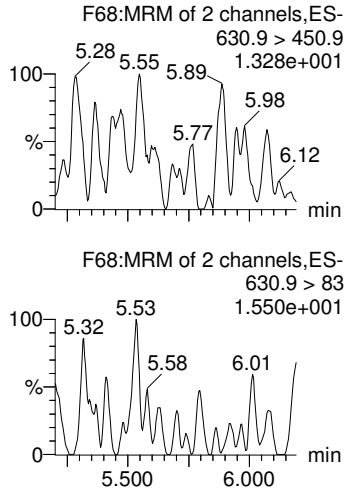
L-EtFOSAA



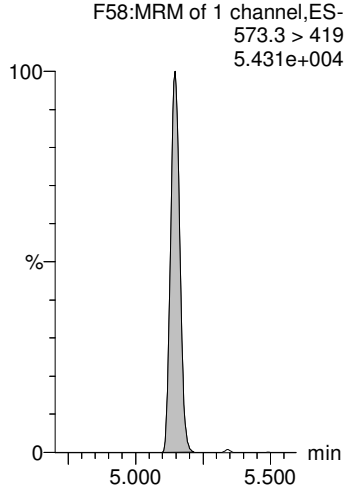
Total N-EtFOSAA



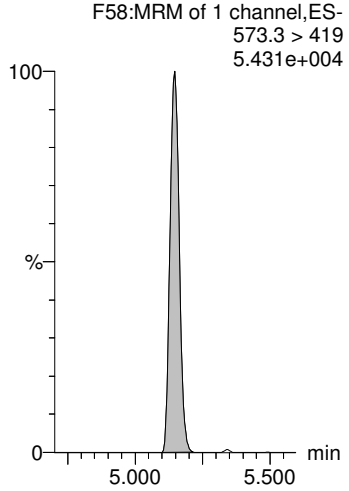
11Cl-PF30UdS



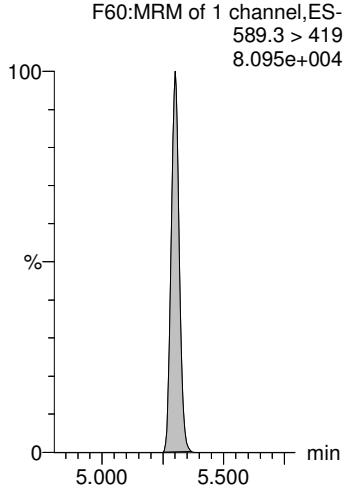
d3-N-MeFOSAA-EIS



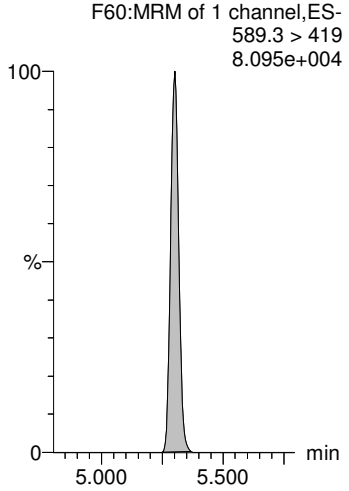
d3-N-MeFOSAA-EIS



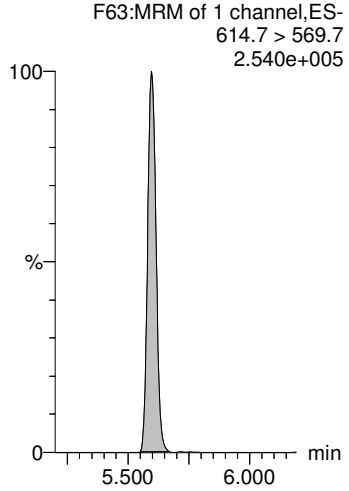
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

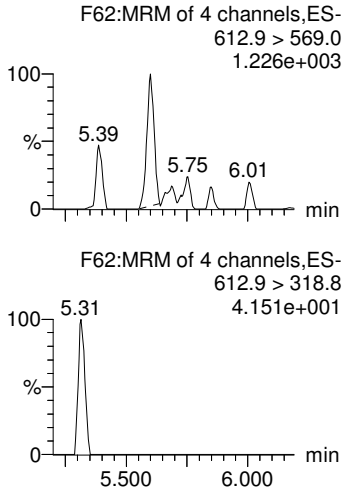
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

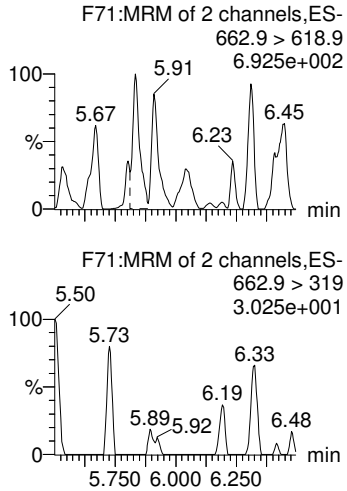
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

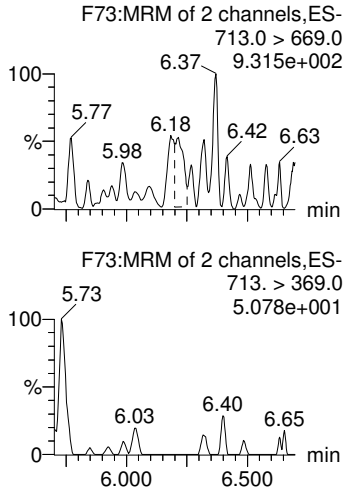
PFDoA



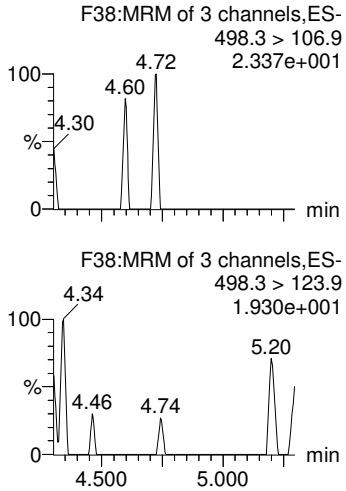
PFTrDA



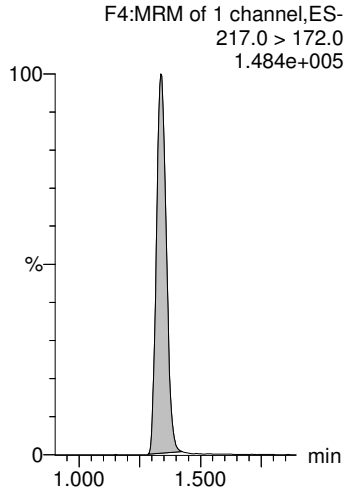
PFTeDA



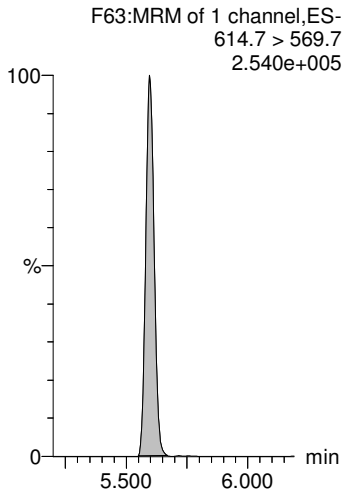
TDCA



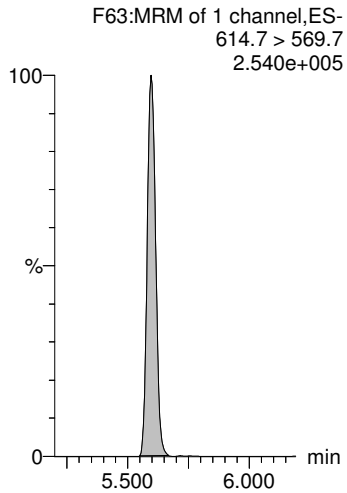
13C4-PFBA



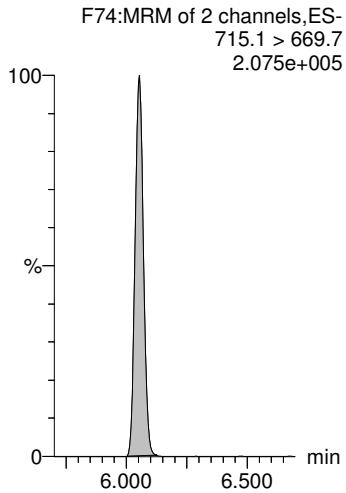
13C2-PFDoA-EIS



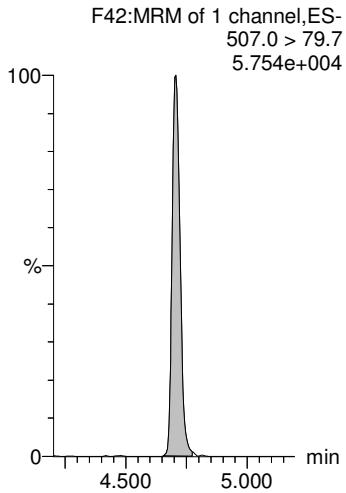
13C2-PFDoA-EIS



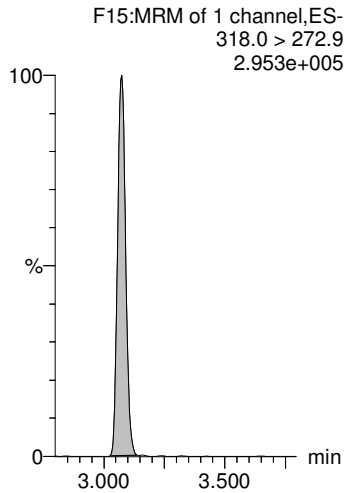
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

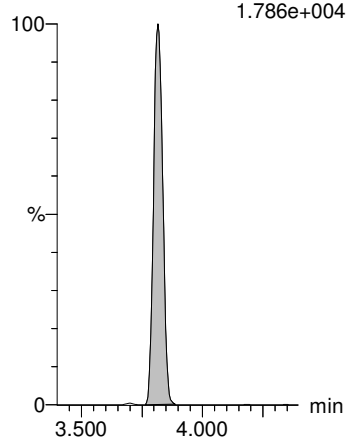
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

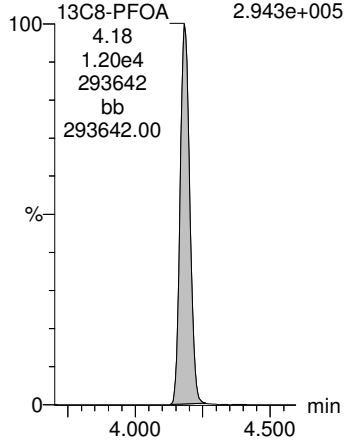
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:42 Pacific Standard Time

Name: 200303P2-25, Date: 03-Mar-2020, Time: 20:56:17, ID: 2000356-07 TW10S-20200219 0.24766, Description: TW10S-20200219

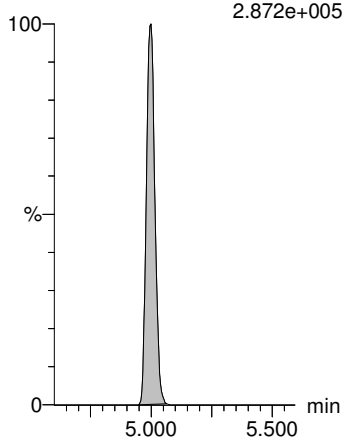
18O2-PFHxS



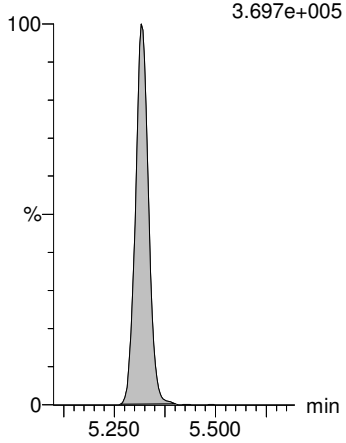
13C8-PFOA



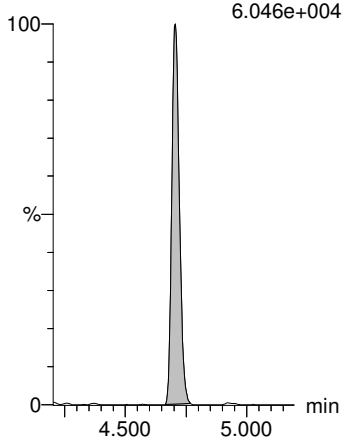
13C6-PFDA



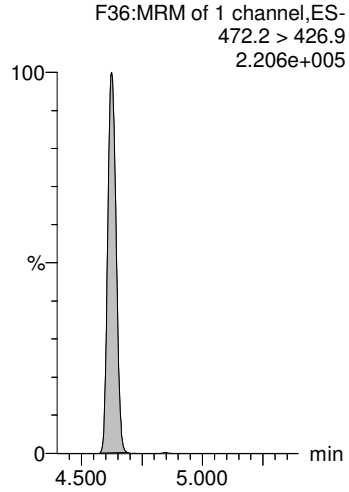
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	5.37e3	8.21e2	0.251		2.56	2.56	81.8	131.2675		3.402	NO
2	7	PFHxA	313.0 > 269.0	6.83e4	9.55e3	0.251		3.07	3.07	89.5	401.1066		16.373	NO
3	9	HFPO-DA	285.1 > 168.9		2.29e3	0.251		3.29						YES
4	11	PFHpA	363.0 > 318.9	2.06e4	5.76e3	0.251		3.67	3.67	44.6	147.9489		14.354	NO
5	12	ADONA	376.8 > 250.9		5.76e3	0.251		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	8.21e2		0.251	68.744	2.62	2.56	821	47.5858	95.6		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	9.55e3		0.251	1061.420	3.07	3.07	9550	35.8308	72.0		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.29e3		0.251	276.115	3.35	3.29	2290	33.0186	66.3		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	5.76e3		0.251	602.105	3.69	3.67	5760	38.1220	76.6		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	5.76e3		0.251	602.105	3.69	3.67	5760	38.1220	76.6		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	2.46e4	1.76e3	0.251		3.82	3.82	175	648.6822		2.294	NO
13	1...	Total PFHxS	398.9 > 79.7	2.46e4	1.76e3	0.251		3.93		175	648.6822			
14	16	L-PFOA	412.8 > 368.9	1.37e5	8.69e3	0.251		4.18	4.18	197	625.8347		2.941	NO
15	1...	Total PFOA	412.8 > 368.9	1.37e5	8.69e3	0.251		4.60		197	625.8347			
16	21	PFNA	463.0 > 418.8	1.70e3	7.87e3	0.251		4.62	4.62	2.70	8.3964		6.668	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.76e3		0.251	173.666	3.82	3.82	1760	40.2907	80.9		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.76e3		0.251	173.666	3.82	3.82	1760	40.2907	80.9		
19	69	13C2-PFOA-EIS	414.9 > 369.7	8.69e3		0.251	812.468	4.18	4.18	8690	42.6115	85.6		
20	69	13C2-PFOA-EIS	414.9 > 369.7	8.69e3		0.251	812.468	4.18	4.18	8690	42.6115	85.6		
21	65	13C5-PFNA-EIS	468.2 > 422.9	7.87e3		0.251	715.290	4.62	4.62	7870	43.8141	88.0		
22	-1													
23	23	L-PFOS	498.9 > 79.7	3.05e4	1.88e3	0.251		4.71	4.71	203	786.2175		2.359	NO
24	1...	Total PFOS	498.9 > 79.7	3.05e4	1.88e3	0.251		5.13		203	786.2175			
25	25	9Cl-PF30NS	530.7 > 350.8		1.88e3	0.251		4.91						YES
26	26	PFDA	513 > 468.8	2.67e2	8.53e3	0.251		5.00	4.99	0.391	1.0880		10.557	NO
27	33	PFUdA	563.0 > 518.9		9.80e3	0.251		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	1.88e3		0.251	170.914	4.70	4.71	1880	43.7649	87.9		
29	71	13C8-PFOS-EIS	507.0 > 79.7	1.88e3		0.251	170.914	4.70	4.71	1880	43.7649	87.9		
30	71	13C8-PFOS-EIS	507.0 > 79.7	1.88e3		0.251	170.914	4.70	4.71	1880	43.7649	87.9		
31	73	13C2-PFDA-EIS	515.1 > 469.9	8.53e3		0.251	817.432	5.00	5.00	8530	41.5823	83.5		
32	79	13C2-PFUdA-EIS	565 > 519.8	9.80e3		0.251	1068.765	5.32	5.32	9800	36.5103	73.3		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.83e3	0.251		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.83e3	0.251		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.71e3	0.251		5.31						YES

BP 3/5/2020

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.71e3	0.251		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.02e4	0.251		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.83e3		0.251	144.472	5.14	5.15	1830	50.5768	101.6		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.83e3		0.251	144.472	5.14	5.15	1830	50.5768	101.6		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.71e3		0.251	265.746	5.29	5.31	2710	40.6637	81.7		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.71e3		0.251	265.746	5.29	5.31	2710	40.6637	81.7		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.251	1089.820	5.58	5.60	10200	37.3255	75.0		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.02e4	0.251		5.60						YES
46	39	PFTrDA	662.9 > 618.9		1.02e4	0.251		5.85						YES
47	41	PFTeDA	713.0 > 669.0		7.66e3	0.251		6.05						YES
48	1...	TDCA	498.3>106.9			0.251		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	5.83e3	5.83e3	0.251	1.000	1.34	1.34	12.5	49.7968	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.251	1089.820	5.58	5.60	10200	37.3255	75.0		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.02e4		0.251	1089.820	5.58	5.60	10200	37.3255	75.0		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	7.66e3		0.251	818.597	6.01	6.05	7660	37.2561	74.8		
53	71	13C8-PFOS-EIS	507.0 > 79.7	1.88e3		0.251	170.914	4.70	4.71	1880	43.7649	87.9		
54	1...	13C5-PFHxA	318.0 > 272.9	9.40e3	9.40e3	0.251	1.000	3.06	3.07	12.5	49.7968	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.97e2	7.97e2	0.251	1.000	3.81	3.82	12.5	49.7968	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.10e4	1.10e4	0.251	1.000	4.17	4.18	12.5	49.7968	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	9.92e3	9.92e3	0.251	1.000	4.99	5.00	12.5	49.7968	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.11e4	1.11e4	0.251	1.000	5.31	5.32	12.5	49.7968	100.0		
60	1...	13C4-PFOS	503 > 79.7	1.89e3	1.89e3	0.251	1.000	4.70	4.70	12.5	49.7968	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	8.55e3	8.55e3	0.251	1.000	4.62	4.62	12.5	49.7968	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

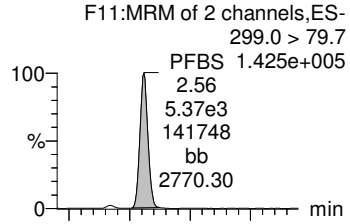
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

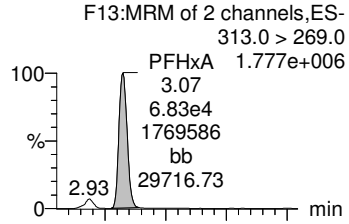
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

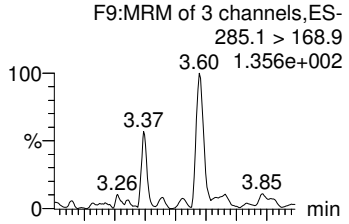
PFBS



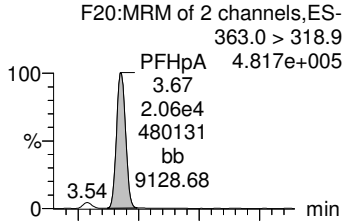
PFHxA



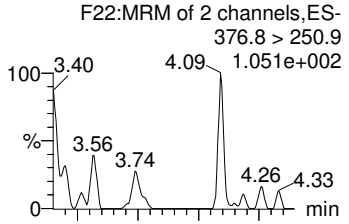
HFPO-DA



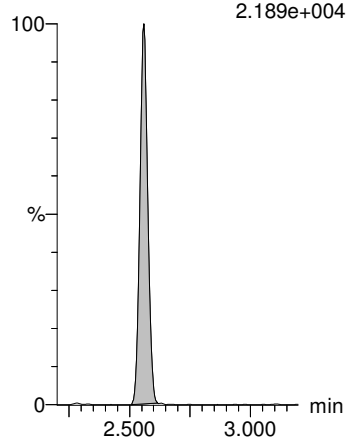
PFHpA



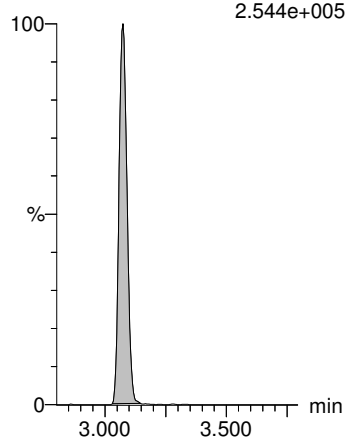
ADONA



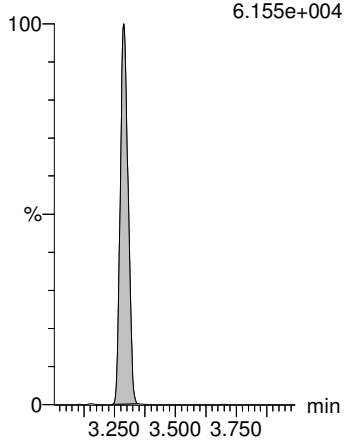
13C3-PFBS-EIS



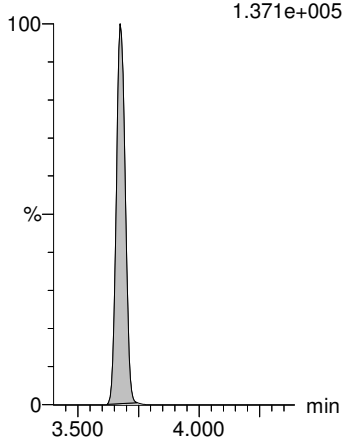
13C2-PFHxA-EIS



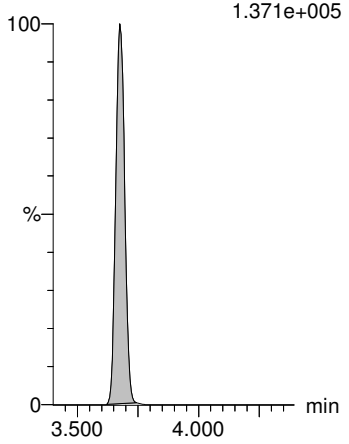
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

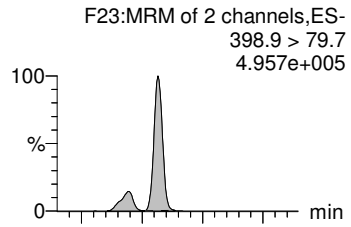
Review: AMR 3/5/2020

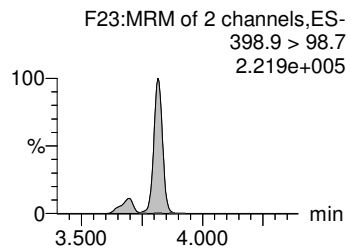
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

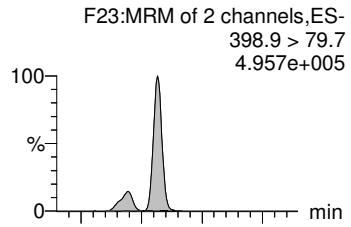
Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

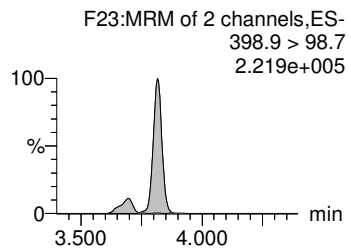
L-PFHxS



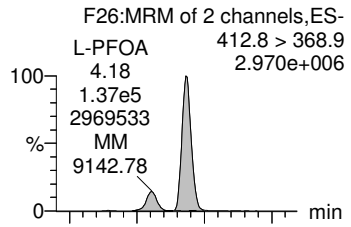


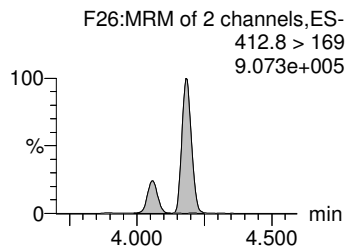
Total PFHxS



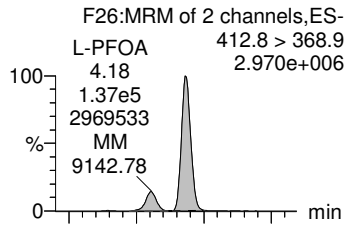


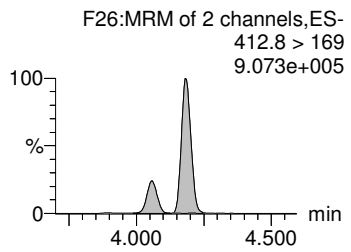
L-PFOA



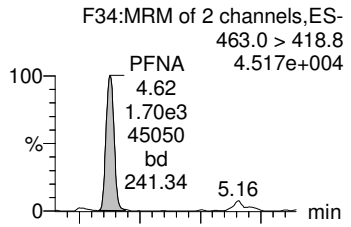


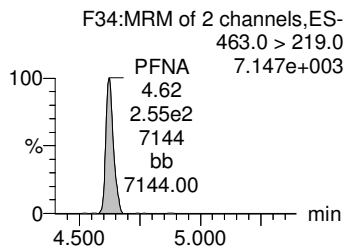
Total PFOA



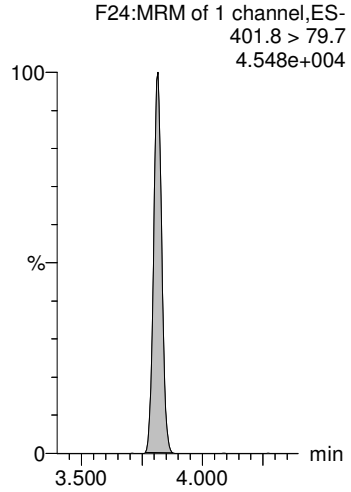


PFNA

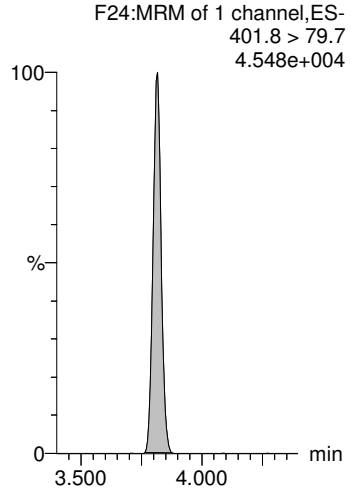




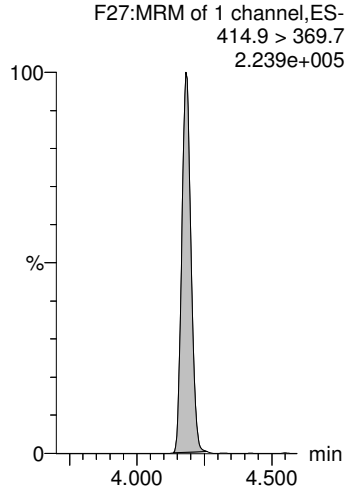
13C3-PFHxS-EIS



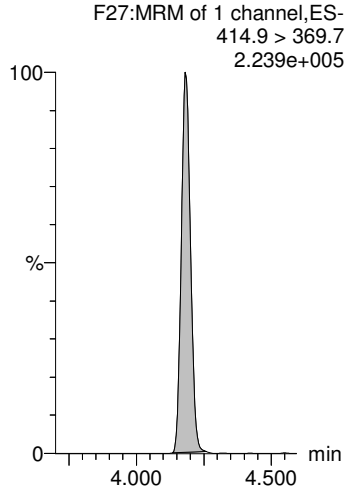
13C3-PFHxS-EIS



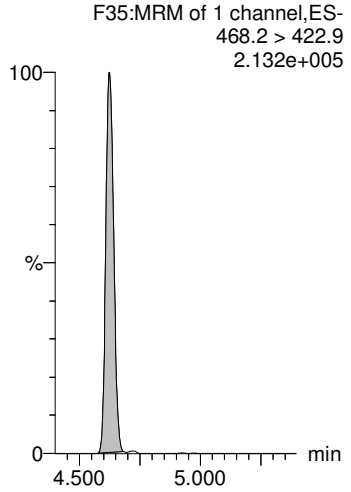
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

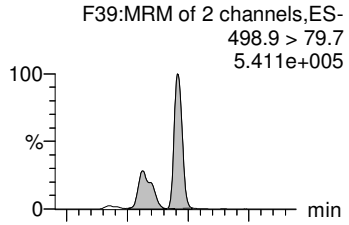
Review: AMR 3/5/2020

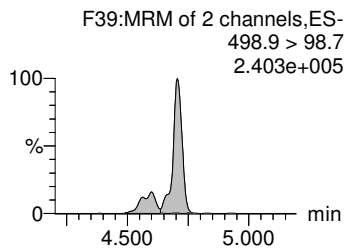
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

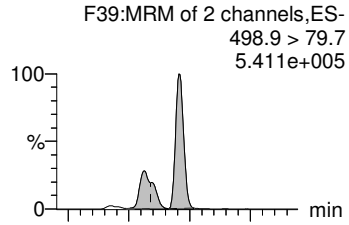
Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

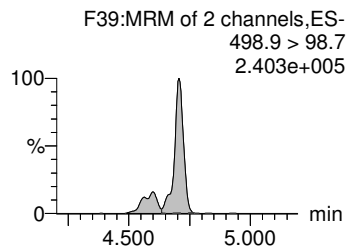
L-PFOS



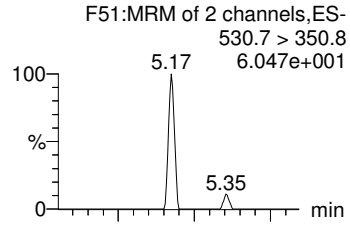


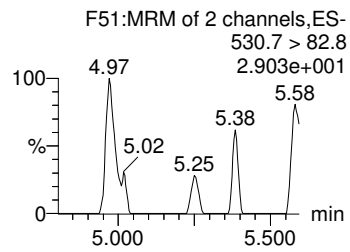
Total PFOS



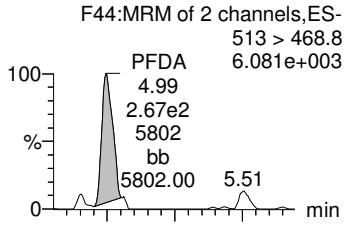


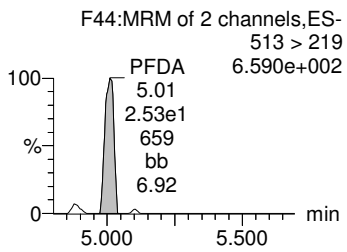
9Cl-PF30NS



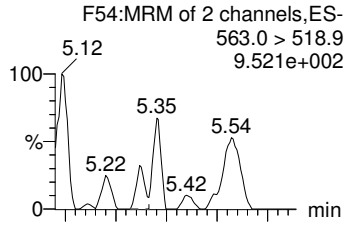


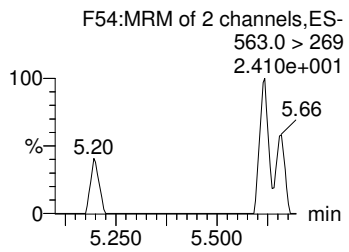
PFDA



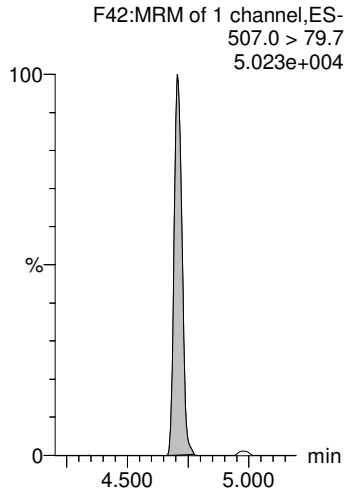


PFUdA

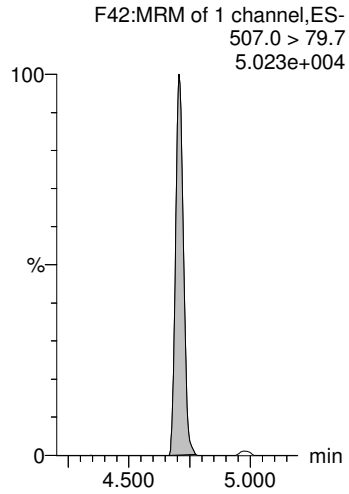




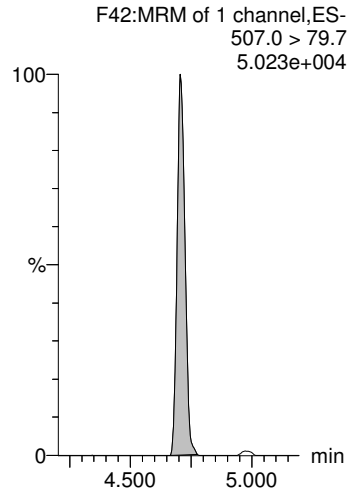
13C8-PFOS-EIS



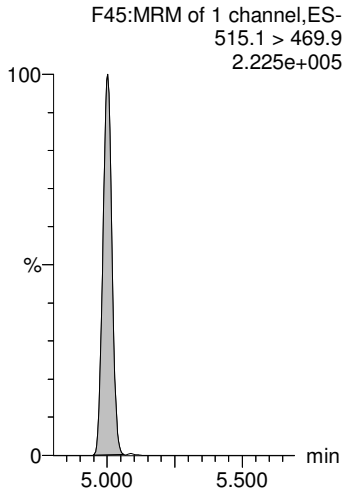
13C8-PFOS-EIS



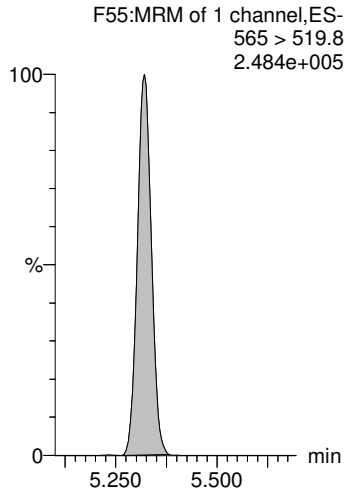
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

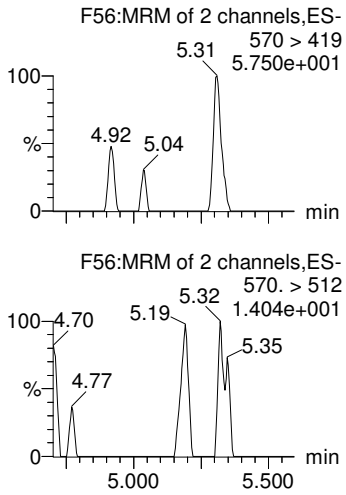
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

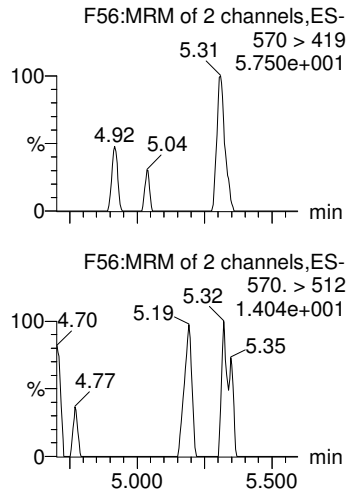
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

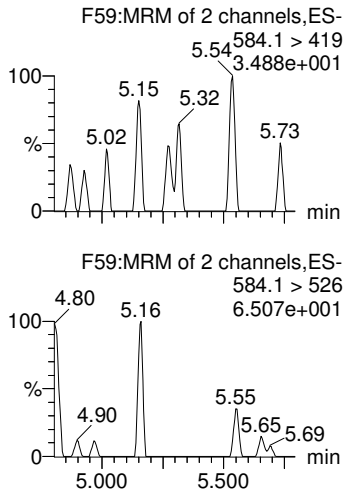
L-MeFOSAA



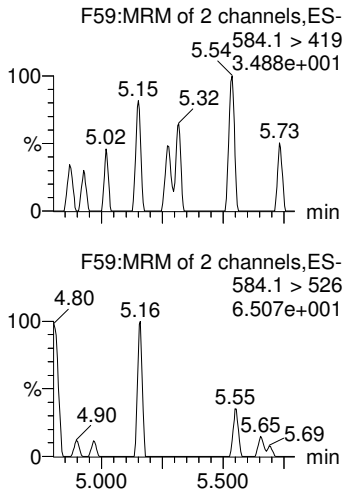
Total N-MeFOSAA



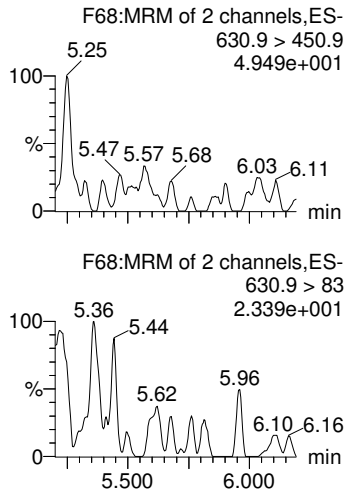
L-EtFOSAA



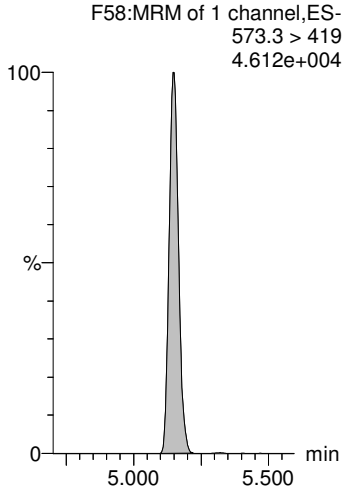
Total N-EtFOSAA



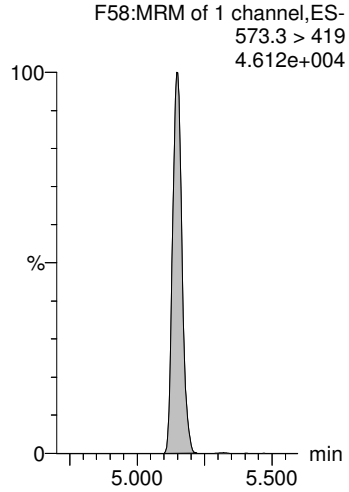
11Cl-PF30UdS



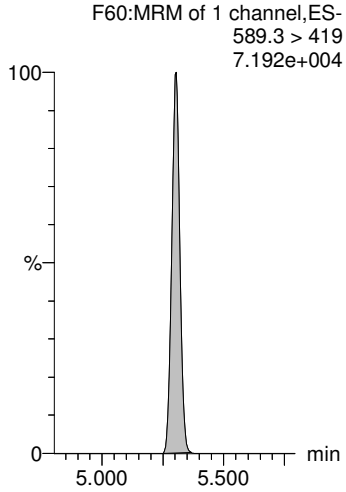
d3-N-MeFOSAA-EIS



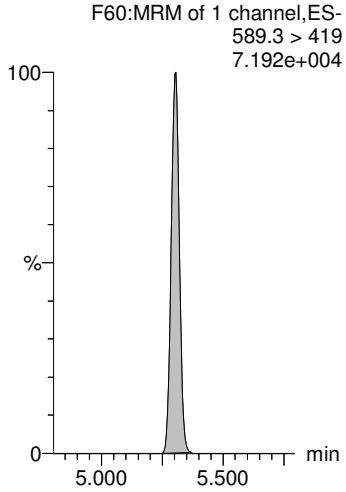
d3-N-MeFOSAA-EIS



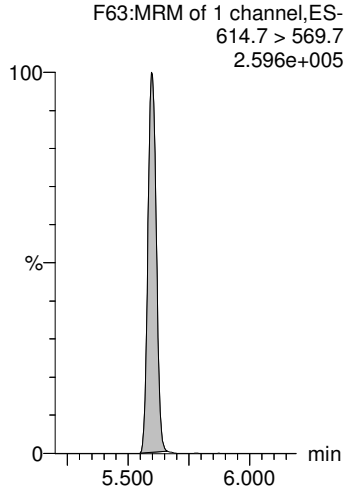
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

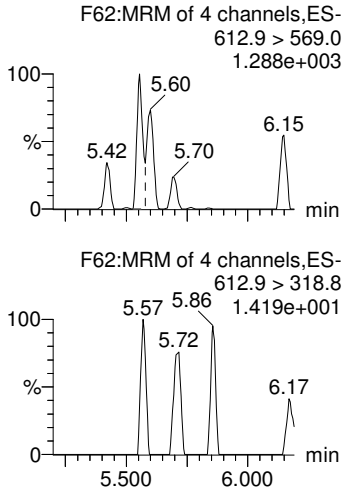
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

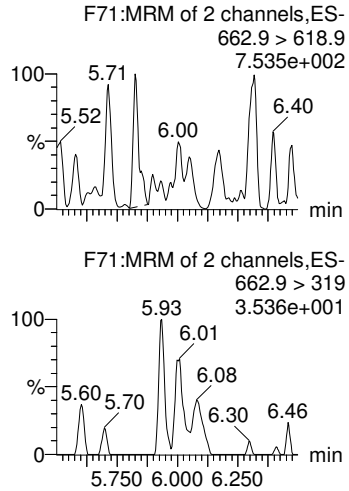
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

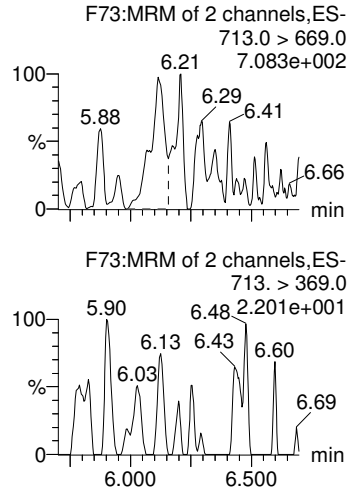
PFDoA



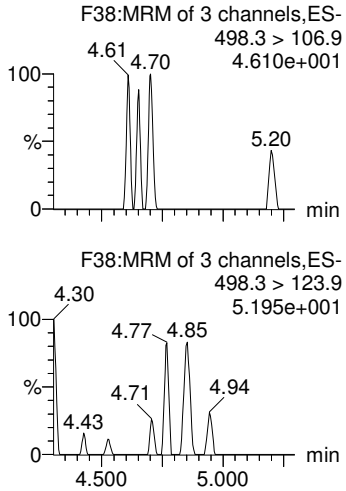
PFTrDA



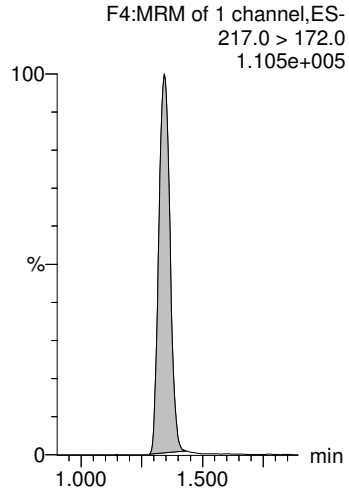
PFTeDA



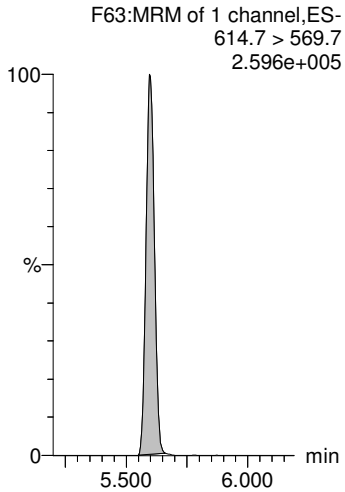
TDCA



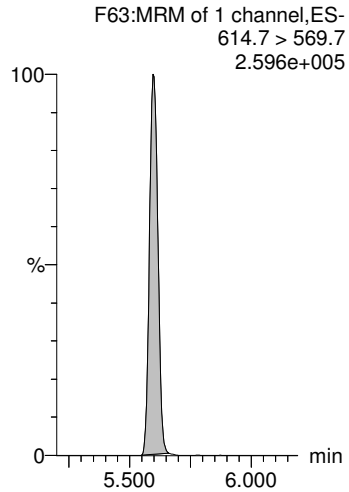
13C4-PFBA



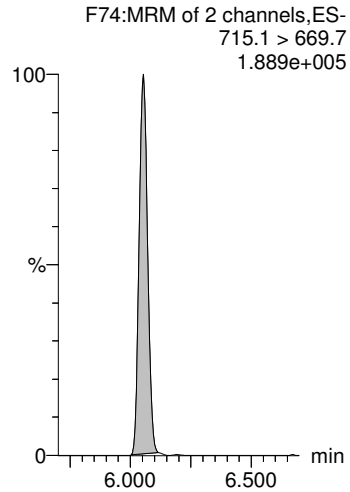
13C2-PFDoA-EIS



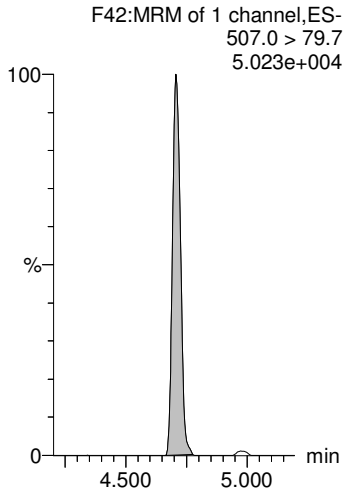
13C2-PFDoA-EIS



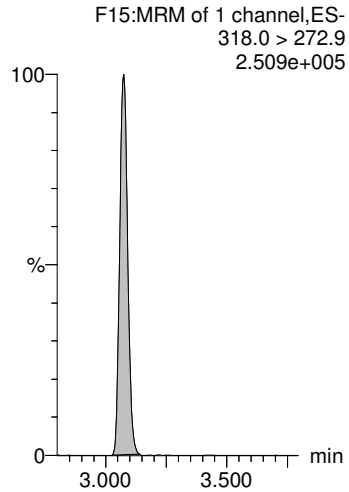
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

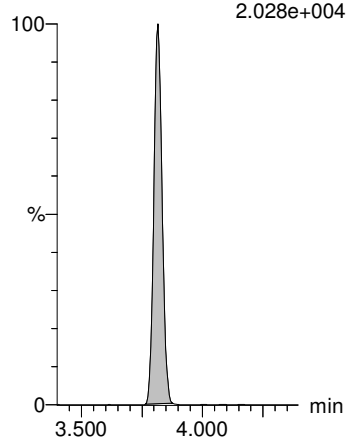
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

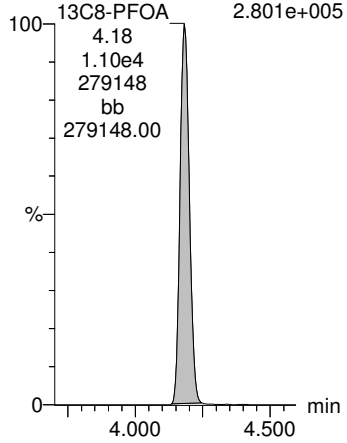
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:47 Pacific Standard Time

Name: 200303P2-26, Date: 03-Mar-2020, Time: 21:06:48, ID: 2000356-08 TW11S-20200219 0.25102, Description: TW11S-20200219

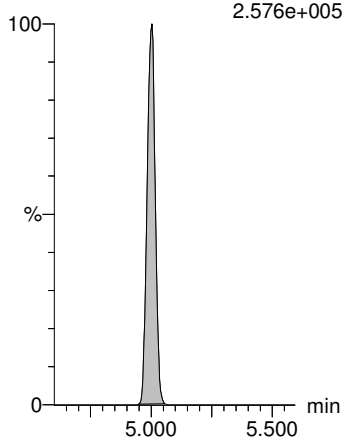
18O2-PFHxS



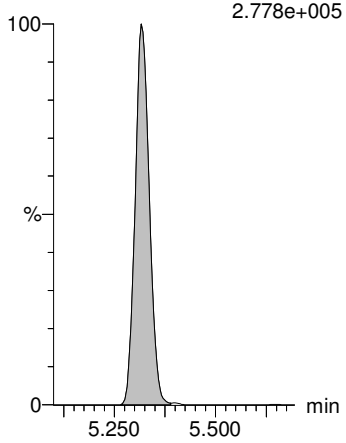
13C8-PFOA



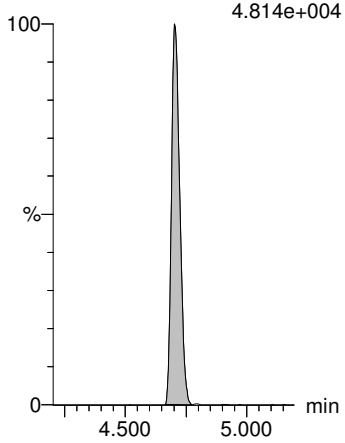
13C6-PFDA



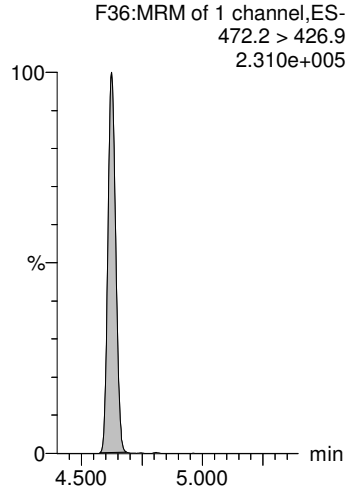
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

*See Dilution

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	4.71e4	7.03e2	0.249		2.56	2.56	839	1354.2176		3.144	NO
2	7	PFHxA	313.0 > 269.0	9.87e5	8.95e3	0.249		3.07	3.07	1380	6224.2267 *E		17.074	NO
3	9	HFPO-DA	285.1 > 168.9		2.63e3	0.249		3.29						YES
4	11	PFHpA	363.0 > 318.9	3.01e5	5.43e3	0.249		3.67	3.67	693	2315.1267 *E		15.542	NO
5	12	ADONA	376.8 > 250.9		5.43e3	0.249		3.77						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	7.03e2		0.249	68.744	2.62	2.56	703	41.0050	81.8		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	8.95e3		0.249	1061.420	3.07	3.07	8950	33.8378	67.5		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.63e3		0.249	276.115	3.35	3.29	2630	38.1825	76.1		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	5.43e3		0.249	602.105	3.69	3.67	5430	36.1982	72.2		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	5.43e3		0.249	602.105	3.69	3.67	5430	36.1982	72.2		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	2.24e5	1.13e3	0.249		3.82	3.82	2480	6836.7128 *E		2.302	NO
13	1...	Total PFHxS	398.9 > 79.7	2.24e5	1.13e3	0.249		3.93		2480	6836.7128			
14	16	L-PFOA	412.8 > 368.9	1.71e6	8.02e3	0.249		4.18	4.18	2670	13911.3783 *E		2.920	NO
15	1...	Total PFOA	412.8 > 368.9	1.71e6	8.02e3	0.249		4.60		2670	13911.3783			
16	21	PFNA	463.0 > 418.8	1.52e4	7.69e3	0.249		4.62	4.62	24.8	77.4998		6.151	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.13e3		0.249	173.666	3.82	3.82	1130	26.1878	52.2		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.13e3		0.249	173.666	3.82	3.82	1130	26.1878	52.2		
19	69	13C2-PFOA-EIS	414.9 > 369.7	8.02e3		0.249	812.468	4.18	4.18	8020	39.6012	79.0		
20	69	13C2-PFOA-EIS	414.9 > 369.7	8.02e3		0.249	812.468	4.18	4.18	8020	39.6012	79.0		
21	65	13C5-PFNA-EIS	468.2 > 422.9	7.69e3		0.249	715.290	4.62	4.62	7690	43.1438	86.0		
22	-1													
23	23	L-PFOS	498.9 > 79.7	2.16e5	1.62e3	0.249		4.71	4.71	1670	5355.2005 *E		2.208	NO
24	1...	Total PFOS	498.9 > 79.7	2.16e5	1.62e3	0.249		5.13		1670	5355.2005			
25	25	9Cl-PF30NS	530.7 > 350.8		1.62e3	0.249		4.91						YES
26	26	PFDA	513 > 468.8	9.35e2	8.92e3	0.249		5.00	5.00	1.31	3.7921		8.981	NO
27	33	PFUdA	563.0 > 518.9		1.16e4	0.249		5.32						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	1.62e3		0.249	170.914	4.71	4.71	1620	38.0721	75.9		
29	71	13C8-PFOS-EIS	507.0 > 79.7	1.62e3		0.249	170.914	4.71	4.71	1620	38.0721	75.9		
30	71	13C8-PFOS-EIS	507.0 > 79.7	1.62e3		0.249	170.914	4.71	4.71	1620	38.0721	75.9		
31	73	13C2-PFDA-EIS	515.1 > 469.9	8.92e3		0.249	817.432	5.00	5.00	8920	43.7910	87.3		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.16e4		0.249	1068.765	5.32	5.32	11600	43.4327	86.6		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.97e3	0.249		5.15						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.97e3	0.249		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.59e3	0.249		5.30						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.59e3	0.249		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		9.71e3	0.249		5.53						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.97e3		0.249	144.472	5.14	5.15	1970	54.5770	108.8		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.97e3		0.249	144.472	5.14	5.15	1970	54.5770	108.8		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.59e3		0.249	265.746	5.29	5.30	2590	39.0871	77.9		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.59e3		0.249	265.746	5.29	5.30	2590	39.0871	77.9		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	9.71e3		0.249	1089.820	5.58	5.60	9710	35.7641	71.3		
44	-1													
45	37	PFDoA	612.9 > 569.0		9.71e3	0.249		5.60						YES
46	39	PFTrDA	662.9 > 618.9		9.71e3	0.249		5.85						YES
47	41	PFTeDA	713.0 > 669.0		7.16e3	0.249		6.05						YES
48	1...	TDCA	498.3>106.9			0.249		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.33e3	6.33e3	0.249	1.000	1.34	1.34	12.5	50.1545	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	9.71e3		0.249	1089.820	5.58	5.60	9710	35.7641	71.3		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	9.71e3		0.249	1089.820	5.58	5.60	9710	35.7641	71.3		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	7.16e3		0.249	818.597	6.01	6.05	7160	35.1182	70.0		
53	71	13C8-PFOS-EIS	507.0 > 79.7	1.62e3		0.249	170.914	4.71	4.71	1620	38.0721	75.9		
54	1...	13C5-PFHxA	318.0 > 272.9	8.17e3	8.17e3	0.249	1.000	3.06	3.07	12.5	50.1545	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	5.16e2	5.16e2	0.249	1.000	3.81	3.82	12.5	50.1545	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	7.79e3	7.79e3	0.249	1.000	4.17	4.18	12.5	50.1545	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	1.04e4	1.04e4	0.249	1.000	4.99	5.00	12.5	50.1545	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.29e4	1.29e4	0.249	1.000	5.31	5.32	12.5	50.1545	100.0		
60	1...	13C4-PFOS	503 > 79.7	1.59e3	1.59e3	0.249	1.000	4.70	4.71	12.5	50.1545	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	8.52e3	8.52e3	0.249	1.000	4.62	4.62	12.5	50.1545	100.0		

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

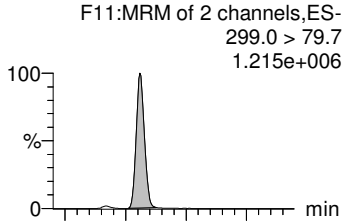
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

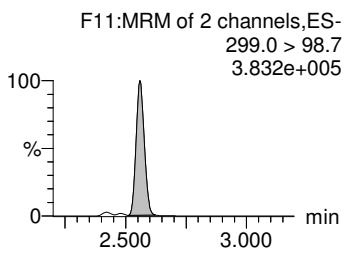
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

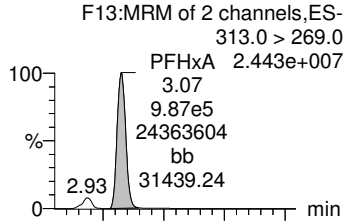
Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

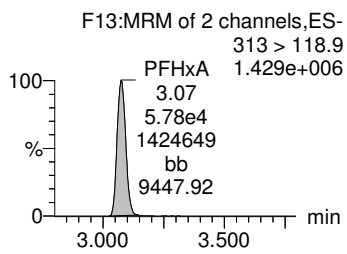
PFBS



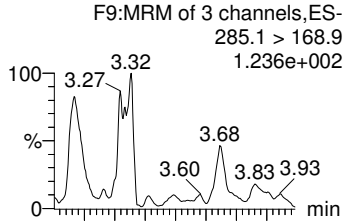


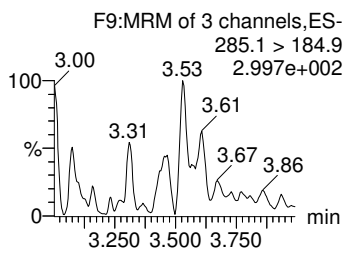
PFHxA



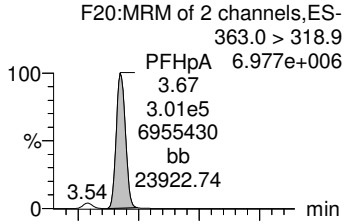


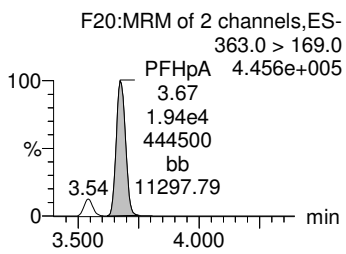
HFPO-DA



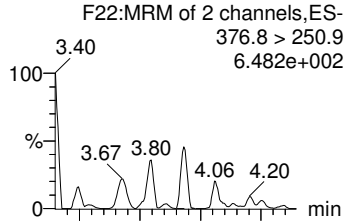


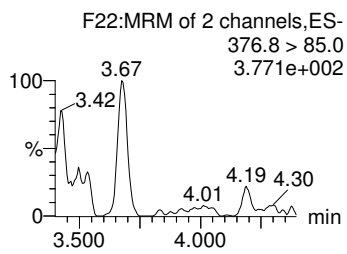
PFHpA



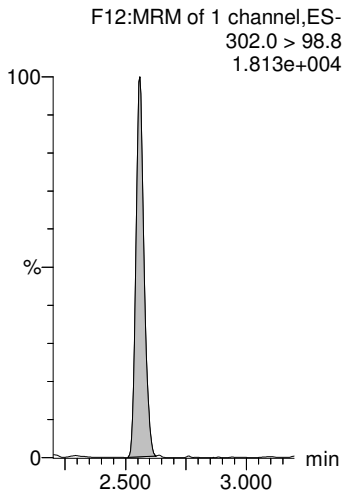


ADONA

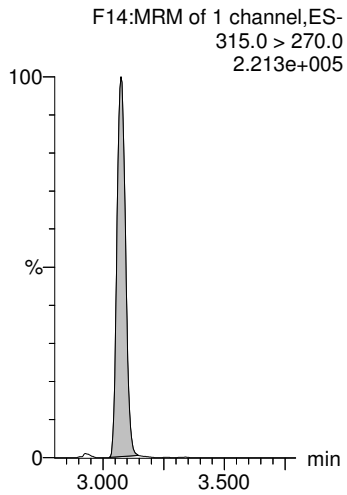




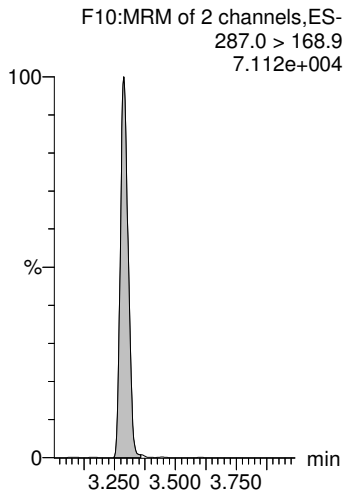
13C3-PFBS-EIS



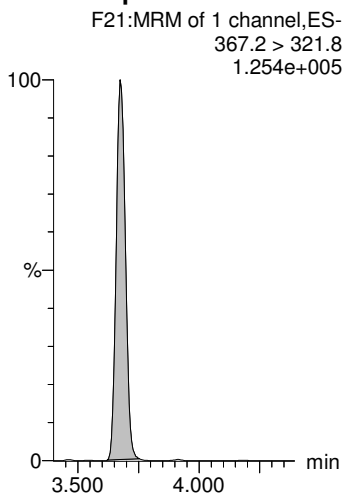
13C2-PFHxA-EIS



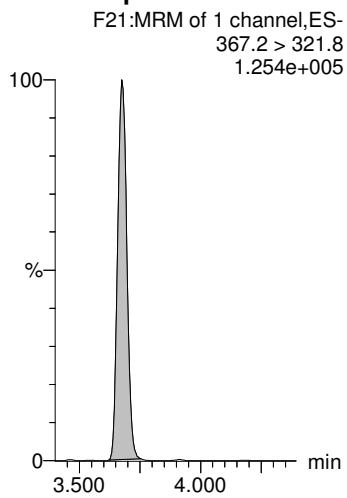
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

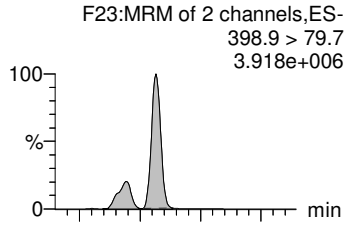
Review: AMR 3/5/2020

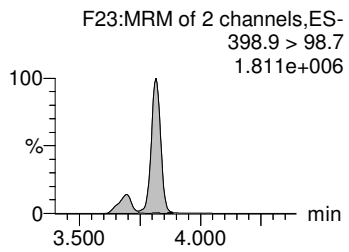
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

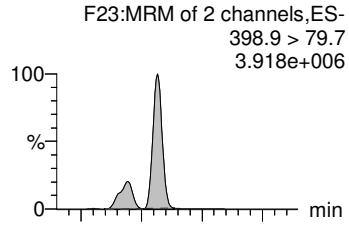
Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

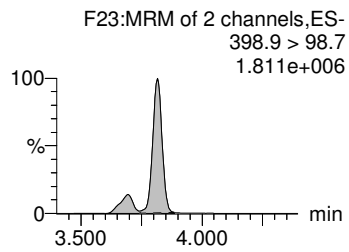
L-PFHxS



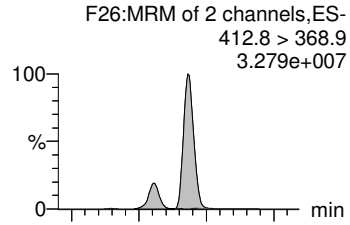


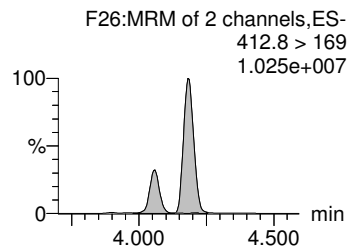
Total PFHxS



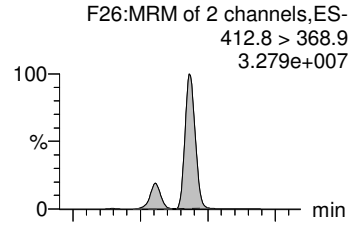


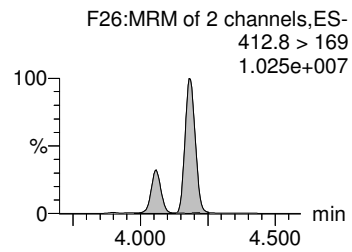
L-PFOA



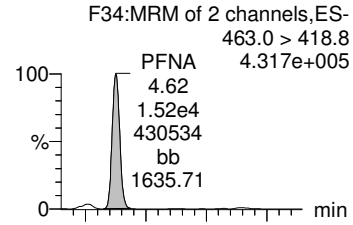


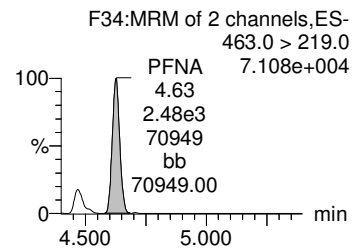
Total PFOA



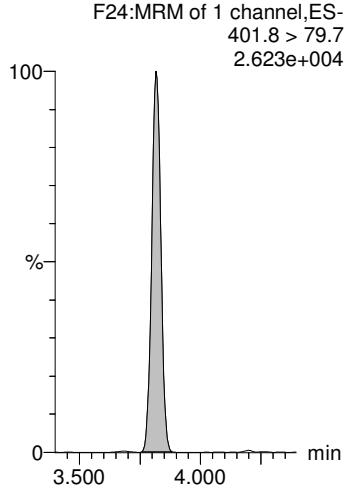


PFNA

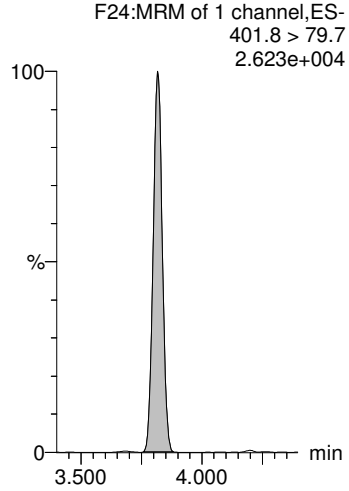




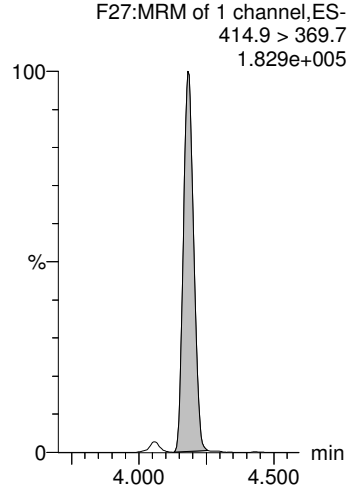
13C3-PFHxS-EIS



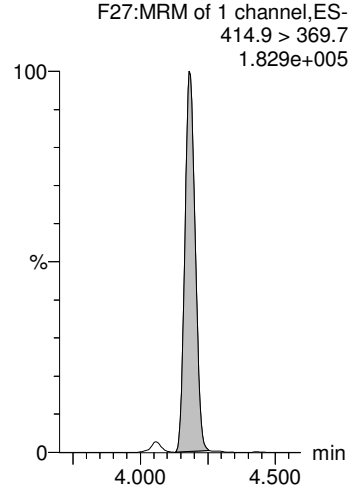
13C3-PFHxS-EIS



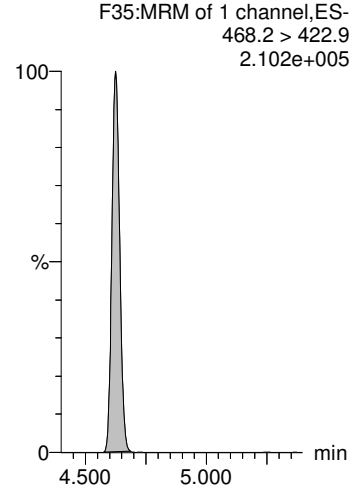
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

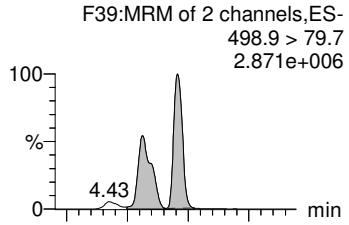
Review: AMR 3/5/2020

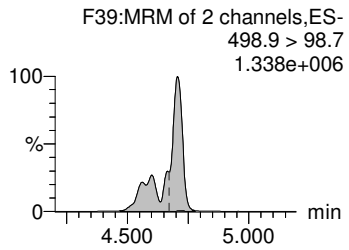
Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

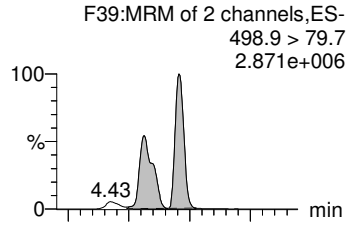
Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

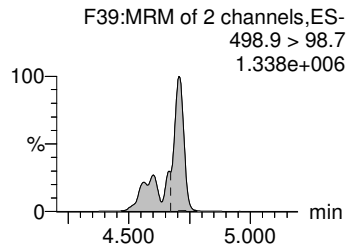
L-PFOS



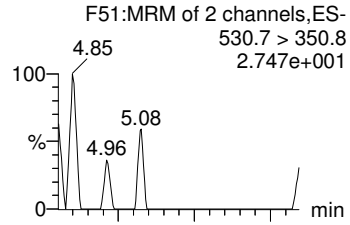


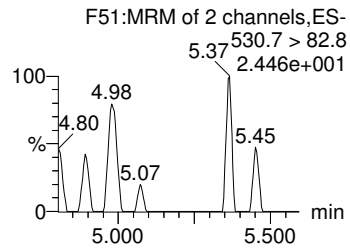
Total PFOS



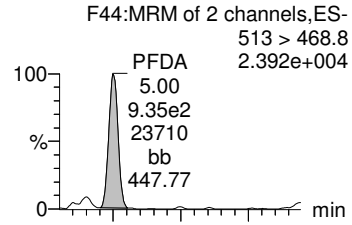


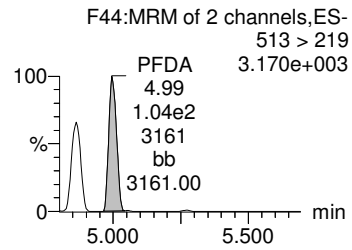
9Cl-PF30NS



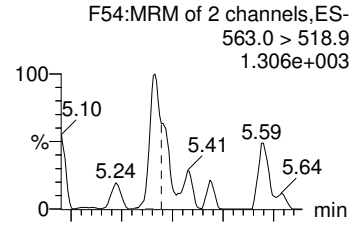


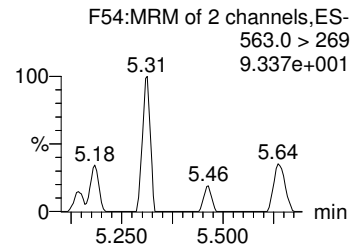
PFDA



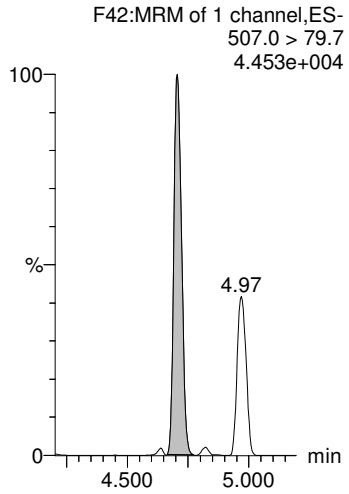


PFUdA

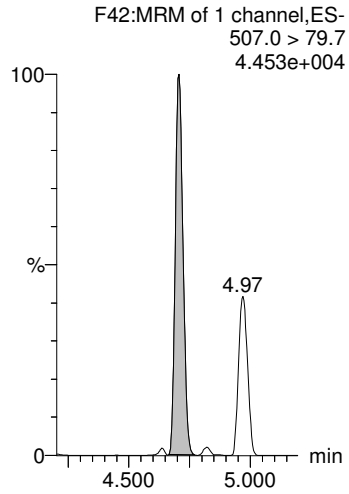




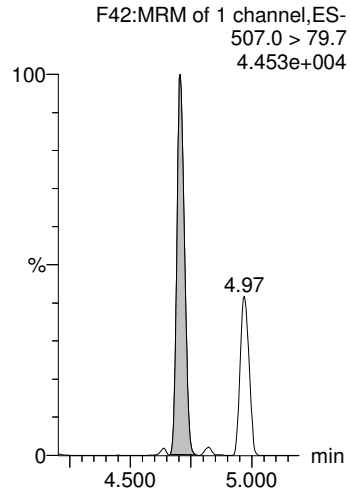
13C8-PFOS-EIS



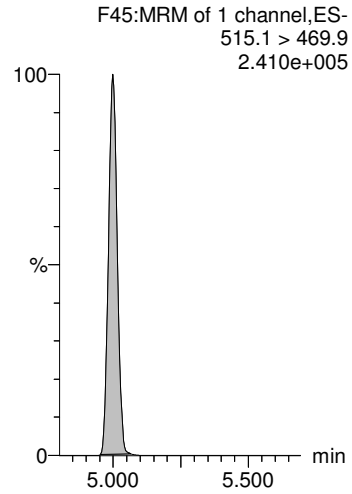
13C8-PFOS-EIS



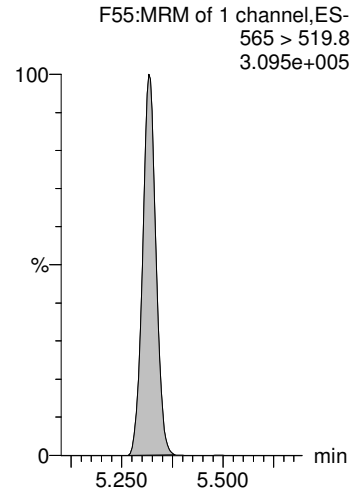
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

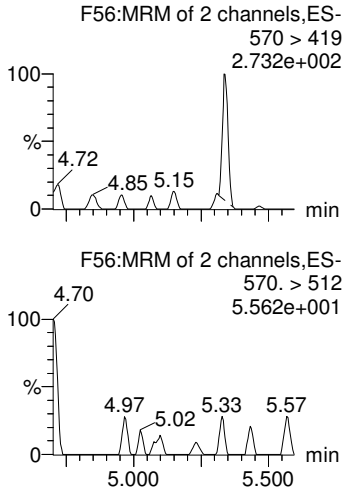
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

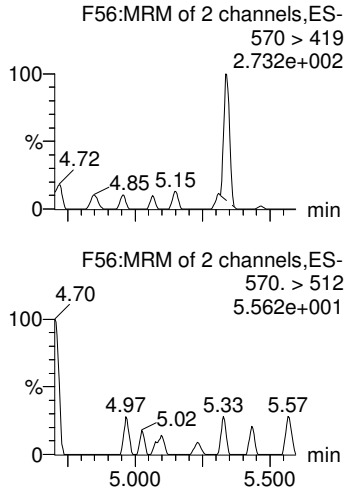
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

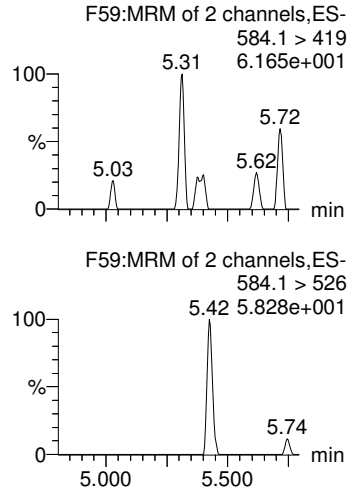
L-MeFOSAA



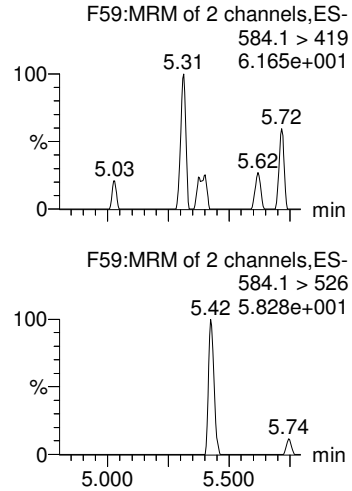
Total N-MeFOSAA



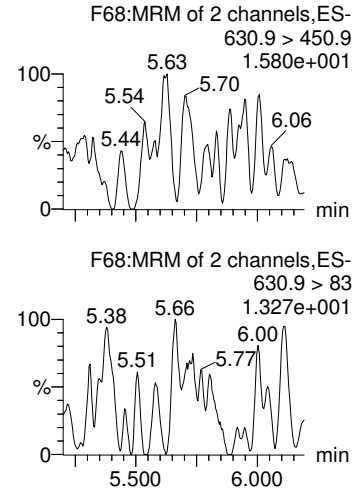
L-EtFOSAA



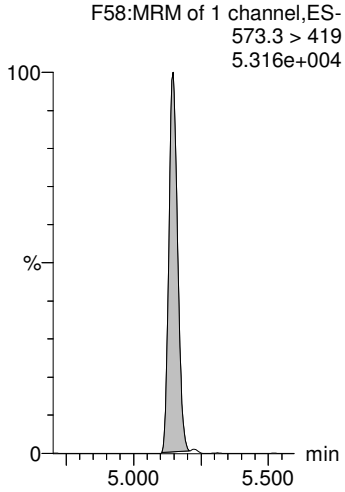
Total N-EtFOSAA



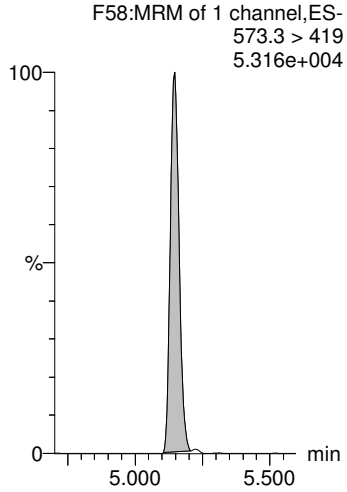
11Cl-PF30UdS



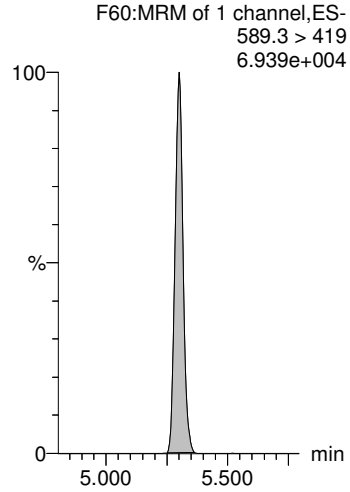
d3-N-MeFOSAA-EIS



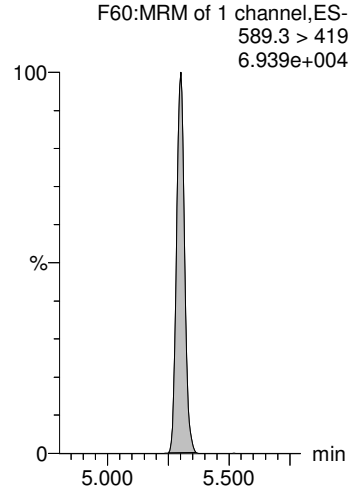
d3-N-MeFOSAA-EIS



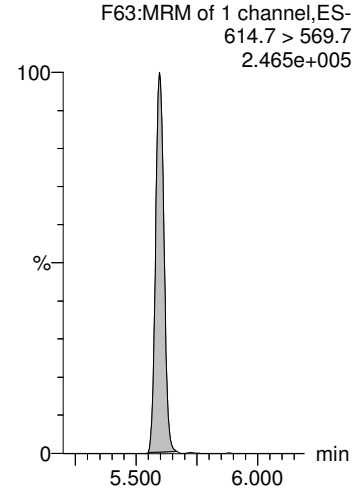
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

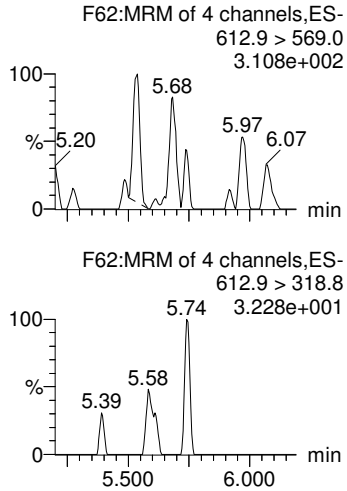
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

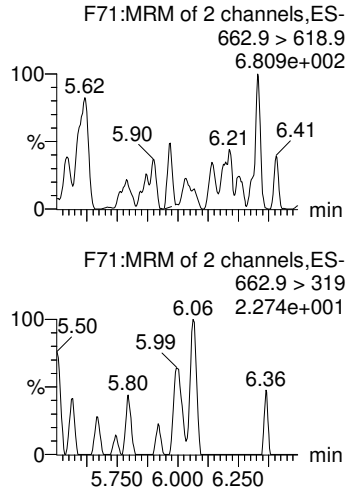
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

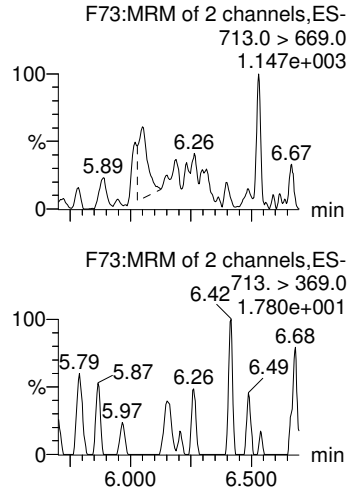
PFDoA



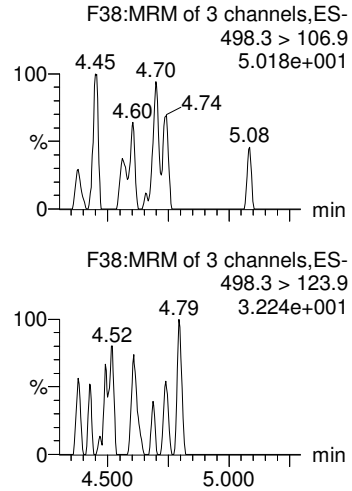
PFTrDA



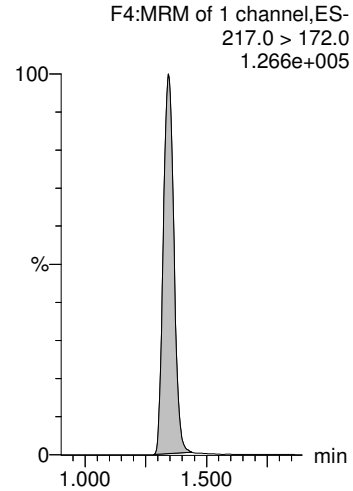
PFTeDA



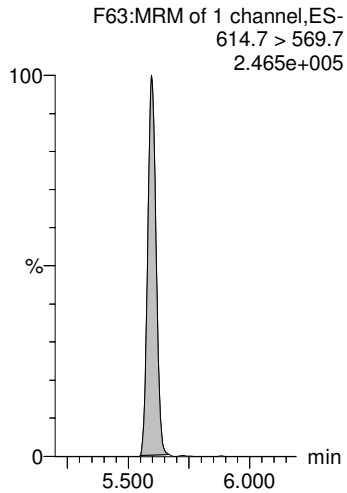
TDCA



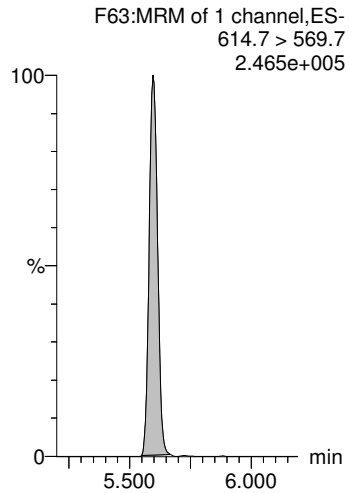
13C4-PFBA



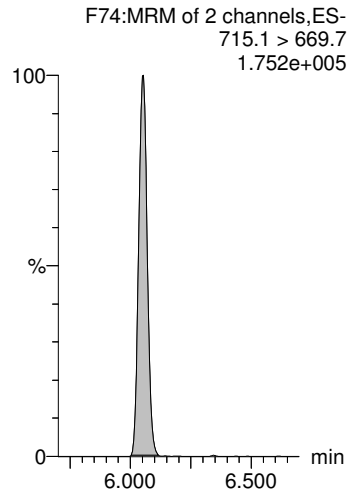
13C2-PFDoA-EIS



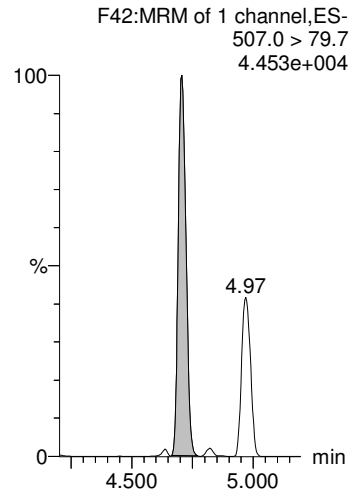
13C2-PFDoA-EIS



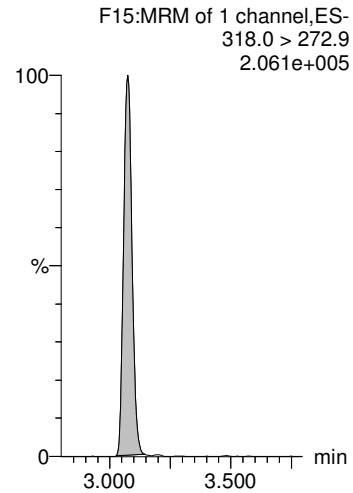
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

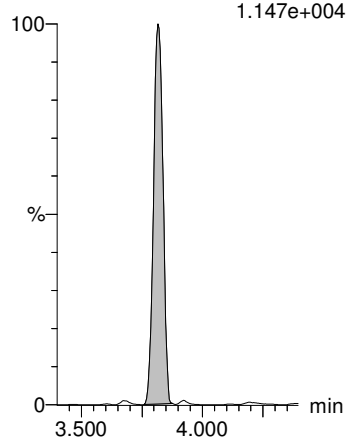
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200303P2\200303P2-25-27.qld

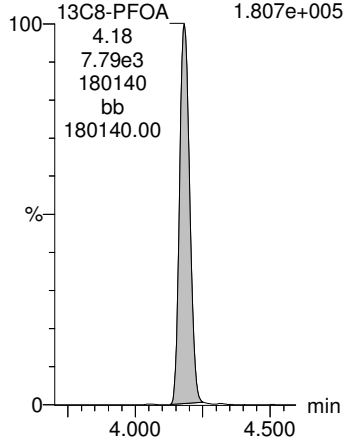
Last Altered: Thursday, March 05, 2020 12:19:46 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:20:51 Pacific Standard Time

Name: 200303P2-27, Date: 03-Mar-2020, Time: 21:17:19, ID: 2000356-09 TW13S-20200219 0.24923, Description: TW13S-20200219

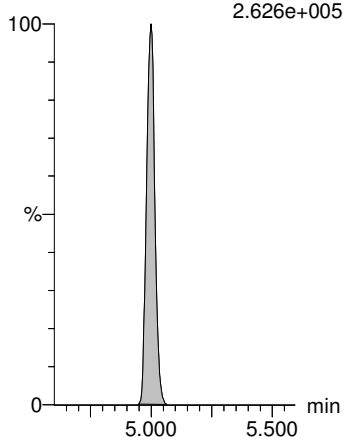
18O2-PFHxS



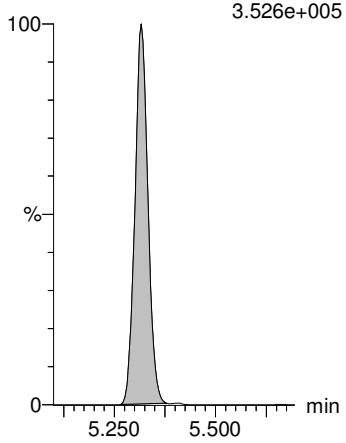
13C8-PFOA



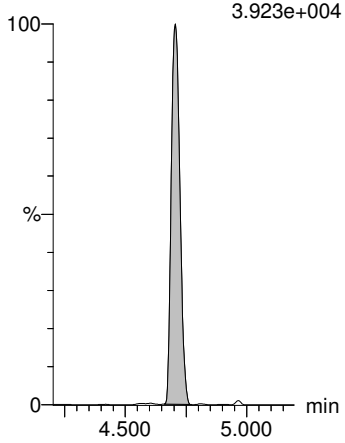
13C6-PFDA



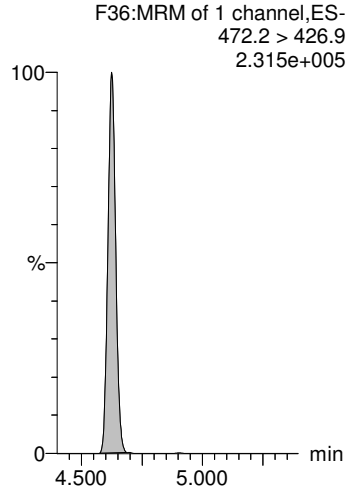
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

Vista Analytical Laboratory

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-68.qld

Last Altered: Thursday, March 05, 2020 12:39:59 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:43:02 Pacific Standard Time

Name: 200304P2-68, Date: 05-Mar-2020, Time: 06:54:41, ID: 2000356-09@10X TW13S-20200219 0.24923, Description: TW13S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	RT	Response	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
1	7	PFHxA	313.0 > 269.0	138961.359	1282.572	0.249		2.94	1354.323	6194.7		NO	17.351	NO
2	11	PFHpA	363.0 > 318.9	36318.086	669.186	0.249		3.54	678.400	2276.7		NO	15.500	NO
3	13	L-PFHxS	398.9 > 79.7	32511.859	195.525	0.249		3.68	2078.498	8113.1		NO	2.352	NO
4	1...	Total PFHxS	398.9 > 79.7	32511.859	195.525	0.249			2078.498	8113.1		NO		
5	57	13C2-PFHxA-EIS	315.0 > 270.0	1282.572		0.249	1213.080	2.94	1282.572	4.2	8.5	YES		
6	59	13C4-PFHpA-EIS	367.2 > 321.8	669.186		0.249	676.004	3.55	669.186	4.0	7.9	YES		
7	61	13C3-PFHxS-EIS	401.8 > 79.7	195.525		0.249	190.058	3.68	195.525	4.1	8.2	YES		
8	61	13C3-PFHxS-EIS	401.8 > 79.7	195.525		0.249	190.058	3.68	195.525	4.1	8.2	YES		
9	-1													
10	16	L-PFOA	412.8 > 368.9	243353.516	1091.079	0.249		4.06	2787.991	10512.6		NO	2.923	NO
11	1...	Total PFOA	412.8 > 368.9	243353.516	1091.079	0.249			2787.991	10512.6		NO		
12	23	L-PFOS	498.9 > 79.7	26696.955	207.316	0.249		4.61	1609.678	5595.4		NO	2.234	NO
13	1...	Total PFOS	498.9 > 79.7	26696.955	207.316	0.249			1609.678	5595.4		NO		
14	69	13C2-PFOA-EIS	414.9 > 369.7	1091.079		0.249	1016.548	4.06	1091.079	4.3	8.6	YES		
15	69	13C2-PFOA-EIS	414.9 > 369.7	1091.079		0.249	1016.548	4.06	1091.079	4.3	8.6	YES		
16	71	13C8-PFOS-EIS	507.0 > 79.7	207.316		0.249	207.944	4.61	207.316	4.0	8.0	YES		
17	71	13C8-PFOS-EIS	507.0 > 79.7	207.316		0.249	207.944	4.61	207.316	4.0	8.0	YES		
18	-1													
19	1...	13C5-PFHxA	318.0 > 272.9	1063.968	1063.968	0.249	1.000	2.94	12.500	50.2	100.0	NO		
20	1...	13C8-PFOA	420.9 > 376.0	1188.183	1188.183	0.249	1.000	4.06	12.500	50.2	100.0	NO		
21	1...	18O2-PFHxS	403.0 > 102.6	58.564	58.564	0.249	1.000	3.68	12.500	50.2	100.0	NO		
22	-1													

BP 3/5/2020

Vista Analytical Laboratory

Review: AMR 3/5/2020

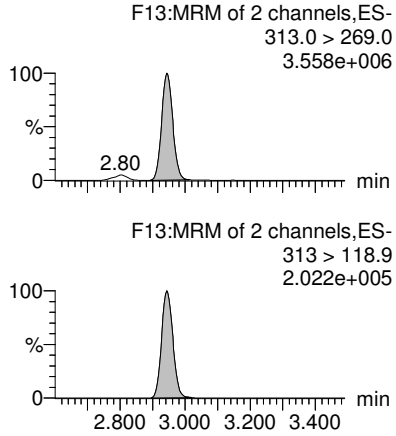
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-68.qld

Last Altered: Thursday, March 05, 2020 12:39:59 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:43:02 Pacific Standard Time

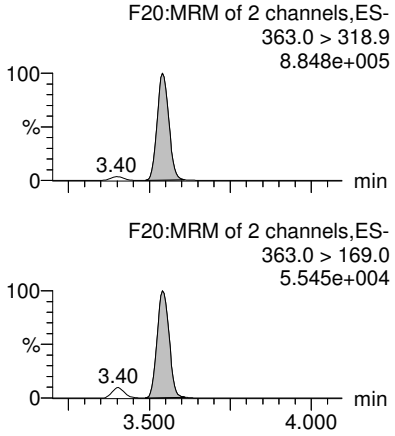
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-68, Date: 05-Mar-2020, Time: 06:54:41, ID: 2000356-09@10X TW13S-20200219 0.24923, Description: TW13S-20200219

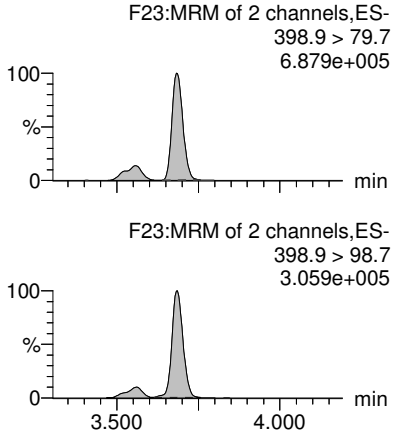
PFHxA



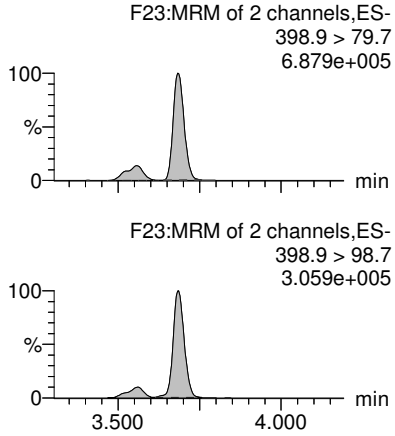
PFHpA



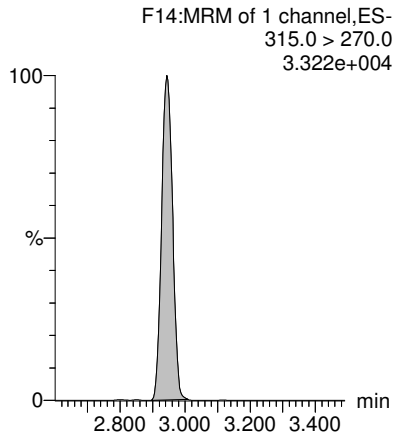
L-PFHxS



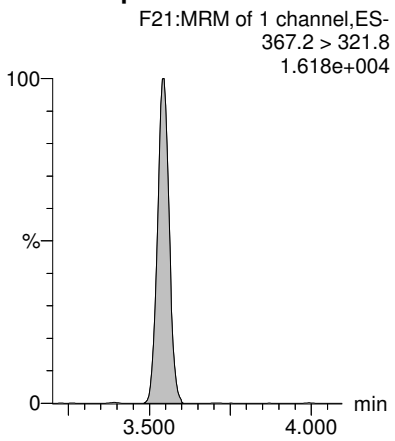
Total PFHxS



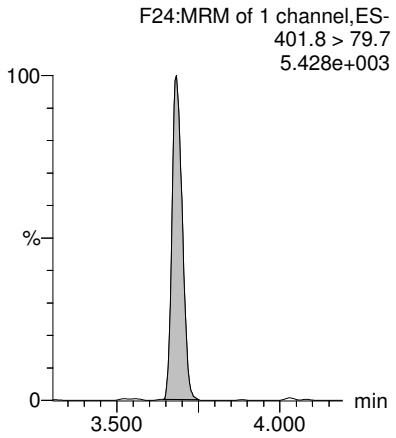
13C2-PFHxA-EIS



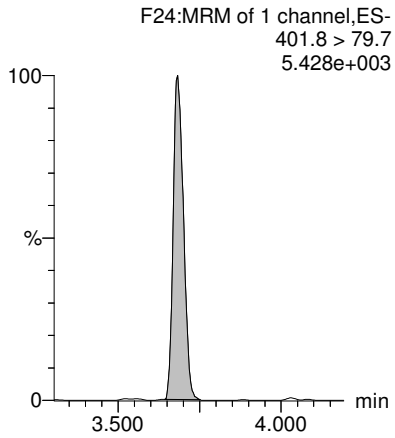
13C4-PFHpA-EIS



13C3-PFHxS-EIS



13C3-PFHxS-EIS



BP 3/5/2020

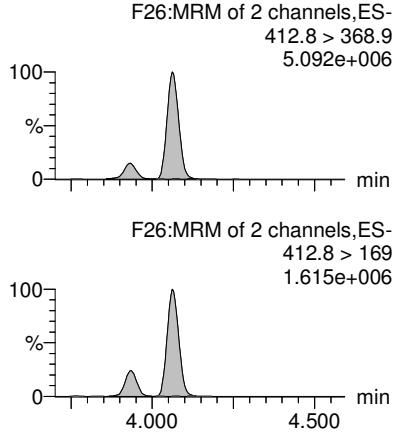
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-68.qld

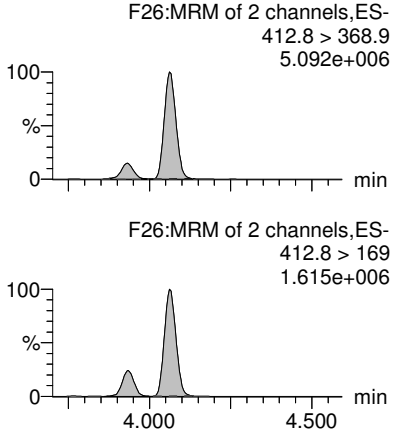
Last Altered: Thursday, March 05, 2020 12:39:59 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:43:02 Pacific Standard Time

Name: 200304P2-68, Date: 05-Mar-2020, Time: 06:54:41, ID: 2000356-09@10X TW13S-20200219 0.24923, Description: TW13S-20200219

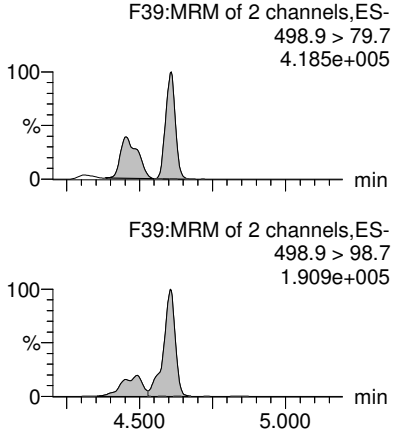
L-PFOA



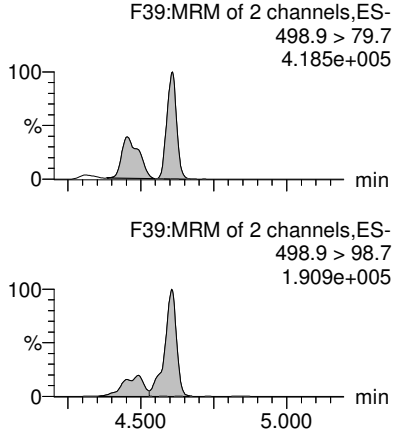
Total PFOA



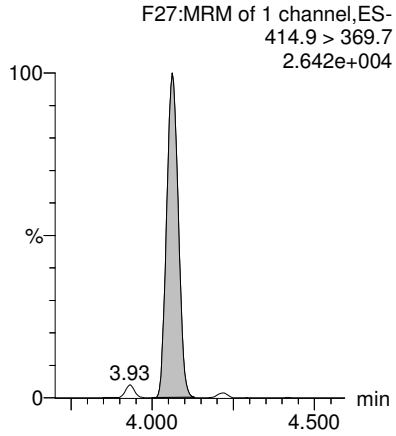
L-PFOS



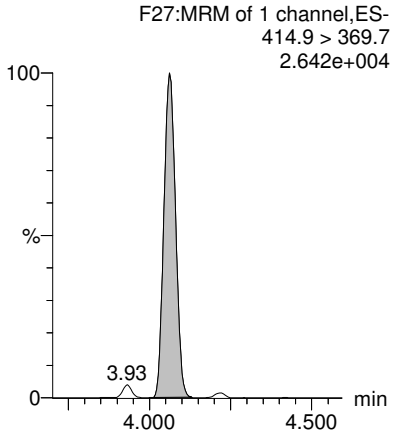
Total PFOS



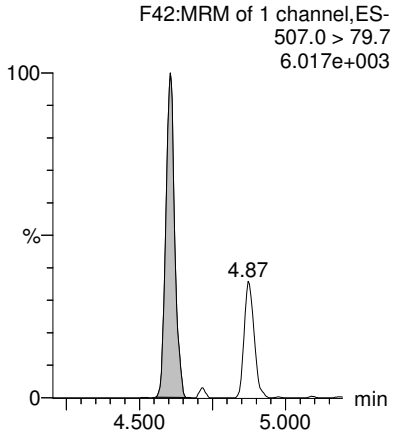
13C2-PFOA-EIS



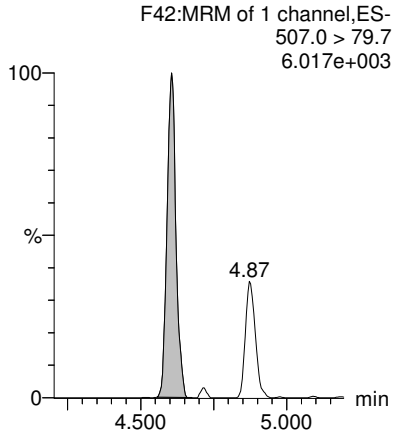
13C2-PFOA-EIS



13C8-PFOS-EIS



13C8-PFOS-EIS



BP 3/5/2020

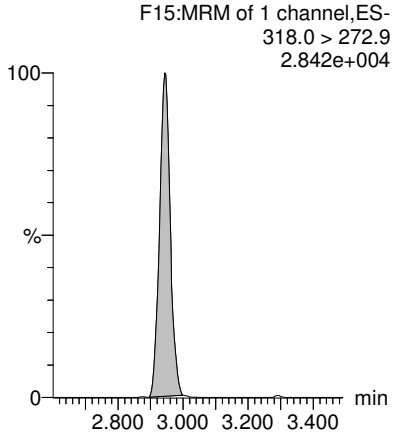
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-68.qld

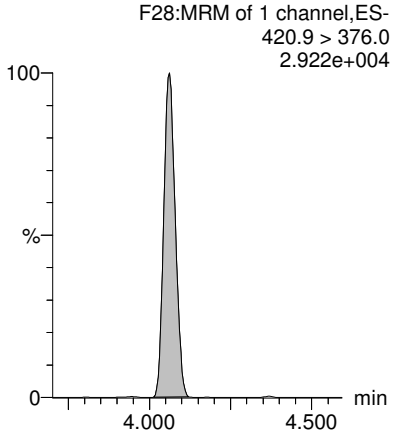
Last Altered: Thursday, March 05, 2020 12:39:59 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:43:02 Pacific Standard Time

Name: 200304P2-68, Date: 05-Mar-2020, Time: 06:54:41, ID: 2000356-09@10X TW13S-20200219 0.24923, Description: TW13S-20200219

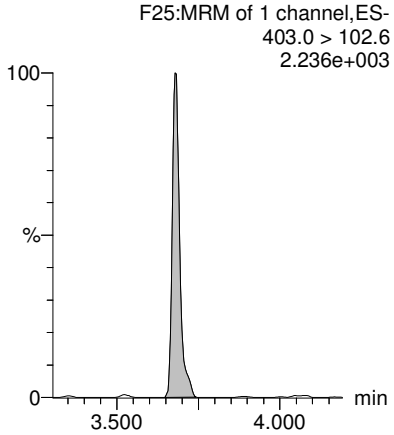
13C5-PFHxA



13C8-PFOA



18O2-PFHxS



BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
1	5	PFBS	299.0 > 79.7	8.10e3	8.28e2	0.255		2.41	2.41	122	185.1308		3.147	NO
2	7	PFHxA	313.0 > 269.0	2.40e5	1.11e4	0.255		2.95	2.95	270	1205.7746		17.064	NO
3	9	HFPO-DA	285.1 > 168.9		2.62e3	0.255		3.15						YES
4	11	PFHpA	363.0 > 318.9	9.78e4	6.39e3	0.255		3.54	3.54	191	626.1071		15.224	NO
5	12	ADONA	376.8 > 250.9		6.39e3	0.255		3.63						YES
6	51	13C3-PFBS-EIS	302.0 > 98.8	8.28e2		0.255	82.647	2.53	2.41	828	39.2139	80.1		
7	57	13C2-PFHxA-EIS	315.0 > 270.0	1.11e4		0.255	1213.080	2.94	2.95	11100	35.8150	73.2		
8	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2.62e3		0.255	280.215	3.25	3.15	2620	36.6224	74.8		
9	59	13C4-PFHpA-EIS	367.2 > 321.8	6.39e3		0.255	676.004	3.59	3.54	6390	37.0307	75.7		
10	59	13C4-PFHpA-EIS	367.2 > 321.8	6.39e3		0.255	676.004	3.59	3.54	6390	37.0307	75.7		
11	-1													
12	13	L-PFHxS	398.9 > 79.7	3.42e4	1.78e3	0.255		3.68	3.69	240	915.8138		2.354	NO
13	1...	Total PFHxS	398.9 > 79.7	3.42e4	1.78e3	0.255		3.93		240	915.8138			
14	16	L-PFOA	412.8 > 368.9	2.69e5	9.10e3	0.255		4.06	4.06	369	1159.7538		2.974	NO
15	1...	Total PFOA	412.8 > 368.9	2.69e5	9.10e3	0.255		4.60		369	1159.7538			
16	21	PFNA	463.0 > 418.8	2.18e3	8.01e3	0.255		4.52	4.52	3.40	10.5652		6.570	NO
17	61	13C3-PFHxS-EIS	401.8 > 79.7	1.78e3		0.255	190.058	3.69	3.68	1780	36.6774	74.9		
18	61	13C3-PFHxS-EIS	401.8 > 79.7	1.78e3		0.255	190.058	3.69	3.68	1780	36.6774	74.9		
19	69	13C2-PFOA-EIS	414.9 > 369.7	9.10e3		0.255	1016.548	4.06	4.06	9100	35.0622	71.6		
20	69	13C2-PFOA-EIS	414.9 > 369.7	9.10e3		0.255	1016.548	4.06	4.06	9100	35.0622	71.6		
21	65	13C5-PFNA-EIS	468.2 > 422.9	8.01e3		0.255	867.408	4.52	4.52	8010	36.1563	73.9		
22	-1													
23	23	L-PFOS	498.9 > 79.7	2.77e4	2.20e3	0.255		4.60	4.60	157	640.2560		2.329	NO
24	1...	Total PFOS	498.9 > 79.7	2.77e4	2.20e3	0.255		5.13		157	640.2560			
25	25	9Cl-PF30NS	530.7 > 350.8		2.20e3	0.255		4.80						YES
26	26	PFDA	513 > 468.8		9.71e3	0.255		4.91						YES
27	33	PFUdA	563.0 > 518.9		1.15e4	0.255		5.24						YES
28	71	13C8-PFOS-EIS	507.0 > 79.7	2.20e3		0.255	207.944	4.60	4.60	2200	41.4795	84.8		
29	71	13C8-PFOS-EIS	507.0 > 79.7	2.20e3		0.255	207.944	4.60	4.60	2200	41.4795	84.8		
30	71	13C8-PFOS-EIS	507.0 > 79.7	2.20e3		0.255	207.944	4.60	4.60	2200	41.4795	84.8		
31	73	13C2-PFDA-EIS	515.1 > 469.9	9.71e3		0.255	944.999	4.91	4.91	9710	40.2234	82.2		
32	79	13C2-PFUdA-EIS	565 > 519.8	1.15e4		0.255	1226.695	5.24	5.24	11500	36.6947	75.0		
33	-1													
34	29	L-MeFOSAA	570 > 419		1.97e3	0.255		5.06						YES
35	1...	Total N-MeFOSAA	570. > 419	0.00e0	1.97e3	0.255		5.19		0.000				
36	31	L-EtFOSAA	584.1 > 419		2.59e3	0.255		5.22						YES

BP 3/5/2020

Vista Analytical Laboratory L18

Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

	#	Name	Trace	Area	IS Area	wt/vol	RRF Mean	Pred.RT	RT	Response	Conc.	%Rec	Ion Ratio	Ratio Out?
37	1...	Total N-EtFOSAA	584.1 > 419	0.00e0	2.59e3	0.255		5.37		0.000				
38	35	11Cl-PF30UdS	630.9 > 450.9		1.05e4	0.255		5.46						YES
39	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.97e3		0.255	195.067	5.07	5.06	1970	39.6203	81.0		
40	77	d3-N-MeFOSAA-EIS	573.3 > 419	1.97e3		0.255	195.067	5.07	5.06	1970	39.6203	81.0		
41	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.59e3		0.255	288.034	5.21	5.22	2590	35.1678	71.9		
42	81	d5-N-EtFOSAA-EIS	589.3 > 419	2.59e3		0.255	288.034	5.21	5.22	2590	35.1678	71.9		
43	83	13C2-PFDoA-EIS	614.7 > 569.7	1.05e4		0.255	1212.024	5.50	5.53	10500	34.0315	69.5		
44	-1													
45	37	PFDoA	612.9 > 569.0		1.05e4	0.255		5.53						YES
46	39	PFTrDA	662.9 > 618.9		1.05e4	0.255		5.77						YES
47	41	PFTeDA	713.0 > 669.0		8.21e3	0.255		6.00						YES
48	1...	TDCA	498.3>106.9			0.255		4.59						YES
49	99	13C4-PFBA	217.0 > 172.0	6.99e3	6.99e3	0.255	1.000	1.23	1.23	12.5	48.9390	100.0		
50	83	13C2-PFDoA-EIS	614.7 > 569.7	1.05e4		0.255	1212.024	5.50	5.53	10500	34.0315	69.5		
51	83	13C2-PFDoA-EIS	614.7 > 569.7	1.05e4		0.255	1212.024	5.50	5.53	10500	34.0315	69.5		
52	89	13C2-PFTeDA-EIS	715.1 > 669.7	8.21e3		0.255	1069.279	5.92	6.00	8210	30.0519	61.4		
53	71	13C8-PFOS-EIS	507.0 > 79.7	2.20e3		0.255	207.944	4.60	4.60	2200	41.4795	84.8		
54	1...	13C5-PFHxA	318.0 > 272.9	9.87e3	9.87e3	0.255	1.000	2.94	2.94	12.5	48.9390	100.0		
55	-1													
56	1...	18O2-PFHxS	403.0 > 102.6	7.54e2	7.54e2	0.255	1.000	3.67	3.69	12.5	48.9390	100.0		
57	1...	13C8-PFOA	420.9 > 376.0	1.10e4	1.10e4	0.255	1.000	4.05	4.06	12.5	48.9390	100.0		
58	1...	13C6-PFDA	519.1 > 473.7	9.92e3	9.92e3	0.255	1.000	4.90	4.91	12.5	48.9390	100.0		
59	1...	13C7-PFUdA	570.1 > 524.8	1.28e4	1.28e4	0.255	1.000	5.23	5.24	12.5	48.9390	100.0		
60	1...	13C4-PFOS	503 > 79.7	2.02e3	2.02e3	0.255	1.000	4.60	4.60	12.5	48.9390	100.0		
61	1...	13C9-PFNA	472.2 > 426.9	8.68e3	8.68e3	0.255	1.000	4.51	4.52	12.5	48.9390	100.0		

BP 3/5/2020

Review: AMR 3/5/2020

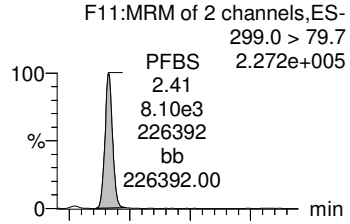
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

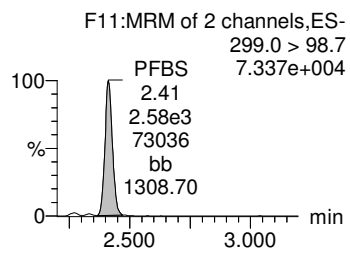
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

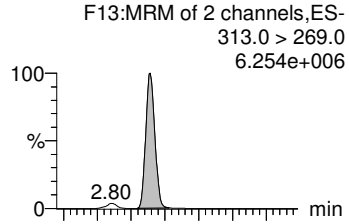
Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

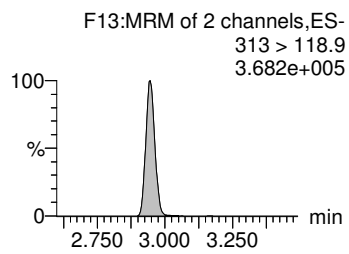
PFBS



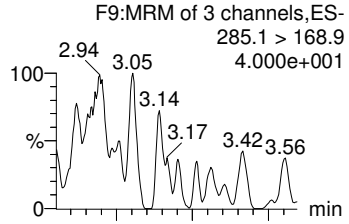


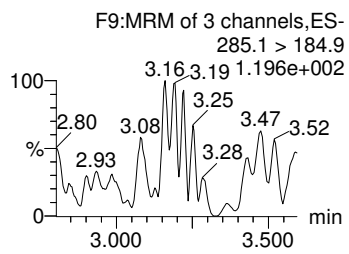
PFHxA



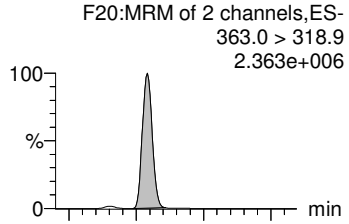


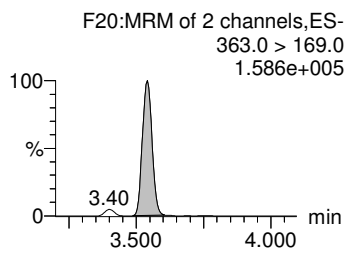
HFPO-DA



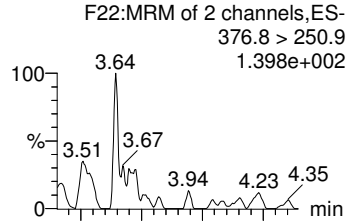


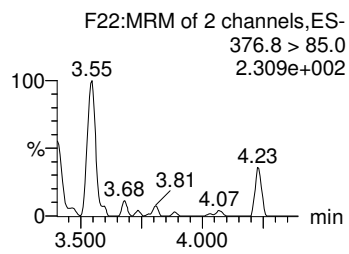
PFHpA



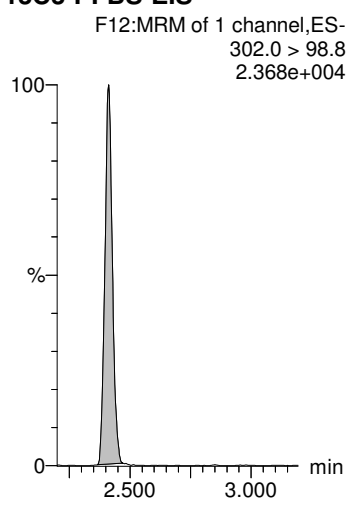


ADONA

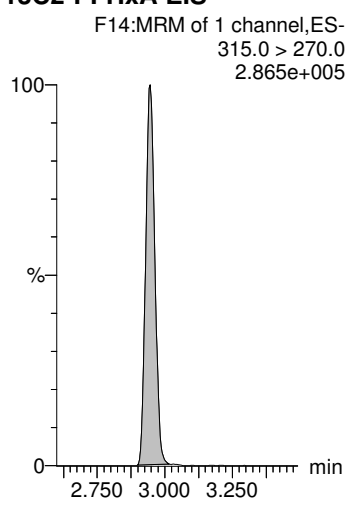




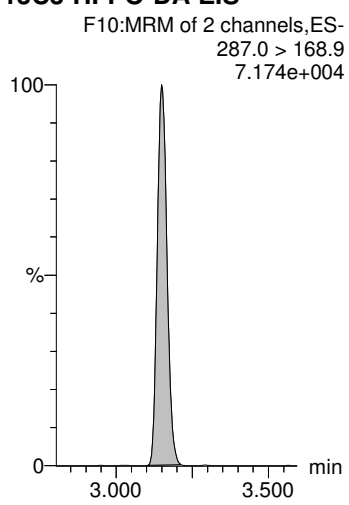
13C3-PFBS-EIS



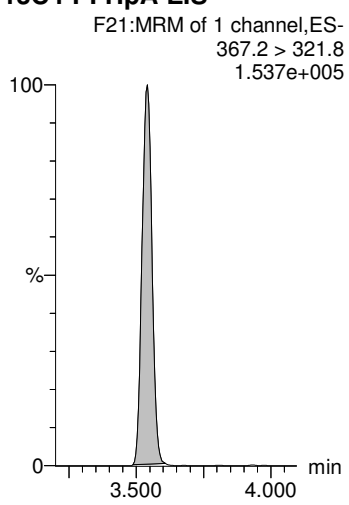
13C2-PFHxA-EIS



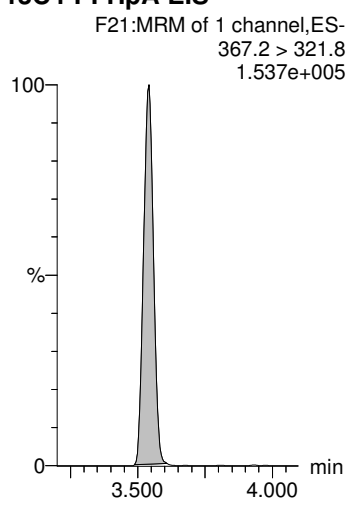
13C3-HFPO-DA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



BP 3/5/2020

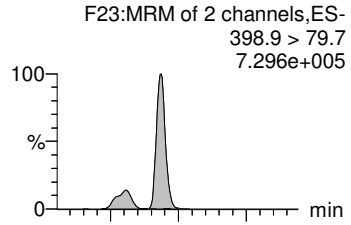
Review: AMR 3/5/2020

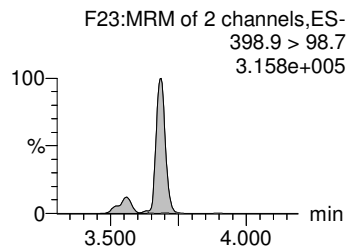
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

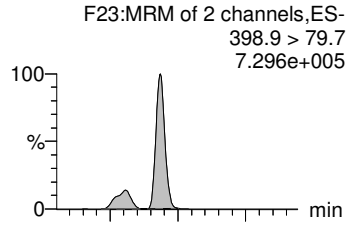
Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

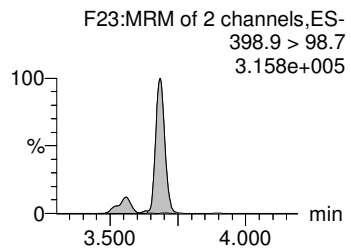
L-PFHxS



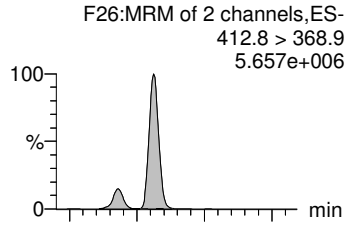


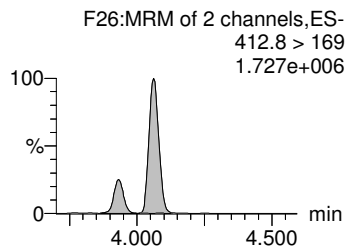
Total PFHxS



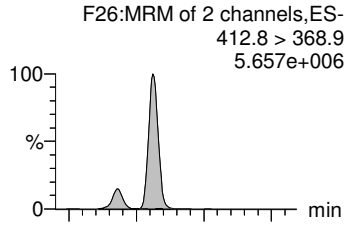


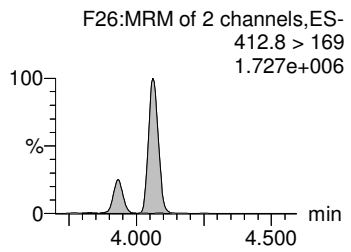
L-PFOA



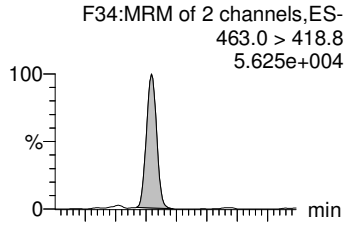


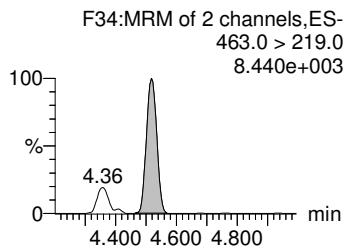
Total PFOA



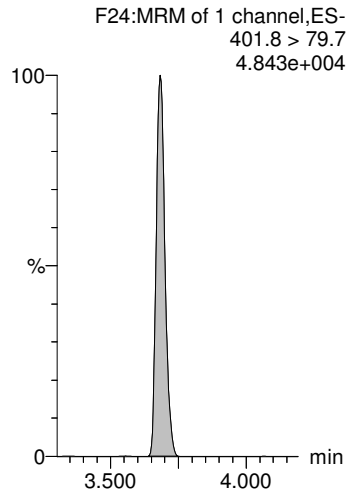


PFNA

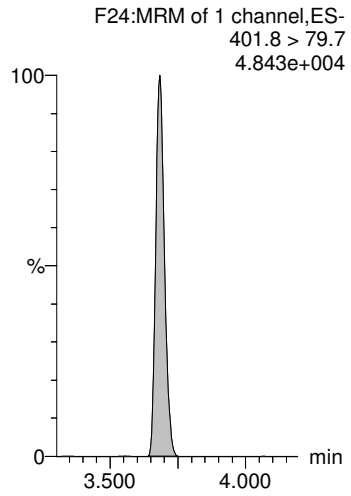




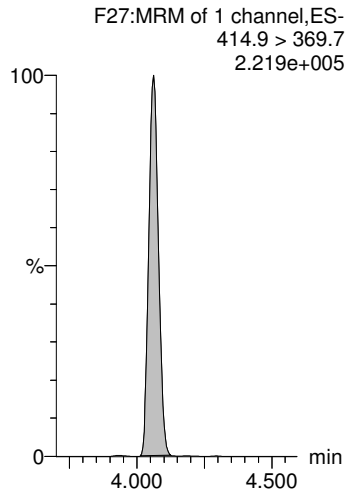
13C3-PFHxS-EIS



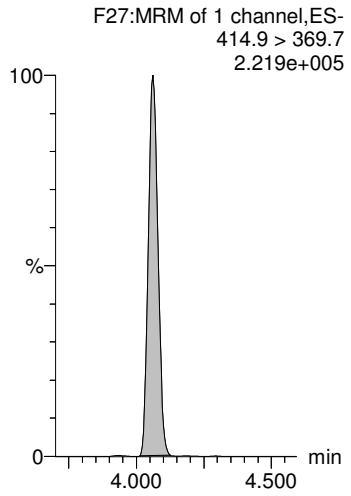
13C3-PFHxS-EIS



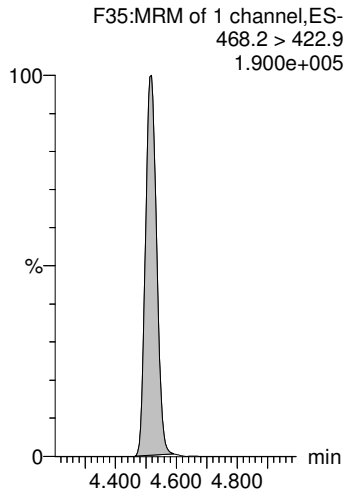
13C2-PFOA-EIS



13C2-PFOA-EIS



13C5-PFNA-EIS



BP 3/5/2020

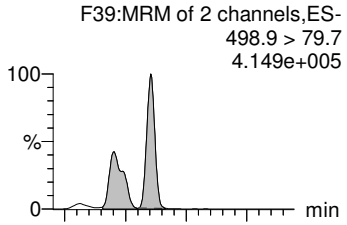
Review: AMR 3/5/2020

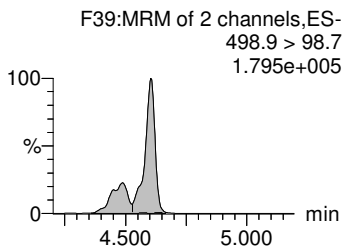
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

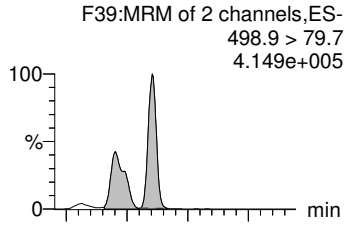
Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

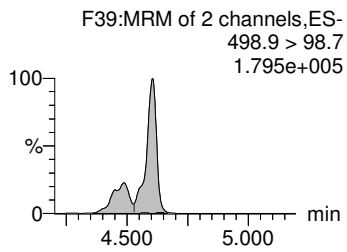
L-PFOS



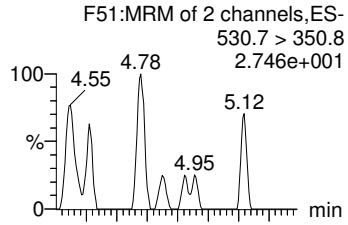


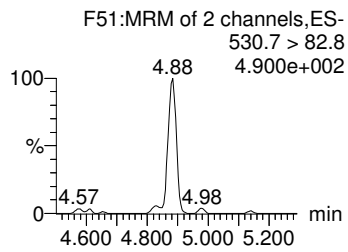
Total PFOS



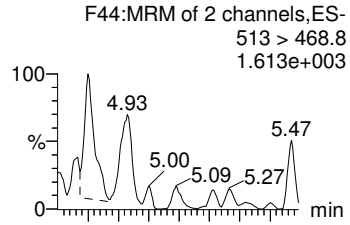


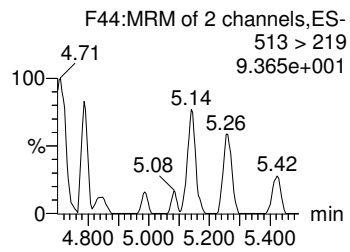
9Cl-PF30NS



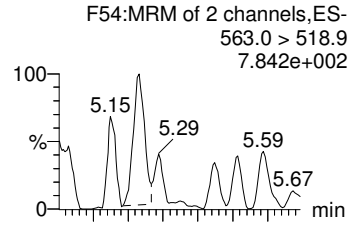


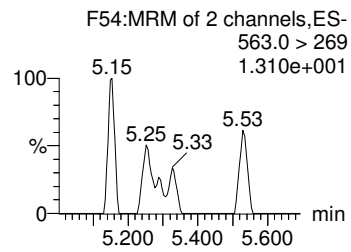
PFDA



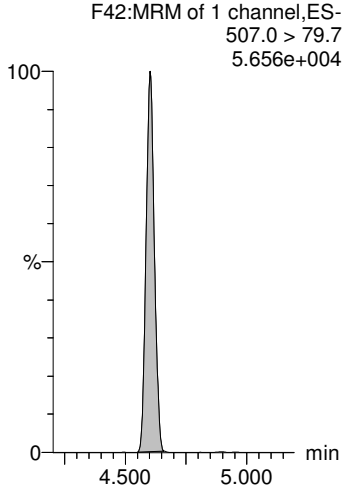


PFUdA

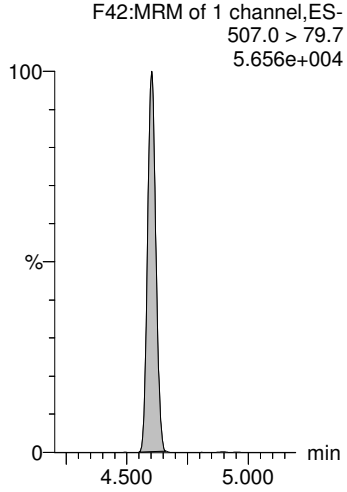




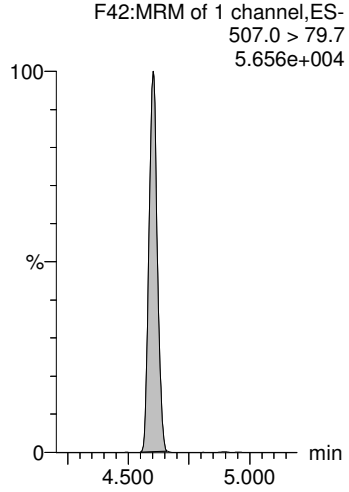
13C8-PFOS-EIS



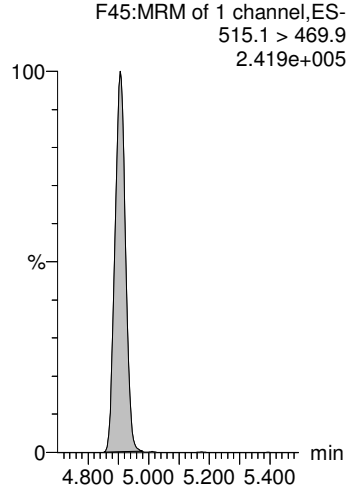
13C8-PFOS-EIS



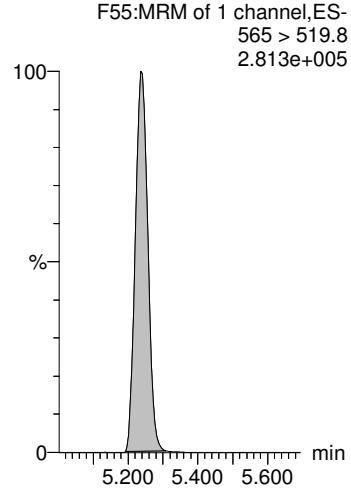
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-PFUdA-EIS



BP 3/5/2020

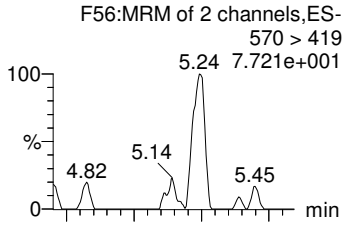
Review: AMR 3/5/2020

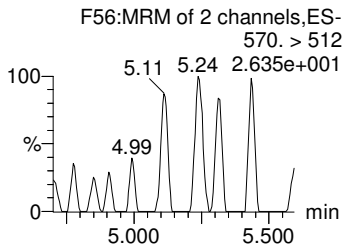
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

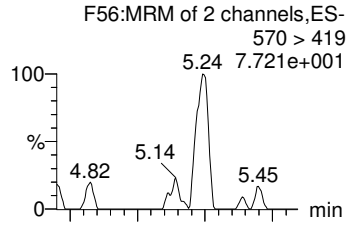
Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

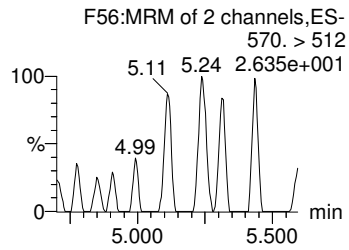
L-MeFOSAA



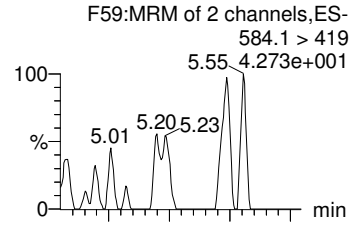


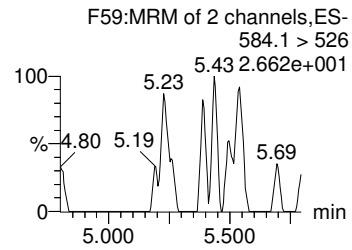
Total N-MeFOSAA



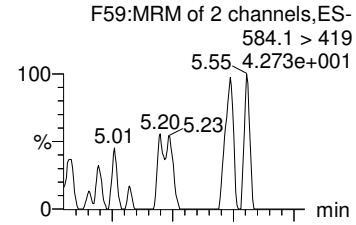


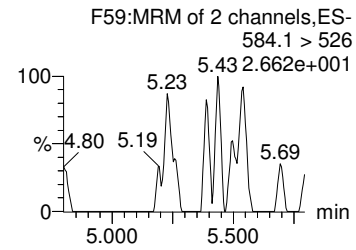
L-EtFOSAA



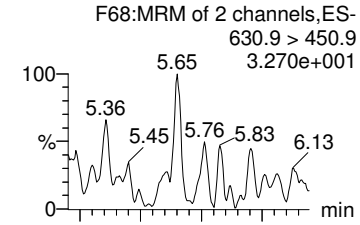


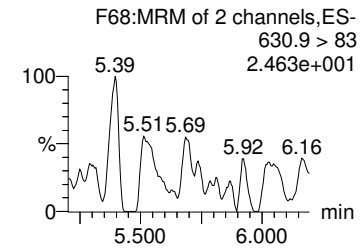
Total N-EtFOSAA



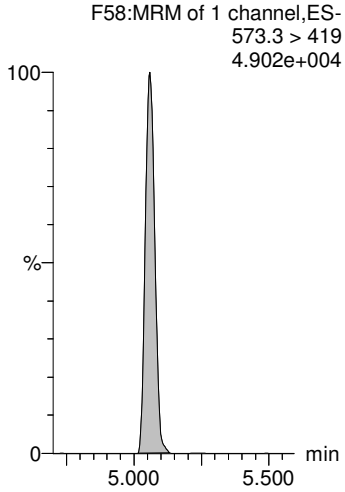


11Cl-PF30UdS

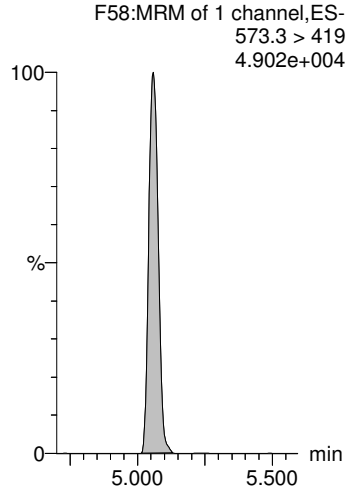




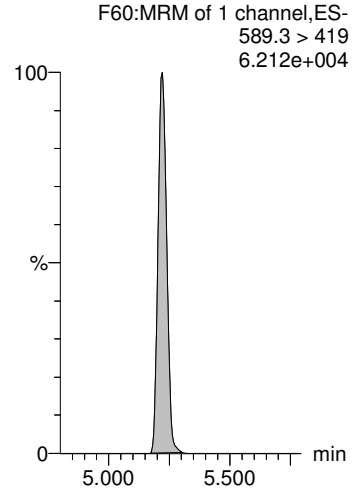
d3-N-MeFOSAA-EIS



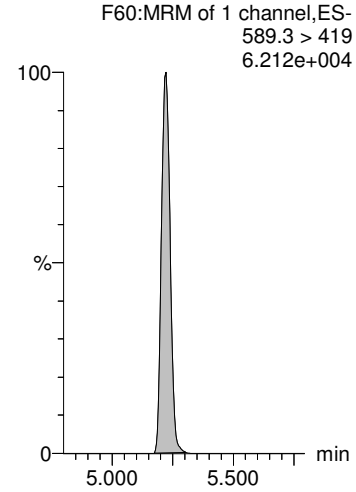
d3-N-MeFOSAA-EIS



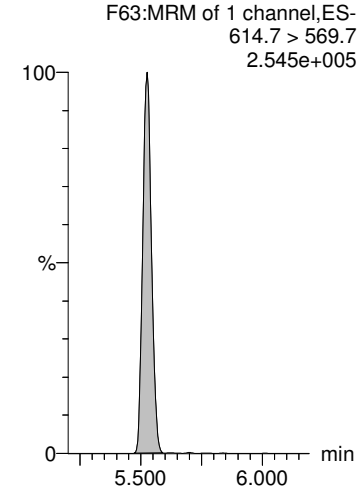
d5-N-EtFOSAA-EIS



d5-N-EtFOSAA-EIS



13C2-PFDoA-EIS



BP 3/5/2020

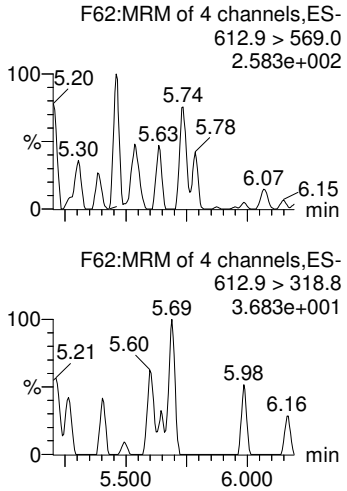
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

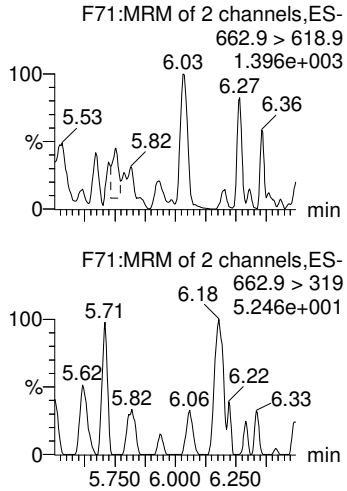
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

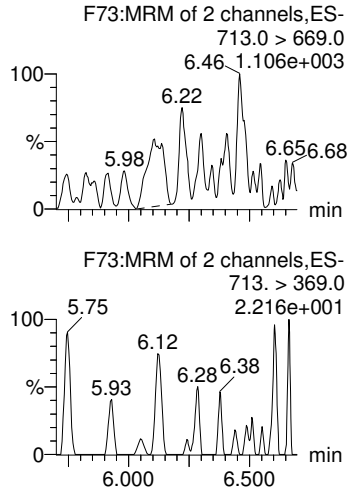
PFDoA



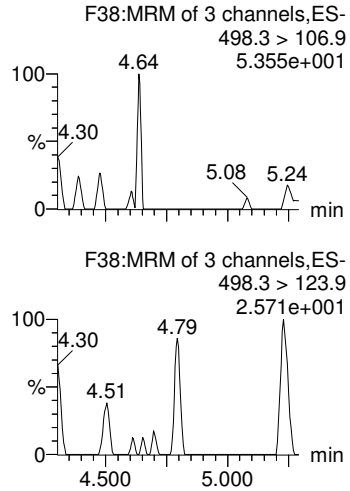
PFTrDA



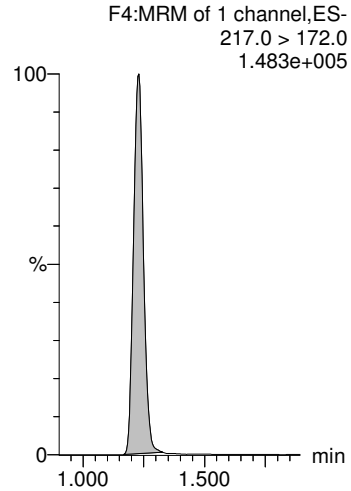
PFTeDA



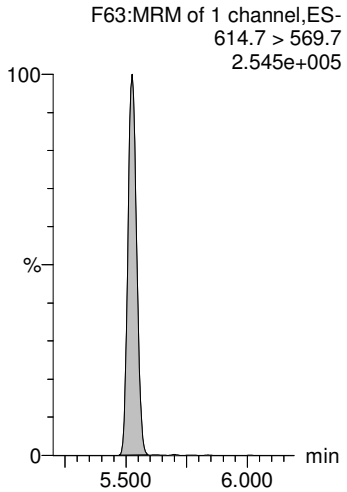
TDCA



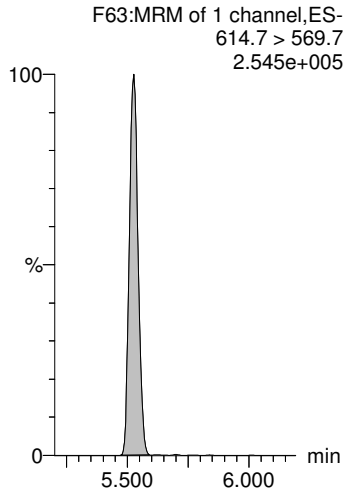
13C4-PFBA



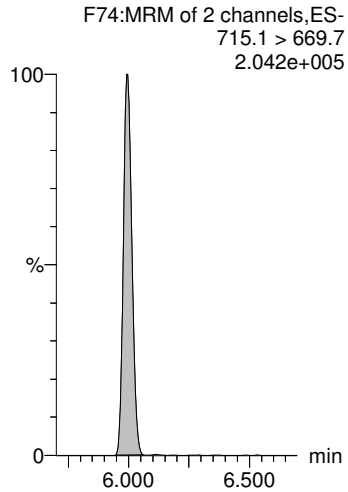
13C2-PFDoA-EIS



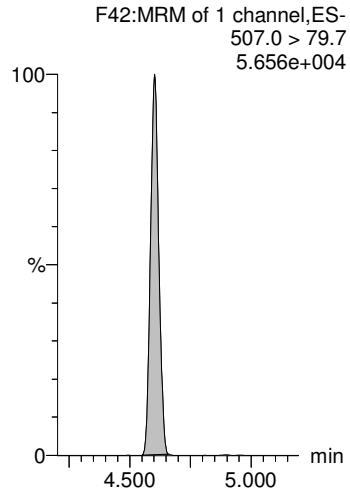
13C2-PFDoA-EIS



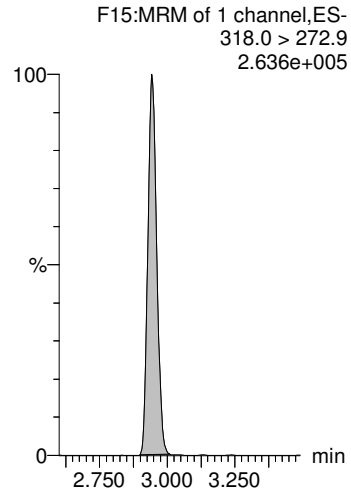
13C2-PFTeDA-EIS



13C8-PFOS-EIS



13C5-PFHxA



BP 3/5/2020

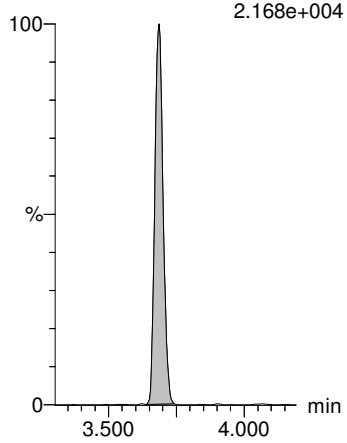
Review: AMR 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-64-65.qld

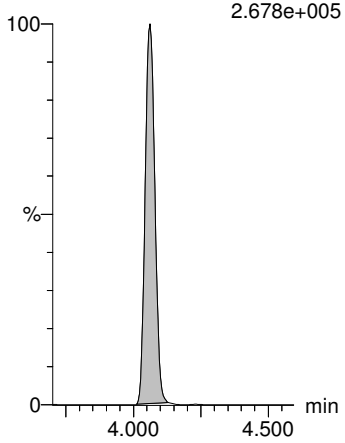
Last Altered: Thursday, March 05, 2020 12:31:04 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:31:41 Pacific Standard Time

Name: 200304P2-65, Date: 05-Mar-2020, Time: 06:23:10, ID: 2000356-10 TW12S-20200219 0.25542, Description: TW12S-20200219

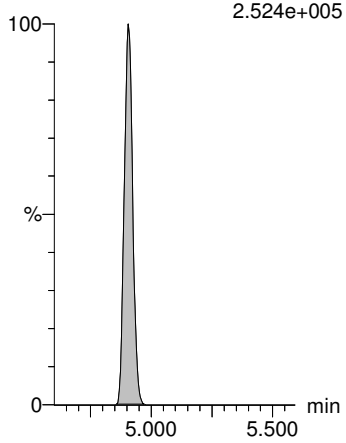
18O2-PFHxS



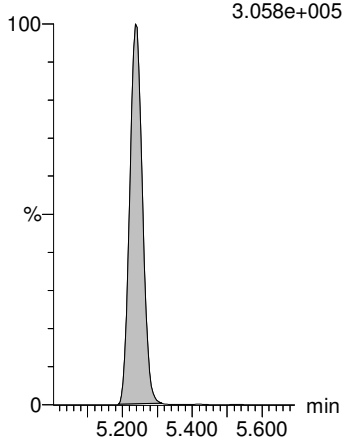
13C8-PFOA



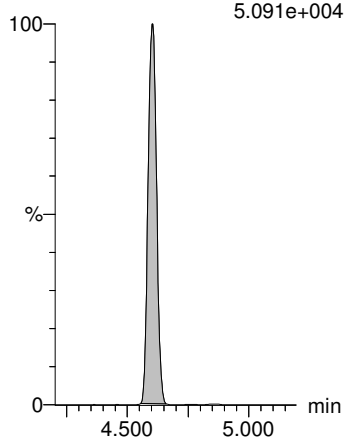
13C6-PFDA



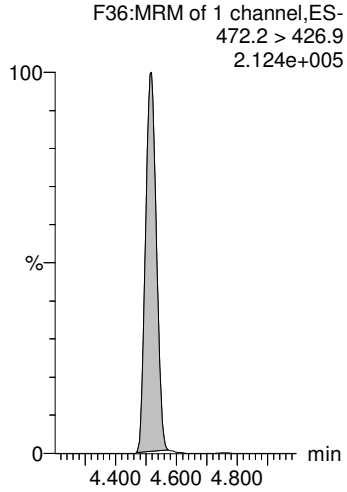
13C7-PFUdA



13C4-PFOS



13C9-PFNA



BP 3/5/2020

INSTRUMENT BLANKS (IB)

AND

CONTINUTING CALIBRATION VERIFICATIONS (CCV)

Vista Analytical Laboratory

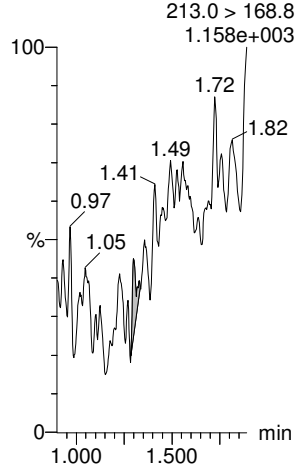
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

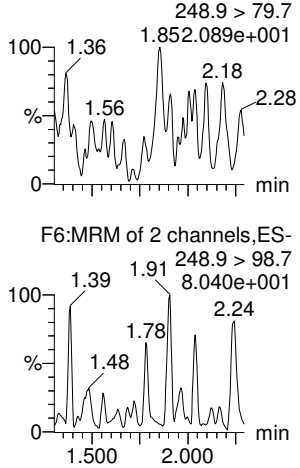
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:14:46
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

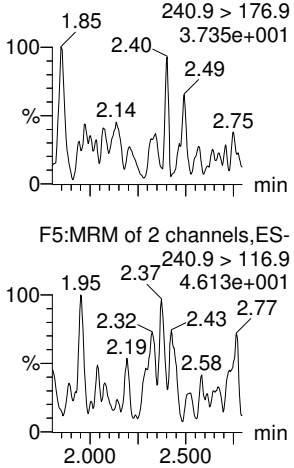
PFBA



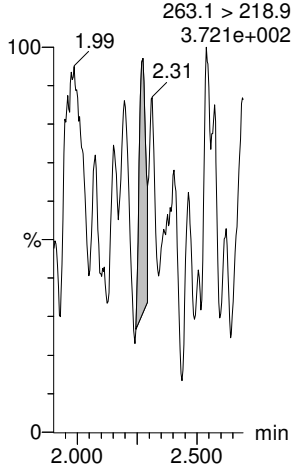
PFPrS



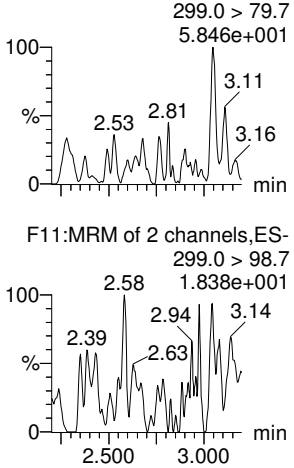
3:3 FTCA



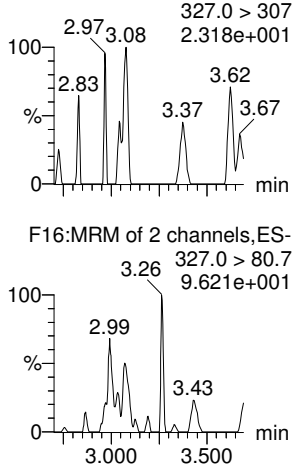
PFPeA



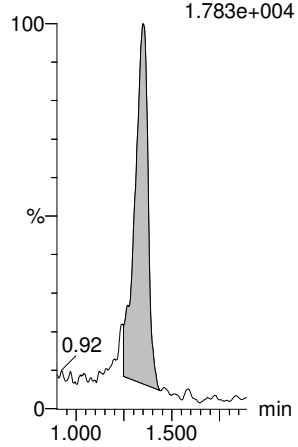
PFBS



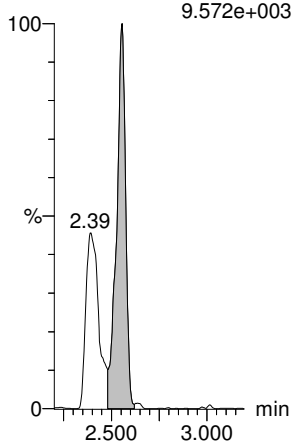
4:2 FTS



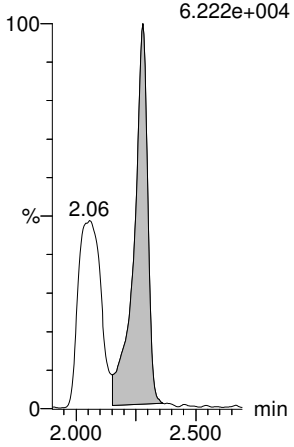
13C3-PFBA-EIS



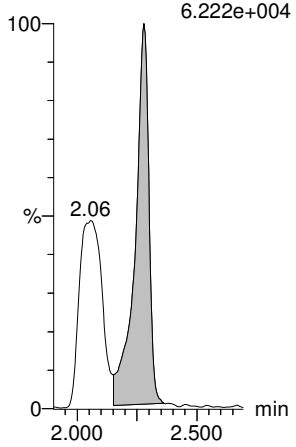
13C3-PFBS-EIS



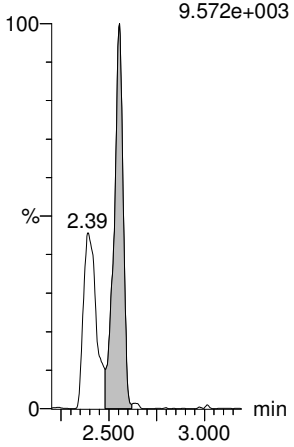
13C3-PFPeA-EIS



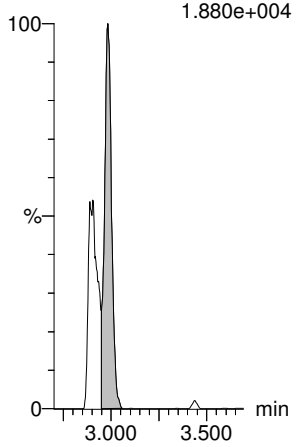
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

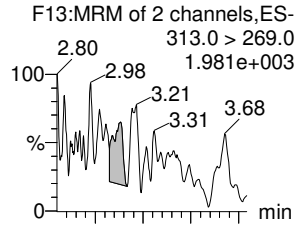


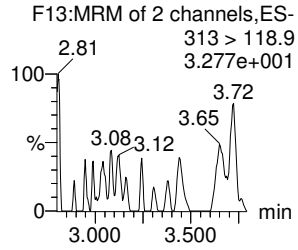
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

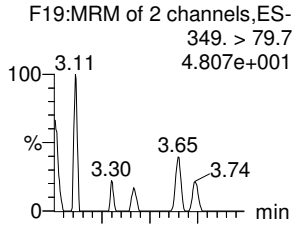
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

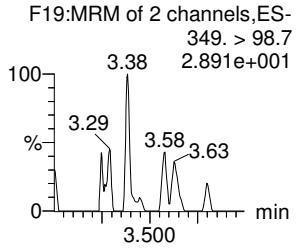
PFHxA



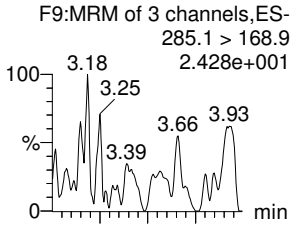


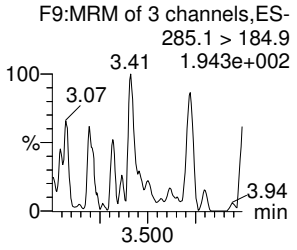
PFPeS



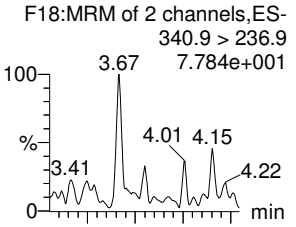


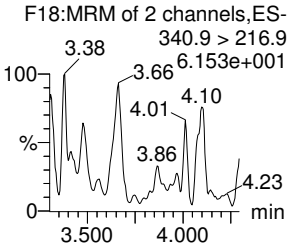
HFPO-DA



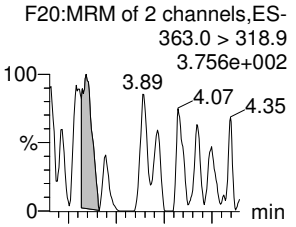


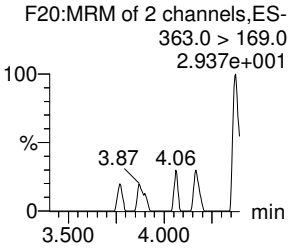
5:3 FTCA



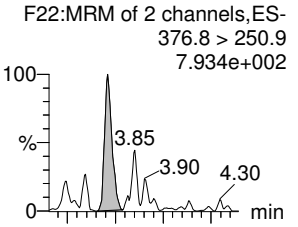


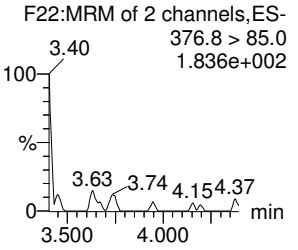
PFHpA



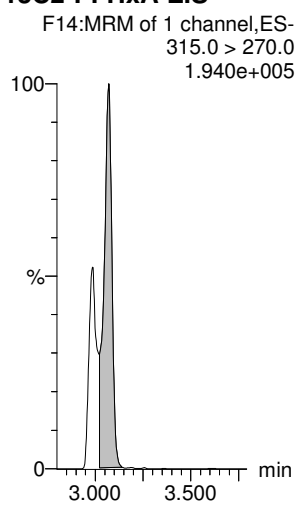


ADONA

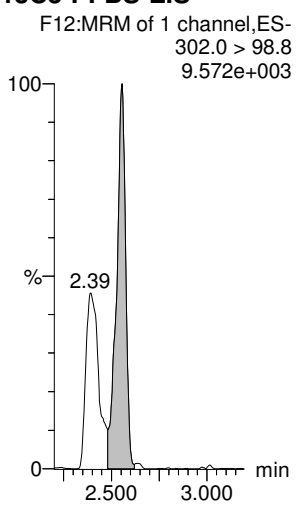




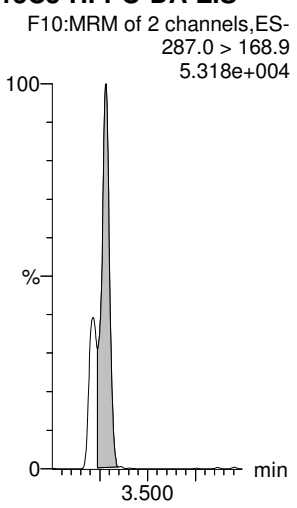
13C2-PFHxA-EIS



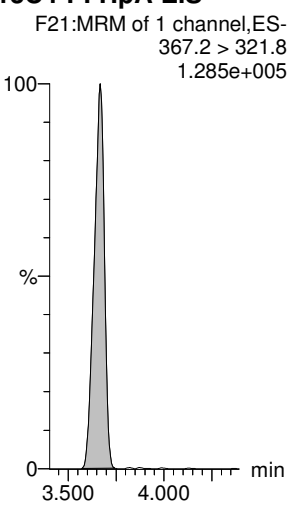
13C3-PFBS-EIS



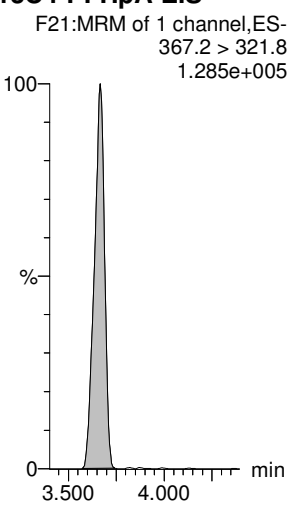
13C3-HFPO-DA-EIS



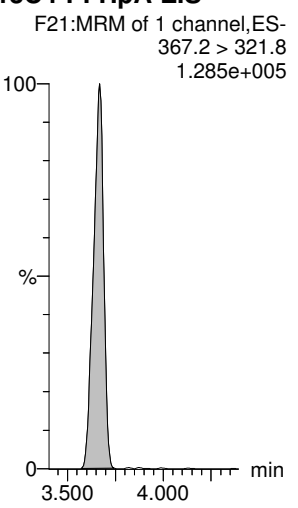
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

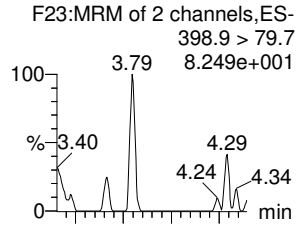


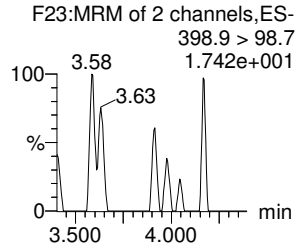
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

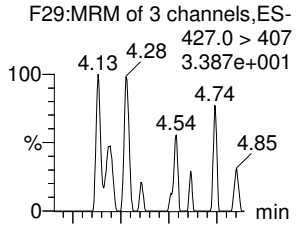
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

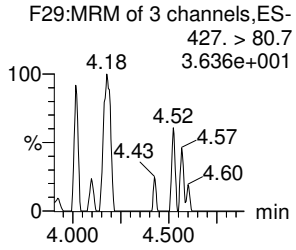
L-PFHxS



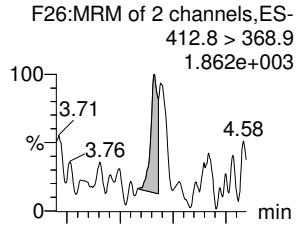


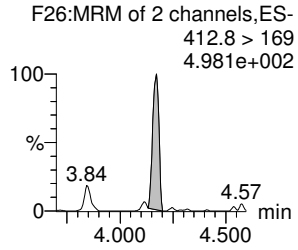
6:2 FTS



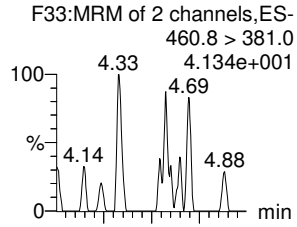


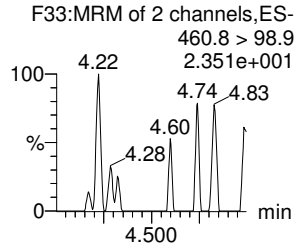
L-PFOA



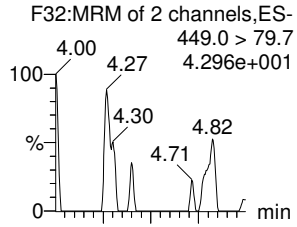


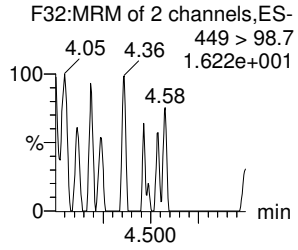
PFEChS



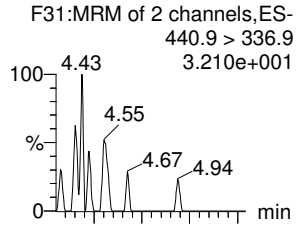


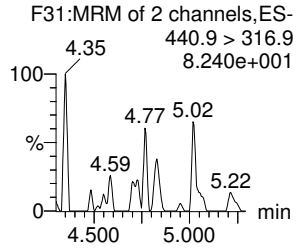
PFHpS



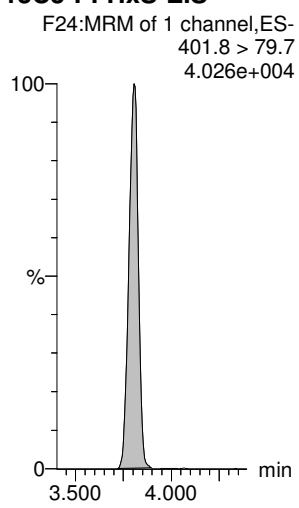


7:3 FTCA

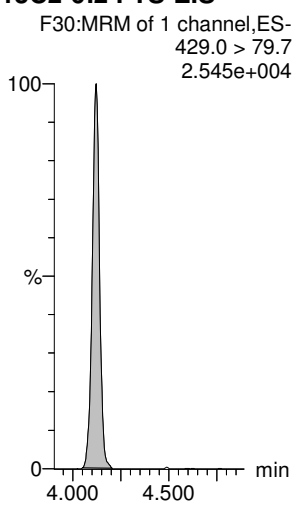




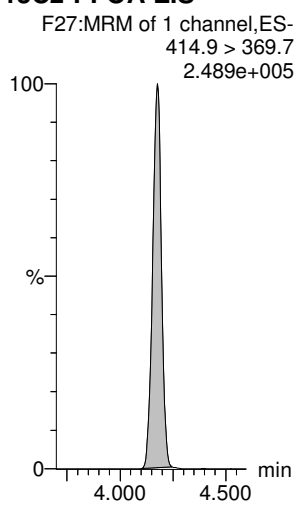
13C3-PFHxS-EIS



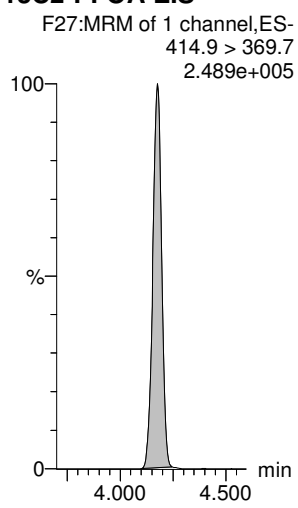
13C2-6:2 FTS-EIS



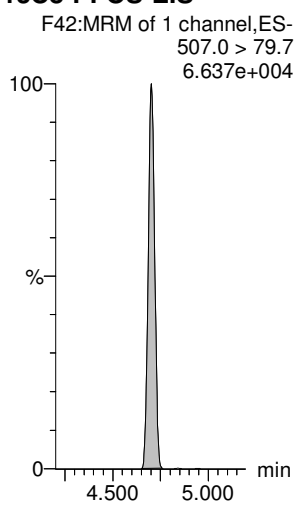
13C2-PFOA-EIS



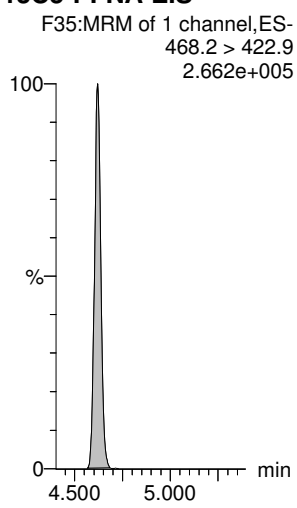
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

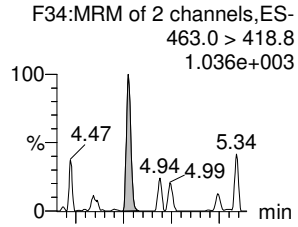


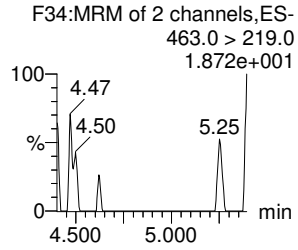
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

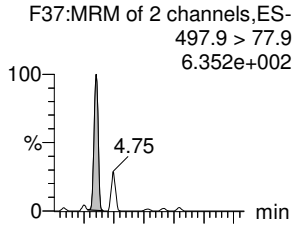
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

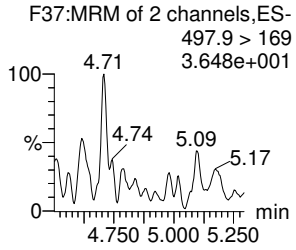
PFNA



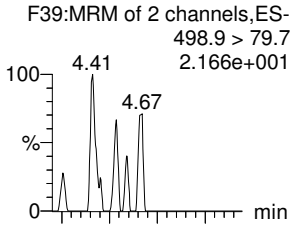


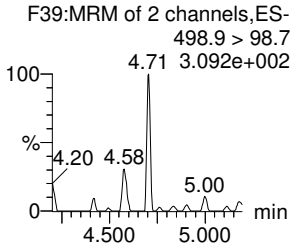
PFOSA



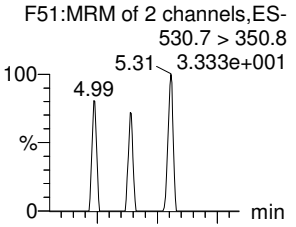


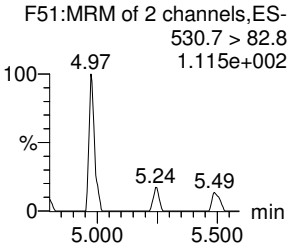
L-PFOS



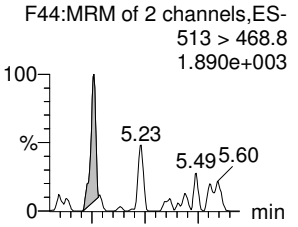


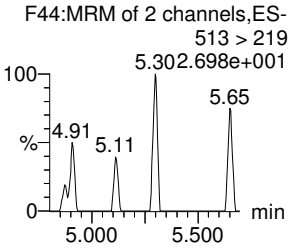
9Cl-PF30NS



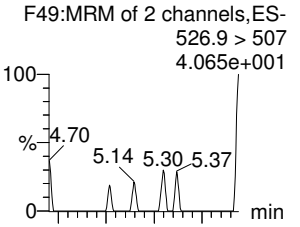


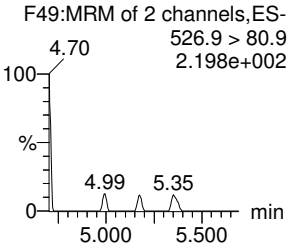
PFDA



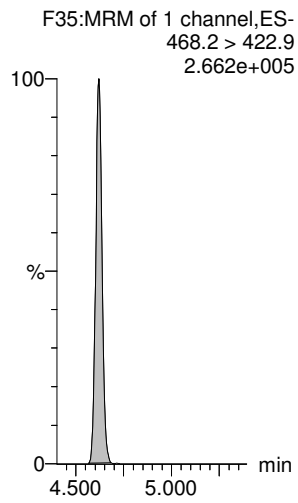


8:2 FTS

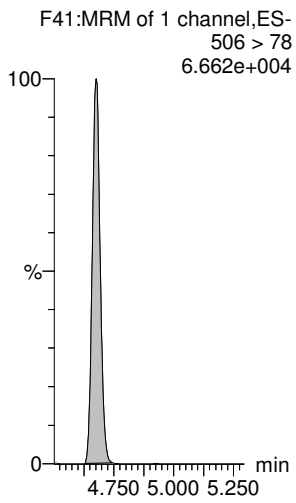




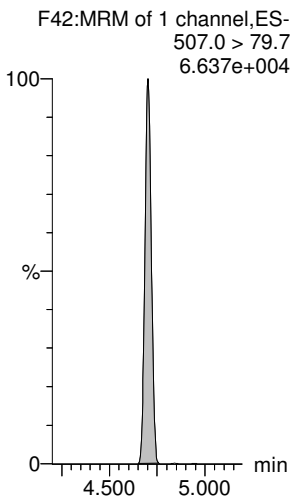
13C5-PFNA-EIS



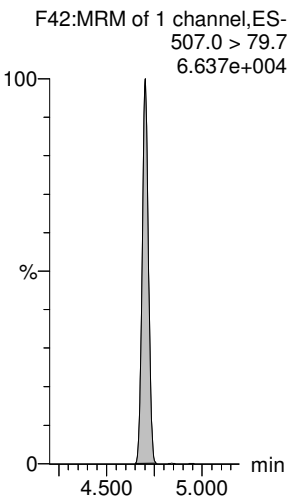
13C8-PFOSA-EIS



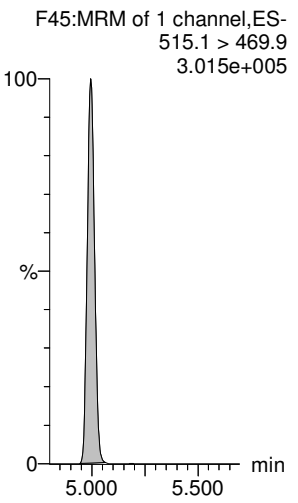
13C8-PFOS-EIS



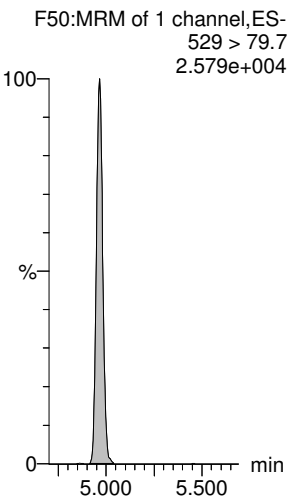
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

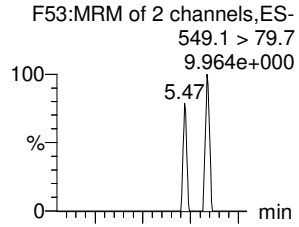


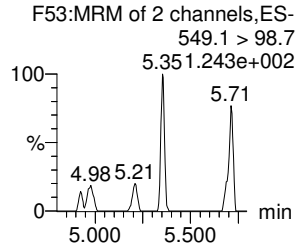
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

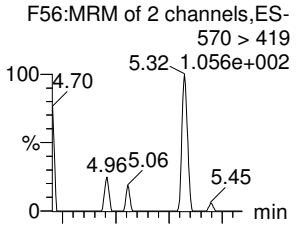
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

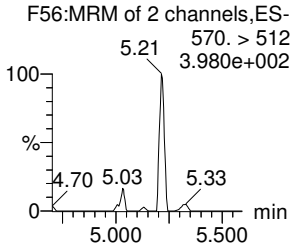
PFNS



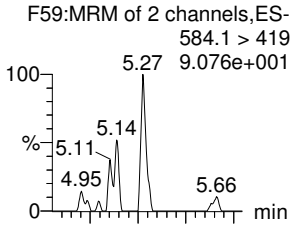


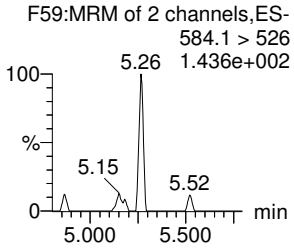
L-MeFOSAA



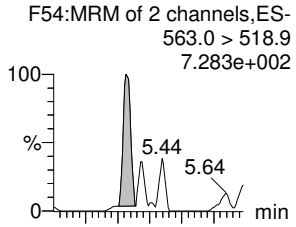


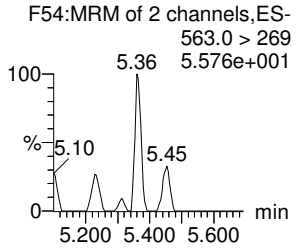
L-EtFOSAA



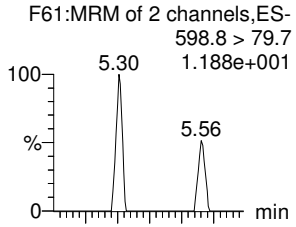


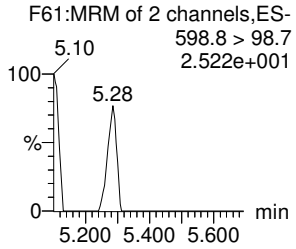
PFUdA



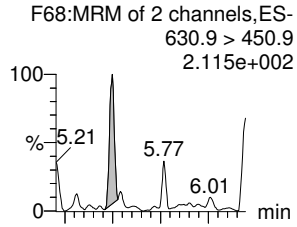


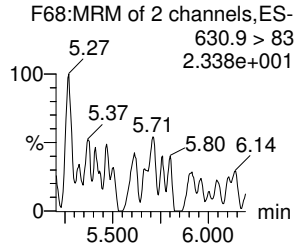
PFDS



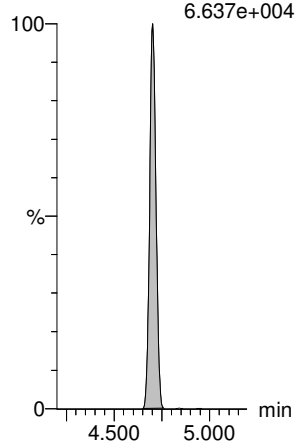


11Cl-PF30UdS

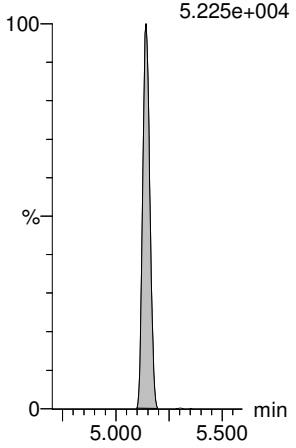




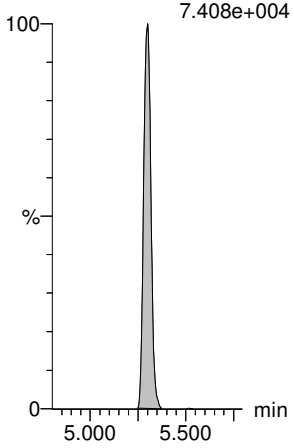
13C8-PFOS-EIS



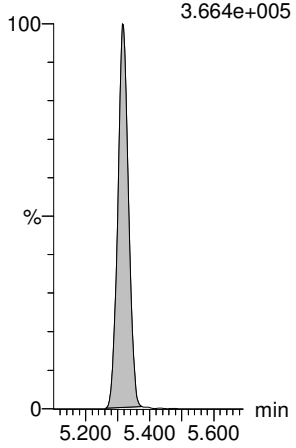
d3-N-MeFOSAA-EIS



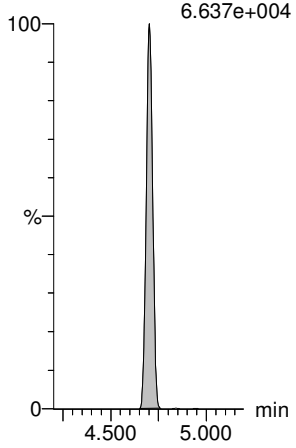
d5-N-EtFOSAA-EIS



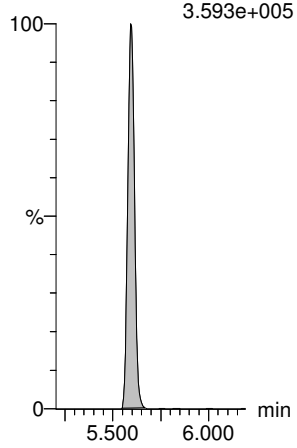
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

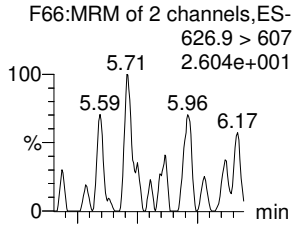


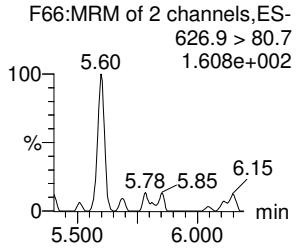
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

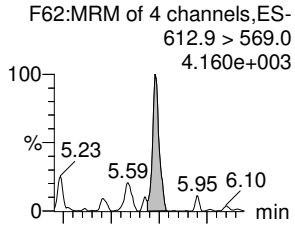
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

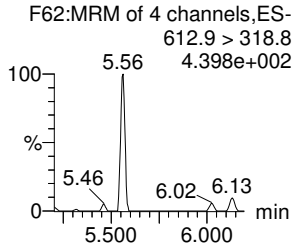
10:2 FTS



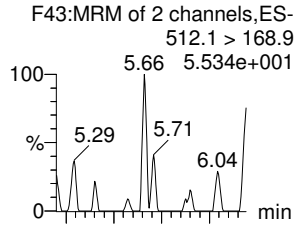


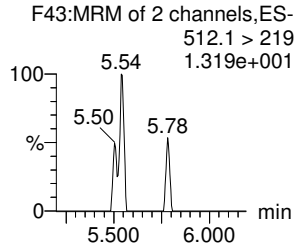
PFDoA



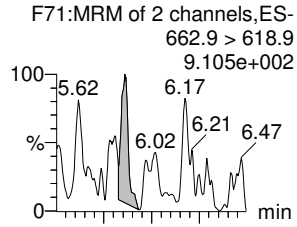


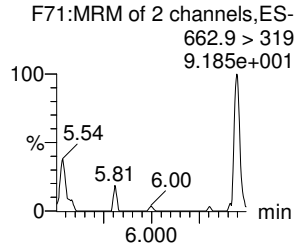
N-MeFOSA



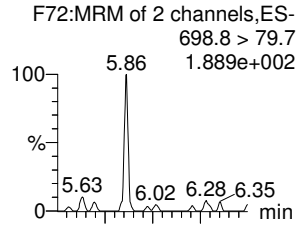


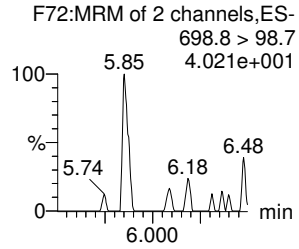
PFTrDA



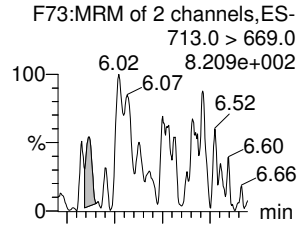


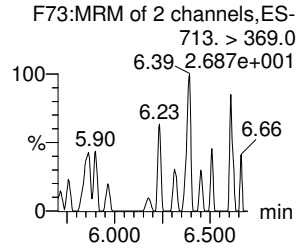
PFDoS



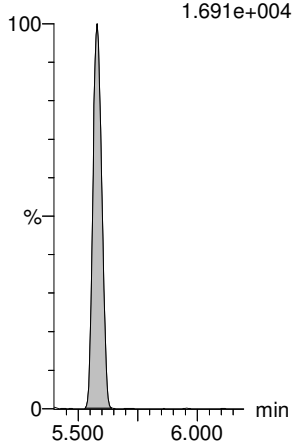


PFTeDA

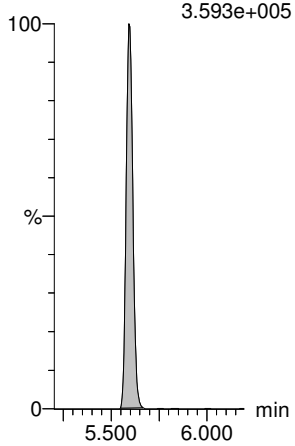




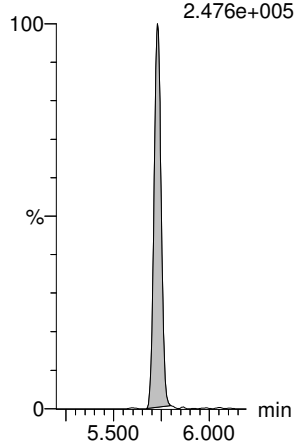
13C2-10:2 FTS-EIS



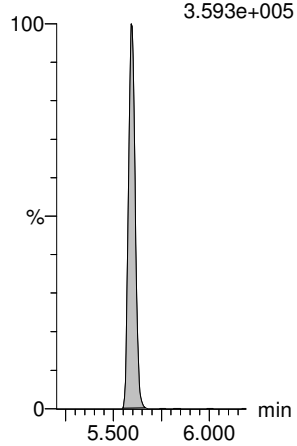
13C2-PFDoA-EIS



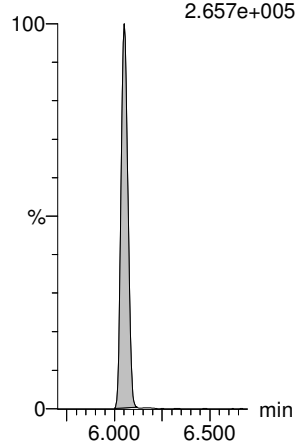
d3-N-MeFOSA-EIS



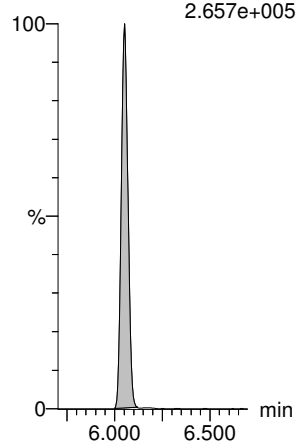
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

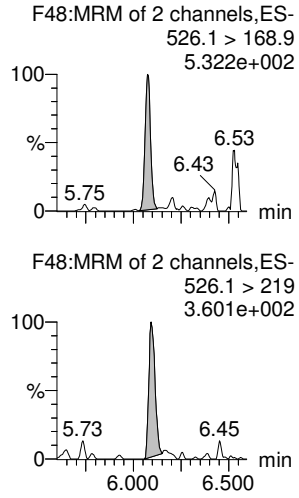


Dataset: Untitled

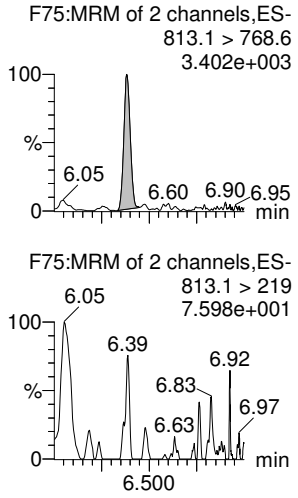
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

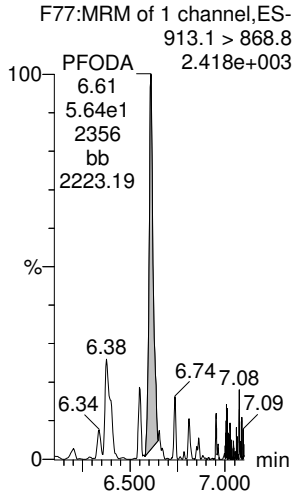
N-EtFOSA



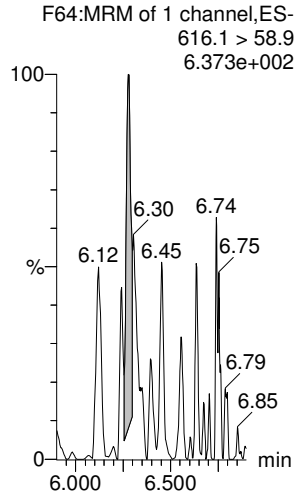
PFHxDA



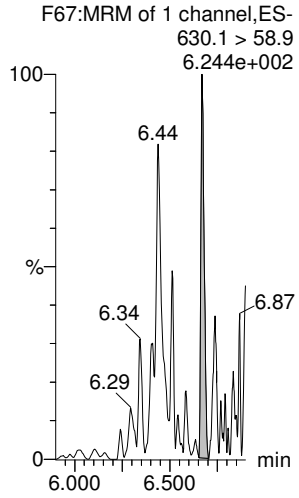
PFODA



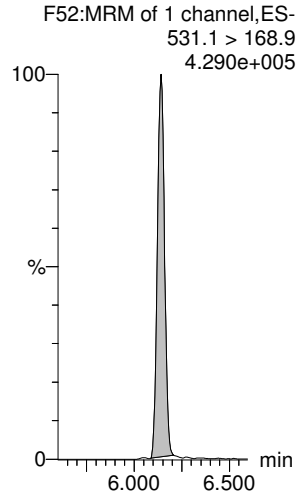
N-MeFOSE



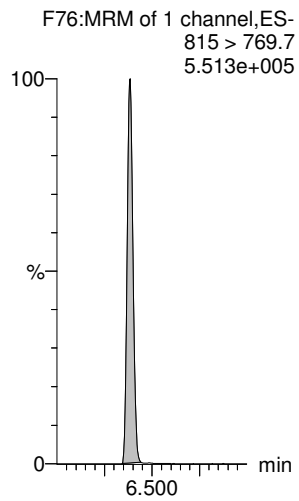
N-EtFOSE



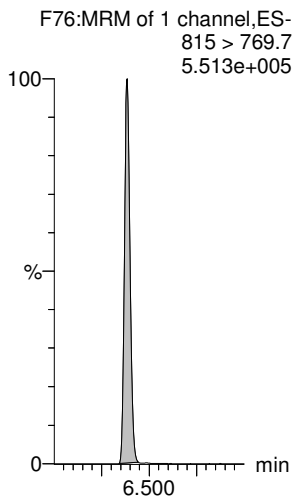
d5-N-ETFOSA-EIS



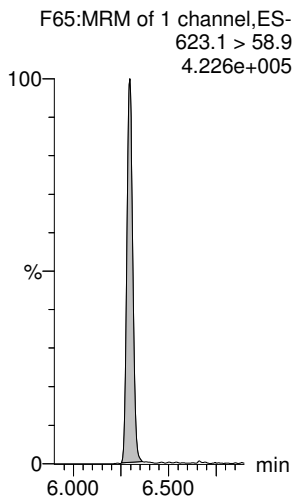
13C2-PFHxDA-EIS



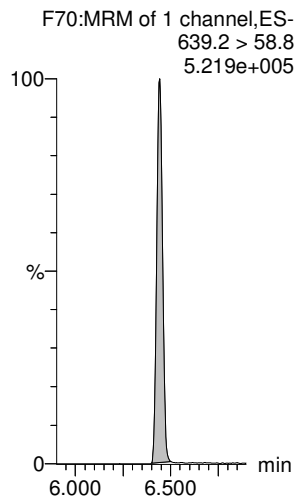
13C2-PFHxDA-EIS



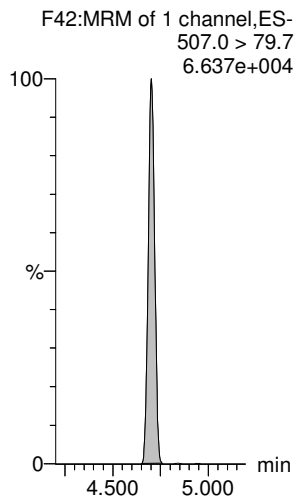
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS

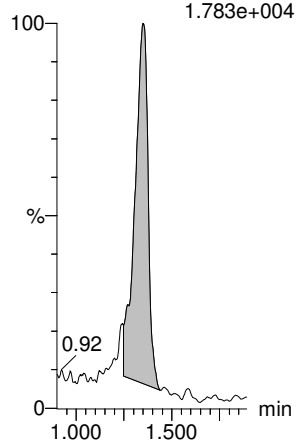


Dataset: Untitled

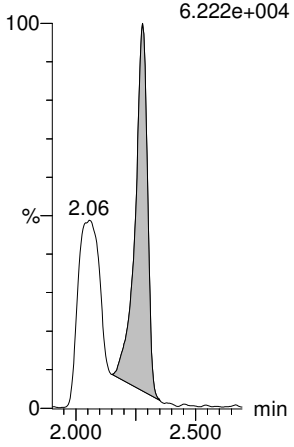
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

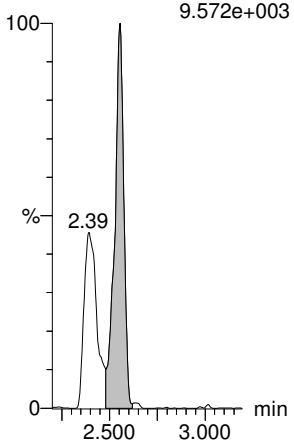
13C3-PFBA-RSD



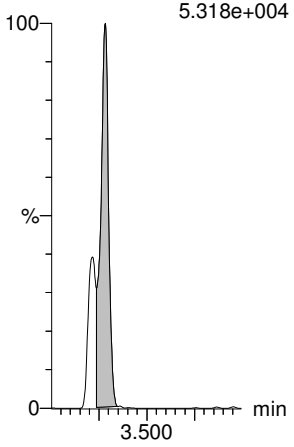
13C3-PFPeA-RSD



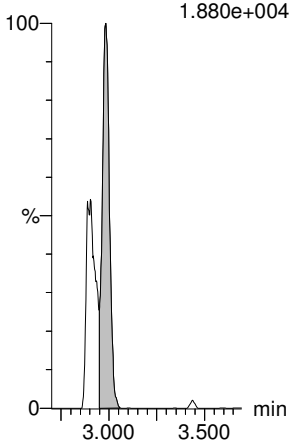
13C3-PFBS-RSD



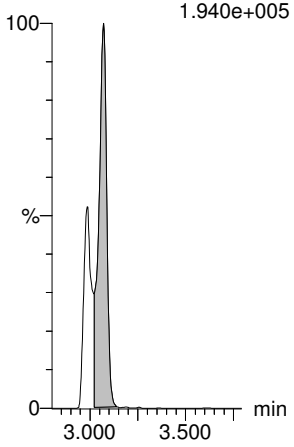
13C3-HFPO-DA-RSD



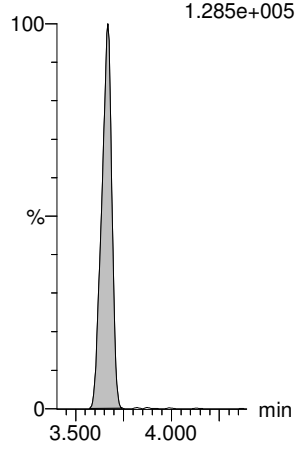
13C2-4:2 FTS-RSD



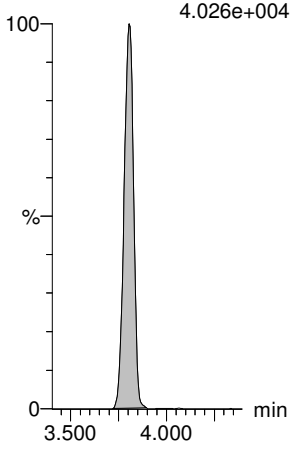
13C2-PFHxA-RSD



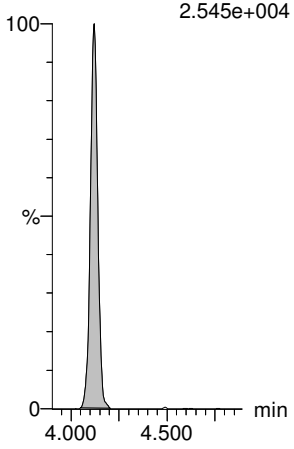
13C4-PFHpA-RSD



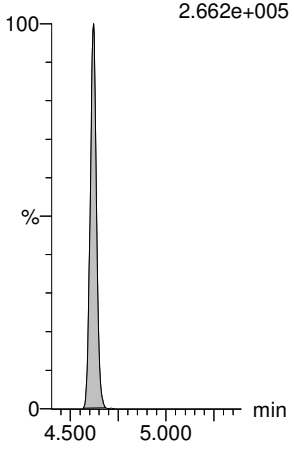
13C3-PFHxS-RSD



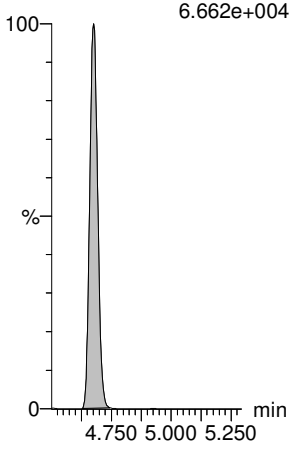
13C2-6:2 FTS-RSD



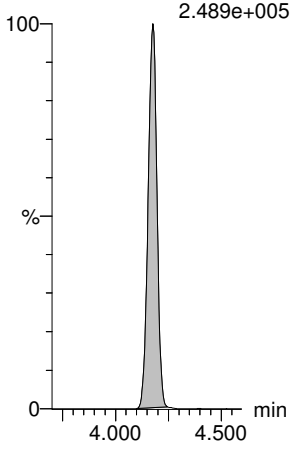
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD

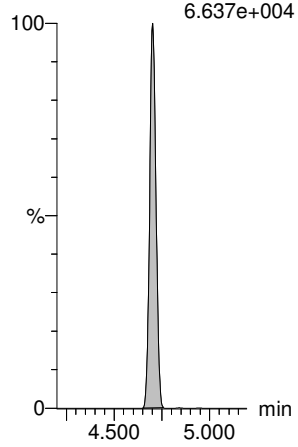


Dataset: Untitled

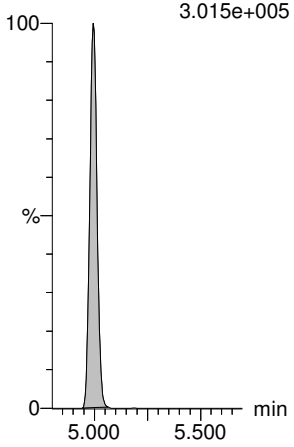
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

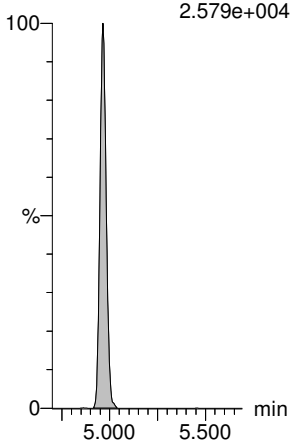
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.637e+004



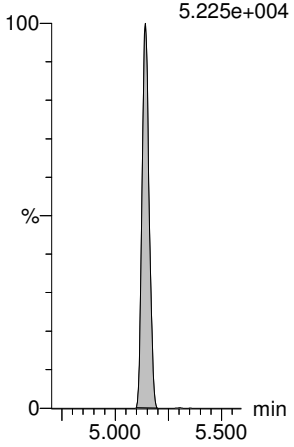
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.015e+005



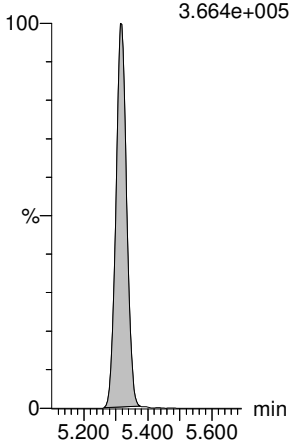
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.579e+004



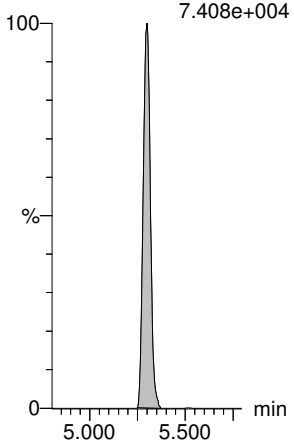
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
5.225e+004



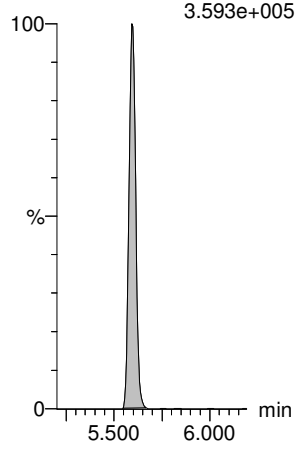
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.664e+005



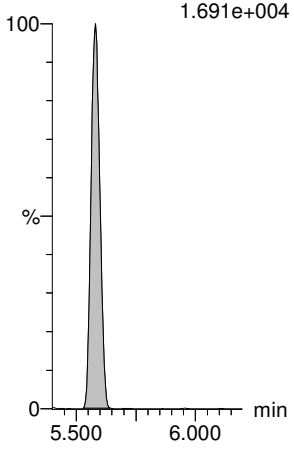
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
7.408e+004



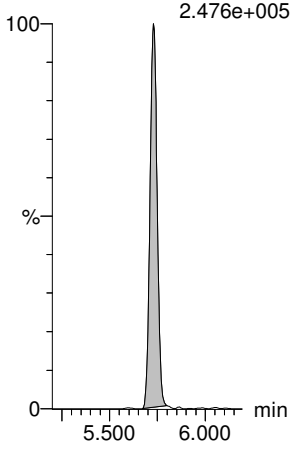
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.593e+005



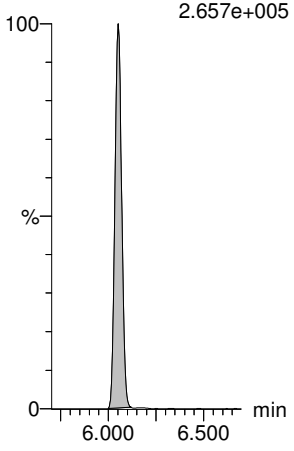
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.691e+004



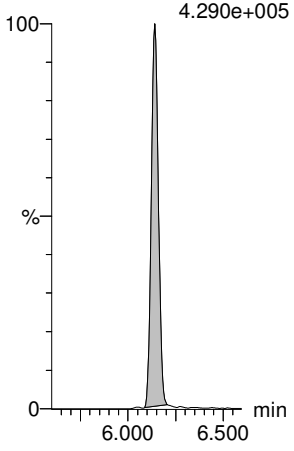
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.476e+005



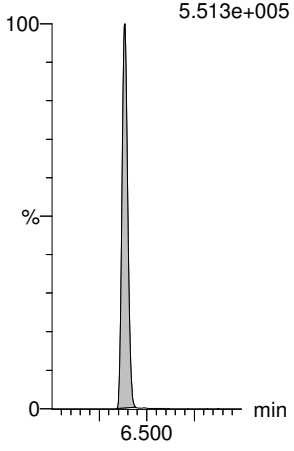
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.657e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.290e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.513e+005

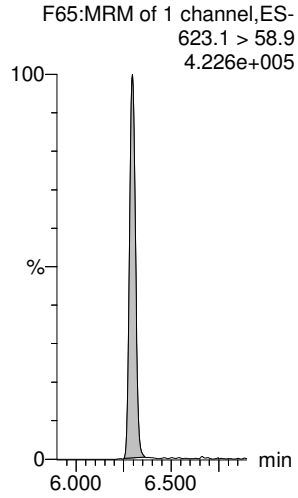


Dataset: Untitled

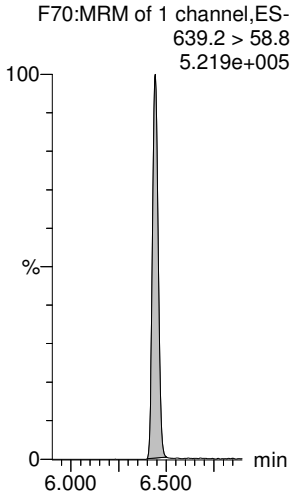
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

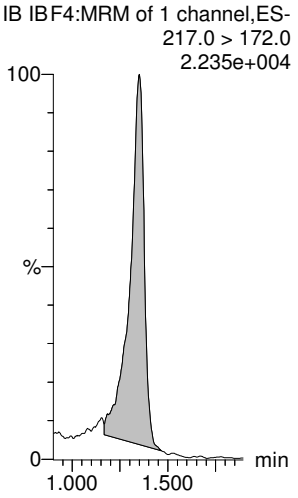
d7-N-MeFOSE-RSD



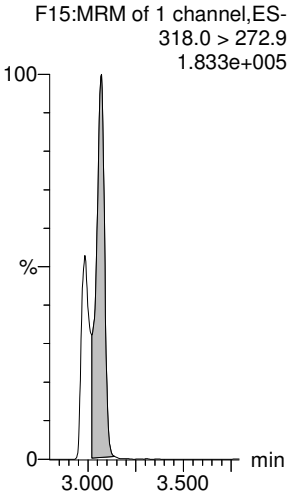
d9-N-EtFOSE-RSD



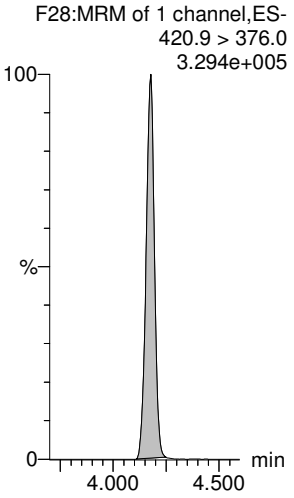
13C4-PFBA



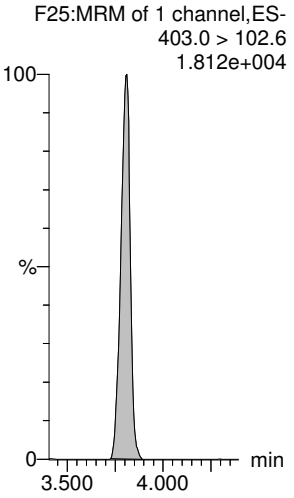
13C5-PFHxA



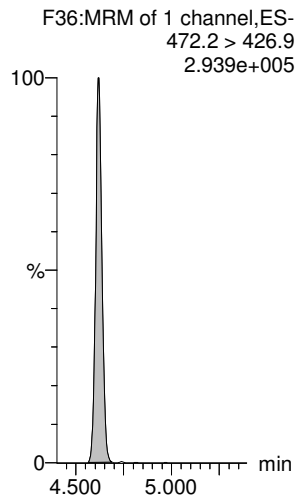
13C8-PFOA



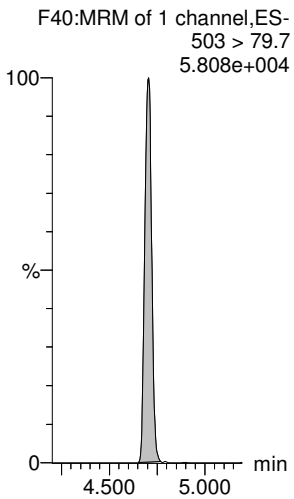
18O2-PFHxS



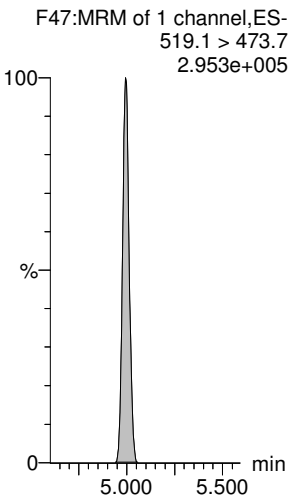
13C9-PFNA



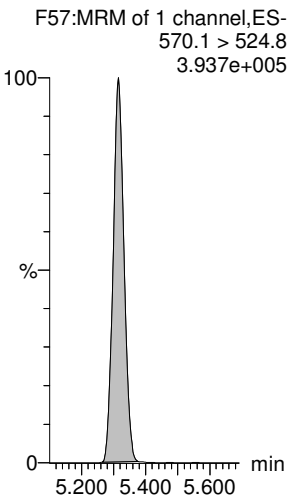
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, 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	5.054	1320.083	1.00	1.30	0.048		0.0348		NO		
2	2	PFPrS	248.9 > 79.7		519.862	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		4067.550	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	7.456	4067.550	1.00	2.27	0.023				NO		
5	5	PFBS	299.0 > 79.7		519.862	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		807.816	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1320.083		1.00	1.35	1320.083	12.500	4.09	32.7	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	519.862		1.00	2.56	519.862	12.500	7.56	60.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	4067.550		1.00	2.28	4067.550	12.500	7.00	56.0	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	4067.550		1.00	2.28	4067.550	12.500	7.00	56.0	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	519.862		1.00	2.56	519.862	12.500	7.56	60.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	807.816		1.00	2.98	807.816	12.500	7.97	63.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	54.915	9199.433	1.00	3.13	0.075		0.0574		NO		YES
15	8	PFPeS	349.>79.7		519.862	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2524.620	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		7798.205	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	21.491	7798.205	1.00	3.59	0.034		0.0005...		NO		YES
19	12	ADONA	376.8 > 250.9	34.768	7798.205	1.00	3.71	0.056				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	9199.433		1.00	3.07	9199.433	12.500	8.67	69.3	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	519.862		1.00	2.56	519.862	12.500	7.56	60.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2524.620		1.00	3.28	2524.620	12.500	9.14	73.1	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	7798.205		1.00	3.67	7798.205	12.500	13.0	103.6	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	7798.205		1.00	3.67	7798.205	12.500	13.0	103.6	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	7798.205		1.00	3.67	7798.205	12.500	13.0	103.6	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7		2273.999	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407		1098.287	1.00						NO		YES
29	16	L-PFOA	412.8 > 368.9	58.178	11749.028	1.00	4.16	0.062				NO	3.537	NO
30	18	PFecHS	460.8 > 381.0		11749.028	1.00						NO		YES
31	19	PFHpS	449.0 > 79.7		2486.527	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		10123.158	1.00						NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2273.999		1.00	3.80	2273.999	12.500	13.1	104.8	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1098.287		1.00	4.12	1098.287	12.500	12.7	101.4	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	11749.028		1.00	4.18	11749.028	12.500	14.5	115.7	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	11749.028		1.00	4.18	11749.028	12.500	14.5	115.7	NO		

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, 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	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	10123.158		1.00	4.62	10123.158	12.500	14.2	113.2	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	26.945	10123.158	1.00	4.77	0.033		0.0262		NO		YES
41	22	PFOSA	497.9 > 77.9	12.617	2512.510	1.00	4.68	0.063		0.116		NO		YES
42	23	L-PFOS	498.9 > 79.7		2486.527	1.00						NO		YES
43	25	9Cl-PF30NS	530.7 > 350.8		2486.527	1.00						NO		YES
44	26	PFDA	513 > 468.8	47.474	11799.821	1.00	5.01	0.050		0.0240		NO		YES
45	27	8:2 FTS	526.9 > 507		964.547	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	10123.158		1.00	4.62	10123.158	12.500	14.2	113.2	NO		
47	67	13C8-PFOSA-EIS	506 > 78	2512.510		1.00	4.68	2512.510	12.500	12.9	103.2	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	11799.821		1.00	4.99	11799.821	12.500	14.4	115.5	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	964.547		1.00	4.97	964.547	12.500	16.4	131.1	NO		
52	-1													
53	28	PFNS	549.1 > 79.7		2486.527	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		2007.039	1.00						NO		YES
55	31	L-EtFOSAA	584.1 > 419		3192.863	1.00						NO		YES
56	33	PFUdA	563.0 > 518.9	18.393	14050.710	1.00	5.33	0.016				NO		YES
57	34	PFDS	598.8 > 79.7		2486.527	1.00						NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9	5.717	14136.940	1.00	5.50	0.005				NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	2007.039		1.00	5.14	2007.039	12.500	13.9	111.1	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3192.863		1.00	5.30	3192.863	12.500	12.0	96.1	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	14050.710		1.00	5.31	14050.710	12.500	13.1	105.2	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	14136.940		1.00	5.59	14136.940	12.500	13.0	103.8	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		727.087	1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	163.986	14136.940	1.00	5.73	0.145		0.142		NO		YES
68	38	N-MeFOSA	512.1 > 168.9		10526.383	1.00						NO		YES
69	39	PFTrDA	662.9 > 618.9	37.643	14136.940	1.00	5.86	0.033		0.00936		NO		YES
70	40	PFDoS	698.8 > 79.7		10840.953	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	15.208	10840.953	1.00	5.86	0.018				NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	727.087		1.00	5.58	727.087	12.500	14.3	114.2	NO		

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, 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	614.7 > 569.7	14136.940		1.00	5.59	14136.940	12.500	13.0	103.8	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	10526.383		1.00	5.73	10526.383	149.200	148	99.2	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	14136.940		1.00	5.59	14136.940	12.500	13.0	103.8	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	10840.953		1.00	6.05	10840.953	12.500	13.2	105.9	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	10840.953		1.00	6.05	10840.953	12.500	13.2	105.9	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	17.820	18305.059	1.00	6.07	0.145		0.0906		NO	1.342	NO
80	43	PFHxDA	813.1 > 768.6	131.363	18624.898	1.00	6.38	0.088		0.00635		NO		YES
81	44	PFODA	913.1 > 868.8	56.439	18624.898	1.00	6.61	0.038		0.0527		NO		
82	45	N-MeFOSE	616.1 > 58.9	16.348	15053.555	1.00	6.28	0.162		0.145		NO		
83	46	N-EtFOSE	630.1 > 58.9	12.175	17781.639	1.00	6.67	0.102				NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	18305.059		1.00	6.14	18305.059	149.200	146	98.0	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	18624.898		1.00	6.39	18624.898	12.500	13.5	107.8	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	18624.898		1.00	6.39	18624.898	12.500	13.5	107.8	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	15053.555		1.00	6.29	15053.555	149.200	154	103.2	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	17781.639		1.00	6.44	17781.639	149.200	163	108.9	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1320.083	1864.469	1.00	1.35	8.850	12.500	11.1	88.5	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	3532.243	9055.438	1.00	2.28	4.876	12.500	8.56	68.5	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	519.862	1021.538	1.00	2.56	6.361	12.500	6.25	50.0	YES		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2524.620	9055.438	1.00	3.28	3.485	12.500	13.2	105.4	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	807.816	1021.538	1.00	2.98	9.885	12.500	6.89	55.1	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	9199.433	9055.438	1.00	3.07	12.699	12.500	12.3	98.3	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	7798.205	9055.438	1.00	3.67	10.765	12.500	18.2	145.9	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2273.999	1021.538	1.00	3.80	27.826	12.500	11.4	91.3	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1098.287	2398.926	1.00	4.12	5.723	12.500	12.8	102.4	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	10123.158	11091.801	1.00	4.62	11.408	12.500	12.1	96.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	2512.510	15258.304	1.00	4.68	2.058	12.500	11.4	91.2	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	11749.028	14804.700	1.00	4.18	9.920	12.500	12.1	97.1	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2486.527	2398.926	1.00	4.70	12.956	12.500	13.4	107.6	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	11799.821	11708.404	1.00	4.99	12.598	12.500	13.1	104.8	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	964.547	2398.926	1.00	4.97	5.026	12.500	14.2	113.4	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	2007.039	15258.304	1.00	5.14	1.644	12.500	11.3	90.0	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	14050.710	15258.304	1.00	5.31	11.511	12.500	11.7	93.4	NO		

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	3192.863	15258.304	1.00	5.30	2.616	12.500	11.0	87.7	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	14136.940	11708.404	1.00	5.59	15.093	12.500	11.9	95.2	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	727.087	2398.926	1.00	5.58	3.789	12.500	14.2	113.6	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	10526.383	15258.304	1.00	5.73	8.623	149.200	126	84.3	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	10840.953	15258.304	1.00	6.05	8.881	12.500	11.4	91.5	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	18305.059	15258.304	1.00	6.14	14.996	149.200	129	86.6	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	18624.898	15258.304	1.00	6.39	15.258	12.500	11.8	94.6	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	15053.555	15258.304	1.00	6.29	12.332	149.200	133	88.9	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	17781.639	15258.304	1.00	6.44	14.567	149.200	133	89.2	NO		
119	99	13C4-PFBA	217.0 > 172.0	1864.469	1864.469	1.00	1.35	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	9055.438	9055.438	1.00	3.07	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	14804.700	14804.700	1.00	4.18	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1021.538	1021.538	1.00	3.81	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11091.801	11091.801	1.00	4.62	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2398.926	2398.926	1.00	4.71	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	11708.404	11708.404	1.00	4.99	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	15258.304	15258.304	1.00	5.31	12.500	12.500	12.5	100.0	NO		

LC Calibration Standards Review Checklist 05

			ION Ratio	Concentration	C-Cals Name	Sign Date	Correct I-Cal	Manual Integrations	N/A
Calibration ID:	ST200303P2-11	L M H	☑	☑	☑	☑	☑	☑	☑
Calibration ID:	-12	L M H	☑	☑	☑	☑	☑	☑	☐
Calibration ID:	-13	L M H	☑	☑	☑	☑	☑	☑	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐
Calibration ID:		L M H	☐	☐	☐	☐	☐	☐	☐

Full Mass Cal. Date: 20200303

Run Log Present: ☑

# of Samples per Sequence Checked: ☑

Instrument Blank Saved ☑

All Branches in Acquisition Window ☑

IIS Area Saved ☑

Reviewed By: OPV 03/04/20

Initials/Date

Comments:

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

JQV 03/04/20

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

	#	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	3972.978	4345.709	1.00	1.36	11.428	10.000	9.39	93.9	NO		
2	2	PFPrS	248.9 > 79.7	1004.688	861.872	1.00	1.69	14.571	10.000	10.8	108.0	NO	2.475	NO
3	3	3:3 FTCA	240.9 > 176.9	701.902	7430.900	1.00	2.14	1.181	10.000	9.96	99.6	NO	3.864	NO
4	4	PFPeA	263.1 > 218.9	5592.850	7430.900	1.00	2.28	9.408	10.000	10.1	101.3	NO		
5	5	PFBS	299.0 > 79.7	1691.160	861.872	1.00	2.56	24.527	10.000	9.89	98.9	NO	3.075	NO
6	6	4:2 FTS	327.0 > 307	1432.046	1195.247	1.00	2.99	14.976	10.000	10.1	101.4	NO	1.112	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	4345.709		1.00	1.36	4345.709	12.500	13.5	107.6	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	861.872		1.00	2.56	861.872	12.500	12.5	100.3	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	7430.900		1.00	2.28	7430.900	12.500	12.8	102.2	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	7430.900		1.00	2.28	7430.900	12.500	12.8	102.2	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	861.872		1.00	2.56	861.872	12.500	12.5	100.3	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1195.247		1.00	2.99	1195.247	12.500	11.8	94.3	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	9112.944	13534.221	1.00	3.07	8.417	10.000	9.45	94.5	NO	17.239	NO
15	8	PFPeS	349.>79.7	1719.755	861.872	1.00	3.27	24.942	10.000	9.69	96.9	NO	2.334	NO
16	9	HFPO-DA	285.1 > 168.9	2857.713	3423.168	1.00	3.29	10.435	10.000	9.82	98.2	NO	2.747	NO
17	10	5:3 FTCA	340.9 > 236.9	1836.189	7502.963	1.00	3.62	3.059	10.000	10.2	102.1	NO	1.796	NO
18	11	PFHpA	363.0 > 318.9	7265.287	7502.963	1.00	3.67	12.104	10.000	10.1	100.5	NO	16.762	NO
19	12	ADONA	376.8 > 250.9	20418.912	7502.963	1.00	3.78	34.018	10.000	9.97	99.7	NO	3.998	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	13534.221		1.00	3.07	13534.221	12.500	12.8	102.0	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	861.872		1.00	2.56	861.872	12.500	12.5	100.3	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3423.168		1.00	3.29	3423.168	12.500	12.4	99.2	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	7502.963		1.00	3.67	7502.963	12.500	12.5	99.7	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	7502.963		1.00	3.67	7502.963	12.500	12.5	99.7	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	7502.963		1.00	3.67	7502.963	12.500	12.5	99.7	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	1568.411	2265.928	1.00	3.82	8.652	10.000	8.36	83.6	NO	2.092	NO
28	15	6:2 FTS	427.0 > 407	1654.150	1202.002	1.00	4.13	17.202	10.000	8.73	87.3	NO	1.321	NO
29	16	L-PFOA	412.8 > 368.9	11553.832	11193.286	1.00	4.19	12.903	10.000	10.0	100.2	NO	3.313	NO
30	18	PFecHS	460.8 > 381.0	1847.735	11193.286	1.00	4.20	2.063	10.000	10.3	103.2	NO	0.597	NO
31	19	PFHpS	449.0 > 79.7	1598.968	2341.421	1.00	4.29	8.536	10.000	9.02	90.2	NO	1.952	NO
32	20	7:3 FTCA	440.9 > 336.9	1856.633	9909.016	1.00	4.62	2.342	10.000	9.05	90.5	NO	1.756	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2265.928		1.00	3.82	2265.928	12.500	13.0	104.4	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1202.002		1.00	4.13	1202.002	12.500	13.9	111.0	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	11193.286		1.00	4.19	11193.286	12.500	13.8	110.2	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	11193.286		1.00	4.19	11193.286	12.500	13.8	110.2	NO		

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	2341.421		1.00	4.71	2341.421	12.500	13.7	109.6	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	9909.016		1.00	4.62	9909.016	12.500	13.9	110.8	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	9746.530	9909.016	1.00	4.62	12.295	10.000	9.59	95.9	NO	6.299	NO
41	22	PFOSA	497.9 > 77.9	2006.863	2507.730	1.00	4.68	10.003	10.000	9.44	94.4	NO	30.863	NO
42	23	L-PFOS	498.9 > 79.7	1664.489	2341.421	1.00	4.71	8.886	10.000	9.02	90.2	NO	1.911	NO
43	25	9Cl-PF30NS	530.7 > 350.8	2945.082	2341.421	1.00	4.93	15.723	10.000	9.71	97.1	NO	18.040	NO
44	26	PFDA	513 > 468.8	11719.145	11162.164	1.00	5.00	13.124	10.000	9.59	95.9	NO	8.136	NO
45	27	8:2 FTS	526.9 > 507	1197.609	813.721	1.00	4.97	18.397	10.000	12.0	120.2	NO	2.692	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	9909.016		1.00	4.62	9909.016	12.500	13.9	110.8	NO		
47	67	13C8-PFOSA-EIS	506 > 78	2507.730		1.00	4.68	2507.730	12.500	12.9	103.0	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2341.421		1.00	4.71	2341.421	12.500	13.7	109.6	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2341.421		1.00	4.71	2341.421	12.500	13.7	109.6	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	11162.164		1.00	5.00	11162.164	12.500	13.7	109.2	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	813.721		1.00	4.97	813.721	12.500	13.8	110.6	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	1768.463	2341.421	1.00	5.06	9.441	10.000	10.9	108.9	NO	2.161	NO
54	29	L-MeFOSAA	570 > 419	3955.001	2224.255	1.00	5.15	22.227	10.000	8.92	89.2	NO	2.413	NO
55	31	L-EtFOSAA	584.1 > 419	3943.623	3575.574	1.00	5.31	13.787	10.000	9.50	95.0	NO	1.342	NO
56	33	PFUdA	563.0 > 518.9	10228.093	12606.662	1.00	5.32	10.142	10.000	11.3	113.5	NO	18.915	NO
57	34	PFDS	598.8 > 79.7	1706.709	2341.421	1.00	5.36	9.112	10.000	10.4	103.5	NO	1.645	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	4839.100	14777.439	1.00	5.52	4.093	10.000	9.37	93.7	NO	16.959	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	2341.421		1.00	4.71	2341.421	12.500	13.7	109.6	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	2224.255		1.00	5.15	2224.255	12.500	15.4	123.2	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3575.574		1.00	5.30	3575.574	12.500	13.5	107.6	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	12606.662		1.00	5.32	12606.662	12.500	11.8	94.4	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2341.421		1.00	4.71	2341.421	12.500	13.7	109.6	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	14777.439		1.00	5.60	14777.439	12.500	13.6	108.5	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1060.788	616.322	1.00	5.58	21.514	10.000	9.61	96.1	NO	0.901	NO
67	37	PFDoA	612.9 > 569.0	11026.567	14777.439	1.00	5.60	9.327	10.000	9.34	93.4	NO	11.254	NO
68	38	N-MeFOSA	512.1 > 168.9	3778.939	10975.694	1.00	5.71	51.370	50.000	47.2	94.4	NO	1.601	NO
69	39	PFTrDA	662.9 > 618.9	10629.062	14777.439	1.00	5.84	8.991	10.000	8.59	85.9	NO	39.343	NO
70	40	PFDoS	698.8 > 79.7	1880.526	10565.863	1.00	5.86	2.225	10.000	10.3	102.8	NO	3.258	NO
71	41	PFTeDA	713.0 > 669.0	12247.843	10565.863	1.00	6.05	14.490	10.000	9.95	99.5	NO	18.042	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	616.322		1.00	5.58	616.322	12.500	12.1	96.8	NO		

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	14777.439		1.00	5.60	14777.439	12.500	13.6	108.5	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	10975.694		1.00	5.73	10975.694	149.200	154	103.4	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	14777.439		1.00	5.60	14777.439	12.500	13.6	108.5	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	10565.863		1.00	6.05	10565.863	12.500	12.9	103.3	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	10565.863		1.00	6.05	10565.863	12.500	12.9	103.3	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	5467.578	18565.600	1.00	6.13	43.939	50.000	50.9	101.8	NO	1.795	NO
80	43	PFHxDA	813.1 > 768.6	9308.207	16797.945	1.00	6.39	6.927	10.000	10.5	105.2	NO	91.449	NO
81	44	PFODA	913.1 > 868.8	13439.311	16797.945	1.00	6.62	10.001	10.000	10.8	107.6	NO		
82	45	N-MeFOSE	616.1 > 58.9	5144.337	15444.949	1.00	6.30	49.695	50.000	51.1	102.3	NO		
83	46	N-EtFOSE	630.1 > 58.9	5640.588	17689.074	1.00	6.45	47.576	50.000	48.9	97.8	NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	18565.600		1.00	6.14	18565.600	149.200	148	99.4	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	16797.945		1.00	6.38	16797.945	12.500	12.1	97.2	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	16797.945		1.00	6.38	16797.945	12.500	12.1	97.2	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	15444.949		1.00	6.30	15444.949	149.200	158	105.8	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	17689.074		1.00	6.44	17689.074	149.200	162	108.4	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2341.421		1.00	4.71	2341.421	12.500	13.7	109.6	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	4345.709	5439.934	1.00	1.36	9.986	12.500	12.5	99.9	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	7430.900	12595.660	1.00	2.28	7.374	12.500	12.9	103.6	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	861.872	893.110	1.00	2.56	12.063	12.500	11.8	94.8	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	3423.168	12595.660	1.00	3.29	3.397	12.500	12.8	102.7	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1195.247	893.110	1.00	2.99	16.729	12.500	11.7	93.3	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	13534.221	12595.660	1.00	3.07	13.431	12.500	13.0	103.9	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	7502.963	12595.660	1.00	3.67	7.446	12.500	12.6	100.9	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2265.928	893.110	1.00	3.82	31.714	12.500	13.0	104.1	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1202.002	2546.382	1.00	4.13	5.901	12.500	13.2	105.6	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	9909.016	9925.048	1.00	4.62	12.480	12.500	13.2	105.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	2507.730	13592.996	1.00	4.68	2.306	12.500	12.8	102.2	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	11193.286	13350.029	1.00	4.19	10.481	12.500	12.8	102.6	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2341.421	2546.382	1.00	4.71	11.494	12.500	11.9	95.4	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	11162.164	10797.004	1.00	5.00	12.923	12.500	13.4	107.5	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	813.721	2546.382	1.00	4.97	3.994	12.500	11.3	90.1	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	2224.255	13592.996	1.00	5.15	2.045	12.500	14.0	112.0	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	12606.662	13592.996	1.00	5.32	11.593	12.500	11.8	94.1	NO		

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	3575.574	13592.996	1.00	5.30	3.288	12.500	13.8	110.2	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	14777.439	10797.004	1.00	5.60	17.108	12.500	13.5	107.9	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	616.322	2546.382	1.00	5.58	3.025	12.500	11.3	90.8	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	10975.694	13592.996	1.00	5.73	10.093	149.200	147	98.7	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	10565.863	13592.996	1.00	6.05	9.716	12.500	12.5	100.1	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	18565.600	13592.996	1.00	6.14	17.073	149.200	147	98.6	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	16797.945	13592.996	1.00	6.38	15.447	12.500	12.0	95.8	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	15444.949	13592.996	1.00	6.30	14.203	149.200	153	102.4	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	17689.074	13592.996	1.00	6.44	16.267	149.200	149	99.7	NO		
119	99	13C4-PFBA	217.0 > 172.0	5439.934	5439.934	1.00	1.35	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	12595.660	12595.660	1.00	3.07	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	13350.029	13350.029	1.00	4.19	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	893.110	893.110	1.00	3.82	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	9925.048	9925.048	1.00	4.62	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2546.382	2546.382	1.00	4.71	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	10797.004	10797.004	1.00	5.00	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	13592.996	13592.996	1.00	5.32	12.500	12.500	12.5	100.0	NO		

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 12:09:06 Pacific Standard Time
Printed: Wednesday, March 04, 2020 12:09:27 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200303P2-1	IPA	03-Mar-20	16:44:11
2	2	200303P2-2	IPA	03-Mar-20	16:54:40
3	3	200303P2-3	ST200303P2-1 PFC CS-2 20C0304	03-Mar-20	17:05:12
4	4	200303P2-4	ST200303P2-2 PFC CS-1 20C0305	03-Mar-20	17:15:40
5	5	200303P2-5	ST200303P2-3 PFC CS0 20C0306	03-Mar-20	17:26:12
6	6	200303P2-6	ST200303P2-4 PFC CS1 20C0307	03-Mar-20	17:36:41
7	7	200303P2-7	ST200303P2-5 PFC CS2 20C0308	03-Mar-20	17:47:13
8	8	200303P2-8	ST200303P2-6 PFC CS3 20C0309	03-Mar-20	17:57:42
9	9	200303P2-9	ST200303P2-7 PFC CS4 20C0310	03-Mar-20	18:08:13
10	10	200303P2-10	ST200303P2-8 PFC CS5 20C0311	03-Mar-20	18:18:44
11	11	200303P2-11	ST200303P2-9 PFC CS6 20C0312	03-Mar-20	18:29:13
12	12	200303P2-12	ST200303P2-10 PFC CS7 20C0313	03-Mar-20	18:39:45
13	13	200303P2-13	IB	03-Mar-20	18:50:14
14	14	200303P2-14	ICV200303P2-1 PFC ICV 20C0314	03-Mar-20	19:00:45
15	15	200303P2-15	IB	03-Mar-20	19:11:14
16	16	200303P2-16	B0B0186-BLK1 Method Blank 0.25	03-Mar-20	19:21:45
17	17	200303P2-17	B0B0186-BS1 OPR 0.25	03-Mar-20	19:32:16
18	18	200303P2-18	B0B0186-BSD1 LCSD 0.25	03-Mar-20	19:42:47
19	19	200303P2-19	2000356-01 EB04-20200219 0.25138	03-Mar-20	19:53:16
20	20	200303P2-20	2000356-02 IS720W02D-20200219 0.25192	03-Mar-20	20:03:47
21	21	200303P2-21	2000356-03 IS720W06D-20200219 0.25411	03-Mar-20	20:14:15
22	22	200303P2-22	2000356-04 IS720W03D-20200219 0.24684	03-Mar-20	20:24:47
23	23	200303P2-23	2000356-05 TW08S-20200219 0.23703	03-Mar-20	20:35:16
24	24	200303P2-24	2000356-06 TW09S-20200219 0.25359	03-Mar-20	20:45:48
25	25	200303P2-25	2000356-07 TW10S-20200219 0.24766	03-Mar-20	20:56:17
26	26	200303P2-26	2000356-08 TW11S-20200219 0.25102	03-Mar-20	21:06:48
27	27	200303P2-27	2000356-09 TW13S-20200219 0.24923	03-Mar-20	21:17:19
28	28	200303P2-28	2000356-10 TW12S-20200219 0.25542	03-Mar-20	21:27:50
29	29	200303P2-29	B0B0181-BLK1 Method Blank 2	03-Mar-20	21:38:18
30	30	200303P2-30	IB	03-Mar-20	21:48:50
31	31	200303P2-31	ST200303P2-11 PFC CS3 20C0309	03-Mar-20	21:59:18
32	32	200303P2-32	IB	03-Mar-20	22:09:51

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 12:09:06 Pacific Standard Time
Printed: Wednesday, March 04, 2020 12:09:27 Pacific Standard Time

Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
33	33 200303P2-33	B0B0181-BS1 OPR 2	03-Mar-20	22:20:20
34	34 200303P2-34	B0B0181-MS1 Matrix Spike 2.13	03-Mar-20	22:30:51
35	35 200303P2-35	B0B0181-MSD1 Matrix Spike Dup 2.14	03-Mar-20	22:41:20
36	36 200303P2-36	2000319-01 S-SB13-03-20200211 2.3	03-Mar-20	22:51:51
37	37 200303P2-37	2000319-02 S-SB13-4.5-20200211 2.21	03-Mar-20	23:02:22
38	38 200303P2-38	2000319-04 S-SB14-00-20200211 2.09	03-Mar-20	23:12:52
39	39 200303P2-39	2000319-05 S-SB14-4.5-20200211 2.21	03-Mar-20	23:23:23
40	40 200303P2-40	2000319-06 S-SB15-00-20200211 2.18	03-Mar-20	23:33:51
41	41 200303P2-41	2000319-08 S-SB01-00-20200211 2.14	03-Mar-20	23:44:22
42	42 200303P2-42	2000319-09 S-SB02-00-20200211 2.17	03-Mar-20	23:54:53
43	43 200303P2-43	2000319-10 S-SB02-4.5-20200211 2.15	04-Mar-20	00:05:24
44	44 200303P2-44	2000319-12 S-SB11-02-20200211 2.09	04-Mar-20	00:15:52
45	45 200303P2-45	2000319-13 S-SB11-4.5-20200211 2.1	04-Mar-20	00:26:25
46	46 200303P2-46	IB	04-Mar-20	00:36:53
47	47 200303P2-47	ST200303P2-12 PFC CS3 20C0309	04-Mar-20	00:47:25
48	48 200303P2-48	IB	04-Mar-20	00:57:55
49	49 200303P2-49	2000319-14 S-SB10-02-20200211 2.11	04-Mar-20	01:08:24
50	50 200303P2-50	2000328-07 S-1DW-20200214 2.18	04-Mar-20	01:18:54
51	51 200303P2-51	B0B0261-BLK1 Method Blank 2	04-Mar-20	01:29:26
52	52 200303P2-52	B0B0261-BS1 OPR 2	04-Mar-20	01:39:55
53	53 200303P2-53	B0B0261-MS1 Matrix Spike 2.52	04-Mar-20	01:50:26
54	54 200303P2-54	B0B0261-MSD1 Matrix Spike Dup 2.55	04-Mar-20	02:00:57
55	55 200303P2-55	2000373-04 TN-SW01-20200220 2.55	04-Mar-20	02:11:27
56	56 200303P2-56	B0B0123-BSD1 LCSD 0.25	04-Mar-20	02:21:58
57	57 200303P2-57	B0B0214-BLK1 Method Blank 0.25	04-Mar-20	02:32:27
58	58 200303P2-58	B0B0214-BS1 OPR 0.25	04-Mar-20	02:42:58
59	59 200303P2-59	B0B0214-BSD1 LCSD 0.25	04-Mar-20	02:53:28
60	60 200303P2-60	2000387-01 Influent 0.11386	04-Mar-20	03:03:59
61	61 200303P2-61	2000388-01 Plant Boiler/Tower Chemicals 0.25431	04-Mar-20	03:14:27
62	62 200303P2-62	2000389-01 Melissa Walker / 90 Powers Rd.,No.Haver	04-Mar-20	03:25:00
63	63 200303P2-63	2000315-01@5X S-SB06-00-20200210 2.29	04-Mar-20	03:35:30
64	64 200303P2-64	2000354-08@40X S9MW15-20Q1 0.25813	04-Mar-20	03:45:58
65	65 200303P2-65	2000353-10@30X S9MW68L1-20Q1 0.25186	04-Mar-20	03:56:31
66	66 200303P2-66	B0B0211-BS1 OPR 0.25	04-Mar-20	04:06:59
67	67 200303P2-67	IB	04-Mar-20	04:17:31
68	68 200303P2-68	ST200303P2-13 PFC CS3 20C0309	04-Mar-20	04:28:02

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 12:09:06 Pacific Standard Time
Printed: Wednesday, March 04, 2020 12:09:27 Pacific Standard Time

Compound name: PFBA

	# Name	ID	Acq.Date	Acq.Time
69	69 200303P2-69	IB	04-Mar-20	04:38:30
70	70 200303P2-70	PFC NS SCP QC (FTCAs)	04-Mar-20	04:49:02

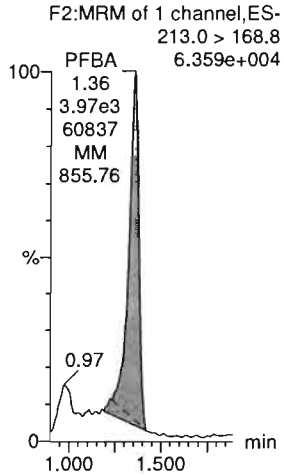
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

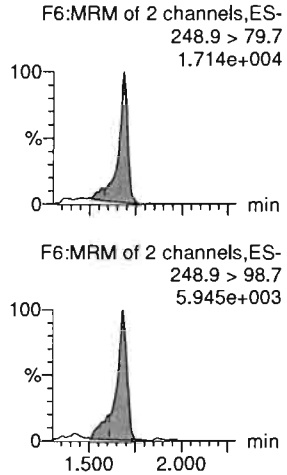
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

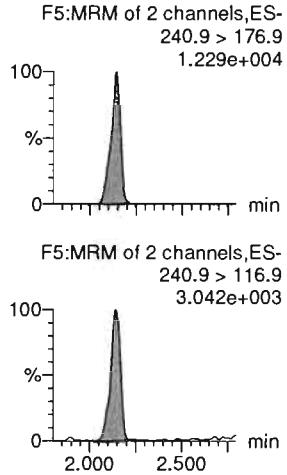
PFBA



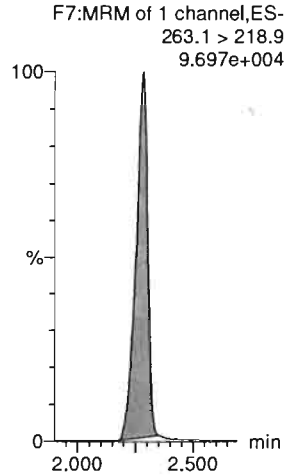
PFPrS



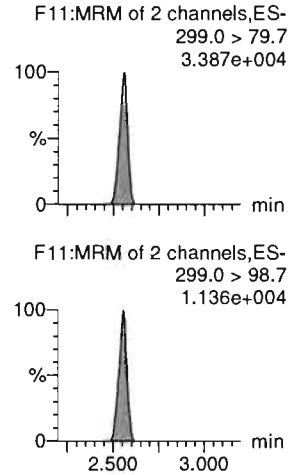
3:3 FTCA



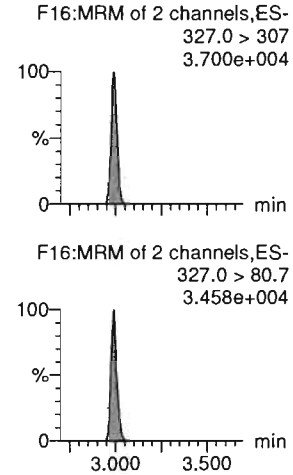
PFPeA



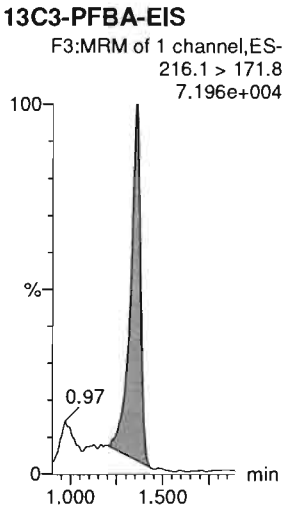
PFBS



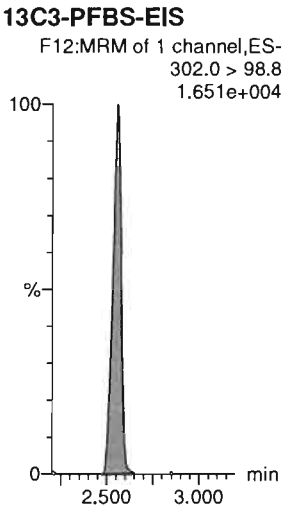
4:2 FTS



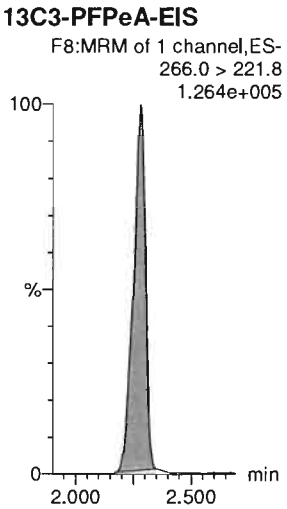
13C3-PFBA-EIS



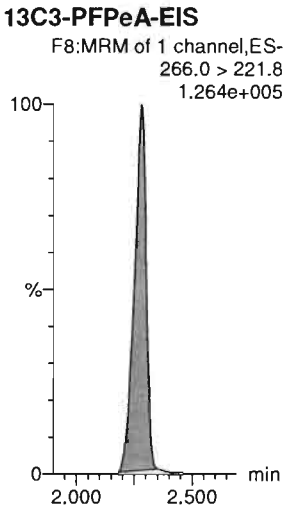
13C3-PFBS-EIS



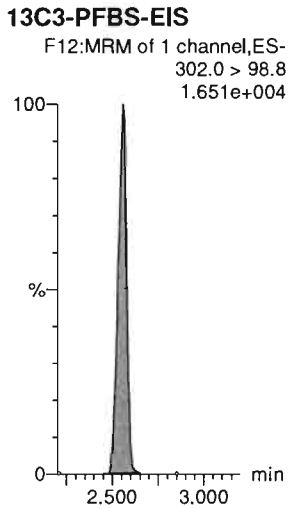
13C3-PFPeA-EIS



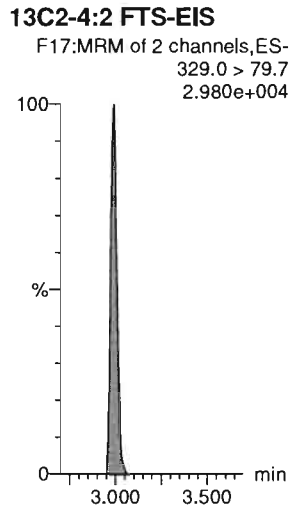
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

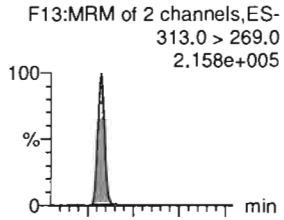


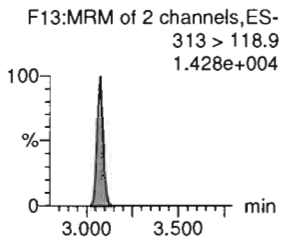
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

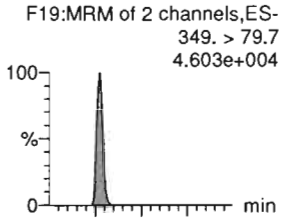
Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

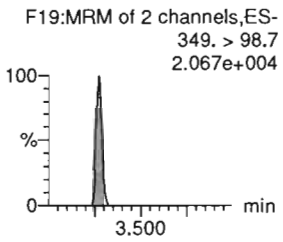
PFHxA



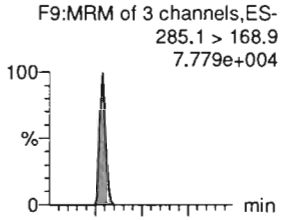


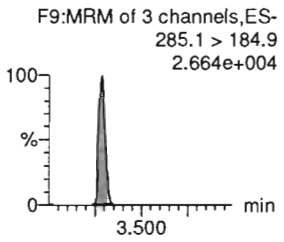
PFPeS



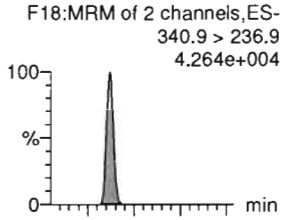


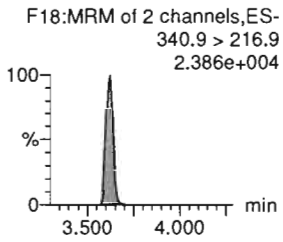
HFPO-DA



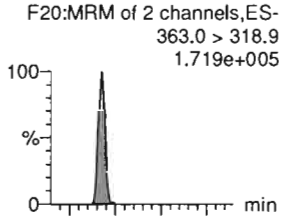


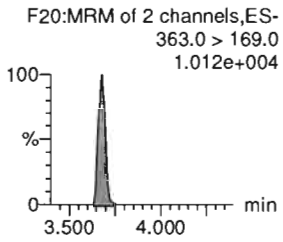
5:3 FTCA



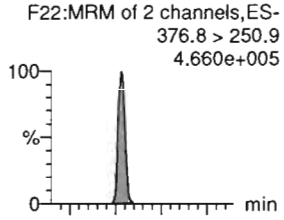


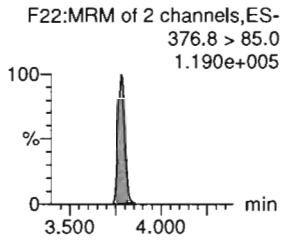
PFHpA



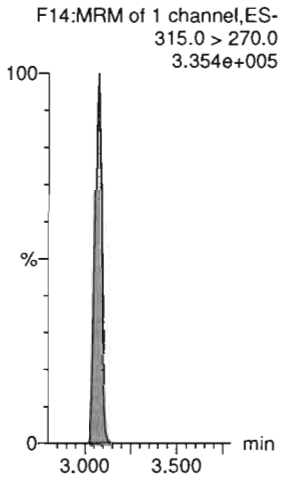


ADONA

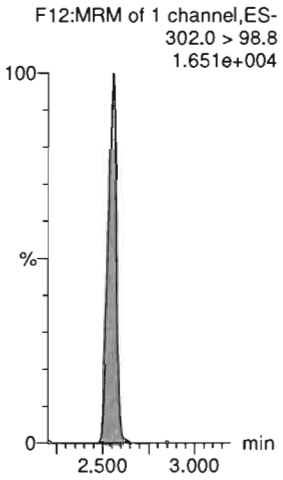




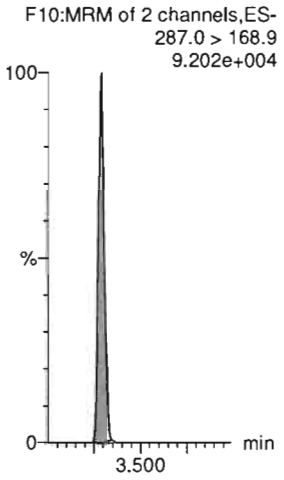
13C2-PFHxA-EIS



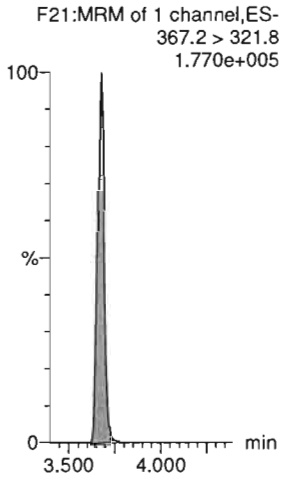
13C3-PFBS-EIS



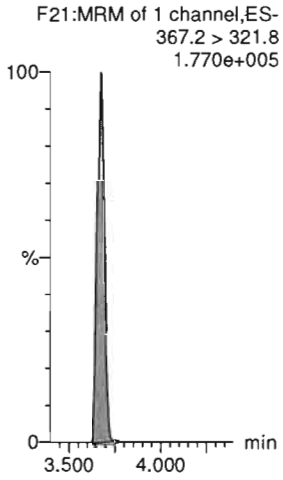
13C3-HFPO-DA-EIS



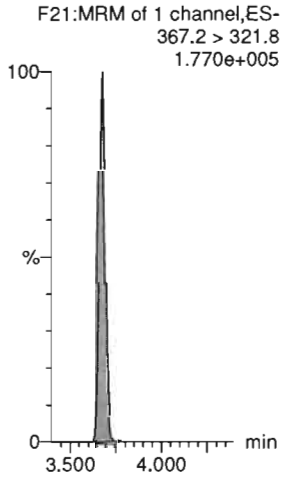
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

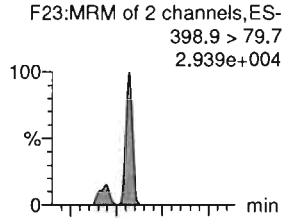


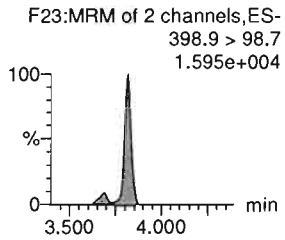
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

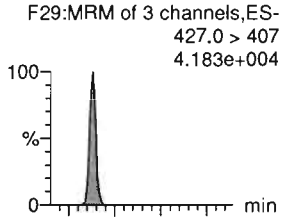
Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

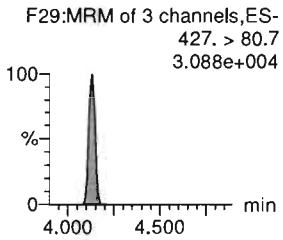
L-PFHxS



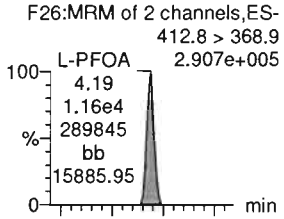


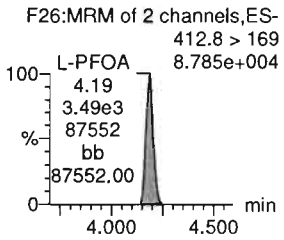
6:2 FTS



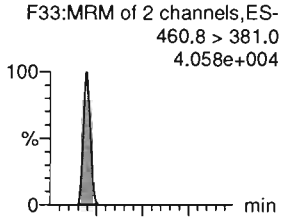


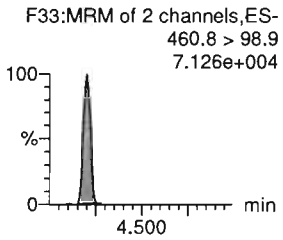
L-PFOA



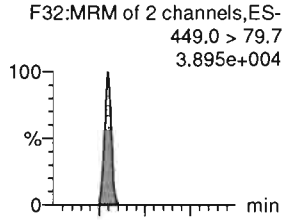


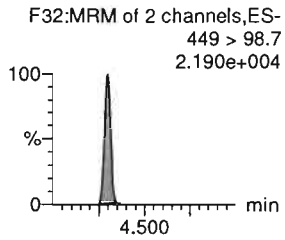
PFEChS



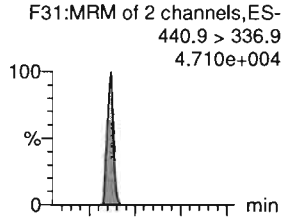


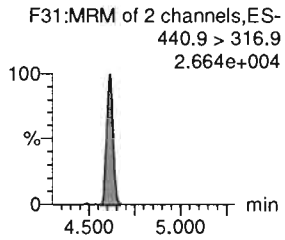
PFHpS



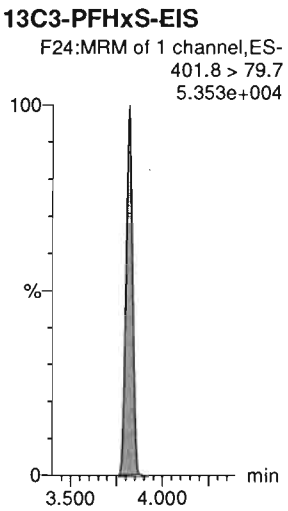


7:3 FTCA

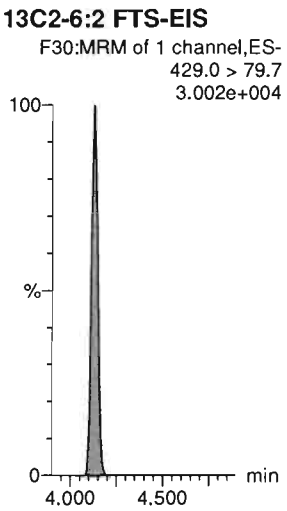




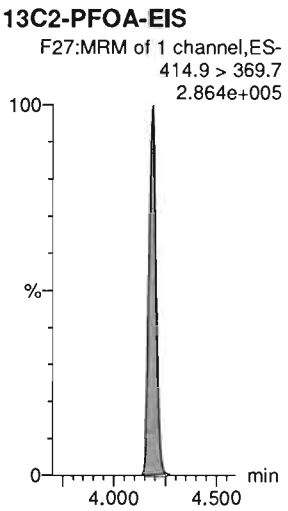
13C3-PFHxS-EIS



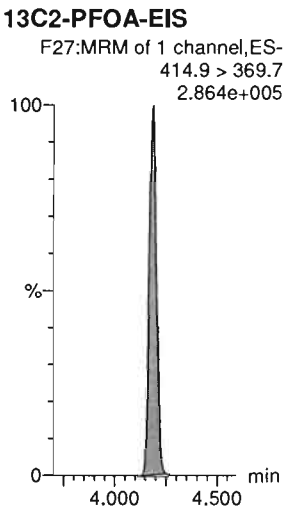
13C2-6:2 FTS-EIS



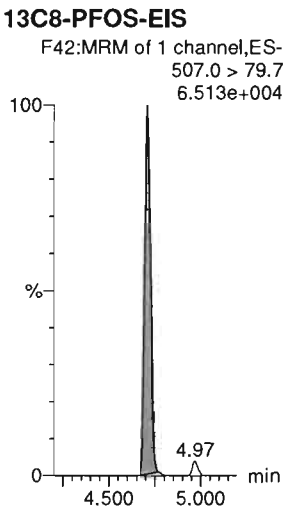
13C2-PFOA-EIS



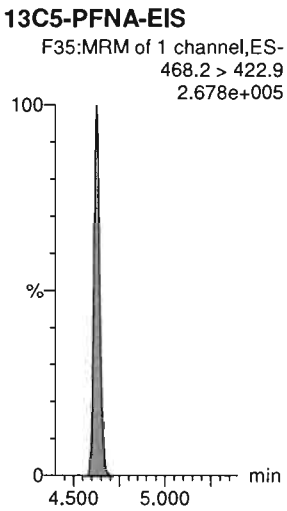
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

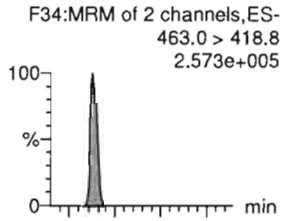


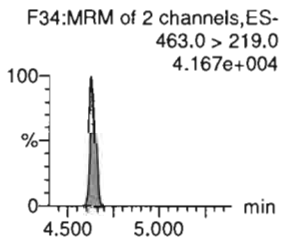
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

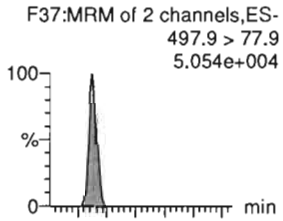
Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

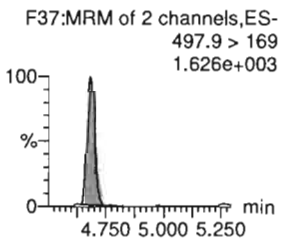
PFNA



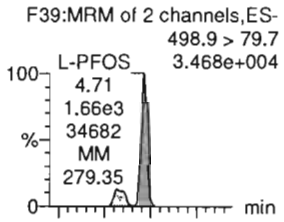


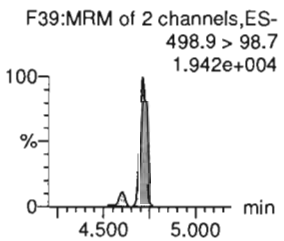
PFOSA



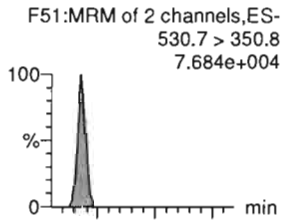


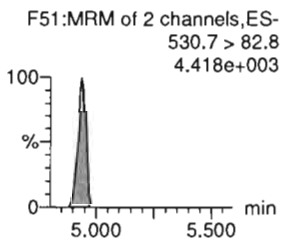
L-PFOS



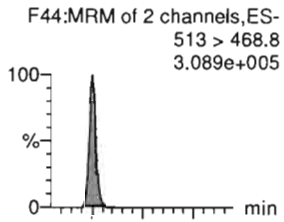


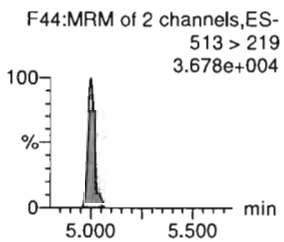
9Cl-PF30NS



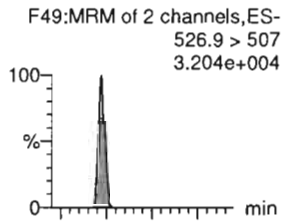


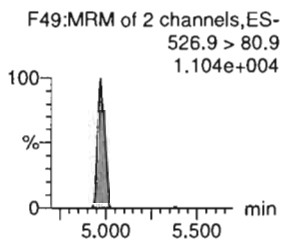
PFDA



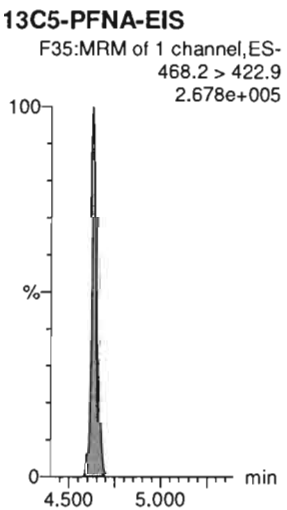


8:2 FTS

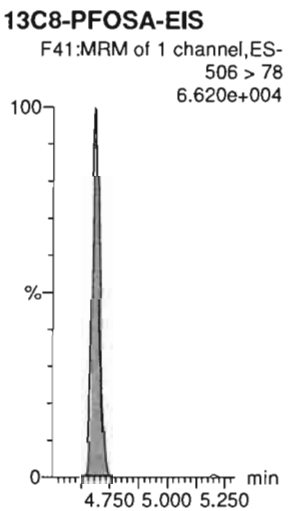




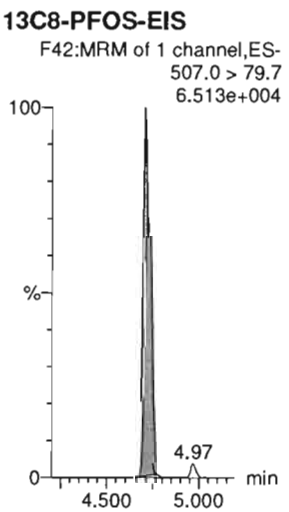
13C5-PFNA-EIS



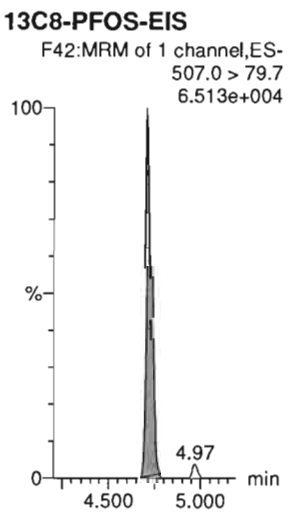
13C8-PFOSA-EIS



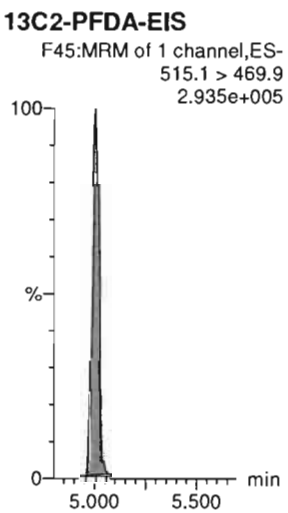
13C8-PFOS-EIS



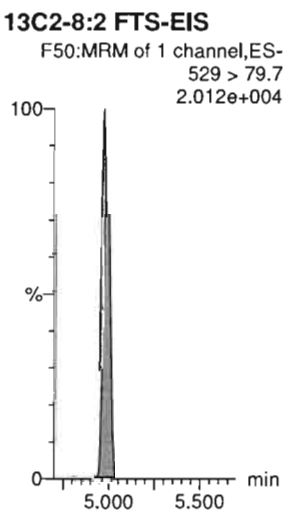
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

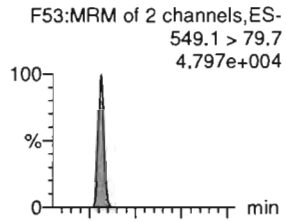


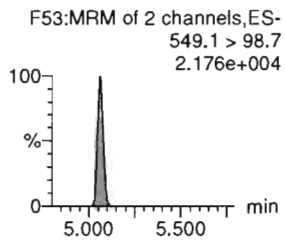
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

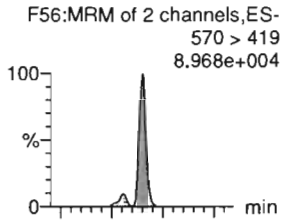
Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

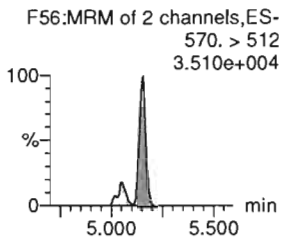
PFNS



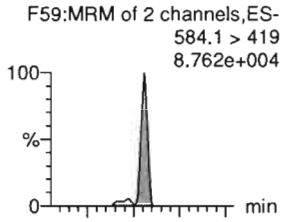


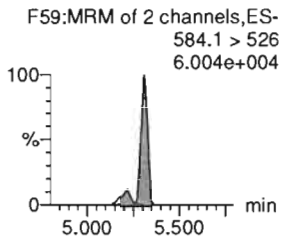
L-MeFOSAA



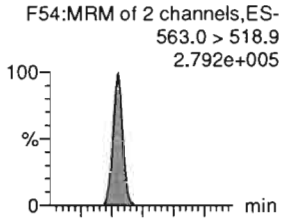


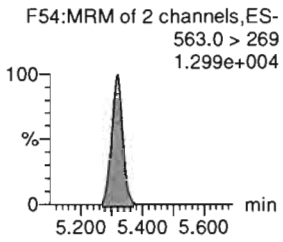
L-EtFOSAA



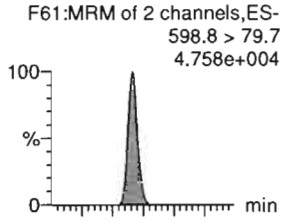


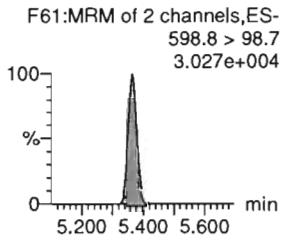
PFUdA



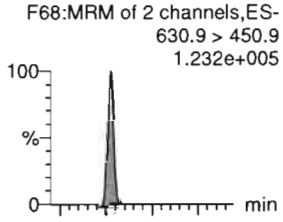


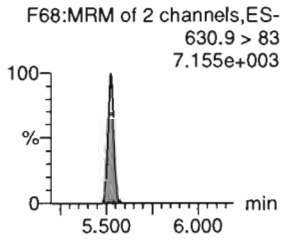
PFDS



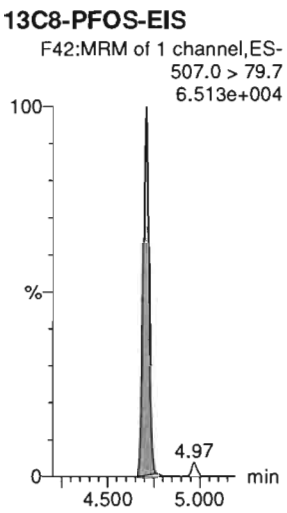


11Cl-PF30UdS

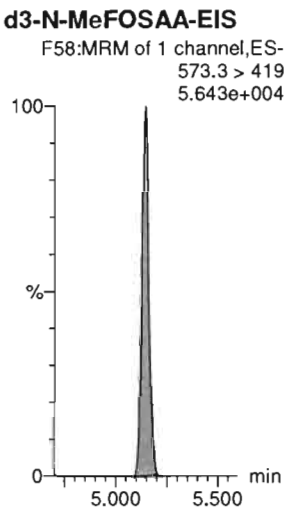




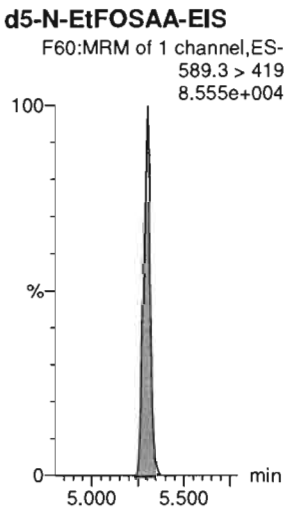
13C8-PFOS-EIS



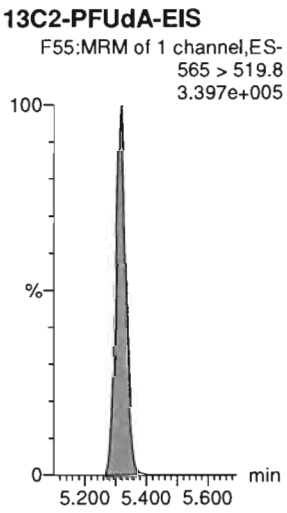
d3-N-MeFOSAA-EIS



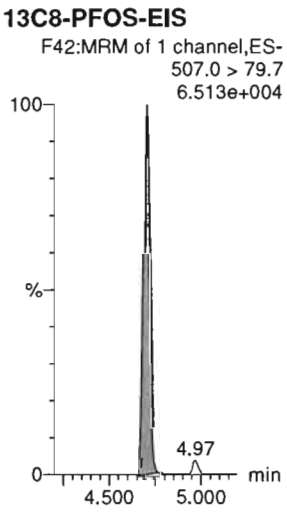
d5-N-EtFOSAA-EIS



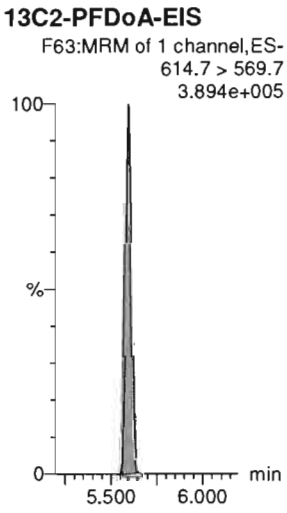
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

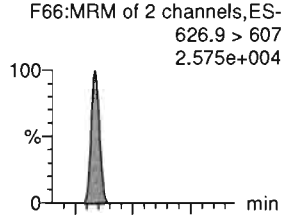


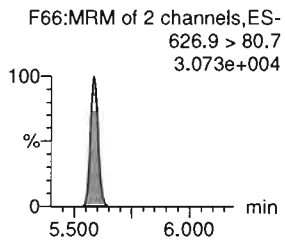
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

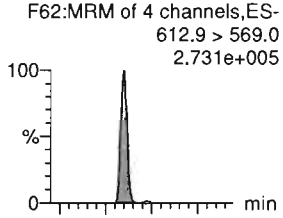
Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

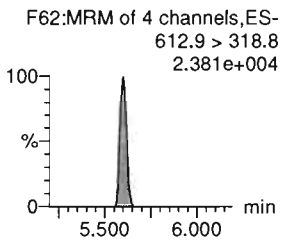
10:2 FTS



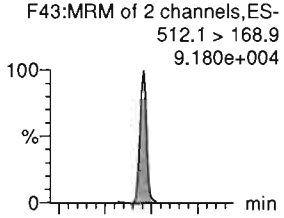


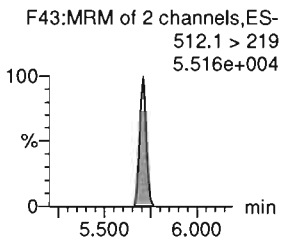
PFDoA



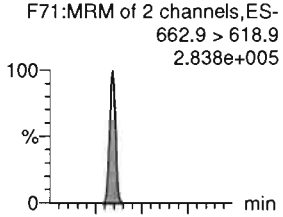


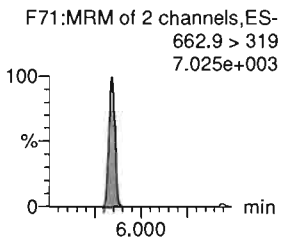
N-MeFOSA



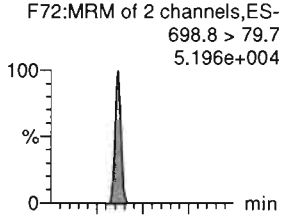


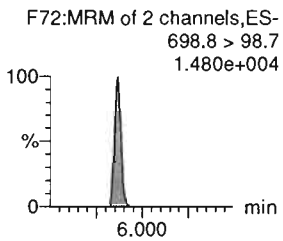
PFTrDA



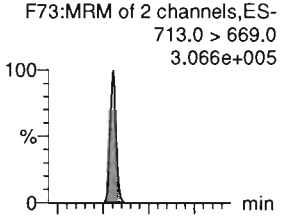


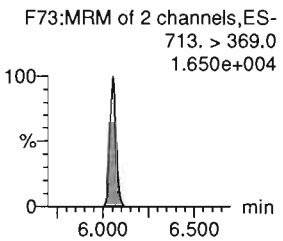
PFDoS



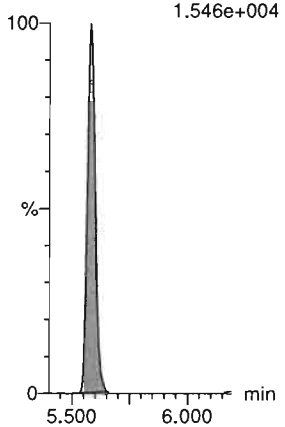


PFTeDA

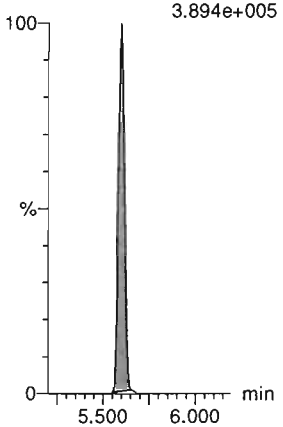




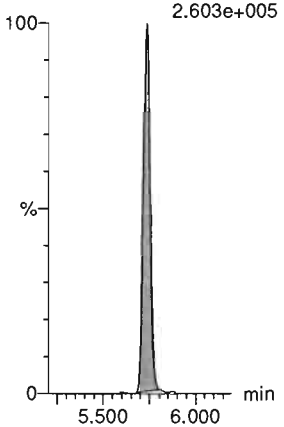
13C2-10:2 FTS-EIS



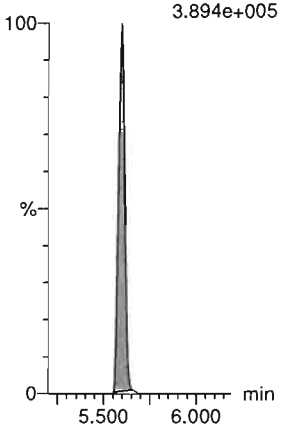
13C2-PFDoA-EIS



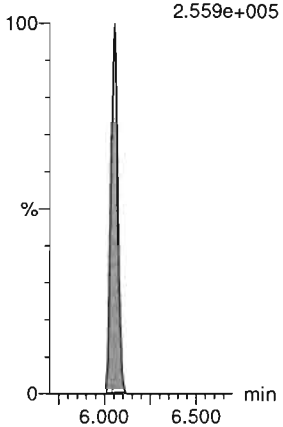
d3-N-MeFOSA-EIS



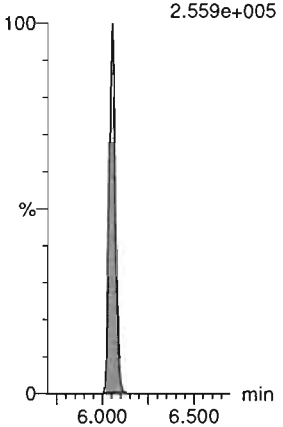
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

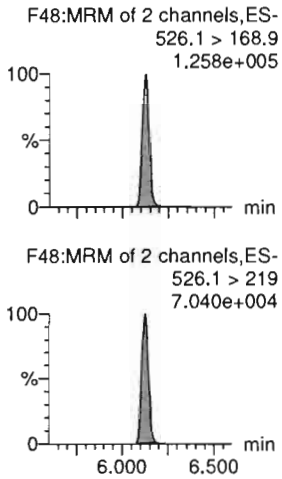


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

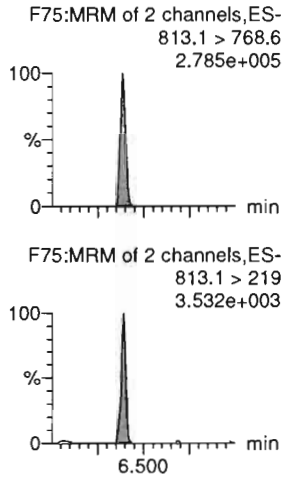
Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

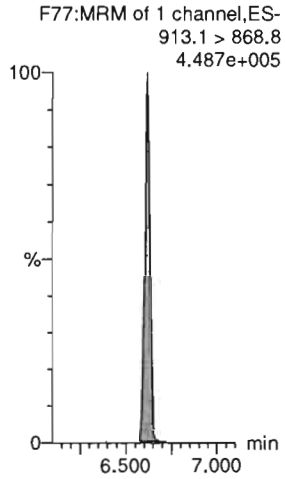
N-EtFOSA



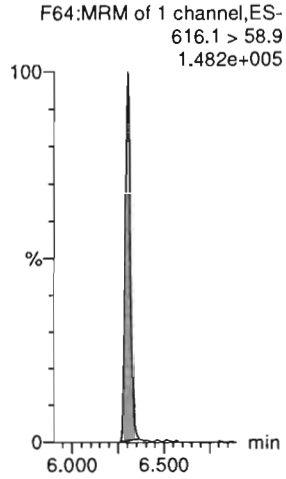
PFHxDA



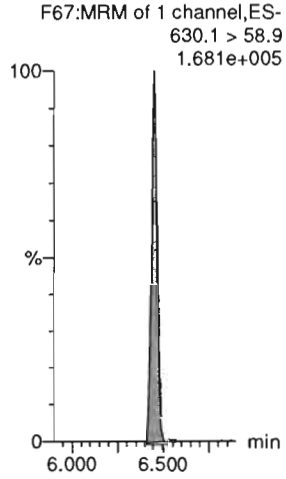
PFODA



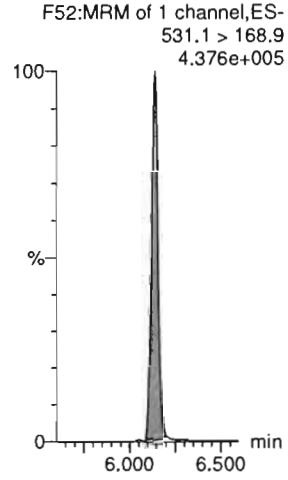
N-MeFOSE



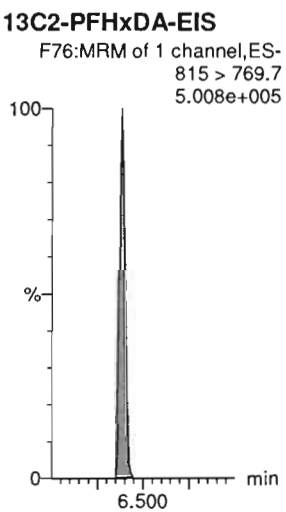
N-EtFOSE



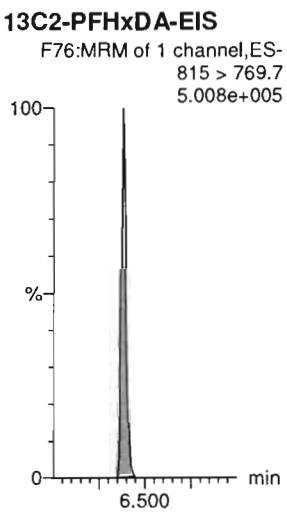
d5-N-ETFOSA-EIS



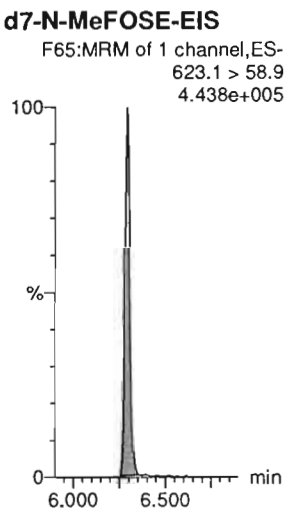
13C2-PFHxDA-EIS



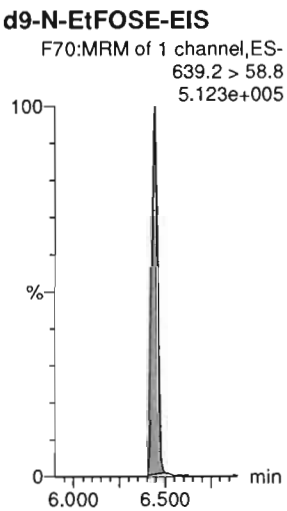
13C2-PFHxDA-EIS



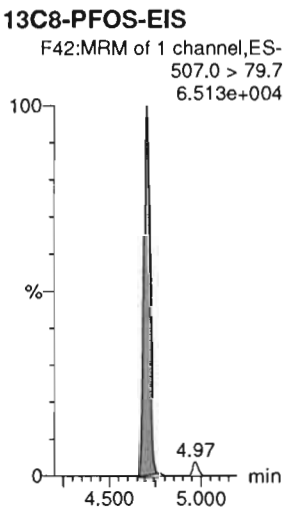
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS

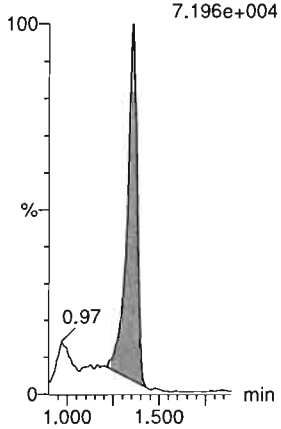


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

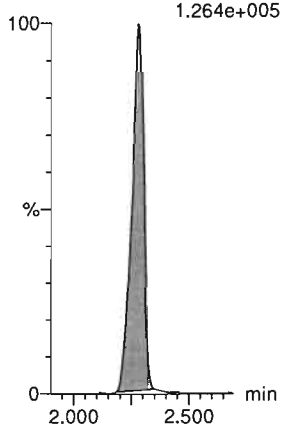
Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

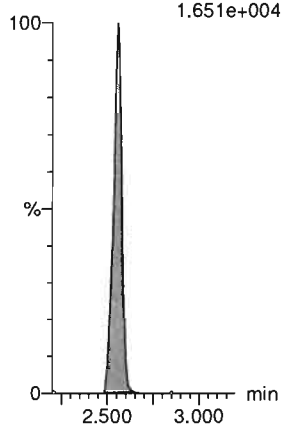
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
7.196e+004



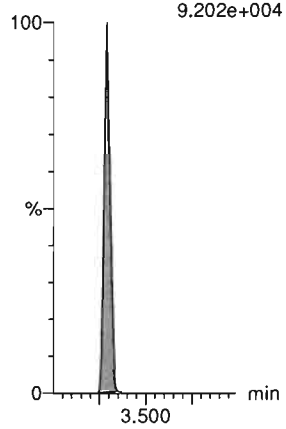
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.264e+005



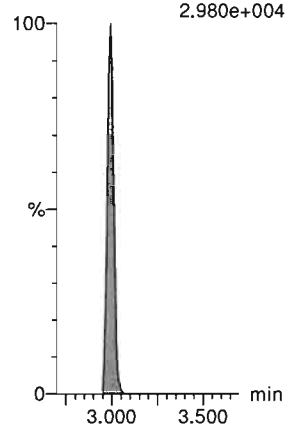
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.651e+004



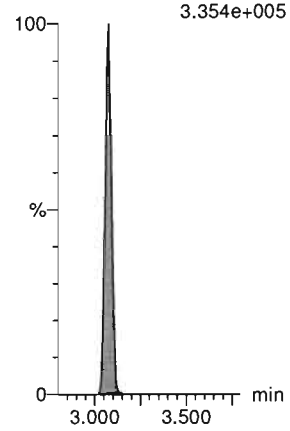
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.202e+004



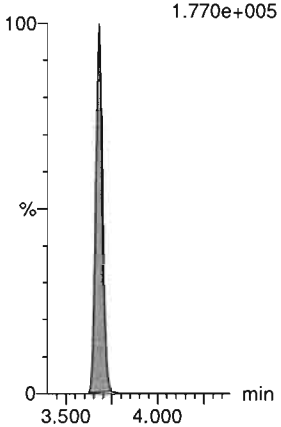
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.980e+004



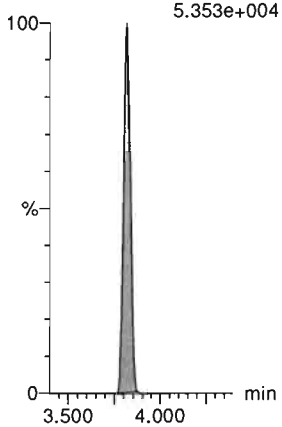
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.354e+005



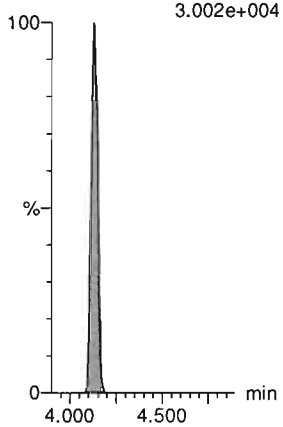
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.770e+005



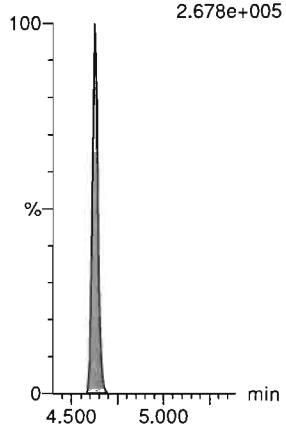
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
5.353e+004



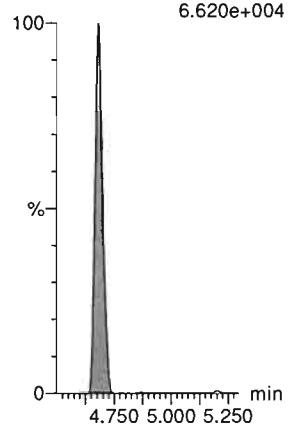
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.002e+004



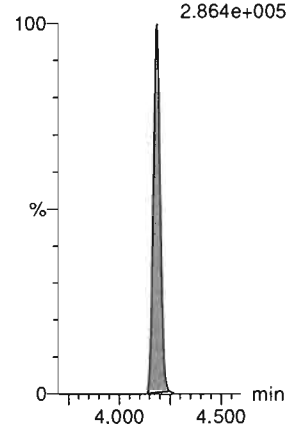
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.678e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
6.620e+004



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.864e+005

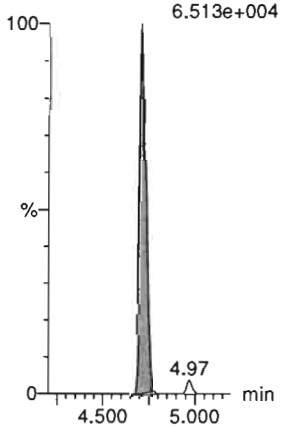


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

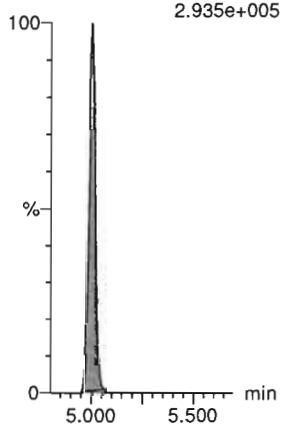
Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

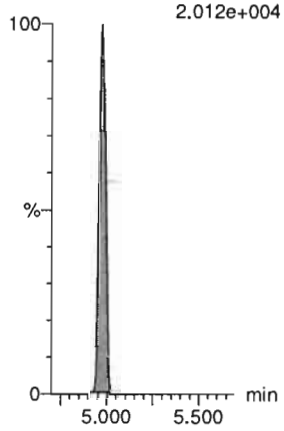
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.513e+004



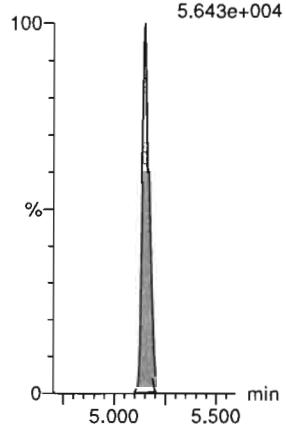
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.935e+005



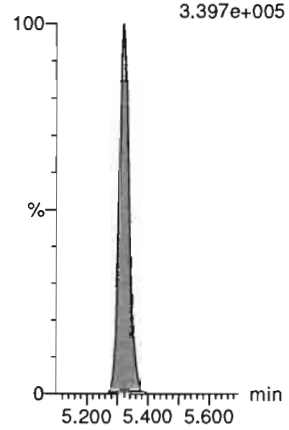
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.012e+004



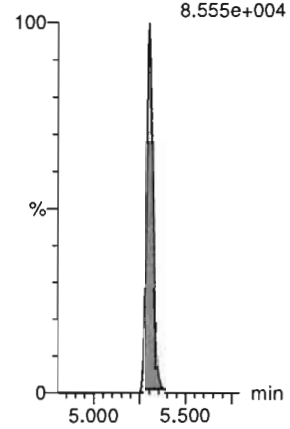
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
5.643e+004



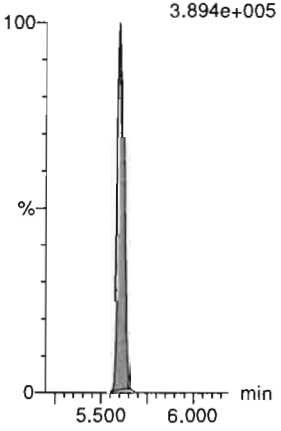
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.397e+005



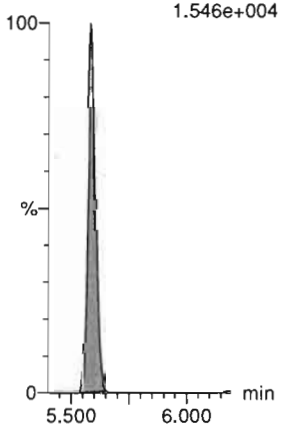
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.555e+004



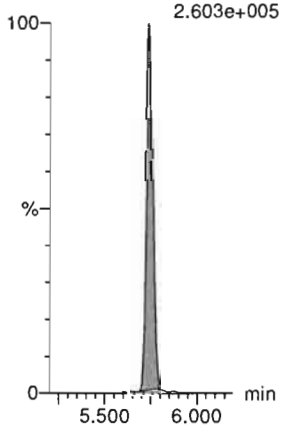
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.894e+005



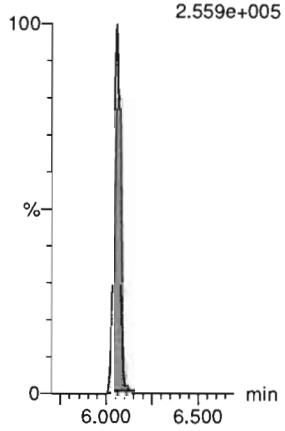
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.546e+004



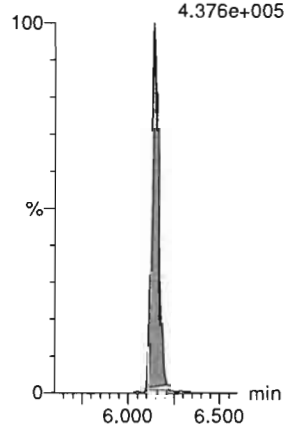
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.603e+005



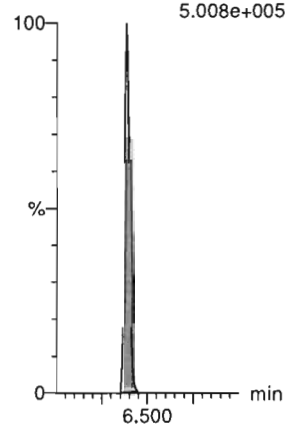
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.559e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.376e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.008e+005

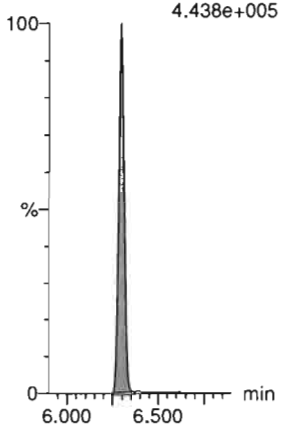


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-31.qld

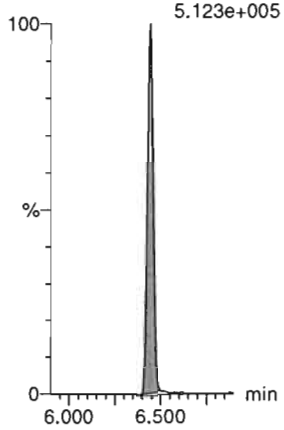
Last Altered: Wednesday, March 04, 2020 11:47:03 Pacific Standard Time
Printed: Wednesday, March 04, 2020 11:47:23 Pacific Standard Time

Name: 200303P2-31, Date: 03-Mar-2020, Time: 21:59:18, ID: ST200303P2-11 PFC CS3 20C0309, Description: PFC CS3 20B1106

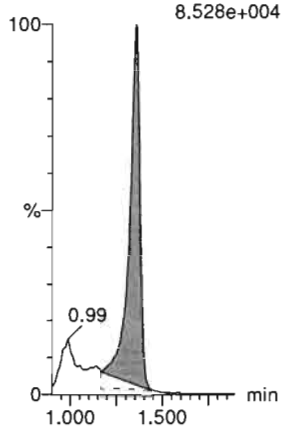
d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.438e+005



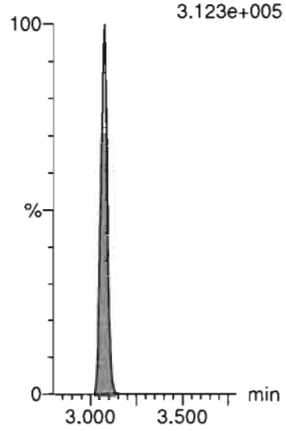
d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.123e+005



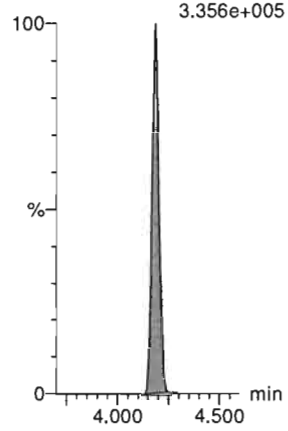
13C4-PFBA
F4:MRM of 1 channel,ES-
217.0 > 172.0
8.528e+004



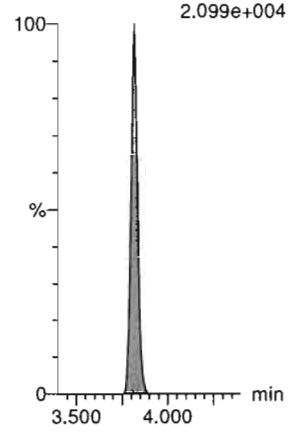
13C5-PFHxA
F15:MRM of 1 channel,ES-
318.0 > 272.9
3.123e+005



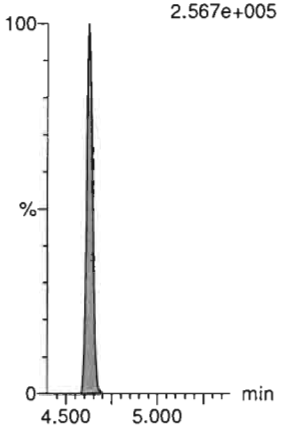
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
3.356e+005



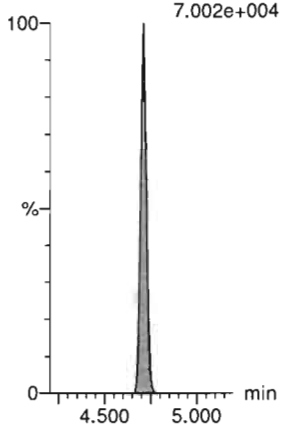
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
2.099e+004



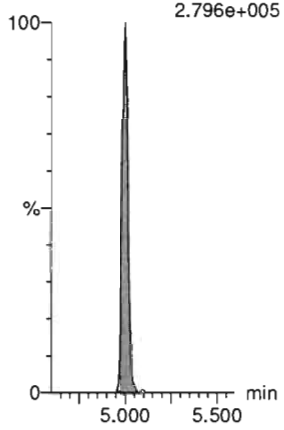
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
2.567e+005



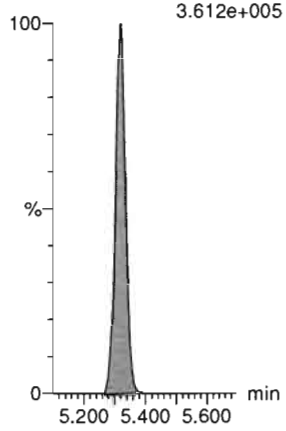
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.7
7.002e+004



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
2.796e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
3.612e+005



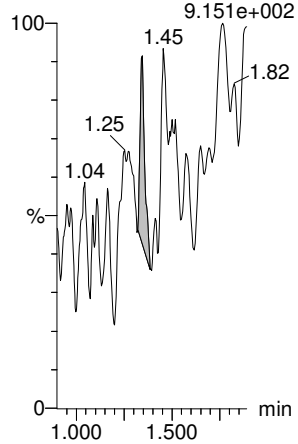
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

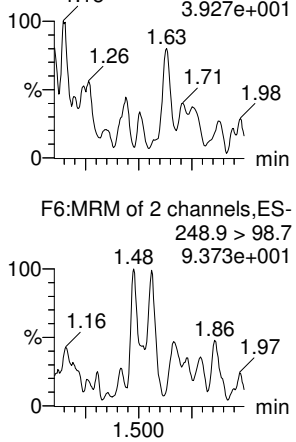
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

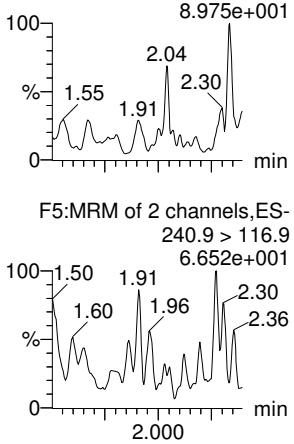
PFBA



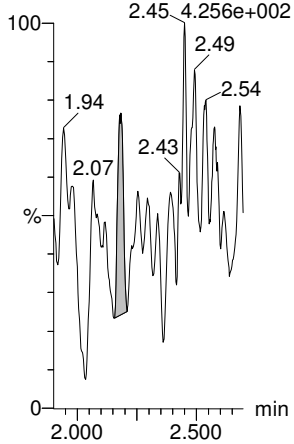
PFPrS



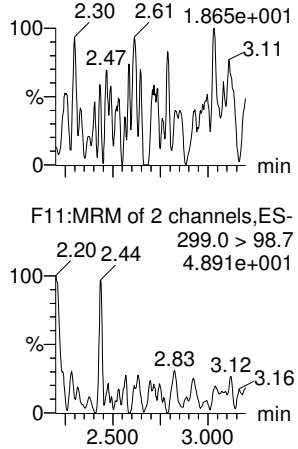
3:3 FTCA



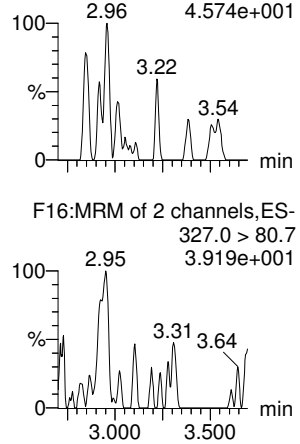
PFPeA



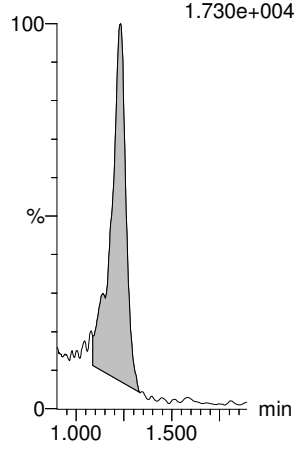
PFBS



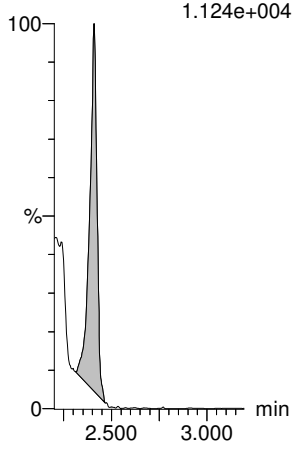
4:2 FTS



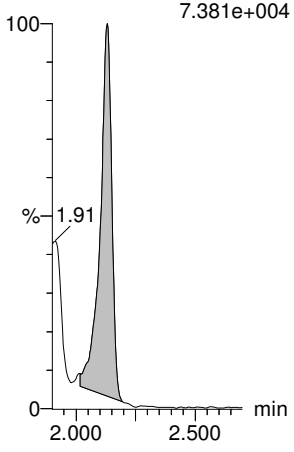
13C3-PFBA-EIS



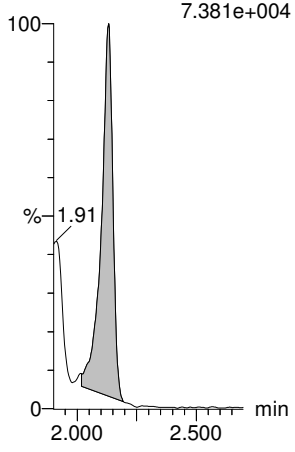
13C3-PFBS-EIS



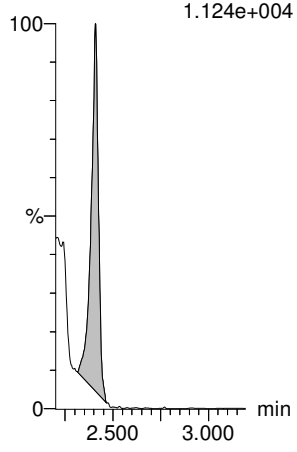
13C3-PFPeA-EIS



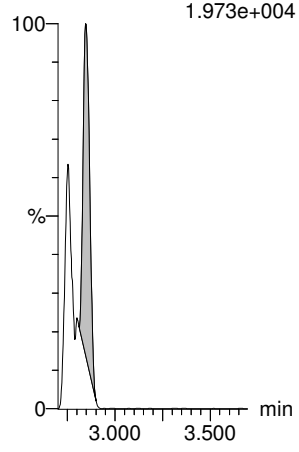
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

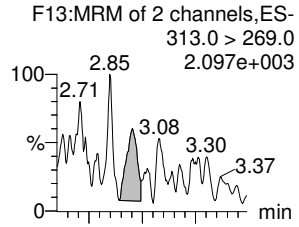


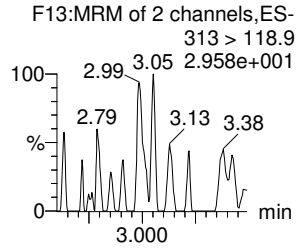
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

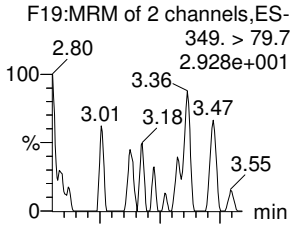
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

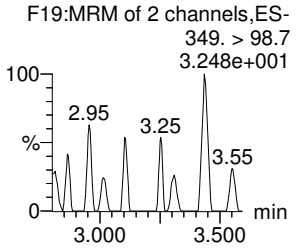
PFHxA



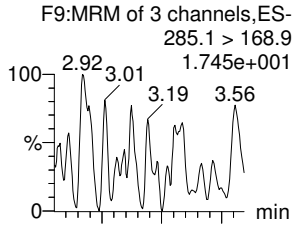


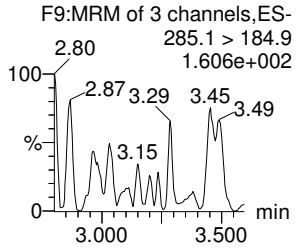
PFPeS



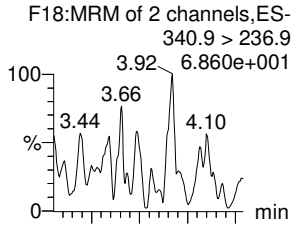


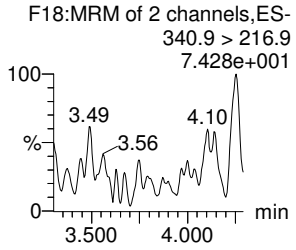
HFPO-DA



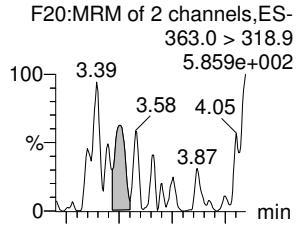


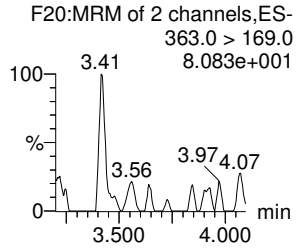
5:3 FTCA



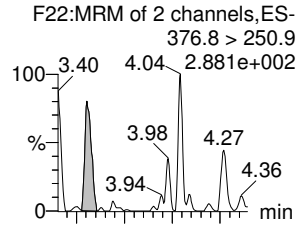


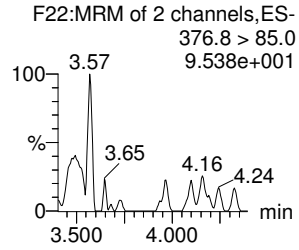
PFHpA



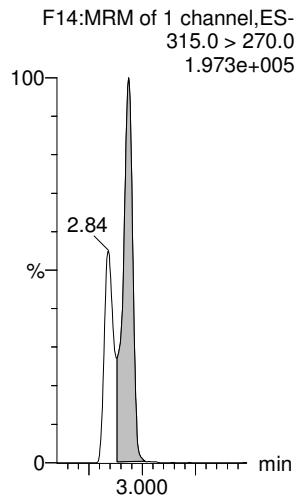


ADONA

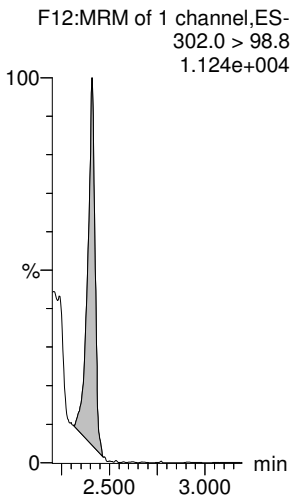




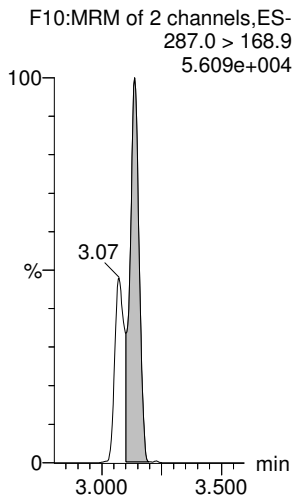
13C2-PFHxA-EIS



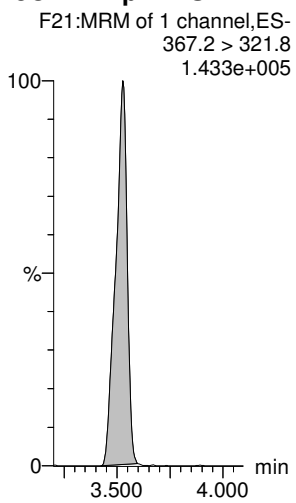
13C3-PFBS-EIS



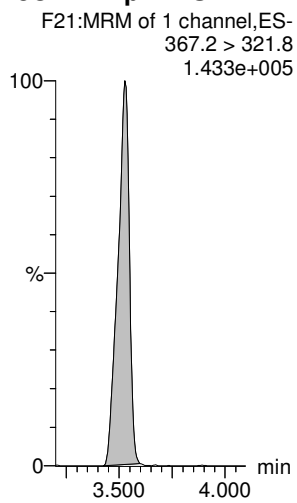
13C3-HFPO-DA-EIS



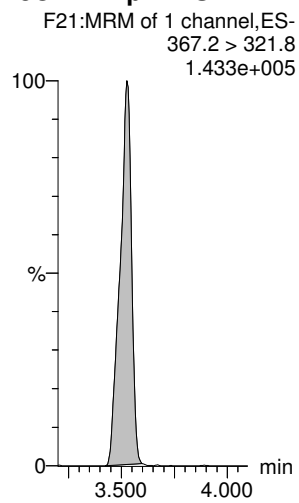
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

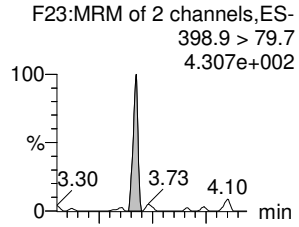


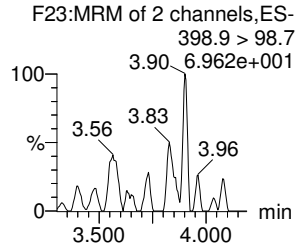
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

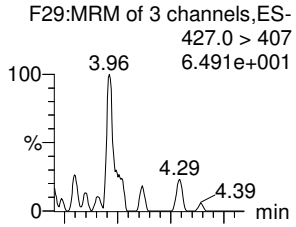
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

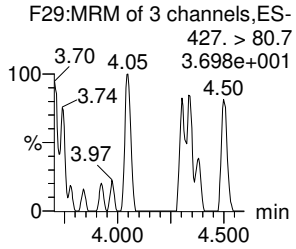
L-PFHxS



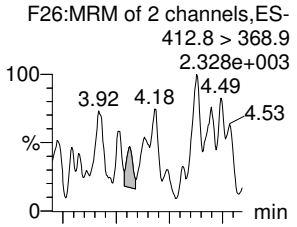


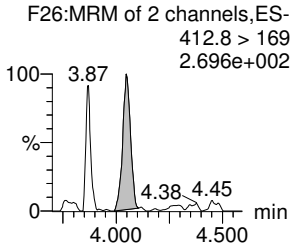
6:2 FTS



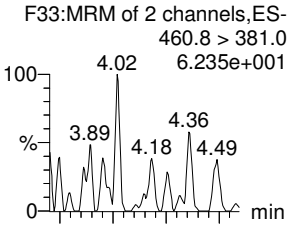


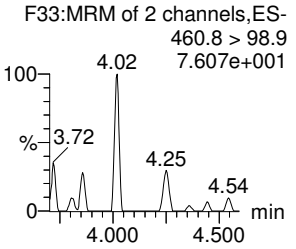
L-PFOA



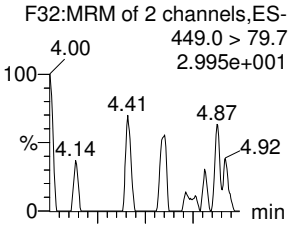


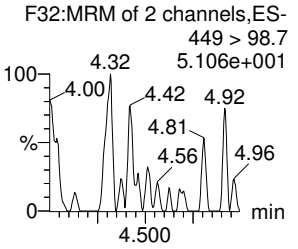
PFEChS



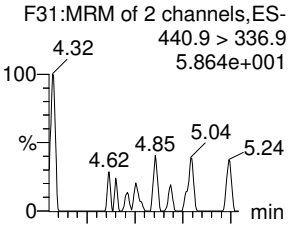


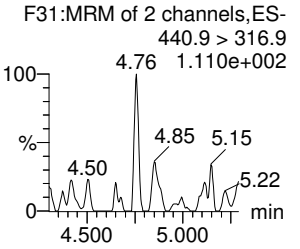
PFHpS



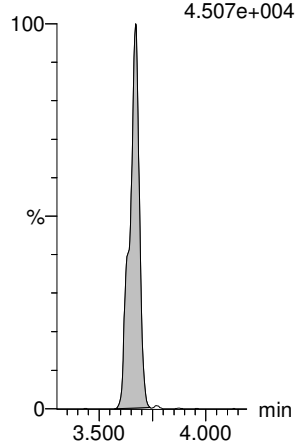


7:3 FTCA

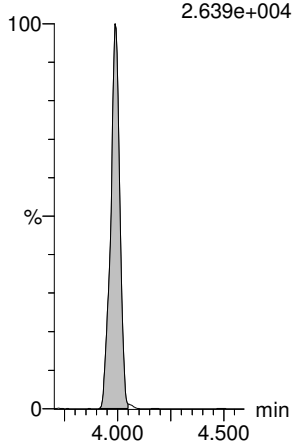




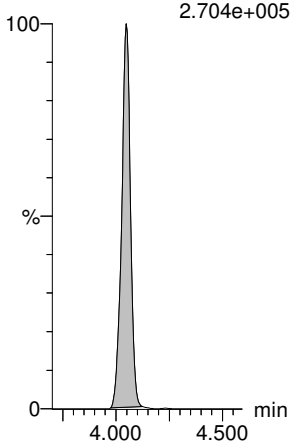
13C3-PFHxS-EIS



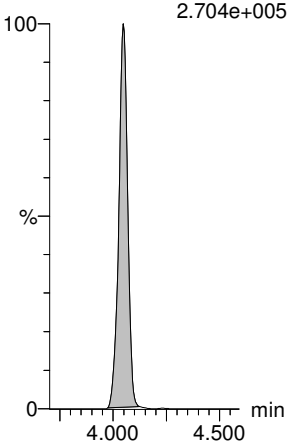
13C2-6:2 FTS-EIS



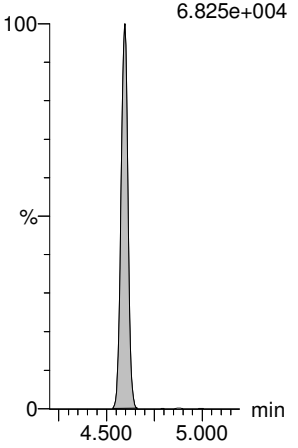
13C2-PFOA-EIS



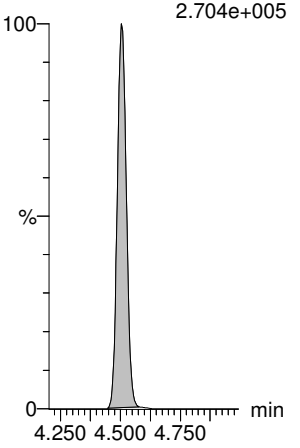
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

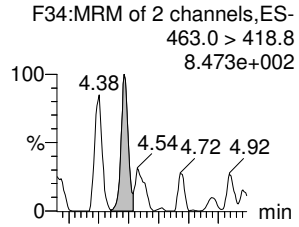


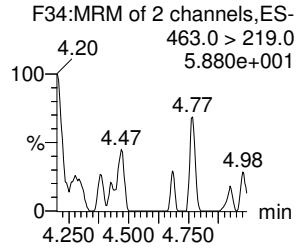
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

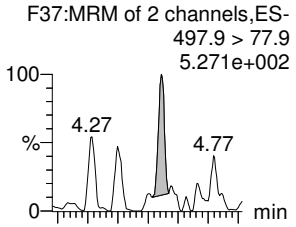
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

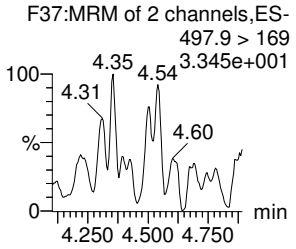
PFNA



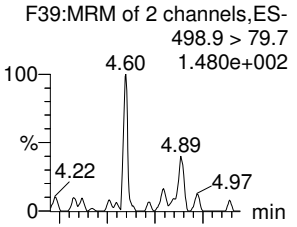


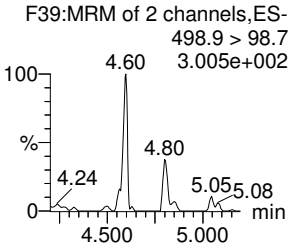
PFOSA



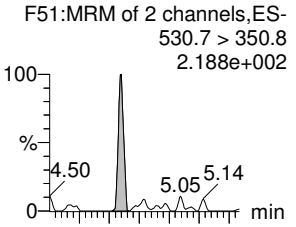


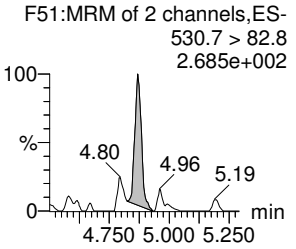
L-PFOS



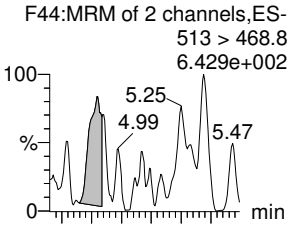


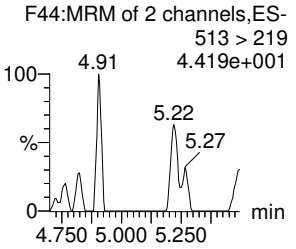
9Cl-PF30NS



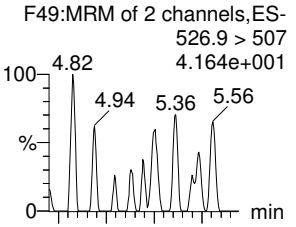


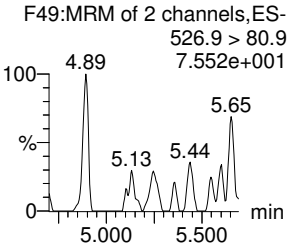
PFDA



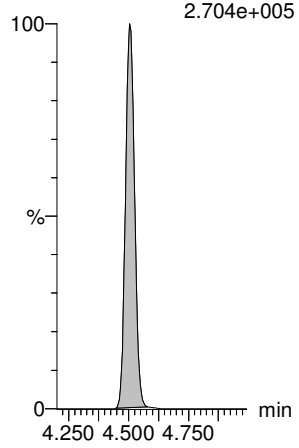


8:2 FTS

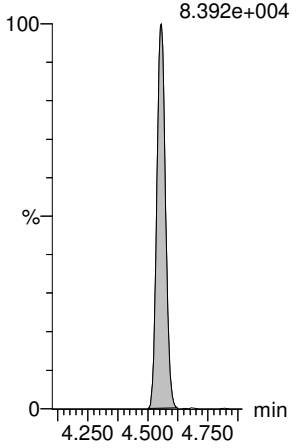




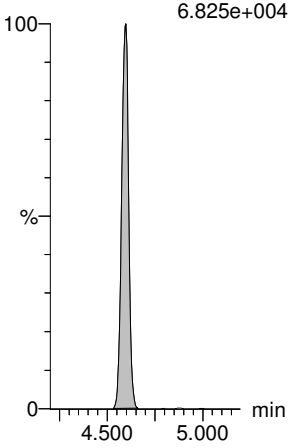
13C5-PFNA-EIS



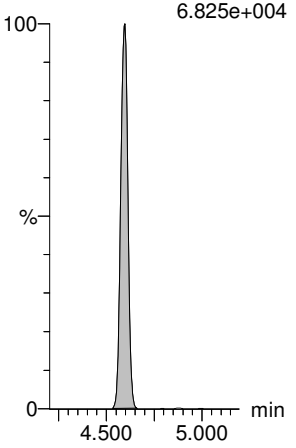
13C8-PFOSA-EIS



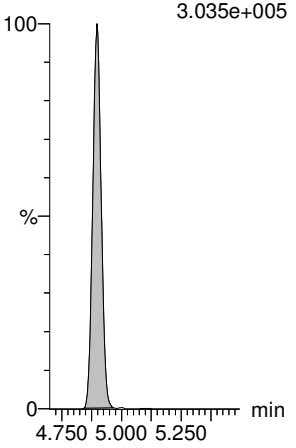
13C8-PFOS-EIS



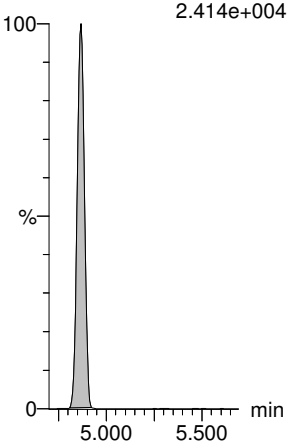
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

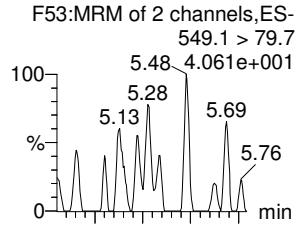


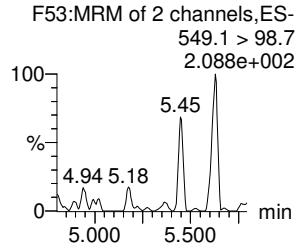
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

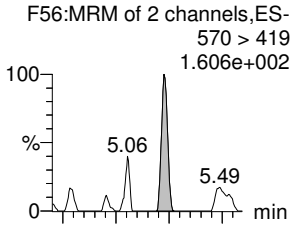
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

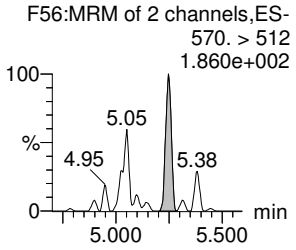
PFNS



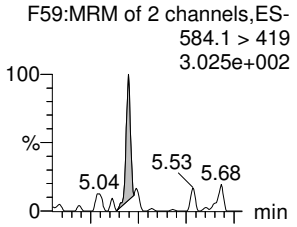


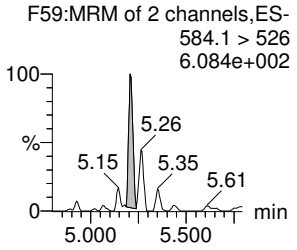
L-MeFOSAA



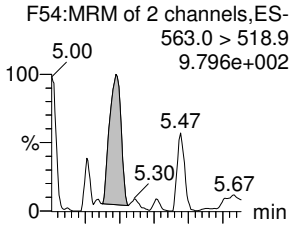


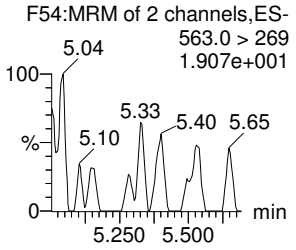
L-EtFOSAA



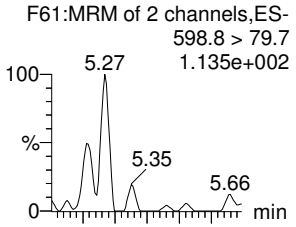


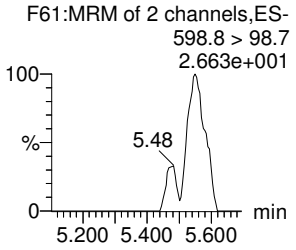
PFUdA



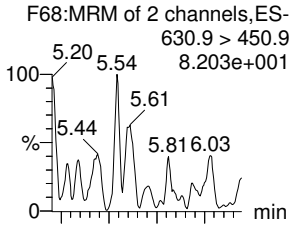


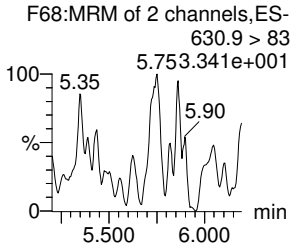
PFDS



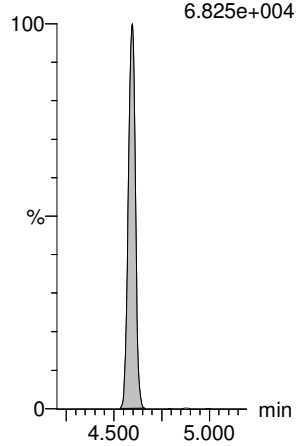


11Cl-PF30UdS

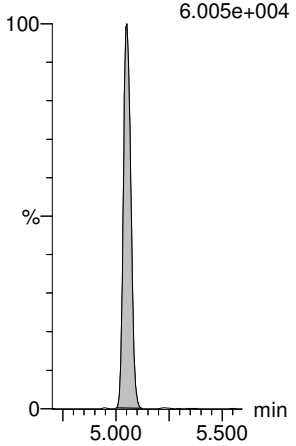




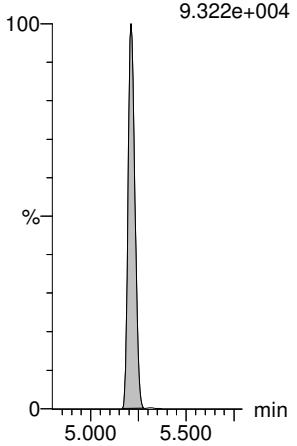
13C8-PFOS-EIS



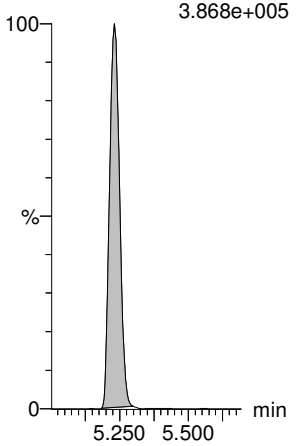
d3-N-MeFOSAA-EIS



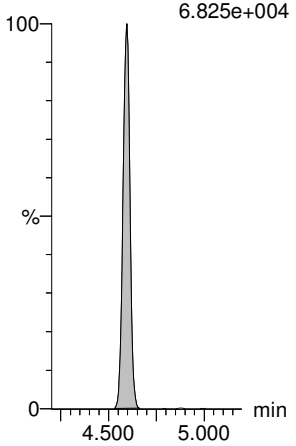
d5-N-EtFOSAA-EIS



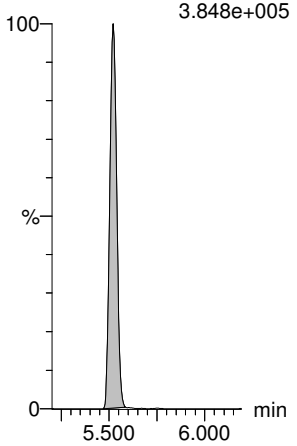
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

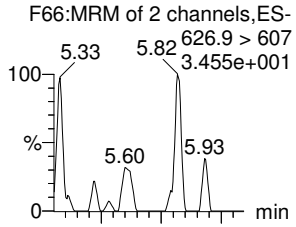


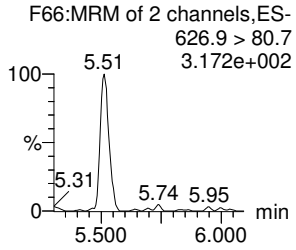
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

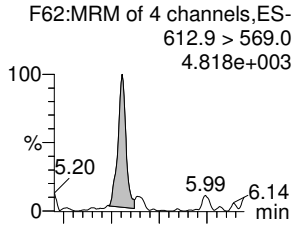
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

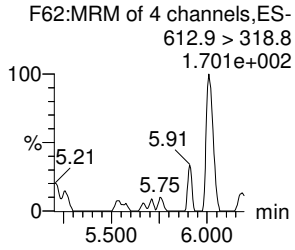
10:2 FTS



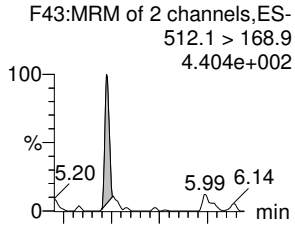


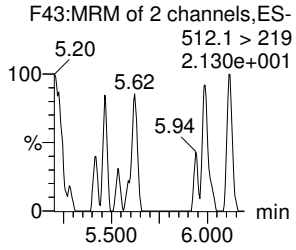
PFDoA



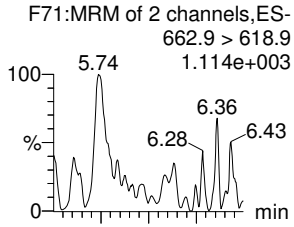


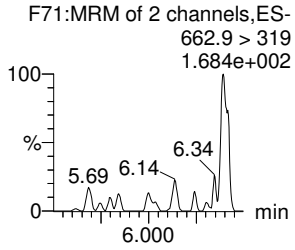
N-MeFOSA



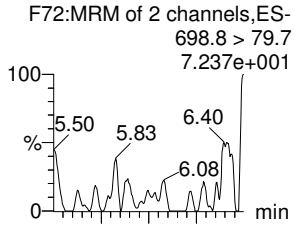


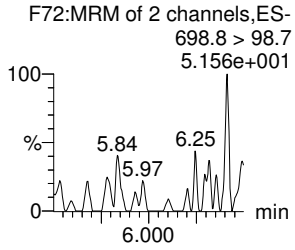
PFTrDA



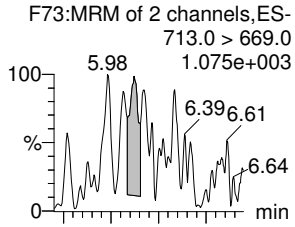


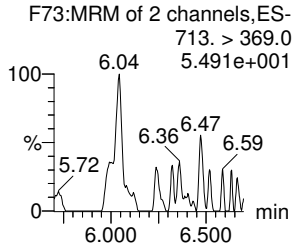
PFDoS



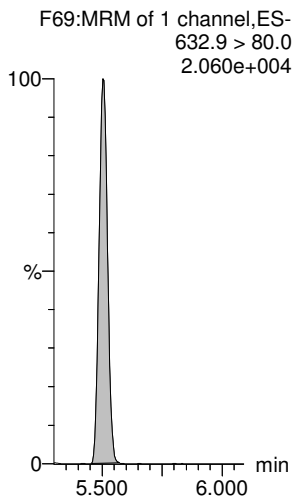


PFTeDA

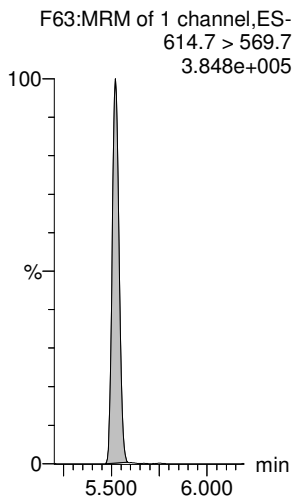




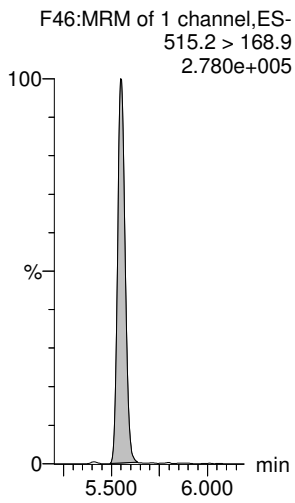
13C2-10:2 FTS-EIS



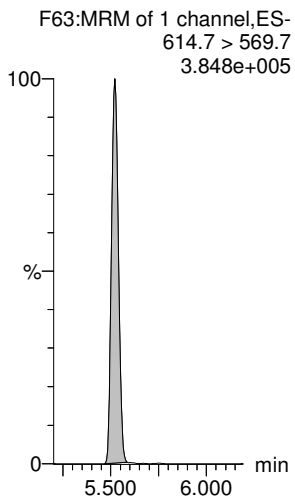
13C2-PFDoA-EIS



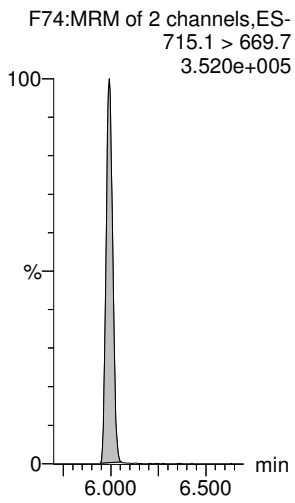
d3-N-MeFOSA-EIS



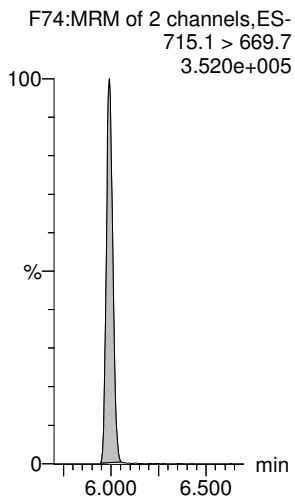
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

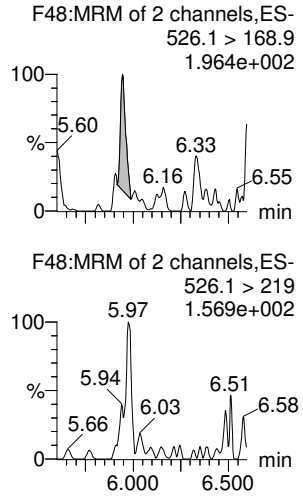


Dataset: Untitled

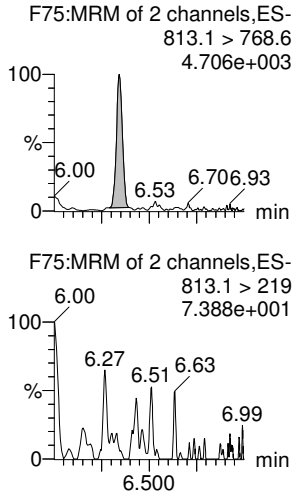
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

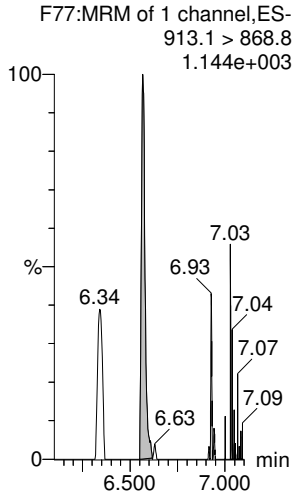
N-EtFOSA



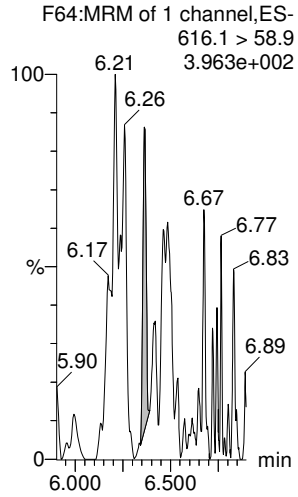
PFHxDA



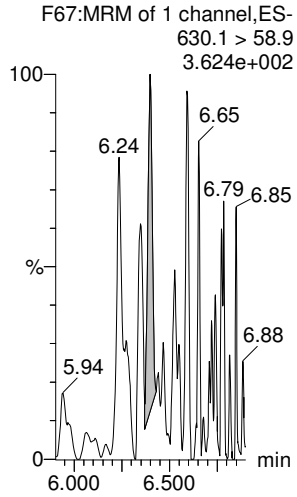
PFODA



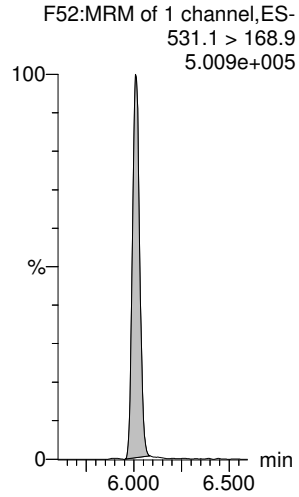
N-MeFOSE



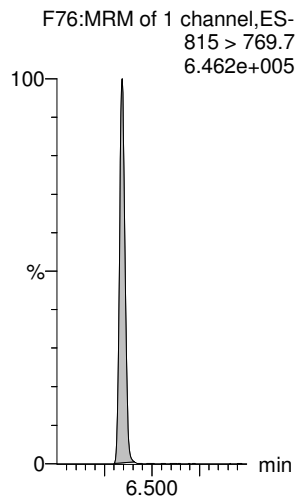
N-EtFOSE



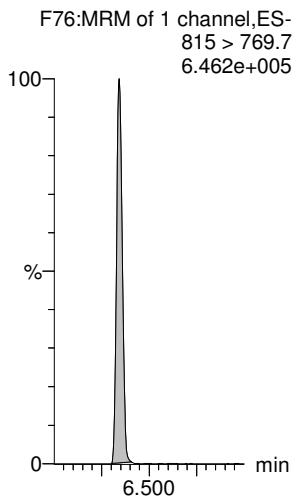
d5-N-ETFOSA-EIS



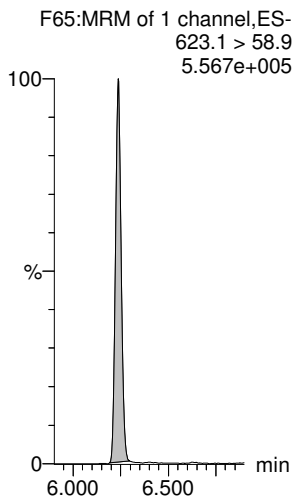
13C2-PFHxDA-EIS



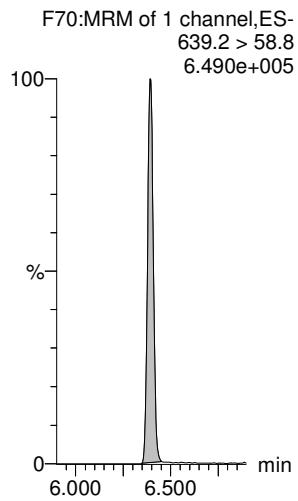
13C2-PFHxDA-EIS



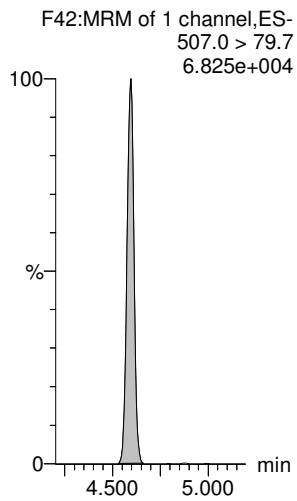
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS

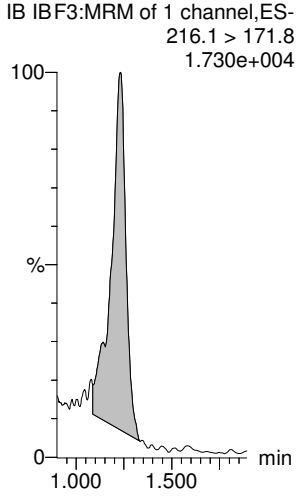


Dataset: Untitled

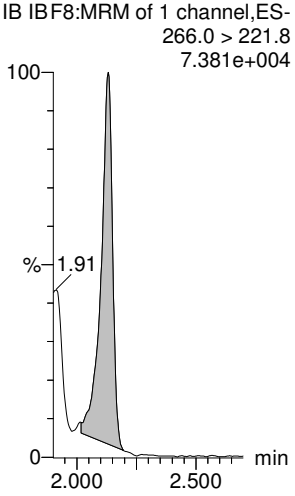
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

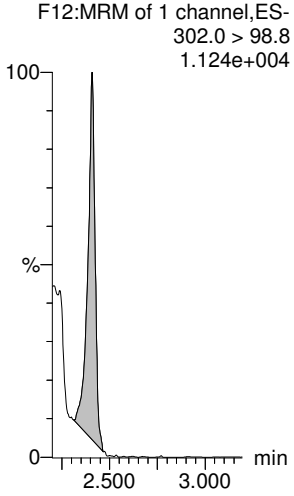
13C3-PFBA-RSD



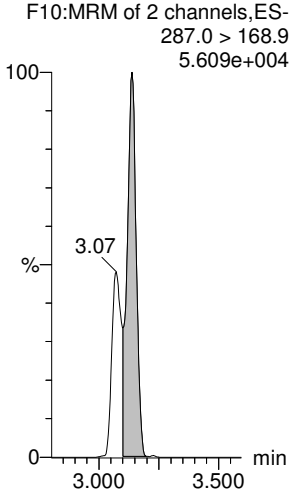
13C3-PFPeA-RSD



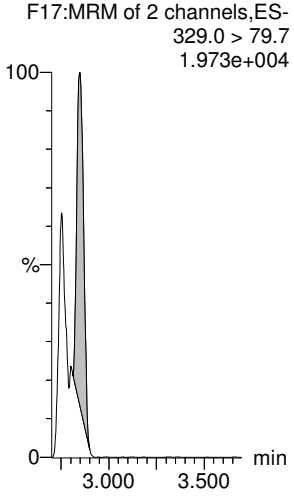
13C3-PFBS-RSD



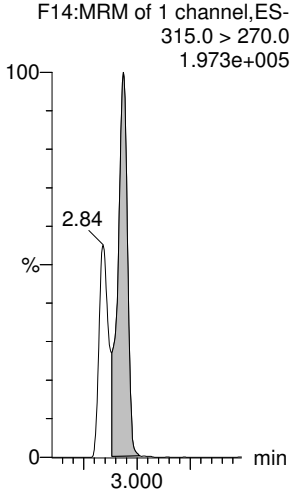
13C3-HFPO-DA-RSD



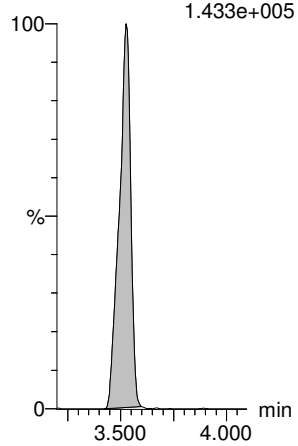
13C2-4:2 FTS-RSD



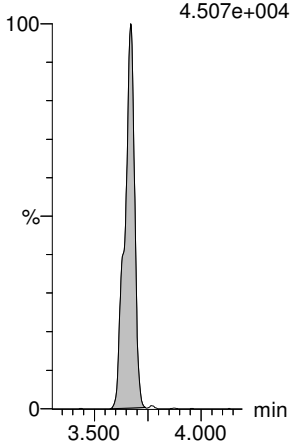
13C2-PFHxA-RSD



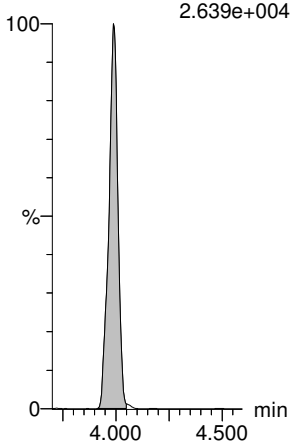
13C4-PFHpA-RSD



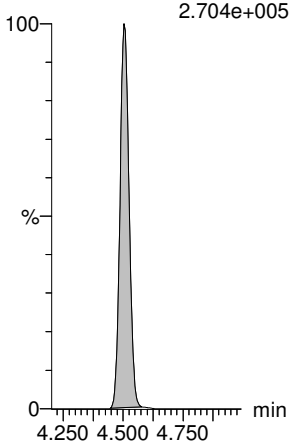
13C3-PFHxS-RSD



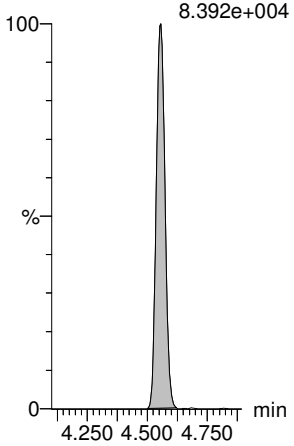
13C2-6:2 FTS-RSD



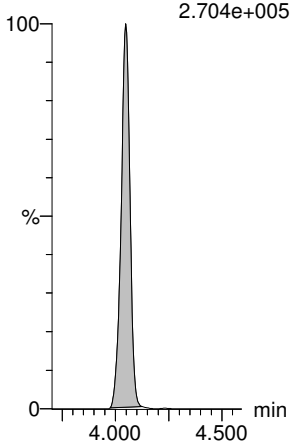
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD

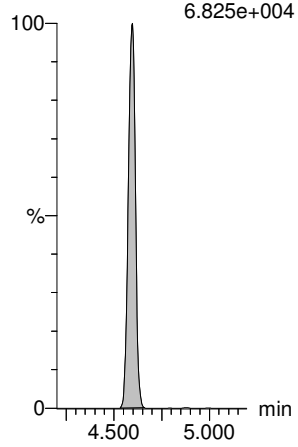


Dataset: Untitled

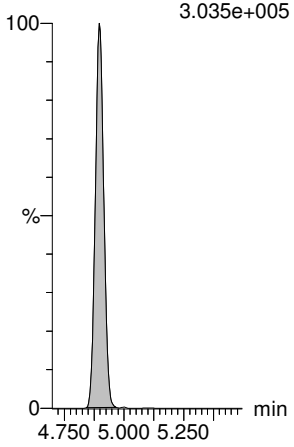
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

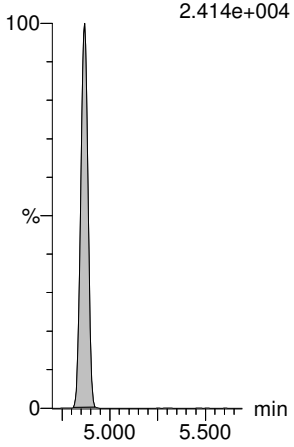
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.825e+004



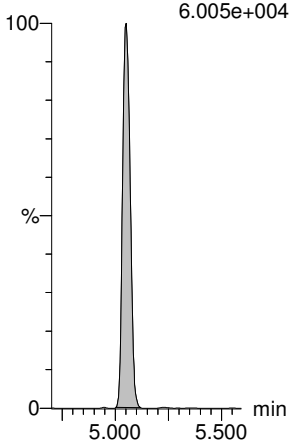
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.035e+005



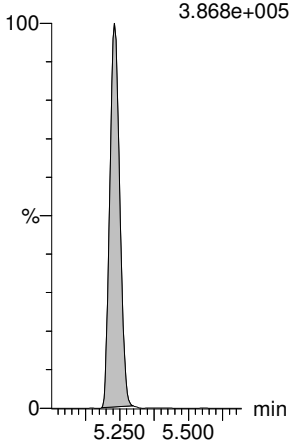
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.414e+004



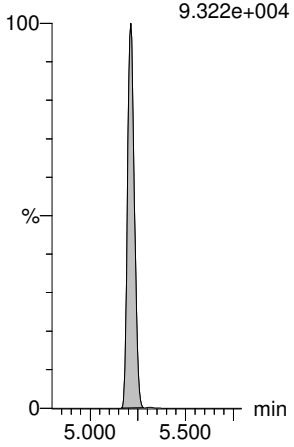
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.005e+004



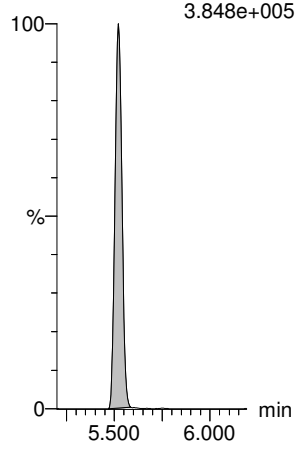
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.868e+005



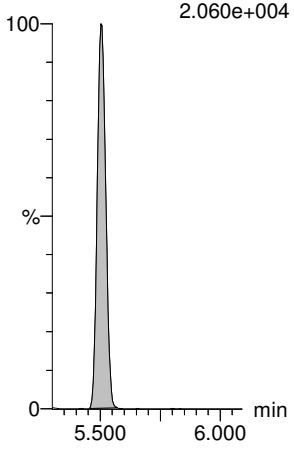
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
9.322e+004



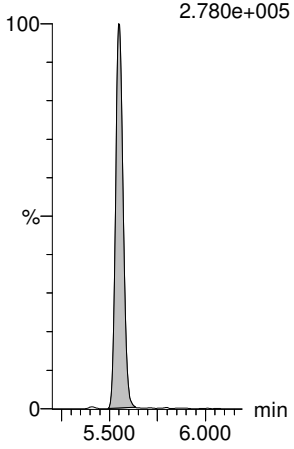
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.848e+005



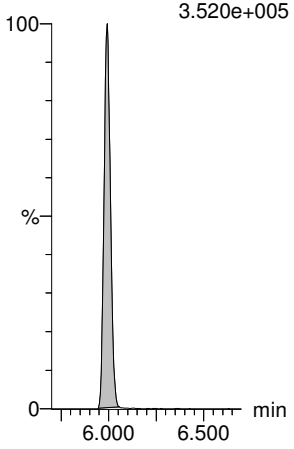
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.060e+004



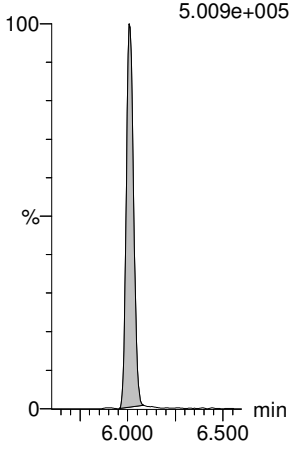
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.780e+005



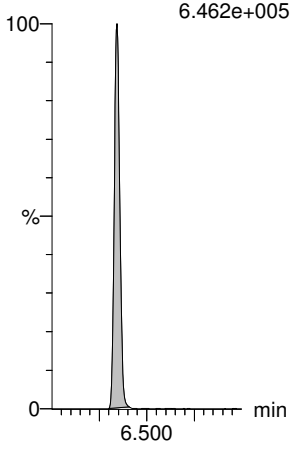
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.520e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.009e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.462e+005

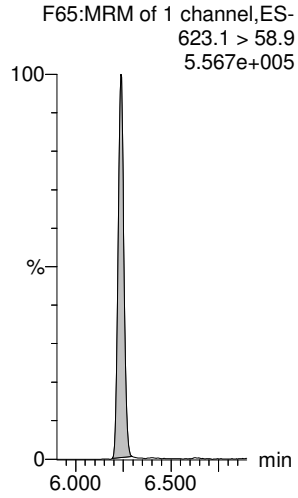


Dataset: Untitled

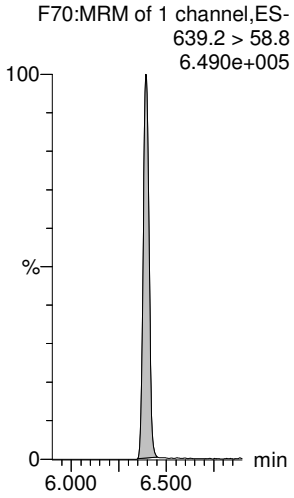
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

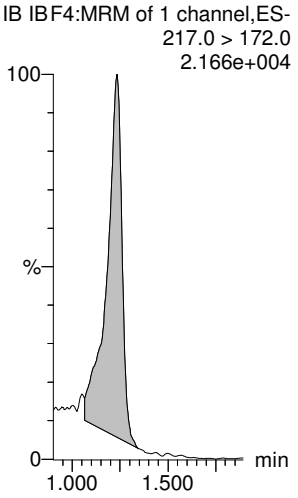
d7-N-MeFOSE-RSD



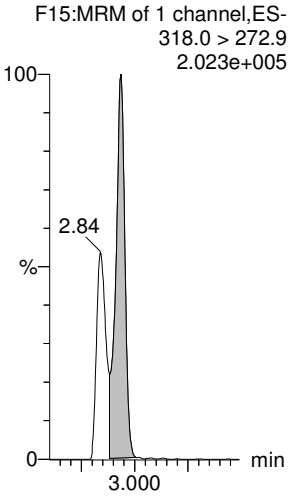
d9-N-EtFOSE-RSD



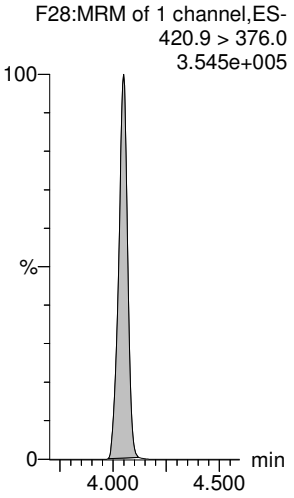
13C4-PFBA



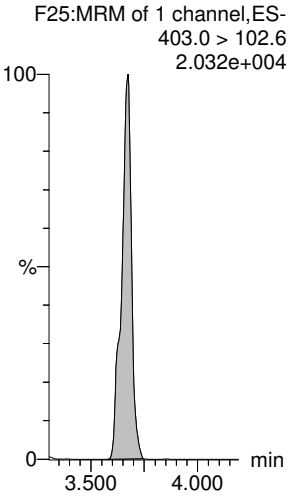
13C5-PFHxA



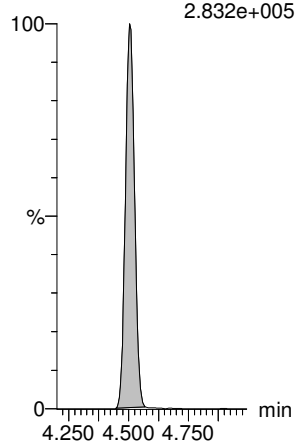
13C8-PFOA



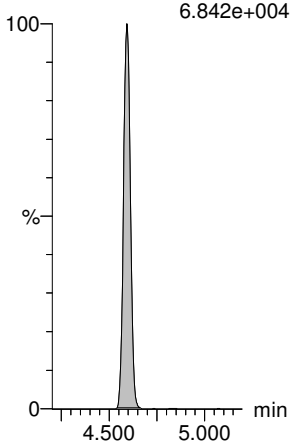
18O2-PFHxS



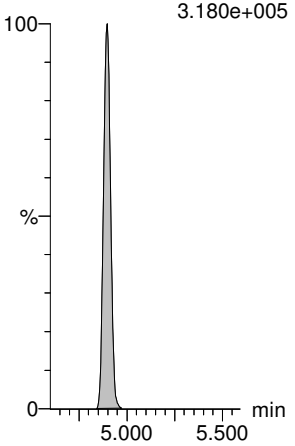
13C9-PFNA



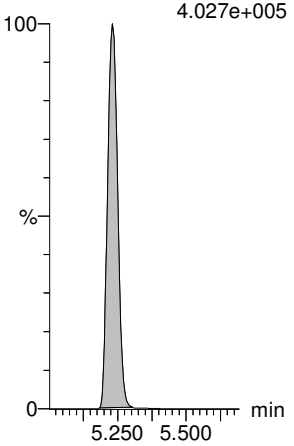
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, 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	12.159	1425.392	1.00	1.34	0.107		0.126		NO		
2	2	PFPrS	248.9 > 79.7		468.345	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		4005.253	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	6.192	4005.253	1.00	2.18	0.019		0.0144		NO		
5	5	PFBS	299.0 > 79.7		468.345	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		687.112	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1425.392		1.00	1.23	1425.392	12.500	3.84	30.7	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	468.345		1.00	2.41	468.345	12.500	5.67	45.3	YES		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	4005.253		1.00	2.13	4005.253	12.500	5.88	47.0	YES		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	4005.253		1.00	2.13	4005.253	12.500	5.88	47.0	YES		
11	51	13C3-PFBS-EIS	302.0 > 98.8	468.345		1.00	2.41	468.345	12.500	5.67	45.3	YES		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	687.112		1.00	2.85	687.112	12.500	5.69	45.5	YES		
13	-1													
14	7	PFHxA	313.0 > 269.0	64.647	10086.920	1.00	2.95	0.080		0.0245		NO		YES
15	8	PFPeS	349.>79.7		468.345	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2419.228	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		8859.708	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	20.703	8859.708	1.00	3.50	0.029				NO		YES
19	12	ADONA	376.8 > 250.9	9.118	8859.708	1.00	3.56	0.013				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	10086.920		1.00	2.94	10086.920	12.500	8.32	66.5	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	468.345		1.00	2.41	468.345	12.500	5.67	45.3	YES		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2419.228		1.00	3.14	2419.228	12.500	8.63	69.1	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	8859.708		1.00	3.53	8859.708	12.500	13.1	104.8	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	8859.708		1.00	3.53	8859.708	12.500	13.1	104.8	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	8859.708		1.00	3.53	8859.708	12.500	13.1	104.8	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	11.526	2366.117	1.00	3.67	0.061		0.130		NO		YES
28	15	6:2 FTS	427.0 > 407		1286.210	1.00						NO		YES
29	16	L-PFOA	412.8 > 368.9	24.111	12880.134	1.00	4.07	0.023				NO	2.116	NO
30	18	PFecHS	460.8 > 381.0		12880.134	1.00						NO		YES
31	19	PFHpS	449.0 > 79.7		2877.657	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		11555.749	1.00						NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2366.117		1.00	3.67	2366.117	12.500	12.4	99.6	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1286.210		1.00	3.99	1286.210	12.500	14.3	114.2	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12880.134		1.00	4.05	12880.134	12.500	12.7	101.4	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12880.134		1.00	4.05	12880.134	12.500	12.7	101.4	NO		

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, 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	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	11555.749		1.00	4.50	11555.749	12.500	13.3	106.6	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	28.700	11555.749	1.00	4.48	0.031				NO		YES
41	22	PFOSA	497.9 > 77.9	13.301	3483.541	1.00	4.55	0.048				NO		YES
42	23	L-PFOS	498.9 > 79.7		2877.657	1.00						NO		YES
43	25	9Cl-PF30NS	530.7 > 350.8	5.586	2877.657	1.00	4.80	0.024		0.00565		NO	0.706	YES
44	26	PFDA	513 > 468.8	28.565	12344.313	1.00	4.90	0.029				NO		YES
45	27	8:2 FTS	526.9 > 507		1030.673	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	11555.749		1.00	4.50	11555.749	12.500	13.3	106.6	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3483.541		1.00	4.56	3483.541	12.500	13.6	109.2	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	12344.313		1.00	4.90	12344.313	12.500	13.1	104.5	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1030.673		1.00	4.87	1030.673	12.500	11.8	94.5	NO		
52	-1													
53	28	PFNS	549.1 > 79.7		2877.657	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419	5.340	2439.694	1.00	5.23	0.027		0.0476		NO	0.951	YES
55	31	L-EtFOSAA	584.1 > 419	7.322	3890.859	1.00	5.20	0.024		0.0711		NO	0.466	YES
56	33	PFUdA	563.0 > 518.9	44.895	16051.350	1.00	5.24	0.035				NO		YES
57	34	PFDS	598.8 > 79.7		2877.657	1.00						NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9		15742.117	1.00						NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	2439.694		1.00	5.05	2439.694	12.500	12.5	100.1	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3890.859		1.00	5.21	3890.859	12.500	13.5	108.1	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	16051.350		1.00	5.23	16051.350	12.500	13.1	104.7	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	15742.117		1.00	5.52	15742.117	12.500	13.0	103.9	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		831.490	1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	223.817	15742.117	1.00	5.56	0.178				NO		YES
68	38	N-MeFOSA	512.1 > 168.9	10.727	12577.316	1.00	5.47	0.127				NO		YES
69	39	PFTrDA	662.9 > 618.9		15742.117	1.00						NO		YES
70	40	PFDoS	698.8 > 79.7		13690.438	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	51.518	13690.438	1.00	6.12	0.047		0.0555		NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	831.490		1.00	5.50	831.490	12.500	14.5	116.3	NO		

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, 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	614.7 > 569.7	15742.117		1.00	5.52	15742.117	12.500	13.0	103.9	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	12577.316		1.00	5.55	12577.316	149.200	150	100.3	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	15742.117		1.00	5.52	15742.117	12.500	13.0	103.9	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	13690.438		1.00	5.99	13690.438	12.500	12.8	102.4	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	13690.438		1.00	5.99	13690.438	12.500	12.8	102.4	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	5.406	21915.990	1.00	5.94	0.037				NO		YES
80	43	PFHxDA	813.1 > 768.6	160.668	21672.244	1.00	6.34	0.093		0.0102		NO		YES
81	44	PFODA	913.1 > 868.8	25.492	21672.244	1.00	6.57	0.015		0.0394		NO		
82	45	N-MeFOSE	616.1 > 58.9	5.858	19399.535	1.00	6.36	0.045		0.114		NO		
83	46	N-EtFOSE	630.1 > 58.9	8.164	22549.330	1.00	6.40	0.054		0.106		NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	21915.990		1.00	6.01	21915.990	149.200	151	101.0	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	21672.244		1.00	6.34	21672.244	12.500	12.9	103.0	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	21672.244		1.00	6.34	21672.244	12.500	12.9	103.0	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	19399.535		1.00	6.24	19399.535	149.200	145	96.9	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	22549.330		1.00	6.39	22549.330	149.200	149	99.6	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1425.392	1862.473	1.00	1.23	9.567	12.500	12.0	96.0	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	3983.000	9902.850	1.00	2.13	5.028	12.500	8.84	70.7	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	468.345	1086.782	1.00	2.41	5.387	12.500	5.36	42.8	YES		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2419.228	9902.850	1.00	3.14	3.054	12.500	12.5	99.6	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	687.112	1086.782	1.00	2.85	7.903	12.500	5.21	41.6	YES		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	10086.920	9902.850	1.00	2.94	12.732	12.500	12.4	98.9	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	8859.708	9902.850	1.00	3.53	11.183	12.500	19.8	158.3	YES		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2366.117	1086.782	1.00	3.67	27.215	12.500	11.4	90.9	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1286.210	2801.486	1.00	3.99	5.739	12.500	12.0	95.6	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	11555.749	12146.396	1.00	4.50	11.892	12.500	12.7	101.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3483.541	16926.570	1.00	4.56	2.573	12.500	12.2	97.6	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12880.134	17218.184	1.00	4.05	9.351	12.500	11.4	91.0	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2877.657	2801.486	1.00	4.60	12.840	12.500	13.0	103.8	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	12344.313	13326.403	1.00	4.90	11.579	12.500	11.8	94.3	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1030.673	2801.486	1.00	4.87	4.599	12.500	11.2	89.9	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	2439.694	16926.570	1.00	5.05	1.802	12.500	11.2	89.3	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	16051.350	16926.570	1.00	5.23	11.854	12.500	12.3	98.3	NO		

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	3890.859	16926.570	1.00	5.21	2.873	12.500	12.6	100.8	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	15742.117	13326.403	1.00	5.52	14.766	12.500	11.8	94.6	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	831.490	2801.486	1.00	5.50	3.710	12.500	13.0	103.9	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	12577.316	16926.570	1.00	5.55	9.288	149.200	130	87.4	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	13690.438	16926.570	1.00	5.99	10.110	12.500	12.0	96.2	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	21915.990	16926.570	1.00	6.01	16.185	149.200	142	94.9	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	21672.244	16926.570	1.00	6.34	16.005	12.500	12.1	97.1	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	19399.535	16926.570	1.00	6.24	14.326	149.200	137	92.0	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	22549.330	16926.570	1.00	6.39	16.652	149.200	139	93.3	NO		
119	99	13C4-PFBA	217.0 > 172.0	1862.473	1862.473	1.00	1.23	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	9902.850	9902.850	1.00	2.94	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	17218.184	17218.184	1.00	4.05	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1086.782	1086.782	1.00	3.67	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	12146.396	12146.396	1.00	4.50	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2801.486	2801.486	1.00	4.59	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	13326.403	13326.403	1.00	4.90	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	16926.570	16926.570	1.00	5.23	12.500	12.500	12.5	100.0	NO		

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

JLM 3/5/2020

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	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	4414.079	4525.835	1.00	1.24	12.191	10.000	9.96	99.6	NO		
2	2	PFPrS	248.9 > 79.7	998.019	1025.202	1.00	1.54	12.169	10.000	9.92	99.2	NO	2.596	NO
3	3	3:3 FTCA	240.9 > 176.9	1003.909	8585.486	1.00	2.01	1.462	10.000	9.82	98.2	NO	3.710	NO
4	4	PFPeA	263.1 > 218.9	6450.080	8585.486	1.00	2.14	9.391	10.000	9.90	99.0	NO		
5	5	PFBS	299.0 > 79.7	2084.923	1025.202	1.00	2.41	25.421	10.000	9.86	98.6	NO	3.472	NO
6	6	4:2 FTS	327.0 > 307	1774.255	1656.532	1.00	2.86	13.388	10.000	8.64	86.4	NO	1.086	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	4525.835		1.00	1.24	4525.835	12.500	12.2	97.4	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	1025.202		1.00	2.41	1025.202	12.500	12.4	99.2	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	8585.486		1.00	2.14	8585.486	12.500	12.6	100.8	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	8585.486		1.00	2.14	8585.486	12.500	12.6	100.8	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	1025.202		1.00	2.41	1025.202	12.500	12.4	99.2	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1656.532		1.00	2.86	1656.532	12.500	13.7	109.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	10653.144	14962.108	1.00	2.94	8.900	10.000	10.1	100.8	NO	19.156	NO
15	8	PFPeS	349.>79.7	1936.837	1025.202	1.00	3.13	23.615	10.000	10.2	101.8	NO	2.409	NO
16	9	HFPO-DA	285.1 > 168.9	3192.564	3610.841	1.00	3.14	11.052	10.000	9.97	99.7	NO	2.885	NO
17	10	5:3 FTCA	340.9 > 236.9	2428.008	8518.424	1.00	3.48	3.563	10.000	9.30	93.0	NO	1.789	NO
18	11	PFHpA	363.0 > 318.9	8274.261	8518.424	1.00	3.54	12.142	10.000	10.1	100.5	NO	16.487	NO
19	12	ADONA	376.8 > 250.9	22657.617	8518.424	1.00	3.64	33.248	10.000	9.74	97.4	NO	3.970	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	14962.108		1.00	2.94	14962.108	12.500	12.3	98.7	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	1025.202		1.00	2.41	1025.202	12.500	12.4	99.2	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3610.841		1.00	3.14	3610.841	12.500	12.9	103.1	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	8518.424		1.00	3.54	8518.424	12.500	12.6	100.8	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	8518.424		1.00	3.54	8518.424	12.500	12.6	100.8	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	8518.424		1.00	3.54	8518.424	12.500	12.6	100.8	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	1936.598	2488.580	1.00	3.68	9.727	10.000	9.53	95.3	NO	2.428	NO
28	15	6:2 FTS	427.0 > 407	1917.508	1185.710	1.00	4.00	20.215	10.000	10.6	105.8	NO	1.449	NO
29	16	L-PFOA	412.8 > 368.9	12132.298	12170.303	1.00	4.06	12.461	10.000	9.73	97.3	NO	3.049	NO
30	18	PFecHS	460.8 > 381.0	1647.976	12170.303	1.00	4.07	1.693	10.000	8.62	86.2	NO	0.460	NO
31	19	PFHpS	449.0 > 79.7	2065.670	2677.025	1.00	4.17	9.645	10.000	10.6	106.0	NO	1.887	NO
32	20	7:3 FTCA	440.9 > 336.9	2397.823	11607.678	1.00	4.50	2.582	10.000	8.95	89.5	NO	1.658	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2488.580		1.00	3.68	2488.580	12.500	13.1	104.8	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1185.710		1.00	4.00	1185.710	12.500	13.2	105.2	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12170.303		1.00	4.06	12170.303	12.500	12.0	95.8	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12170.303		1.00	4.06	12170.303	12.500	12.0	95.8	NO		

RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	2677.025		1.00	4.60	2677.025	12.500	12.9	103.0	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	11607.678		1.00	4.51	11607.678	12.500	13.4	107.1	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	10864.704	11607.678	1.00	4.51	11.700	10.000	9.35	93.5	NO	6.293	NO
41	22	PFOSA	497.9 > 77.9	2562.513	3297.611	1.00	4.56	9.714	10.000	10.3	102.9	NO	28.675	NO
42	23	L-PFOS	498.9 > 79.7	2038.513	2677.025	1.00	4.60	9.519	10.000	10.2	101.9	NO	2.156	NO
43	25	9Cl-PF30NS	530.7 > 350.8	3416.003	2677.025	1.00	4.83	15.951	10.000	10.2	102.0	NO	18.773	NO
44	26	PFDA	513 > 468.8	12761.620	12505.505	1.00	4.91	12.756	10.000	9.51	95.1	NO	8.723	NO
45	27	8:2 FTS	526.9 > 507	1304.969	1131.478	1.00	4.87	14.417	10.000	8.82	88.2	NO	2.319	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	11607.678		1.00	4.51	11607.678	12.500	13.4	107.1	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3297.611		1.00	4.56	3297.611	12.500	12.9	103.3	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2677.025		1.00	4.60	2677.025	12.500	12.9	103.0	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2677.025		1.00	4.60	2677.025	12.500	12.9	103.0	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	12505.505		1.00	4.91	12505.505	12.500	13.2	105.9	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1131.478		1.00	4.87	1131.478	12.500	13.0	103.7	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	1972.877	2677.025	1.00	4.97	9.212	10.000	10.4	104.4	NO	2.250	NO
54	29	L-MeFOSAA	570 > 419	4173.231	2722.506	1.00	5.06	19.161	10.000	9.19	91.9	NO	2.286	NO
55	31	L-EtFOSAA	584.1 > 419	3899.280	3836.879	1.00	5.22	12.703	10.000	9.65	96.5	NO	1.389	NO
56	33	PFUdA	563.0 > 518.9	11778.005	15380.688	1.00	5.24	9.572	10.000	10.2	101.7	NO	17.141	NO
57	34	PFDS	598.8 > 79.7	1902.746	2677.025	1.00	5.28	8.885	10.000	10.0	100.0	NO	1.944	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	5679.186	15067.925	1.00	5.45	4.711	10.000	10.4	104.3	NO	23.306	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	2677.025		1.00	4.60	2677.025	12.500	12.9	103.0	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	2722.506		1.00	5.06	2722.506	12.500	14.0	111.7	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3836.879		1.00	5.22	3836.879	12.500	13.3	106.6	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	15380.688		1.00	5.24	15380.688	12.500	12.5	100.3	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2677.025		1.00	4.60	2677.025	12.500	12.9	103.0	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	15067.925		1.00	5.53	15067.925	12.500	12.4	99.5	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1413.817	685.398	1.00	5.51	25.785	10.000	11.3	113.2	NO	1.140	NO
67	37	PFDoA	612.9 > 569.0	12443.479	15067.925	1.00	5.53	10.323	10.000	10.3	103.0	NO	9.919	NO
68	38	N-MeFOSA	512.1 > 168.9	4500.816	12884.779	1.00	5.53	52.117	50.000	50.8	101.6	NO	1.550	NO
69	39	PFTrDA	662.9 > 618.9	13946.254	15067.925	1.00	5.78	11.569	10.000	11.0	110.0	NO	40.482	NO
70	40	PFDoS	698.8 > 79.7	2156.923	13009.580	1.00	5.80	2.072	10.000	10.8	107.6	NO	3.379	NO
71	41	PFTeDA	713.0 > 669.0	14507.373	13009.580	1.00	6.00	13.939	10.000	9.78	97.8	NO	18.150	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	685.398		1.00	5.51	685.398	12.500	12.0	95.8	NO		

RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	15067.925		1.00	5.53	15067.925	12.500	12.4	99.5	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	12884.779		1.00	5.56	12884.779	149.200	153	102.7	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	15067.925		1.00	5.53	15067.925	12.500	12.4	99.5	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	13009.580		1.00	6.00	13009.580	12.500	12.2	97.3	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	13009.580		1.00	6.00	13009.580	12.500	12.2	97.3	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	6376.870	21743.824	1.00	5.99	43.756	50.000	49.8	99.6	NO	1.786	NO
80	43	PFHxDA	813.1 > 768.6	10551.366	19919.156	1.00	6.35	6.621	10.000	9.75	97.5	NO	78.836	NO
81	44	PFODA	913.1 > 868.8	14295.653	19919.156	1.00	6.59	8.971	10.000	9.73	97.3	NO		
82	45	N-MeFOSE	616.1 > 58.9	6636.174	19186.012	1.00	6.25	51.606	50.000	51.1	102.2	NO		
83	46	N-EtFOSE	630.1 > 58.9	6927.685	21935.881	1.00	6.40	47.120	50.000	48.8	97.5	NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	21743.824		1.00	6.01	21743.824	149.200	150	100.2	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	19919.156		1.00	6.35	19919.156	12.500	11.8	94.7	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	19919.156		1.00	6.35	19919.156	12.500	11.8	94.7	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	19186.012		1.00	6.24	19186.012	149.200	143	95.9	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	21935.881		1.00	6.40	21935.881	149.200	145	96.9	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2677.025		1.00	4.60	2677.025	12.500	12.9	103.0	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	4525.835	5817.896	1.00	1.24	9.724	12.500	12.2	97.5	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	8585.486	14053.869	1.00	2.14	7.636	12.500	13.4	107.4	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	1025.202	939.302	1.00	2.41	13.643	12.500	13.6	108.5	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	3610.841	14053.869	1.00	3.14	3.212	12.500	13.1	104.8	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1656.532	939.302	1.00	2.86	22.045	12.500	14.5	116.2	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	14962.108	14053.869	1.00	2.94	13.308	12.500	12.9	103.4	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	8518.424	14053.869	1.00	3.54	7.577	12.500	13.4	107.2	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2488.580	939.302	1.00	3.68	33.117	12.500	13.8	110.6	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1185.710	2783.276	1.00	4.00	5.325	12.500	11.1	88.7	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	11607.678	12173.016	1.00	4.51	11.919	12.500	12.8	102.1	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3297.611	15446.001	1.00	4.56	2.669	12.500	12.7	101.3	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12170.303	14165.552	1.00	4.06	10.739	12.500	13.1	104.6	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2677.025	2783.276	1.00	4.60	12.023	12.500	12.1	97.2	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	12505.505	12887.421	1.00	4.91	12.130	12.500	12.4	98.8	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1131.478	2783.276	1.00	4.87	5.082	12.500	12.4	99.4	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	2722.506	15446.001	1.00	5.06	2.203	12.500	13.7	109.2	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	15380.688	15446.001	1.00	5.24	12.447	12.500	12.9	103.2	NO		

RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	3836.879	15446.001	1.00	5.22	3.105	12.500	13.6	108.9	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	15067.925	12887.421	1.00	5.53	14.615	12.500	11.7	93.6	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	685.398	2783.276	1.00	5.51	3.078	12.500	10.8	86.2	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	12884.779	15446.001	1.00	5.56	10.427	149.200	146	98.1	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	13009.580	15446.001	1.00	6.00	10.528	12.500	12.5	100.2	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	21743.824	15446.001	1.00	6.01	17.597	149.200	154	103.2	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	19919.156	15446.001	1.00	6.35	16.120	12.500	12.2	97.8	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	19186.012	15446.001	1.00	6.24	15.527	149.200	149	99.7	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	21935.881	15446.001	1.00	6.40	17.752	149.200	148	99.5	NO		
119	99	13C4-PFBA	217.0 > 172.0	5817.896	5817.896	1.00	1.24	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	14053.869	14053.869	1.00	2.94	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	14165.552	14165.552	1.00	4.06	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	939.302	939.302	1.00	3.68	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	12173.016	12173.016	1.00	4.51	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2783.276	2783.276	1.00	4.60	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	12887.421	12887.421	1.00	4.90	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	15446.001	15446.001	1.00	5.24	12.500	12.500	12.5	100.0	NO		

RK 3/5/2020

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 12:29:39 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:30:31 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200304P2-1	IPA	04-Mar-20	19:10:51
2	2	200304P2-2	IPA	04-Mar-20	19:21:20
3	3	200304P2-3	ST200304P2-1 PFC CS-2 20C0304	04-Mar-20	19:31:52
4	4	200304P2-4	ST200304P2-2 PFC CS-1 20C0305	04-Mar-20	19:42:23
5	5	200304P2-5	ST200304P2-3 PFC CS0 20C0306	04-Mar-20	19:52:51
6	6	200304P2-6	ST200304P2-4 PFC CS1 20C0307	04-Mar-20	20:03:23
7	7	200304P2-7	ST200304P2-5 PFC CS2 20C0308	04-Mar-20	20:13:54
8	8	200304P2-8	ST200304P2-6 PFC CS3 20C0309	04-Mar-20	20:24:22
9	9	200304P2-9	ST200304P2-7 PFC CS4 20C0310	04-Mar-20	20:34:54
10	10	200304P2-10	ST200304P2-8 PFC CS5 20C0311	04-Mar-20	20:45:22
11	11	200304P2-11	ST200304P2-9 PFC CS6 20C0312	04-Mar-20	20:55:55
12	12	200304P2-12	ST200304P2-10 PFC CS7 20C0313	04-Mar-20	21:06:25
13	13	200304P2-13	IB	04-Mar-20	21:16:56
14	14	200304P2-14	ICV200304P2-1 PFC ICV 20C0314	04-Mar-20	21:27:24
15	15	200304P2-15	IB	04-Mar-20	21:37:55
16	16	200304P2-16	B0B0213-BLK1 Method Blank 0.25	04-Mar-20	21:48:26
17	17	200304P2-17	B0B0213-BS1 OPR 0.25	04-Mar-20	21:58:57
18	18	200304P2-18	B0B0213-BSD1 LCSD 0.25	04-Mar-20	22:09:25
19	19	200304P2-19	2000372-01 EB05-20200220 0.25095	04-Mar-20	22:19:57
20	20	200304P2-20	2000372-02 TW07S-20200220 0.25404	04-Mar-20	22:30:26
21	21	200304P2-21	2000372-03 TW05S-20200220 0.24752	04-Mar-20	22:40:57
22	22	200304P2-22	2000372-04 TW06S-20200220 0.24881	04-Mar-20	22:51:28
23	23	200304P2-23	2000372-05 TW21S-20200220 0.24679	04-Mar-20	23:01:56
24	24	200304P2-24	2000372-06 TW20S-20200220 0.24911	04-Mar-20	23:12:29
25	25	200304P2-25	2000372-07 TW19S-20200220 0.24732	04-Mar-20	23:22:57
26	26	200304P2-26	2000372-08 TW18S-20200220 0.25075	04-Mar-20	23:33:29
27	27	200304P2-27	2000373-01 OU3-LW01-20200220 0.24602	04-Mar-20	23:43:57
28	28	200304P2-28	2000373-02 TS-LW01-20200220 0.24944	04-Mar-20	23:54:30
29	29	200304P2-29	ST200304P2-11 PFC CS3 20C0309	05-Mar-20	00:04:58
30	30	200304P2-30	IB	05-Mar-20	00:15:30
31	31	200304P2-31	2000373-03 TN-LW01-20200220 0.25058	05-Mar-20	00:26:01
32	32	200304P2-32	2000373-05 TN-LW02-20200220 0.25407	05-Mar-20	00:36:31

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 12:29:39 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:30:31 Pacific Standard Time

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
33	33	200304P2-33	2000390-01 EB06-20200221 0.25473	05-Mar-20	00:46:59
34	34	200304P2-34	2000390-02 TW14S-20200221 0.25234	05-Mar-20	00:57:32
35	35	200304P2-35	2000390-03 TW17S-20200221 0.25253	05-Mar-20	01:08:00
36	36	200304P2-36	2000390-04 TW16S-20200221 0.25077	05-Mar-20	01:18:32
37	37	200304P2-37	2000390-05 TW15S-20200221 0.25188	05-Mar-20	01:29:02
38	38	200304P2-38	B0B0279-BLK1 Method Blank 0.25	05-Mar-20	01:39:31
39	39	200304P2-39	B0B0279-BS1 OPR 0.25	05-Mar-20	01:50:03
40	40	200304P2-40	B0B0279-MS1 Matrix Spike 0.24487	05-Mar-20	02:00:34
41	41	200304P2-41	B0B0279-MSD1 Matrix Spike Dup 0.24851	05-Mar-20	02:11:02
42	42	200304P2-42	B0B0279-MSD2 Matrix Spike Dup 0.25981	05-Mar-20	02:21:34
43	43	200304P2-43	B0B0279-MS2 Matrix Spike 0.25235	05-Mar-20	02:32:02
44	44	200304P2-44	2000405-01 S9MW41-20Q1 0.2563	05-Mar-20	02:42:35
45	45	200304P2-45	2000405-02 S9MW14-20Q1 0.25573	05-Mar-20	02:53:03
46	46	200304P2-46	2000405-03 S9IMW1-20Q1 0.26015	05-Mar-20	03:03:35
47	47	200304P2-47	ST200304P2-12 PFC CS3 20C0309	05-Mar-20	03:14:06
48	48	200304P2-48	IB	05-Mar-20	03:24:35
49	49	200304P2-49	2000405-04 S9DMW1-20Q1 0.25143	05-Mar-20	03:35:06
50	50	200304P2-50	2000405-05 S9MW63L7-20Q1 0.25274	05-Mar-20	03:45:34
51	51	200304P2-51	2000405-06 S9MW63L9-20Q1 0.26389	05-Mar-20	03:56:07
52	52	200304P2-52	2000405-07 S9MW63L1-20Q1 0.25432	05-Mar-20	04:06:37
53	53	200304P2-53	2000405-08 S9MW63L3-20Q1 0.24908	05-Mar-20	04:17:06
54	54	200304P2-54	2000405-09 S9MW35-20Q1 0.24421	05-Mar-20	04:27:38
55	55	200304P2-55	2000405-10 S9MW32-20Q1 0.26062	05-Mar-20	04:38:06
56	56	200304P2-56	2000405-11 S9MW13-20Q1 0.25349	05-Mar-20	04:48:38
57	57	200304P2-57	2000405-12 S9MW12-20Q1 0.26401	05-Mar-20	04:59:09
58	58	200304P2-58	2000405-13 S9MW12-20Q1-D 0.25543	05-Mar-20	05:09:37
59	59	200304P2-59	ST200304P2-13 PFC CS3 20C0309	05-Mar-20	05:20:09
60	60	200304P2-60	IB	05-Mar-20	05:30:38
61	61	200304P2-61	2000405-14 S9MW63L5-20Q1 0.26102	05-Mar-20	05:41:10
62	62	200304P2-62	2000315-02 S-SB05-00-20200210 2.33	05-Mar-20	05:51:39
63	63	200304P2-63	2000388-01 Plant Boiler/Tower Chemicals 0.25431	05-Mar-20	06:02:10
64	64	200304P2-64	2000356-06 TW09S-20200219 0.25359	05-Mar-20	06:12:41
65	65	200304P2-65	2000356-10 TW12S-20200219 0.25542	05-Mar-20	06:23:10
66	66	200304P2-66	IB	05-Mar-20	06:33:41
67	67	200304P2-67	2000356-05@5X TW08S-20200219 0.23703	05-Mar-20	06:44:10
68	68	200304P2-68	2000356-09@10X TW13S-20200219 0.24923	05-Mar-20	06:54:41

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 12:29:39 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:30:31 Pacific Standard Time

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
69	69	200304P2-69	B0B0238-BLK1 Method Blank 0.25	05-Mar-20	07:05:12
70	70	200304P2-70	B0B0238-BS1 OPR 0.25	05-Mar-20	07:15:41
71	71	200304P2-71	2000395-01 GW043.7048.72002191000JSJ 0.23635	05-Mar-20	07:26:13
72	72	200304P2-72	2000395-02 FB2002191040JSJ 0.23937	05-Mar-20	07:36:43
73	73	200304P2-73	2000395-03 GW042.7047.72002191115JSJ 0.251	05-Mar-20	07:47:12
74	74	200304P2-74	2000395-04 GW0190242002191230JSJ 0.25527	05-Mar-20	07:57:44
75	75	200304P2-75	ST200304P2-14 PFC CS3 20C0309	05-Mar-20	08:08:13
76	76	200304P2-76	IB	05-Mar-20	08:18:45
77	77	200304P2-77	2000395-05 GW028.7033.72002191545JSJ 0.2514	05-Mar-20	08:29:13
78	78	200304P2-78	2000395-06 GW025.3030.32002201000JSJ 0.24266	05-Mar-20	08:39:45
79	79	200304P2-79	2000395-07 GW020.5025.52002201130JSJ 0.25088	05-Mar-20	08:50:16
80	80	200304P2-80	2000395-08 GW021.5026.52002201305JSJ 0.24274	05-Mar-20	09:00:44
81	81	200304P2-81	2000395-09 GW0230282002201415AB 0.24246	05-Mar-20	09:11:16
82	82	200304P2-82	2000395-10 GW0150202002201405JSJ 0.25236	05-Mar-20	09:21:47
83	83	200304P2-83	B0C0012-BLK1 Method Blank 2	05-Mar-20	09:32:15
84	84	200304P2-84	B0C0012-BS1 OPR 2	05-Mar-20	09:42:47
85	85	200304P2-85	B0C0012-BS2 OPR 2	05-Mar-20	09:53:16
86	86	200304P2-86	B0C0012-BS3 OPR 2	05-Mar-20	10:03:48
87	87	200304P2-87	B0C0012-BS4 OPR 2	05-Mar-20	10:14:17
88	88	200304P2-88	PFC NS SUP	05-Mar-20	10:24:48
89	89	200304P2-89	ST200304P2-15 PFC CS3 20C0309	05-Mar-20	10:35:17
90	90	200304P2-90	IB	05-Mar-20	10:45:49

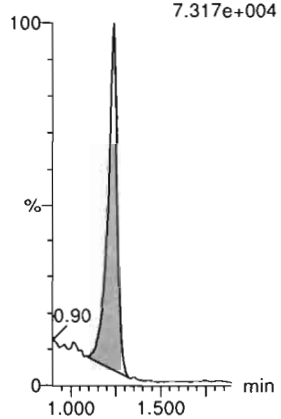
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

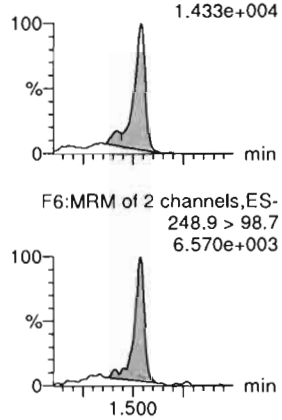
Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

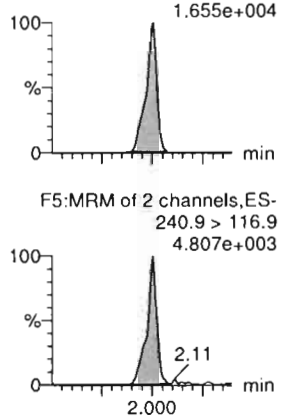
PFBA



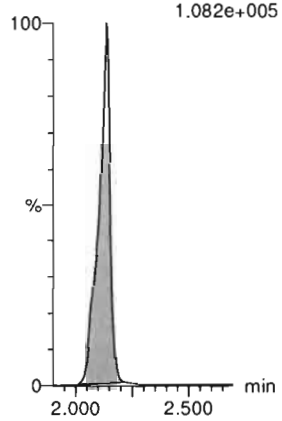
PFPrS



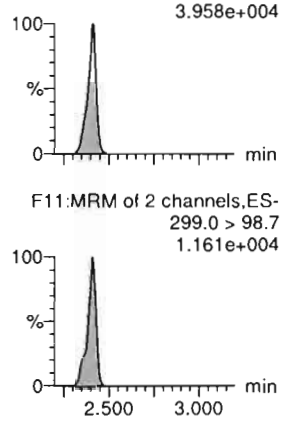
3:3 FTCA



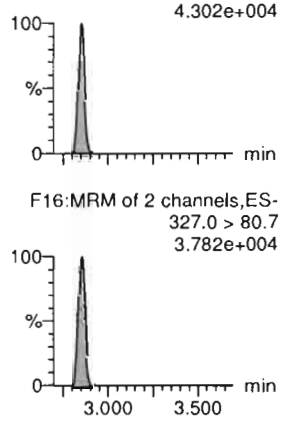
PFPeA



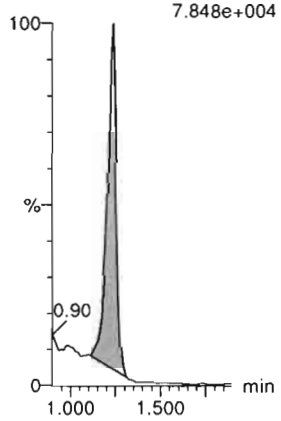
PFBS



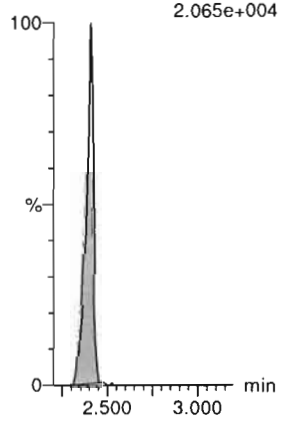
4:2 FTS



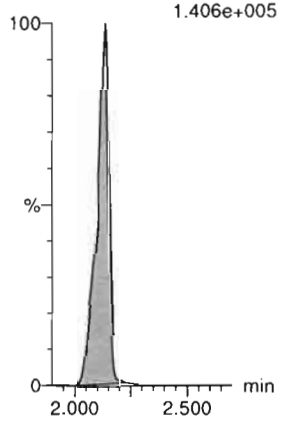
13C3-PFBA-EIS



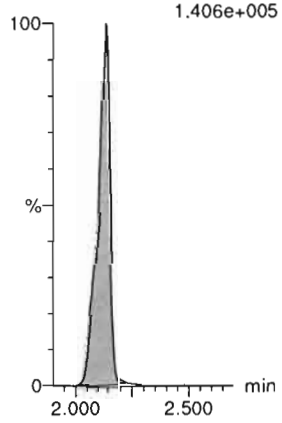
13C3-PFBS-EIS



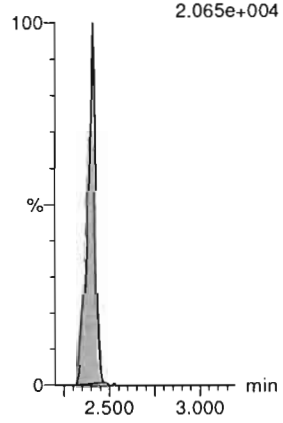
13C3-PFPeA-EIS



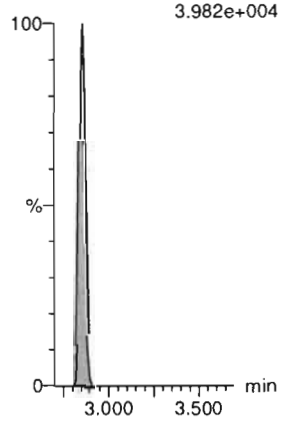
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS



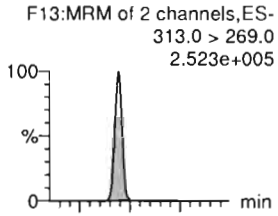
RK 3/5/2020

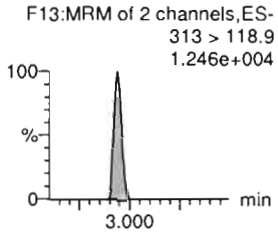
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

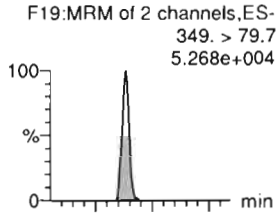
Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

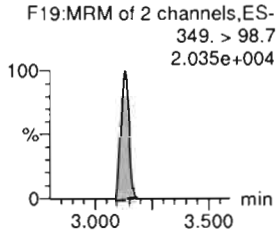
PFHxA



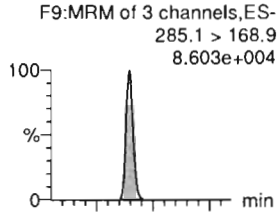


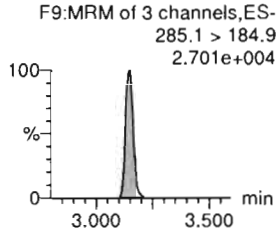
PFPeS



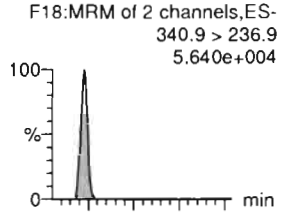


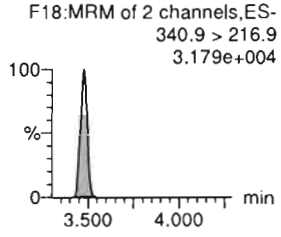
HFPO-DA



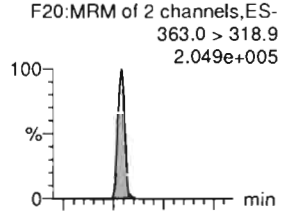


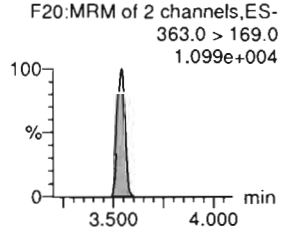
5:3 FTCA



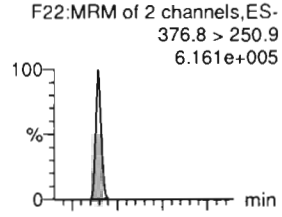


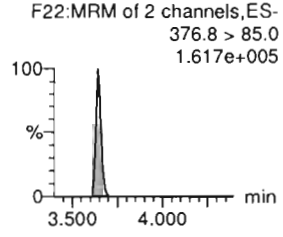
PFHpA



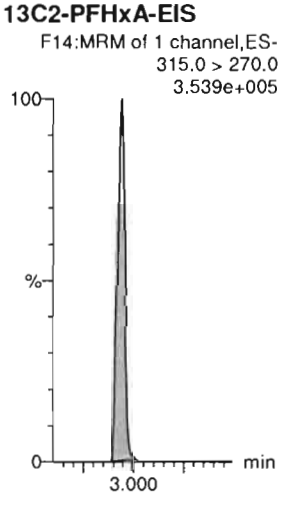


ADONA

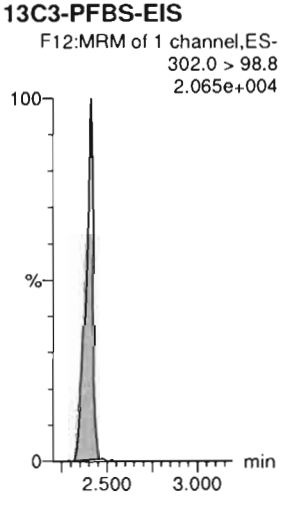




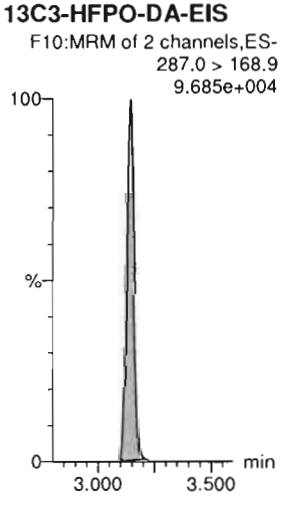
13C2-PFHxA-EIS



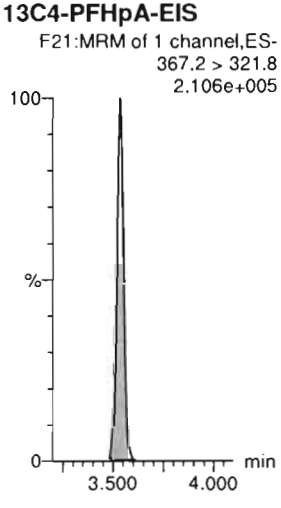
13C3-PFBS-EIS



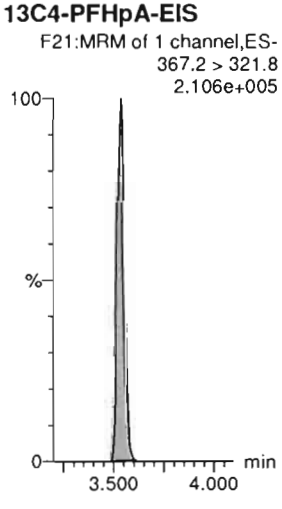
13C3-HFPO-DA-EIS



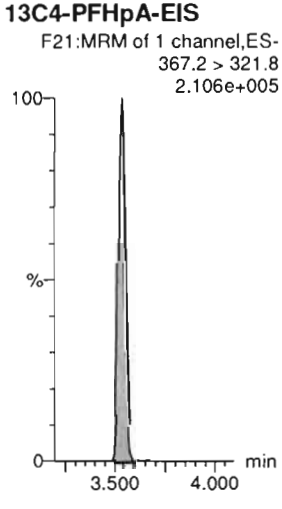
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



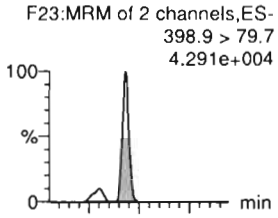
RK 3/5/2020

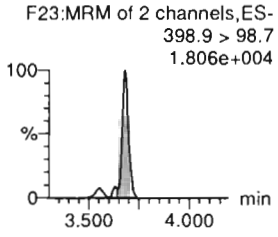
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

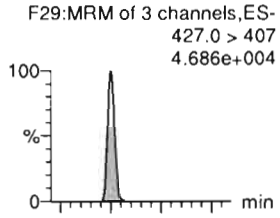
Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

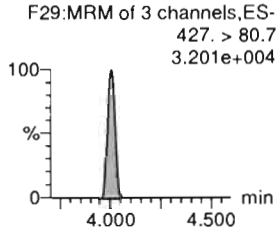
L-PFHxS



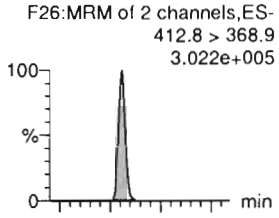


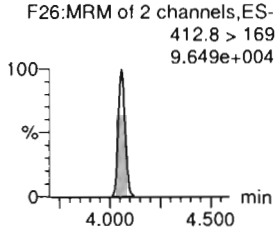
6:2 FTS



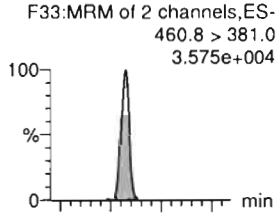


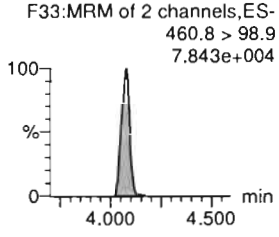
L-PFOA



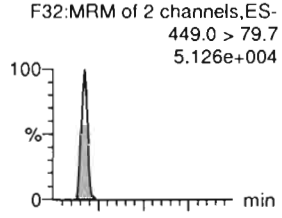


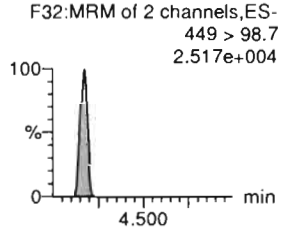
PFEChS



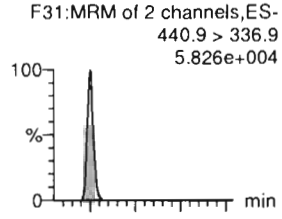


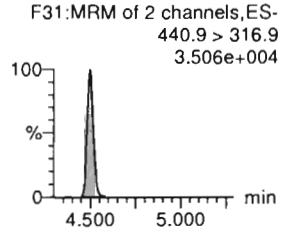
PFHpS



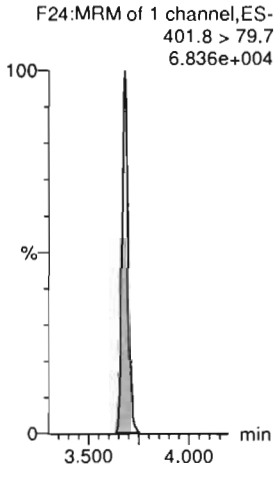


7:3 FTCA

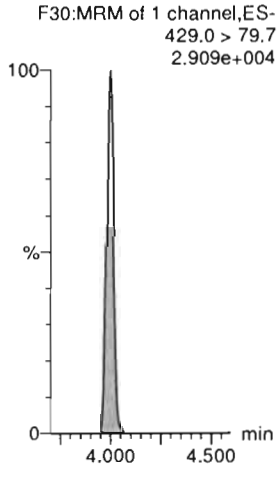




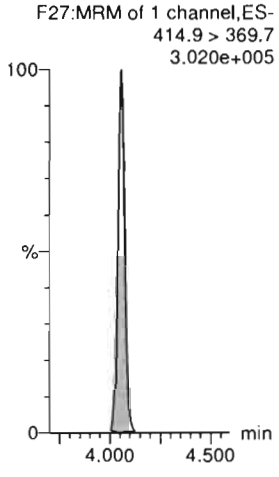
13C3-PFHxS-EIS



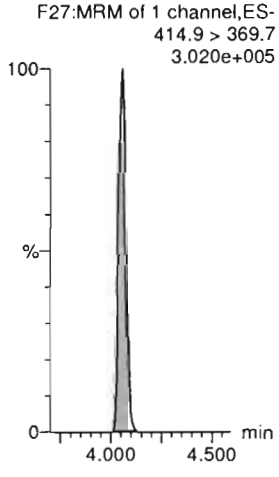
13C2-6:2 FTS-EIS



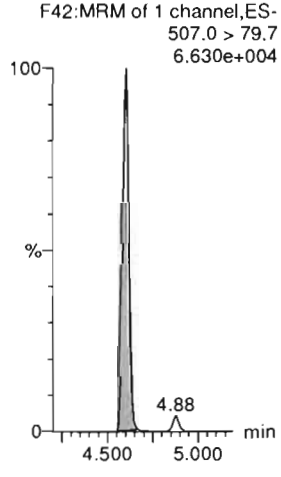
13C2-PFOA-EIS



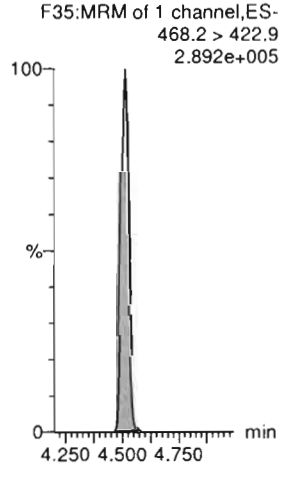
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



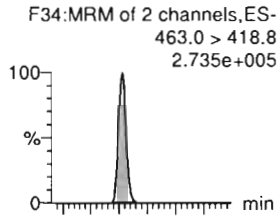
RK 3/5/2020

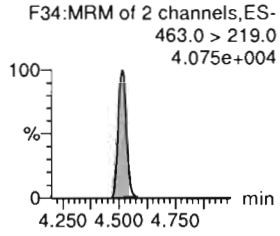
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

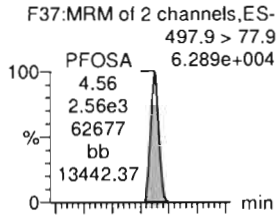
Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

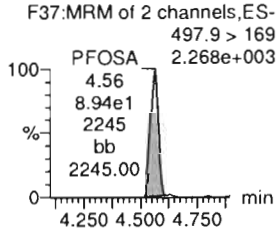
PFNA



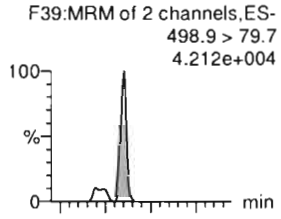


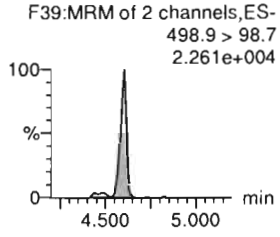
PFOSA



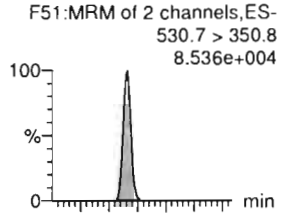


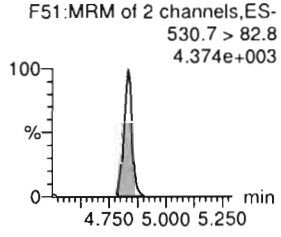
L-PFOS



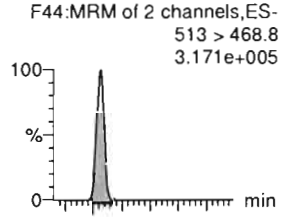


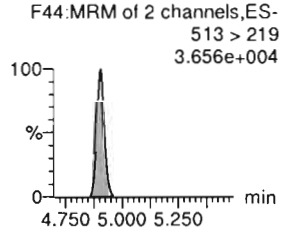
9Cl-PF30NS



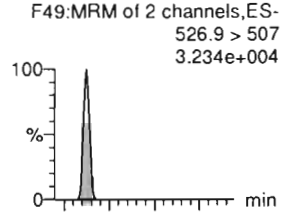


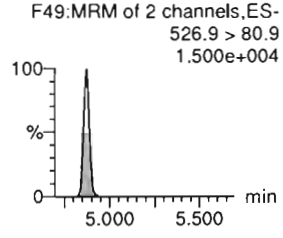
PFDA



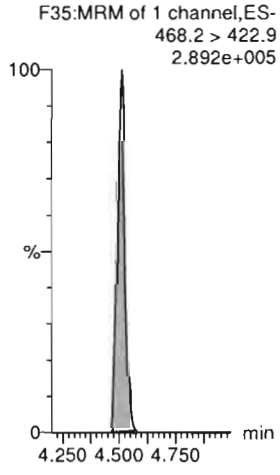


8:2 FTS

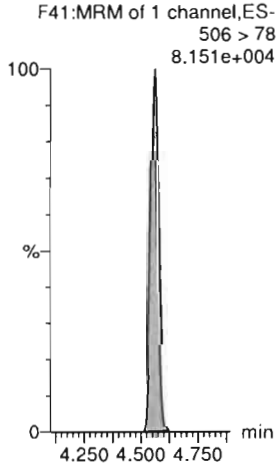




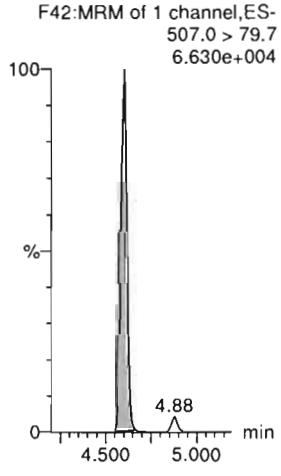
13C5-PFNA-EIS



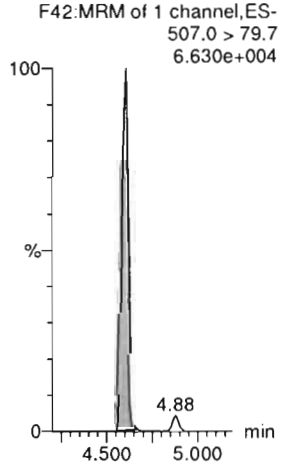
13C8-PFOSA-EIS



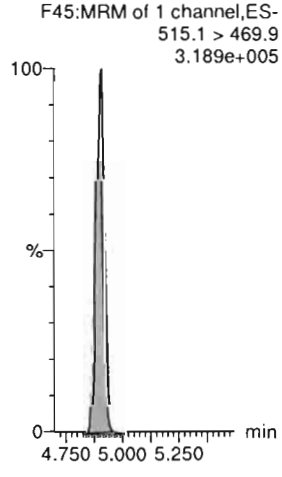
13C8-PFOS-EIS



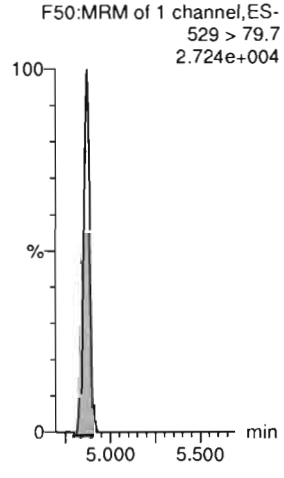
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS



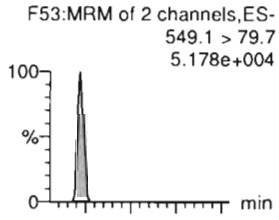
RK 3/5/2020

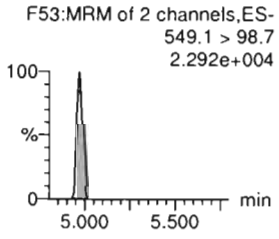
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

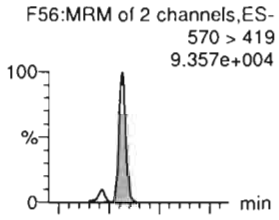
Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

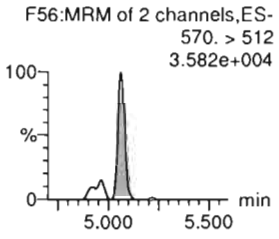
PFNS



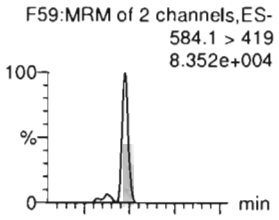


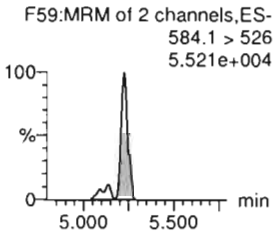
L-MeFOSAA



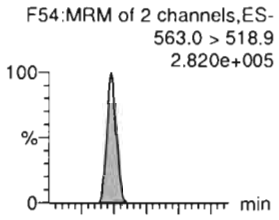


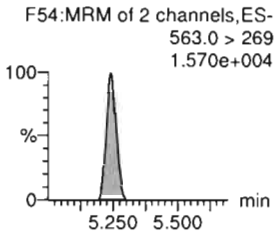
L-EtFOSAA



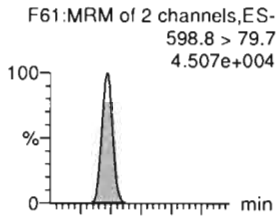


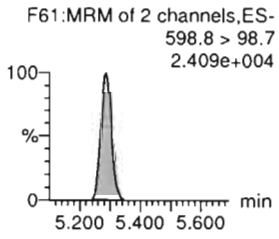
PFUdA



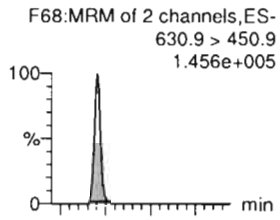


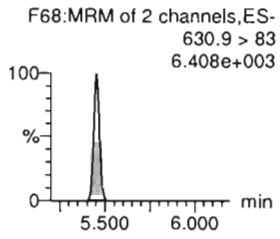
PFDS



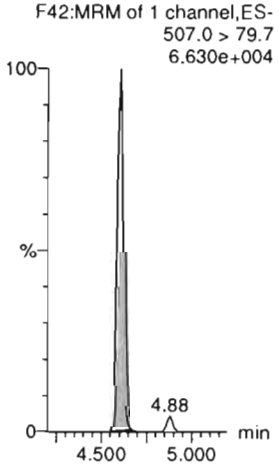


11Cl-PF30UdS

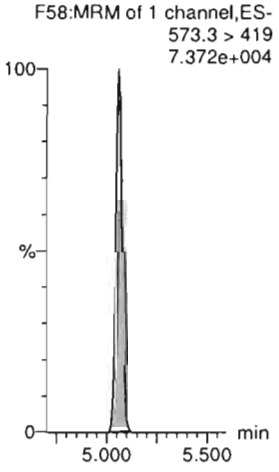




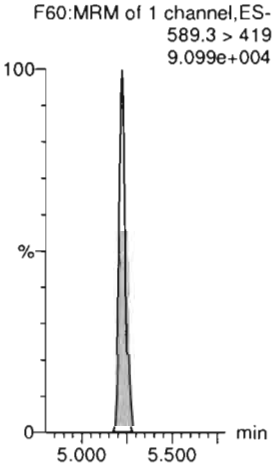
13C8-PFOS-EIS



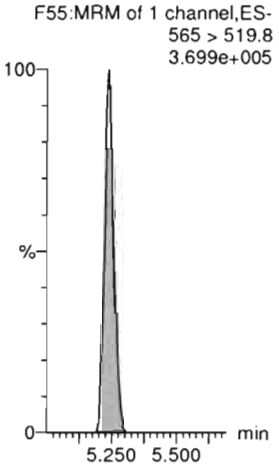
d3-N-MeFOSAA-EIS



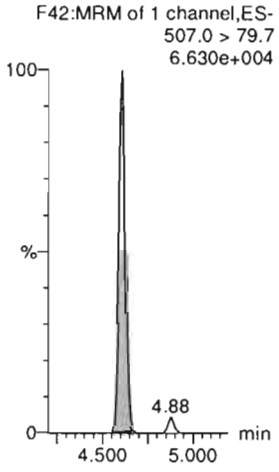
d5-N-EtFOSAA-EIS



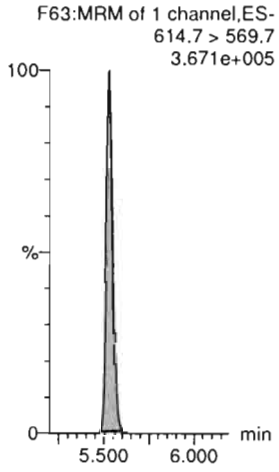
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



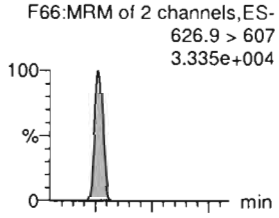
RK 3/5/2020

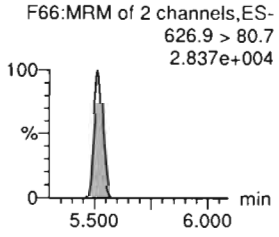
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

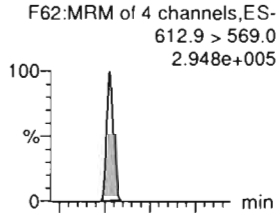
Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

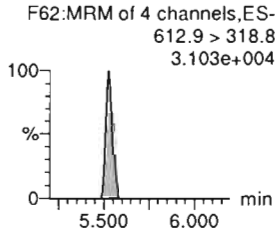
10:2 FTS



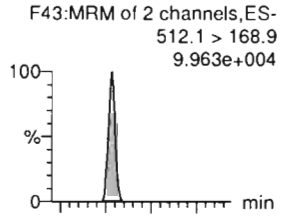


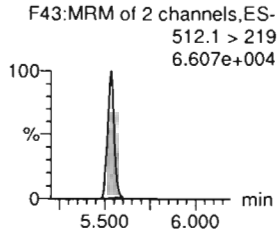
PFDoA



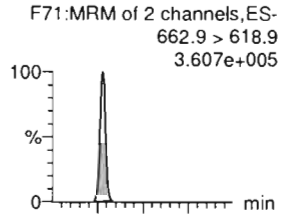


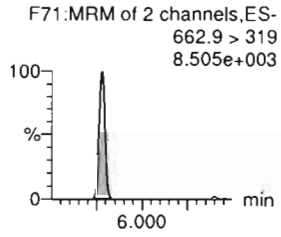
N-MeFOSA



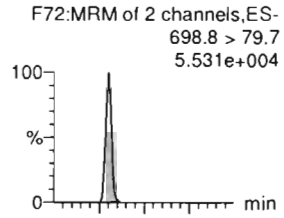


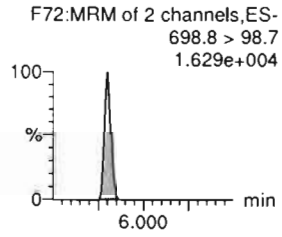
PFTrDA



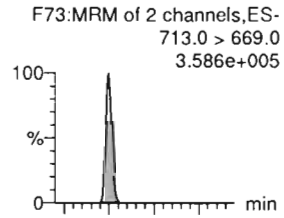


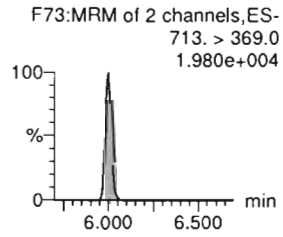
PFDoS



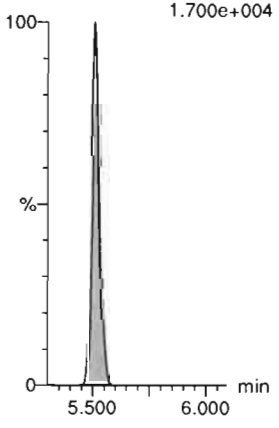


PFTeDA

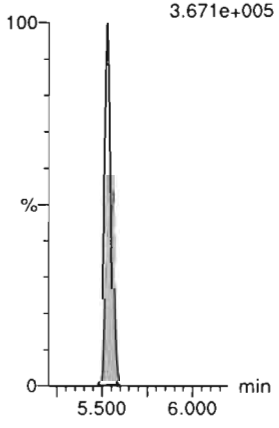




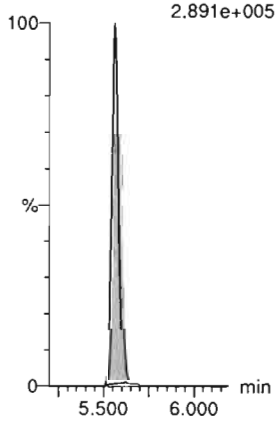
13C2-10:2 FTS-EIS



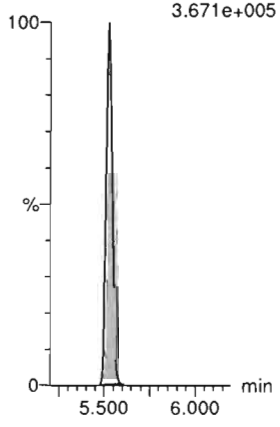
13C2-PFDoA-EIS



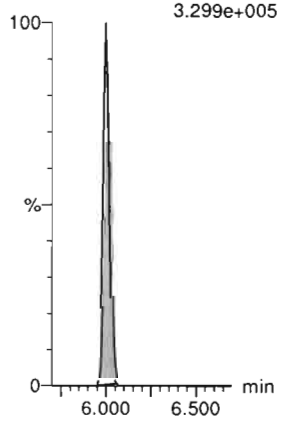
d3-N-MeFOSA-EIS



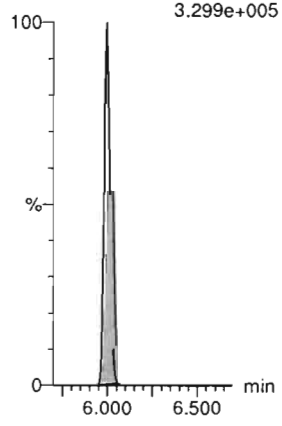
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



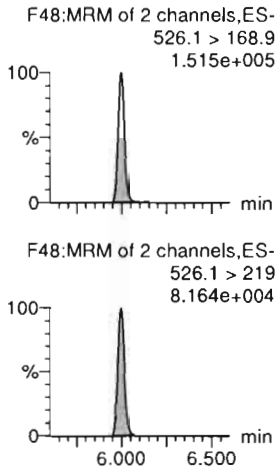
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

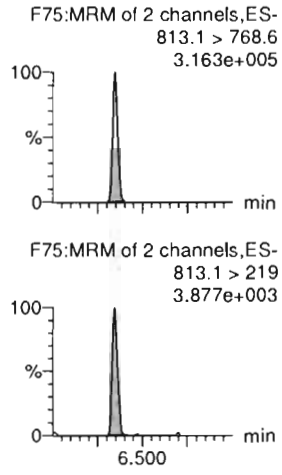
Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

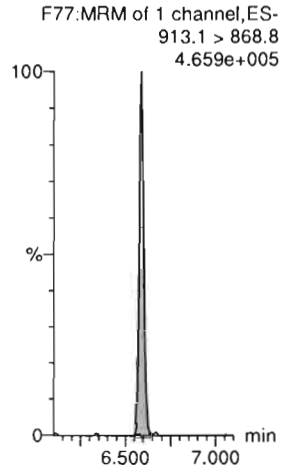
N-EtFOSA



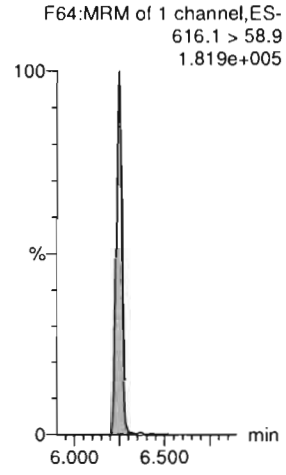
PFHxDA



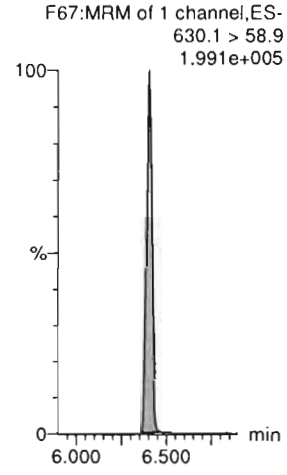
PFODA



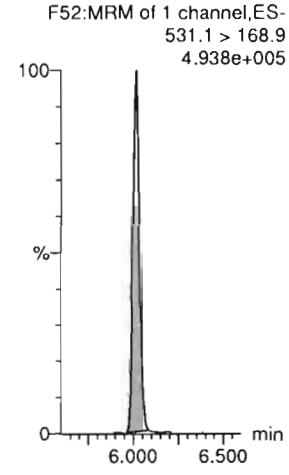
N-MeFOSE



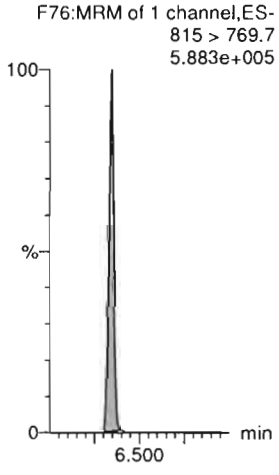
N-EtFOSE



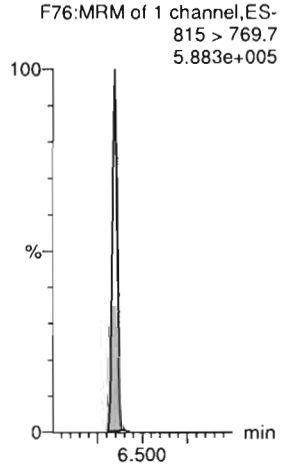
d5-N-ETFOSA-EIS



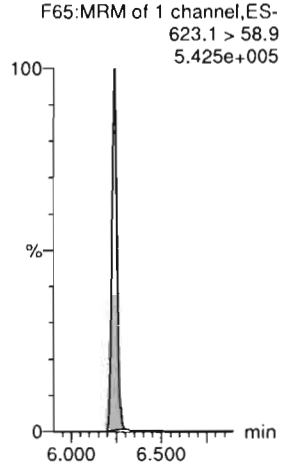
13C2-PFHxDA-EIS



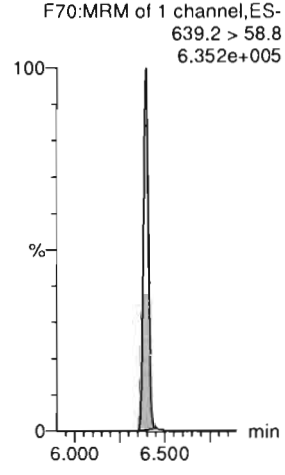
13C2-PFHxDA-EIS



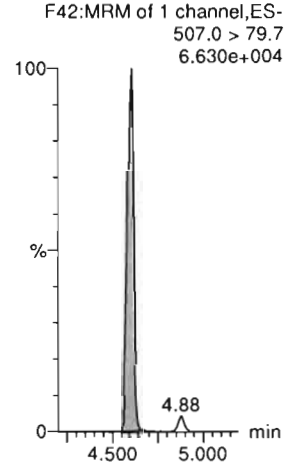
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS



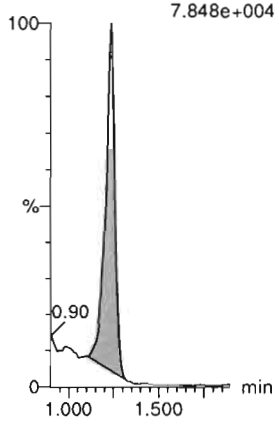
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

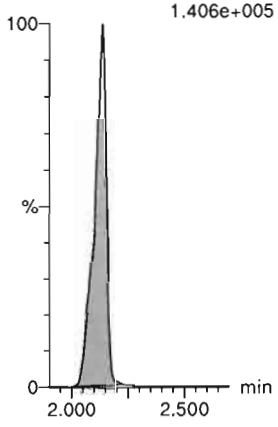
Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

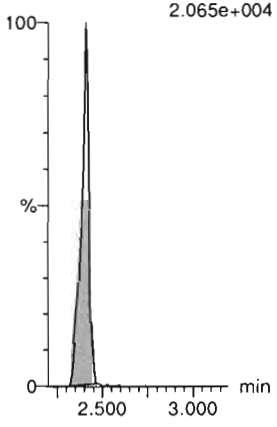
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
7.848e+004



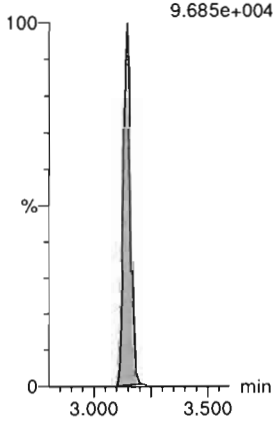
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.406e+005



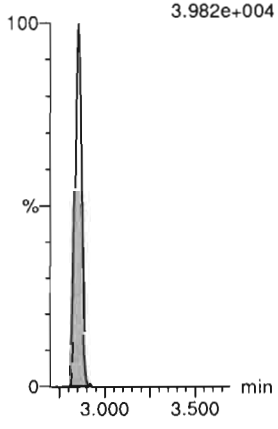
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.065e+004



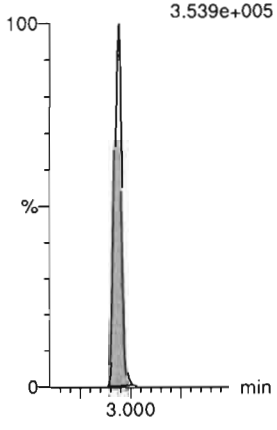
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.685e+004



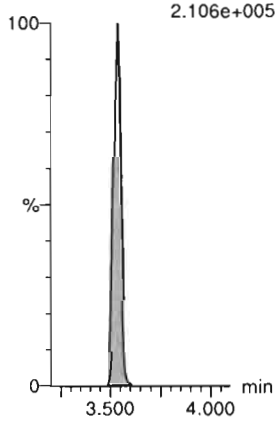
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.982e+004



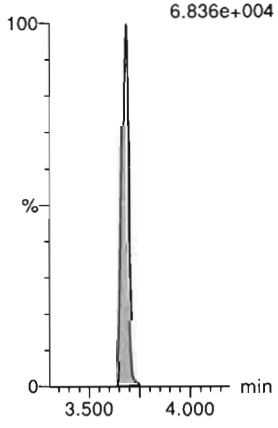
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.539e+005



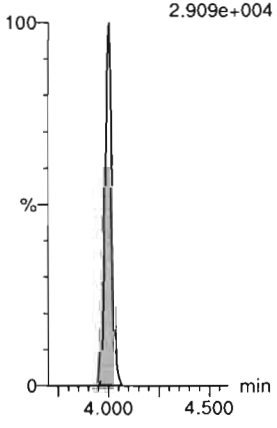
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.106e+005



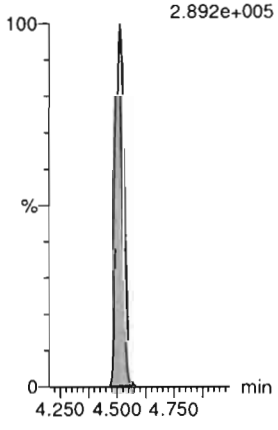
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.836e+004



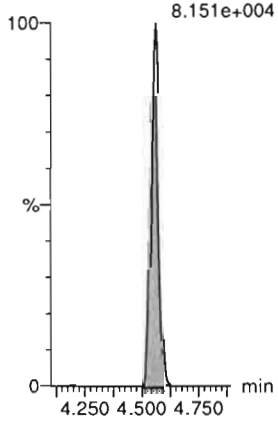
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.909e+004



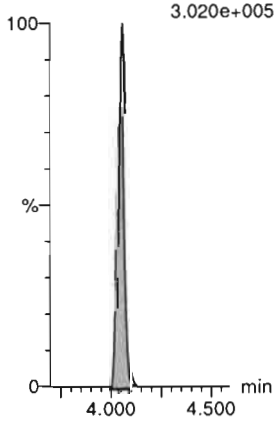
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.892e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.151e+004



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.020e+005



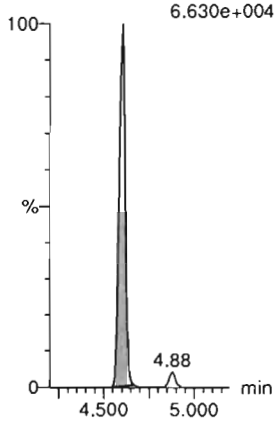
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

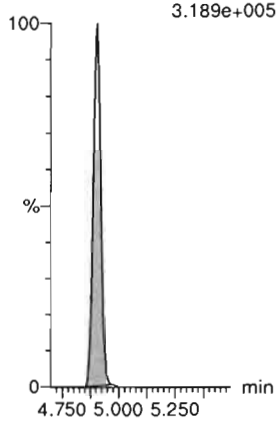
Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

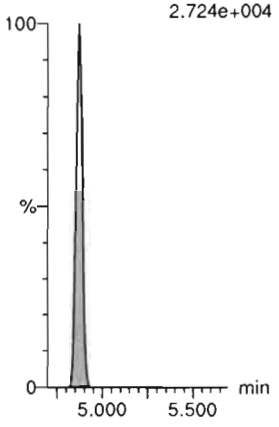
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.630e+004



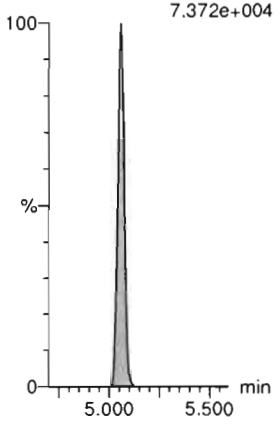
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.189e+005



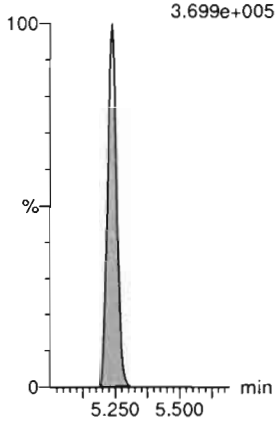
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.724e+004



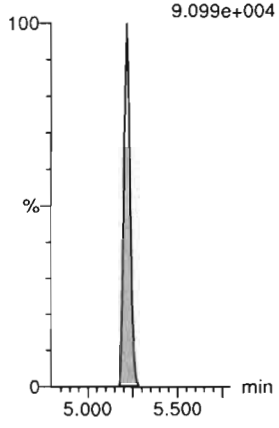
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
7.372e+004



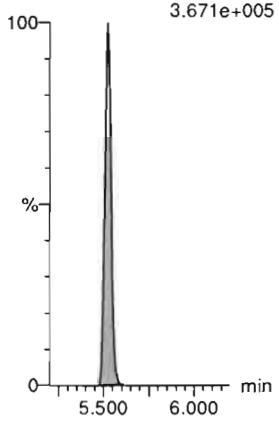
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.699e+005



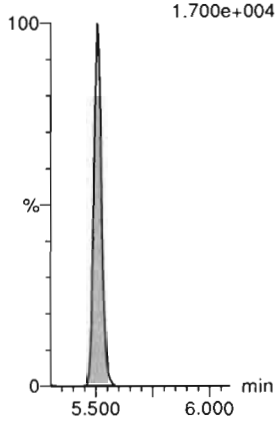
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
9.099e+004



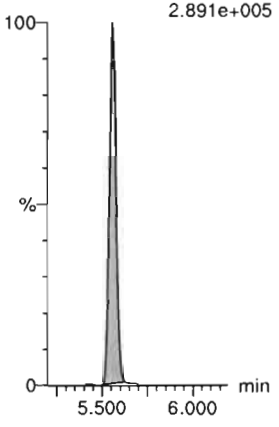
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.671e+005



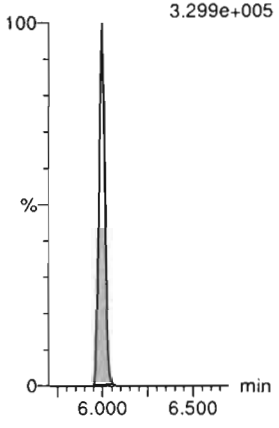
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.700e+004



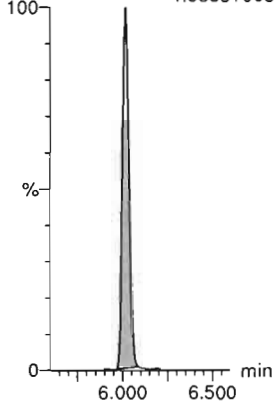
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.891e+005



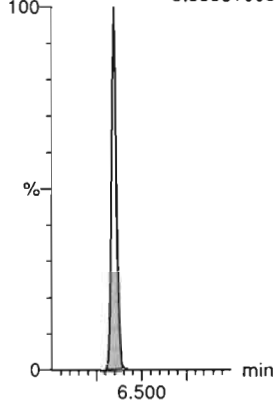
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.299e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.938e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.883e+005



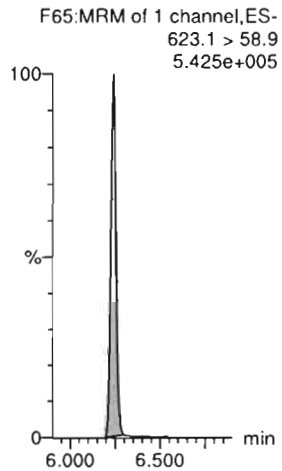
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-59.qld

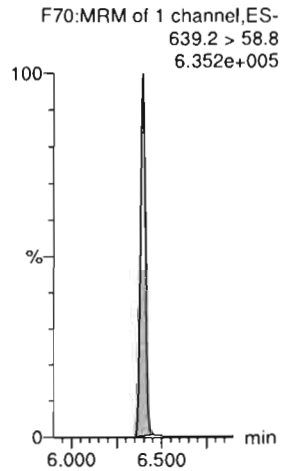
Last Altered: Thursday, March 05, 2020 11:45:23 Pacific Standard Time
Printed: Thursday, March 05, 2020 11:48:32 Pacific Standard Time

Name: 200304P2-59, Date: 05-Mar-2020, Time: 05:20:09, ID: ST200304P2-13 PFC CS3 20C0309, Description: PFC CS3 20C0309

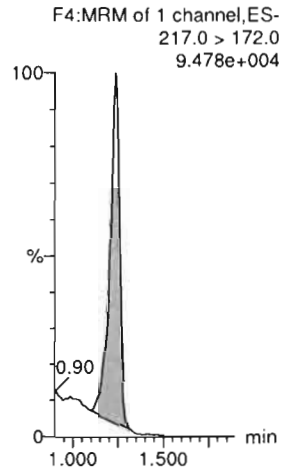
d7-N-MeFOSE-RSD



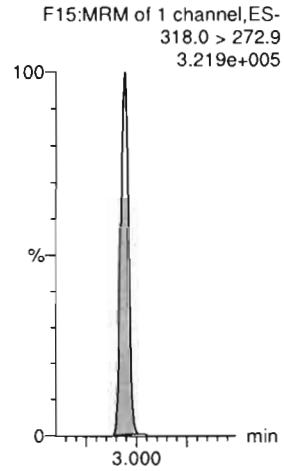
d9-N-EtFOSE-RSD



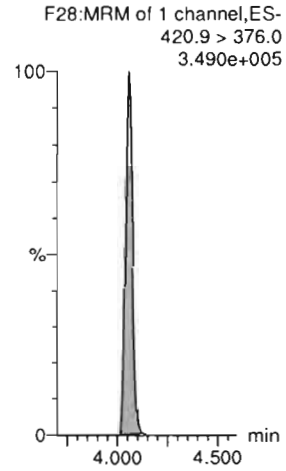
13C4-PFBA



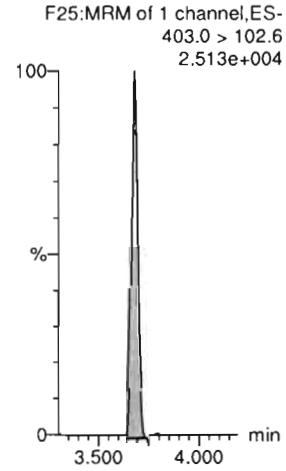
13C5-PFHxA



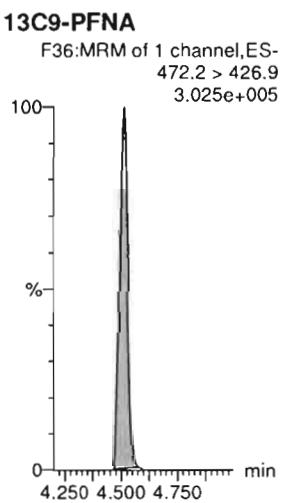
13C8-PFOA



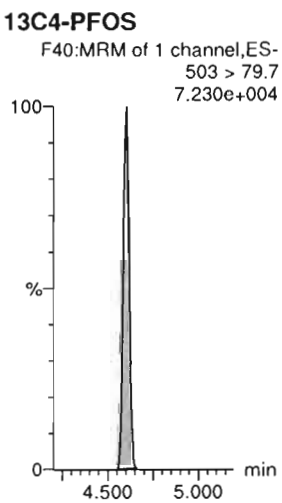
18O2-PFHxS



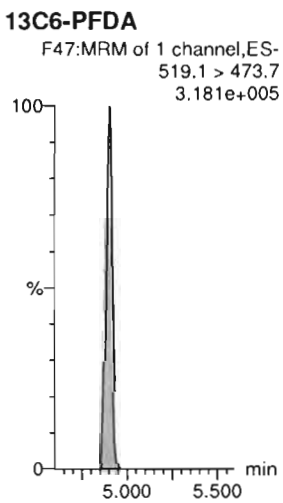
13C9-PFNA



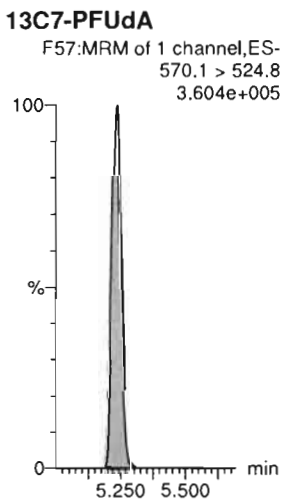
13C4-PFOS



13C6-PFDA



13C7-PFUdA



RK 3/5/2020

JLM 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

(A) High criteria limit, (B) Low criteria limit

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	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	4194.329	4148.344	1.00	1.24	12.639	10.000	10.3	103.3	NO		
2	2	PFPrS	248.9 > 79.7	838.891	907.745	1.00	1.54	11.552	10.000	9.42	94.2	NO	2.625	NO
3	3	3:3 FTCA	240.9 > 176.9	889.957	8237.703	1.00	2.01	1.350	10.000	9.08	90.8	NO	3.595	NO
4	4	PFPeA	263.1 > 218.9	6212.327	8237.703	1.00	2.14	9.427	10.000	9.94	99.4	NO		
5	5	PFBS	299.0 > 79.7	1718.415	907.745	1.00	2.42	23.663	10.000	9.18	91.8	NO	3.658	NO
6	6	4:2 FTS	327.0 > 307	1566.862	1092.567	1.00	2.86	17.926	10.000	11.5	115.3	NO	1.105	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	4148.344		1.00	1.24	4148.344	12.500	11.2	89.3	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	907.745		1.00	2.42	907.745	12.500	11.0	87.9	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	8237.703		1.00	2.14	8237.703	12.500	12.1	96.8	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	8237.703		1.00	2.14	8237.703	12.500	12.1	96.8	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	907.745		1.00	2.42	907.745	12.500	11.0	87.9	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	1092.567		1.00	2.87	1092.567	12.500	9.05	72.4	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	10500.428	14957.884	1.00	2.95	8.775	10.000	9.94	99.4	NO	19.274	NO
15	8	PFPeS	349.>79.7	1692.715	907.745	1.00	3.14	23.309	10.000	10.0	100.4	NO	2.708	NO
16	9	HFPO-DA	285.1 > 168.9	2796.903	3338.054	1.00	3.16	10.474	10.000	9.45	94.5	NO	2.730	NO
17	10	5:3 FTCA	340.9 > 236.9	2233.518	8493.919	1.00	3.48	3.287	10.000	8.59	85.9	NO	1.843	NO
18	11	PFHpA	363.0 > 318.9	8386.570	8493.919	1.00	3.55	12.342	10.000	10.2	102.2	NO	17.243	NO
19	12	ADONA	376.8 > 250.9	22388.365	8493.919	1.00	3.65	32.948	10.000	9.65	96.5	NO	4.222	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	14957.884		1.00	2.95	14957.884	12.500	12.3	98.6	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	907.745		1.00	2.42	907.745	12.500	11.0	87.9	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	3338.054		1.00	3.15	3338.054	12.500	11.9	95.3	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	8493.919		1.00	3.55	8493.919	12.500	12.6	100.5	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	8493.919		1.00	3.55	8493.919	12.500	12.6	100.5	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	8493.919		1.00	3.55	8493.919	12.500	12.6	100.5	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	1568.626	2042.980	1.00	3.69	9.598	10.000	9.41	94.1	NO	2.224	NO
28	15	6:2 FTS	427.0 > 407	1964.878	1089.174	1.00	4.01	22.550	10.000	11.8	118.0	NO	1.610	NO
29	16	L-PFOA	412.8 > 368.9	12775.691	12838.173	1.00	4.07	12.439	10.000	9.71	97.1	NO	3.509	NO
30	18	PFecHS	460.8 > 381.0	1892.143	12838.173	1.00	4.08	1.842	10.000	9.38	93.8	NO	0.592	NO
31	19	PFHpS	449.0 > 79.7	1757.820	2218.333	1.00	4.18	9.905	10.000	10.9	108.8	NO	2.100	NO
32	20	7:3 FTCA	440.9 > 336.9	2364.550	10764.917	1.00	4.51	2.746	10.000	9.51	95.1	NO	1.740	NO
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2042.980		1.00	3.69	2042.980	12.500	10.7	86.0	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1089.174		1.00	4.01	1089.174	12.500	12.1	96.7	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12838.173		1.00	4.07	12838.173	12.500	12.6	101.0	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12838.173		1.00	4.07	12838.173	12.500	12.6	101.0	NO		

RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	2218.333		1.00	4.61	2218.333	12.500	10.7	85.3	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	10764.917		1.00	4.52	10764.917	12.500	12.4	99.3	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	11434.635	10764.917	1.00	4.53	13.278	10.000	10.6	106.2	NO	6.655	NO
41	22	PFOSA	497.9 > 77.9	2313.943	3009.473	1.00	4.57	9.611	10.000	10.2	101.8	NO	31.964	NO
42	23	L-PFOS	498.9 > 79.7	1793.248	2218.333	1.00	4.61	10.105	10.000	10.8	108.2	NO	2.540	NO
43	25	9Cl-PF30NS	530.7 > 350.8	3286.571	2218.333	1.00	4.83	18.519	10.000	11.8	118.5	NO	23.174	NO
44	26	PFDA	513 > 468.8	13940.674	13000.621	1.00	4.91	13.404	10.000	9.99	99.9	NO	8.543	NO
45	27	8:2 FTS	526.9 > 507	1233.641	860.322	1.00	4.88	17.924	10.000	11.0	109.8	NO	2.864	NO
46	65	13C5-PFNA-EIS	468.2 > 422.9	10764.917		1.00	4.52	10764.917	12.500	12.4	99.3	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3009.473		1.00	4.57	3009.473	12.500	11.8	94.3	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2218.333		1.00	4.61	2218.333	12.500	10.7	85.3	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2218.333		1.00	4.61	2218.333	12.500	10.7	85.3	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	13000.621		1.00	4.91	13000.621	12.500	13.8	110.1	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	860.322		1.00	4.88	860.322	12.500	9.86	78.9	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	1560.533	2218.333	1.00	4.98	8.793	10.000	9.97	99.7	NO	2.411	NO
54	29	L-MeFOSAA	570 > 419	4376.019	1813.024	1.00	5.07	30.171	10.000	14.5	144.6 (A)	YES	2.330	NO
55	31	L-EtFOSAA	584.1 > 419	3699.333	2940.622	1.00	5.23	15.725	10.000	11.9	119.3	NO	1.207	NO
56	33	PFUdA	563.0 > 518.9	11834.134	16148.991	1.00	5.24	9.160	10.000	9.73	97.3	NO	17.130	NO
57	34	PFDS	598.8 > 79.7	1545.506	2218.333	1.00	5.29	8.709	10.000	9.80	98.0	NO	1.943	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	5399.739	17303.920	1.00	5.46	3.901	10.000	8.63	86.3	NO	18.549	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	2218.333		1.00	4.61	2218.333	12.500	10.7	85.3	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	1813.024		1.00	5.07	1813.024	12.500	9.29	74.4	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	2940.622		1.00	5.23	2940.622	12.500	10.2	81.7	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	16148.991		1.00	5.24	16148.991	12.500	13.2	105.3	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2218.333		1.00	4.61	2218.333	12.500	10.7	85.3	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	17303.920		1.00	5.53	17303.920	12.500	14.3	114.2	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607	1423.816	667.156	1.00	5.52	26.677	10.000	11.7	117.2	NO	1.384	NO
67	37	PFDoA	612.9 > 569.0	13551.884	17303.920	1.00	5.53	9.790	10.000	9.76	97.6	NO	9.934	NO
68	38	N-MeFOSA	512.1 > 168.9	4114.447	10801.338	1.00	5.55	56.833	50.000	55.5	110.9	NO	1.477	NO
69	39	PFTrDA	662.9 > 618.9	14681.865	17303.920	1.00	5.78	10.606	10.000	10.1	100.7	NO	42.138	NO
70	40	PFDoS	698.8 > 79.7	1727.321	14076.414	1.00	5.80	1.534	10.000	7.96	79.6	NO	3.379	NO
71	41	PFTeDA	713.0 > 669.0	15268.665	14076.414	1.00	6.00	13.559	10.000	9.52	95.2	NO	22.340	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	667.156		1.00	5.51	667.156	12.500	11.7	93.3	NO		

RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	17303.920		1.00	5.53	17303.920	12.500	14.3	114.2	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	10801.338		1.00	5.58	10801.338	149.200	129	86.1	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	17303.920		1.00	5.53	17303.920	12.500	14.3	114.2	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	14076.414		1.00	6.00	14076.414	12.500	13.2	105.3	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	14076.414		1.00	6.00	14076.414	12.500	13.2	105.3	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	5725.679	19863.746	1.00	6.01	43.007	50.000	48.9	97.9	NO	1.582	NO
80	43	PFHxDA	813.1 > 768.6	12113.191	24313.973	1.00	6.35	6.227	10.000	9.16	91.6	NO	77.175	NO
81	44	PFODA	913.1 > 868.8	12489.891	24313.973	1.00	6.59	6.421	10.000	6.97	69.7 (B)	YES		
82	45	N-MeFOSE	616.1 > 58.9	5699.146	17434.637	1.00	6.25	48.771	50.000	48.3	96.6	NO		
83	46	N-EtFOSE	630.1 > 58.9	6657.755	19998.334	1.00	6.41	49.671	50.000	51.4	102.8	NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	19863.746		1.00	6.03	19863.746	149.200	137	91.6	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	24313.973		1.00	6.35	24313.973	12.500	14.4	115.6	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	24313.973		1.00	6.35	24313.973	12.500	14.4	115.6	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	17434.637		1.00	6.25	17434.637	149.200	130	87.1	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	19998.334		1.00	6.40	19998.334	149.200	132	88.3	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2218.333		1.00	4.61	2218.333	12.500	10.7	85.3	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	4169.463	5642.356	1.00	1.24	9.237	12.500	11.6	92.7	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	8237.703	15069.188	1.00	2.14	6.833	12.500	12.0	96.1	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	907.745	733.444	1.00	2.42	15.471	12.500	15.4	123.0	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	3338.054	15069.188	1.00	3.15	2.769	12.500	11.3	90.3	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	1092.567	733.444	1.00	2.87	18.620	12.500	12.3	98.1	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	14957.884	15069.188	1.00	2.95	12.408	12.500	12.1	96.4	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	8493.919	15069.188	1.00	3.55	7.046	12.500	12.5	99.7	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2042.980	733.444	1.00	3.69	34.818	12.500	14.5	116.3	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1089.174	2255.192	1.00	4.01	6.037	12.500	12.6	100.6	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	10764.917	11427.690	1.00	4.52	11.775	12.500	12.6	100.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3009.473	14804.009	1.00	4.57	2.541	12.500	12.1	96.4	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12838.173	15717.816	1.00	4.07	10.210	12.500	12.4	99.4	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2218.333	2255.192	1.00	4.61	12.296	12.500	12.4	99.4	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	13000.621	12556.379	1.00	4.91	12.942	12.500	13.2	105.5	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	860.322	2255.192	1.00	4.88	4.769	12.500	11.7	93.2	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	1802.479	14804.009	1.00	5.07	1.522	12.500	9.43	75.5	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	16148.991	14804.009	1.00	5.24	13.636	12.500	14.1	113.1	NO		

RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	2940.622	14804.009	1.00	5.23	2.483	12.500	10.9	87.1	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	17303.920	12556.379	1.00	5.53	17.226	12.500	13.8	110.3	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	667.156	2255.192	1.00	5.51	3.698	12.500	12.9	103.6	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	10801.338	14804.009	1.00	5.58	9.120	149.200	128	85.8	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	14076.414	14804.009	1.00	6.00	11.886	12.500	14.1	113.1	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	19863.746	14804.009	1.00	6.03	16.772	149.200	147	98.4	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	24366.354	14804.009	1.00	6.35	20.574	12.500	15.6	124.8	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	17434.637	14804.009	1.00	6.25	14.721	149.200	141	94.5	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	19998.334	14804.009	1.00	6.40	16.886	149.200	141	94.7	NO		
119	99	13C4-PFBA	217.0 > 172.0	5642.356	5642.356	1.00	1.24	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	15069.188	15069.188	1.00	2.95	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	15717.816	15717.816	1.00	4.07	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	733.444	733.444	1.00	3.69	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11427.690	11427.690	1.00	4.52	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2255.192	2255.192	1.00	4.61	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	12556.379	12556.379	1.00	4.91	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	14804.009	14804.009	1.00	5.24	12.500	12.500	12.5	100.0	NO		

RK 3/5/2020

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 12:29:39 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:30:31 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200304P2-1	IPA	04-Mar-20	19:10:51
2	2	200304P2-2	IPA	04-Mar-20	19:21:20
3	3	200304P2-3	ST200304P2-1 PFC CS-2 20C0304	04-Mar-20	19:31:52
4	4	200304P2-4	ST200304P2-2 PFC CS-1 20C0305	04-Mar-20	19:42:23
5	5	200304P2-5	ST200304P2-3 PFC CS0 20C0306	04-Mar-20	19:52:51
6	6	200304P2-6	ST200304P2-4 PFC CS1 20C0307	04-Mar-20	20:03:23
7	7	200304P2-7	ST200304P2-5 PFC CS2 20C0308	04-Mar-20	20:13:54
8	8	200304P2-8	ST200304P2-6 PFC CS3 20C0309	04-Mar-20	20:24:22
9	9	200304P2-9	ST200304P2-7 PFC CS4 20C0310	04-Mar-20	20:34:54
10	10	200304P2-10	ST200304P2-8 PFC CS5 20C0311	04-Mar-20	20:45:22
11	11	200304P2-11	ST200304P2-9 PFC CS6 20C0312	04-Mar-20	20:55:55
12	12	200304P2-12	ST200304P2-10 PFC CS7 20C0313	04-Mar-20	21:06:25
13	13	200304P2-13	IB	04-Mar-20	21:16:56
14	14	200304P2-14	ICV200304P2-1 PFC ICV 20C0314	04-Mar-20	21:27:24
15	15	200304P2-15	IB	04-Mar-20	21:37:55
16	16	200304P2-16	B0B0213-BLK1 Method Blank 0.25	04-Mar-20	21:48:26
17	17	200304P2-17	B0B0213-BS1 OPR 0.25	04-Mar-20	21:58:57
18	18	200304P2-18	B0B0213-BSD1 LCSD 0.25	04-Mar-20	22:09:25
19	19	200304P2-19	2000372-01 EB05-20200220 0.25095	04-Mar-20	22:19:57
20	20	200304P2-20	2000372-02 TW07S-20200220 0.25404	04-Mar-20	22:30:26
21	21	200304P2-21	2000372-03 TW05S-20200220 0.24752	04-Mar-20	22:40:57
22	22	200304P2-22	2000372-04 TW06S-20200220 0.24881	04-Mar-20	22:51:28
23	23	200304P2-23	2000372-05 TW21S-20200220 0.24679	04-Mar-20	23:01:56
24	24	200304P2-24	2000372-06 TW20S-20200220 0.24911	04-Mar-20	23:12:29
25	25	200304P2-25	2000372-07 TW19S-20200220 0.24732	04-Mar-20	23:22:57
26	26	200304P2-26	2000372-08 TW18S-20200220 0.25075	04-Mar-20	23:33:29
27	27	200304P2-27	2000373-01 OU3-LW01-20200220 0.24602	04-Mar-20	23:43:57
28	28	200304P2-28	2000373-02 TS-LW01-20200220 0.24944	04-Mar-20	23:54:30
29	29	200304P2-29	ST200304P2-11 PFC CS3 20C0309	05-Mar-20	00:04:58
30	30	200304P2-30	IB	05-Mar-20	00:15:30
31	31	200304P2-31	2000373-03 TN-LW01-20200220 0.25058	05-Mar-20	00:26:01
32	32	200304P2-32	2000373-05 TN-LW02-20200220 0.25407	05-Mar-20	00:36:31

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 12:29:39 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:30:31 Pacific Standard Time

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
33	33	200304P2-33	2000390-01 EB06-20200221 0.25473	05-Mar-20	00:46:59
34	34	200304P2-34	2000390-02 TW14S-20200221 0.25234	05-Mar-20	00:57:32
35	35	200304P2-35	2000390-03 TW17S-20200221 0.25253	05-Mar-20	01:08:00
36	36	200304P2-36	2000390-04 TW16S-20200221 0.25077	05-Mar-20	01:18:32
37	37	200304P2-37	2000390-05 TW15S-20200221 0.25188	05-Mar-20	01:29:02
38	38	200304P2-38	B0B0279-BLK1 Method Blank 0.25	05-Mar-20	01:39:31
39	39	200304P2-39	B0B0279-BS1 OPR 0.25	05-Mar-20	01:50:03
40	40	200304P2-40	B0B0279-MS1 Matrix Spike 0.24487	05-Mar-20	02:00:34
41	41	200304P2-41	B0B0279-MSD1 Matrix Spike Dup 0.24851	05-Mar-20	02:11:02
42	42	200304P2-42	B0B0279-MSD2 Matrix Spike Dup 0.25981	05-Mar-20	02:21:34
43	43	200304P2-43	B0B0279-MS2 Matrix Spike 0.25235	05-Mar-20	02:32:02
44	44	200304P2-44	2000405-01 S9MW41-20Q1 0.2563	05-Mar-20	02:42:35
45	45	200304P2-45	2000405-02 S9MW14-20Q1 0.25573	05-Mar-20	02:53:03
46	46	200304P2-46	2000405-03 S9IMW1-20Q1 0.26015	05-Mar-20	03:03:35
47	47	200304P2-47	ST200304P2-12 PFC CS3 20C0309	05-Mar-20	03:14:06
48	48	200304P2-48	IB	05-Mar-20	03:24:35
49	49	200304P2-49	2000405-04 S9DMW1-20Q1 0.25143	05-Mar-20	03:35:06
50	50	200304P2-50	2000405-05 S9MW63L7-20Q1 0.25274	05-Mar-20	03:45:34
51	51	200304P2-51	2000405-06 S9MW63L9-20Q1 0.26389	05-Mar-20	03:56:07
52	52	200304P2-52	2000405-07 S9MW63L1-20Q1 0.25432	05-Mar-20	04:06:37
53	53	200304P2-53	2000405-08 S9MW63L3-20Q1 0.24908	05-Mar-20	04:17:06
54	54	200304P2-54	2000405-09 S9MW35-20Q1 0.24421	05-Mar-20	04:27:38
55	55	200304P2-55	2000405-10 S9MW32-20Q1 0.26062	05-Mar-20	04:38:06
56	56	200304P2-56	2000405-11 S9MW13-20Q1 0.25349	05-Mar-20	04:48:38
57	57	200304P2-57	2000405-12 S9MW12-20Q1 0.26401	05-Mar-20	04:59:09
58	58	200304P2-58	2000405-13 S9MW12-20Q1-D 0.25543	05-Mar-20	05:09:37
59	59	200304P2-59	ST200304P2-13 PFC CS3 20C0309	05-Mar-20	05:20:09
60	60	200304P2-60	IB	05-Mar-20	05:30:38
61	61	200304P2-61	2000405-14 S9MW63L5-20Q1 0.26102	05-Mar-20	05:41:10
62	62	200304P2-62	2000315-02 S-SB05-00-20200210 2.33	05-Mar-20	05:51:39
63	63	200304P2-63	2000388-01 Plant Boiler/Tower Chemicals 0.25431	05-Mar-20	06:02:10
64	64	200304P2-64	2000356-06 TW09S-20200219 0.25359	05-Mar-20	06:12:41
65	65	200304P2-65	2000356-10 TW12S-20200219 0.25542	05-Mar-20	06:23:10
66	66	200304P2-66	IB	05-Mar-20	06:33:41
67	67	200304P2-67	2000356-05@5X TW08S-20200219 0.23703	05-Mar-20	06:44:10
68	68	200304P2-68	2000356-09@10X TW13S-20200219 0.24923	05-Mar-20	06:54:41

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 12:29:39 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:30:31 Pacific Standard Time

Compound name: PFBA

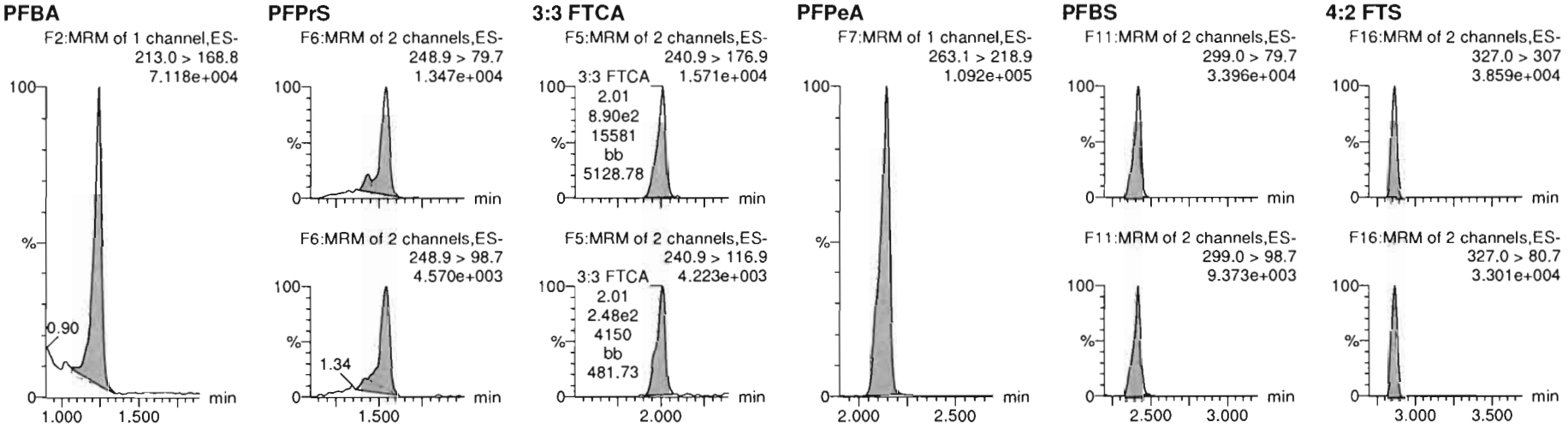
	#	Name	ID	Acq.Date	Acq.Time
69	69	200304P2-69	B0B0238-BLK1 Method Blank 0.25	05-Mar-20	07:05:12
70	70	200304P2-70	B0B0238-BS1 OPR 0.25	05-Mar-20	07:15:41
71	71	200304P2-71	2000395-01 GW043.7048.72002191000JSJ 0.23635	05-Mar-20	07:26:13
72	72	200304P2-72	2000395-02 FB2002191040JSJ 0.23937	05-Mar-20	07:36:43
73	73	200304P2-73	2000395-03 GW042.7047.72002191115JSJ 0.251	05-Mar-20	07:47:12
74	74	200304P2-74	2000395-04 GW0190242002191230JSJ 0.25527	05-Mar-20	07:57:44
75	75	200304P2-75	ST200304P2-14 PFC CS3 20C0309	05-Mar-20	08:08:13
76	76	200304P2-76	IB	05-Mar-20	08:18:45
77	77	200304P2-77	2000395-05 GW028.7033.72002191545JSJ 0.2514	05-Mar-20	08:29:13
78	78	200304P2-78	2000395-06 GW025.3030.32002201000JSJ 0.24266	05-Mar-20	08:39:45
79	79	200304P2-79	2000395-07 GW020.5025.52002201130JSJ 0.25088	05-Mar-20	08:50:16
80	80	200304P2-80	2000395-08 GW021.5026.52002201305JSJ 0.24274	05-Mar-20	09:00:44
81	81	200304P2-81	2000395-09 GW0230282002201415AB 0.24246	05-Mar-20	09:11:16
82	82	200304P2-82	2000395-10 GW0150202002201405JSJ 0.25236	05-Mar-20	09:21:47
83	83	200304P2-83	B0C0012-BLK1 Method Blank 2	05-Mar-20	09:32:15
84	84	200304P2-84	B0C0012-BS1 OPR 2	05-Mar-20	09:42:47
85	85	200304P2-85	B0C0012-BS2 OPR 2	05-Mar-20	09:53:16
86	86	200304P2-86	B0C0012-BS3 OPR 2	05-Mar-20	10:03:48
87	87	200304P2-87	B0C0012-BS4 OPR 2	05-Mar-20	10:14:17
88	88	200304P2-88	PFC NS SUP	05-Mar-20	10:24:48
89	89	200304P2-89	ST200304P2-15 PFC CS3 20C0309	05-Mar-20	10:35:17
90	90	200304P2-90	IB	05-Mar-20	10:45:49

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Method: P:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: P:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309



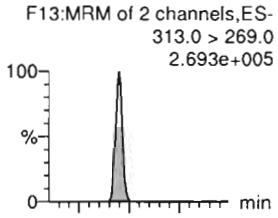
RK 3/5/2020

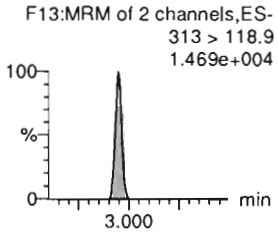
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

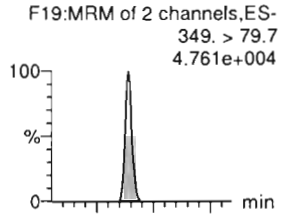
Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

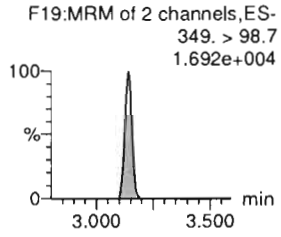
PFHxA



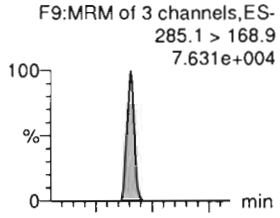


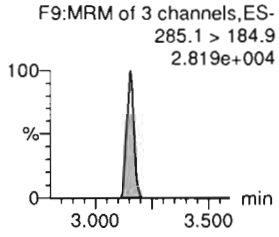
PFPeS



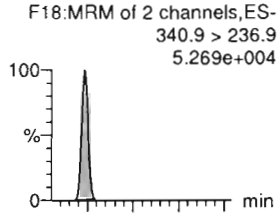


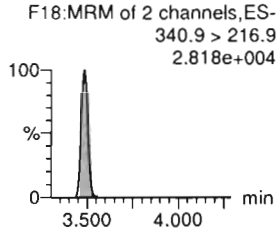
HFPO-DA



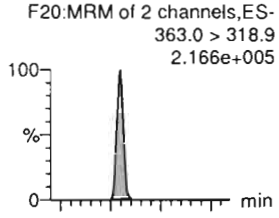


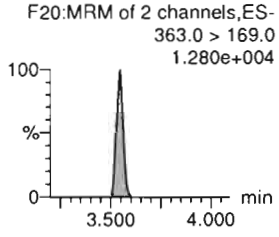
5:3 FTCA



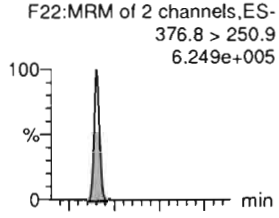


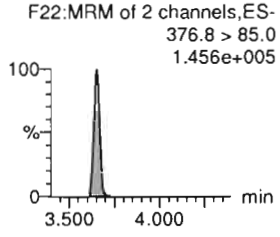
PFHpA



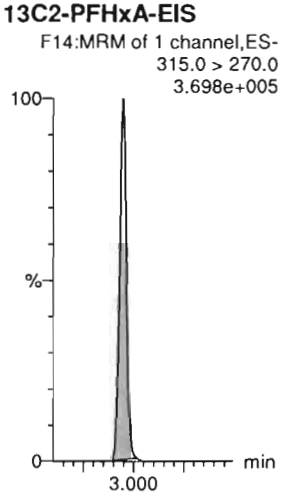


ADONA

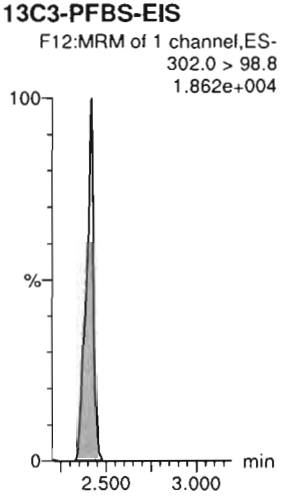




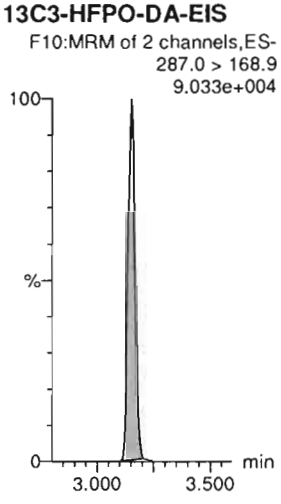
13C2-PFHxA-EIS



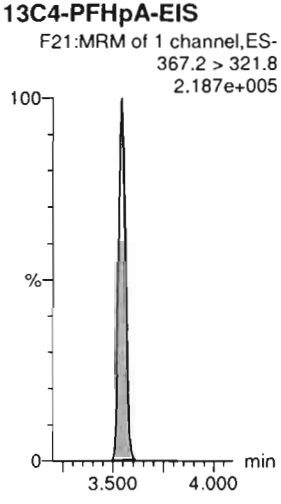
13C3-PFBS-EIS



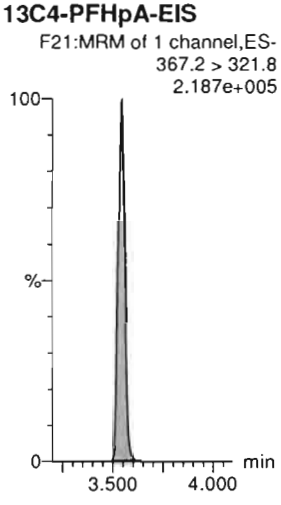
13C3-HFPO-DA-EIS



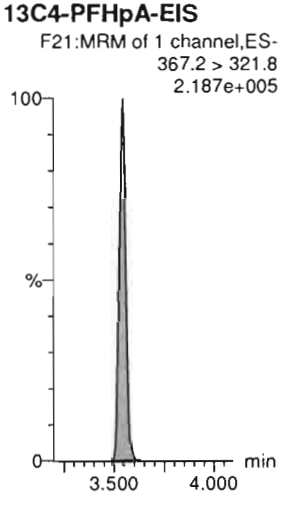
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS



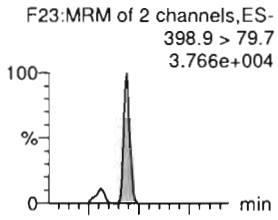
RK 3/5/2020

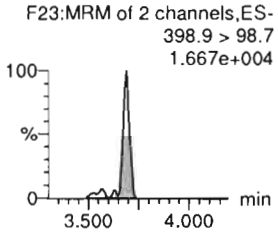
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

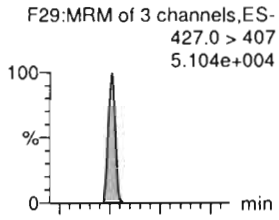
Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

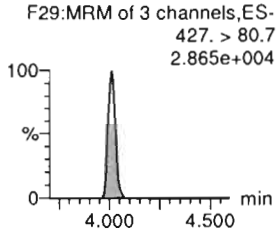
L-PFHxS



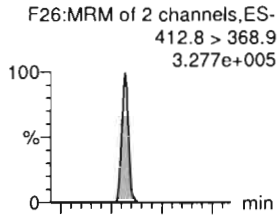


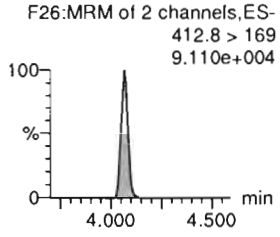
6:2 FTS



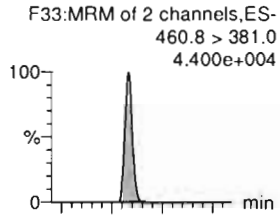


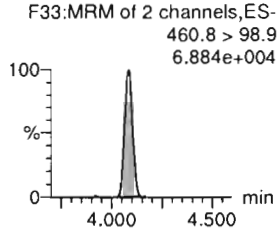
L-PFOA



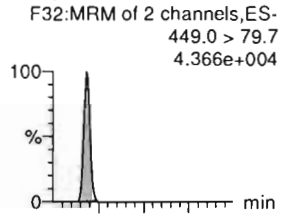


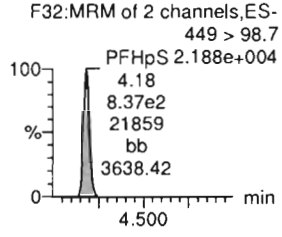
PFEChS



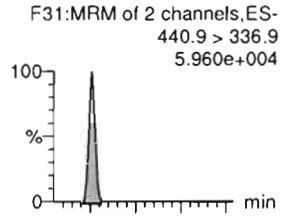


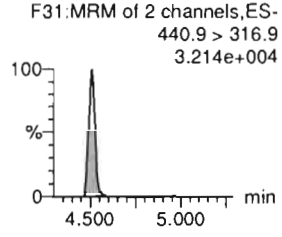
PFHpS



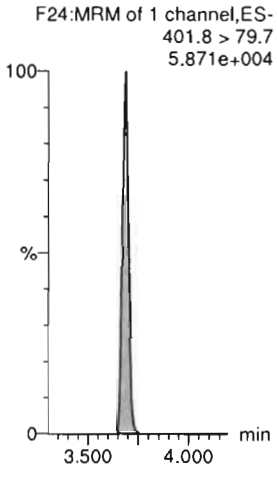


7:3 FTCA

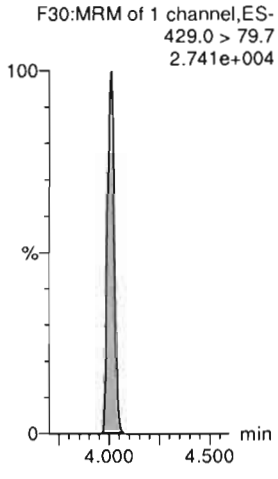




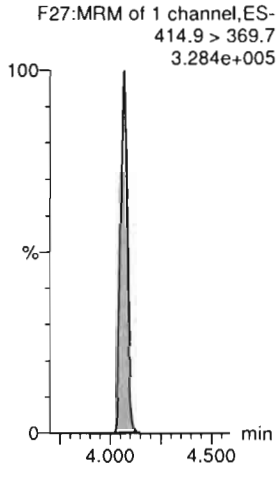
13C3-PFHxS-EIS



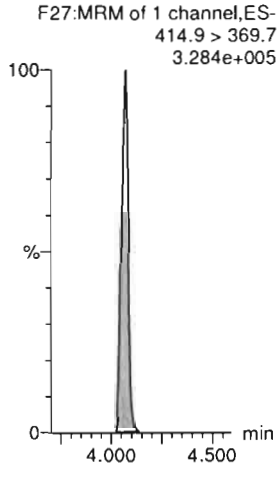
13C2-6:2 FTS-EIS



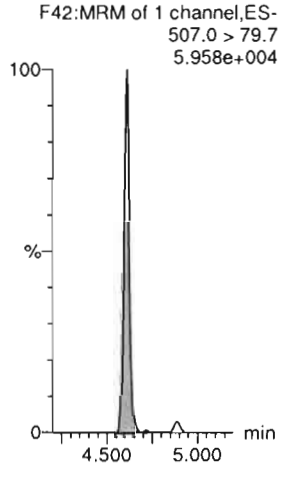
13C2-PFOA-EIS



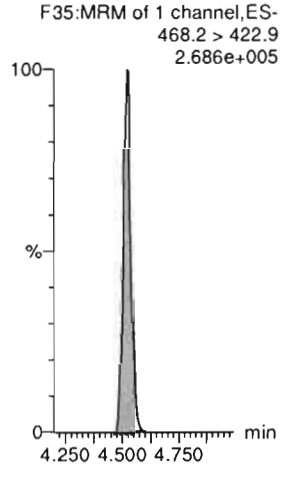
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS



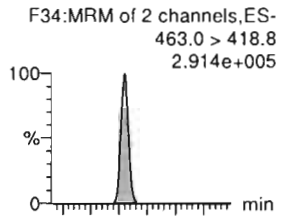
RK 3/5/2020

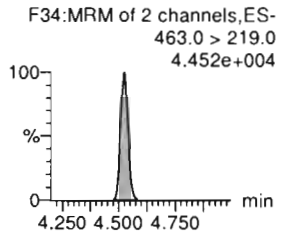
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

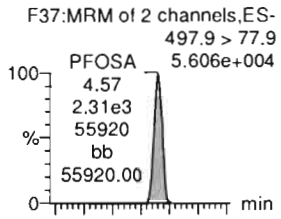
Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

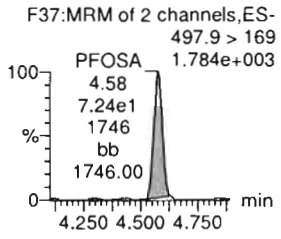
PFNA



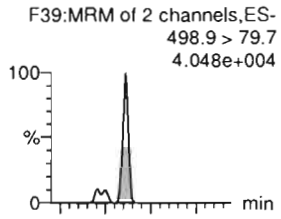


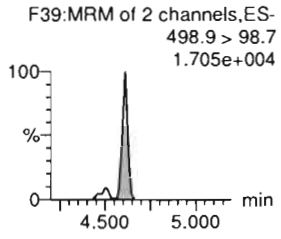
PFOSA



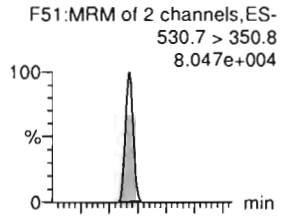


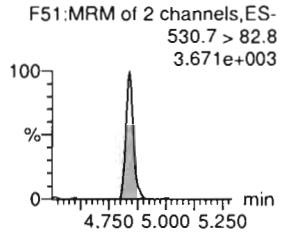
L-PFOS



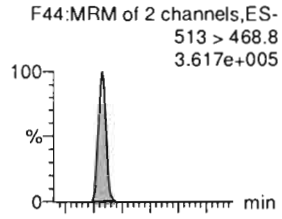


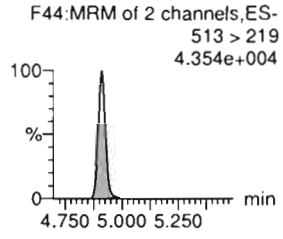
9Cl-PF30NS



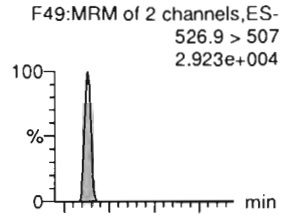


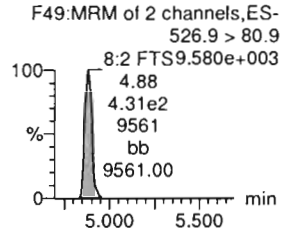
PFDA



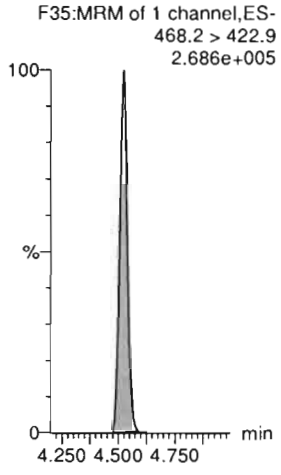


8:2 FTS

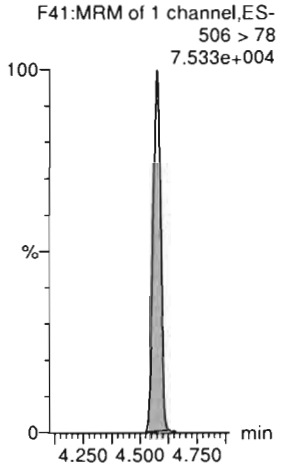




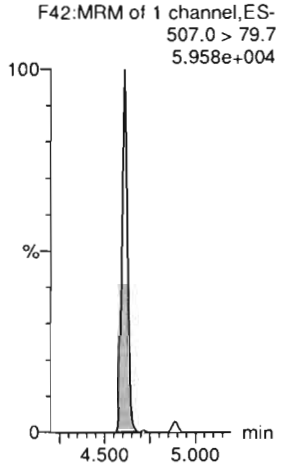
13C5-PFNA-EIS



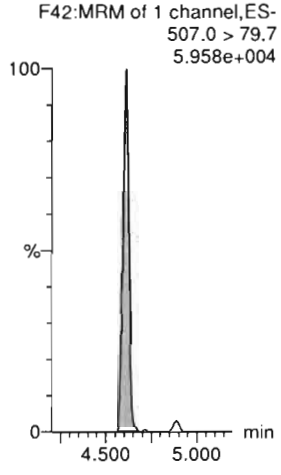
13C8-PFOSA-EIS



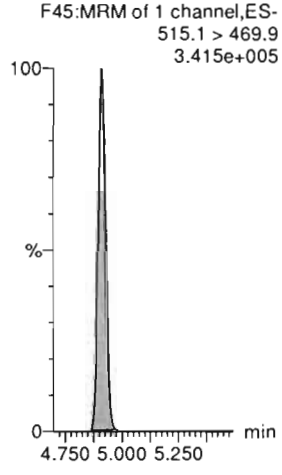
13C8-PFOS-EIS



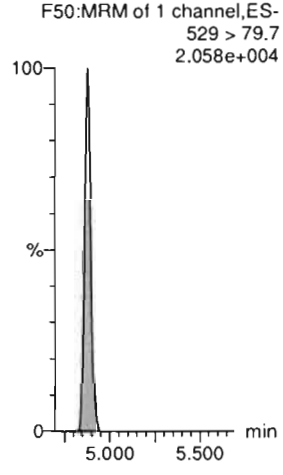
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS



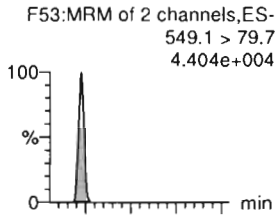
RK 3/5/2020

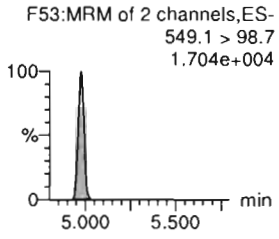
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

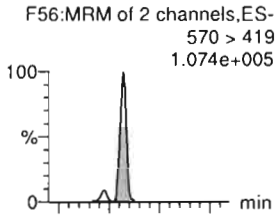
Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

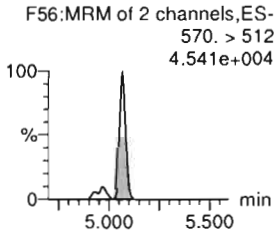
PFNS



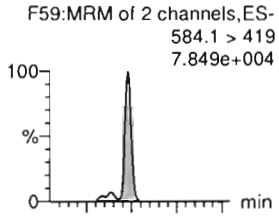


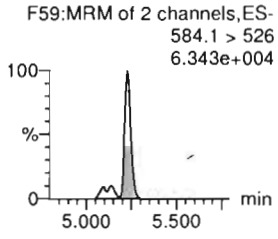
L-MeFOSAA



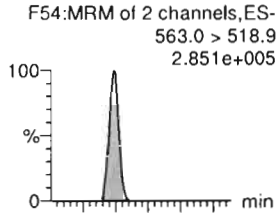


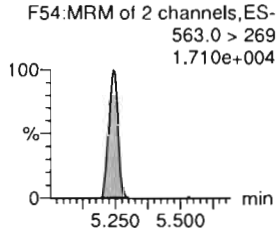
L-EtFOSAA



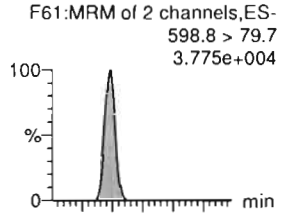


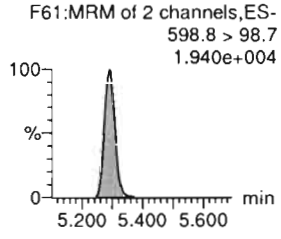
PFUdA



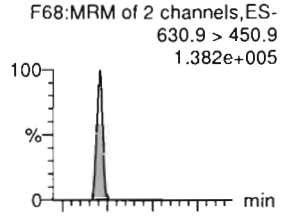


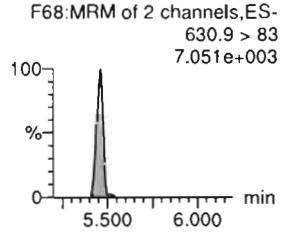
PFDS



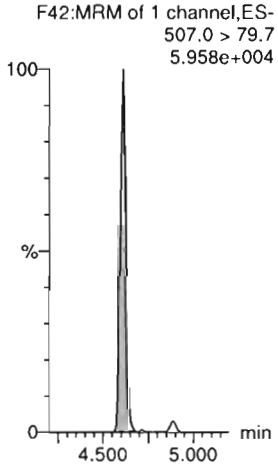


11Cl-PF30UdS

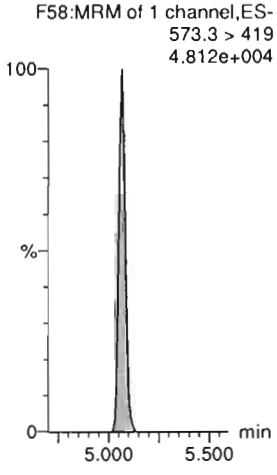




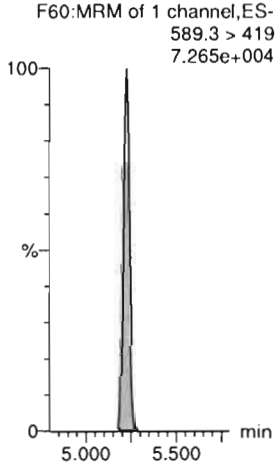
13C8-PFOS-EIS



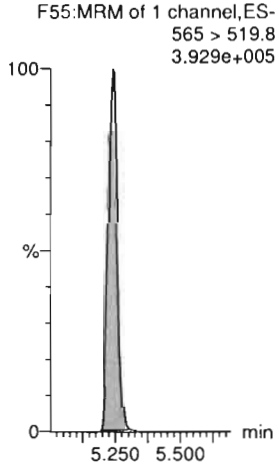
d3-N-MeFOSAA-EIS



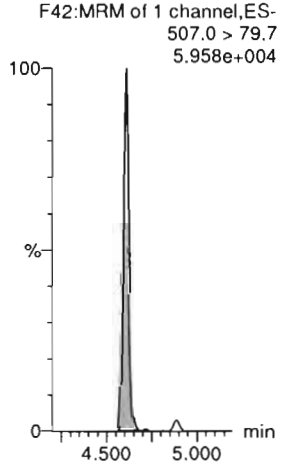
d5-N-EtFOSAA-EIS



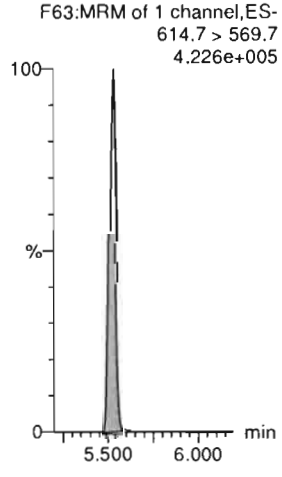
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS



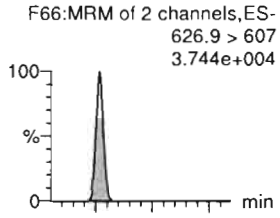
RK 3/5/2020

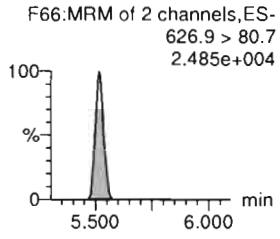
Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

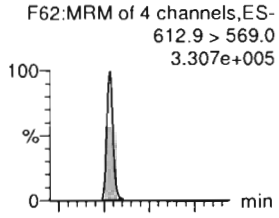
Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

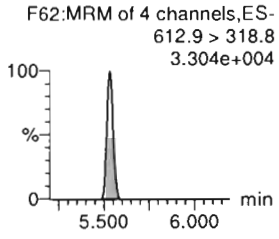
10:2 FTS



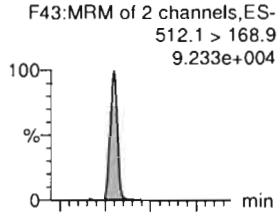


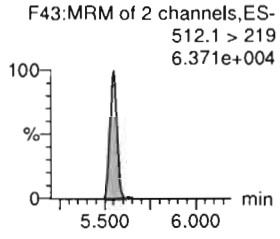
PFDoA



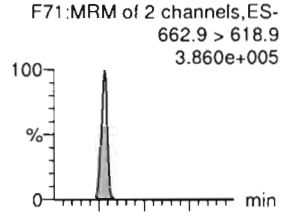


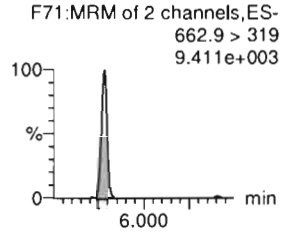
N-MeFOSA



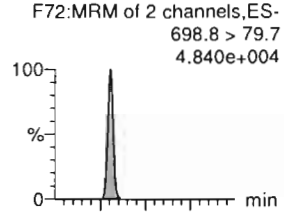


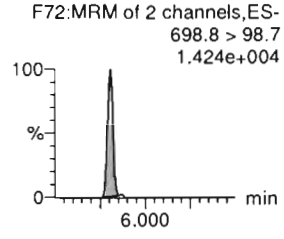
PFTrDA



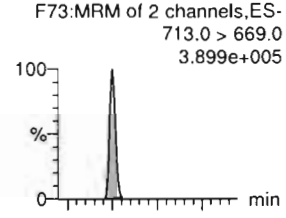


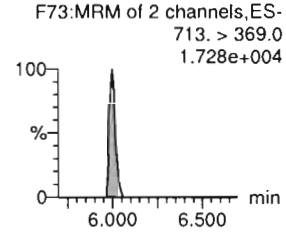
PFDoS



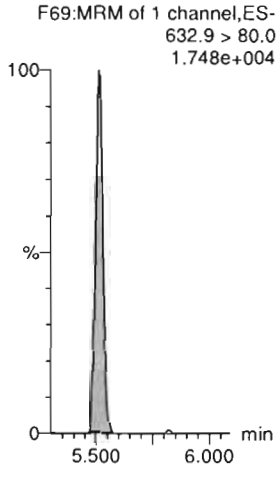


PFTeDA

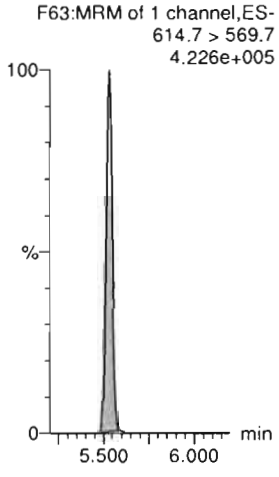




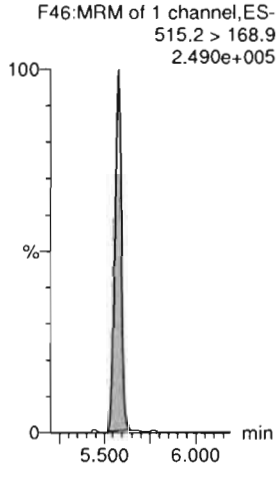
13C2-10:2 FTS-EIS



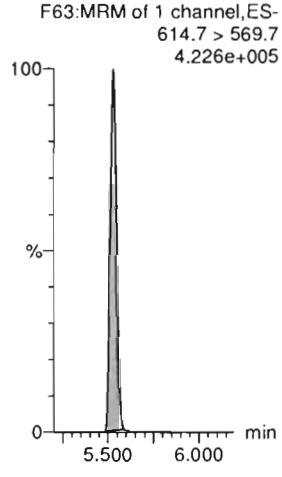
13C2-PFDoA-EIS



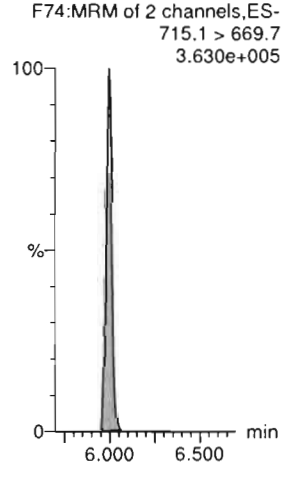
d3-N-MeFOSA-EIS



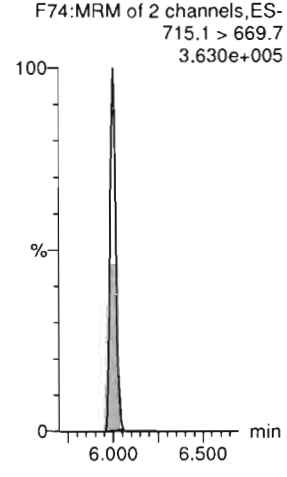
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS



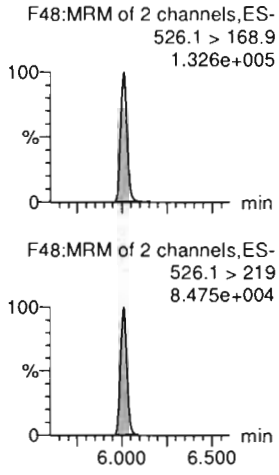
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

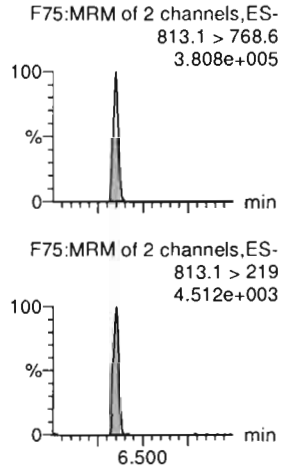
Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

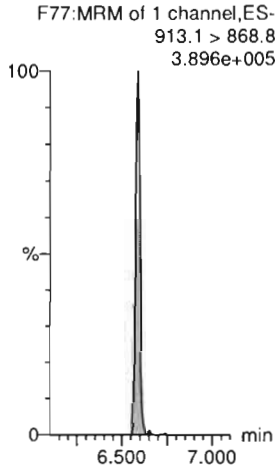
N-EtFOSA



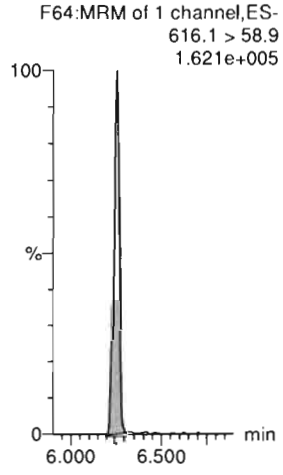
PFHxDA



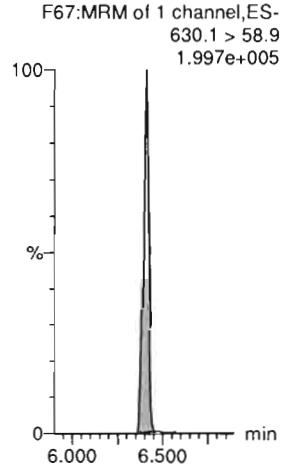
PFODA



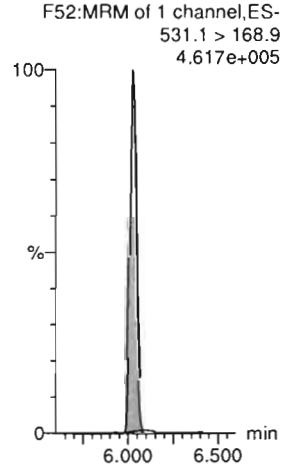
N-MeFOSE



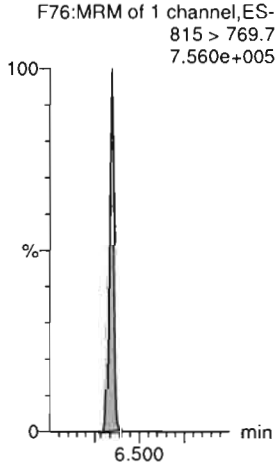
N-EtFOSE



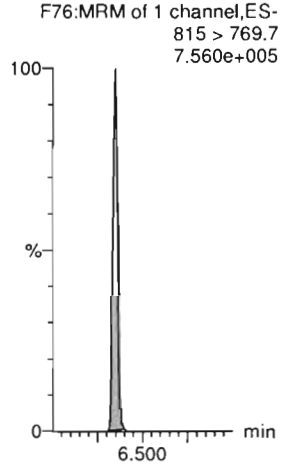
d5-N-ETFOSA-EIS



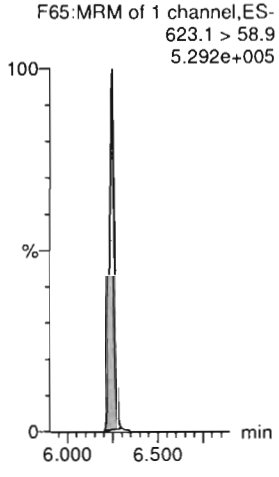
13C2-PFHxDA-EIS



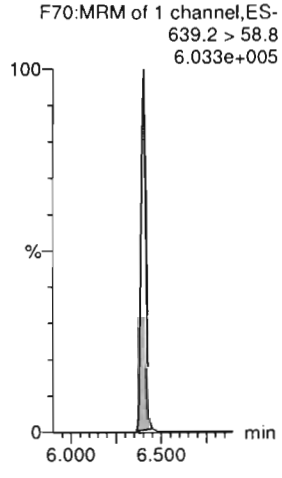
13C2-PFHxDA-EIS



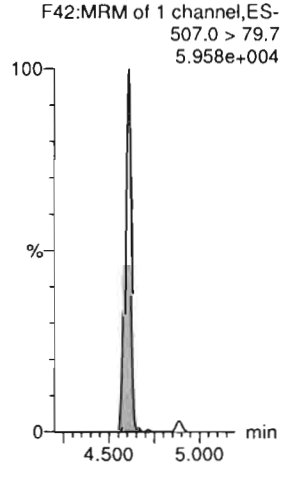
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS



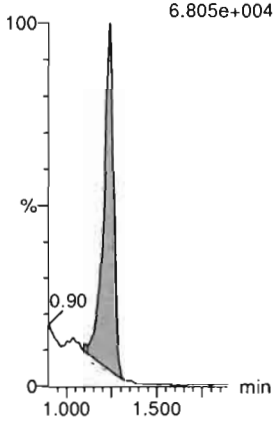
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

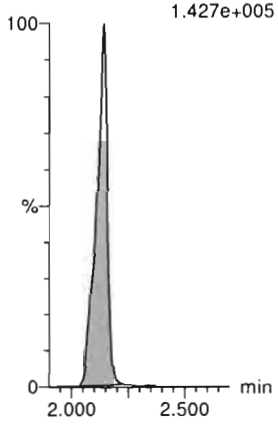
Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

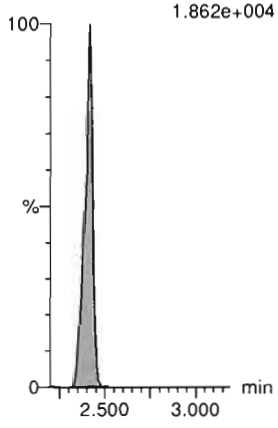
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
6.805e+004



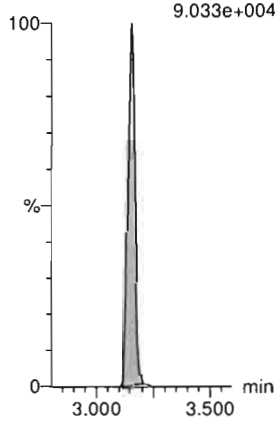
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
1.427e+005



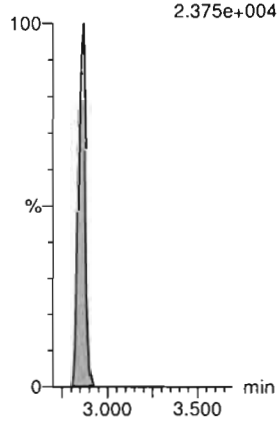
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.862e+004



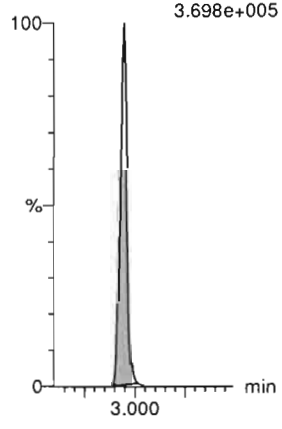
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.033e+004



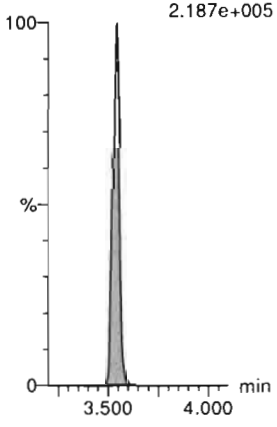
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.375e+004



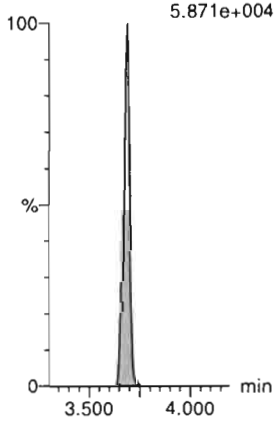
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.698e+005



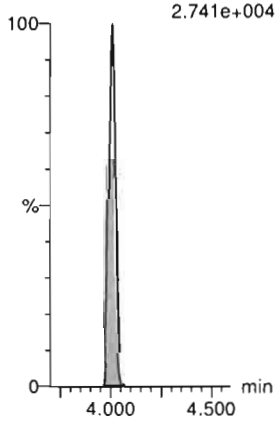
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.187e+005



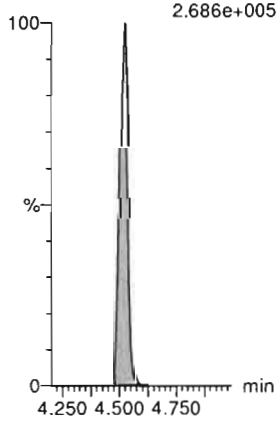
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
5.871e+004



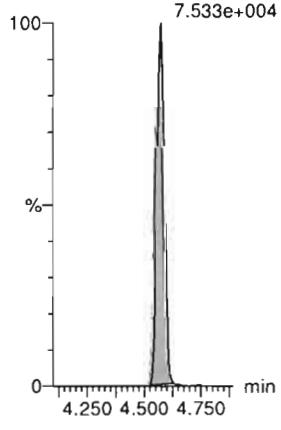
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.741e+004



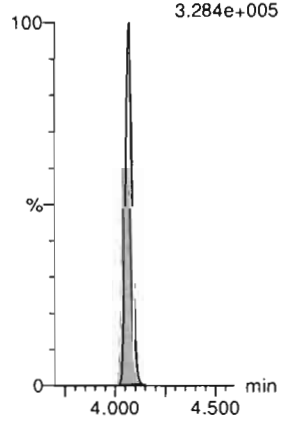
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.686e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
7.533e+004



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.284e+005



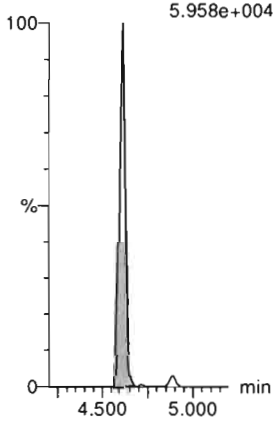
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

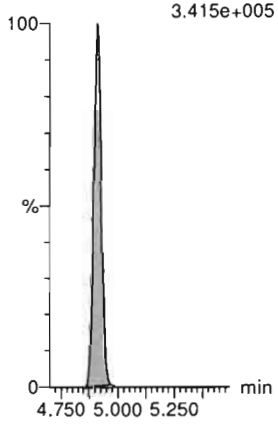
Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

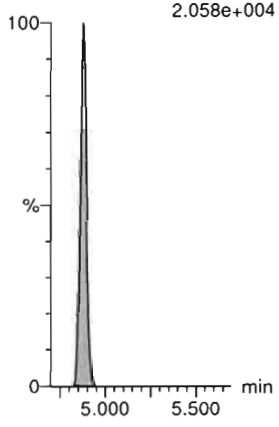
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
5.958e+004



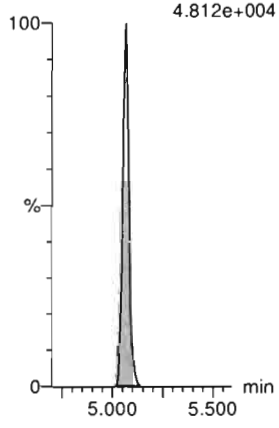
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.415e+005



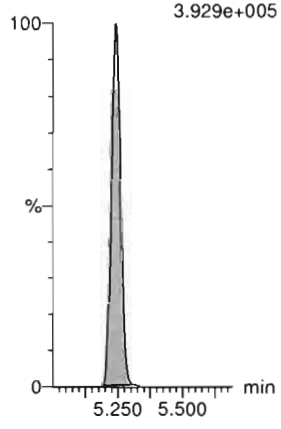
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.058e+004



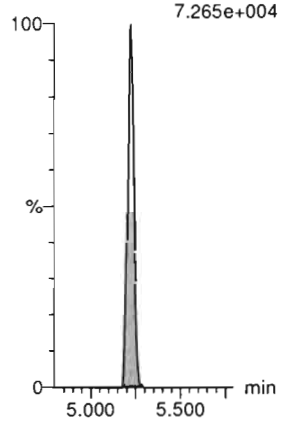
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.812e+004



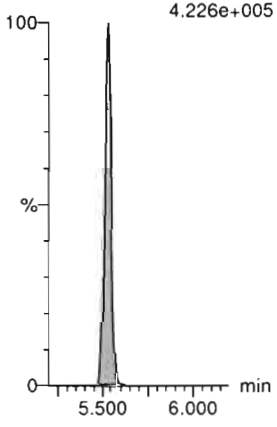
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.929e+005



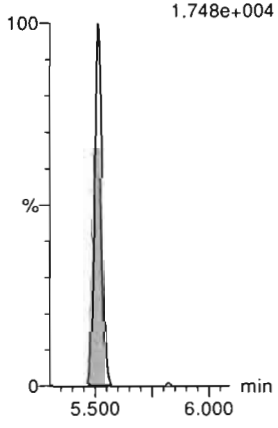
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
7.265e+004



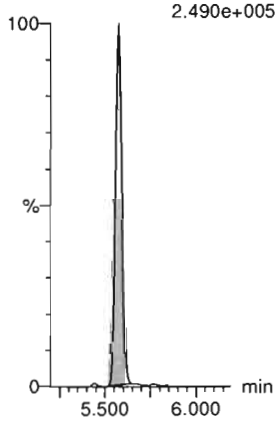
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.226e+005



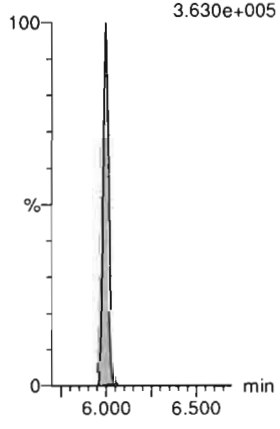
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.748e+004



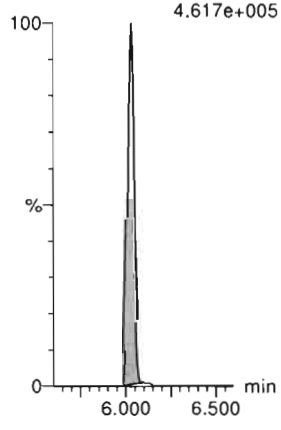
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.490e+005



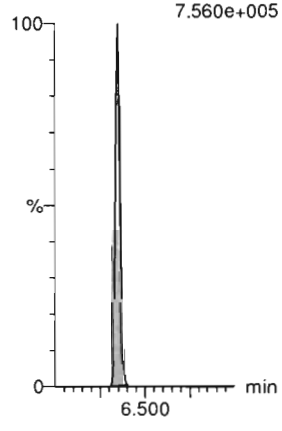
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.630e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.617e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
7.560e+005



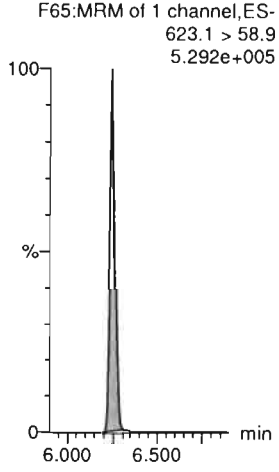
RK 3/5/2020

Dataset: P:\PFAS5.PRO\RESULTS\200304P2\200304P2-75.qld

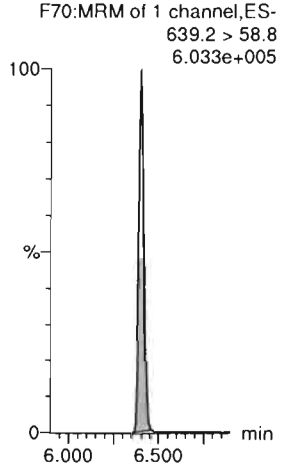
Last Altered: Thursday, March 05, 2020 12:01:52 Pacific Standard Time
Printed: Thursday, March 05, 2020 12:15:26 Pacific Standard Time

Name: 200304P2-75, Date: 05-Mar-2020, Time: 08:08:13, ID: ST200304P2-14 PFC CS3 20C0309, Description: PFC CS3 20C0309

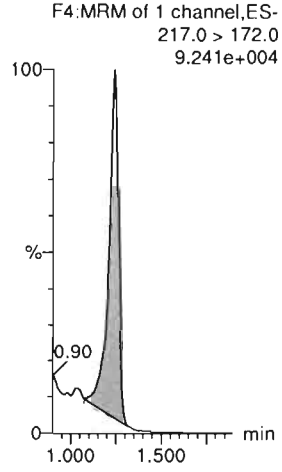
d7-N-MeFOSE-RSD



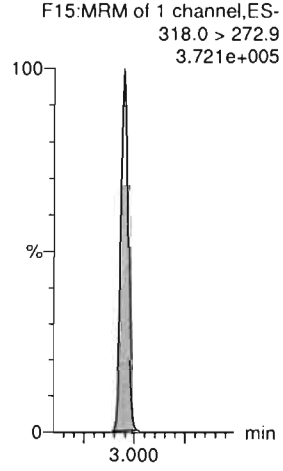
d9-N-EtFOSE-RSD



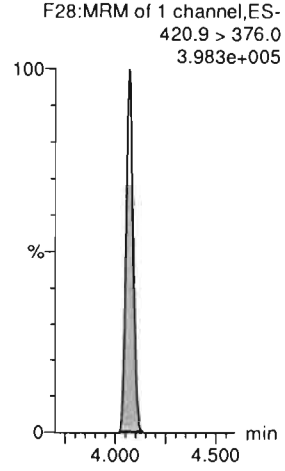
13C4-PFBA



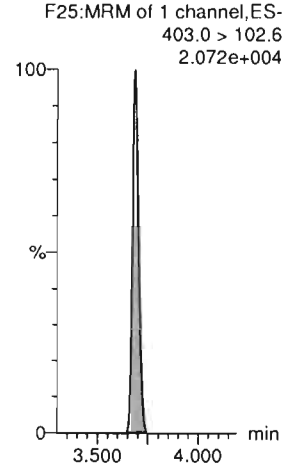
13C5-PFHxA



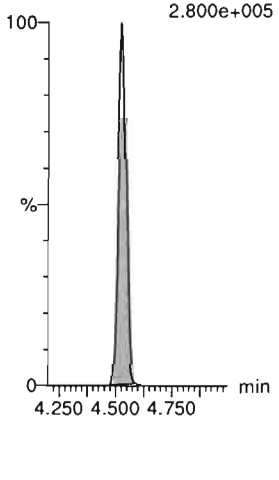
13C8-PFOA



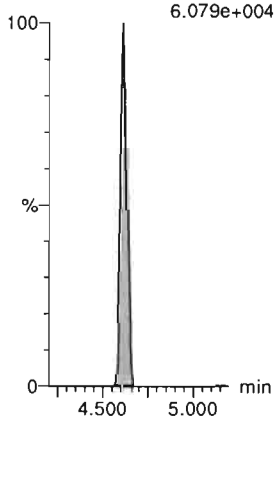
18O2-PFHxS



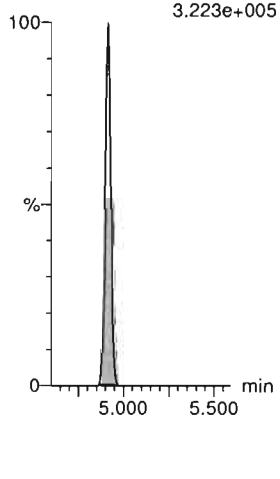
13C9-PFNA



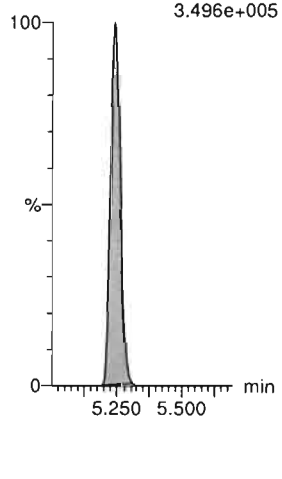
13C4-PFOS



13C6-PFDA



13C7-PFUdA



RK 3/5/2020

INITIAL CALIBRATION (ICAL)

INCLUDING ASSOCIATED

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

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

low point
3:3 FTCA : 0.5 ✓
PFPrS : 0.5 ✓
8:2FTS : 1.0 ✓
PFNS : 0.5 ✓
L-MeFOSAA : 0.5 ✓

high point
3:3 FTCA : 100 ✓
5:3 FTCA : 100 ✓
L-PFHxS : 250 ✓
7:3 FTCA : 100 ✓
PFOSA : 100 ✓
9Cl : 250 ✓
8:2 FTS : 250 ✓
10:2 FTS : 100 ✓

✓dpv 03/04/20

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 09:57:51
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 09:53:23

Compound name: PFBA
Coefficient of Determination: R^2 = 0.999808
Calibration curve: 0.000115966 * x^2 + 1.21542 * x + 0.00558253
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200303P2-3	Standard	0.250	1.35	115.130	3828.781	0.376	0.3	21.9	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	1.34	183.933	3904.802	0.589	0.5	-4.0	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	1.35	341.182	4029.857	1.058	0.9	-13.4	NO	1.000	NO	MM
4	4	200303P2-6	Standard	2.000	1.35	749.582	3907.519	2.398	2.0	-1.6	NO	1.000	NO	MM
5	5	200303P2-7	Standard	5.000	1.35	1894.840	3982.435	5.947	4.9	-2.3	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	1.35	3927.488	4037.479	12.159	10.0	-0.1	NO	1.000	NO	MM
7	7	200303P2-9	Standard	50.000	1.35	19304.391	4069.265	59.299	48.6	-2.9	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	1.35	40708.504	4023.520	126.470	103.0	3.0	NO	1.000	NO	MM
9	9	200303P2-11	Standard	250.000	1.35	80729.711	3266.993	308.884	248.3	-0.7	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	1.35	138106.578	2709.053	637.246	500.4	0.1	NO	1.000	NO	bb

Compound name: PFPrS
Correlation coefficient: r = 0.998092, r^2 = 0.996187
Calibration curve: 1.35561 * x + -0.0758928
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	200303P2-3	Standard	0.250	1.67	13.203	773.767	0.213	0.2	-14.7	NO	0.996	NO	MM
2	2	200303P2-4	Standard	0.500	1.67	47.842	860.536	0.695	0.6	13.7	NO	0.996	NO	MM
3	3	200303P2-5	Standard	1.000	1.67	83.034	876.899	1.184	0.9	-7.1	NO	0.996	NO	MM
4	4	200303P2-6	Standard	2.000	1.68	164.959	783.104	2.633	2.0	-0.1	NO	0.996	NO	MM
5	5	200303P2-7	Standard	5.000	1.68	449.609	883.079	6.364	4.8	-5.0	NO	0.996	NO	MM
6	6	200303P2-8	Standard	10.000	1.67	907.066	859.305	13.195	9.8	-2.1	NO	0.996	NO	MM
7	7	200303P2-9	Standard	50.000	1.67	4559.865	883.604	64.507	47.6	-4.7	NO	0.996	NO	MM
8	8	200303P2-10	Standard	100.000	1.68	8867.936	905.317	122.442	90.4	-9.6	NO	0.996	NO	MM
9	9	200303P2-11	Standard	250.000	1.68	19889.154	671.266	370.366	273.3	9.3	NO	0.996	NO	db
10	10	200303P2-12	Standard	500.000	1.68	32005.098	603.320	663.104	489.2	-2.2	NO	0.996	NO	bb

VY 03/04/20

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999219
Calibration curve: -3.87181e-005 * x^2 + 0.120386 * x + -0.0145912
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200303P2-3	Standard	0.250	2.14	17.789	6780.241	0.033	0.4	57.5	YES	0.999	NO	MMX
2	2	200303P2-4	Standard	0.500	2.13	18.703	7087.714	0.033	0.4	-21.0	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	2.14	78.158	7196.988	0.136	1.2	24.9	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	2.13	124.906	6887.883	0.227	2.0	0.3	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	2.13	314.974	7218.731	0.545	4.7	-6.8	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	2.13	708.920	7267.896	1.219	10.3	2.8	NO	0.999	NO	bd
7	7	200303P2-9	Standard	50.000	2.14	3439.835	7301.122	5.889	49.8	-0.3	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	2.13	6980.170	7492.915	11.645	100.1	0.1	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	2.14	2903.913	6060.960	5.989	50.7	-79.7	YES	0.999	NO	bbX
10	10	200303P2-12	Standard	500.000	2.14	4881.295	5004.170	12.193	104.9	-79.0	YES	0.999	NO	bbX

Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999936
Calibration curve: 0.000112224 * x^2 + 0.924631 * x + 0.0261326
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	200303P2-3	Standard	0.250	2.27	133.045	6780.241	0.245	0.2	-5.2	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	2.27	296.924	7087.714	0.524	0.5	7.6	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	2.27	537.236	7196.988	0.933	1.0	-1.9	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	2.27	1090.159	6887.883	1.978	2.1	5.5	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	2.27	2764.149	7218.731	4.786	5.1	2.9	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	2.27	5572.203	7267.896	9.584	10.3	3.2	NO	1.000	NO	bd
7	7	200303P2-9	Standard	50.000	2.28	27287.762	7301.122	46.718	50.2	0.4	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	2.27	55177.867	7492.915	92.050	98.4	-1.6	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	2.28	116032.422	6060.960	239.303	251.1	0.5	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	2.28	196216.203	5004.170	490.132	499.7	-0.1	NO	1.000	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: PFBS
Correlation coefficient: r = 0.999272, r^2 = 0.998545
Calibration curve: 2.48479 * x + -0.055572
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 200303P2-3	Standard	0.250	2.54	34.337	773.767	0.555	0.2	-1.8	NO	0.999	NO	bb
2	2 200303P2-4	Standard	0.500	2.54	82.628	860.536	1.200	0.5	1.1	NO	0.999	NO	bb
3	3 200303P2-5	Standard	1.000	2.56	186.714	876.899	2.662	1.1	9.4	NO	0.999	NO	bb
4	4 200303P2-6	Standard	2.000	2.55	285.992	783.104	4.565	1.9	-7.0	NO	0.999	NO	bb
5	5 200303P2-7	Standard	5.000	2.55	827.126	883.079	11.708	4.7	-5.3	NO	0.999	NO	bb
6	6 200303P2-8	Standard	10.000	2.55	1690.556	859.305	24.592	9.9	-0.8	NO	0.999	NO	bb
7	7 200303P2-9	Standard	50.000	2.55	8707.196	883.604	123.177	49.6	-0.8	NO	0.999	NO	bb
8	8 200303P2-10	Standard	100.000	2.55	16566.783	905.317	228.743	92.1	-7.9	NO	0.999	NO	bb
9	9 200303P2-11	Standard	250.000	2.56	35032.289	671.266	652.355	262.6	5.0	NO	0.999	NO	bb
10	10 200303P2-12	Standard	500.000	2.56	59501.262	603.320	1232.788	496.2	-0.8	NO	0.999	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999609
Calibration curve: 5.01667e-006 * x^2 + 1.50313 * x + -0.271096
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200303P2-3	Standard	0.250	2.97	15.189	1207.044	0.157	0.3	14.0	NO	1.000	NO	bb
2	2 200303P2-4	Standard	0.500	2.98	51.993	1173.512	0.554	0.5	9.8	NO	1.000	NO	bb
3	3 200303P2-5	Standard	1.000	2.98	108.170	1283.465	1.053	0.9	-11.9	NO	1.000	NO	bb
4	4 200303P2-6	Standard	2.000	2.98	255.850	1280.889	2.497	1.8	-7.9	NO	1.000	NO	bb
5	5 200303P2-7	Standard	5.000	2.98	658.458	1216.937	6.763	4.7	-6.4	NO	1.000	NO	bb
6	6 200303P2-8	Standard	10.000	2.98	1458.349	1267.724	14.380	9.7	-2.5	NO	1.000	NO	bb
7	7 200303P2-9	Standard	50.000	2.98	7319.349	1158.367	78.983	52.7	5.4	NO	1.000	NO	bb
8	8 200303P2-10	Standard	100.000	2.98	14243.599	1171.206	152.019	101.3	1.3	NO	1.000	NO	bb
9	9 200303P2-11	Standard	250.000	2.98	27687.438	941.322	367.667	244.6	-2.2	NO	1.000	NO	bb
10	10 200303P2-12	Standard	500.000	2.99	45100.766	745.866	755.846	502.2	0.4	NO	1.000	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: PFHxA
Correlation coefficient: r = 0.999747, r^2 = 0.999493
Calibration curve: 0.888423 * x + 0.0236523
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	200303P2-3	Standard	0.250	3.06	281.556	12372.654	0.284	0.3	17.4	NO	0.999	NO	MM
2	2	200303P2-4	Standard	0.500	3.06	566.457	12562.437	0.564	0.6	21.6	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	3.06	873.966	12803.994	0.853	0.9	-6.6	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	3.06	1808.419	12857.600	1.758	2.0	-2.4	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	3.06	4173.411	13269.029	3.932	4.4	-12.0	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	3.07	8701.055	13267.754	8.198	9.2	-8.0	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	3.07	46732.945	13209.300	44.224	49.8	-0.5	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	3.07	94834.297	13445.646	88.165	99.2	-0.8	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	3.07	194326.750	10616.093	228.812	257.5	3.0	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	3.07	331385.531	9421.071	439.687	494.9	-1.0	NO	0.999	NO	bb

Compound name: PFPeS
Coefficient of Determination: R^2 = 0.996983
Calibration curve: -0.000737317 * x^2 + 2.60366 * x + -0.220378
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	200303P2-3	Standard	0.250	3.27	46.122	773.767	0.745	0.4	48.3	YES	0.997	NO	bbX
2	2	200303P2-4	Standard	0.500	3.26	53.648	860.536	0.779	0.4	-23.2	NO	0.997	NO	bb
3	3	200303P2-5	Standard	1.000	3.26	167.801	876.899	2.392	1.0	0.4	NO	0.997	NO	bb
4	4	200303P2-6	Standard	2.000	3.27	383.785	783.104	6.126	2.4	22.0	NO	0.997	NO	bb
5	5	200303P2-7	Standard	5.000	3.27	867.772	883.079	12.283	4.8	-3.8	NO	0.997	NO	bb
6	6	200303P2-8	Standard	10.000	3.27	1671.664	859.305	24.317	9.4	-5.5	NO	0.997	NO	bb
7	7	200303P2-9	Standard	50.000	3.27	8650.922	883.604	122.381	47.7	-4.5	NO	0.997	NO	bb
8	8	200303P2-10	Standard	100.000	3.27	16810.893	905.317	232.113	91.6	-8.4	NO	0.997	NO	bb
9	9	200303P2-11	Standard	250.000	3.27	34910.055	671.266	650.079	270.5	8.2	NO	0.997	NO	bb
10	10	200303P2-12	Standard	500.000	3.27	53057.348	603.320	1099.279	490.4	-1.9	NO	0.997	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.999736
Calibration curve: -3.70224e-005 * x^2 + 1.06117 * x + 0.0156029
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 200303P2-3	Standard	0.250	3.28	56.763	3239.827	0.219	0.2	-23.3	NO	1.000	NO	bb
2	2 200303P2-4	Standard	0.500	3.28	165.318	3329.751	0.621	0.6	14.0	NO	1.000	NO	bb
3	3 200303P2-5	Standard	1.000	3.28	281.539	3172.836	1.109	1.0	3.1	NO	1.000	NO	bb
4	4 200303P2-6	Standard	2.000	3.28	617.537	3298.511	2.340	2.2	9.5	NO	1.000	NO	bb
5	5 200303P2-7	Standard	5.000	3.28	1488.348	3309.682	5.621	5.3	5.7	NO	1.000	NO	bb
6	6 200303P2-8	Standard	10.000	3.28	2768.708	3451.440	10.027	9.4	-5.6	NO	1.000	NO	bb
7	7 200303P2-9	Standard	50.000	3.28	14254.139	3214.601	55.427	52.3	4.6	NO	1.000	NO	bb
8	8 200303P2-10	Standard	100.000	3.28	28532.879	3429.730	103.991	98.3	-1.7	NO	1.000	NO	bb
9	9 200303P2-11	Standard	250.000	3.28	58547.777	2798.559	261.509	248.6	-0.6	NO	1.000	NO	bb
10	10 200303P2-12	Standard	500.000	3.28	100991.594	2417.417	522.208	500.8	0.2	NO	1.000	NO	bb

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999899
Calibration curve: -0.000232095 * x^2 + 0.30291 * x + -0.00956149
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 200303P2-3	Standard	0.250	3.61	33.584	7117.141	0.059	0.2	-9.5	NO	1.000	NO	bb
2	2 200303P2-4	Standard	0.500	3.61	89.963	7254.415	0.155	0.5	8.7	NO	1.000	NO	bb
3	3 200303P2-5	Standard	1.000	3.61	185.812	7574.525	0.307	1.0	4.5	NO	1.000	NO	bb
4	4 200303P2-6	Standard	2.000	3.61	348.848	7532.448	0.579	1.9	-2.7	NO	1.000	NO	bb
5	5 200303P2-7	Standard	5.000	3.61	863.091	7168.500	1.505	5.0	0.4	NO	1.000	NO	bb
6	6 200303P2-8	Standard	10.000	3.61	1771.470	7526.317	2.942	9.8	-1.8	NO	1.000	NO	bb
7	7 200303P2-9	Standard	50.000	3.62	8916.380	7615.288	14.636	50.3	0.6	NO	1.000	NO	bb
8	8 200303P2-10	Standard	100.000	3.62	17686.182	7916.613	27.926	99.9	-0.1	NO	1.000	NO	bb
9	9 200303P2-11	Standard	250.000	3.62	7315.767	5872.898	15.571	53.6	-78.5	YES	1.000	NO	bbX
10	10 200303P2-12	Standard	500.000	3.62	12513.992	5222.884	29.950	107.8	-78.4	YES	1.000	NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: PFHpA
Correlation coefficient: r = 0.999795, r^2 = 0.999590
Calibration curve: 1.20072 * x + 0.0337868
Response type: Internal Std (Ref 59), 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	200303P2-3	Standard	0.250	3.66	183.698	7117.141	0.323	0.2	-3.8	NO	1.000	NO	dd
2	2	200303P2-4	Standard	0.500	3.66	399.914	7254.415	0.689	0.5	9.2	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	3.66	754.264	7574.525	1.245	1.0	0.9	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	3.67	1438.594	7532.448	2.387	2.0	-2.0	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	3.67	3409.330	7168.500	5.945	4.9	-1.5	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	3.67	7176.611	7526.317	11.919	9.9	-1.0	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	3.67	36028.926	7615.288	59.139	49.2	-1.6	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	3.67	74254.766	7916.613	117.245	97.6	-2.4	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	3.67	145531.094	5872.898	309.751	257.9	3.2	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	3.67	248550.078	5222.884	594.858	495.4	-0.9	NO	1.000	NO	bb

Compound name: ADONA
Coefficient of Determination: R^2 = 0.998598
Calibration curve: -0.000574337 * x^2 + 3.40961 * x + 0.0863605
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	200303P2-3	Standard	0.250	3.77	502.084	7117.141	0.882	0.2	-6.7	NO	0.999	NO	bb
2	2	200303P2-4	Standard	0.500	3.77	1126.835	7254.415	1.942	0.5	8.8	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	3.77	2019.249	7574.525	3.332	1.0	-4.8	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	3.77	4266.898	7532.448	7.081	2.1	2.6	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	3.77	10374.447	7168.500	18.090	5.3	5.7	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	3.77	20496.697	7526.317	34.042	10.0	-0.2	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	3.77	99842.852	7615.288	163.886	48.4	-3.1	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	3.77	198689.328	7916.613	313.722	93.5	-6.5	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	3.78	403392.813	5872.898	858.590	263.5	5.4	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	3.78	645606.063	5222.884	1545.138	494.3	-1.1	NO	0.999	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.998835
Calibration curve: 0.000245469 * x^2 + 1.03462 * x + -0.0140581
Response type: Internal Std (Ref 61), 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	200303P2-3	Standard	0.250	3.81	46.987	1901.904	0.309	0.3	24.8	NO	0.999	NO	MM
2	2	200303P2-4	Standard	0.500	3.81	92.684	1938.776	0.598	0.6	18.2	NO	0.999	NO	MM
3	3	200303P2-5	Standard	1.000	3.81	163.760	2151.361	0.951	0.9	-6.7	NO	0.999	NO	MM
4	4	200303P2-6	Standard	2.000	3.81	226.405	1924.800	1.470	1.4	-28.3	NO	0.999	NO	MM
5	5	200303P2-7	Standard	5.000	3.81	815.702	2176.634	4.684	4.5	-9.3	NO	0.999	NO	MM
6	6	200303P2-8	Standard	10.000	3.81	1711.329	2170.821	9.854	9.5	-4.8	NO	0.999	NO	MM
7	7	200303P2-9	Standard	50.000	3.81	8476.065	2090.841	50.674	48.4	-3.1	NO	0.999	NO	MM
8	8	200303P2-10	Standard	100.000	3.81	17445.465	1973.076	110.522	104.3	4.3	NO	0.999	NO	MM
9	9	200303P2-11	Standard	250.000	3.81	35520.609	1629.372	272.502	248.7	-0.5	NO	0.999	NO	MM
10	10	200303P2-12	Standard	500.000	3.82	60889.578	1438.358	529.159	461.0	-7.8	NO	0.999	NO	MMX

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998749
Calibration curve: -0.000923492 * x^2 + 2.00945 * x + -0.262843
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	200303P2-3	Standard	0.250	4.14	16.754	943.251	0.222	0.2	-3.5	NO	0.999	NO	MM
2	2	200303P2-4	Standard	0.500	4.12	35.970	989.685	0.454	0.4	-28.6	NO	0.999	NO	MM
3	3	200303P2-5	Standard	1.000	4.12	161.786	1023.709	1.975	1.1	11.4	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	4.13	235.146	1127.322	2.607	1.4	-28.5	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	4.12	846.266	1008.153	10.493	5.4	7.3	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	4.12	1568.394	1083.144	18.100	9.2	-8.2	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	4.12	8088.975	1056.809	95.677	48.8	-2.3	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	4.12	16053.355	1080.196	185.769	96.9	-3.1	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	4.12	31971.998	865.674	461.663	261.2	4.5	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	4.13	53772.930	877.114	766.333	493.4	-1.3	NO	0.999	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999921
Calibration curve: -0.000146837 * x^2 + 1.27853 * x + 0.105499
Response type: Internal Std (Ref 69), 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	200303P2-3	Standard	0.250	4.17	355.648	10276.202	0.433	0.3	2.3	NO	1.000	NO	db
2	2	200303P2-4	Standard	0.500	4.17	568.254	9904.520	0.717	0.5	-4.3	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	4.18	1218.405	10989.836	1.386	1.0	0.2	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	4.18	2379.966	11166.376	2.664	2.0	0.1	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	4.18	5691.305	10651.461	6.679	5.1	2.9	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	4.18	10567.288	10155.849	13.006	10.1	1.0	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	4.18	54274.141	10956.073	61.922	48.6	-2.8	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	4.18	110278.398	10915.598	126.285	99.8	-0.2	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	4.18	215320.141	8587.115	313.435	252.4	1.0	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	4.18	366634.031	7620.000	601.434	498.9	-0.2	NO	1.000	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.998283
Calibration curve: -3.00173e-005 * x^2 + 0.204305 * x + -0.0410032
Response type: Internal Std (Ref 69), 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	200303P2-3	Standard	0.250	4.18	10.457	10276.202	0.013	0.3	5.2	NO	0.998	NO	bb
2	2	200303P2-4	Standard	0.500	4.18	43.260	9904.520	0.055	0.5	-6.4	NO	0.998	NO	bb
3	3	200303P2-5	Standard	1.000	4.18	98.325	10989.836	0.112	0.7	-25.2	NO	0.998	NO	bb
4	4	200303P2-6	Standard	2.000	4.19	398.160	11166.376	0.446	2.4	19.2	NO	0.998	NO	bb
5	5	200303P2-7	Standard	5.000	4.19	818.964	10651.461	0.961	4.9	-1.8	NO	0.998	NO	bb
6	6	200303P2-8	Standard	10.000	4.19	1881.352	10155.849	2.316	11.6	15.5	NO	0.998	NO	bd
7	7	200303P2-9	Standard	50.000	4.19	8584.901	10956.073	9.795	48.5	-3.0	NO	0.998	NO	bd
8	8	200303P2-10	Standard	100.000	4.19	16302.348	10915.598	18.669	92.8	-7.2	NO	0.998	NO	bb
9	9	200303P2-11	Standard	250.000	4.19	35276.836	8587.115	51.351	261.6	4.6	NO	0.998	NO	bd
10	10	200303P2-12	Standard	500.000	4.19	57192.133	7620.000	93.819	495.5	-0.9	NO	0.998	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999665
Calibration curve: 0.000104495 * x^2 + 0.952337 * x + -0.0596615
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	200303P2-3	Standard	0.250	4.29	42.940	2259.796	0.238	0.3	24.8	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	4.29	70.038	2403.130	0.364	0.4	-11.0	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	4.29	119.674	2387.771	0.626	0.7	-28.0	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	4.29	377.378	2521.568	1.871	2.0	1.3	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	4.29	827.079	2447.391	4.224	4.5	-10.1	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	4.29	1526.325	2136.431	8.930	9.4	-5.7	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	4.29	8966.878	2295.031	48.839	51.1	2.1	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	4.29	17517.016	2221.123	98.582	102.4	2.4	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	4.29	35569.469	1841.658	241.423	246.9	-1.2	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	4.29	57517.180	1428.670	503.241	501.0	0.2	NO	1.000	NO	MM

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.998811
Calibration curve: -0.000174738 * x^2 + 0.263989 * x + -0.031734
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	200303P2-3	Standard	0.250	4.60	22.456	8676.989	0.032	0.2	-2.9	NO	0.999	NO	bb
2	2	200303P2-4	Standard	0.500	4.61	57.270	8244.232	0.087	0.4	-10.1	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	4.60	218.720	9017.449	0.303	1.3	27.0	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	4.60	335.052	8924.409	0.469	1.9	-5.0	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	4.60	919.617	9430.936	1.219	4.8	-5.0	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	4.61	1737.698	8941.126	2.429	9.4	-6.2	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	4.61	9467.884	9044.084	13.086	51.4	2.9	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	4.61	18731.912	9572.104	24.462	99.3	-0.7	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	4.61	7685.649	7455.316	12.886	50.6	-79.7	YES	0.999	NO	bbX
10	10	200303P2-12	Standard	500.000	4.61	12550.805	6266.013	25.037	101.8	-79.6	YES	0.999	NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: PFNA
Correlation coefficient: r = 0.999847, r^2 = 0.999693
Calibration curve: 1.28179 * x + -0.000309399
Response type: Internal Std (Ref 65), 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	200303P2-3	Standard	0.250	4.61	213.386	8676.989	0.307	0.2	-4.0	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	4.62	415.611	8244.232	0.630	0.5	-1.6	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	4.62	903.029	9017.449	1.252	1.0	-2.3	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	4.62	1880.020	8924.409	2.633	2.1	2.7	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	4.62	5239.944	9430.936	6.945	5.4	8.4	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	4.62	8819.136	8941.126	12.329	9.6	-3.8	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	4.62	46607.039	9044.084	64.416	50.3	0.5	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	4.62	96730.867	9572.104	126.319	98.5	-1.5	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	4.62	195861.203	7455.316	328.392	256.2	2.5	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	4.62	318020.281	6266.013	634.415	494.9	-1.0	NO	1.000	NO	bb

Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999403
Calibration curve: -0.00163149 * x^2 + 1.08134 * x + -0.0624652
Response type: Internal Std (Ref 67), 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	200303P2-3	Standard	0.250	4.67	36.028	2425.879	0.186	0.2	-8.2	NO	0.999	NO	bb
2	2	200303P2-4	Standard	0.500	4.68	107.733	2370.601	0.568	0.6	16.7	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	4.67	162.146	2388.090	0.849	0.8	-15.6	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	4.68	440.111	2352.839	2.338	2.2	11.4	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	4.68	1029.390	2509.700	5.127	4.8	-3.3	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	4.68	2032.000	2435.245	10.430	9.8	-1.5	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	4.68	9971.408	2479.768	50.264	50.4	0.7	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	4.68	18499.936	2524.310	91.609	99.8	-0.2	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	4.68	38608.426	1933.458	249.607			NO	0.999	NO	bbXI
10	10	200303P2-12	Standard	500.000	4.68	66234.406	1519.821	544.755			NO	0.999	NO	bbXI

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999463
Calibration curve: 0.000193432 * x^2 + 0.989498 * x + -0.0580098
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	200303P2-3	Standard	0.250	4.71	46.322	2259.796	0.256	0.3	27.0	NO	0.999	NO	MM
2	2	200303P2-4	Standard	0.500	4.70	56.469	2403.130	0.294	0.4	-28.9	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	4.70	168.645	2387.771	0.883	1.0	-4.9	NO	0.999	NO	MM
4	4	200303P2-6	Standard	2.000	4.70	367.389	2521.568	1.821	1.9	-5.1	NO	0.999	NO	MM
5	5	200303P2-7	Standard	5.000	4.70	807.641	2447.391	4.125	4.2	-15.5	NO	0.999	NO	MM
6	6	200303P2-8	Standard	10.000	4.70	1670.201	2136.431	9.772	9.9	-0.8	NO	0.999	NO	MM
7	7	200303P2-9	Standard	50.000	4.70	9488.220	2295.031	51.678	51.8	3.5	NO	0.999	NO	MM
8	8	200303P2-10	Standard	100.000	4.70	18508.367	2221.123	104.161	103.2	3.2	NO	0.999	NO	MM
9	9	200303P2-11	Standard	250.000	4.71	37276.387	1841.658	253.008	244.1	-2.4	NO	0.999	NO	MM
10	10	200303P2-12	Standard	500.000	4.71	62337.195	1428.670	545.413	502.0	0.4	NO	0.999	NO	MM

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999413
Calibration curve: -0.000413837 * x^2 + 1.65593 * x + -0.32074
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	200303P2-3	Standard	0.250	4.91	5.872	2259.796	0.032	0.2	-14.7	NO	0.999	NO	bb
2	2	200303P2-4	Standard	0.500	4.92	128.625	2403.130	0.669	0.6	19.6	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	4.92	283.082	2387.771	1.482	1.1	8.9	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	4.92	565.441	2521.568	2.803	1.9	-5.6	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	4.92	1406.232	2447.391	7.182	4.5	-9.3	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	4.92	2830.929	2136.431	16.563	10.2	2.2	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	4.92	14426.401	2295.031	78.574	48.2	-3.5	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	4.92	29410.891	2221.123	165.518	102.8	2.8	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	4.92	56961.488	1841.658	386.618	249.2	-0.3	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	4.92	99750.414	1428.670	872.756	624.8	25.0	NO	0.999	NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:58:29 Pacific Standard Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999678
Calibration curve: -0.000145832 * x^2 + 1.36841 * x + 0.0174532
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	200303P2-3	Standard	0.250	4.99	294.064	9372.358	0.392	0.3	9.5	NO	1.000	NO	MM
2	2	200303P2-4	Standard	0.500	4.99	564.699	9355.163	0.755	0.5	7.7	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	4.99	1120.392	10534.359	1.329	1.0	-4.1	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	4.99	2152.339	10551.075	2.550	1.9	-7.4	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	4.99	5819.042	10234.135	7.107	5.2	3.7	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	4.99	10920.862	10217.901	13.360	9.8	-2.4	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	4.99	55940.672	10355.660	67.524	49.6	-0.8	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	4.99	110003.313	10471.477	131.313	96.9	-3.1	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	4.99	234203.953	8584.602	341.023	256.2	2.5	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	5.00	384368.250	7453.241	644.633	497.4	-0.5	NO	1.000	NO	bb

Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.996215
Calibration curve: -0.000512211 * x^2 + 1.60192 * x + -0.783624
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	200303P2-3	Standard	0.250	4.96	14.431	892.880	0.202	0.6	146.2	YES	0.996	NO	bbX
2	2	200303P2-4	Standard	0.500	4.97	35.793	799.151	0.560	0.8	67.8	YES	0.996	NO	bbX
3	3	200303P2-5	Standard	1.000	4.98	41.499	841.972	0.616	0.9	-12.6	NO	0.996	NO	bb
4	4	200303P2-6	Standard	2.000	4.97	149.712	858.458	2.180	1.9	-7.4	NO	0.996	NO	bb
5	5	200303P2-7	Standard	5.000	4.96	499.921	887.876	7.038	4.9	-2.2	NO	0.996	NO	bb
6	6	200303P2-8	Standard	10.000	4.97	1169.527	735.974	19.864	12.9	29.4	NO	0.996	NO	bb
7	7	200303P2-9	Standard	50.000	4.97	4726.205	833.209	70.904	45.4	-9.2	NO	0.996	NO	bb
8	8	200303P2-10	Standard	100.000	4.97	11105.568	882.409	157.319	102.0	2.0	NO	0.996	NO	bb
9	9	200303P2-11	Standard	250.000	4.97	20721.111	704.386	367.716	250.0	0.0	NO	0.996	NO	bb
10	10	200303P2-12	Standard	500.000	4.97	34879.285	586.539	743.328	567.5	13.5	NO	0.996	NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:04:55 Pacific Standard Time

Compound name: PFNS
Coefficient of Determination: R^2 = 0.999281
Calibration curve: 0.000201263 * x^2 + 0.884982 * x + -0.220403
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 200303P2-3	Standard	0.250	5.05	41.590	2259.796	0.230	0.5	103.6	YES	0.999	NO	bbX
2	2 200303P2-4	Standard	0.500	5.06	55.240	2403.130	0.287	0.6	14.7	NO	0.999	NO	bb
3	3 200303P2-5	Standard	1.000	5.06	84.983	2387.771	0.445	0.8	-24.8	NO	0.999	NO	bb
4	4 200303P2-6	Standard	2.000	5.06	256.015	2521.568	1.269	1.7	-15.9	NO	0.999	NO	bb
5	5 200303P2-7	Standard	5.000	5.05	890.678	2447.391	4.549	5.4	7.7	NO	0.999	NO	bb
6	6 200303P2-8	Standard	10.000	5.06	1735.558	2136.431	10.155	11.7	16.9	NO	0.999	NO	bb
7	7 200303P2-9	Standard	50.000	5.06	8333.293	2295.031	45.388	50.9	1.9	NO	0.999	NO	bb
8	8 200303P2-10	Standard	100.000	5.06	16329.081	2221.123	91.897	101.7	1.7	NO	0.999	NO	bb
9	9 200303P2-11	Standard	250.000	5.06	33406.289	1841.658	226.741	243.0	-2.8	NO	0.999	NO	bb
10	10 200303P2-12	Standard	500.000	5.06	56641.555	1428.670	495.579	502.8	0.6	NO	0.999	NO	bb

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.994487
Calibration curve: -0.000472659 * x^2 + 2.52637 * x + -0.26915
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 200303P2-3	Standard	0.250	5.15	104.150	1816.436	0.717	0.4	56.1	YES	0.994	NO	bbX
2	2 200303P2-4	Standard	0.500	5.15	106.020	1741.335	0.761	0.4	-18.4	NO	0.994	NO	bb
3	3 200303P2-5	Standard	1.000	5.15	350.081	2110.196	2.074	0.9	-7.2	NO	0.994	NO	MM
4	4 200303P2-6	Standard	2.000	5.15	730.607	1918.343	4.761	2.0	-0.4	NO	0.994	NO	MM
5	5 200303P2-7	Standard	5.000	5.15	1867.050	1959.367	11.911	4.8	-3.5	NO	0.994	NO	MM
6	6 200303P2-8	Standard	10.000	5.15	4254.363	1805.894	29.448	11.8	17.9	NO	0.994	NO	MM
7	7 200303P2-9	Standard	50.000	5.15	19721.771	1740.419	141.645	56.8	13.6	NO	0.994	NO	MM
8	8 200303P2-10	Standard	100.000	5.15	41455.902	1965.308	263.673	106.6	6.6	NO	0.994	NO	MM
9	9 200303P2-11	Standard	250.000	5.15	79546.898	1845.284	538.853	222.7	-10.9	NO	0.994	NO	MM
10	10 200303P2-12	Standard	500.000	5.15	137721.672	1469.821	1171.245	512.9	2.6	NO	0.994	NO	MM

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 09:57:51
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 09:53:23

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.999789, r^2 = 0.999579
Calibration curve: 1.46462 * x + -0.128351
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	200303P2-3	Standard	0.250	5.29	70.216	3190.241	0.275	0.3	10.2	NO	1.000	NO	MM
2	2	200303P2-4	Standard	0.500	5.31	120.820	2983.508	0.506	0.4	-13.3	NO	1.000	NO	MM
3	3	200303P2-5	Standard	1.000	5.31	410.578	3522.184	1.457	1.1	8.3	NO	1.000	NO	MM
4	4	200303P2-6	Standard	2.000	5.30	623.626	3225.858	2.417	1.7	-13.1	NO	1.000	NO	MM
5	5	200303P2-7	Standard	5.000	5.31	1660.597	3552.445	5.843	4.1	-18.5	NO	1.000	NO	MM
6	6	200303P2-8	Standard	10.000	5.30	3596.808	3321.827	13.535	9.3	-6.7	NO	1.000	NO	MM
7	7	200303P2-9	Standard	50.000	5.31	18180.078	3127.889	72.653	49.7	-0.6	NO	1.000	NO	MM
8	8	200303P2-10	Standard	100.000	5.31	36397.059	3183.808	142.899	97.7	-2.3	NO	1.000	NO	MM
9	9	200303P2-11	Standard	250.000	5.31	69197.461	2353.167	367.576	251.1	0.4	NO	1.000	NO	MM
10	10	200303P2-12	Standard	500.000	5.31	114520.867	1941.879	737.178	503.4	0.7	NO	1.000	NO	MM

Compound name: PFUdA
Correlation coefficient: r = 0.999587, r^2 = 0.999174
Calibration curve: 0.887571 * x + 0.0677445
Response type: Internal Std (Ref 79), 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	200303P2-3	Standard	0.250	5.30	277.752	12439.398	0.279	0.2	-4.7	NO	0.999	NO	bb
2	2	200303P2-4	Standard	0.500	5.31	375.119	12289.751	0.382	0.4	-29.3	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	5.31	1080.736	12611.234	1.071	1.1	13.1	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	5.31	1994.500	13254.036	1.881	2.0	2.1	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	5.32	5070.976	13053.461	4.856	5.4	7.9	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	5.31	9964.739	13359.567	9.324	10.4	4.3	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	5.32	49773.777	13654.553	45.565	51.3	2.5	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	5.32	97223.359	12798.581	94.955	106.9	6.9	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	5.32	199933.656	11482.734	217.646	245.1	-1.9	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	5.32	336269.594	9549.330	440.174	495.9	-0.8	NO	0.999	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: PFDS
Coefficient of Determination: R^2 = 0.999008
Calibration curve: 0.000243411 * x^2 + 0.888487 * x + -0.110889
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	200303P2-3	Standard	0.250	5.35	20.037	2259.796	0.111	0.2	-0.2	NO	0.999	NO	bb
2	2	200303P2-4	Standard	0.500	5.34	46.096	2403.130	0.240	0.4	-21.1	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	5.36	128.622	2387.771	0.673	0.9	-11.8	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	5.36	268.518	2521.568	1.331	1.6	-18.9	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	5.36	686.473	2447.391	3.506	4.1	-18.7	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	5.36	1744.684	2136.431	10.208	11.6	15.8	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	5.36	8680.975	2295.031	47.281	52.6	5.2	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	5.36	16548.906	2221.123	93.134	102.1	2.1	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	5.36	33855.195	1841.658	229.787	242.6	-2.9	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	5.36	58067.652	1428.670	508.057	502.7	0.5	NO	0.999	NO	bb

Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.998465, r^2 = 0.996933
Calibration curve: 0.432272 * x + 0.0410329
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	200303P2-3	Standard	0.250	5.52	134.851	12133.043	0.139	0.2	-9.4	NO	0.997	NO	bb
2	2	200303P2-4	Standard	0.500	5.52	222.812	13892.907	0.200	0.4	-26.2	NO	0.997	NO	bb
3	3	200303P2-5	Standard	1.000	5.52	545.860	13581.924	0.502	1.1	6.7	NO	0.997	NO	bb
4	4	200303P2-6	Standard	2.000	5.52	947.910	13267.912	0.893	2.0	-1.4	NO	0.997	NO	bb
5	5	200303P2-7	Standard	5.000	5.52	2591.188	13005.560	2.490	5.7	13.3	NO	0.997	NO	bb
6	6	200303P2-8	Standard	10.000	5.52	4762.876	13622.752	4.370	10.0	0.2	NO	0.997	NO	bb
7	7	200303P2-9	Standard	50.000	5.52	24843.449	13412.619	23.153	53.5	6.9	NO	0.997	NO	bb
8	8	200303P2-10	Standard	100.000	5.52	50138.445	12833.076	48.837	112.9	12.9	NO	0.997	NO	bb
9	9	200303P2-11	Standard	250.000	5.52	101252.859	11601.709	109.093	252.3	0.9	NO	0.997	NO	bb
10	10	200303P2-12	Standard	500.000	5.52	171570.594	10316.580	207.882	480.8	-3.8	NO	0.997	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999594
Calibration curve: -0.00406384 * x^2 + 2.33041 * x + -0.497241
Response type: Internal Std (Ref 85), 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	200303P2-3	Standard	0.250	5.59	5.212	635.222	0.103	0.3	3.0	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	5.58	31.471	650.342	0.605	0.5	-5.3	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	5.58	101.642	635.307	2.000	1.1	7.4	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	5.58	206.917	708.738	3.649	1.8	-10.8	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	5.58	573.773	611.284	11.733	5.3	5.9	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	5.58	1144.938	636.817	22.474	10.0	0.3	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	5.58	5331.137	633.654	105.167	49.6	-0.7	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	5.58	9964.720	647.999	192.221	100.2	0.2	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	5.58	22381.760	442.267	632.586			NO	1.000	NO	bbXI
10	10	200303P2-12	Standard	500.000	5.58	33286.938	455.714	913.044			NO	1.000	NO	bbXI

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999609
Calibration curve: -0.00015708 * x^2 + 0.999852 * x + 0.00259607
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	200303P2-3	Standard	0.250	5.59	203.274	12133.043	0.209	0.2	-17.3	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	5.59	634.616	13892.907	0.571	0.6	13.7	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	5.59	1149.540	13581.924	1.058	1.1	5.6	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	5.59	2078.475	13267.912	1.958	2.0	-2.2	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	5.59	5369.797	13005.560	5.161	5.2	3.3	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	5.59	10303.478	13622.752	9.454	9.5	-5.3	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	5.60	54480.836	13412.619	50.774	51.2	2.4	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	5.60	103952.750	12833.076	101.255	102.9	2.9	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	5.60	217315.859	11601.709	234.142	243.5	-2.6	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	5.60	382114.406	10316.580	462.986	502.8	0.6	NO	1.000	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999272
Calibration curve: -6.02934e-005 * x^2 + 1.09391 * x + -0.1388
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	200303P2-3	Standard	1.250	5.69	61.606	10259.430	0.896	0.9	-24.3	NO	0.999	NO	bb
2	2	200303P2-4	Standard	2.500	5.70	194.542	10988.189	2.642	2.5	1.7	NO	0.999	NO	bb
3	3	200303P2-5	Standard	5.000	5.70	377.407	10724.583	5.250	4.9	-1.4	NO	0.999	NO	bb
4	4	200303P2-6	Standard	10.000	5.70	876.143	11030.577	11.851	11.0	9.7	NO	0.999	NO	bb
5	5	200303P2-7	Standard	25.000	5.70	2023.871	10555.266	28.608	26.3	5.3	NO	0.999	NO	bb
6	6	200303P2-8	Standard	50.000	5.70	4004.288	10612.593	56.295	51.7	3.5	NO	0.999	NO	bb
7	7	200303P2-9	Standard	250.000	5.70	19514.811	11106.692	262.149	243.0	-2.8	NO	0.999	NO	bb
8	8	200303P2-10	Standard	500.000	5.70	37480.547	10998.032	508.463	477.5	-4.5	NO	0.999	NO	bb
9	9	200303P2-11	Standard	1250.000	5.70	78129.227	8859.682	1315.722	1295.4	3.6	NO	0.999	NO	bb
10	10	200303P2-12	Standard	2500.000	5.70	128537.961	8189.364	2341.801	2479.8	-0.8	NO	0.999	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999296
Calibration curve: -0.000355294 * x^2 + 1.04682 * x + 0.0234845
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	200303P2-3	Standard	0.250	5.83	301.543	12133.043	0.311	0.3	9.7	NO	0.999	NO	bb
2	2	200303P2-4	Standard	0.500	5.84	497.346	13892.907	0.447	0.4	-19.0	NO	0.999	NO	bb
3	3	200303P2-5	Standard	1.000	5.84	1224.986	13581.924	1.127	1.1	5.5	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	5.83	2171.281	13267.912	2.046	1.9	-3.4	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	5.84	5721.878	13005.560	5.499	5.2	4.8	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	5.84	11508.793	13622.752	10.560	10.1	1.0	NO	0.999	NO	bb
7	7	200303P2-9	Standard	50.000	5.84	54574.566	13412.619	50.861	49.4	-1.2	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	5.84	109017.188	12833.076	106.188	105.2	5.2	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	5.84	215371.656	11601.709	232.047	241.4	-3.4	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	5.84	360998.000	10316.580	437.400	504.0	0.8	NO	0.999	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999757
Calibration curve: -6.08132e-006 * x^2 + 0.217001 * x + -0.00635842
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	200303P2-3	Standard	0.250	5.85	45.555	10196.760	0.056	0.3	14.7	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	5.85	71.518	10113.177	0.088	0.4	-12.7	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	5.86	209.510	10498.654	0.249	1.2	17.9	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	5.86	311.665	10452.335	0.373	1.7	-12.7	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	5.86	853.861	10898.511	0.979	4.5	-9.1	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	5.86	1784.294	10232.462	2.180	10.1	0.8	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	5.86	9250.207	10406.538	11.111	51.3	2.6	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	5.86	18210.633	10751.960	21.171	97.9	-2.1	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	5.86	35935.301	8272.260	54.301	252.0	0.8	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	5.86	57548.785	6734.312	106.820	499.3	-0.1	NO	1.000	NO	bb

Compound name: PFTeDA
Correlation coefficient: r = 0.999514, r^2 = 0.999028
Calibration curve: 1.45443 * x + 0.0208012
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	200303P2-3	Standard	0.250	6.04	292.049	10196.760	0.358	0.2	-7.3	NO	0.999	NO	bd
2	2	200303P2-4	Standard	0.500	6.05	589.108	10113.177	0.728	0.5	-2.7	NO	0.999	NO	MM
3	3	200303P2-5	Standard	1.000	6.05	1283.537	10498.654	1.528	1.0	3.6	NO	0.999	NO	bb
4	4	200303P2-6	Standard	2.000	6.05	2568.005	10452.335	3.071	2.1	4.9	NO	0.999	NO	bb
5	5	200303P2-7	Standard	5.000	6.05	6508.981	10898.511	7.465	5.1	2.4	NO	0.999	NO	bb
6	6	200303P2-8	Standard	10.000	6.05	12413.025	10232.462	15.164	10.4	4.1	NO	0.999	NO	db
7	7	200303P2-9	Standard	50.000	6.05	61180.020	10406.538	73.487	50.5	1.0	NO	0.999	NO	bb
8	8	200303P2-10	Standard	100.000	6.05	114427.664	10751.960	133.031	91.5	-8.5	NO	0.999	NO	bb
9	9	200303P2-11	Standard	250.000	6.05	245643.609	8272.260	371.186	255.2	2.1	NO	0.999	NO	bb
10	10	200303P2-12	Standard	500.000	6.05	393523.344	6734.312	730.445	502.2	0.4	NO	0.999	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999812
Calibration curve: -1.18859e-005 * x^2 + 0.862486 * x + 0.0671398
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	200303P2-3	Standard	1.250	6.12	104.372	18117.516	0.860	0.9	-26.5	NO	1.000	NO	bb
2	2	200303P2-4	Standard	2.500	6.12	317.615	18585.359	2.550	2.9	15.1	NO	1.000	NO	bb
3	3	200303P2-5	Standard	5.000	6.12	597.623	18667.434	4.777	5.5	9.2	NO	1.000	NO	bb
4	4	200303P2-6	Standard	10.000	6.12	1198.532	18866.869	9.478	10.9	9.1	NO	1.000	NO	bd
5	5	200303P2-7	Standard	25.000	6.12	2676.186	18863.928	21.167	24.5	-2.1	NO	1.000	NO	bb
6	6	200303P2-8	Standard	50.000	6.12	5187.531	18672.766	41.450	48.0	-4.0	NO	1.000	NO	bb
7	7	200303P2-9	Standard	250.000	6.12	26512.016	18436.674	214.550	249.5	-0.2	NO	1.000	NO	bb
8	8	200303P2-10	Standard	500.000	6.12	52466.098	18624.201	420.310	490.6	-1.9	NO	1.000	NO	bb
9	9	200303P2-11	Standard	1250.000	6.12	104901.164	14559.637	1074.976	1268.5	1.5	NO	1.000	NO	bb
10	10	200303P2-12	Standard	2500.000	6.13	172632.891	12407.013	2075.989	2492.5	-0.3	NO	1.000	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999642
Calibration curve: -9.25999e-005 * x^2 + 0.651279 * x + 0.0840261
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	200303P2-3	Standard	0.250	6.38	321.491	16431.227	0.245	0.2	-1.4	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	6.38	571.457	17230.199	0.415	0.5	1.5	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	6.38	1031.796	16559.240	0.779	1.1	6.7	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	6.38	1846.385	17177.160	1.344	1.9	-3.3	NO	1.000	NO	bb
5	5	200303P2-7	Standard	5.000	6.38	4741.804	17347.584	3.417	5.1	2.4	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	6.38	8800.778	17281.908	6.366	9.7	-3.4	NO	1.000	NO	bb
7	7	200303P2-9	Standard	50.000	6.38	45064.629	17724.119	31.782	49.0	-2.0	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	6.38	89093.266	17807.473	62.539	97.2	-2.8	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	6.38	181174.875	14038.063	161.325	257.0	2.8	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	6.39	286265.188	11892.600	300.886	497.0	-0.6	NO	1.000	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.999897
Calibration curve: -4.51061e-005 * x^2 + 0.931077 * x + -0.0111612
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	200303P2-3	Standard	0.250	6.61	265.070	16431.227	0.202	0.2	-8.6	NO	1.000	NO	bb
2	2	200303P2-4	Standard	0.500	6.62	580.195	17230.199	0.421	0.5	-7.2	NO	1.000	NO	bb
3	3	200303P2-5	Standard	1.000	6.62	1288.522	16559.240	0.973	1.1	5.7	NO	1.000	NO	bb
4	4	200303P2-6	Standard	2.000	6.62	2678.291	17177.160	1.949	2.1	5.3	NO	1.000	NO	bd
5	5	200303P2-7	Standard	5.000	6.62	6733.179	17347.584	4.852	5.2	4.5	NO	1.000	NO	bb
6	6	200303P2-8	Standard	10.000	6.62	12445.658	17281.908	9.002	9.7	-3.2	NO	1.000	NO	bd
7	7	200303P2-9	Standard	50.000	6.62	65210.219	17724.119	45.990	49.5	-1.0	NO	1.000	NO	bb
8	8	200303P2-10	Standard	100.000	6.62	130263.938	17807.473	91.439	98.7	-1.3	NO	1.000	NO	bb
9	9	200303P2-11	Standard	250.000	6.62	261252.453	14038.063	232.629	253.0	1.2	NO	1.000	NO	bb
10	10	200303P2-12	Standard	500.000	6.62	431172.750	11892.600	453.194	498.8	-0.2	NO	1.000	NO	bb

Compound name: N-MeFOSE
Correlation coefficient: r = 0.999679, r^2 = 0.999358
Calibration curve: 0.971286 * x + 0.0209332
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	200303P2-3	Standard	1.250	6.30	109.382	14683.476	1.111	1.1	-10.2	NO	0.999	NO	bb
2	2	200303P2-4	Standard	2.500	6.30	219.563	14443.506	2.268	2.3	-7.5	NO	0.999	NO	bb
3	3	200303P2-5	Standard	5.000	6.31	513.536	15499.694	4.943	5.1	1.4	NO	0.999	NO	bb
4	4	200303P2-6	Standard	10.000	6.30	916.353	14382.142	9.506	9.8	-2.3	NO	0.999	NO	MM
5	5	200303P2-7	Standard	25.000	6.31	2528.950	13924.578	27.097	27.9	11.5	NO	0.999	NO	bb
6	6	200303P2-8	Standard	50.000	6.30	4817.714	14592.701	49.258	50.7	1.4	NO	0.999	NO	bb
7	7	200303P2-9	Standard	250.000	6.30	25412.205	14999.295	252.779	260.2	4.1	NO	0.999	NO	bb
8	8	200303P2-10	Standard	500.000	6.30	47320.969	14395.392	490.455	504.9	1.0	NO	0.999	NO	bb
9	9	200303P2-11	Standard	1250.000	6.31	103213.641	12342.360	1247.693	1284.6	2.8	NO	0.999	NO	bb
10	10	200303P2-12	Standard	2500.000	6.31	172044.000	10799.154	2376.942	2447.2	-2.1	NO	0.999	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999791, r^2 = 0.999581
Calibration curve: 0.967953 * x + 0.219782
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 200303P2-3	Standard	1.250	6.45	174.475	16332.719	1.594	1.4	13.6	NO	1.000	NO	bb
2	2 200303P2-4	Standard	2.500	6.45	282.980	17437.307	2.421	2.3	-9.0	NO	1.000	NO	bb
3	3 200303P2-5	Standard	5.000	6.45	566.869	17547.912	4.820	4.8	-5.0	NO	1.000	NO	bb
4	4 200303P2-6	Standard	10.000	6.45	1087.766	16589.441	9.783	9.9	-1.2	NO	1.000	NO	bb
5	5 200303P2-7	Standard	25.000	6.45	2931.712	17724.738	24.678	25.3	1.1	NO	1.000	NO	bb
6	6 200303P2-8	Standard	50.000	6.45	5504.274	16321.159	50.317	51.8	3.5	NO	1.000	NO	bb
7	7 200303P2-9	Standard	250.000	6.45	27305.748	17224.307	236.527	244.1	-2.3	NO	1.000	NO	bb
8	8 200303P2-10	Standard	500.000	6.45	58801.484	18648.422	470.452	485.8	-2.8	NO	1.000	NO	bb
9	9 200303P2-11	Standard	1250.000	6.45	118807.781	14226.369	1246.005	1287.0	3.0	NO	1.000	NO	bb
10	10 200303P2-12	Standard	2500.000	6.45	207142.859	12865.930	2402.136	2481.4	-0.7	NO	1.000	NO	bb

Compound name: 13C3-PFBA-EIS
Response Factor: 322.998
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 200303P2-3	Standard	12.500	1.34	3828.781		3828.781	11.9	-5.2	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	1.34	3904.802		3904.802	12.1	-3.3	NO		NO	MMX
3	3 200303P2-5	Standard	12.500	1.34	4029.857		4029.857	12.5	-0.2	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	1.35	3907.519		3907.519	12.1	-3.2	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	1.35	3982.435		3982.435	12.3	-1.4	NO		NO	MMX
6	6 200303P2-8	Standard	12.500	1.35	4037.479		4037.479	12.5	0.0	NO		NO	MM
7	7 200303P2-9	Standard	12.500	1.35	4069.265		4069.265	12.6	0.8	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	1.35	4023.520		4023.520	12.5	-0.3	NO		NO	MMX
9	9 200303P2-11	Standard	12.500	1.35	3266.993		3266.993	10.1	-19.1	NO		NO	MMX
10	10 200303P2-12	Standard	12.500	1.35	2709.053		2709.053	8.4	-32.9	NO		NO	MMX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C3-PFBA-RSD
Response Factor: 0.799683
RRF SD: 0.0277203, Relative SD: 3.46641
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	200303P2-3	Standard	12.500	1.34	3828.781	4545.599	10.529	13.2	5.3	NO		NO	bb
2	2	200303P2-4	Standard	12.500	1.34	3902.616	4674.229	10.437	13.1	4.4	NO		NO	MM
3	3	200303P2-5	Standard	12.500	1.34	4029.857	4912.538	10.254	12.8	2.6	NO		NO	bb
4	4	200303P2-6	Standard	12.500	1.35	3907.519	4918.820	9.930	12.4	-0.7	NO		NO	bb
5	5	200303P2-7	Standard	12.500	1.35	3956.331	5119.233	9.660	12.1	-3.4	NO		NO	MM
6	6	200303P2-8	Standard	12.500	1.35	4036.660	5265.259	9.583	12.0	-4.1	NO		NO	MM
7	7	200303P2-9	Standard	12.500	1.35	4069.265	5051.663	10.069	12.6	0.7	NO		NO	bb
8	8	200303P2-10	Standard	12.500	1.35	4067.689	5274.190	9.641	12.1	-3.6	NO		NO	MM
9	9	200303P2-11	Standard	12.500	1.35	3346.042	4116.191	10.161	12.7	1.7	NO		NO	MM
10	10	200303P2-12	Standard	12.500	1.35	2727.308	3515.880	9.696	12.1	-3.0	NO		NO	MM

Compound name: 13C3-PFPeA-EIS
Response Factor: 581.432
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	200303P2-3	Standard	12.500	2.27	6780.241		6780.241	11.7	-6.7	NO		NO	bbX
2	2	200303P2-4	Standard	12.500	2.27	7087.714		7087.714	12.2	-2.5	NO		NO	bbX
3	3	200303P2-5	Standard	12.500	2.27	7196.988		7196.988	12.4	-1.0	NO		NO	bbX
4	4	200303P2-6	Standard	12.500	2.27	6887.883		6887.883	11.8	-5.2	NO		NO	bbX
5	5	200303P2-7	Standard	12.500	2.27	7218.731		7218.731	12.4	-0.7	NO		NO	bbX
6	6	200303P2-8	Standard	12.500	2.27	7267.896		7267.896	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	2.27	7301.122		7301.122	12.6	0.5	NO		NO	bbX
8	8	200303P2-10	Standard	12.500	2.27	7492.915		7492.915	12.9	3.1	NO		NO	bbX
9	9	200303P2-11	Standard	12.500	2.28	6060.960		6060.960	10.4	-16.6	NO		NO	bbX
10	10	200303P2-12	Standard	12.500	2.28	5004.170		5004.170	8.6	-31.1	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C3-PFPeA-RSD
Response Factor: 0.569685
RRF SD: 0.00950417, Relative SD: 1.66832
Response type: Internal Std (Ref 100), 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	200303P2-3	Standard	12.500	2.27	6780.241	11875.554	7.137	12.5	0.2	NO		NO	bb
2	2	200303P2-4	Standard	12.500	2.27	7087.714	12324.506	7.189	12.6	0.9	NO		NO	bb
3	3	200303P2-5	Standard	12.500	2.27	7196.988	12512.284	7.190	12.6	1.0	NO		NO	bb
4	4	200303P2-6	Standard	12.500	2.27	6887.883	12303.884	6.998	12.3	-1.7	NO		NO	bb
5	5	200303P2-7	Standard	12.500	2.27	7218.731	12659.766	7.128	12.5	0.1	NO		NO	bb
6	6	200303P2-8	Standard	12.500	2.27	7267.896	12889.432	7.048	12.4	-1.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	2.27	7301.122	13059.239	6.988	12.3	-1.9	NO		NO	bb
8	8	200303P2-10	Standard	12.500	2.27	7492.915	12821.661	7.305	12.8	2.6	NO		NO	bb
9	9	200303P2-11	Standard	12.500	2.28	6060.960	10879.929	6.963	12.2	-2.2	NO		NO	bb
10	10	200303P2-12	Standard	12.500	2.28	5004.170	8610.223	7.265	12.8	2.0	NO		NO	bb

Compound name: 13C3-PFBS-EIS
Response Factor: 68.7444
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	200303P2-3	Standard	12.500	2.55	773.767		773.767	11.3	-10.0	NO		NO	bbX
2	2	200303P2-4	Standard	12.500	2.54	860.536		860.536	12.5	0.1	NO		NO	bbX
3	3	200303P2-5	Standard	12.500	2.55	876.899		876.899	12.8	2.0	NO		NO	bbX
4	4	200303P2-6	Standard	12.500	2.55	783.104		783.104	11.4	-8.9	NO		NO	bbX
5	5	200303P2-7	Standard	12.500	2.55	883.079		883.079	12.8	2.8	NO		NO	bbX
6	6	200303P2-8	Standard	12.500	2.55	859.305		859.305	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	2.55	883.604		883.604	12.9	2.8	NO		NO	bbX
8	8	200303P2-10	Standard	12.500	2.55	905.317		905.317	13.2	5.4	NO		NO	bbX
9	9	200303P2-11	Standard	12.500	2.55	671.266		671.266	9.8	-21.9	NO		NO	bbX
10	10	200303P2-12	Standard	12.500	2.56	603.320		603.320	8.8	-29.8	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C3-PFBS-RSD
Response Factor: 1.01796
RRF SD: 0.0884803, Relative SD: 8.6919
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 200303P2-3	Standard	12.500	2.55	773.767	718.324	13.465	13.2	5.8	NO		NO	bb
2	2 200303P2-4	Standard	12.500	2.54	860.536	847.686	12.689	12.5	-0.3	NO		NO	bb
3	3 200303P2-5	Standard	12.500	2.55	876.899	961.671	11.398	11.2	-10.4	NO		NO	bb
4	4 200303P2-6	Standard	12.500	2.55	783.104	776.086	12.613	12.4	-0.9	NO		NO	bb
5	5 200303P2-7	Standard	12.500	2.55	883.079	909.979	12.130	11.9	-4.7	NO		NO	bb
6	6 200303P2-8	Standard	12.500	2.55	859.305	831.661	12.915	12.7	1.5	NO		NO	bb
7	7 200303P2-9	Standard	12.500	2.55	883.604	857.509	12.880	12.7	1.2	NO		NO	bb
8	8 200303P2-10	Standard	12.500	2.55	905.317	859.145	13.172	12.9	3.5	NO		NO	bb
9	9 200303P2-11	Standard	12.500	2.55	671.266	762.852	10.999	10.8	-13.6	NO		NO	bb
10	10 200303P2-12	Standard	12.500	2.56	603.320	503.357	14.982	14.7	17.7	NO		NO	bb

Compound name: 13C3-HFPO-DA-EIS
Response Factor: 276.115
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 200303P2-3	Standard	12.500	3.27	3239.827		3239.827	11.7	-6.1	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	3.28	3329.751		3329.751	12.1	-3.5	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	3.28	3172.836		3172.836	11.5	-8.1	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	3.28	3298.511		3298.511	11.9	-4.4	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	3.28	3309.682		3309.682	12.0	-4.1	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	3.28	3451.440		3451.440	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.28	3214.601		3214.601	11.6	-6.9	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	3.28	3429.730		3429.730	12.4	-0.6	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	3.28	2798.559		2798.559	10.1	-18.9	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	3.28	2417.417		2417.417	8.8	-30.0	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C3-HFPO-DA-RSD
Response Factor: 0.264549
RRF SD: 0.0100911, Relative SD: 3.81445
Response type: Internal Std (Ref 100), 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 200303P2-3	Standard	12.500	3.27	3239.827	11875.554	3.410	12.9	3.1	NO		NO	bb
2	2 200303P2-4	Standard	12.500	3.28	3329.751	12324.506	3.377	12.8	2.1	NO		NO	bb
3	3 200303P2-5	Standard	12.500	3.28	3172.836	12512.284	3.170	12.0	-4.1	NO		NO	bb
4	4 200303P2-6	Standard	12.500	3.28	3298.511	12303.884	3.351	12.7	1.3	NO		NO	bb
5	5 200303P2-7	Standard	12.500	3.28	3309.682	12659.766	3.268	12.4	-1.2	NO		NO	bb
6	6 200303P2-8	Standard	12.500	3.28	3451.440	12889.432	3.347	12.7	1.2	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.28	3214.601	13059.239	3.077	11.6	-7.0	NO		NO	bb
8	8 200303P2-10	Standard	12.500	3.28	3429.730	12821.661	3.344	12.6	1.1	NO		NO	bb
9	9 200303P2-11	Standard	12.500	3.28	2798.559	10879.929	3.215	12.2	-2.8	NO		NO	bb
10	10 200303P2-12	Standard	12.500	3.28	2417.417	8610.223	3.510	13.3	6.1	NO		NO	bb

Compound name: 13C2-4:2 FTS-EIS
Response Factor: 101.418
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 200303P2-3	Standard	12.500	2.98	1207.044		1207.044	11.9	-4.8	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	2.98	1173.512		1173.512	11.6	-7.4	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	2.98	1283.465		1283.465	12.7	1.2	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	2.98	1280.889		1280.889	12.6	1.0	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	2.98	1216.937		1216.937	12.0	-4.0	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	2.98	1267.724		1267.724	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	2.98	1158.367		1158.367	11.4	-8.6	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	2.98	1171.206		1171.206	11.5	-7.6	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	2.98	941.322		941.322	9.3	-25.7	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	2.98	745.866		745.866	7.4	-41.2	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-4:2 FTS-RSD
Response Factor: 1.43413
RRF SD: 0.145912, Relative SD: 10.1743
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	200303P2-3	Standard	12.500	2.98	1207.044	718.324	21.005	14.6	17.2	NO		NO	bb
2	2	200303P2-4	Standard	12.500	2.98	1173.512	847.686	17.305	12.1	-3.5	NO		NO	bb
3	3	200303P2-5	Standard	12.500	2.98	1283.465	961.671	16.683	11.6	-6.9	NO		NO	bb
4	4	200303P2-6	Standard	12.500	2.98	1280.889	776.086	20.631	14.4	15.1	NO		NO	bb
5	5	200303P2-7	Standard	12.500	2.98	1216.937	909.979	16.717	11.7	-6.7	NO		NO	bb
6	6	200303P2-8	Standard	12.500	2.98	1267.724	831.661	19.054	13.3	6.3	NO		NO	bb
7	7	200303P2-9	Standard	12.500	2.98	1158.367	857.509	16.886	11.8	-5.8	NO		NO	bb
8	8	200303P2-10	Standard	12.500	2.98	1171.206	859.145	17.040	11.9	-4.9	NO		NO	bb
9	9	200303P2-11	Standard	12.500	2.98	941.322	762.852	15.424	10.8	-14.0	NO		NO	bb
10	10	200303P2-12	Standard	12.500	2.98	745.866	503.357	18.522	12.9	3.3	NO		NO	bb

Compound name: 13C2-PFHxA-EIS
Response Factor: 1061.42
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	200303P2-3	Standard	12.500	3.06	12372.654		12372.654	11.7	-6.7	NO		NO	bbX
2	2	200303P2-4	Standard	12.500	3.06	12562.437		12562.437	11.8	-5.3	NO		NO	bbX
3	3	200303P2-5	Standard	12.500	3.06	12803.994		12803.994	12.1	-3.5	NO		NO	bbX
4	4	200303P2-6	Standard	12.500	3.06	12857.600		12857.600	12.1	-3.1	NO		NO	bbX
5	5	200303P2-7	Standard	12.500	3.06	13269.029		13269.029	12.5	0.0	NO		NO	bbX
6	6	200303P2-8	Standard	12.500	3.07	13267.754		13267.754	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	3.07	13209.300		13209.300	12.4	-0.4	NO		NO	bbX
8	8	200303P2-10	Standard	12.500	3.07	13445.646		13445.646	12.7	1.3	NO		NO	bbX
9	9	200303P2-11	Standard	12.500	3.07	10616.093		10616.093	10.0	-20.0	NO		NO	bbX
10	10	200303P2-12	Standard	12.500	3.07	9421.071		9421.071	8.9	-29.0	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-PFHxA-RSD
Response Factor: 1.0337
RRF SD: 0.0306754, Relative SD: 2.96752
Response type: Internal Std (Ref 100), 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 200303P2-3	Standard	12.500	3.06	12372.654	11875.554	13.023	12.6	0.8	NO		NO	bb
2	2 200303P2-4	Standard	12.500	3.06	12562.437	12324.506	12.741	12.3	-1.4	NO		NO	bb
3	3 200303P2-5	Standard	12.500	3.06	12803.994	12512.284	12.791	12.4	-1.0	NO		NO	bb
4	4 200303P2-6	Standard	12.500	3.06	12857.600	12303.884	13.063	12.6	1.1	NO		NO	bb
5	5 200303P2-7	Standard	12.500	3.06	13269.029	12659.766	13.102	12.7	1.4	NO		NO	bb
6	6 200303P2-8	Standard	12.500	3.07	13267.754	12889.432	12.867	12.4	-0.4	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.07	13209.300	13059.239	12.644	12.2	-2.1	NO		NO	bb
8	8 200303P2-10	Standard	12.500	3.07	13445.646	12821.661	13.108	12.7	1.4	NO		NO	bb
9	9 200303P2-11	Standard	12.500	3.07	10616.093	10879.929	12.197	11.8	-5.6	NO		NO	bb
10	10 200303P2-12	Standard	12.500	3.07	9421.071	8610.223	13.677	13.2	5.8	NO		NO	bb

Compound name: 13C4-PFHpA-EIS
Response Factor: 602.105
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 200303P2-3	Standard	12.500	3.66	7117.141		7117.141	11.8	-5.4	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	3.66	7254.415		7254.415	12.0	-3.6	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	3.67	7574.525		7574.525	12.6	0.6	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	3.67	7532.448		7532.448	12.5	0.1	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	3.67	7168.500		7168.500	11.9	-4.8	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	3.67	7526.317		7526.317	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.67	7615.288		7615.288	12.6	1.2	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	3.67	7916.613		7916.613	13.1	5.2	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	3.67	5872.898		5872.898	9.8	-22.0	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	3.67	5222.884		5222.884	8.7	-30.6	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C4-PFHpA-RSD
Response Factor: 0.590261
RRF SD: 0.0236047, Relative SD: 3.99902
Response type: Internal Std (Ref 100), 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 200303P2-3	Standard	12.500	3.66	7117.141	11875.554	7.491	12.7	1.5	NO		NO	bb
2	2 200303P2-4	Standard	12.500	3.66	7254.415	12324.506	7.358	12.5	-0.3	NO		NO	bb
3	3 200303P2-5	Standard	12.500	3.67	7574.525	12512.284	7.567	12.8	2.6	NO		NO	bb
4	4 200303P2-6	Standard	12.500	3.67	7532.448	12303.884	7.653	13.0	3.7	NO		NO	bb
5	5 200303P2-7	Standard	12.500	3.67	7168.500	12659.766	7.078	12.0	-4.1	NO		NO	bb
6	6 200303P2-8	Standard	12.500	3.67	7526.317	12889.432	7.299	12.4	-1.1	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.67	7615.288	13059.239	7.289	12.3	-1.2	NO		NO	bb
8	8 200303P2-10	Standard	12.500	3.67	7916.613	12821.661	7.718	13.1	4.6	NO		NO	bb
9	9 200303P2-11	Standard	12.500	3.67	5872.898	10879.929	6.747	11.4	-8.6	NO		NO	bb
10	10 200303P2-12	Standard	12.500	3.67	5222.884	8610.223	7.582	12.8	2.8	NO		NO	bb

Compound name: 13C3-PFHxS-EIS
Response Factor: 173.666
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 200303P2-3	Standard	12.500	3.81	1901.904		1901.904	11.0	-12.4	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	3.81	1938.776		1938.776	11.2	-10.7	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	3.81	2151.361		2151.361	12.4	-0.9	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	3.80	1924.800		1924.800	11.1	-11.3	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	3.81	2176.634		2176.634	12.5	0.3	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	3.81	2170.821		2170.821	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.81	2090.841		2090.841	12.0	-3.7	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	3.81	1973.076		1973.076	11.4	-9.1	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	3.81	1629.372		1629.372	9.4	-24.9	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	3.81	1438.358		1438.358	8.3	-33.7	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C3-PFHxS-RSD
Response Factor: 2.43825
RRF SD: 0.218053, Relative SD: 8.94301
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 200303P2-3	Standard	12.500	3.81	1901.904	718.324	33.096	13.6	8.6	NO		NO	bb
2	2 200303P2-4	Standard	12.500	3.81	1938.776	847.686	28.589	11.7	-6.2	NO		NO	bb
3	3 200303P2-5	Standard	12.500	3.81	2151.361	961.671	27.964	11.5	-8.2	NO		NO	bb
4	4 200303P2-6	Standard	12.500	3.80	1924.800	776.086	31.002	12.7	1.7	NO		NO	bb
5	5 200303P2-7	Standard	12.500	3.81	2176.634	909.979	29.900	12.3	-1.9	NO		NO	bb
6	6 200303P2-8	Standard	12.500	3.81	2170.821	831.661	32.628	13.4	7.1	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.81	2090.841	857.509	30.478	12.5	0.0	NO		NO	bb
8	8 200303P2-10	Standard	12.500	3.81	1973.076	859.145	28.707	11.8	-5.8	NO		NO	bb
9	9 200303P2-11	Standard	12.500	3.81	1629.372	762.852	26.699	10.9	-12.4	NO		NO	bb
10	10 200303P2-12	Standard	12.500	3.81	1438.358	503.357	35.719	14.6	17.2	NO		NO	bb

Compound name: 13C2-6:2 FTS-EIS
Response Factor: 86.6515
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 200303P2-3	Standard	12.500	4.12	943.251		943.251	10.9	-12.9	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	4.12	989.685		989.685	11.4	-8.6	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	4.12	1023.709		1023.709	11.8	-5.5	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	4.12	1127.322		1127.322	13.0	4.1	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	4.12	1008.153		1008.153	11.6	-6.9	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	4.12	1083.144		1083.144	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.12	1056.809		1056.809	12.2	-2.4	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	4.12	1080.196		1080.196	12.5	-0.3	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	4.12	865.674		865.674	10.0	-20.1	NO		NO	bdX
10	10 200303P2-12	Standard	12.500	4.13	877.114		877.114	10.1	-19.0	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-6:2 FTS-RSD
Response Factor: 0.447113
RRF SD: 0.0535816, Relative SD: 11.9839
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 200303P2-3	Standard	12.500	4.12	943.251	2280.187	5.171	11.6	-7.5	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.12	989.685	2566.882	4.819	10.8	-13.8	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.12	1023.709	2486.613	5.146	11.5	-7.9	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.12	1127.322	2413.796	5.838	13.1	4.5	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.12	1008.153	2426.850	5.193	11.6	-7.1	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.12	1083.144	2440.285	5.548	12.4	-0.7	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.12	1056.809	2510.452	5.262	11.8	-5.8	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.12	1080.196	2238.731	6.031	13.5	7.9	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.12	865.674	1899.081	5.698	12.7	2.0	NO		NO	bd
10	10 200303P2-12	Standard	12.500	4.13	877.114	1526.484	7.182	16.1	28.5	NO		NO	bb

Compound name: 13C5-PFNA-EIS
Response Factor: 715.29
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 200303P2-3	Standard	12.500	4.62	8676.989		8676.989	12.1	-3.0	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	4.62	8244.232		8244.232	11.5	-7.8	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	4.62	9017.449		9017.449	12.6	0.9	NO		NO	MMX
4	4 200303P2-6	Standard	12.500	4.62	8924.409		8924.409	12.5	-0.2	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	4.62	9430.936		9430.936	13.2	5.5	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	4.62	8941.126		8941.126	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.62	9044.084		9044.084	12.6	1.2	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	4.62	9572.104		9572.104	13.4	7.1	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	4.62	7455.316		7455.316	10.4	-16.6	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	4.62	6266.013		6266.013	8.8	-29.9	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C5-PFNA-RSD
Response Factor: 0.943324
RRF SD: 0.030561, Relative SD: 3.23972
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 200303P2-3	Standard	12.500	4.62	8676.989	9336.074	11.618	12.3	-1.5	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.62	8244.232	9067.151	11.366	12.0	-3.6	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.62	9113.666	9673.860	11.776	12.5	-0.1	NO		NO	bd
4	4 200303P2-6	Standard	12.500	4.62	8924.409	9262.574	12.044	12.8	2.1	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.62	9430.936	10434.640	11.298	12.0	-4.2	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.62	8941.126	9542.068	11.713	12.4	-0.7	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.62	9044.084	8998.559	12.563	13.3	6.5	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.62	9572.104	9821.164	12.183	12.9	3.3	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.62	7455.316	8035.879	11.597	12.3	-1.7	NO		NO	bb
10	10 200303P2-12	Standard	12.500	4.62	6266.013	6660.863	11.759	12.5	-0.3	NO		NO	bb

Compound name: 13C8-PFOSA-EIS
Response Factor: 194.82
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 200303P2-3	Standard	12.500	4.67	2425.879		2425.879	12.5	-0.4	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	4.67	2370.601		2370.601	12.2	-2.7	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	4.67	2388.090		2388.090	12.3	-1.9	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	4.67	2352.839		2352.839	12.1	-3.4	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	4.68	2509.700		2509.700	12.9	3.1	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	4.67	2435.245		2435.245	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.68	2479.768		2479.768	12.7	1.8	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	4.68	2524.310		2524.310	13.0	3.7	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	4.68	1933.458		1933.458	9.9	-20.6	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	4.68	1519.821		1519.821	7.8	-37.6	NO		NO	bdX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C8-PFOSA-RSD
Response Factor: 0.180489
RRF SD: 0.00900984, Relative SD: 4.99189
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 200303P2-3	Standard	12.500	4.67	2425.879	12292.535	2.467	13.7	9.3	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.67	2370.601	13563.615	2.185	12.1	-3.2	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.67	2388.090	12871.737	2.319	12.8	2.8	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.67	2352.839	13709.798	2.145	11.9	-4.9	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.68	2509.700	13352.733	2.349	13.0	4.1	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.67	2435.245	14493.543	2.100	11.6	-6.9	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.68	2479.768	13425.066	2.309	12.8	2.3	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.68	2524.310	13648.736	2.312	12.8	2.5	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.68	1933.458	11018.379	2.193	12.2	-2.8	NO		NO	bb
10	10 200303P2-12	Standard	12.500	4.68	1519.821	8708.936	2.181	12.1	-3.3	NO		NO	bd

Compound name: 13C2-PFOA-EIS
Response Factor: 812.468
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 200303P2-3	Standard	12.500	4.17	10276.202		10276.202	12.6	1.2	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	4.17	9904.520		9904.520	12.2	-2.5	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	4.18	10989.836		10989.836	13.5	8.2	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	4.18	11166.376		11166.376	13.7	10.0	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	4.18	10651.461		10651.461	13.1	4.9	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	4.18	10155.849		10155.849	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.18	10956.073		10956.073	13.5	7.9	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	4.18	10915.598		10915.598	13.4	7.5	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	4.18	8587.115		8587.115	10.6	-15.4	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	4.18	7620.000		7620.000	9.4	-25.0	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-PFOA-RSD
Response Factor: 0.817194
RRF SD: 0.0285078, Relative SD: 3.4885
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 200303P2-3	Standard	12.500	4.17	10276.202	12747.349	10.077	12.3	-1.4	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.17	9904.520	12585.676	9.837	12.0	-3.7	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.18	10989.836	12905.182	10.645	13.0	4.2	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.18	11166.376	13716.797	10.176	12.5	-0.4	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.18	10651.461	13578.188	9.806	12.0	-4.0	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.18	10155.849	13031.755	9.741	11.9	-4.6	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.18	10956.073	13320.379	10.281	12.6	0.6	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.18	10915.598	13278.973	10.275	12.6	0.6	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.18	8587.115	10128.570	10.598	13.0	3.7	NO		NO	bb
10	10 200303P2-12	Standard	12.500	4.18	7620.000	8890.700	10.713	13.1	4.9	NO		NO	bb

Compound name: 13C8-PFOS-EIS
Response Factor: 170.914
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 200303P2-3	Standard	12.500	4.70	2259.796		2259.796	13.2	5.8	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	4.70	2403.130		2403.130	14.1	12.5	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	4.70	2387.771		2387.771	14.0	11.8	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	4.70	2521.568		2521.568	14.8	18.0	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	4.70	2447.391		2447.391	14.3	14.6	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	4.70	2136.431		2136.431	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.70	2295.031		2295.031	13.4	7.4	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	4.70	2221.123		2221.123	13.0	4.0	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	4.70	1841.658		1841.658	10.8	-13.8	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	4.71	1428.670		1428.670	8.4	-33.1	NO		NO	MMX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C8-PFOS-RSD
Response Factor: 0.963695
RRF SD: 0.0488879, Relative SD: 5.07296
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 200303P2-3	Standard	12.500	4.70	2259.796	2280.187	12.388	12.9	2.8	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.70	2403.130	2566.882	11.703	12.1	-2.9	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.70	2387.771	2486.613	12.003	12.5	-0.4	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.70	2521.568	2413.796	13.058	13.6	8.4	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.70	2447.391	2426.850	12.606	13.1	4.6	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.70	2136.431	2440.285	10.944	11.4	-9.2	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.70	2295.031	2510.452	11.427	11.9	-5.1	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.70	2221.123	2238.731	12.402	12.9	3.0	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.70	1841.658	1899.081	12.122	12.6	0.6	NO		NO	bb
10	10 200303P2-12	Standard	12.500	4.71	1442.150	1526.484	11.809	12.3	-2.0	NO		NO	bd

Compound name: 13C2-PFDA-EIS
Response Factor: 817.432
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 200303P2-3	Standard	12.500	4.99	9372.358		9372.358	11.5	-8.3	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	4.99	9355.163		9355.163	11.4	-8.4	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	4.99	10534.359		10534.359	12.9	3.1	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	4.99	10551.075		10551.075	12.9	3.3	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	4.99	10234.135		10234.135	12.5	0.2	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	4.99	10217.901		10217.901	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.99	10355.660		10355.660	12.7	1.3	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	4.99	10471.477		10471.477	12.8	2.5	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	4.99	8584.602		8584.602	10.5	-16.0	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	5.00	7453.241		7453.241	9.1	-27.1	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-PFDA-RSD
Response Factor: 0.961716
RRF SD: 0.0531851, Relative SD: 5.53023
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 200303P2-3	Standard	12.500	4.99	9372.358	10648.158	11.002	11.4	-8.5	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.99	9355.163	10257.038	11.401	11.9	-5.2	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.99	10534.359	10256.365	12.839	13.3	6.8	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.99	10551.075	11266.296	11.706	12.2	-2.6	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.99	10234.135	11200.095	11.422	11.9	-5.0	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.99	10217.901	10392.998	12.289	12.8	2.2	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.99	10355.660	9938.356	13.025	13.5	8.3	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.99	10471.477	11131.530	11.759	12.2	-2.2	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.99	8584.602	8604.448	12.471	13.0	3.7	NO		NO	bb
10	10 200303P2-12	Standard	12.500	5.00	7453.241	7574.510	12.300	12.8	2.3	NO		NO	bb

Compound name: 13C2-8:2 FTS-EIS
Response Factor: 58.8779
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 200303P2-3	Standard	12.500	4.97	892.880		892.880	15.2	21.3	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	4.97	799.151		799.151	13.6	8.6	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	4.96	841.972		841.972	14.3	14.4	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	4.96	858.458		858.458	14.6	16.6	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	4.97	887.876		887.876	15.1	20.6	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	4.97	735.974		735.974	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.97	833.209		833.209	14.2	13.2	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	4.97	882.409		882.409	15.0	19.9	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	4.97	704.386		704.386	12.0	-4.3	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	4.97	586.539		586.539	10.0	-20.3	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-8:2 FTS-RSD
Response Factor: 0.354581
RRF SD: 0.0327584, Relative SD: 9.2386
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 200303P2-3	Standard	12.500	4.97	892.880	2280.187	4.895	13.8	10.4	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.97	799.151	2566.882	3.892	11.0	-12.2	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.96	841.972	2486.613	4.233	11.9	-4.5	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.96	858.458	2413.796	4.446	12.5	0.3	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.97	887.876	2426.850	4.573	12.9	3.2	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.97	735.974	2440.285	3.770	10.6	-14.9	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.97	833.209	2510.452	4.149	11.7	-6.4	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.97	882.409	2238.731	4.927	13.9	11.2	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.97	704.386	1899.081	4.636	13.1	4.6	NO		NO	bb
10	10 200303P2-12	Standard	12.500	4.97	586.539	1526.484	4.803	13.5	8.4	NO		NO	bb

Compound name: d3-N-MeFOSAA-EIS
Response Factor: 144.472
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 200303P2-3	Standard	12.500	5.14	1816.436		1816.436	12.6	0.6	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	5.14	1741.335		1741.335	12.1	-3.6	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	5.14	2110.196		2110.196	14.6	16.9	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	5.14	1918.343		1918.343	13.3	6.2	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	5.14	1959.367		1959.367	13.6	8.5	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	5.14	1805.894		1805.894	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.15	1740.419		1740.419	12.0	-3.6	NO		NO	bdX
8	8 200303P2-10	Standard	12.500	5.15	1965.308		1965.308	13.6	8.8	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	5.14	1845.284		1845.284	12.8	2.2	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	5.15	1469.821		1469.821	10.2	-18.6	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: d3-N-MeFOSAA-RSD
Response Factor: 0.146123
RRF SD: 0.0162684, Relative SD: 11.1334
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 200303P2-3	Standard	12.500	5.14	1816.436	12292.535	1.847	12.6	1.1	NO		NO	bb
2	2 200303P2-4	Standard	12.500	5.14	1741.335	13563.615	1.605	11.0	-12.1	NO		NO	bb
3	3 200303P2-5	Standard	12.500	5.14	2110.196	12871.737	2.049	14.0	12.2	NO		NO	bb
4	4 200303P2-6	Standard	12.500	5.14	1918.343	13709.798	1.749	12.0	-4.2	NO		NO	bb
5	5 200303P2-7	Standard	12.500	5.14	1959.367	13352.733	1.834	12.6	0.4	NO		NO	bb
6	6 200303P2-8	Standard	12.500	5.14	1805.894	14493.543	1.557	10.7	-14.7	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.15	1740.419	13425.066	1.620	11.1	-11.3	NO		NO	bd
8	8 200303P2-10	Standard	12.500	5.15	1965.308	13648.736	1.800	12.3	-1.5	NO		NO	bb
9	9 200303P2-11	Standard	12.500	5.14	1845.284	11018.379	2.093	14.3	14.6	NO		NO	bb
10	10 200303P2-12	Standard	12.500	5.15	1469.821	8708.936	2.110	14.4	15.5	NO		NO	bb

Compound name: 13C2-PFUdA-EIS
Response Factor: 1068.77
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 200303P2-3	Standard	12.500	5.31	12439.398		12439.398	11.6	-6.9	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	5.31	12289.751		12289.751	11.5	-8.0	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	5.31	12611.234		12611.234	11.8	-5.6	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	5.31	13254.036		13254.036	12.4	-0.8	NO		NO	bdX
5	5 200303P2-7	Standard	12.500	5.32	13053.461		13053.461	12.2	-2.3	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	5.31	13359.567		13359.567	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.32	13654.553		13654.553	12.8	2.2	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	5.32	12798.581		12798.581	12.0	-4.2	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	5.32	11482.734		11482.734	10.7	-14.0	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	5.32	9549.330		9549.330	8.9	-28.5	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-PFUdA-RSD
Response Factor: 0.985734
RRF SD: 0.0580485, Relative SD: 5.88886
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	200303P2-3	Standard	12.500	5.31	12439.398	12292.535	12.649	12.8	2.7	NO		NO	bb
2	2	200303P2-4	Standard	12.500	5.31	12289.751	13563.615	11.326	11.5	-8.1	NO		NO	bb
3	3	200303P2-5	Standard	12.500	5.31	12611.234	12871.737	12.247	12.4	-0.6	NO		NO	bb
4	4	200303P2-6	Standard	12.500	5.31	13254.036	13709.798	12.084	12.3	-1.9	NO		NO	bd
5	5	200303P2-7	Standard	12.500	5.32	13053.461	13352.733	12.220	12.4	-0.8	NO		NO	bb
6	6	200303P2-8	Standard	12.500	5.31	13359.567	14493.543	11.522	11.7	-6.5	NO		NO	bb
7	7	200303P2-9	Standard	12.500	5.32	13654.553	13425.066	12.714	12.9	3.2	NO		NO	bb
8	8	200303P2-10	Standard	12.500	5.32	12798.581	13648.736	11.721	11.9	-4.9	NO		NO	bb
9	9	200303P2-11	Standard	12.500	5.32	11482.734	11018.379	13.027	13.2	5.7	NO		NO	bb
10	10	200303P2-12	Standard	12.500	5.32	9549.330	8708.936	13.706	13.9	11.2	NO		NO	bb

Compound name: d5-N-EtFOSAA-EIS
Response Factor: 265.746
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	200303P2-3	Standard	12.500	5.30	3190.241		3190.241	12.0	-4.0	NO		NO	bbX
2	2	200303P2-4	Standard	12.500	5.30	2983.508		2983.508	11.2	-10.2	NO		NO	bbX
3	3	200303P2-5	Standard	12.500	5.30	3522.184		3522.184	13.3	6.0	NO		NO	bbX
4	4	200303P2-6	Standard	12.500	5.30	3225.858		3225.858	12.1	-2.9	NO		NO	bbX
5	5	200303P2-7	Standard	12.500	5.30	3552.445		3552.445	13.4	6.9	NO		NO	bbX
6	6	200303P2-8	Standard	12.500	5.30	3321.827		3321.827	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	5.30	3127.889		3127.889	11.8	-5.8	NO		NO	bbX
8	8	200303P2-10	Standard	12.500	5.30	3183.808		3183.808	12.0	-4.2	NO		NO	bbX
9	9	200303P2-11	Standard	12.500	5.30	2353.167		2353.167	8.9	-29.2	NO		NO	bbX
10	10	200303P2-12	Standard	12.500	5.30	1941.879		1941.879	7.3	-41.5	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: d5-N-EtFOSAA-RSD
Response Factor: 0.238646
RRF SD: 0.0205377, Relative SD: 8.60591
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 200303P2-3	Standard	12.500	5.30	3190.241	12292.535	3.244	13.6	8.7	NO		NO	bb
2	2 200303P2-4	Standard	12.500	5.30	2983.508	13563.615	2.750	11.5	-7.8	NO		NO	bb
3	3 200303P2-5	Standard	12.500	5.30	3522.184	12871.737	3.420	14.3	14.7	NO		NO	bb
4	4 200303P2-6	Standard	12.500	5.30	3225.858	13709.798	2.941	12.3	-1.4	NO		NO	bb
5	5 200303P2-7	Standard	12.500	5.30	3552.445	13352.733	3.326	13.9	11.5	NO		NO	bb
6	6 200303P2-8	Standard	12.500	5.30	3321.827	14493.543	2.865	12.0	-4.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.30	3127.889	13425.066	2.912	12.2	-2.4	NO		NO	bb
8	8 200303P2-10	Standard	12.500	5.30	3183.808	13648.736	2.916	12.2	-2.3	NO		NO	bb
9	9 200303P2-11	Standard	12.500	5.30	2353.167	11018.379	2.670	11.2	-10.5	NO		NO	bb
10	10 200303P2-12	Standard	12.500	5.30	1941.879	8708.936	2.787	11.7	-6.6	NO		NO	bb

Compound name: 13C2-PFDoA-EIS
Response Factor: 1089.82
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 200303P2-3	Standard	12.500	5.59	12133.043		12133.043	11.1	-10.9	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	5.59	13892.907		13892.907	12.7	2.0	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	5.59	13581.924		13581.924	12.5	-0.3	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	5.59	13267.912		13267.912	12.2	-2.6	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	5.59	13005.560		13005.560	11.9	-4.5	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	5.59	13622.752		13622.752	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.60	13412.619		13412.619	12.3	-1.5	NO		NO	bbX
8	8 200303P2-10	Standard	12.500	5.60	12833.076		12833.076	11.8	-5.8	NO		NO	bbX
9	9 200303P2-11	Standard	12.500	5.60	11601.709		11601.709	10.6	-14.8	NO		NO	bbX
10	10 200303P2-12	Standard	12.500	5.60	10316.580		10316.580	9.5	-24.3	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-PFDoA-RSD
Response Factor: 1.26806
RRF SD: 0.0964754, Relative SD: 7.60812
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 200303P2-3	Standard	12.500	5.59	12133.043	10648.158	14.243	11.2	-10.1	NO		NO	bb
2	2 200303P2-4	Standard	12.500	5.59	13892.907	10257.038	16.931	13.4	6.8	NO		NO	bb
3	3 200303P2-5	Standard	12.500	5.59	13581.924	10256.365	16.553	13.1	4.4	NO		NO	bb
4	4 200303P2-6	Standard	12.500	5.59	13267.912	11266.296	14.721	11.6	-7.1	NO		NO	bb
5	5 200303P2-7	Standard	12.500	5.59	13005.560	11200.095	14.515	11.4	-8.4	NO		NO	bb
6	6 200303P2-8	Standard	12.500	5.59	13622.752	10392.998	16.385	12.9	3.4	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.60	13412.619	9938.356	16.870	13.3	6.4	NO		NO	bb
8	8 200303P2-10	Standard	12.500	5.60	12833.076	11131.530	14.411	11.4	-9.1	NO		NO	bb
9	9 200303P2-11	Standard	12.500	5.60	11601.709	8604.448	16.854	13.3	6.3	NO		NO	bb
10	10 200303P2-12	Standard	12.500	5.60	10316.580	7574.510	17.025	13.4	7.4	NO		NO	bb

Compound name: 13C2-10:2 FTS-EIS
Response Factor: 50.9454
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 200303P2-3	Standard	12.500	5.57	635.222		635.222	12.5	-0.3	NO		NO	bbX
2	2 200303P2-4	Standard	12.500	5.57	650.342		650.342	12.8	2.1	NO		NO	bbX
3	3 200303P2-5	Standard	12.500	5.58	635.307		635.307	12.5	-0.2	NO		NO	bbX
4	4 200303P2-6	Standard	12.500	5.58	708.738		708.738	13.9	11.3	NO		NO	bbX
5	5 200303P2-7	Standard	12.500	5.57	611.284		611.284	12.0	-4.0	NO		NO	bbX
6	6 200303P2-8	Standard	12.500	5.58	636.817		636.817	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.58	633.654		633.654	12.4	-0.5	NO		NO	MMX
8	8 200303P2-10	Standard	12.500	5.58	647.999		647.999	12.7	1.8	NO		NO	MMX
9	9 200303P2-11	Standard	12.500	5.58	442.267		442.267	8.7	-30.6	YES		NO	MMX
10	10 200303P2-12	Standard	12.500	5.58	455.714		455.714	8.9	-28.4	NO		NO	MMX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-10:2 FTS-RSD
Response Factor: 0.266688
RRF SD: 0.0217801, Relative SD: 8.16686
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 200303P2-3	Standard	12.500	5.57	635.222	2280.187	3.482	13.1	4.5	NO		NO	bb
2	2 200303P2-4	Standard	12.500	5.57	650.342	2566.882	3.167	11.9	-5.0	NO		NO	bb
3	3 200303P2-5	Standard	12.500	5.58	635.307	2486.613	3.194	12.0	-4.2	NO		NO	bb
4	4 200303P2-6	Standard	12.500	5.58	708.738	2413.796	3.670	13.8	10.1	NO		NO	bb
5	5 200303P2-7	Standard	12.500	5.57	611.284	2426.850	3.149	11.8	-5.6	NO		NO	bb
6	6 200303P2-8	Standard	12.500	5.58	636.817	2440.285	3.262	12.2	-2.1	NO		NO	bb
7	7 200303P2-9	Standard	12.500	5.58	634.060	2510.452	3.157	11.8	-5.3	NO		NO	MM
8	8 200303P2-10	Standard	12.500	5.58	647.497	2238.731	3.615	13.6	8.5	NO		NO	MM
9	9 200303P2-11	Standard	12.500	5.58	442.301	1899.081	2.911	10.9	-12.7	NO		NO	MM
10	10 200303P2-12	Standard	12.500	5.58	455.337	1526.484	3.729	14.0	11.9	NO		NO	MM

Compound name: d3-N-MeFOSA-EIS
Response Factor: 71.13
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 200303P2-3	Standard	149.200	5.72	10259.430		10259.430	144.2	-3.3	NO		NO	bbX
2	2 200303P2-4	Standard	149.200	5.72	10988.189		10988.189	154.5	3.5	NO		NO	bbX
3	3 200303P2-5	Standard	149.200	5.73	10724.583		10724.583	150.8	1.1	NO		NO	bdX
4	4 200303P2-6	Standard	149.200	5.72	11030.577		11030.577	155.1	3.9	NO		NO	bbX
5	5 200303P2-7	Standard	149.200	5.73	10555.266		10555.266	148.4	-0.5	NO		NO	bbX
6	6 200303P2-8	Standard	149.200	5.73	10612.593		10612.593	149.2	0.0	NO		NO	bd
7	7 200303P2-9	Standard	149.200	5.73	11106.692		11106.692	156.1	4.7	NO		NO	bbX
8	8 200303P2-10	Standard	149.200	5.73	10998.032		10998.032	154.6	3.6	NO		NO	bbX
9	9 200303P2-11	Standard	149.200	5.73	8859.682		8859.682	124.6	-16.5	NO		NO	bbX
10	10 200303P2-12	Standard	149.200	5.73	8189.364		8189.364	115.1	-22.8	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: d3-N-MeFOSA-RSD
Response Factor: 0.0685551
RRF SD: 0.00434956, Relative SD: 6.34462
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	200303P2-3	Standard	149.200	5.72	10259.430	12292.535	10.433	152.2	2.0	NO		NO	bb
2	2	200303P2-4	Standard	149.200	5.72	10988.189	13563.615	10.127	147.7	-1.0	NO		NO	bb
3	3	200303P2-5	Standard	149.200	5.73	10724.583	12871.737	10.415	151.9	1.8	NO		NO	bd
4	4	200303P2-6	Standard	149.200	5.72	11030.577	13709.798	10.057	146.7	-1.7	NO		NO	bb
5	5	200303P2-7	Standard	149.200	5.73	10555.266	13352.733	9.881	144.1	-3.4	NO		NO	bb
6	6	200303P2-8	Standard	149.200	5.73	10612.593	14493.543	9.153	133.5	-10.5	NO		NO	bd
7	7	200303P2-9	Standard	149.200	5.73	11106.692	13425.066	10.341	150.8	1.1	NO		NO	bb
8	8	200303P2-10	Standard	149.200	5.73	10998.032	13648.736	10.072	146.9	-1.5	NO		NO	bb
9	9	200303P2-11	Standard	149.200	5.73	8859.682	11018.379	10.051	146.6	-1.7	NO		NO	bb
10	10	200303P2-12	Standard	149.200	5.73	8189.364	8708.936	11.754	171.5	14.9	NO		NO	bb

Compound name: 13C2-PFTeDA-EIS
Response Factor: 818.597
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	200303P2-3	Standard	12.500	6.04	10196.760		10196.760	12.5	-0.3	NO		NO	bbX
2	2	200303P2-4	Standard	12.500	6.05	10113.177		10113.177	12.4	-1.2	NO		NO	bbX
3	3	200303P2-5	Standard	12.500	6.05	10498.654		10498.654	12.8	2.6	NO		NO	bbX
4	4	200303P2-6	Standard	12.500	6.05	10452.335		10452.335	12.8	2.1	NO		NO	bbX
5	5	200303P2-7	Standard	12.500	6.05	10898.511		10898.511	13.3	6.5	NO		NO	bbX
6	6	200303P2-8	Standard	12.500	6.05	10232.462		10232.462	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	6.05	10406.538		10406.538	12.7	1.7	NO		NO	bbX
8	8	200303P2-10	Standard	12.500	6.05	10751.960		10751.960	13.1	5.1	NO		NO	bbX
9	9	200303P2-11	Standard	12.500	6.05	8272.260		8272.260	10.1	-19.2	NO		NO	bbX
10	10	200303P2-12	Standard	12.500	6.05	6734.312		6734.312	8.2	-34.2	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-PFTeDA-RSD
Response Factor: 0.776231
RRF SD: 0.037773, Relative SD: 4.8662
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	200303P2-3	Standard	12.500	6.04	10196.760	12292.535	10.369	13.4	6.9	NO		NO	bb
2	2	200303P2-4	Standard	12.500	6.05	10113.177	13563.615	9.320	12.0	-3.9	NO		NO	bb
3	3	200303P2-5	Standard	12.500	6.05	10498.654	12871.737	10.195	13.1	5.1	NO		NO	bb
4	4	200303P2-6	Standard	12.500	6.05	10452.335	13709.798	9.530	12.3	-1.8	NO		NO	bb
5	5	200303P2-7	Standard	12.500	6.05	10898.511	13352.733	10.203	13.1	5.1	NO		NO	bb
6	6	200303P2-8	Standard	12.500	6.05	10232.462	14493.543	8.825	11.4	-9.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	6.05	10406.538	13425.066	9.689	12.5	-0.1	NO		NO	bb
8	8	200303P2-10	Standard	12.500	6.05	10751.960	13648.736	9.847	12.7	1.5	NO		NO	bb
9	9	200303P2-11	Standard	12.500	6.05	8272.260	11018.379	9.385	12.1	-3.3	NO		NO	bb
10	10	200303P2-12	Standard	12.500	6.05	6734.312	8708.936	9.666	12.5	-0.4	NO		NO	bb

Compound name: d5-N-ETFOSA-EIS
Response Factor: 125.153
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	200303P2-3	Standard	149.200	6.14	18117.516		18117.516	144.8	-3.0	NO		NO	bbX
2	2	200303P2-4	Standard	149.200	6.14	18585.359		18585.359	148.5	-0.5	NO		NO	bbX
3	3	200303P2-5	Standard	149.200	6.14	18667.434		18667.434	149.2	-0.0	NO		NO	bbX
4	4	200303P2-6	Standard	149.200	6.14	18866.869		18866.869	150.8	1.0	NO		NO	bbX
5	5	200303P2-7	Standard	149.200	6.14	18863.928		18863.928	150.7	1.0	NO		NO	bbX
6	6	200303P2-8	Standard	149.200	6.14	18672.766		18672.766	149.2	0.0	NO		NO	bb
7	7	200303P2-9	Standard	149.200	6.14	18436.674		18436.674	147.3	-1.3	NO		NO	bbX
8	8	200303P2-10	Standard	149.200	6.14	18624.201		18624.201	148.8	-0.3	NO		NO	bbX
9	9	200303P2-11	Standard	149.200	6.14	14559.637		14559.637	116.3	-22.0	NO		NO	bbX
10	10	200303P2-12	Standard	149.200	6.14	12407.013		12407.013	99.1	-33.6	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: d5-N-ETFOSA-RSD
Response Factor: 0.116081
RRF SD: 0.00473369, Relative SD: 4.0779
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	200303P2-3	Standard	149.200	6.14	18117.516	12292.535	18.423	158.7	6.4	NO		NO	bb
2	2	200303P2-4	Standard	149.200	6.14	18585.359	13563.615	17.128	147.6	-1.1	NO		NO	bb
3	3	200303P2-5	Standard	149.200	6.14	18667.434	12871.737	18.128	156.2	4.7	NO		NO	bb
4	4	200303P2-6	Standard	149.200	6.14	18866.869	13709.798	17.202	148.2	-0.7	NO		NO	bb
5	5	200303P2-7	Standard	149.200	6.14	18863.928	13352.733	17.659	152.1	2.0	NO		NO	bb
6	6	200303P2-8	Standard	149.200	6.14	18672.766	14493.543	16.104	138.7	-7.0	NO		NO	bb
7	7	200303P2-9	Standard	149.200	6.14	18436.674	13425.066	17.166	147.9	-0.9	NO		NO	bb
8	8	200303P2-10	Standard	149.200	6.14	18624.201	13648.736	17.057	146.9	-1.5	NO		NO	bb
9	9	200303P2-11	Standard	149.200	6.14	14559.637	11018.379	16.517	142.3	-4.6	NO		NO	bb
10	10	200303P2-12	Standard	149.200	6.14	12407.013	8708.936	17.808	153.4	2.8	NO		NO	bb

Compound name: 13C2-PFHxDA-EIS
Response Factor: 1382.55
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	200303P2-3	Standard	12.500	6.38	16431.227		16431.227	11.9	-4.9	NO		NO	bbX
2	2	200303P2-4	Standard	12.500	6.38	17230.199		17230.199	12.5	-0.3	NO		NO	bbX
3	3	200303P2-5	Standard	12.500	6.38	16559.240		16559.240	12.0	-4.2	NO		NO	bbX
4	4	200303P2-6	Standard	12.500	6.38	17177.160		17177.160	12.4	-0.6	NO		NO	bbX
5	5	200303P2-7	Standard	12.500	6.38	17347.584		17347.584	12.5	0.4	NO		NO	bbX
6	6	200303P2-8	Standard	12.500	6.38	17281.908		17281.908	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	6.38	17724.119		17724.119	12.8	2.6	NO		NO	bbX
8	8	200303P2-10	Standard	12.500	6.38	17807.473		17807.473	12.9	3.0	NO		NO	bbX
9	9	200303P2-11	Standard	12.500	6.38	14038.063		14038.063	10.2	-18.8	NO		NO	bbX
10	10	200303P2-12	Standard	12.500	6.38	11892.600		11892.600	8.6	-31.2	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C2-PFHxDA-RSD
Response Factor: 1.29025
RRF SD: 0.0479118, Relative SD: 3.71337
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 200303P2-3	Standard	12.500	6.38	16431.227	12292.535	16.709	12.9	3.6	NO		NO	bb
2	2 200303P2-4	Standard	12.500	6.38	17230.199	13563.615	15.879	12.3	-1.5	NO		NO	bb
3	3 200303P2-5	Standard	12.500	6.38	16559.240	12871.737	16.081	12.5	-0.3	NO		NO	bb
4	4 200303P2-6	Standard	12.500	6.38	17177.160	13709.798	15.661	12.1	-2.9	NO		NO	bb
5	5 200303P2-7	Standard	12.500	6.38	17347.584	13352.733	16.240	12.6	0.7	NO		NO	bb
6	6 200303P2-8	Standard	12.500	6.38	17281.908	14493.543	14.905	11.6	-7.6	NO		NO	bb
7	7 200303P2-9	Standard	12.500	6.38	17724.119	13425.066	16.503	12.8	2.3	NO		NO	bb
8	8 200303P2-10	Standard	12.500	6.38	17807.473	13648.736	16.309	12.6	1.1	NO		NO	bb
9	9 200303P2-11	Standard	12.500	6.38	14038.063	11018.379	15.926	12.3	-1.3	NO		NO	bb
10	10 200303P2-12	Standard	12.500	6.38	11892.600	8708.936	17.070	13.2	5.8	NO		NO	bb

Compound name: d7-N-MeFOSE-EIS
Response Factor: 97.8063
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 200303P2-3	Standard	149.200	6.30	14683.476		14683.476	150.1	0.6	NO		NO	bbX
2	2 200303P2-4	Standard	149.200	6.29	14443.506		14443.506	147.7	-1.0	NO		NO	bbX
3	3 200303P2-5	Standard	149.200	6.30	15499.694		15499.694	158.5	6.2	NO		NO	bbX
4	4 200303P2-6	Standard	149.200	6.29	14382.142		14382.142	147.0	-1.4	NO		NO	bbX
5	5 200303P2-7	Standard	149.200	6.30	13924.578		13924.578	142.4	-4.6	NO		NO	bbX
6	6 200303P2-8	Standard	149.200	6.29	14592.701		14592.701	149.2	0.0	NO		NO	bb
7	7 200303P2-9	Standard	149.200	6.30	14999.295		14999.295	153.4	2.8	NO		NO	bbX
8	8 200303P2-10	Standard	149.200	6.30	14395.392		14395.392	147.2	-1.4	NO		NO	bbX
9	9 200303P2-11	Standard	149.200	6.30	12342.360		12342.360	126.2	-15.4	NO		NO	bbX
10	10 200303P2-12	Standard	149.200	6.30	10799.154		10799.154	110.4	-26.0	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: d7-N-MeFOSE-RSD
Response Factor: 0.0929489
RRF SD: 0.00666899, Relative SD: 7.1749
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	200303P2-3	Standard	149.200	6.30	14683.476	12292.535	14.931	160.6	7.7	NO		NO	bb
2	2	200303P2-4	Standard	149.200	6.29	14443.506	13563.615	13.311	143.2	-4.0	NO		NO	bb
3	3	200303P2-5	Standard	149.200	6.30	15499.694	12871.737	15.052	161.9	8.5	NO		NO	bb
4	4	200303P2-6	Standard	149.200	6.29	14382.142	13709.798	13.113	141.1	-5.4	NO		NO	bb
5	5	200303P2-7	Standard	149.200	6.30	13924.578	13352.733	13.035	140.2	-6.0	NO		NO	bb
6	6	200303P2-8	Standard	149.200	6.29	14592.701	14493.543	12.586	135.4	-9.2	NO		NO	bb
7	7	200303P2-9	Standard	149.200	6.30	14999.295	13425.066	13.966	150.3	0.7	NO		NO	bb
8	8	200303P2-10	Standard	149.200	6.30	14395.392	13648.736	13.184	141.8	-4.9	NO		NO	bb
9	9	200303P2-11	Standard	149.200	6.30	12342.360	11018.379	14.002	150.6	1.0	NO		NO	bb
10	10	200303P2-12	Standard	149.200	6.30	10799.154	8708.936	15.500	166.8	11.8	NO		NO	bb

Compound name: d9-N-EtFOSE-EIS
Response Factor: 109.391
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	200303P2-3	Standard	149.200	6.44	16332.719		16332.719	149.3	0.1	NO		NO	bbX
2	2	200303P2-4	Standard	149.200	6.44	17437.307		17437.307	159.4	6.8	NO		NO	bbX
3	3	200303P2-5	Standard	149.200	6.44	17547.912		17547.912	160.4	7.5	NO		NO	bbX
4	4	200303P2-6	Standard	149.200	6.44	16589.441		16589.441	151.7	1.6	NO		NO	bbX
5	5	200303P2-7	Standard	149.200	6.44	17724.738		17724.738	162.0	8.6	NO		NO	bbX
6	6	200303P2-8	Standard	149.200	6.44	16321.159		16321.159	149.2	0.0	NO		NO	bb
7	7	200303P2-9	Standard	149.200	6.44	17224.307		17224.307	157.5	5.5	NO		NO	bbX
8	8	200303P2-10	Standard	149.200	6.44	18648.422		18648.422	170.5	14.3	NO		NO	bbX
9	9	200303P2-11	Standard	149.200	6.44	14226.369		14226.369	130.1	-12.8	NO		NO	bbX
10	10	200303P2-12	Standard	149.200	6.44	12865.930		12865.930	117.6	-21.2	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: d9-N-EtFOSE-RSD
Response Factor: 0.109408
RRF SD: 0.00789804, Relative SD: 7.2189
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 200303P2-3	Standard	149.200	6.44	16332.719	12292.535	16.608	151.8	1.7	NO		NO	bb
2	2 200303P2-4	Standard	149.200	6.44	17437.307	13563.615	16.070	146.9	-1.6	NO		NO	bb
3	3 200303P2-5	Standard	149.200	6.44	17547.912	12871.737	17.041	155.8	4.4	NO		NO	bb
4	4 200303P2-6	Standard	149.200	6.44	16589.441	13709.798	15.126	138.2	-7.3	NO		NO	bb
5	5 200303P2-7	Standard	149.200	6.44	17724.738	13352.733	16.593	151.7	1.6	NO		NO	bb
6	6 200303P2-8	Standard	149.200	6.44	16321.159	14493.543	14.076	128.7	-13.8	NO		NO	bb
7	7 200303P2-9	Standard	149.200	6.44	17224.307	13425.066	16.037	146.6	-1.8	NO		NO	bb
8	8 200303P2-10	Standard	149.200	6.44	18648.422	13648.736	17.079	156.1	4.6	NO		NO	bb
9	9 200303P2-11	Standard	149.200	6.44	14226.369	11018.379	16.139	147.5	-1.1	NO		NO	bb
10	10 200303P2-12	Standard	149.200	6.44	12865.930	8708.936	18.467	168.8	13.1	NO		NO	bb

Compound name: 13C4-PFBA
Response Factor: 1
RRF SD: 0, Relative SD: 0
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 200303P2-3	Standard	12.500	1.34	4545.599	4545.599	12.500	12.5	0.0	NO		NO	bb
2	2 200303P2-4	Standard	12.500	1.34	4674.229	4674.229	12.500	12.5	0.0	NO		NO	MM
3	3 200303P2-5	Standard	12.500	1.34	4912.538	4912.538	12.500	12.5	0.0	NO		NO	bb
4	4 200303P2-6	Standard	12.500	1.35	4918.820	4918.820	12.500	12.5	0.0	NO		NO	bb
5	5 200303P2-7	Standard	12.500	1.34	5119.233	5119.233	12.500	12.5	0.0	NO		NO	MM
6	6 200303P2-8	Standard	12.500	1.35	5265.259	5265.259	12.500	12.5	0.0	NO		NO	MM
7	7 200303P2-9	Standard	12.500	1.35	5051.663	5051.663	12.500	12.5	0.0	NO		NO	MM
8	8 200303P2-10	Standard	12.500	1.35	5274.190	5274.190	12.500	12.5	0.0	NO		NO	MM
9	9 200303P2-11	Standard	12.500	1.35	4116.191	4116.191	12.500	12.5	0.0	NO		NO	bb
10	10 200303P2-12	Standard	12.500	1.35	3515.880	3515.880	12.500	12.5	0.0	NO		NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 8.27511e-017, Relative SD: 8.27511e-015
Response type: Internal Std (Ref 100), 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 200303P2-3	Standard	12.500	3.06	11875.554	11875.554	12.500	12.5	0.0	NO		NO	bb
2	2 200303P2-4	Standard	12.500	3.06	12324.506	12324.506	12.500	12.5	0.0	NO		NO	bb
3	3 200303P2-5	Standard	12.500	3.06	12512.284	12512.284	12.500	12.5	0.0	NO		NO	bb
4	4 200303P2-6	Standard	12.500	3.06	12303.884	12303.884	12.500	12.5	0.0	NO		NO	bb
5	5 200303P2-7	Standard	12.500	3.06	12659.766	12659.766	12.500	12.5	0.0	NO		NO	bb
6	6 200303P2-8	Standard	12.500	3.07	12889.432	12889.432	12.500	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.07	13059.239	13059.239	12.500	12.5	0.0	NO		NO	bb
8	8 200303P2-10	Standard	12.500	3.07	12821.661	12821.661	12.500	12.5	0.0	NO		NO	bb
9	9 200303P2-11	Standard	12.500	3.07	10879.929	10879.929	12.500	12.5	0.0	NO		NO	bb
10	10 200303P2-12	Standard	12.500	3.07	8610.223	8610.223	12.500	12.5	0.0	NO		NO	bb

Compound name: 18O2-PFHxS
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 200303P2-3	Standard	12.500	3.81	718.324	718.324	12.500	12.5	0.0	NO		NO	bb
2	2 200303P2-4	Standard	12.500	3.81	847.686	847.686	12.500	12.5	0.0	NO		NO	bb
3	3 200303P2-5	Standard	12.500	3.81	961.671	961.671	12.500	12.5	0.0	NO		NO	bb
4	4 200303P2-6	Standard	12.500	3.81	776.086	776.086	12.500	12.5	0.0	NO		NO	bb
5	5 200303P2-7	Standard	12.500	3.81	909.979	909.979	12.500	12.5	0.0	NO		NO	bb
6	6 200303P2-8	Standard	12.500	3.81	831.661	831.661	12.500	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	3.81	857.509	857.509	12.500	12.5	0.0	NO		NO	bb
8	8 200303P2-10	Standard	12.500	3.81	859.145	859.145	12.500	12.5	0.0	NO		NO	bb
9	9 200303P2-11	Standard	12.500	3.81	762.852	762.852	12.500	12.5	0.0	NO		NO	bb
10	10 200303P2-12	Standard	12.500	3.82	503.357	503.357	12.500	12.5	0.0	NO		NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C8-PFOA
Response Factor: 1
RRF SD: 8.27511e-017, Relative SD: 8.27511e-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 200303P2-3	Standard	12.500	4.17	12747.349	12747.349	12.500	12.5	0.0	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.17	12585.676	12585.676	12.500	12.5	0.0	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.18	12905.182	12905.182	12.500	12.5	0.0	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.18	13716.797	13716.797	12.500	12.5	0.0	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.18	13578.188	13578.188	12.500	12.5	0.0	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.18	13031.755	13031.755	12.500	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.18	13320.379	13320.379	12.500	12.5	0.0	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.18	13278.973	13278.973	12.500	12.5	0.0	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.18	10128.570	10128.570	12.500	12.5	0.0	NO		NO	bb
10	10 200303P2-12	Standard	12.500	4.18	8890.700	8890.700	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 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 200303P2-3	Standard	12.500	4.62	9336.074	9336.074	12.500	12.5	0.0	NO		NO	bb
2	2 200303P2-4	Standard	12.500	4.62	9067.151	9067.151	12.500	12.5	0.0	NO		NO	bb
3	3 200303P2-5	Standard	12.500	4.62	9673.860	9673.860	12.500	12.5	0.0	NO		NO	bb
4	4 200303P2-6	Standard	12.500	4.62	9262.574	9262.574	12.500	12.5	0.0	NO		NO	bb
5	5 200303P2-7	Standard	12.500	4.62	10434.640	10434.640	12.500	12.5	0.0	NO		NO	bb
6	6 200303P2-8	Standard	12.500	4.62	9542.068	9542.068	12.500	12.5	0.0	NO		NO	bb
7	7 200303P2-9	Standard	12.500	4.62	8998.559	8998.559	12.500	12.5	0.0	NO		NO	bb
8	8 200303P2-10	Standard	12.500	4.62	9821.164	9821.164	12.500	12.5	0.0	NO		NO	bb
9	9 200303P2-11	Standard	12.500	4.62	8035.879	8035.879	12.500	12.5	0.0	NO		NO	bb
10	10 200303P2-12	Standard	12.500	4.62	6660.863	6660.863	12.500	12.5	0.0	NO		NO	bd

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C4-PFOS
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	200303P2-3	Standard	12.500	4.70	2280.187	2280.187	12.500	12.5	0.0	NO		NO	bb
2	2	200303P2-4	Standard	12.500	4.70	2566.882	2566.882	12.500	12.5	0.0	NO		NO	bb
3	3	200303P2-5	Standard	12.500	4.70	2486.613	2486.613	12.500	12.5	0.0	NO		NO	bb
4	4	200303P2-6	Standard	12.500	4.70	2413.796	2413.796	12.500	12.5	0.0	NO		NO	bb
5	5	200303P2-7	Standard	12.500	4.70	2426.850	2426.850	12.500	12.5	0.0	NO		NO	bb
6	6	200303P2-8	Standard	12.500	4.70	2440.285	2440.285	12.500	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	4.70	2510.452	2510.452	12.500	12.5	0.0	NO		NO	bb
8	8	200303P2-10	Standard	12.500	4.70	2238.731	2238.731	12.500	12.5	0.0	NO		NO	bd
9	9	200303P2-11	Standard	12.500	4.70	1899.081	1899.081	12.500	12.5	0.0	NO		NO	bb
10	10	200303P2-12	Standard	12.500	4.71	1526.484	1526.484	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C6-PFDA
Response Factor: 1
RRF SD: 3.70074e-017, Relative SD: 3.70074e-015
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	200303P2-3	Standard	12.500	4.99	10648.158	10648.158	12.500	12.5	0.0	NO		NO	bb
2	2	200303P2-4	Standard	12.500	4.99	10257.038	10257.038	12.500	12.5	0.0	NO		NO	bb
3	3	200303P2-5	Standard	12.500	4.99	10256.365	10256.365	12.500	12.5	0.0	NO		NO	bb
4	4	200303P2-6	Standard	12.500	4.99	11266.296	11266.296	12.500	12.5	0.0	NO		NO	bb
5	5	200303P2-7	Standard	12.500	4.99	11200.095	11200.095	12.500	12.5	0.0	NO		NO	bb
6	6	200303P2-8	Standard	12.500	4.99	10392.998	10392.998	12.500	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	4.99	9938.356	9938.356	12.500	12.5	0.0	NO		NO	bb
8	8	200303P2-10	Standard	12.500	4.99	11131.530	11131.530	12.500	12.5	0.0	NO		NO	bb
9	9	200303P2-11	Standard	12.500	5.00	8604.448	8604.448	12.500	12.5	0.0	NO		NO	bb
10	10	200303P2-12	Standard	12.500	5.00	7574.510	7574.510	12.500	12.5	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 09:57:53 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:59:27 Pacific Standard Time

Compound name: 13C7-PFUdA
Response Factor: 1
RRF SD: 1.04673e-016, Relative SD: 1.04673e-014
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	200303P2-3	Standard	12.500	5.31	12292.535	12292.535	12.500	12.5	0.0	NO		NO	bb
2	2	200303P2-4	Standard	12.500	5.31	13563.615	13563.615	12.500	12.5	0.0	NO		NO	bb
3	3	200303P2-5	Standard	12.500	5.31	12871.737	12871.737	12.500	12.5	0.0	NO		NO	bb
4	4	200303P2-6	Standard	12.500	5.31	13709.798	13709.798	12.500	12.5	0.0	NO		NO	bb
5	5	200303P2-7	Standard	12.500	5.31	13352.733	13352.733	12.500	12.5	0.0	NO		NO	bb
6	6	200303P2-8	Standard	12.500	5.31	14493.543	14493.543	12.500	12.5	0.0	NO		NO	bb
7	7	200303P2-9	Standard	12.500	5.32	13425.066	13425.066	12.500	12.5	0.0	NO		NO	bb
8	8	200303P2-10	Standard	12.500	5.32	13648.736	13648.736	12.500	12.5	0.0	NO		NO	bb
9	9	200303P2-11	Standard	12.500	5.32	11018.379	11018.379	12.500	12.5	0.0	NO		NO	bb
10	10	200303P2-12	Standard	12.500	5.32	8708.936	8708.936	12.500	12.5	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:07:09 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 09:57:51
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	47	0.9998	NO	
2	2	PFPrS	51	0.9962	NO	
3	3	3:3 FTCA	49	0.9992	NO	
4	4	PFPeA	49	0.9999	NO	
5	5	PFBS	51	0.9985	NO	
6	6	4:2 FTS	55	0.9996	NO	
7	7	PFHxA	57	0.9995	NO	
8	8	PFPeS	51	0.9970	NO	
9	9	HFPO-DA	53	0.9997	NO	
10	10	5:3 FTCA	59	0.9999	NO	
11	11	PFHpA	59	0.9996	NO	
12	12	ADONA	59	0.9986	NO	
13	13	L-PFHxS	61	0.9988	NO	
14	15	6:2 FTS	63	0.9987	NO	
15	16	L-PFOA	69	0.9999	NO	
16	18	PFecHS	69	0.9983	NO	
17	19	PFHpS	71	0.9997	NO	
18	20	7:3 FTCA	65	0.9988	NO	
19	21	PFNA	65	0.9997	NO	
20	22	PFOSA	67	0.9994	NO	
21	23	L-PFOS	71	0.9995	NO	
22	25	9Cl-PF30NS	71	0.9994	NO	
23	26	PFDA	73	0.9997	NO	
24	27	8:2 FTS	75	0.9962	NO	
25	28	PFNS	71	0.9993	NO	
26	29	L-MeFOSAA	77	0.9945	NO	

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:07:32 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 09:57:51
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	81	0.9996	NO	
2	33	PFUdA	79	0.9992	NO	
3	34	PFDS	71	0.9990	NO	
4	35	11Cl-PF30UdS	83	0.9969	NO	
5	36	10:2 FTS	85	0.9996	NO	
6	37	PFDoA	83	0.9996	NO	
7	38	N-MeFOSA	87	0.9993	NO	
8	39	PFTrDA	83	0.9993	NO	
9	40	PFDoS	89	0.9998	NO	
10	41	PFTeDA	89	0.9990	NO	
11	42	N-EtFOSA	91	0.9998	NO	
12	43	PFHxDA	93	0.9996	NO	
13	44	PFODA	93	0.9999	NO	
14	45	N-MeFOSE	95	0.9994	NO	
15	46	N-EtFOSE	97	0.9996	NO	
16	47	13C3-PFBA-EIS			NO	0.000
17	48	13C3-PFBA-RSD	99		NO	3.466
18	49	13C3-PFPeA-EIS			NO	0.000
19	50	13C3-PFPeA-RSD	100		NO	1.668
20	51	13C3-PFBS-EIS			NO	0.000
21	52	13C3-PFBS-RSD	101		NO	8.692
22	53	13C3-HFPO-DA-EIS			NO	0.000
23	54	13C3-HFPO-DA-RSD	100		NO	3.814
24	55	13C2-4:2 FTS-EIS			NO	0.000
25	56	13C2-4:2 FTS-RSD	101		NO	10.174
26	57	13C2-PFHxA-EIS			NO	0.000
27	58	13C2-PFHxA-RSD	100		NO	2.968
28	59	13C4-PFHpA-EIS			NO	0.000
29	60	13C4-PFHpA-RSD	100		NO	3.999
30	61	13C3-PFHxS-EIS			NO	0.000
31	62	13C3-PFHxS-RSD	101		NO	8.943
32	63	13C2-6:2 FTS-EIS			NO	0.000

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:07:32 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	13C2-6:2 FTS-RSD	104		NO	11.984
34	65	13C5-PFNA-EIS			NO	0.000
35	66	13C5-PFNA-RSD	103		NO	3.240
36	67	13C8-PFOSA-EIS			NO	0.000
37	68	13C8-PFOSA-RSD	106		NO	4.992
38	69	13C2-PFOA-EIS			NO	0.000
39	70	13C2-PFOA-RSD	102		NO	3.489
40	71	13C8-PFOS-EIS			NO	0.000
41	72	13C8-PFOS-RSD	104		NO	5.073
42	73	13C2-PFDA-EIS			NO	0.000
43	74	13C2-PFDA-RSD	105		NO	5.530
44	75	13C2-8:2 FTS-EIS			NO	0.000
45	76	13C2-8:2 FTS-RSD	104		NO	9.239
46	77	d3-N-MeFOSAA-EIS			NO	0.000
47	78	d3-N-MeFOSAA-RSD	106		NO	11.133
48	79	13C2-PFUdA-EIS			NO	0.000
49	80	13C2-PFUdA-RSD	106		NO	5.889
50	81	d5-N-EtFOSAA-EIS			NO	0.000
51	82	d5-N-EtFOSAA-RSD	106		NO	8.606
52	83	13C2-PFDoA-EIS			NO	0.000
53	84	13C2-PFDoA-RSD	105		NO	7.608
54	85	13C2-10:2 FTS-EIS			NO	0.000
55	86	13C2-10:2 FTS-RSD	104		NO	8.167
56	87	d3-N-MeFOSA-EIS			NO	0.000
57	88	d3-N-MeFOSA-RSD	106		NO	6.345
58	89	13C2-PFTeDA-EIS			NO	0.000
59	90	13C2-PFTeDA-RSD	106		NO	4.866
60	91	d5-N-ETFOSA-EIS			NO	0.000
61	92	d5-N-ETFOSA-RSD	106		NO	4.078
62	93	13C2-PFHxDA-EIS			NO	0.000
63	94	13C2-PFHxDA-RSD	106		NO	3.713
64	95	d7-N-MeFOSE-EIS			NO	0.000
65	96	d7-N-MeFOSE-RSD	106		NO	7.175
66	97	d9-N-EtFOSE-EIS			NO	0.000
67	98	d9-N-EtFOSE-RSD	106		NO	7.219
68	99	13C4-PFBA	99		NO	0.000

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:07:32 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
69	1...	13C5-PFHxA	100		NO	0.000
70	1...	18O2-PFHxS	101		NO	0.000
71	1...	13C8-PFOA	102		NO	0.000
72	1...	13C9-PFNA	103		NO	0.000
73	1...	13C4-PFOS	104		NO	0.000
74	1...	13C6-PFDA	105		NO	0.000
75	1...	13C7-PFUdA	106		NO	0.000

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:14:49 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:15:38 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 10:14:46
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	PFBA	1.35	1.35			
2	PFPrS	1.71	1.67	2.560	2.560	NO
3	3:3 FTCA	2.13	2.13	4.187	4.187	NO
4	PFPeA	2.27	2.27			
5	PFBS	2.55	2.55	3.171	3.171	NO
6	4:2 FTS	2.98	2.98	0.987	0.987	NO
7	PFHxA	3.07	3.07	17.202	17.202	NO
8	PFPeS	3.23	3.27	2.435	2.435	NO
9	HFPO-DA	3.28	3.28	2.632	2.632	NO
10	5:3 FTCA	3.61	3.61	1.741	1.741	NO
11	PFHpA	3.67	3.67	16.764	16.764	NO
12	ADONA	3.76	3.77	4.212	4.212	NO
13	L-PFHxS	3.81	3.81	2.577	2.577	NO
14	6:2 FTS	4.12	4.12	1.368	1.368	NO
15	L-PFOA	4.18	4.18	3.084	3.084	NO
16	PFecHS	4.19	4.19	0.604	0.604	NO
17	PFHpS	4.31	4.29	1.721	1.721	NO
18	7:3 FTCA	4.61	4.61	1.613	1.613	NO
19	PFNA	4.62	4.62	5.337	5.337	NO
20	PFOSA	4.67	4.68	32.007	32.007	NO
21	L-PFOS	4.70	4.70	2.054	2.054	NO
22	9Cl-PF30NS	4.91	4.92	24.839	24.839	NO
23	PFDA	4.99	4.99	8.114	8.114	NO
24	8:2 FTS	4.97	4.97	3.211	3.211	NO
25	PFNS	5.04	5.06	2.515	2.515	NO
26	L-MeFOSAA	5.14	5.15	2.451	2.451	NO

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:14:49 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:15:13 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 10:14:46
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	L-EtFOSAA	5.30	5.30	1.317	1.317	NO
2	PFUdA	5.31	5.31	17.647	17.647	NO
3	PFDS	5.33	5.36	2.055	2.055	NO
4	11Cl-PF30UdS	5.53	5.52	20.284	20.284	NO
5	10:2 FTS	5.58	5.58	0.941	0.941	NO
6	PFDoA	5.59	5.59	11.533	11.533	NO
7	N-MeFOSA	5.72	5.70	1.793	1.793	NO
8	PFTrDA	5.84	5.84	43.400	43.400	NO
9	PFDoS	5.85	5.86	3.341	3.341	NO
10	PFTeDA	6.05	6.05	16.724	16.724	NO
11	N-EtFOSA	6.12	6.12	1.645	1.645	NO
12	PFHxDA	6.38	6.38	67.004	67.004	NO
13	PFODA	6.59	6.62			
14	N-MeFOSE	6.29	6.30			
15	N-EtFOSE	6.44	6.45			

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:17:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:17:42 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:14:46
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Compound name: PFBA

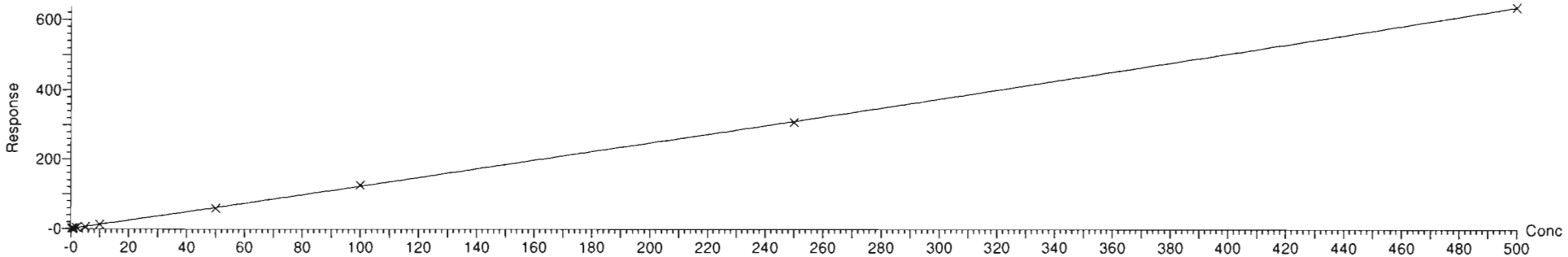
	#	Name	ID	Acq.Date	Acq.Time
1	1	200303P2-1	IPA	03-Mar-20	16:44:11
2	2	200303P2-2	IPA	03-Mar-20	16:54:40
3	3	200303P2-3	ST200303P2-1 PFC CS-2 20C0304	03-Mar-20	17:05:12
4	4	200303P2-4	ST200303P2-2 PFC CS-1 20C0305	03-Mar-20	17:15:40
5	5	200303P2-5	ST200303P2-3 PFC CS0 20C0306	03-Mar-20	17:26:12
6	6	200303P2-6	ST200303P2-4 PFC CS1 20C0307	03-Mar-20	17:36:41
7	7	200303P2-7	ST200303P2-5 PFC CS2 20C0308	03-Mar-20	17:47:13
8	8	200303P2-8	ST200303P2-6 PFC CS3 20C0309	03-Mar-20	17:57:42
9	9	200303P2-9	ST200303P2-7 PFC CS4 20C0310	03-Mar-20	18:08:13
10	10	200303P2-10	ST200303P2-8 PFC CS5 20C0311	03-Mar-20	18:18:44
11	11	200303P2-11	ST200303P2-9 PFC CS6 20C0312	03-Mar-20	18:29:13
12	12	200303P2-12	ST200303P2-10 PFC CS7 20C0313	03-Mar-20	18:39:45
13	13	200303P2-13	IB	03-Mar-20	18:50:14
14	14	200303P2-14	ICV200303P2-1 PFC ICV 20C0314	03-Mar-20	19:00:45
15	15	200303P2-15	IB	03-Mar-20	19:11:14

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

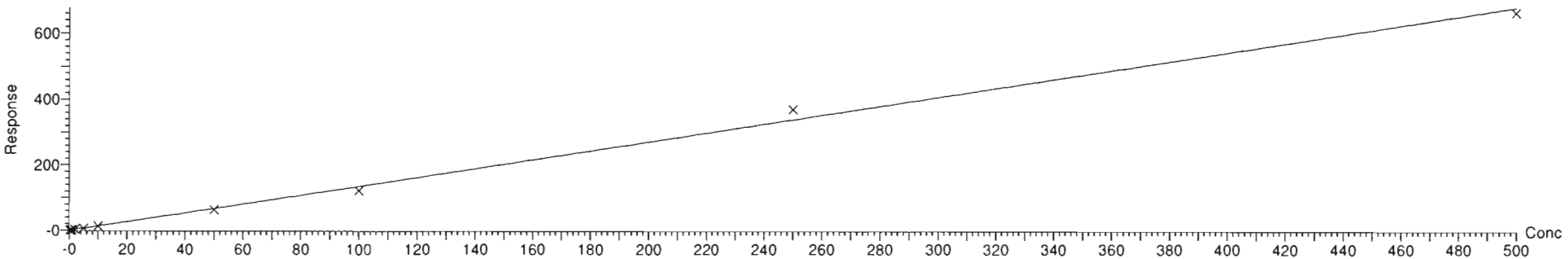
Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 09:57:51
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Compound name: PFBA
Coefficient of Determination: R^2 = 0.999808
Calibration curve: 0.000115966 * x^2 + 1.21542 * x + 0.00558253
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



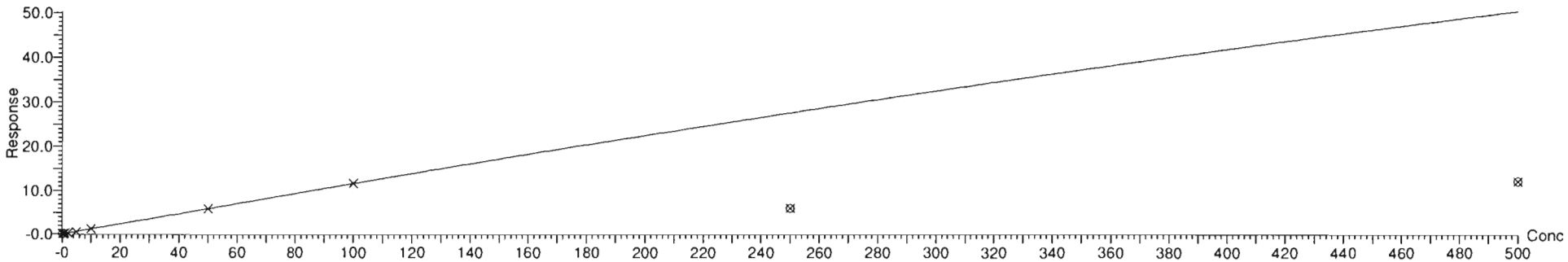
Compound name: PFPrS
Correlation coefficient: r = 0.998092, r^2 = 0.996187
Calibration curve: 1.35561 * x + -0.0758928
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



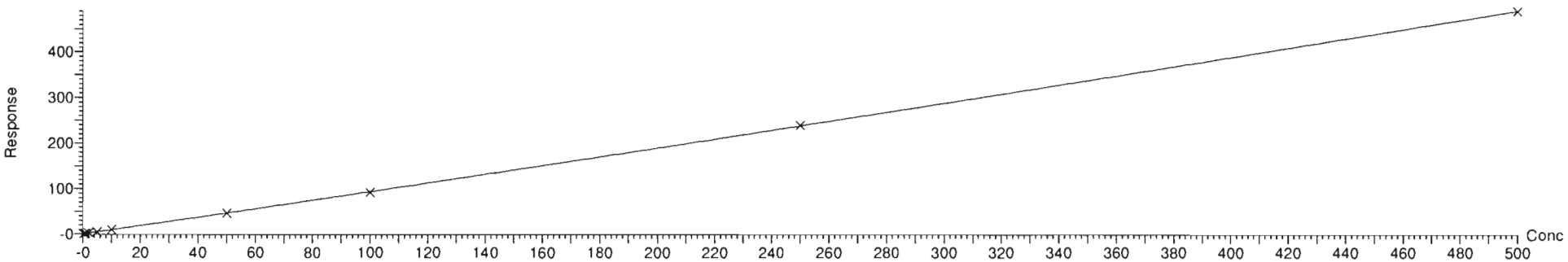
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999219
Calibration curve: -3.87181e-005 * x^2 + 0.120386 * x + -0.0145912
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



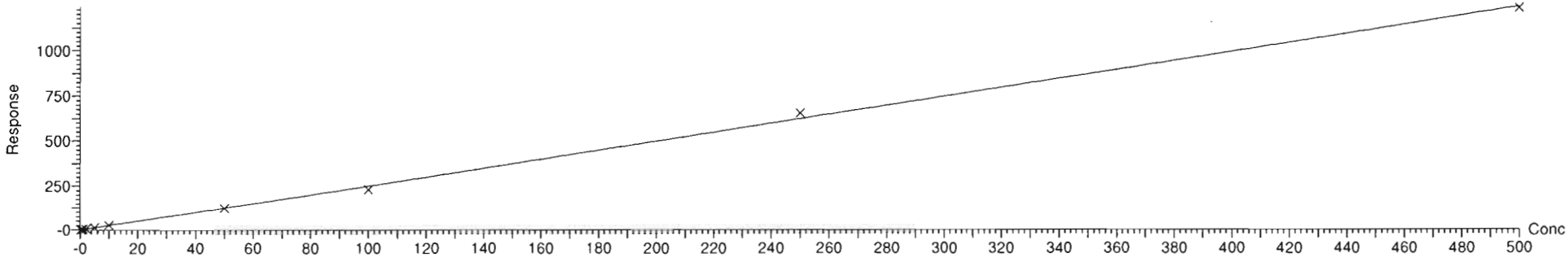
Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999936
Calibration curve: 0.000112224 * x^2 + 0.924631 * x + 0.0261326
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



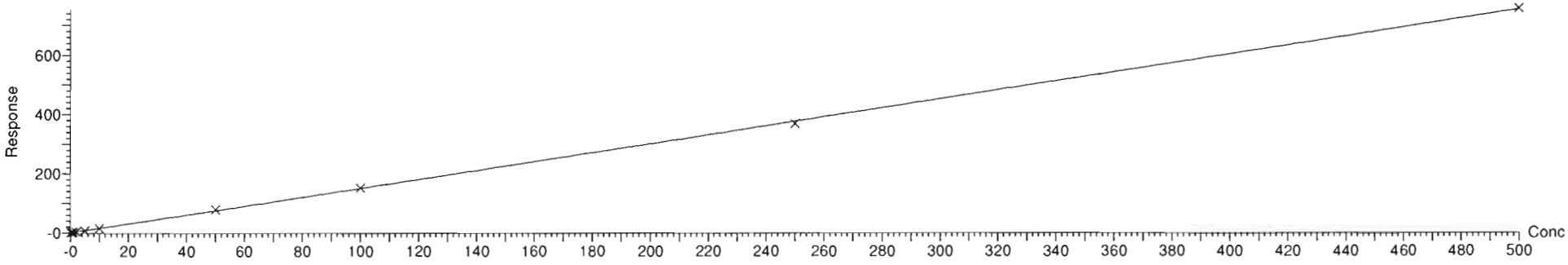
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: PFBS
Correlation coefficient: r = 0.999272, r^2 = 0.998545
Calibration curve: 2.48479 * x + -0.055572
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



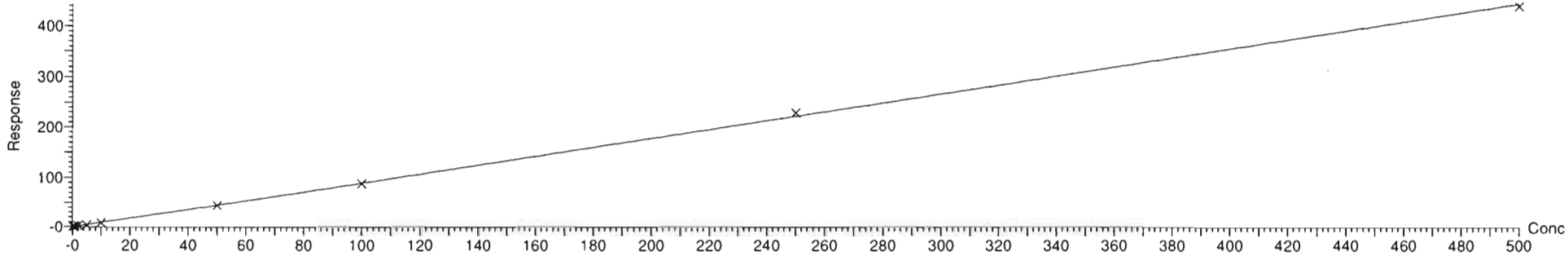
Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999609
Calibration curve: 5.01667e-006 * x^2 + 1.50313 * x + -0.271096
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



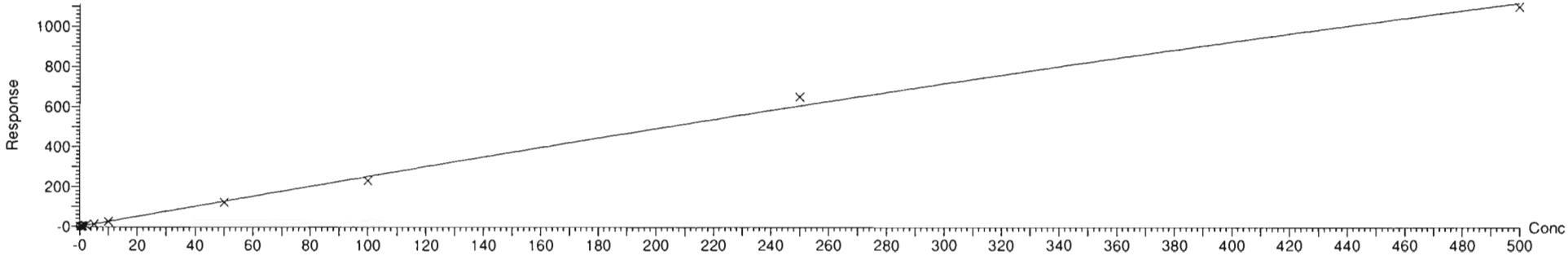
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: PFHxA
Correlation coefficient: r = 0.999747, r^2 = 0.999493
Calibration curve: 0.888423 * x + 0.0236523
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



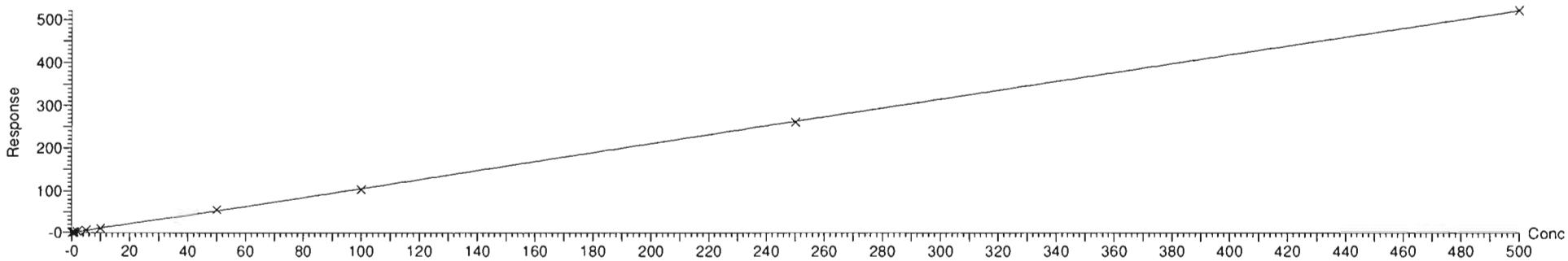
Compound name: PFPeS
Coefficient of Determination: R^2 = 0.996983
Calibration curve: -0.000737317 * x^2 + 2.60366 * x + -0.220378
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



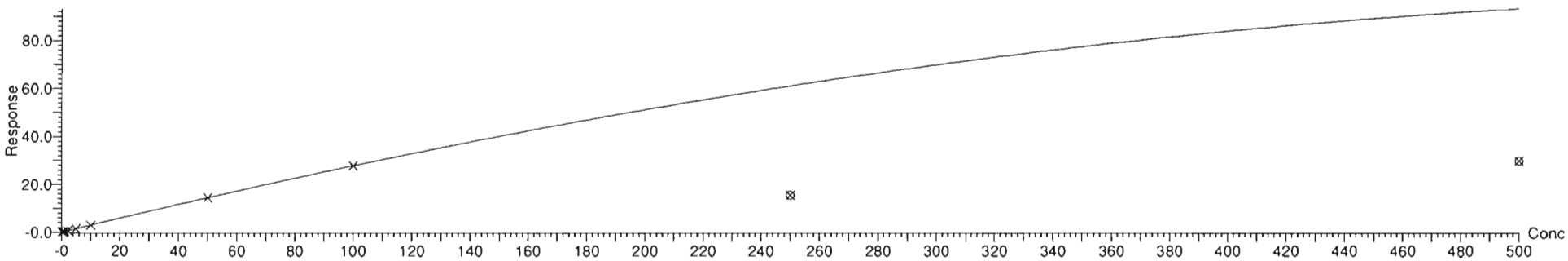
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.999736
Calibration curve: -3.70224e-005 * x^2 + 1.06117 * x + 0.0156029
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



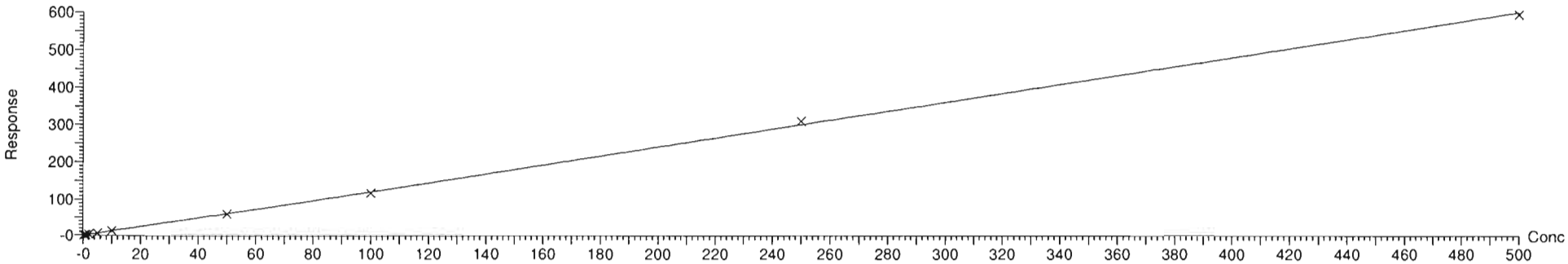
Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999899
Calibration curve: -0.000232095 * x^2 + 0.30291 * x + -0.00956149
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



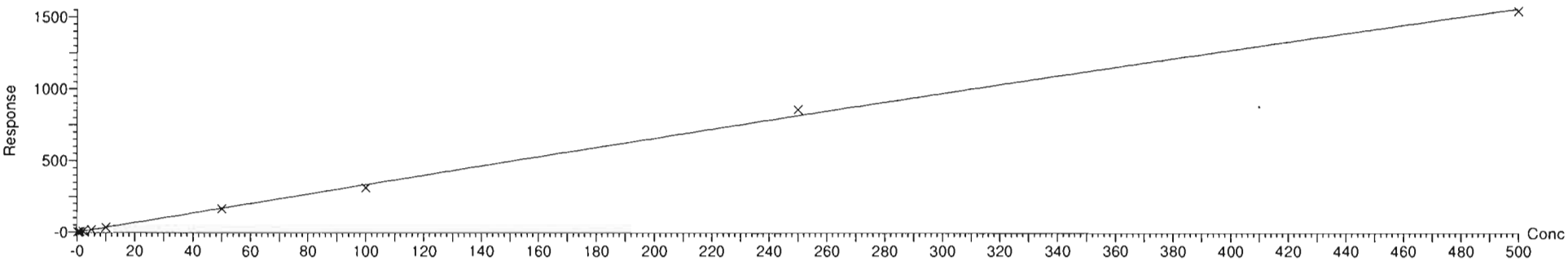
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: PFHpA
Correlation coefficient: r = 0.999795, r^2 = 0.999590
Calibration curve: 1.20072 * x + 0.0337868
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



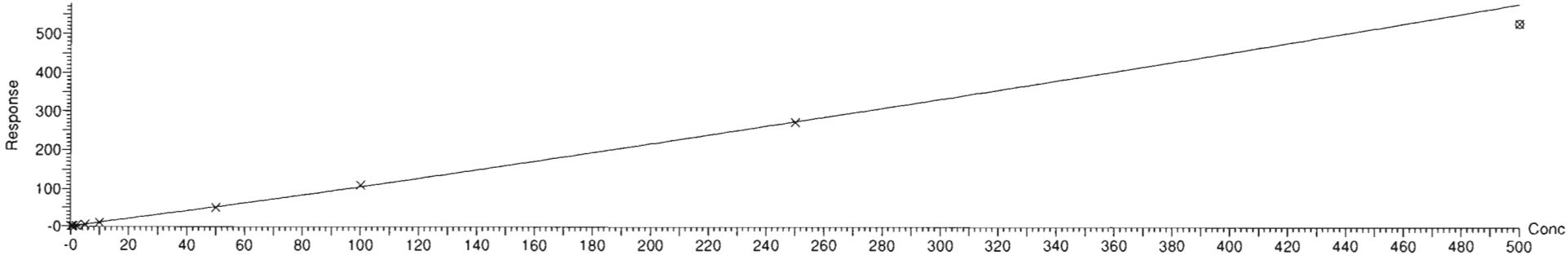
Compound name: ADONA
Coefficient of Determination: R^2 = 0.998598
Calibration curve: -0.000574337 * x^2 + 3.40961 * x + 0.0863605
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



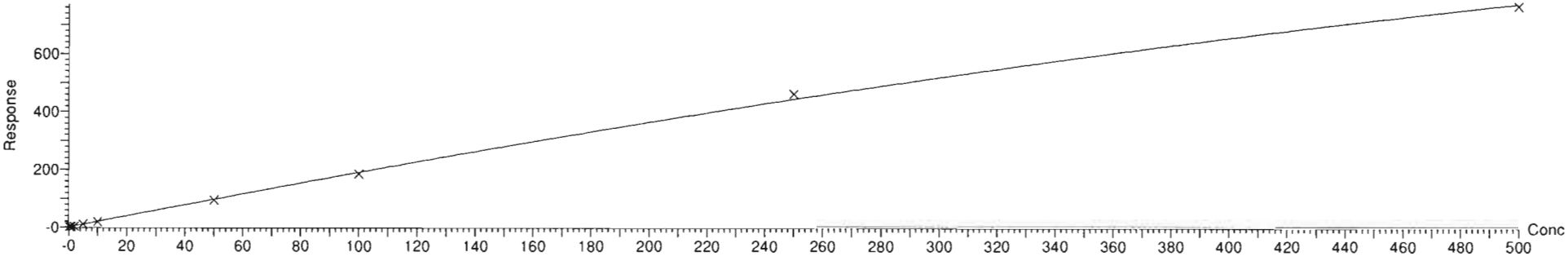
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: L-PFHxS
Coefficient of Determination: R^2 = 0.998835
Calibration curve: 0.000245469 * x^2 + 1.03462 * x + -0.0140581
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



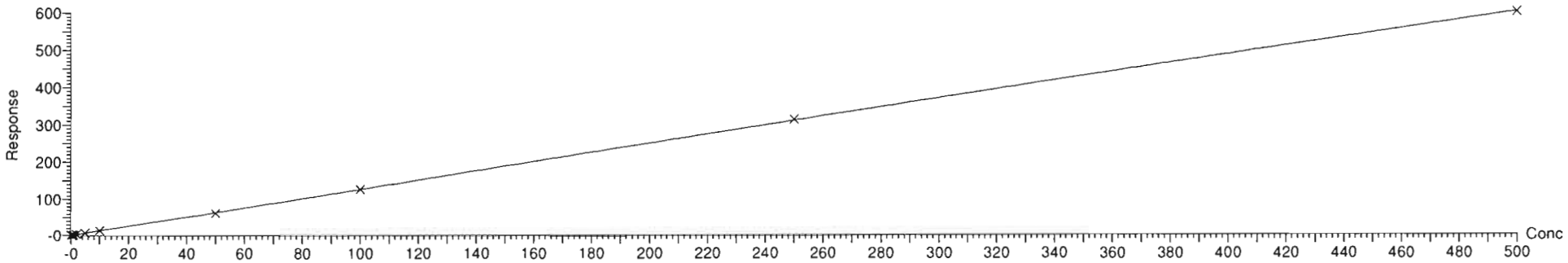
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998749
Calibration curve: -0.000923492 * x^2 + 2.00945 * x + -0.262843
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



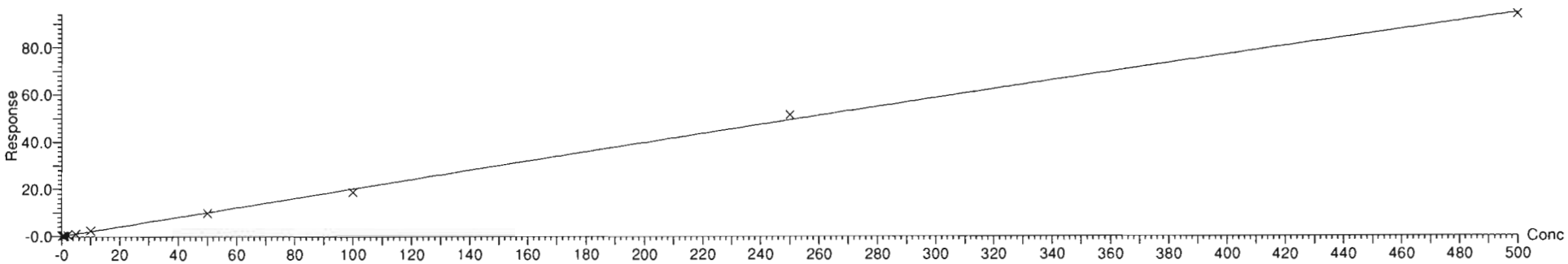
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999921
Calibration curve: -0.000146837 * x^2 + 1.27853 * x + 0.105499
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



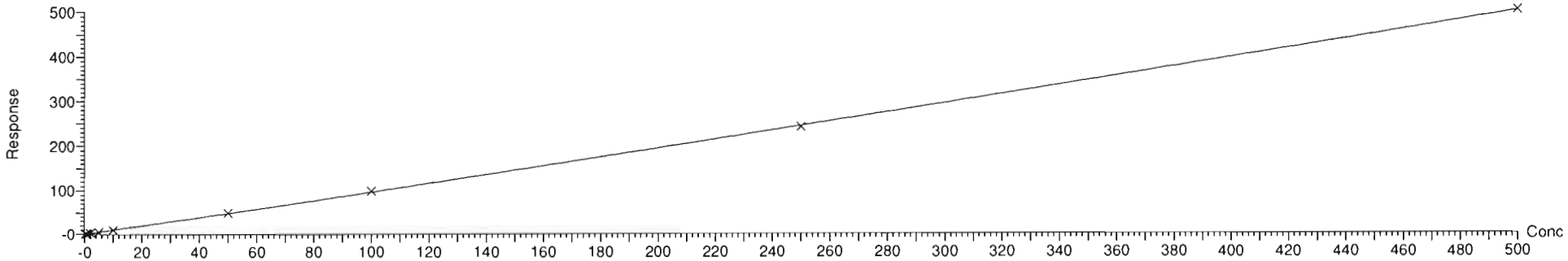
Compound name: PFecHS
Coefficient of Determination: R^2 = 0.998283
Calibration curve: -3.00173e-005 * x^2 + 0.204305 * x + -0.0410032
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



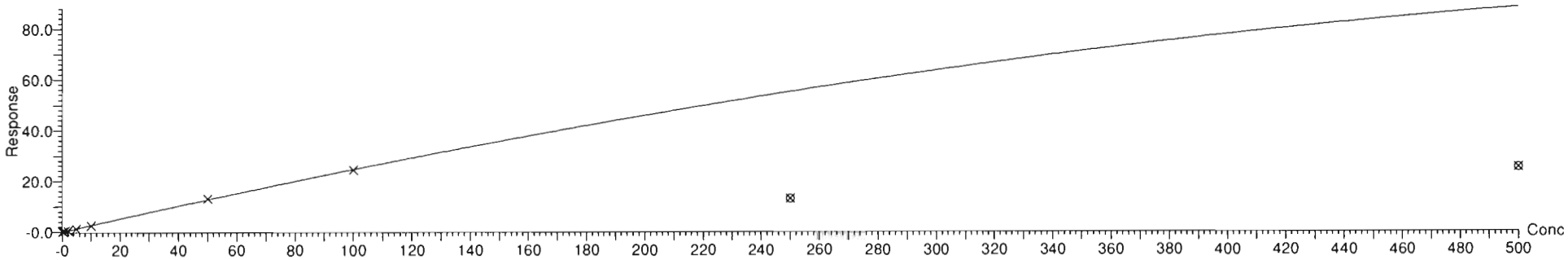
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999665
Calibration curve: 0.000104495 * x^2 + 0.952337 * x + -0.0596615
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



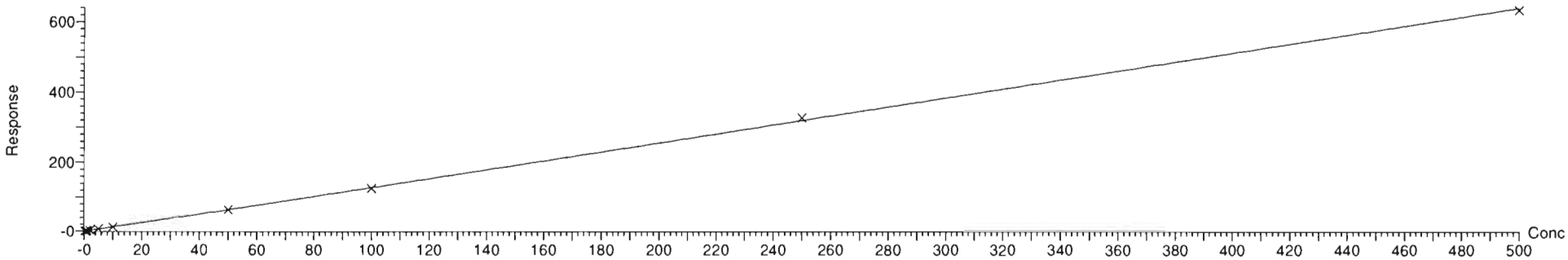
Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.998811
Calibration curve: -0.000174738 * x^2 + 0.263989 * x + -0.031734
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



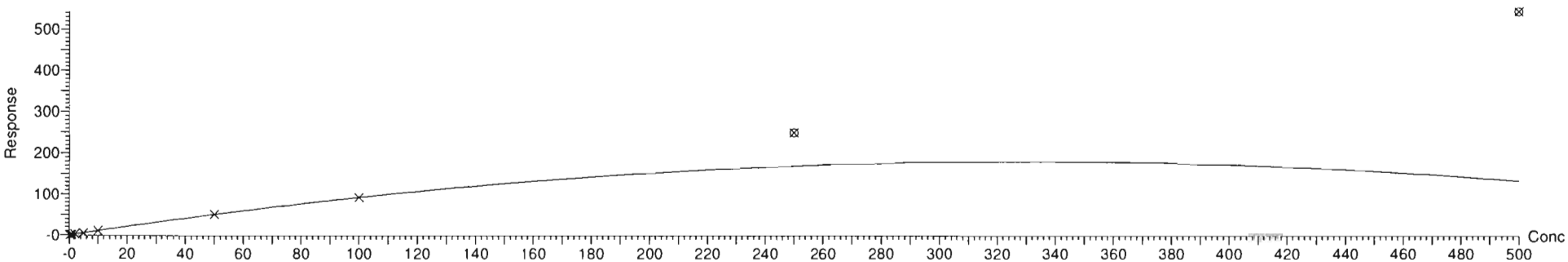
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: PFNA
Correlation coefficient: r = 0.999847, r^2 = 0.999693
Calibration curve: 1.28179 * x + -0.000309399
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



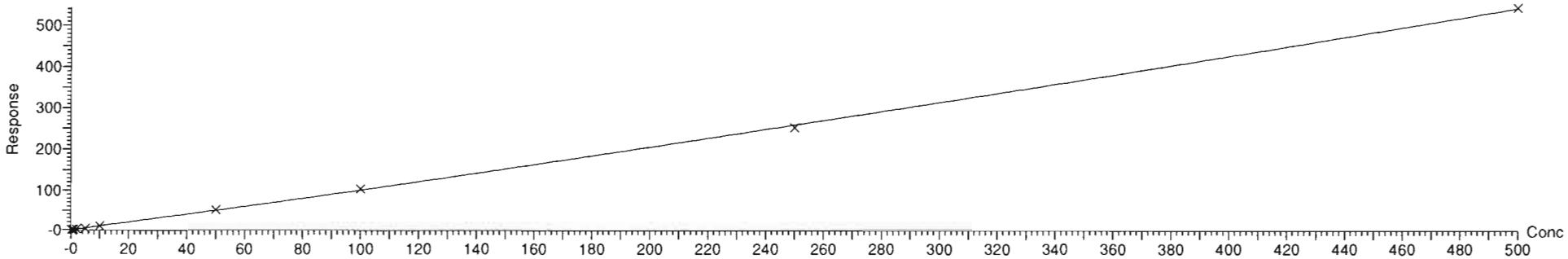
Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999403
Calibration curve: -0.00163149 * x^2 + 1.08134 * x + -0.0624652
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



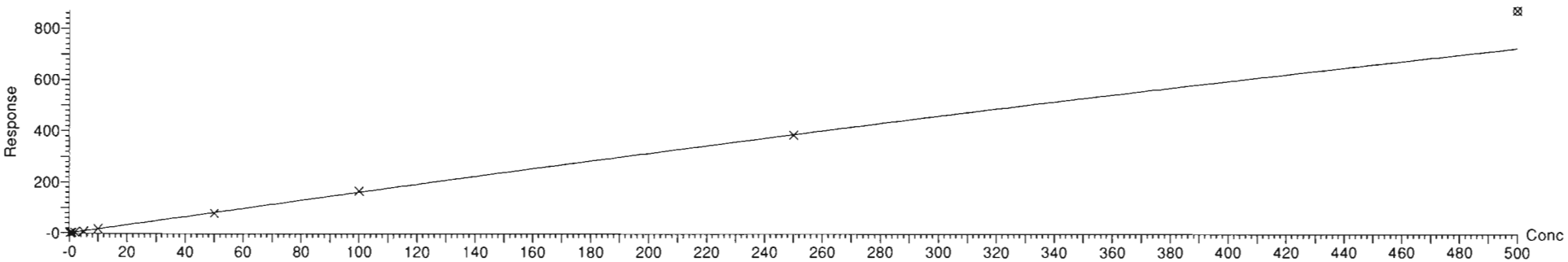
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999463
Calibration curve: 0.000193432 * x^2 + 0.989498 * x + -0.0580098
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



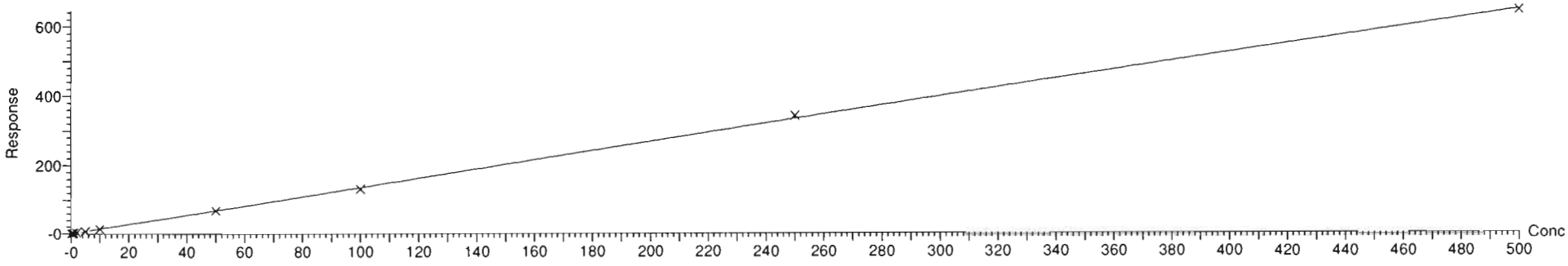
Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999413
Calibration curve: -0.000413837 * x^2 + 1.65593 * x + -0.32074
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



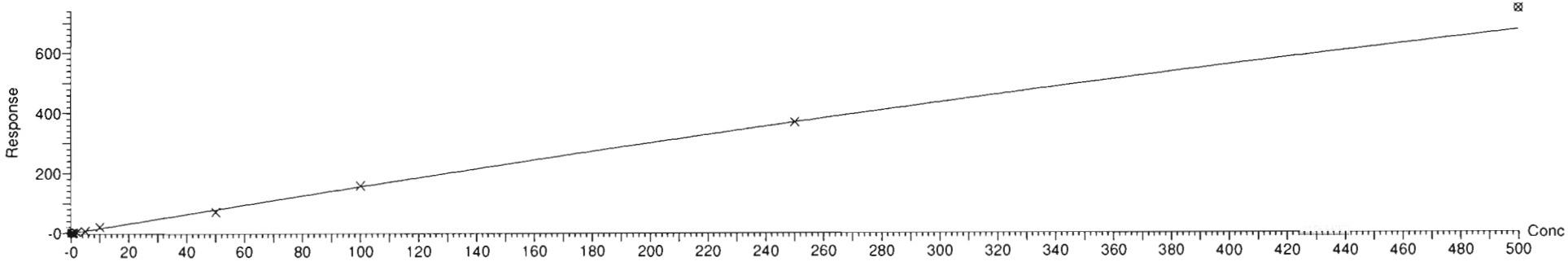
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999678
Calibration curve: -0.000145832 * x^2 + 1.36841 * x + 0.0174532
Response type: Internal Std (Ref 73), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



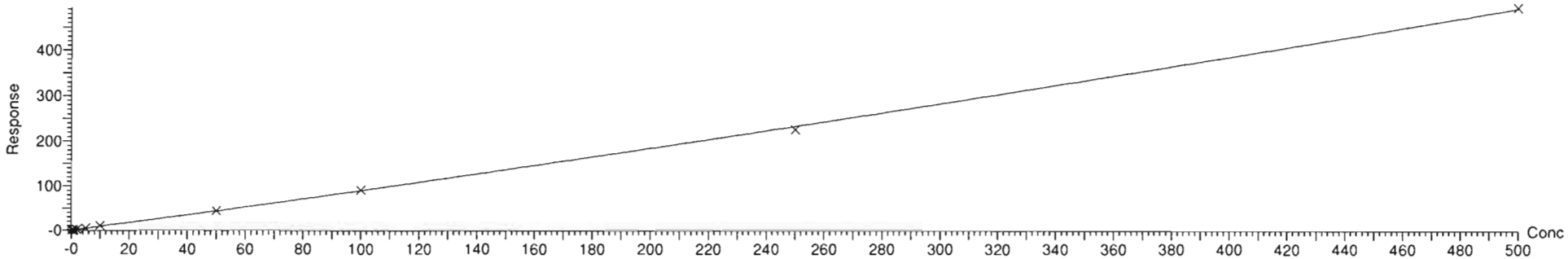
Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.996215
Calibration curve: -0.000512211 * x^2 + 1.60192 * x + -0.783624
Response type: Internal Std (Ref 75), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



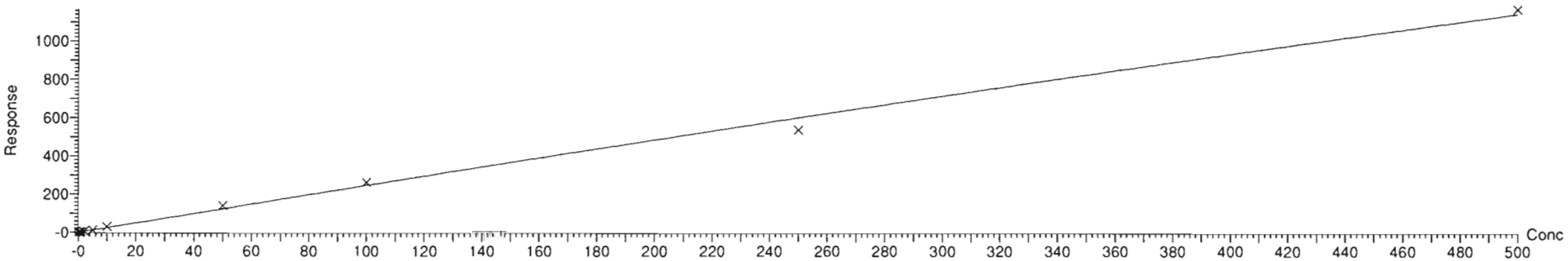
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:08:32 Pacific Standard Time

Compound name: PFNS
Coefficient of Determination: R^2 = 0.999281
Calibration curve: 0.000201263 * x^2 + 0.884982 * x + -0.220403
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: L-MeFOSAA
Coefficient of Determination: R^2 = 0.994487
Calibration curve: -0.000472659 * x^2 + 2.52637 * x + -0.26915
Response type: Internal Std (Ref 77), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

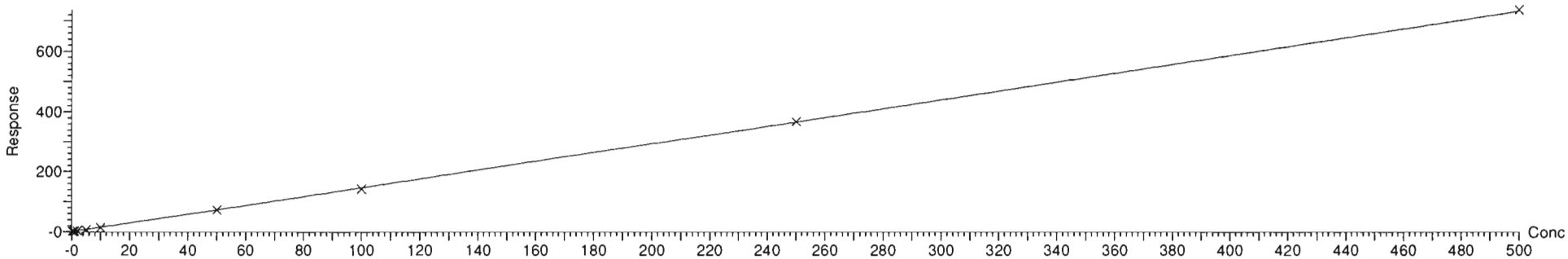


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

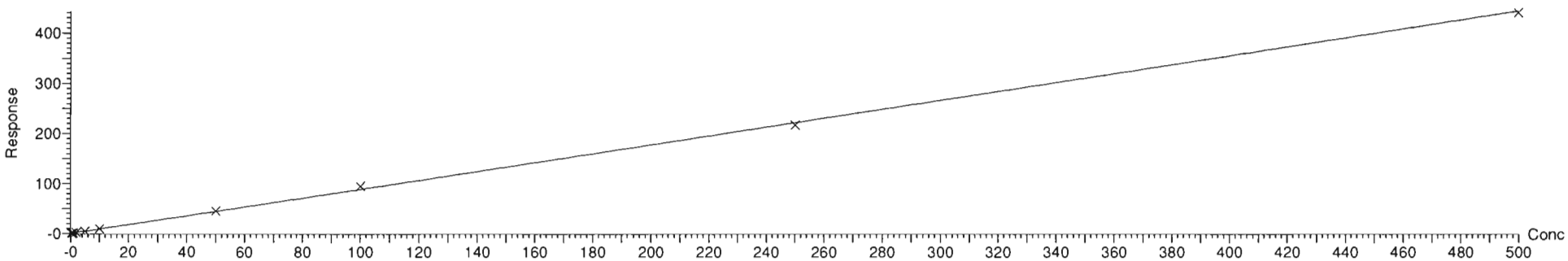
Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 04 Mar 2020 09:57:51
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.999789, r^2 = 0.999579
Calibration curve: 1.46462 * x + -0.128351
Response type: Internal Std (Ref 81), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



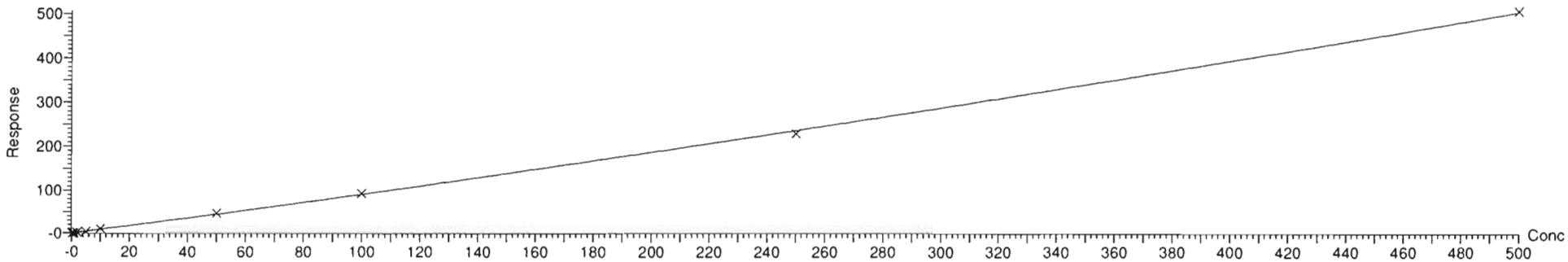
Compound name: PFUdA
Correlation coefficient: r = 0.999587, r^2 = 0.999174
Calibration curve: 0.887571 * x + 0.0677445
Response type: Internal Std (Ref 79), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



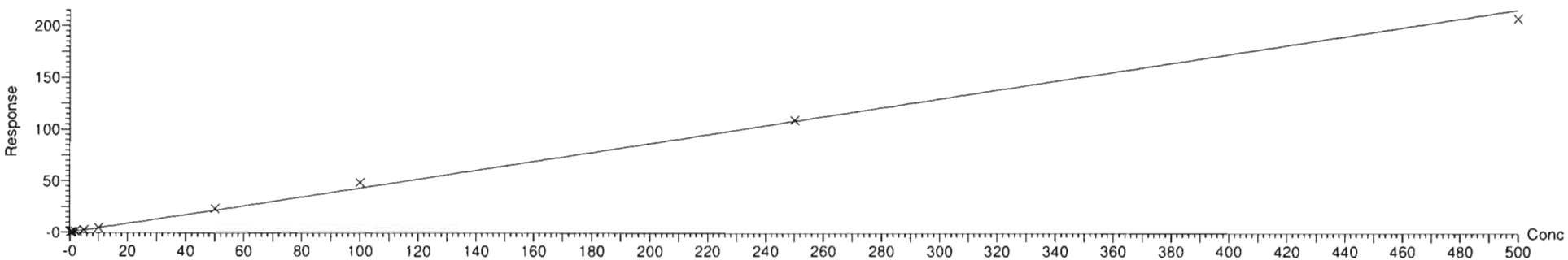
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Compound name: PFDS
Coefficient of Determination: R^2 = 0.999008
Calibration curve: 0.000243411 * x^2 + 0.888487 * x + -0.110889
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



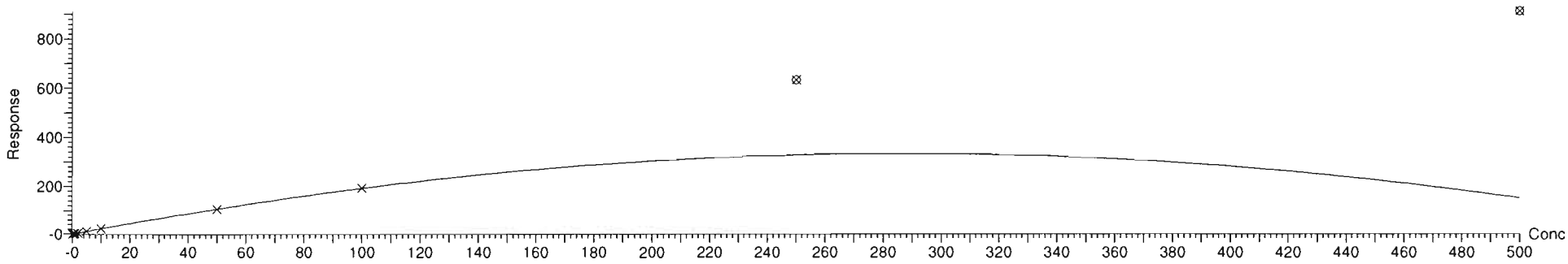
Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.998465, r^2 = 0.996933
Calibration curve: 0.432272 * x + 0.0410329
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



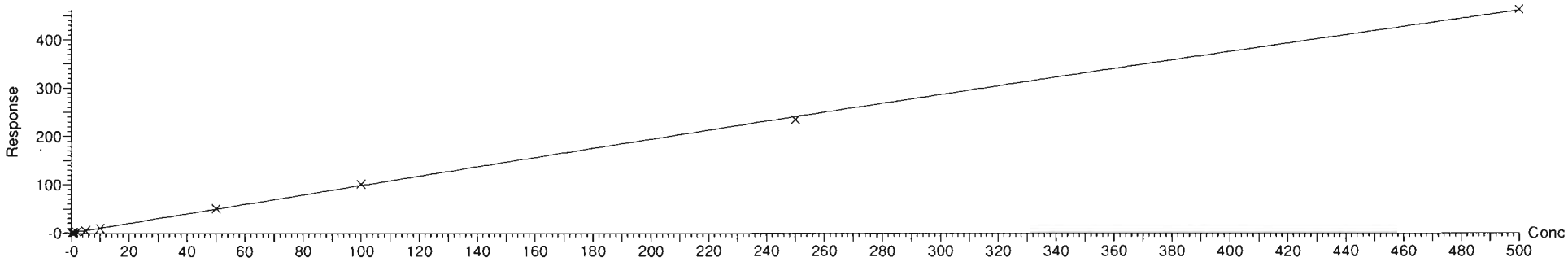
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999594
Calibration curve: -0.00406384 * x^2 + 2.33041 * x + -0.497241
Response type: Internal Std (Ref 85), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



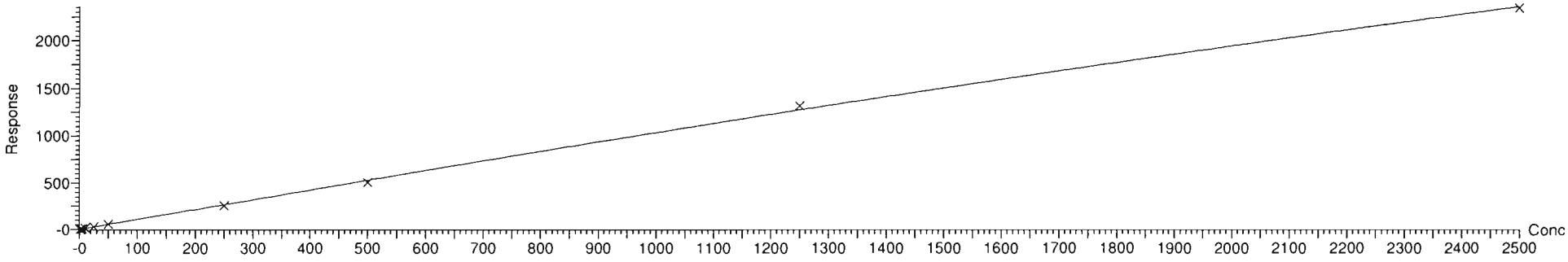
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999609
Calibration curve: -0.00015708 * x^2 + 0.999852 * x + 0.00259607
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



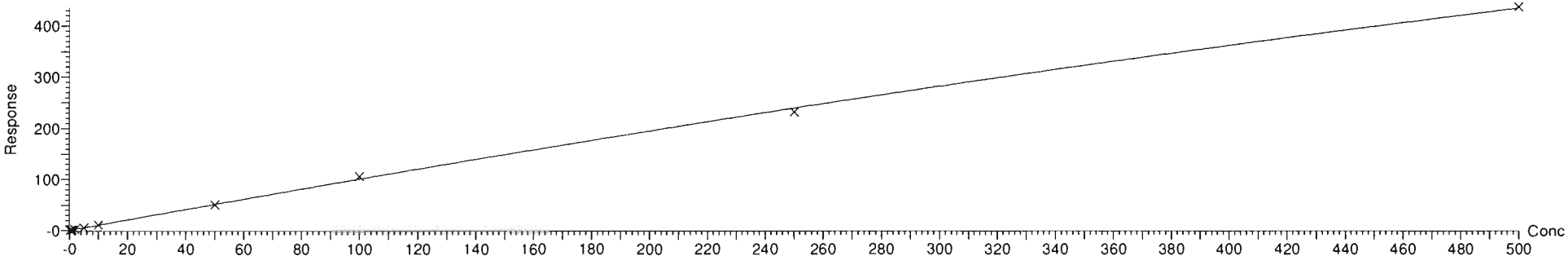
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999272
Calibration curve: -6.02934e-005 * x^2 + 1.09391 * x + -0.1388
Response type: Internal Std (Ref 87), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



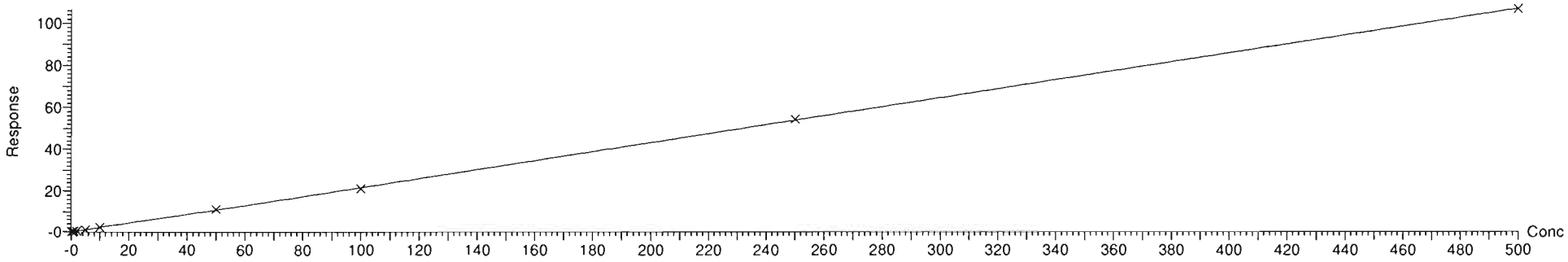
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.999296
Calibration curve: -0.000355294 * x^2 + 1.04682 * x + 0.0234845
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



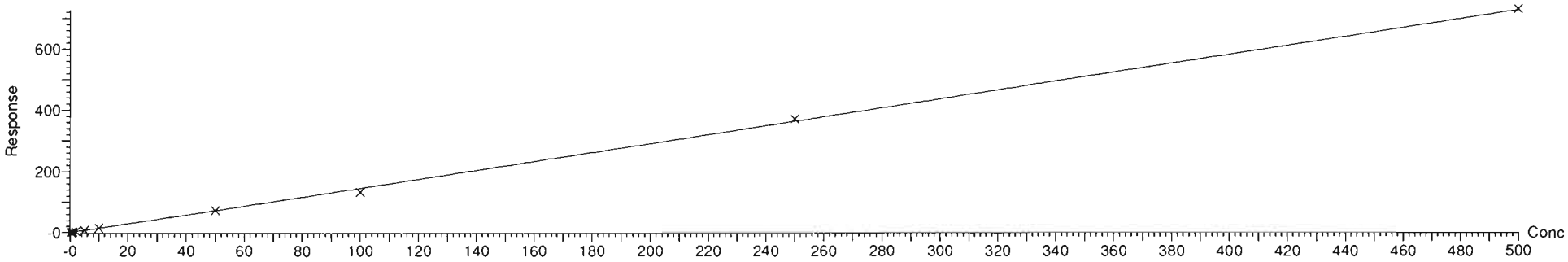
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999757
Calibration curve: -6.08132e-006 * x^2 + 0.217001 * x + -0.00635842
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



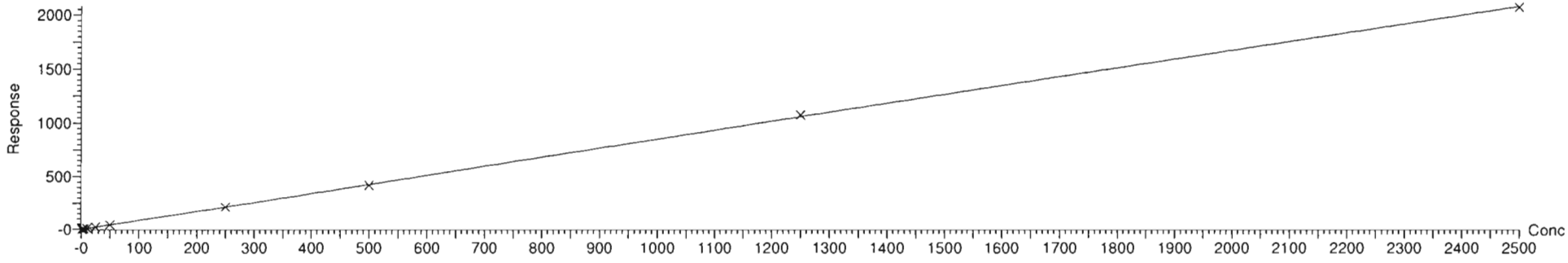
Compound name: PFTeDA
Correlation coefficient: r = 0.999514, r^2 = 0.999028
Calibration curve: 1.45443 * x + 0.0208012
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



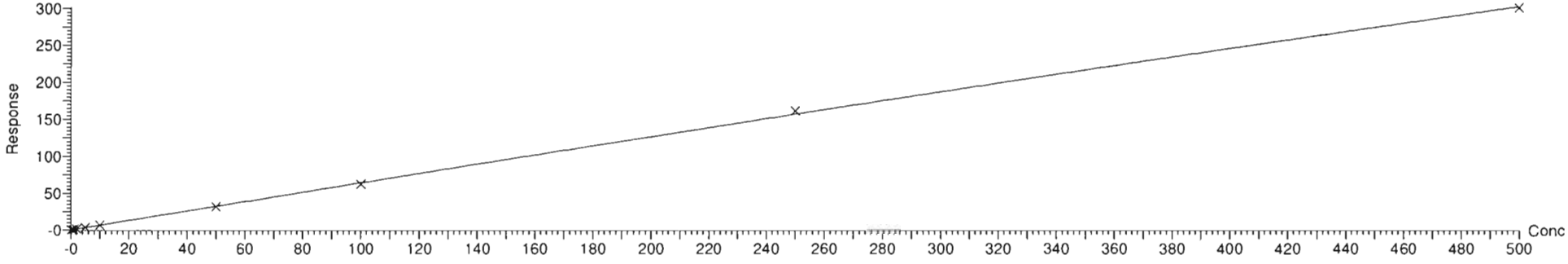
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999812
Calibration curve: -1.18859e-005 * x^2 + 0.862486 * x + 0.0671398
Response type: Internal Std (Ref 91), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



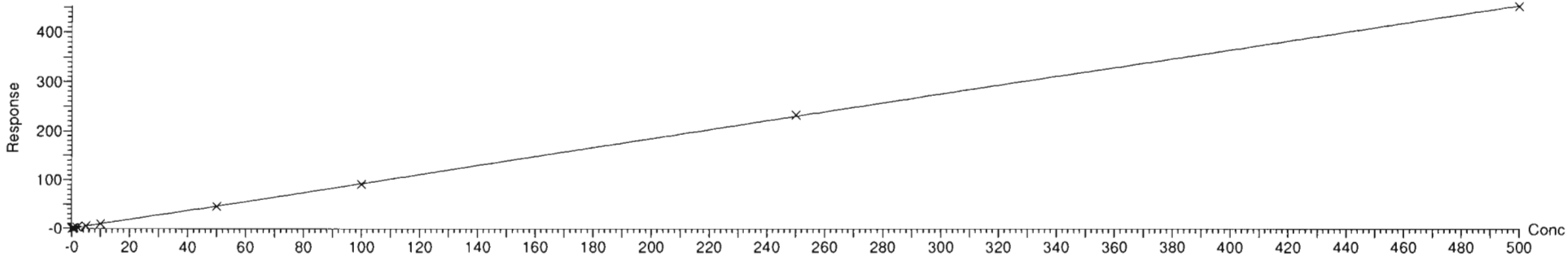
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999642
Calibration curve: -9.25999e-005 * x^2 + 0.651279 * x + 0.0840261
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



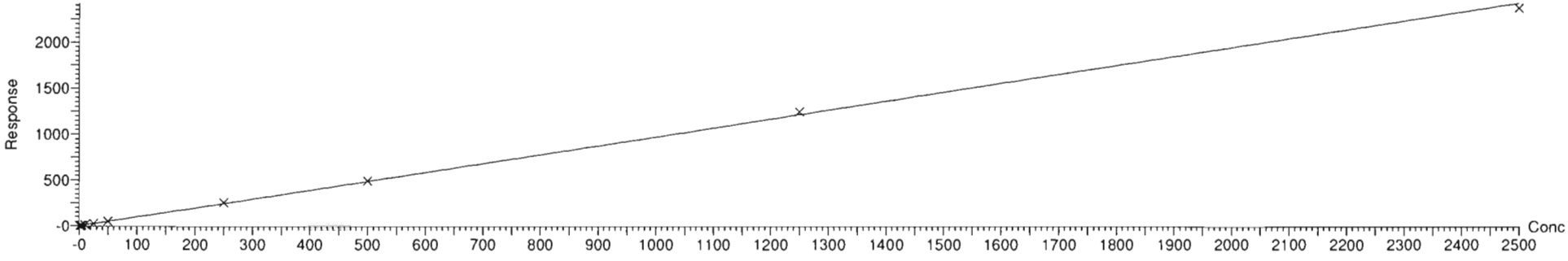
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.999897
Calibration curve: -4.51061e-005 * x^2 + 0.931077 * x + -0.0111612
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



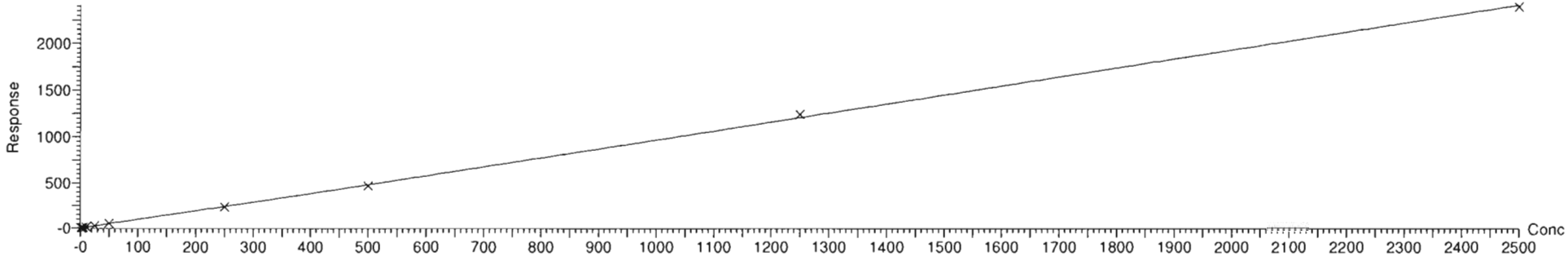
Compound name: N-MeFOSE
Correlation coefficient: r = 0.999679, r^2 = 0.999358
Calibration curve: 0.971286 * x + 0.0209332
Response type: Internal Std (Ref 95), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-CRV.qld

Last Altered: Wednesday, March 04, 2020 10:03:58 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:09:38 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999791, r^2 = 0.999581
Calibration curve: 0.967953 * x + 0.219782
Response type: Internal Std (Ref 97), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



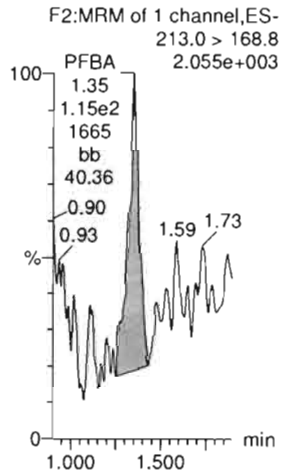
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

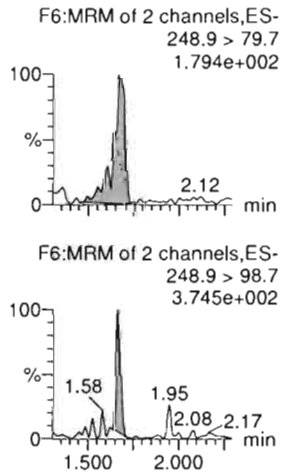
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_022920.mdb 02 Mar 2020 10:31:16
Calibration: 04 Mar 2020 09:30:20

Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

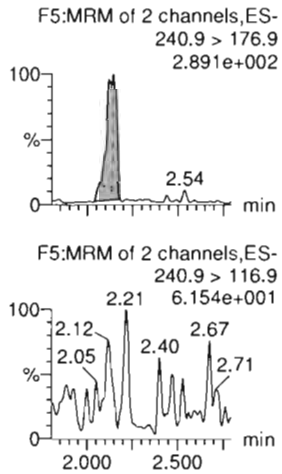
PFBA



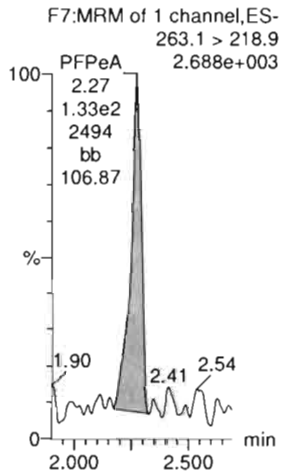
PFPrS



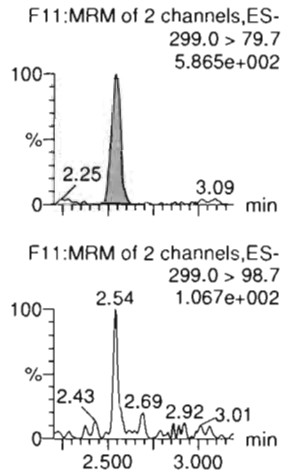
3:3 FTCA



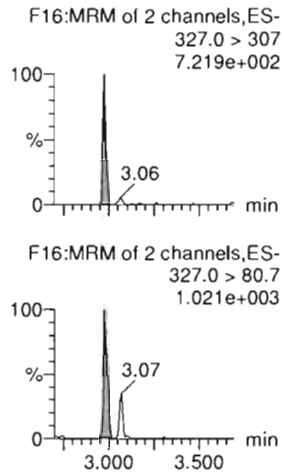
PFPeA



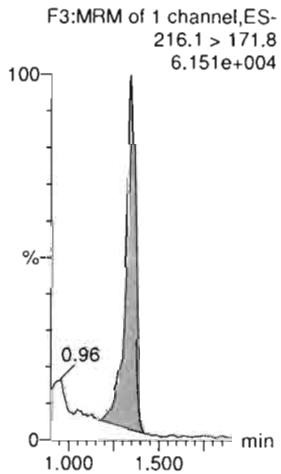
PFBS



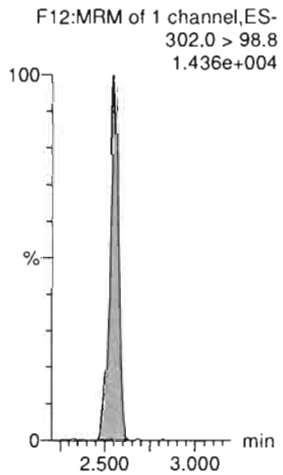
4:2 FTS



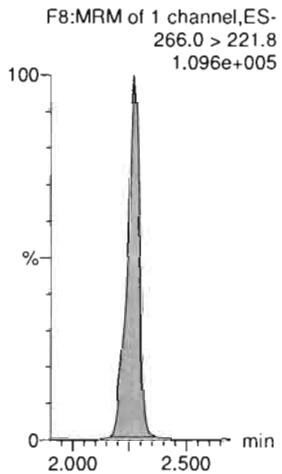
13C3-PFBA-EIS



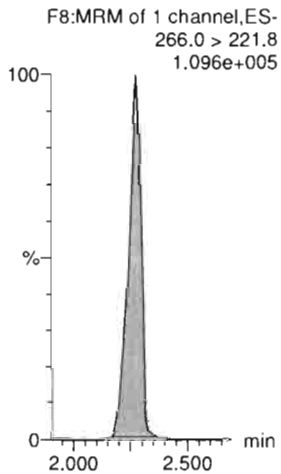
13C3-PFBS-EIS



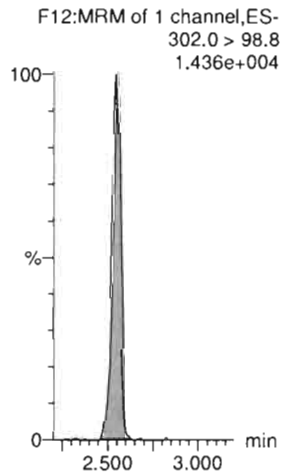
13C3-PFPeA-EIS



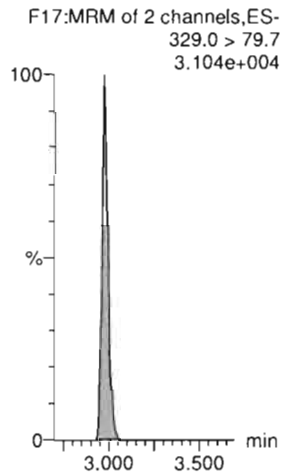
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

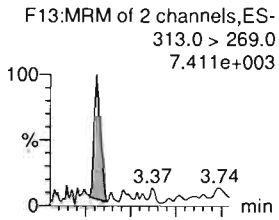


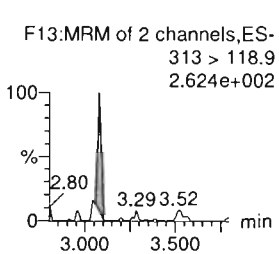
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

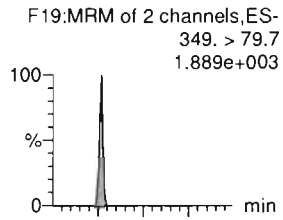
Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

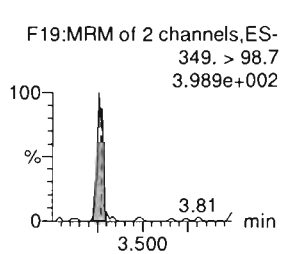
PFHxA



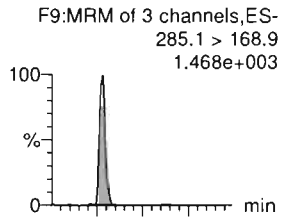


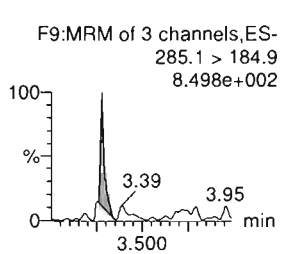
PFPeS



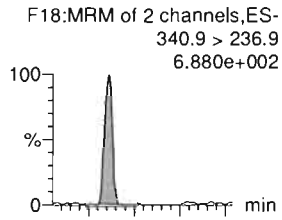


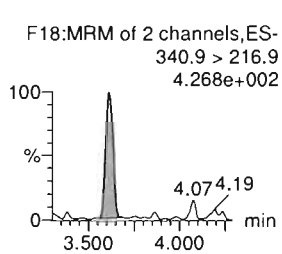
HFPO-DA



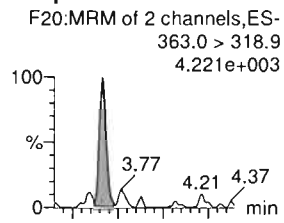


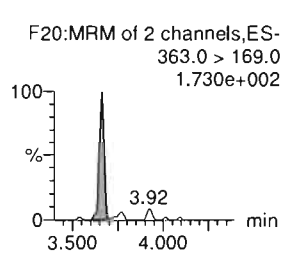
5:3 FTCA



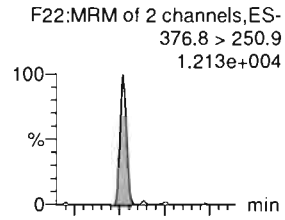


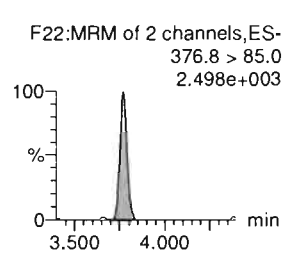
PFHpA



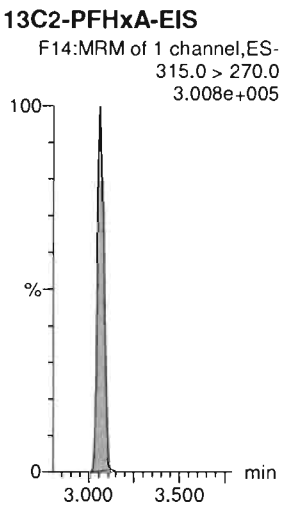


ADONA

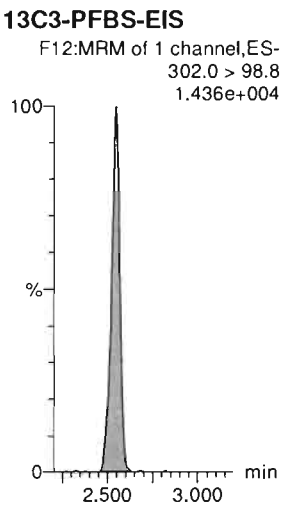




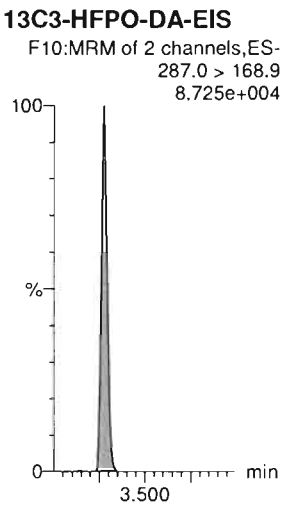
13C2-PFHxA-EIS



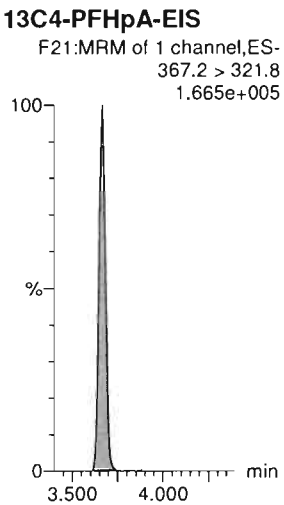
13C3-PFBS-EIS



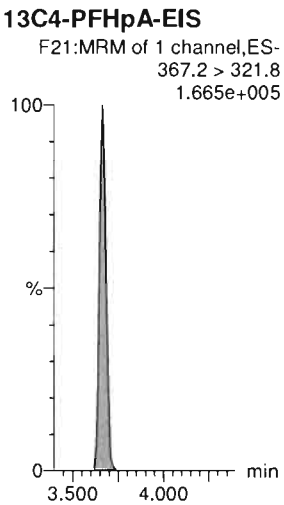
13C3-HFPO-DA-EIS



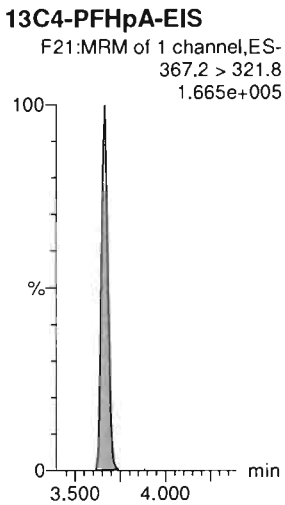
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

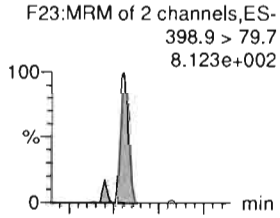


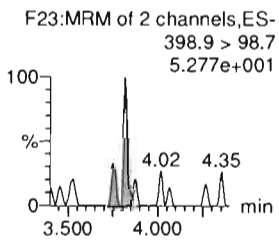
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

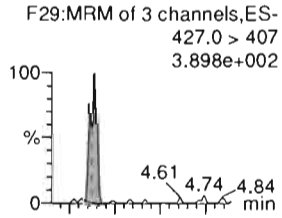
Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

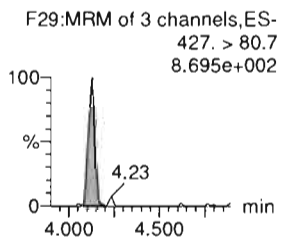
L-PFHxS



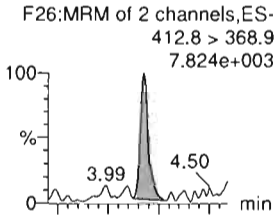


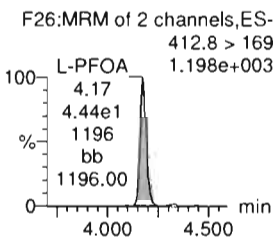
6:2 FTS



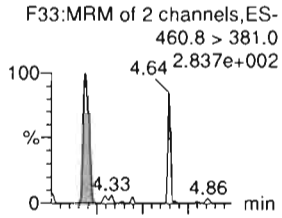


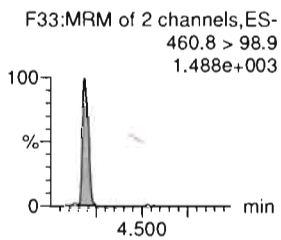
L-PFOA



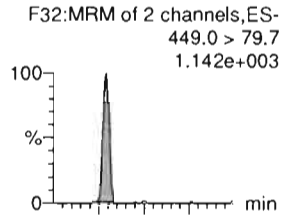


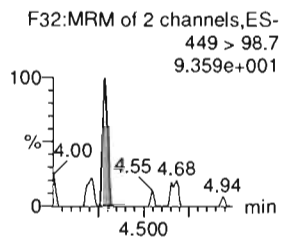
PFEChS



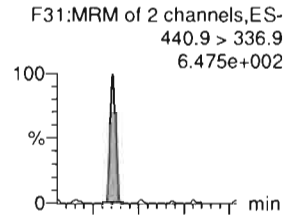


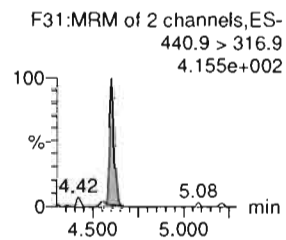
PFHpS



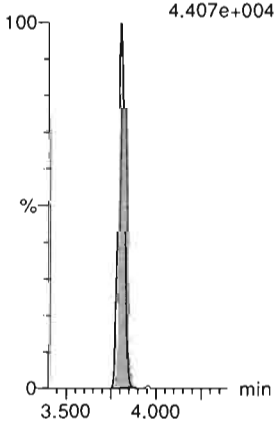


7:3 FTCA

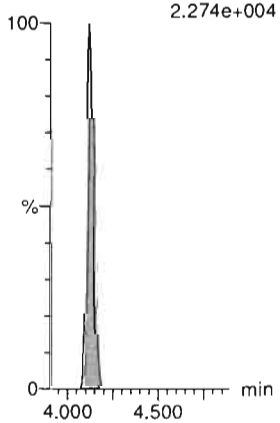




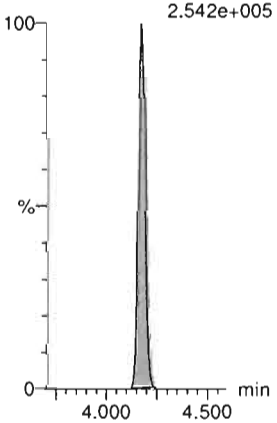
13C3-PFHxS-EIS



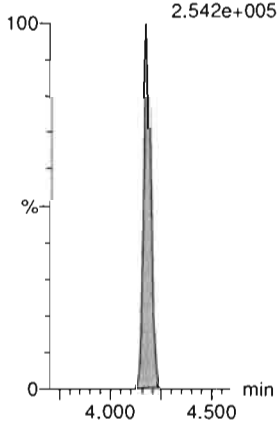
13C2-6:2 FTS-EIS



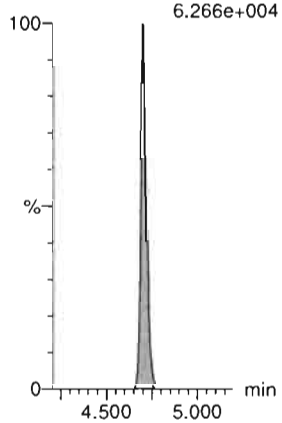
13C2-PFOA-EIS



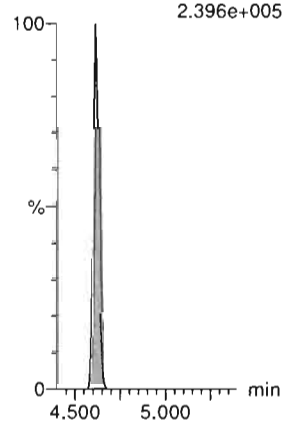
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

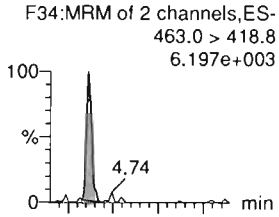


Dataset: Untitled

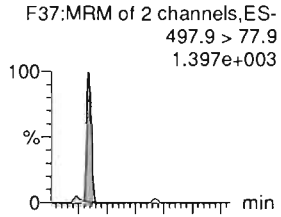
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

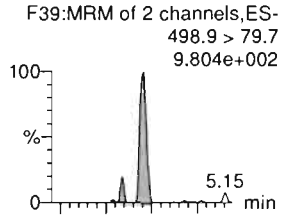
PFNA



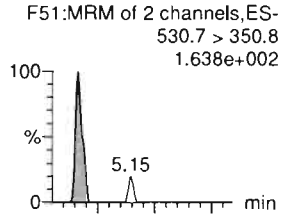
PFOSA



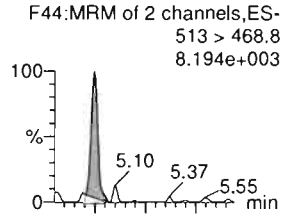
L-PFOS



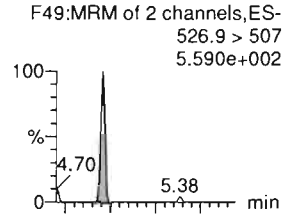
9Cl-PF30NS



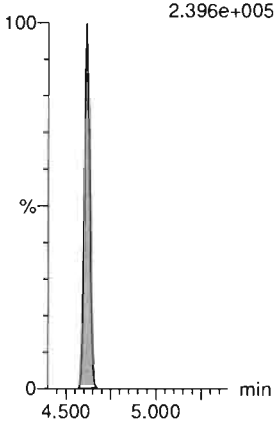
PFDA



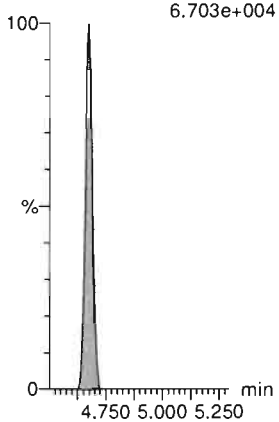
8:2 FTS



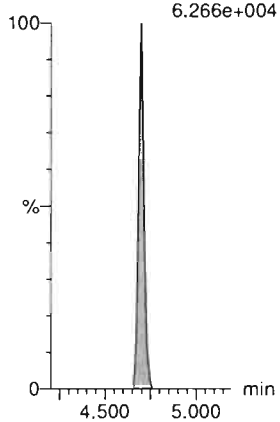
13C5-PFNA-EIS



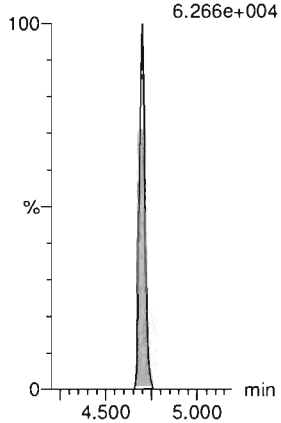
13C8-PFOSA-EIS



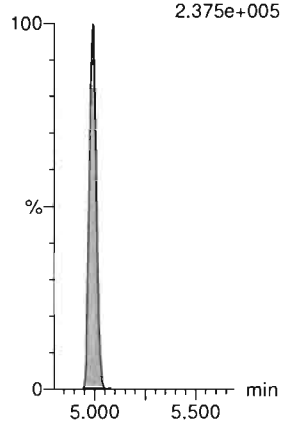
13C8-PFOS-EIS



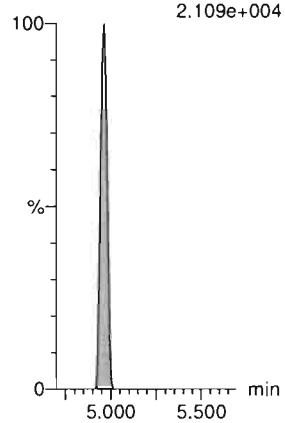
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

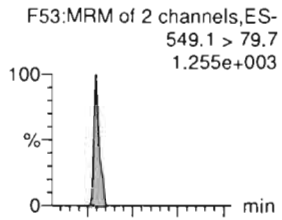


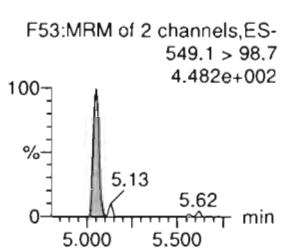
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

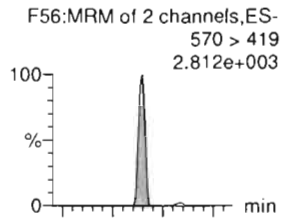
Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

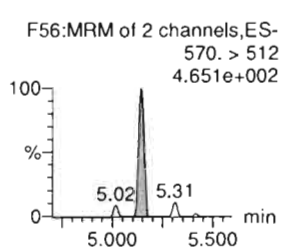
PFNS



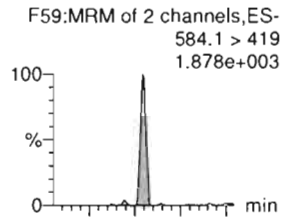


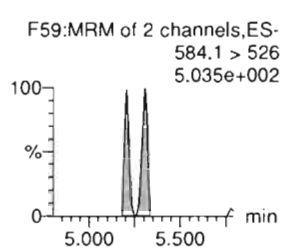
L-MeFOSAA



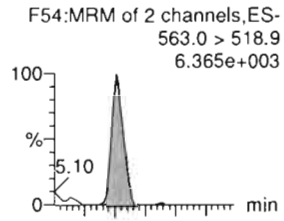


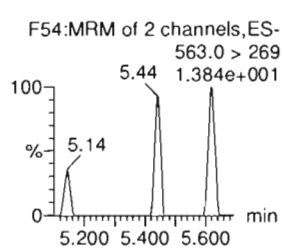
L-EtFOSAA



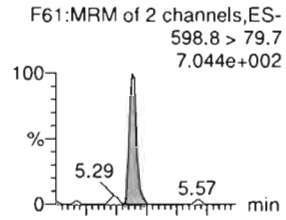


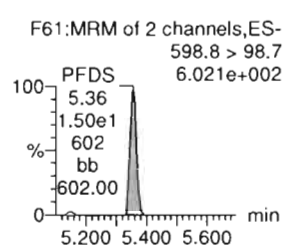
PFUdA



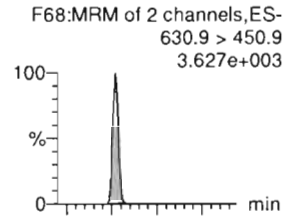


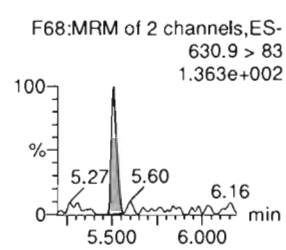
PFDS



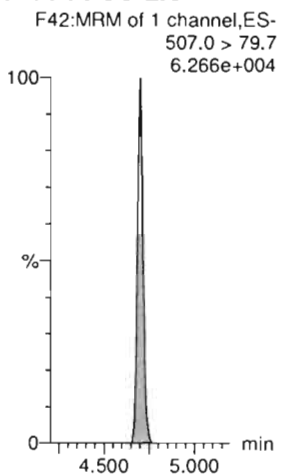


11Cl-PF30UdS

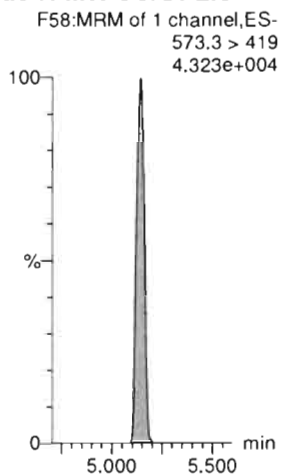




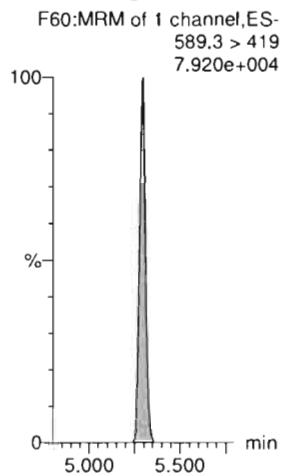
13C8-PFOS-EIS



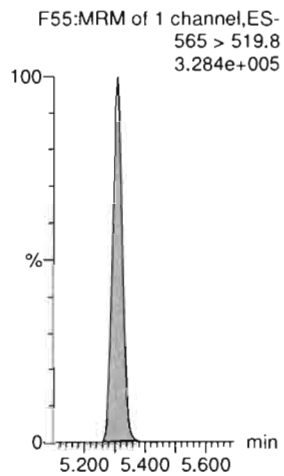
d3-N-MeFOSAA-EIS



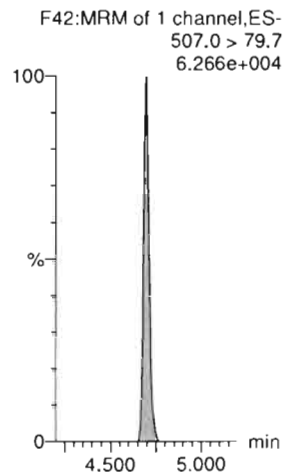
d5-N-EtFOSAA-EIS



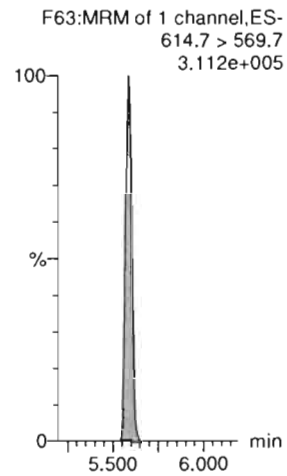
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

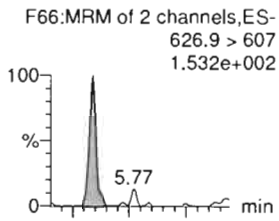


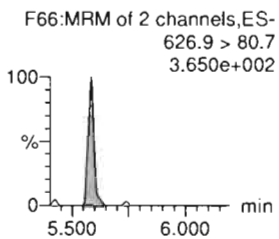
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

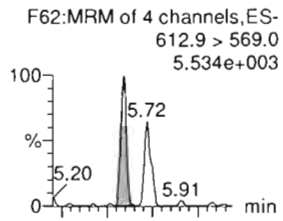
Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

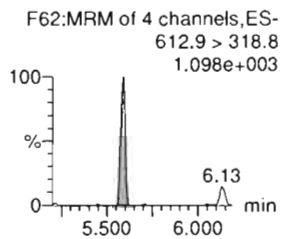
10:2 FTS



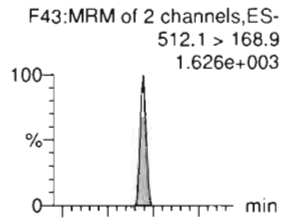


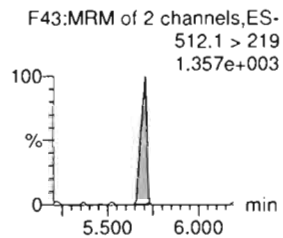
PFDoA



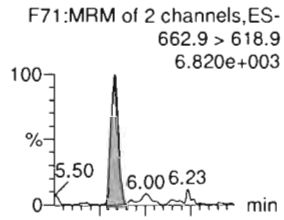


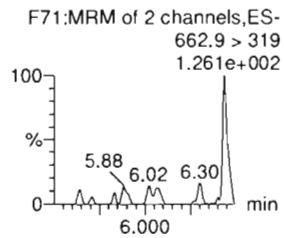
N-MeFOSA



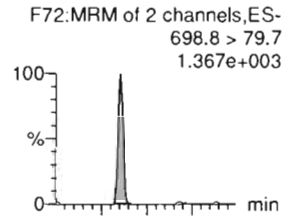


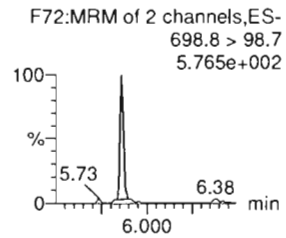
PFTrDA



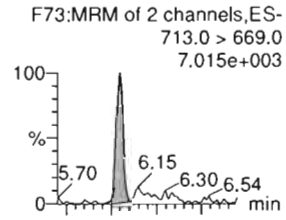


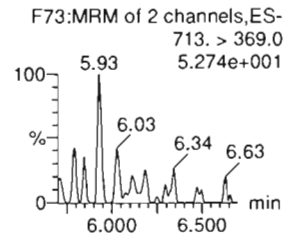
PFDoS



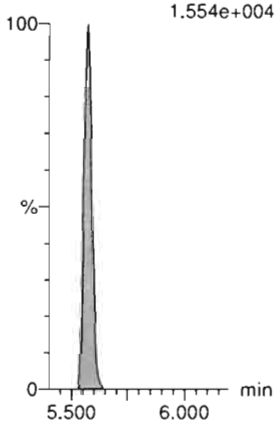


PFTeDA

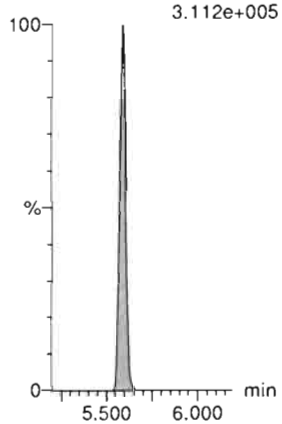




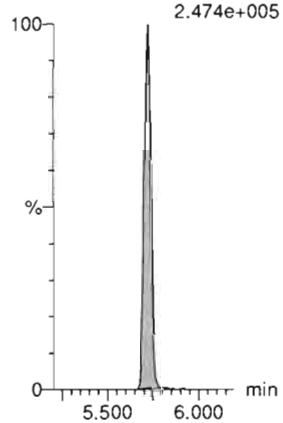
13C2-10:2 FTS-EIS



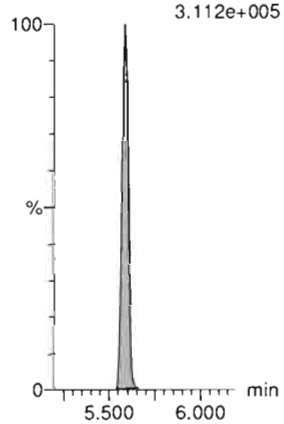
13C2-PFDoA-EIS



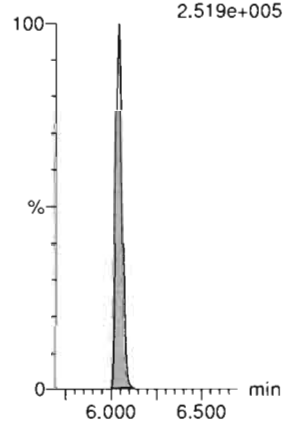
d3-N-MeFOSA-EIS



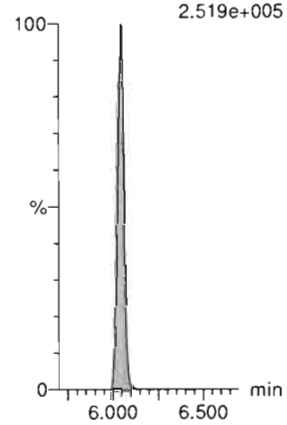
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

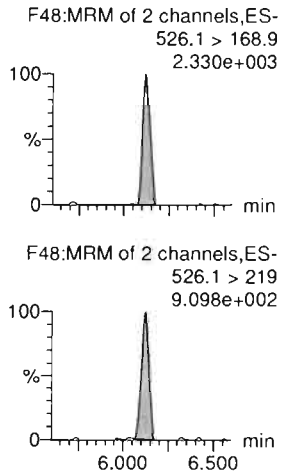


Dataset: Untitled

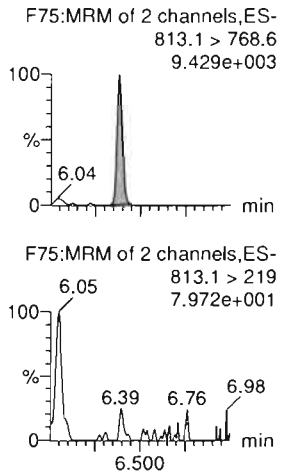
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

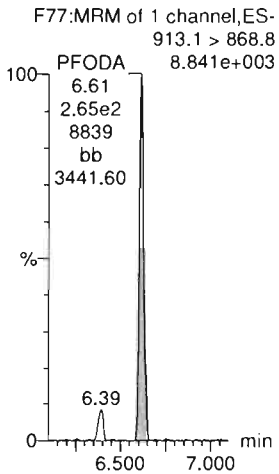
N-EtFOSA



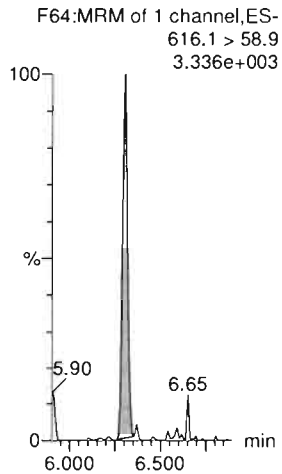
PFHxDA



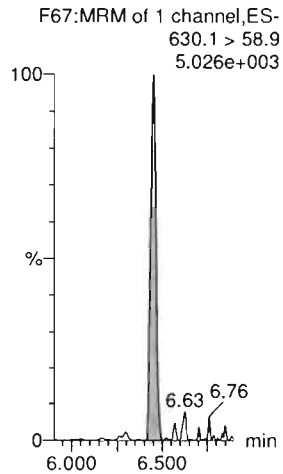
PFODA



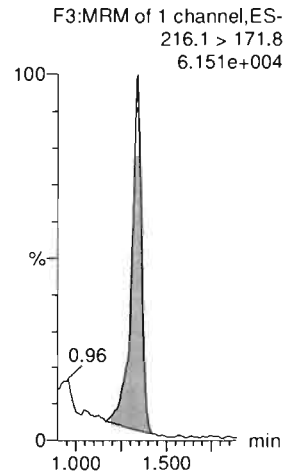
N-MeFOSE



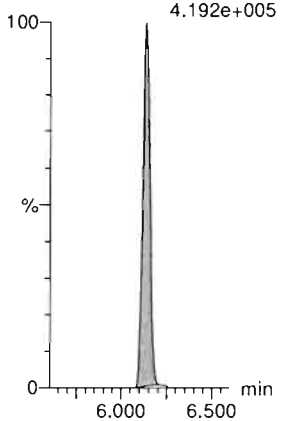
N-EtFOSE



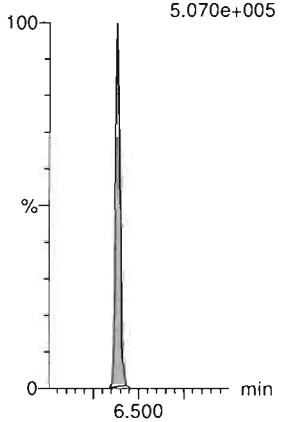
13C3-PFBA-RSD



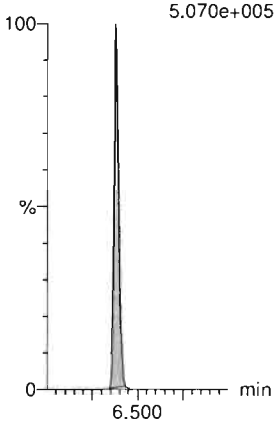
d5-N-ETFOSA-EIS



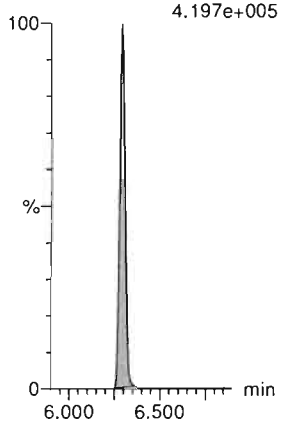
13C2-PFHxDA-EIS



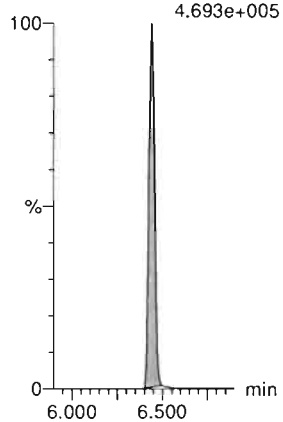
13C2-PFHxDA-EIS



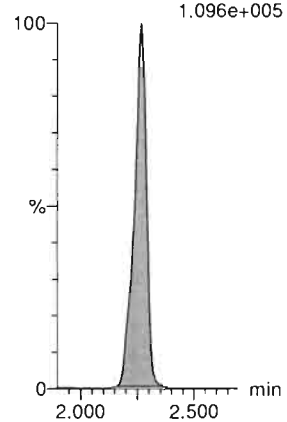
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

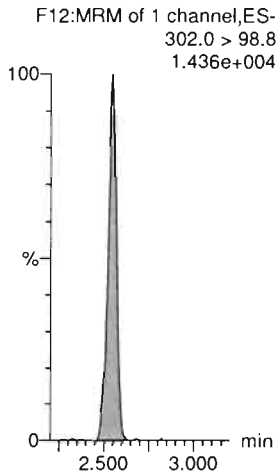


Dataset: Untitled

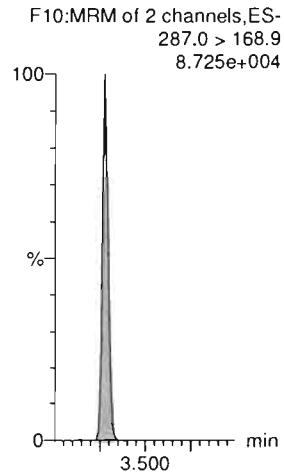
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

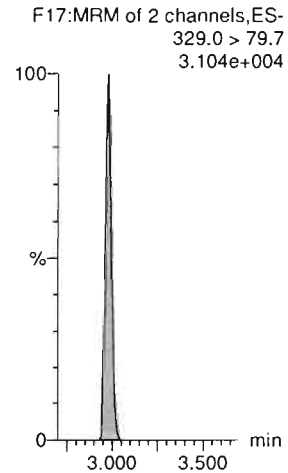
13C3-PFBS-RSD



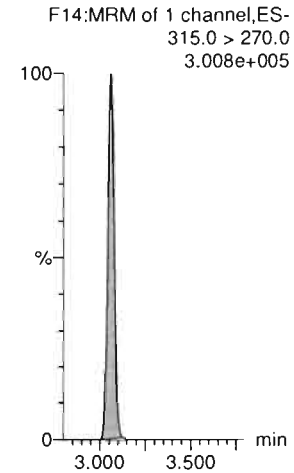
13C3-HFPO-DA-RSD



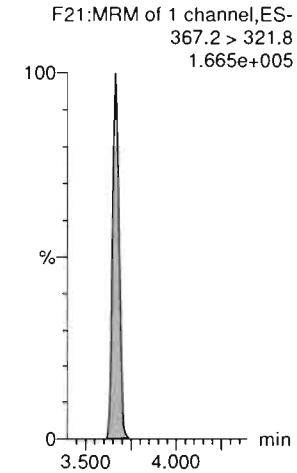
13C2-4:2 FTS-RSD



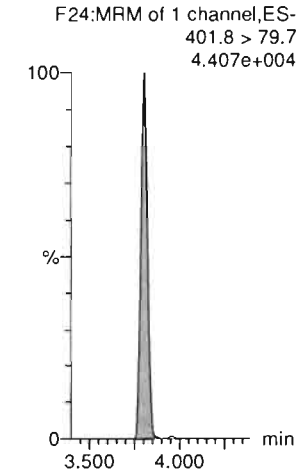
13C2-PFHxA-RSD



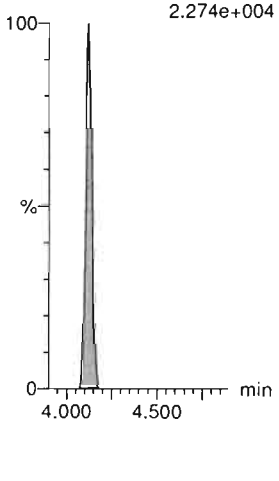
13C4-PFHpA-RSD



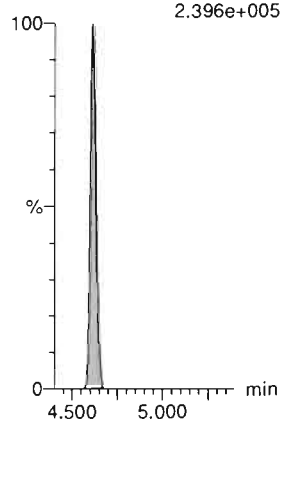
13C3-PFHxS-RSD



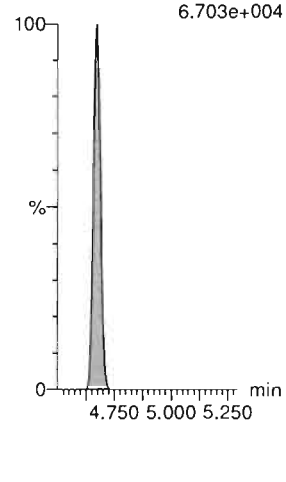
13C2-6:2 FTS-RSD



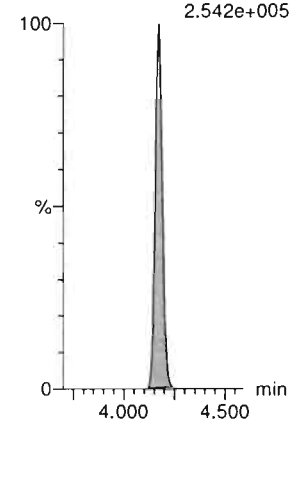
13C5-PFNA-RSD



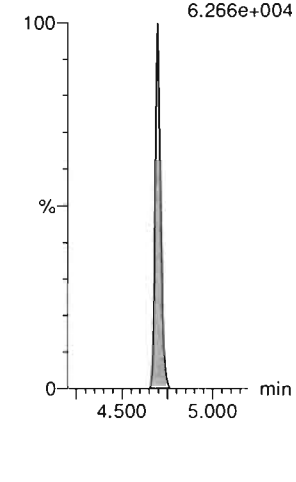
13C8-PFOSA-RSD



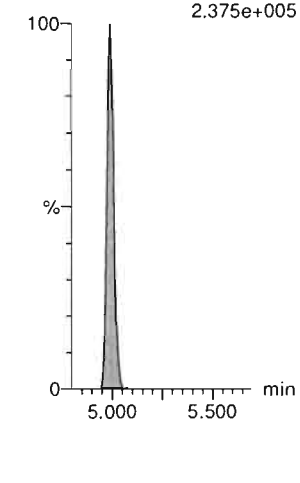
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD

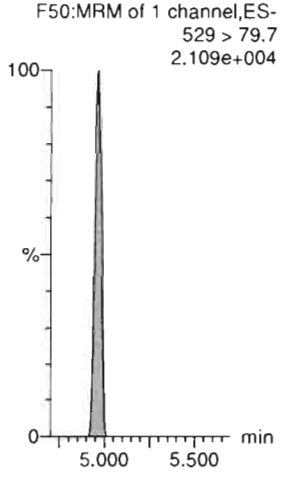


Dataset: Untitled

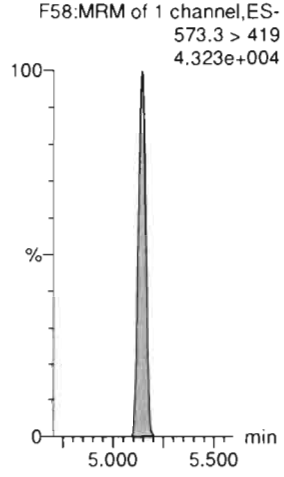
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

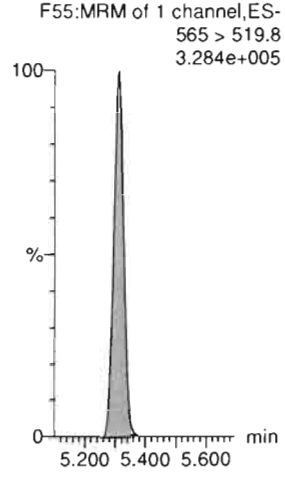
13C2-8:2 FTS-RSD



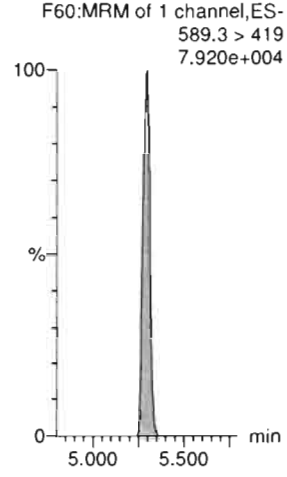
d3-N-MeFOSAA-RSD



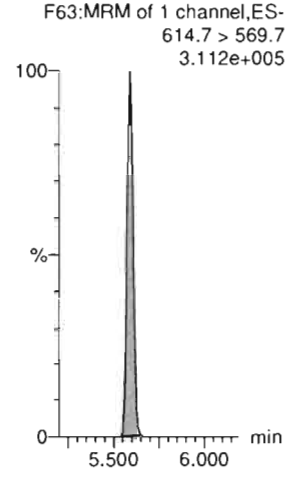
13C2-PFUdA-RSD



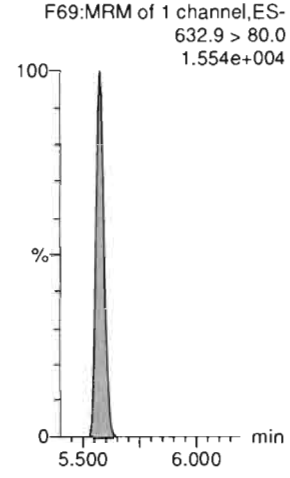
d5-N-EtFOSAA-RSD



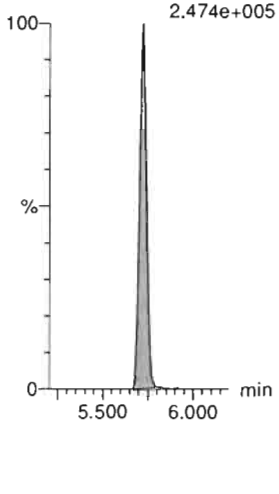
13C2-PFDoA-RSD



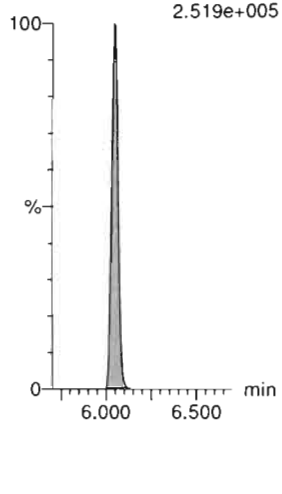
13C2-10:2 FTS-RSD



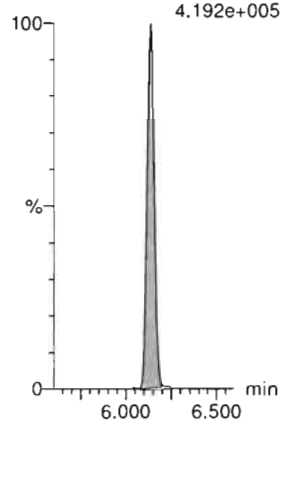
d3-N-MeFOSA-RSD



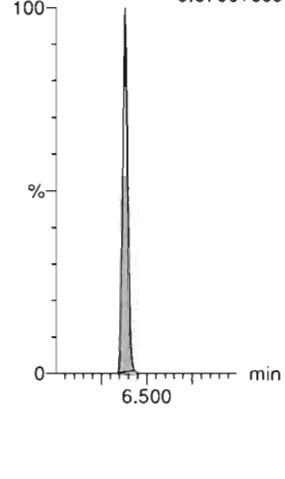
13C2-PFTeDA-RSD



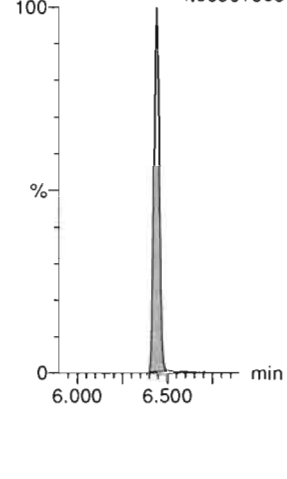
d5-N-ETFOSA-RSD



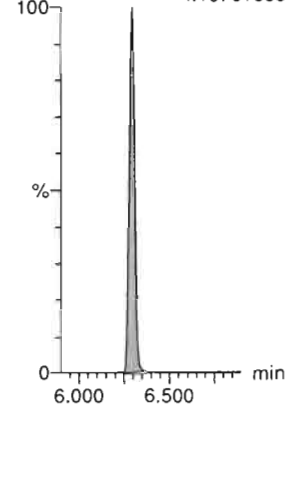
13C2-PFHxDA-RSD



d9-N-EtFOSE-RSD



d7-N-MeFOSE-RSD

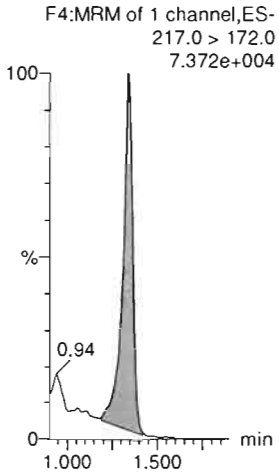


Dataset: Untitled

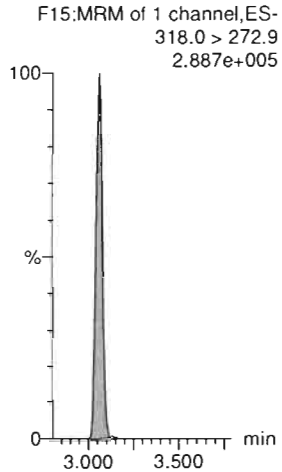
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-3, Date: 03-Mar-2020, Time: 17:05:12, ID: ST200303P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

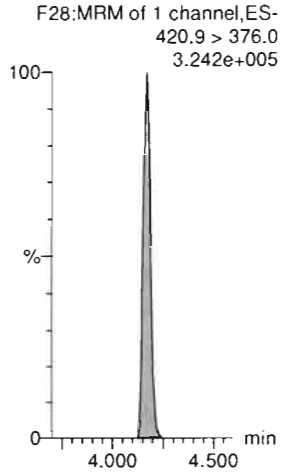
13C4-PFBA



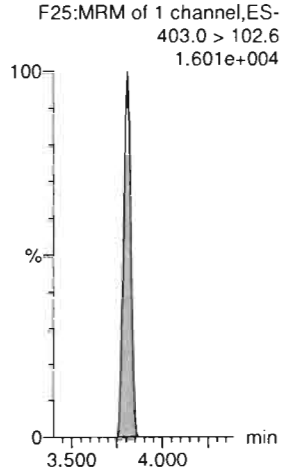
13C5-PFHxA



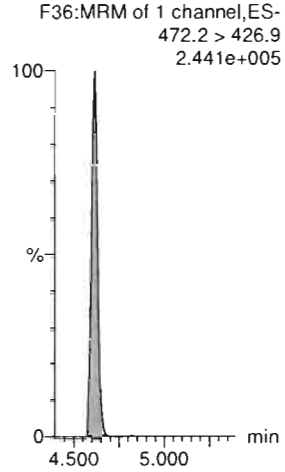
13C8-PFOA



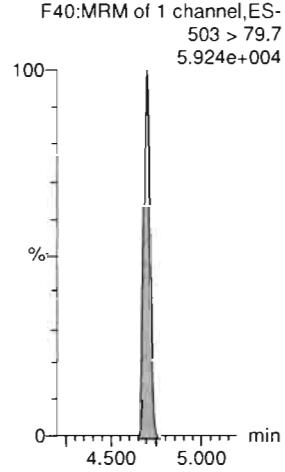
18O2-PFHxS



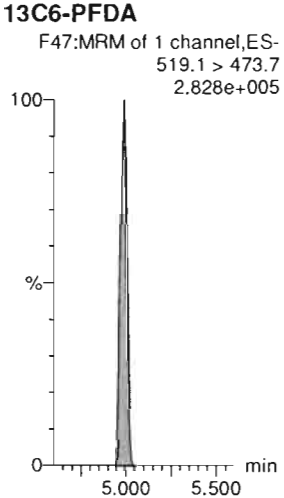
13C9-PFNA



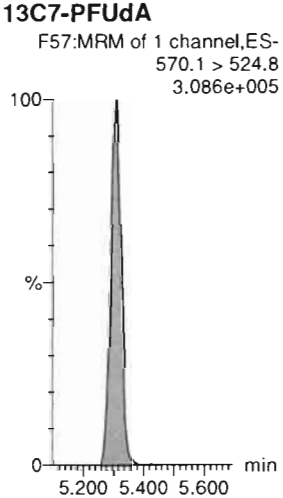
13C4-PFOS



13C6-PFDA



13C7-PFUdA

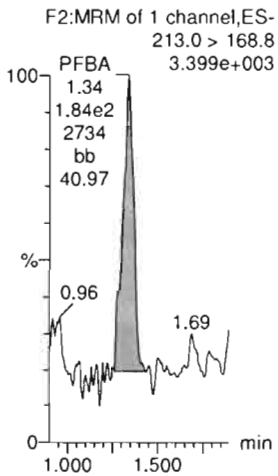


Dataset: Untitled

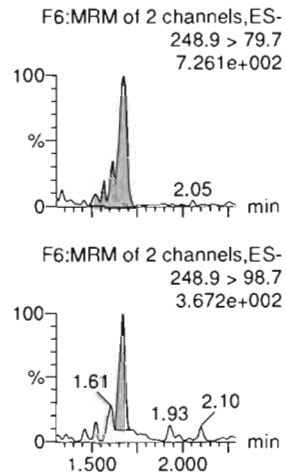
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

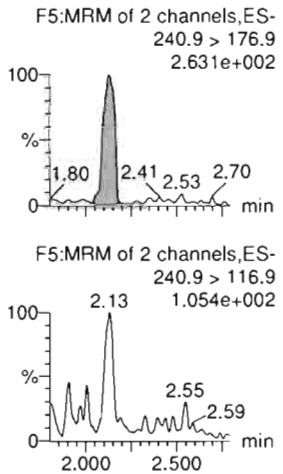
PFBA



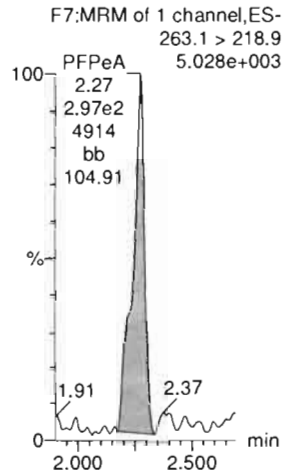
PFPrS



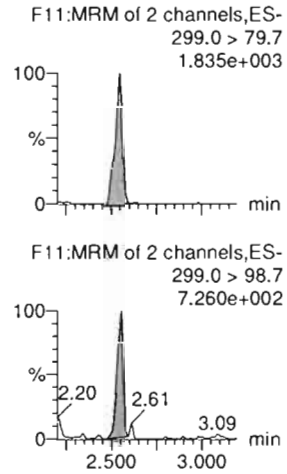
3:3 FTCA



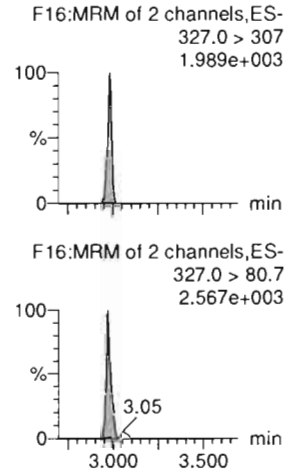
PFPeA



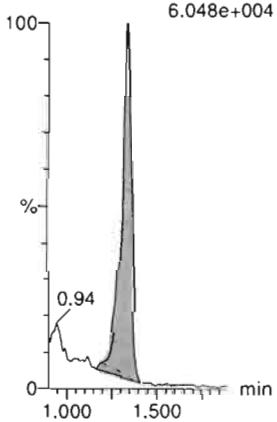
PFBS



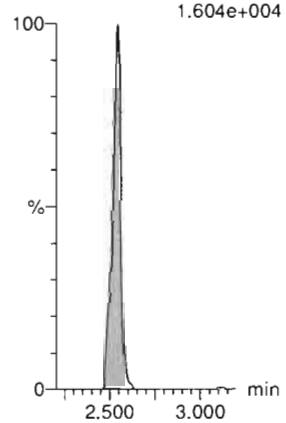
4:2 FTS



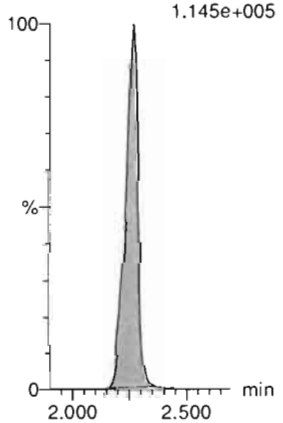
13C3-PFBA-EIS



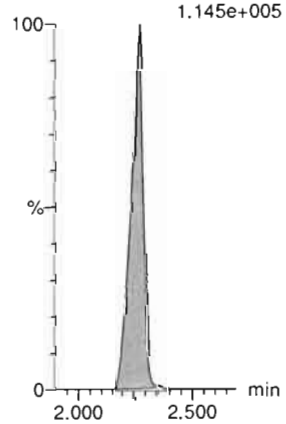
13C3-PFBS-EIS



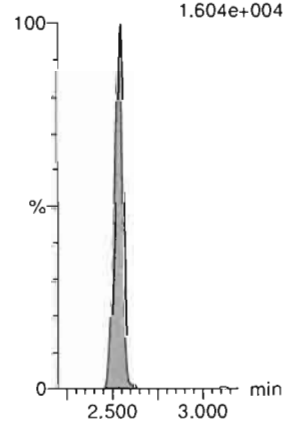
13C3-PFPeA-EIS



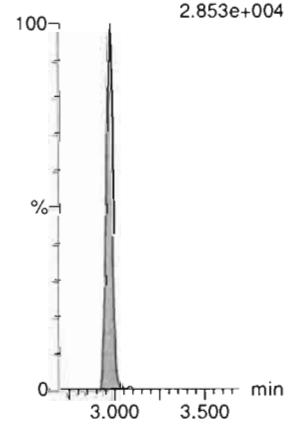
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

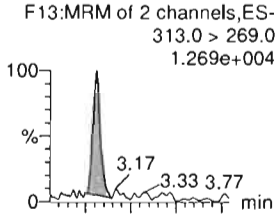


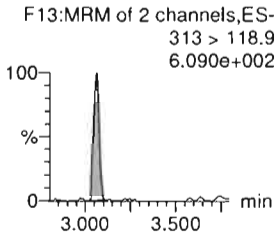
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

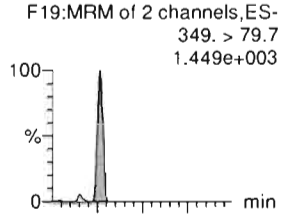
Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

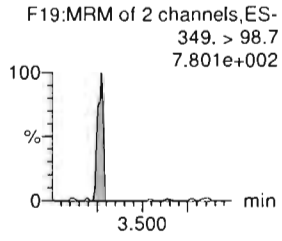
PFHxA



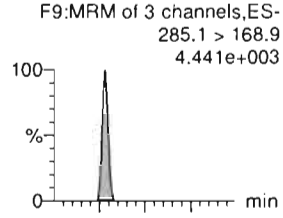


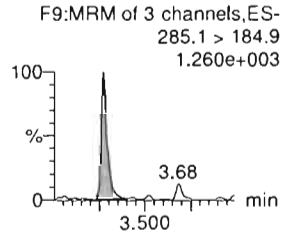
PFPeS



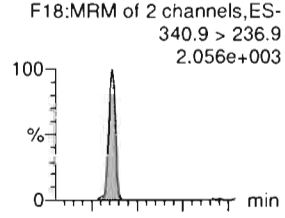


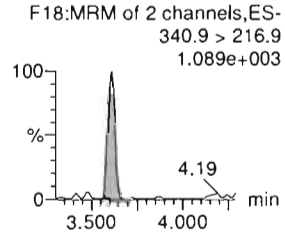
HFPO-DA



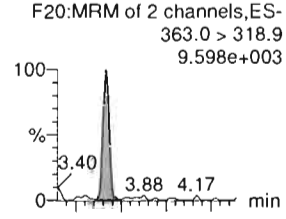


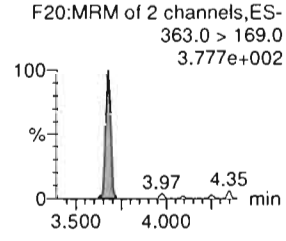
5:3 FTCA



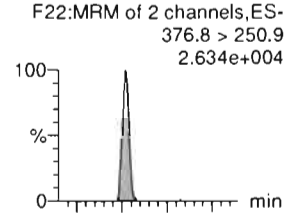


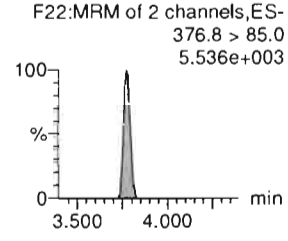
PFHpA



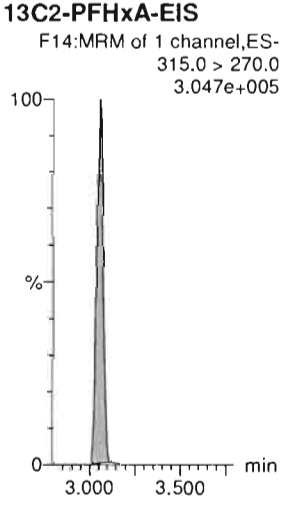


ADONA

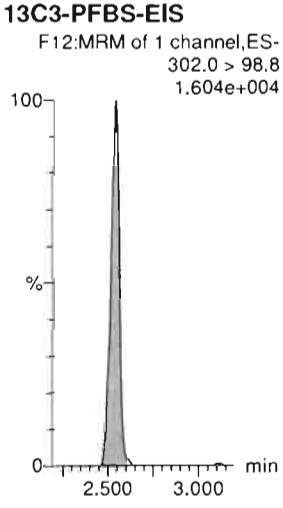




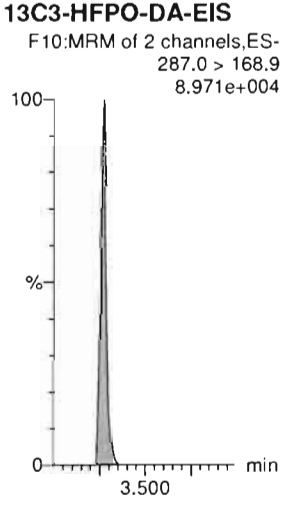
13C2-PFHxA-EIS



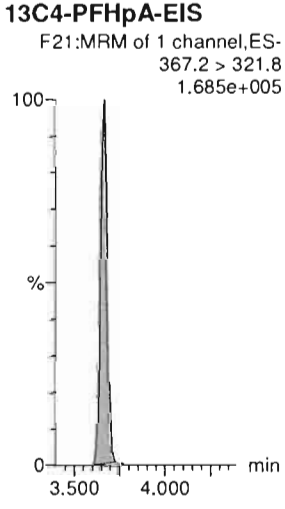
13C3-PFBS-EIS



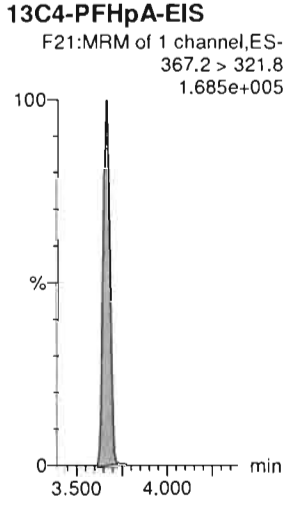
13C3-HFPO-DA-EIS



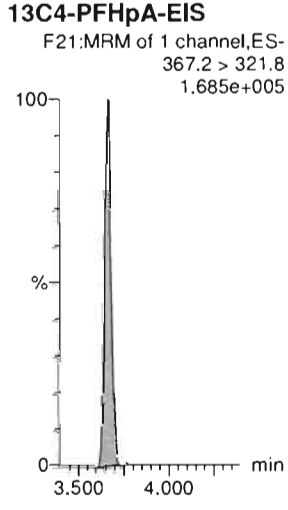
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

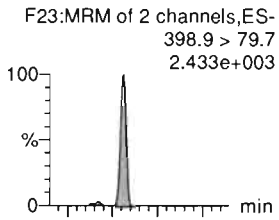


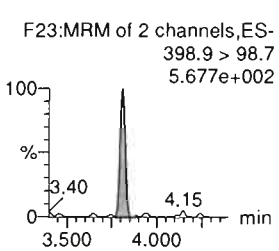
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

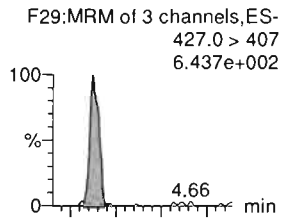
Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

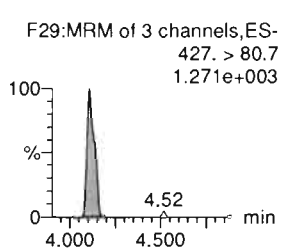
L-PFHxS



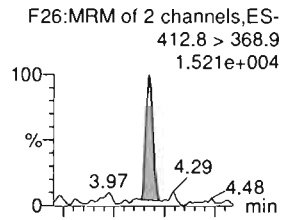


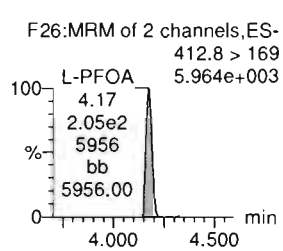
6:2 FTS



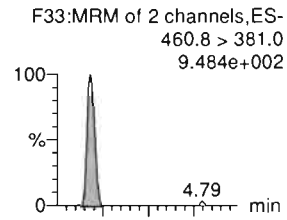


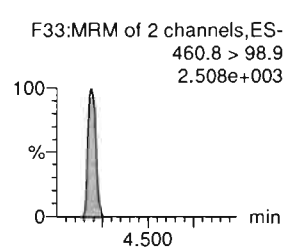
L-PFOA



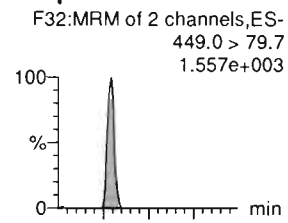


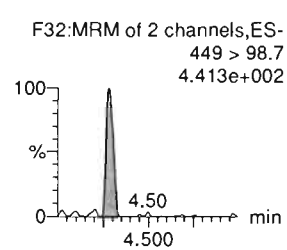
PFEChS



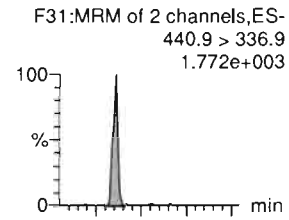


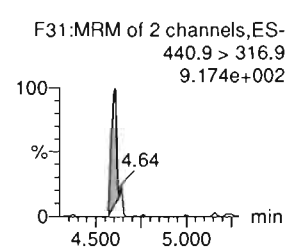
PFHpS



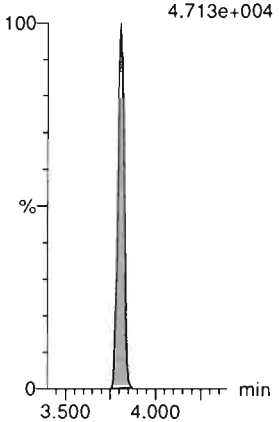


7:3 FTCA

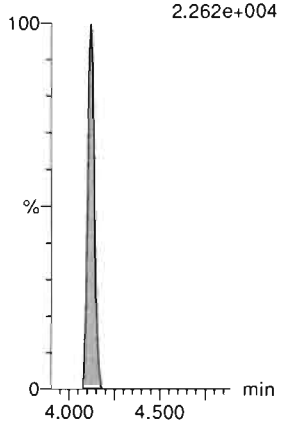




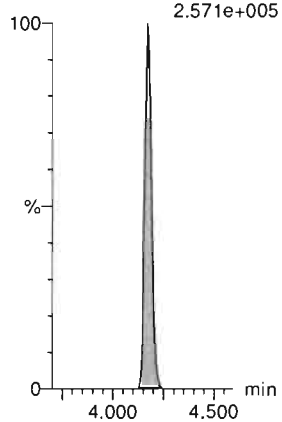
13C3-PFHxS-EIS



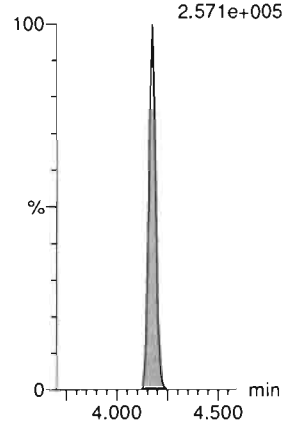
13C2-6:2 FTS-EIS



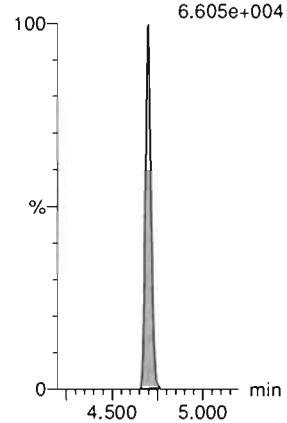
13C2-PFOA-EIS



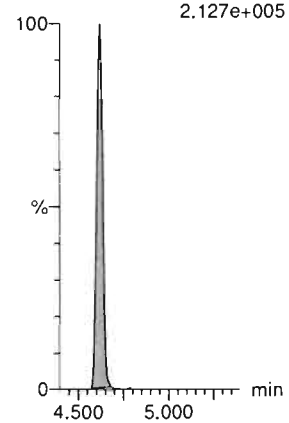
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

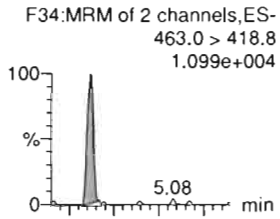


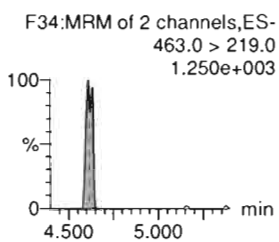
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

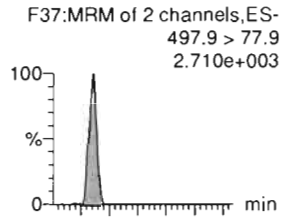
Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

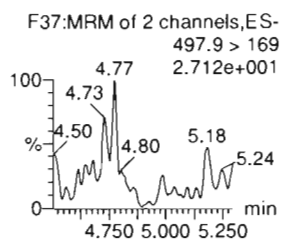
PFNA



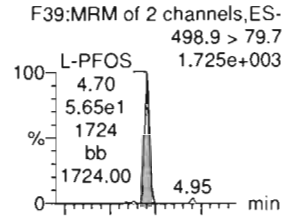


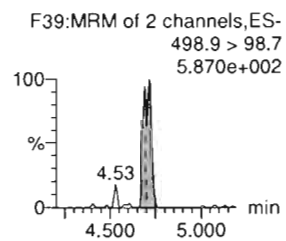
PFOSA



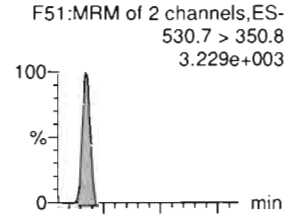


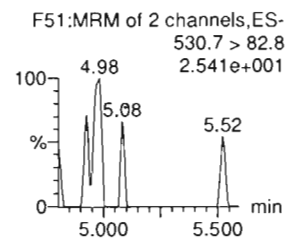
L-PFOS



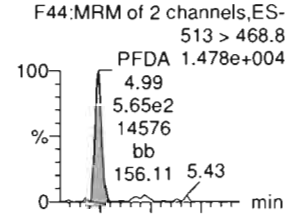


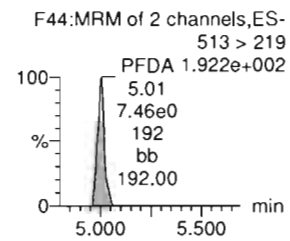
9Cl-PF30NS



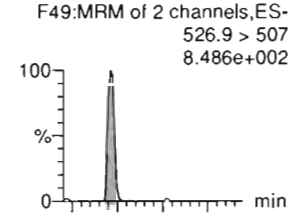


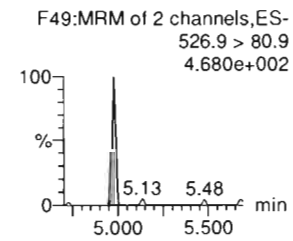
PFDA



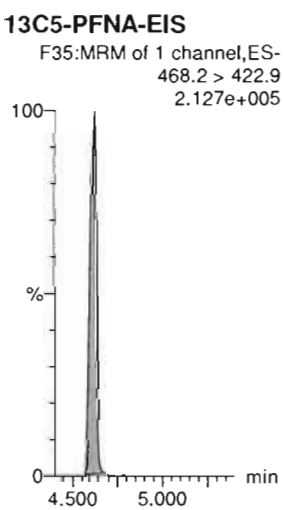


8:2 FTS

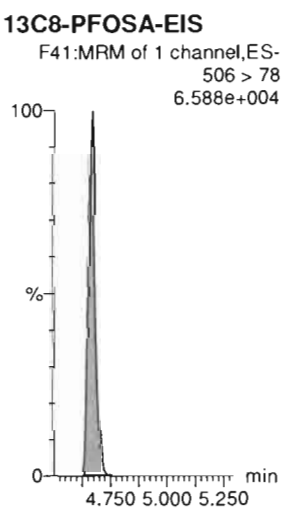




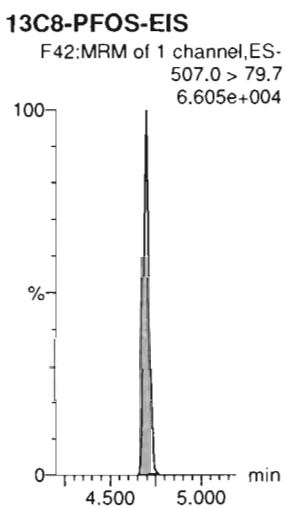
13C5-PFNA-EIS



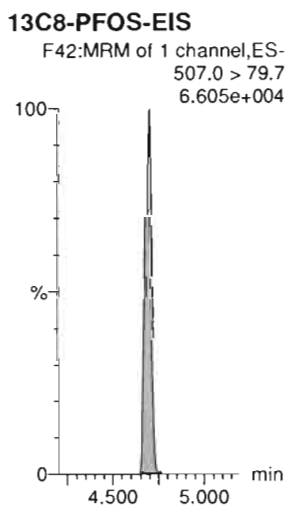
13C8-PFOSA-EIS



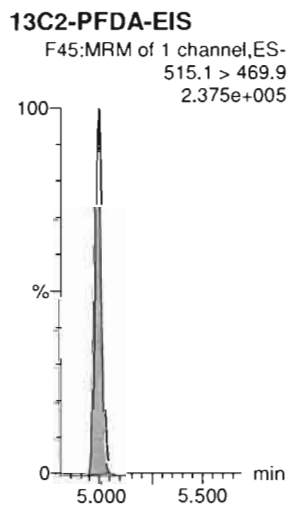
13C8-PFOS-EIS



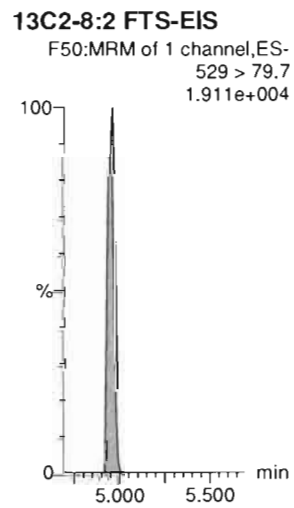
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

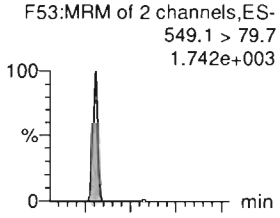


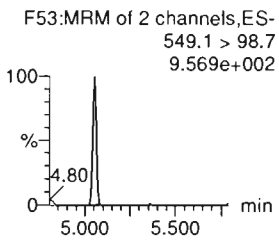
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

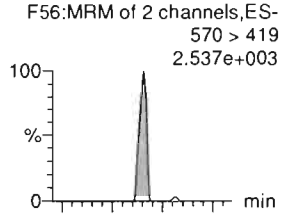
Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

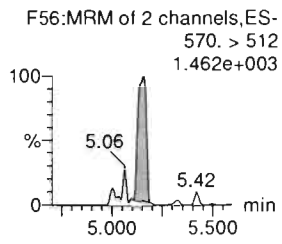
PFNS



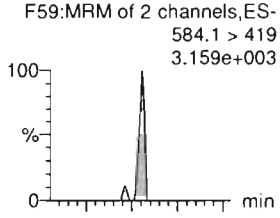


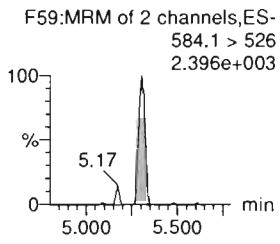
L-MeFOSAA



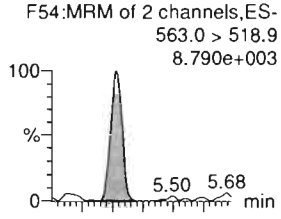


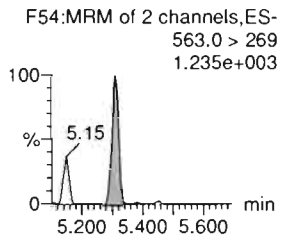
L-EtFOSAA



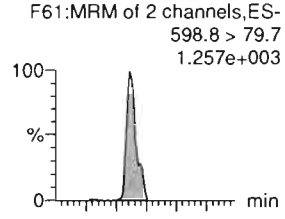


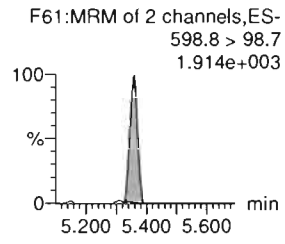
PFUdA



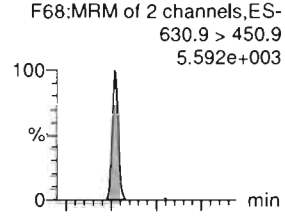


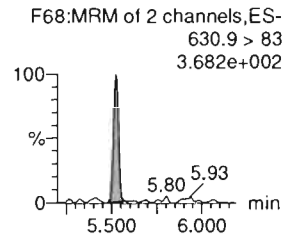
PFDS



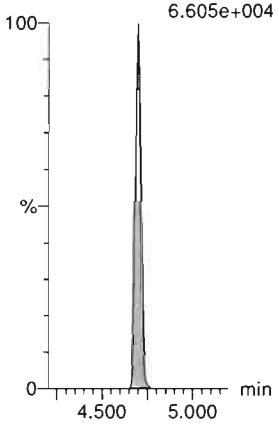


11Cl-PF30UdS

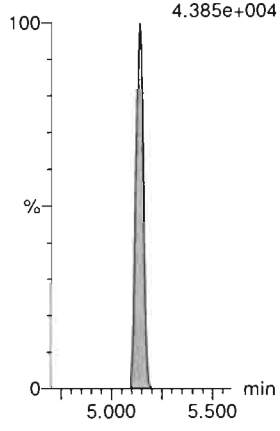




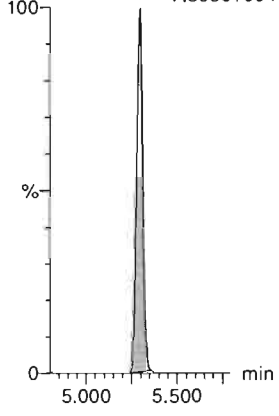
13C8-PFOS-EIS



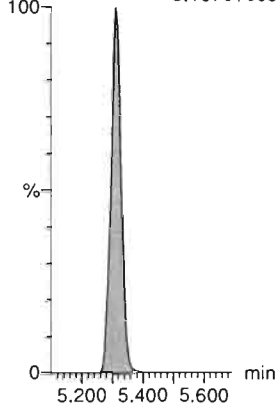
d3-N-MeFOSAA-EIS



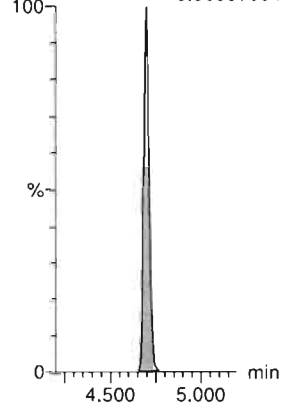
d5-N-EtFOSAA-EIS



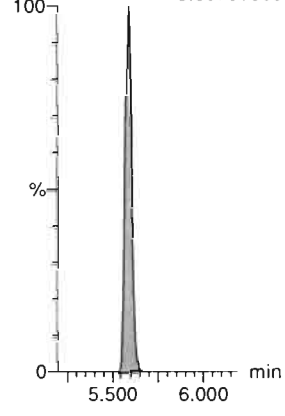
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

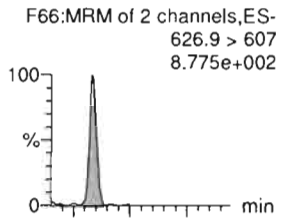


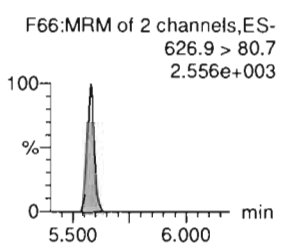
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

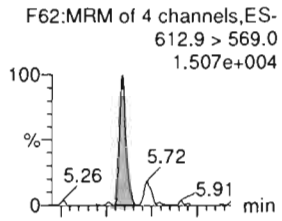
Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

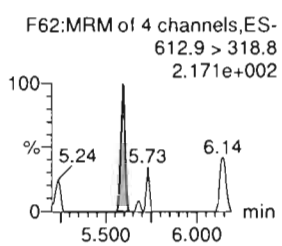
10:2 FTS



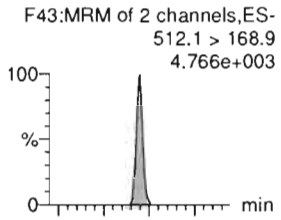


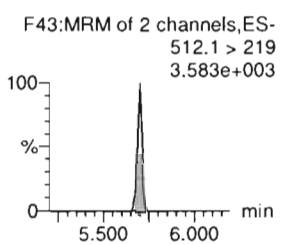
PFDoA



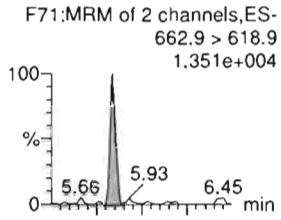


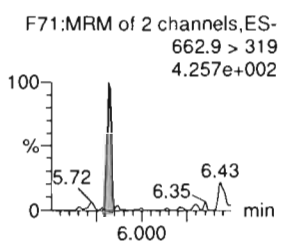
N-MeFOSA



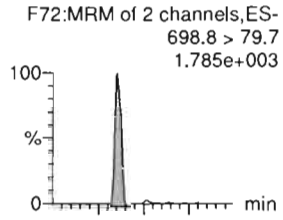


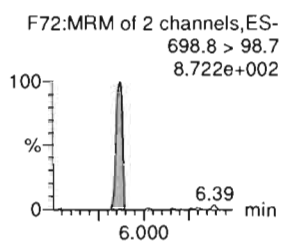
PFTrDA



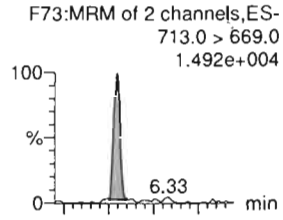


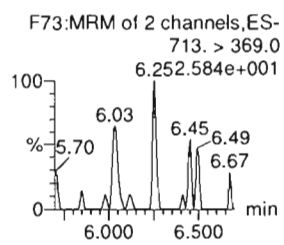
PFDoS



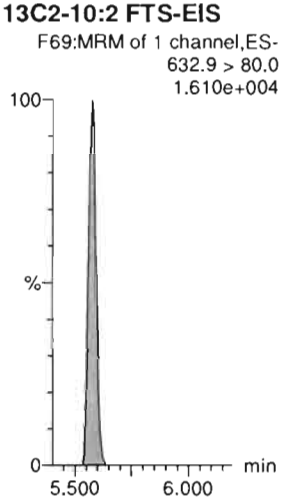


PFTeDA

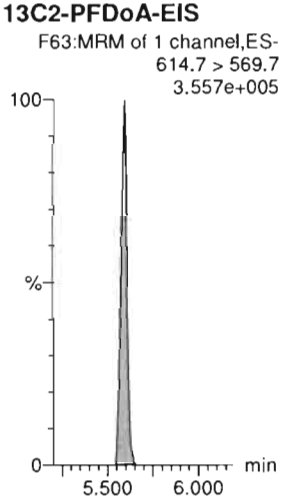




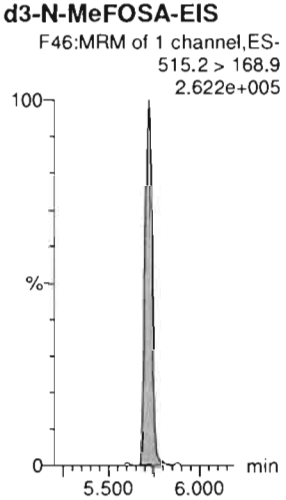
13C2-10:2 FTS-EIS



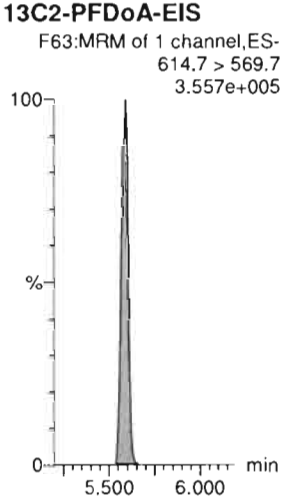
13C2-PFDoA-EIS



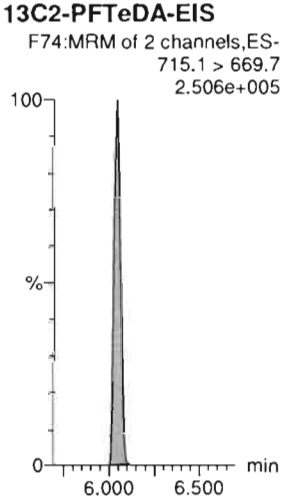
d3-N-MeFOSA-EIS



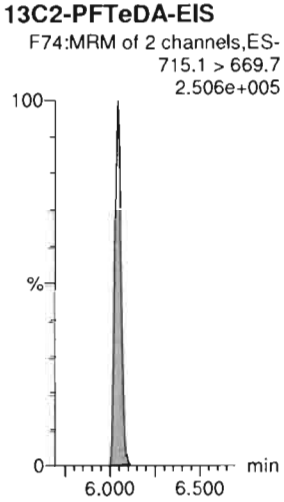
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

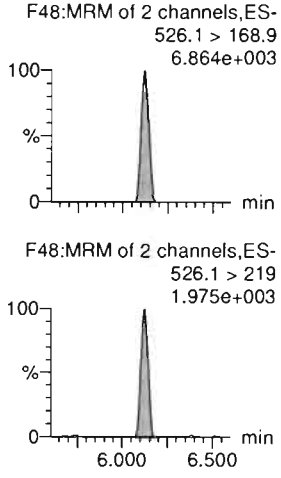


Dataset: Untitled

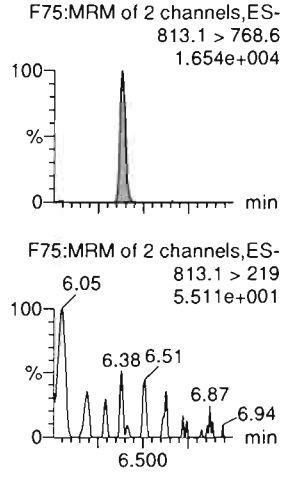
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

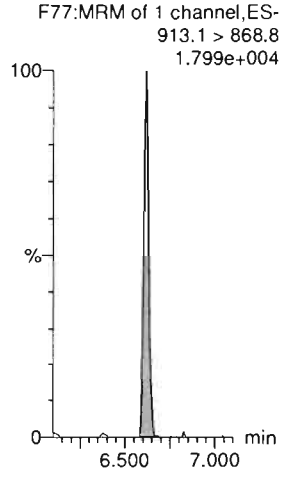
N-EtFOSA



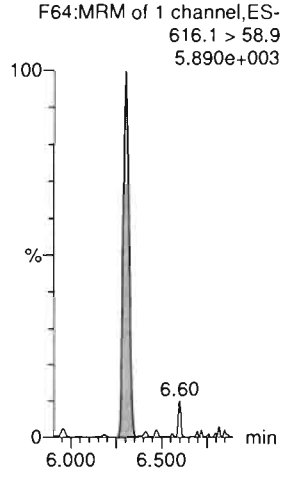
PFHxDA



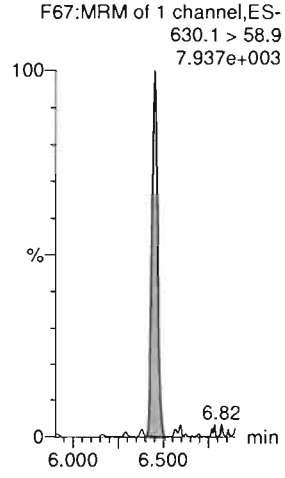
PFODA



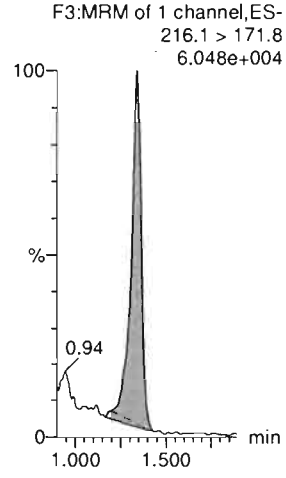
N-MeFOSE



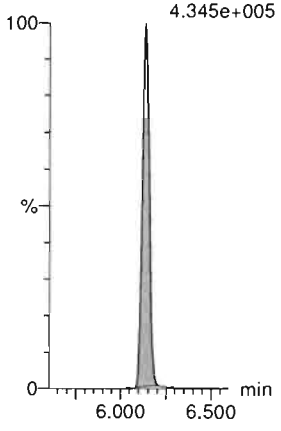
N-EtFOSE



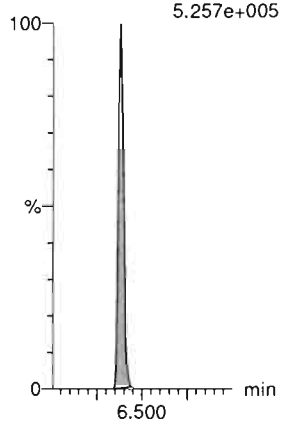
13C3-PFBA-RSD



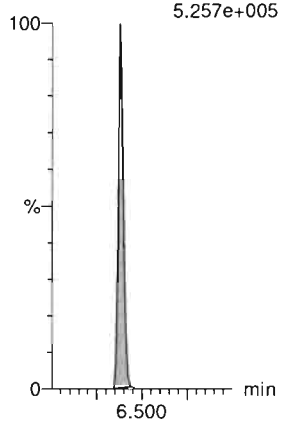
d5-N-ETFOSA-EIS



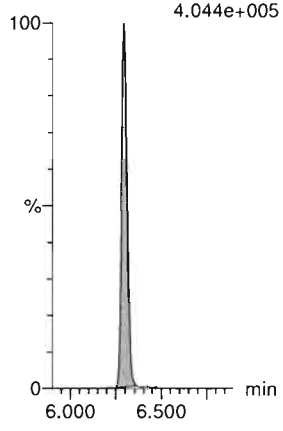
13C2-PFHxDA-EIS



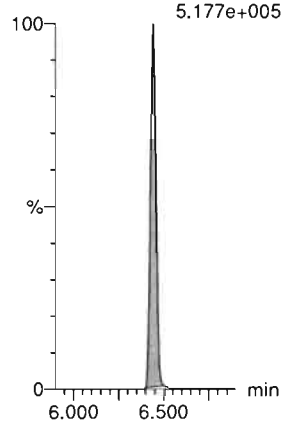
13C2-PFHxDA-EIS



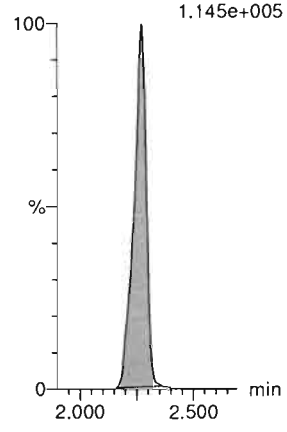
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

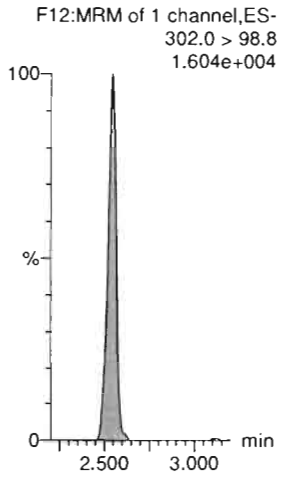


Dataset: Untitled

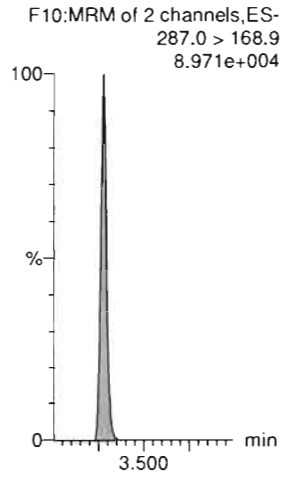
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

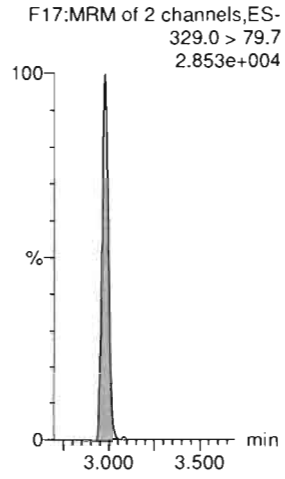
13C3-PFBS-RSD



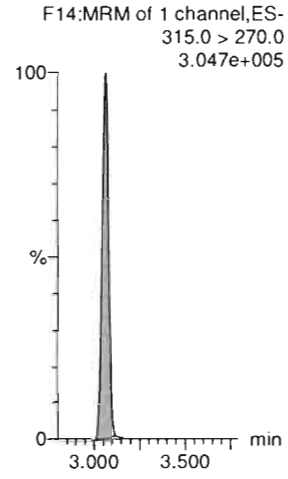
13C3-HFPO-DA-RSD



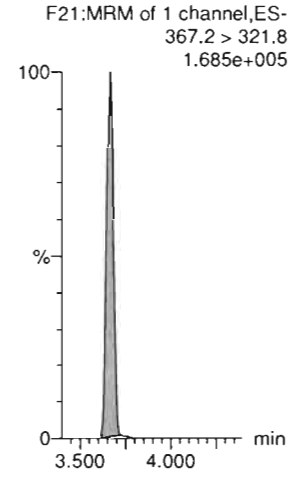
13C2-4:2 FTS-RSD



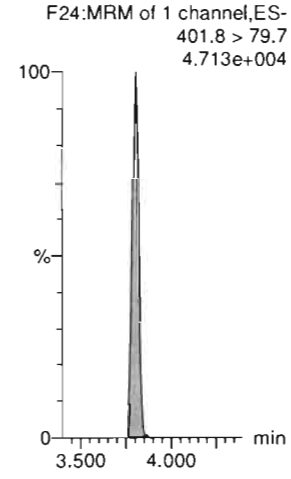
13C2-PFHxA-RSD



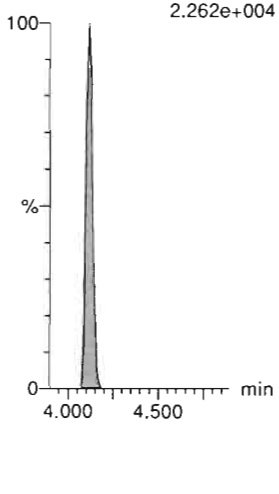
13C4-PFHpA-RSD



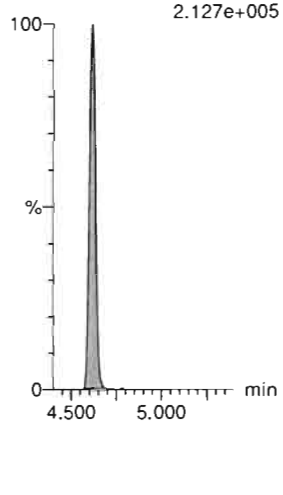
13C3-PFHxS-RSD



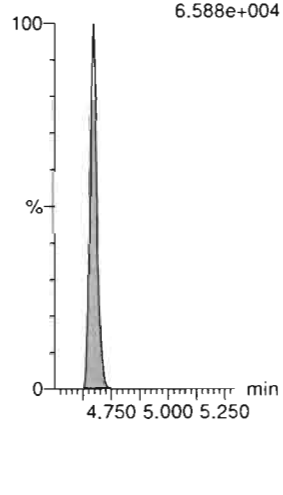
13C2-6:2 FTS-RSD



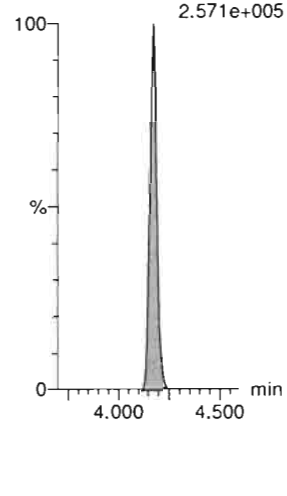
13C5-PFNA-RSD



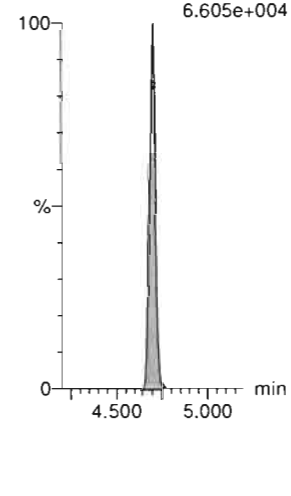
13C8-PFOSA-RSD



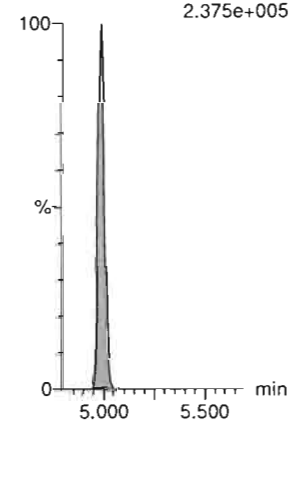
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD

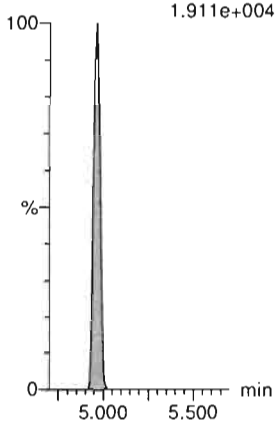


Dataset: Untitled

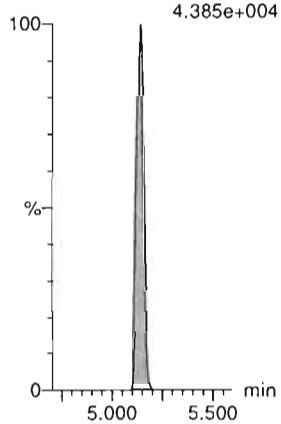
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

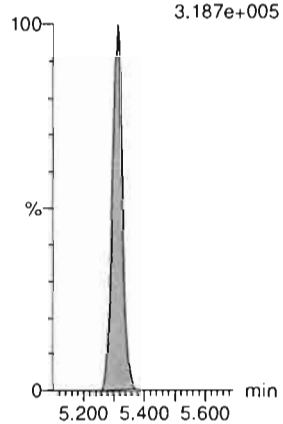
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
1.911e+004



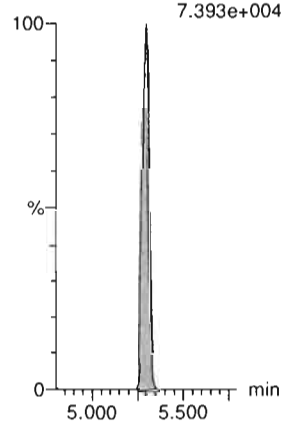
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.385e+004



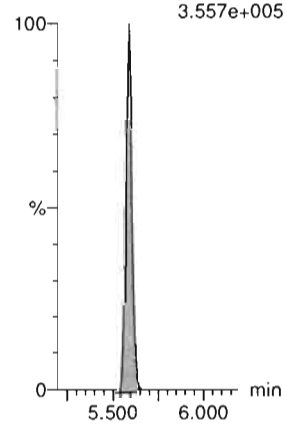
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.187e+005



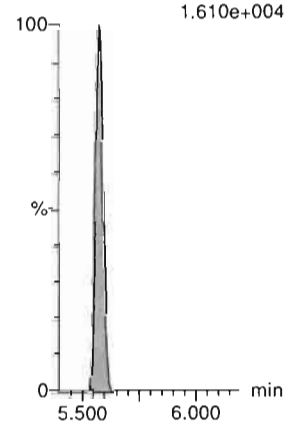
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
7.393e+004



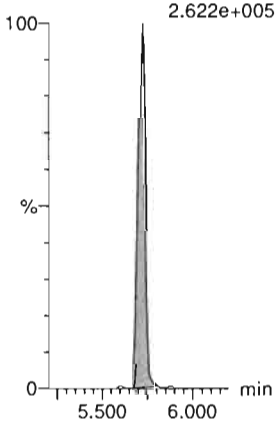
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.557e+005



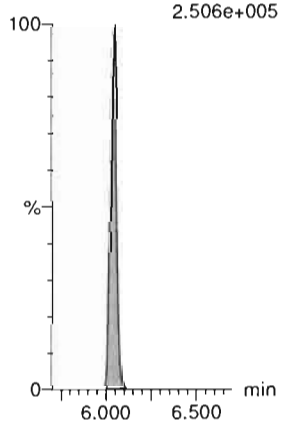
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.610e+004



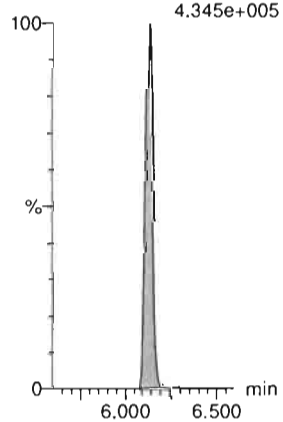
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.622e+005



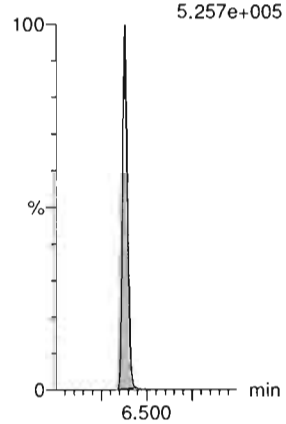
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.506e+005



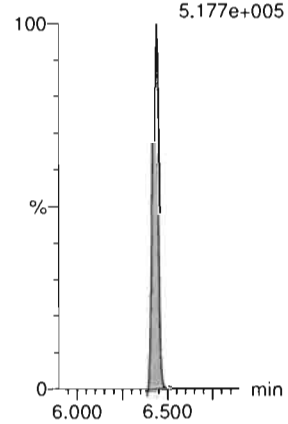
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.345e+005



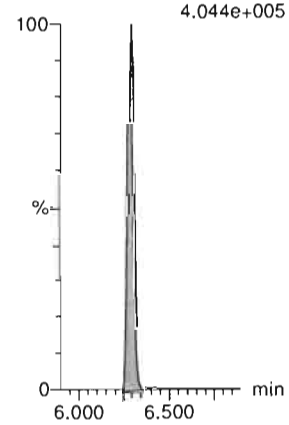
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.257e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.177e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.044e+005

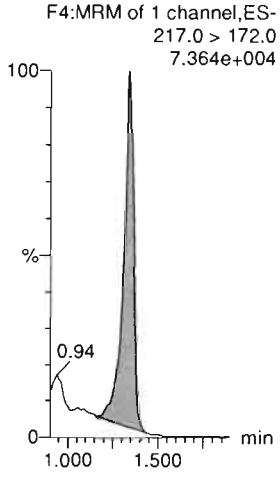


Dataset: Untitled

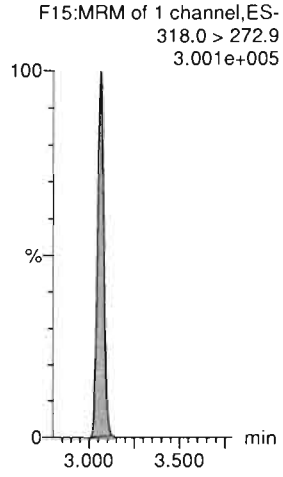
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-4, Date: 03-Mar-2020, Time: 17:15:40, ID: ST200303P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

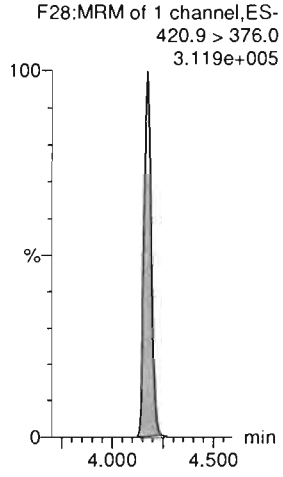
13C4-PFBA



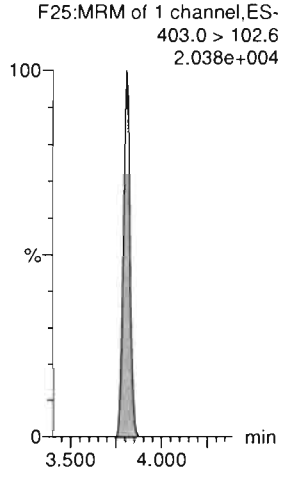
13C5-PFHxA



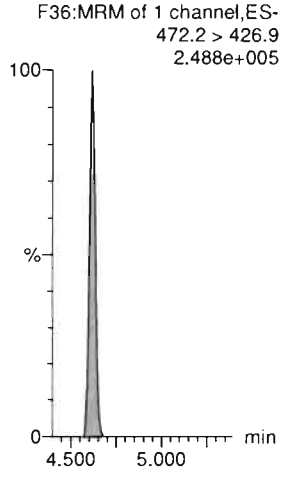
13C8-PFOA



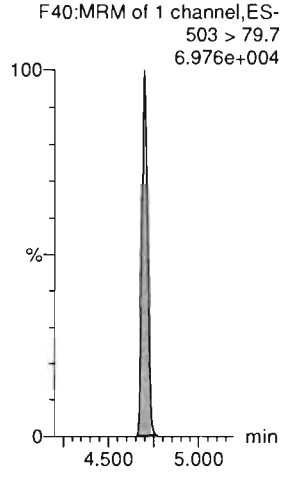
18O2-PFHxS



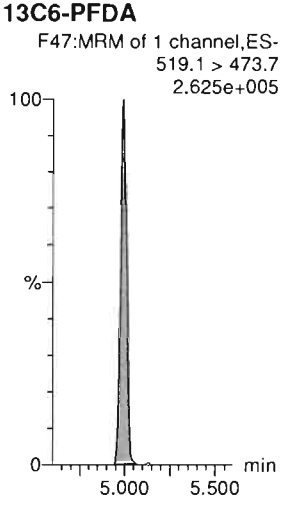
13C9-PFNA



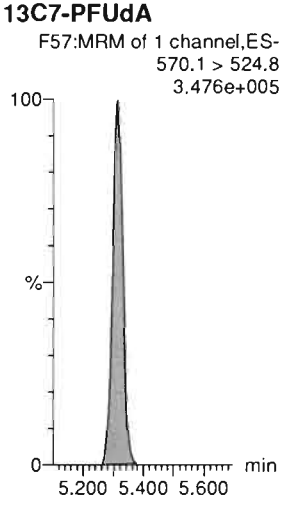
13C4-PFOS



13C6-PFDA



13C7-PFUdA

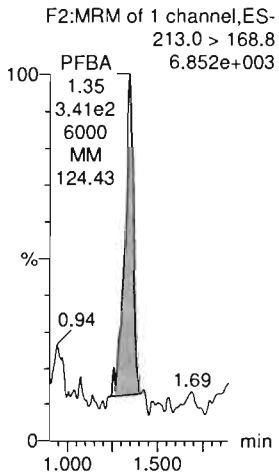


Dataset: Untitled

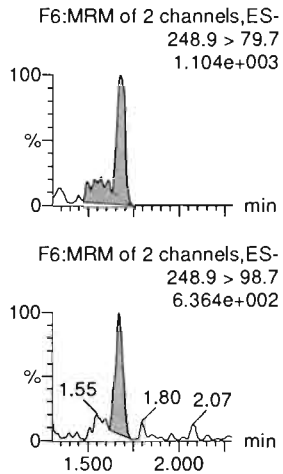
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

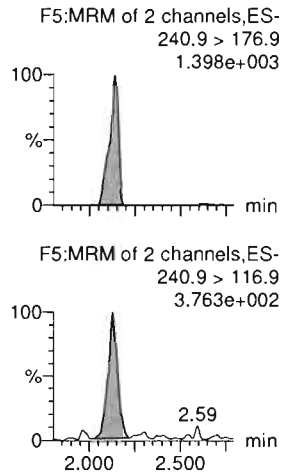
PFBA



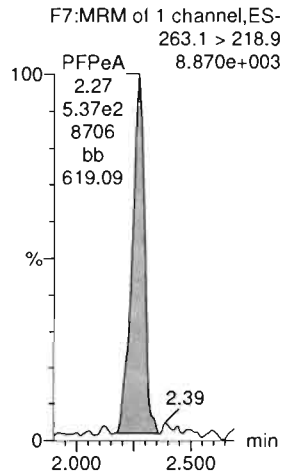
PFPrS



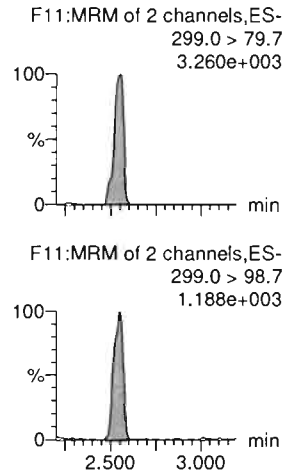
3:3 FTCA



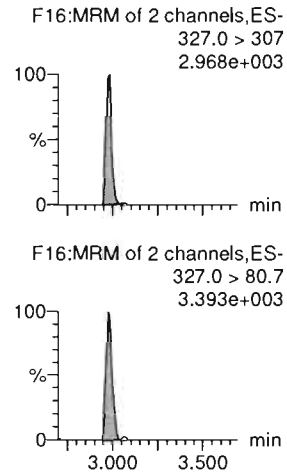
PFPeA



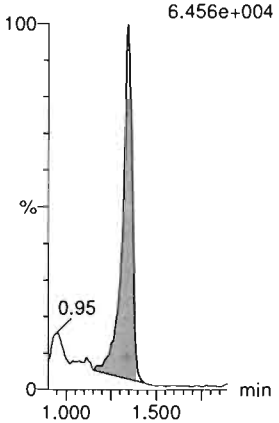
PFBS



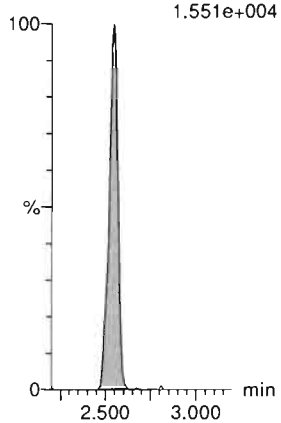
4:2 FTS



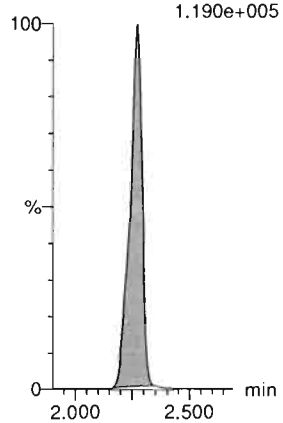
13C3-PFBA-EIS



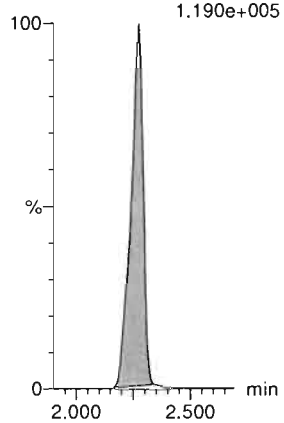
13C3-PFBS-EIS



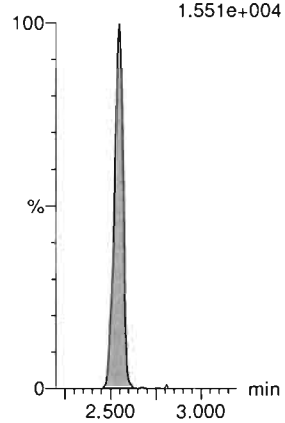
13C3-PFPeA-EIS



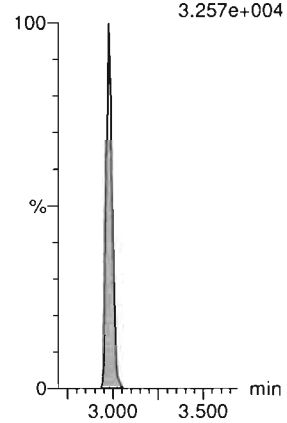
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

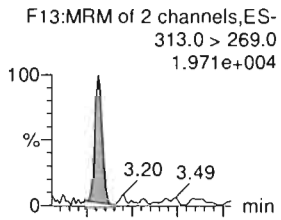


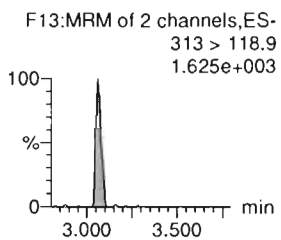
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

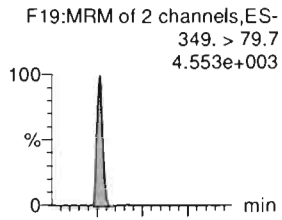
Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

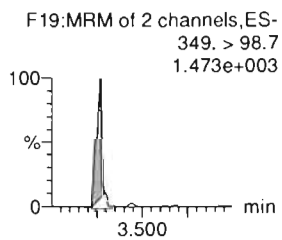
PFHxA



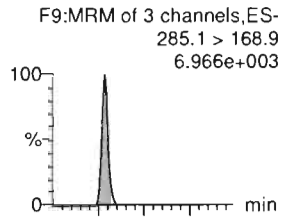


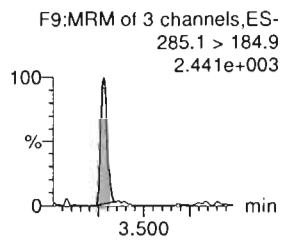
PFPeS



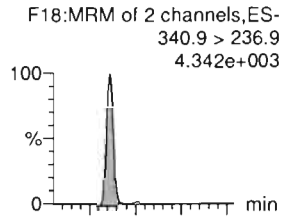


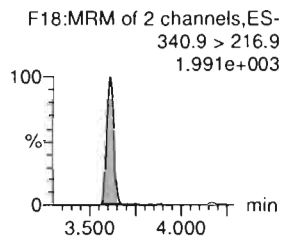
HFPO-DA



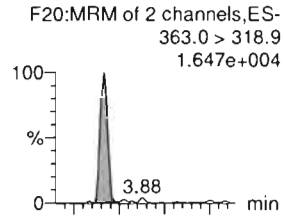


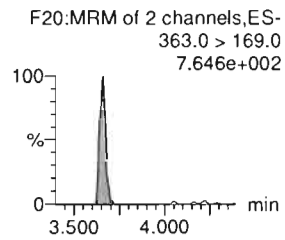
5:3 FTCA



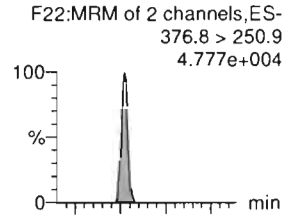


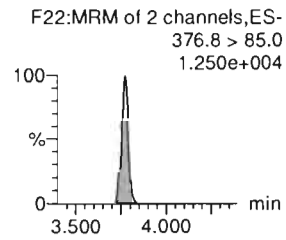
PFHpA



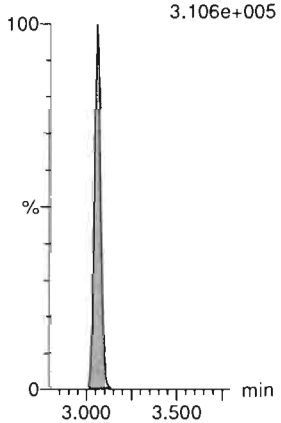


ADONA

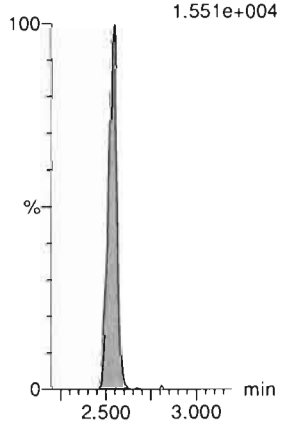




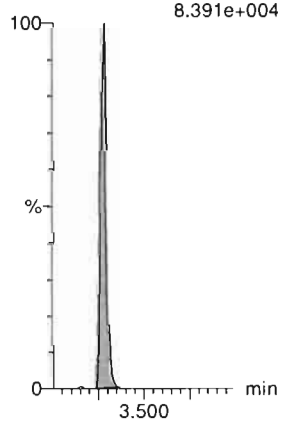
13C2-PFHxA-EIS



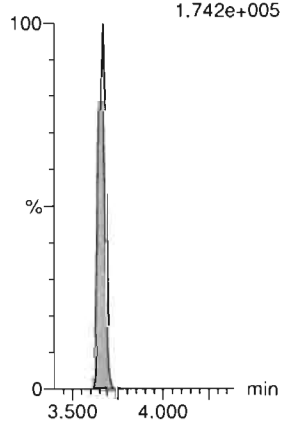
13C3-PFBS-EIS



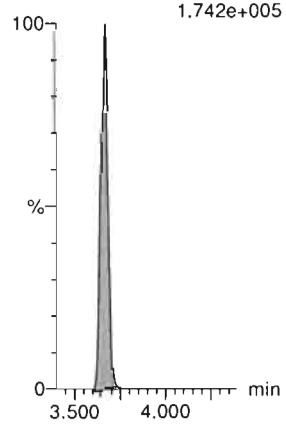
13C3-HFPO-DA-EIS



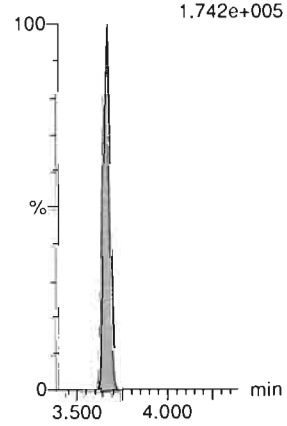
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

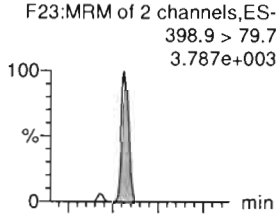


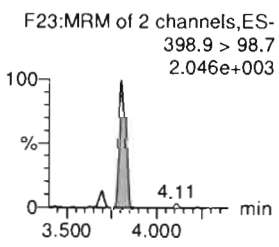
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

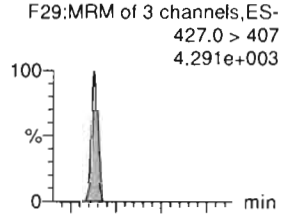
Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

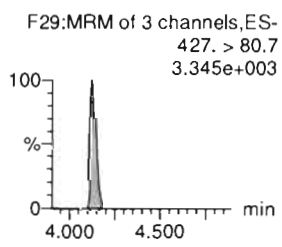
L-PFHxS



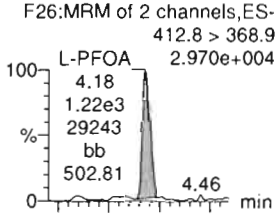


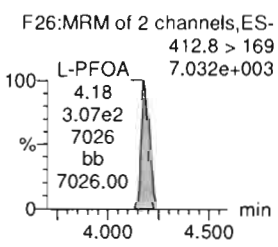
6:2 FTS



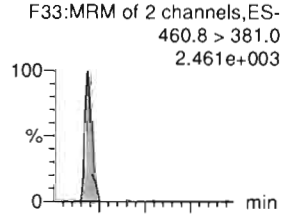


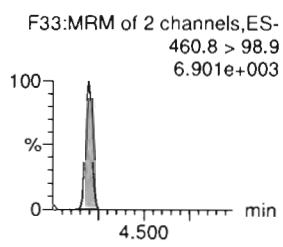
L-PFOA



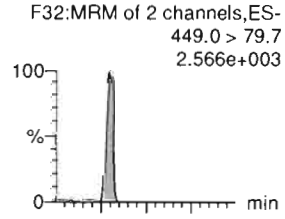


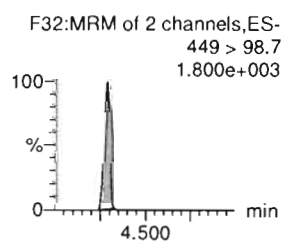
PFEChS



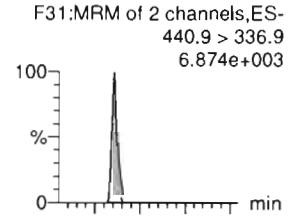


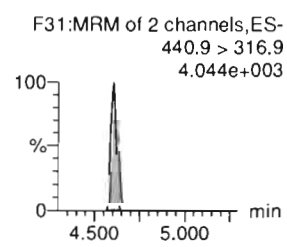
PFHpS



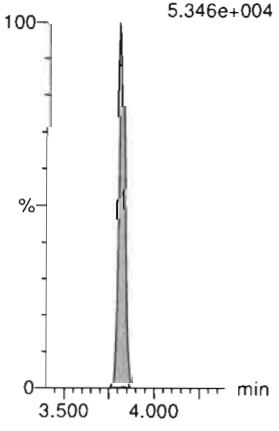


7:3 FTCA

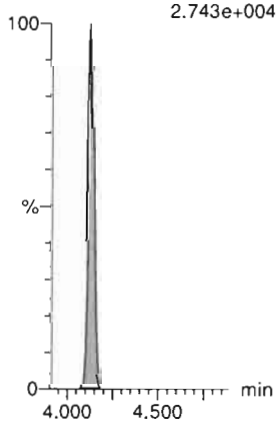




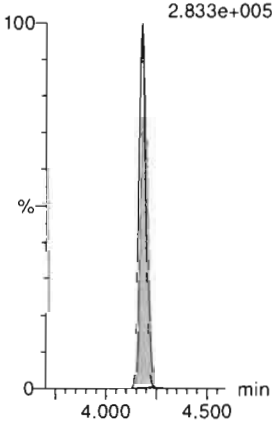
13C3-PFHxS-EIS



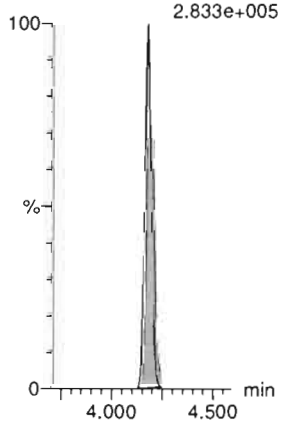
13C2-6:2 FTS-EIS



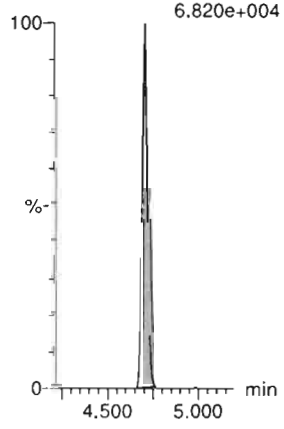
13C2-PFOA-EIS



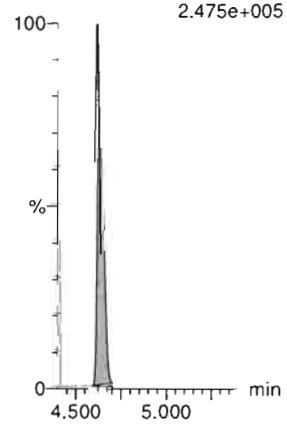
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

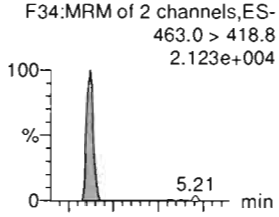


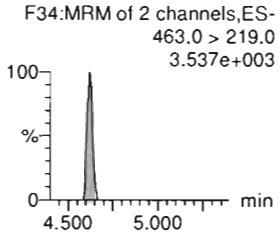
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

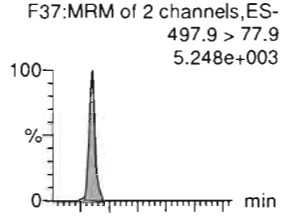
Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

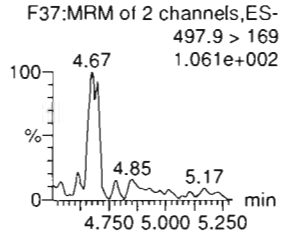
PFNA



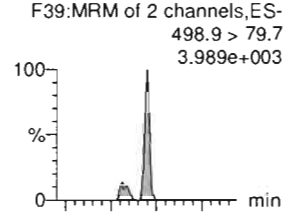


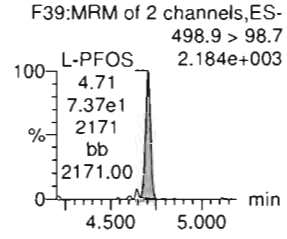
PFOSA



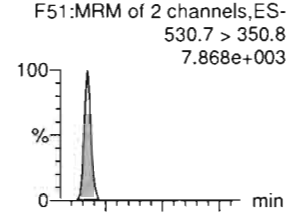


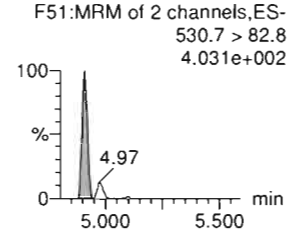
L-PFOS



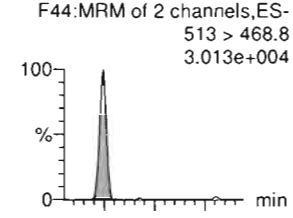


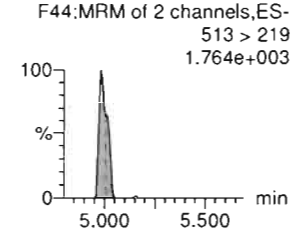
9CI-PF30NS



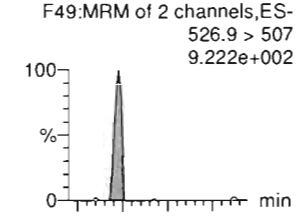


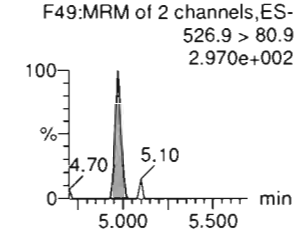
PFDA



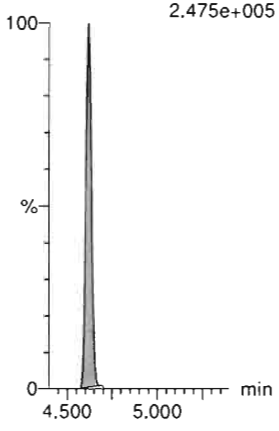


8:2 FTS

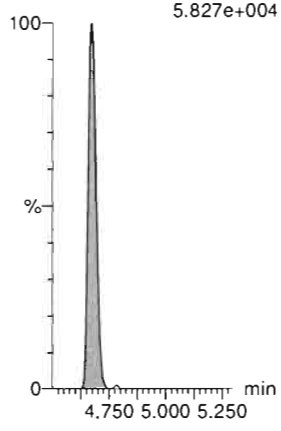




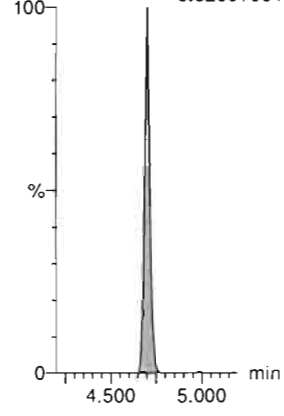
13C5-PFNA-EIS



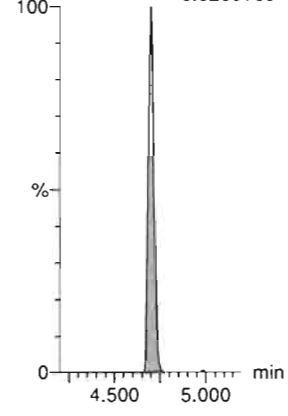
13C8-PFOSA-EIS



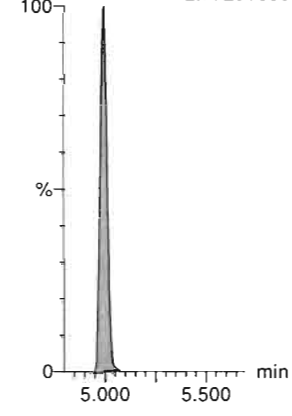
13C8-PFOS-EIS



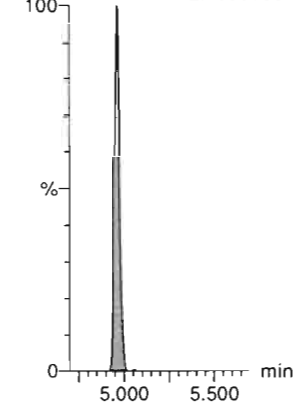
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

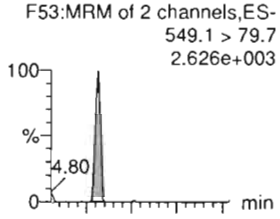


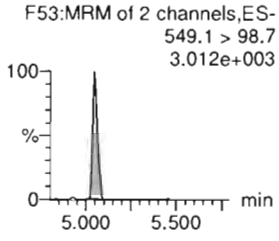
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

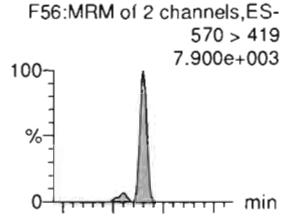
Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

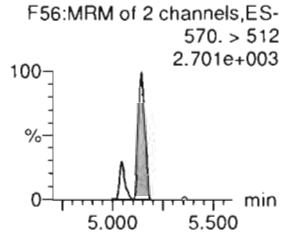
PFNS



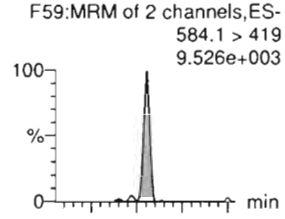


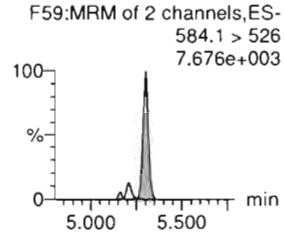
L-MeFOSAA



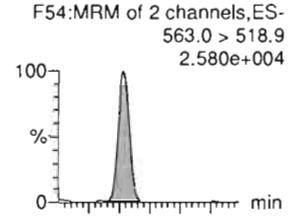


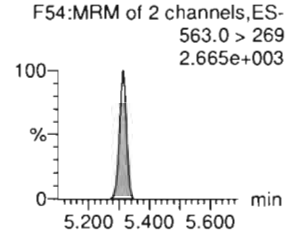
L-EtFOSAA



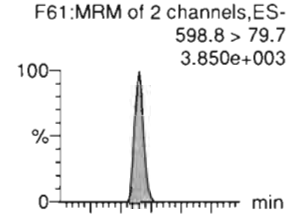


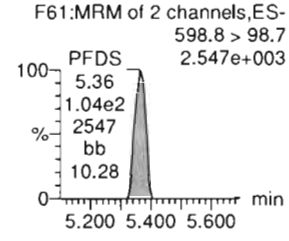
PFUdA



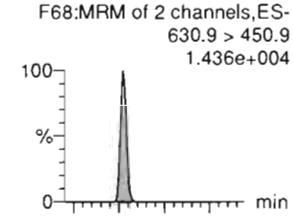


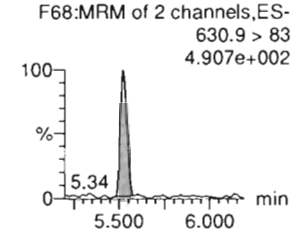
PFDS



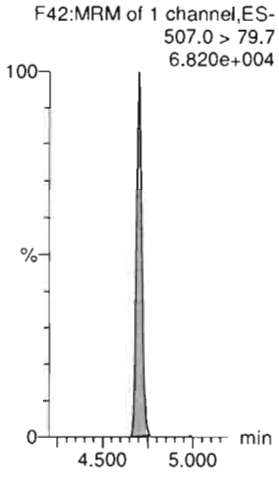


11Cl-PF30UdS

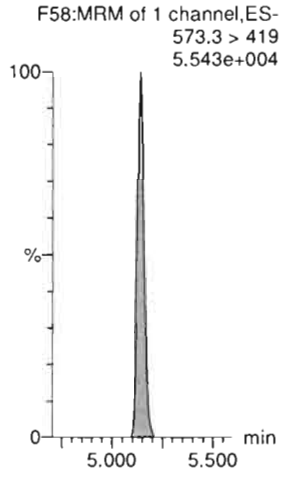




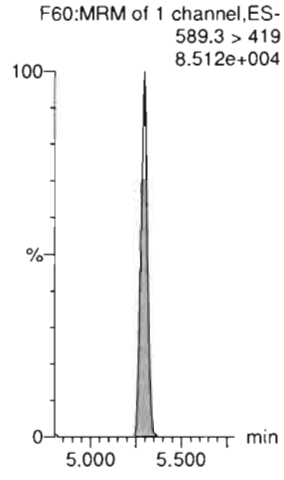
13C8-PFOS-EIS



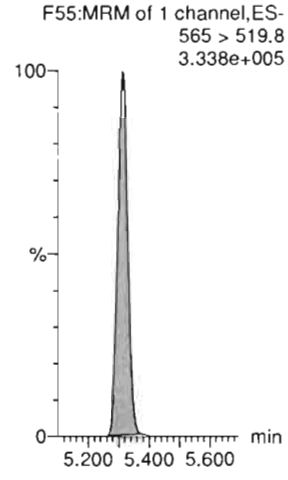
d3-N-MeFOSAA-EIS



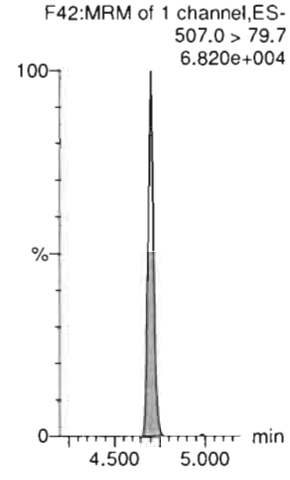
d5-N-EtFOSAA-EIS



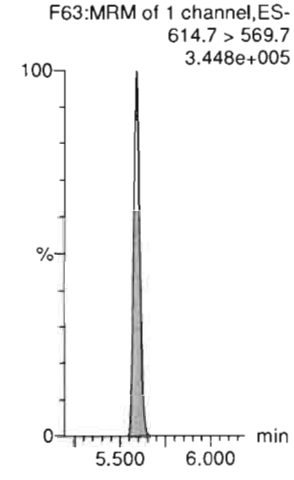
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

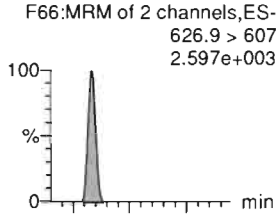


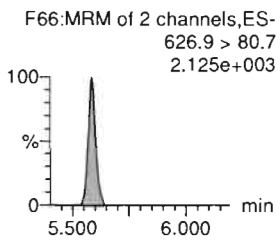
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

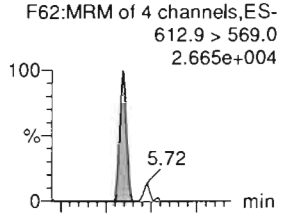
Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

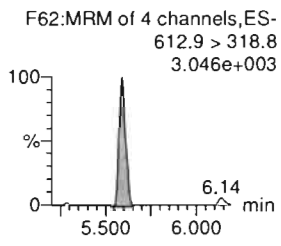
10:2 FTS



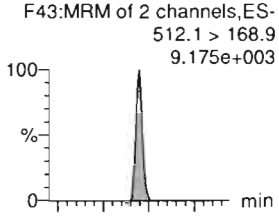


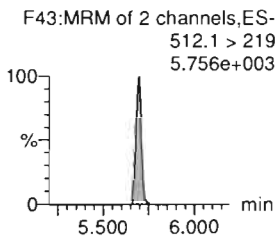
PFDoA



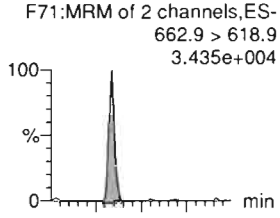


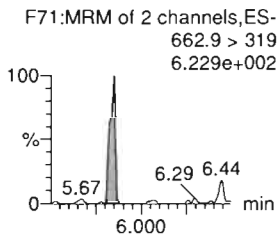
N-MeFOSA



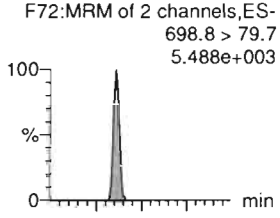


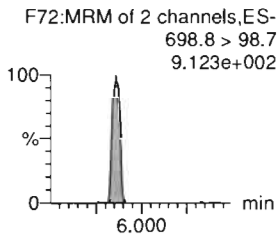
PFTrDA



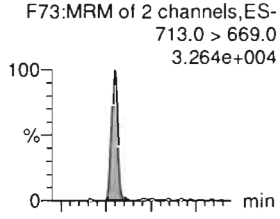


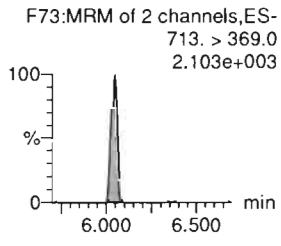
PFDoS



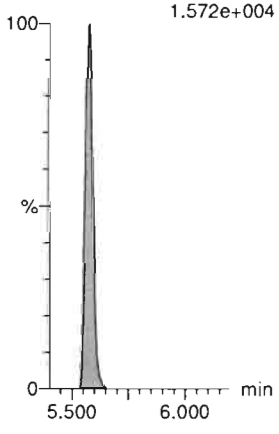


PFTeDA

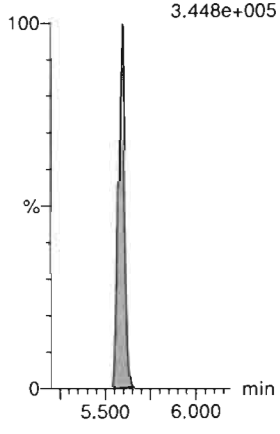




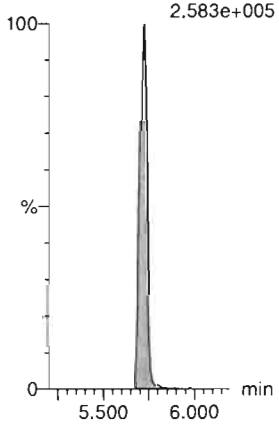
13C2-10:2 FTS-EIS



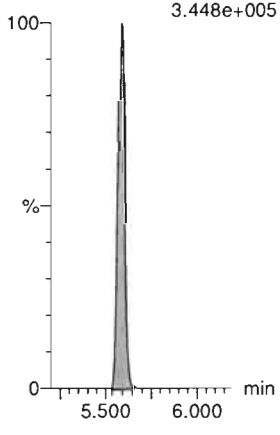
13C2-PFDoA-EIS



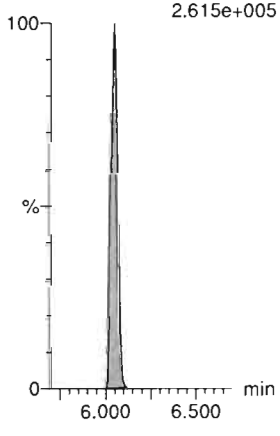
d3-N-MeFOSA-EIS



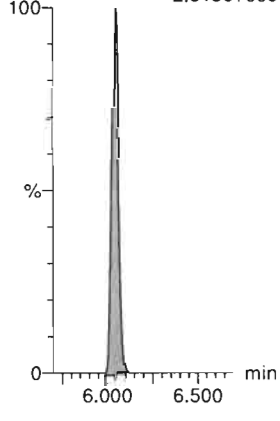
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

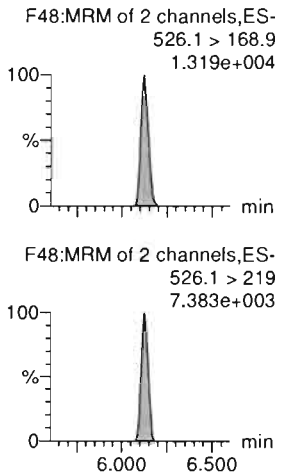


Dataset: Untitled

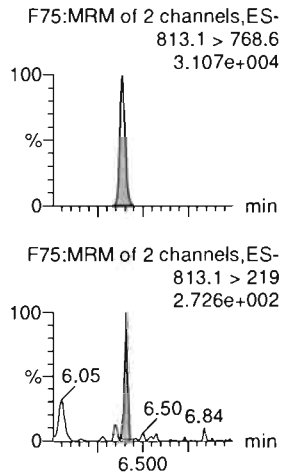
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

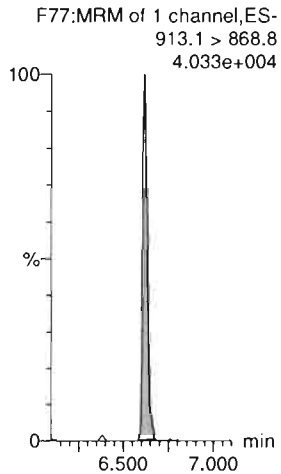
N-EtFOSA



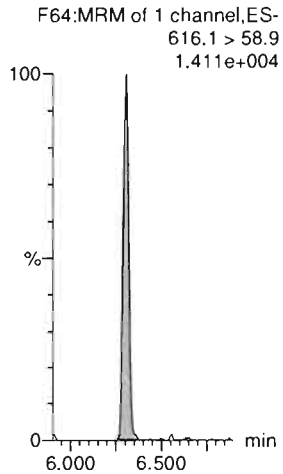
PFHxDA



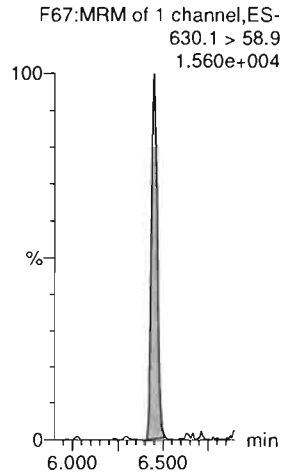
PFODA



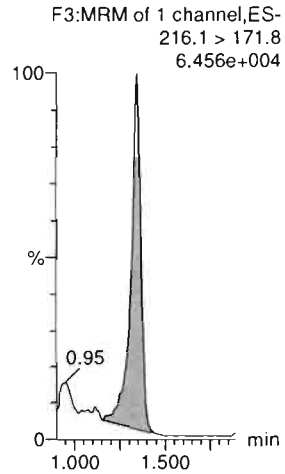
N-MeFOSE



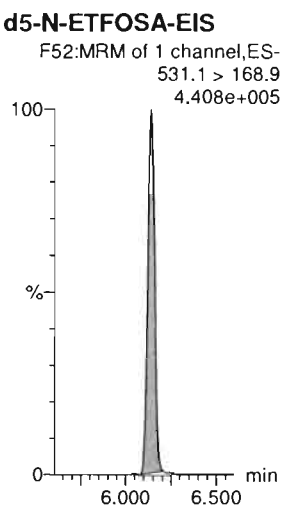
N-EtFOSE



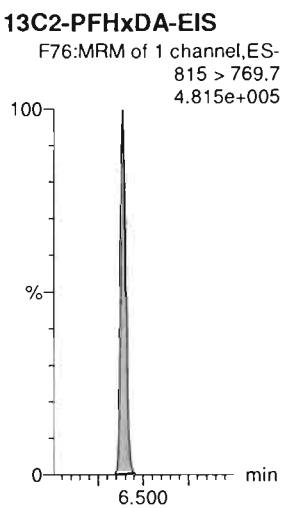
13C3-PFBA-RSD



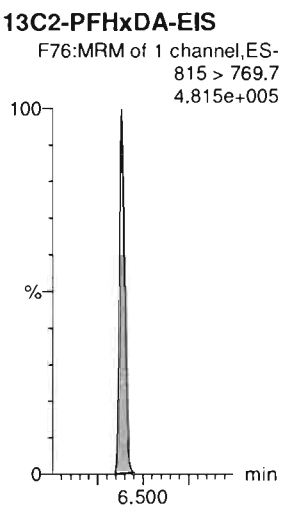
d5-N-ETFOSA-EIS



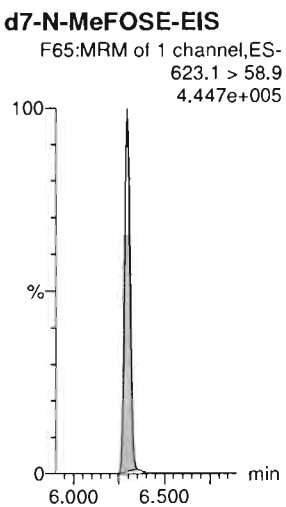
13C2-PFHxDA-EIS



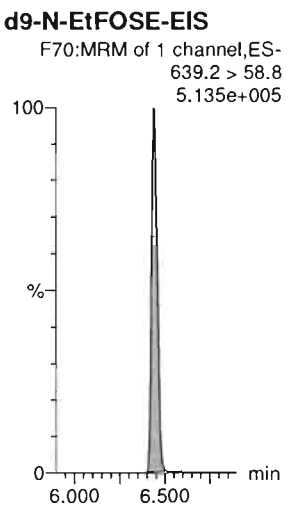
13C2-PFHxDA-EIS



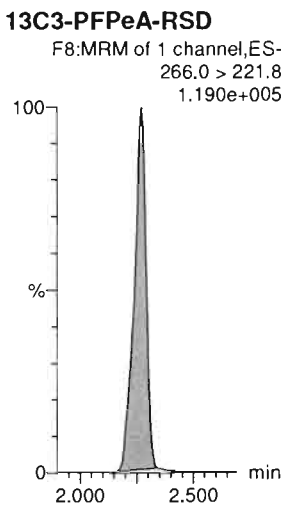
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

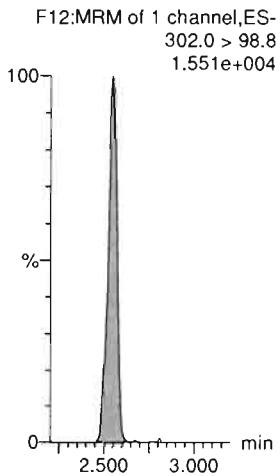


Dataset: Untitled

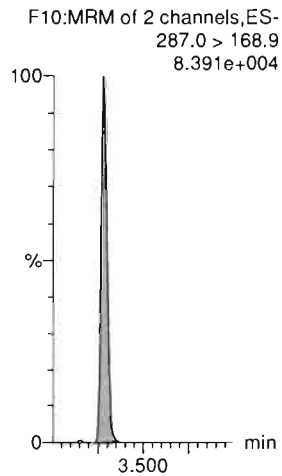
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

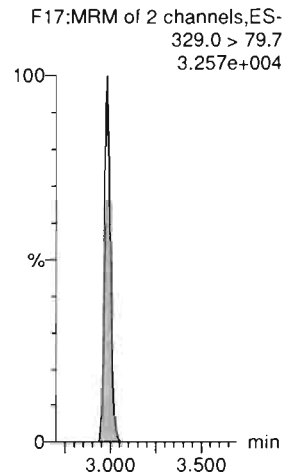
13C3-PFBS-RSD



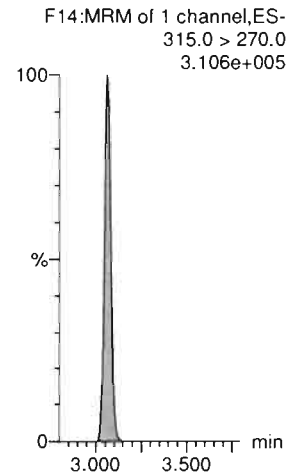
13C3-HFPO-DA-RSD



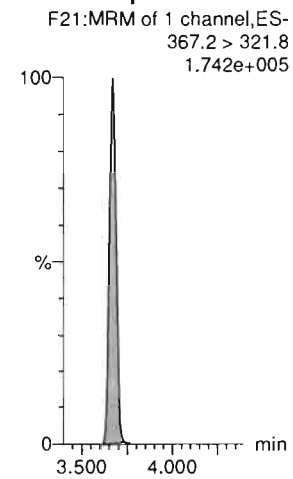
13C2-4:2 FTS-RSD



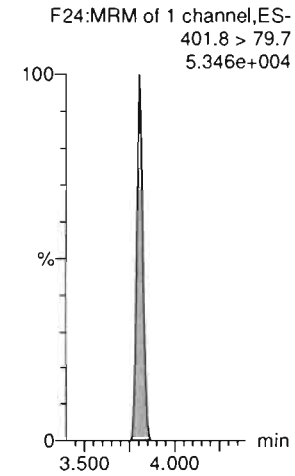
13C2-PFHxA-RSD



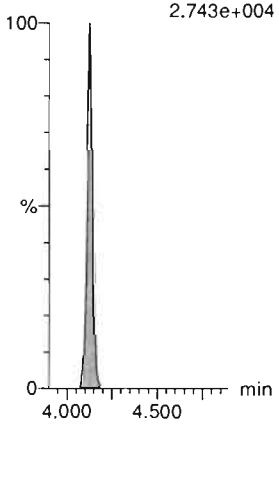
13C4-PFHpA-RSD



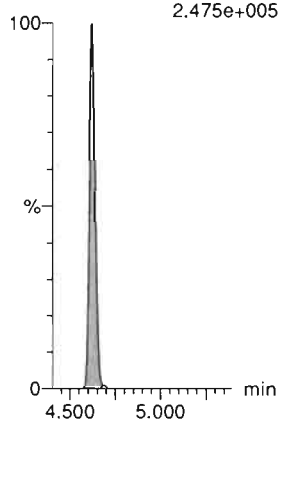
13C3-PFHxS-RSD



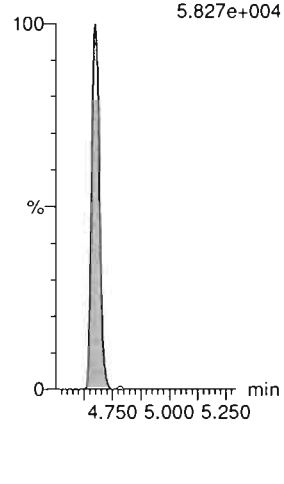
13C2-6:2 FTS-RSD



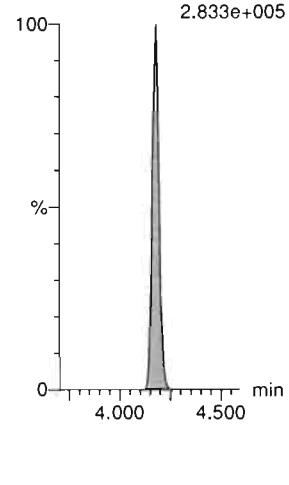
13C5-PFNA-RSD



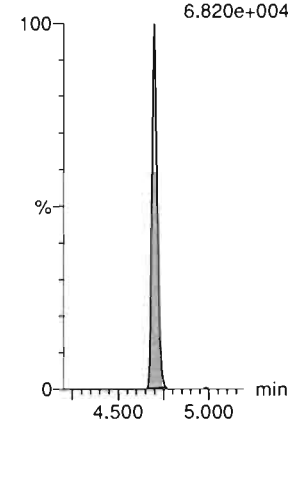
13C8-PFOSA-RSD



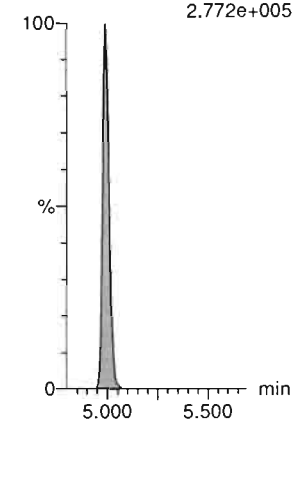
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD

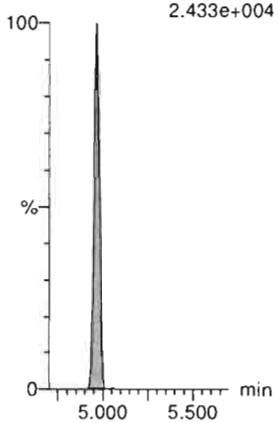


Dataset: Untitled

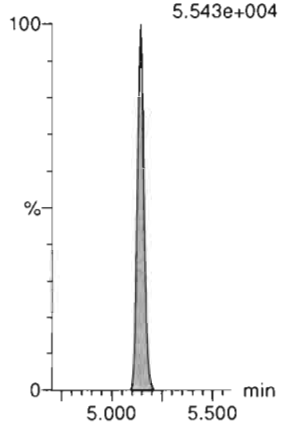
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

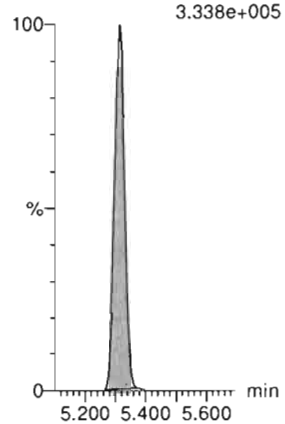
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.433e+004



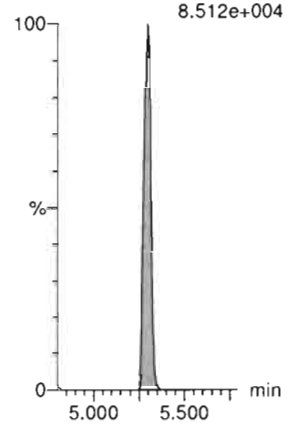
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
5.543e+004



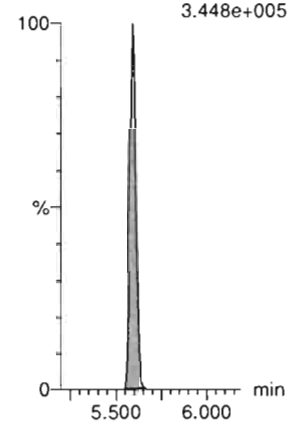
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.338e+005



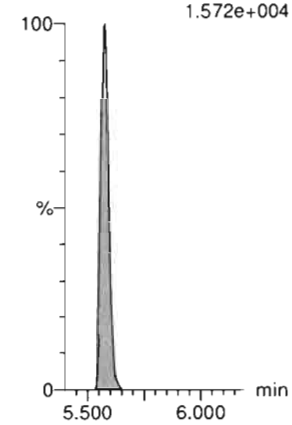
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.512e+004



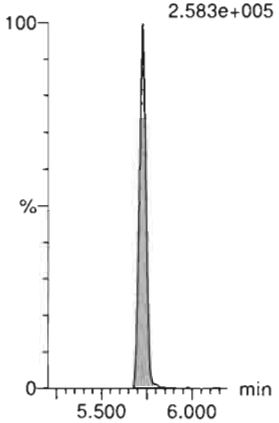
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.448e+005



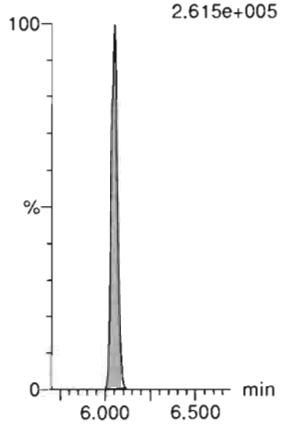
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.572e+004



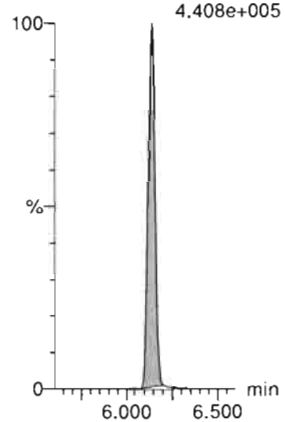
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.583e+005



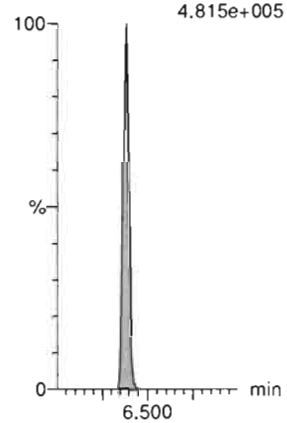
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.615e+005



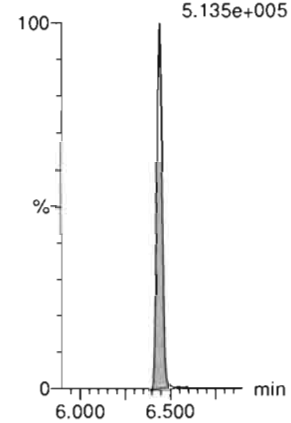
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.408e+005



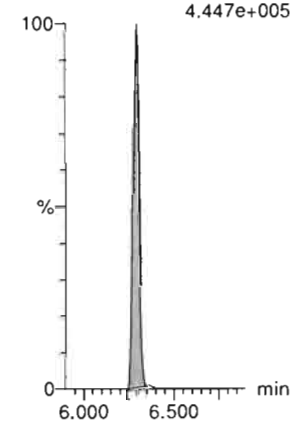
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
4.815e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.135e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.447e+005

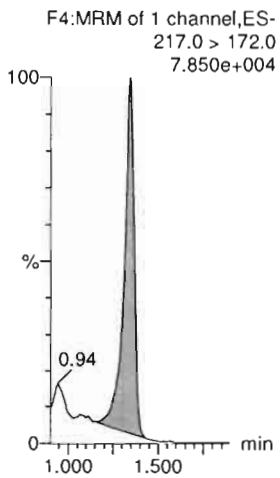


Dataset: Untitled

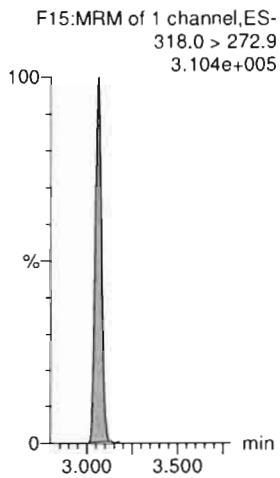
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-5, Date: 03-Mar-2020, Time: 17:26:12, ID: ST200303P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

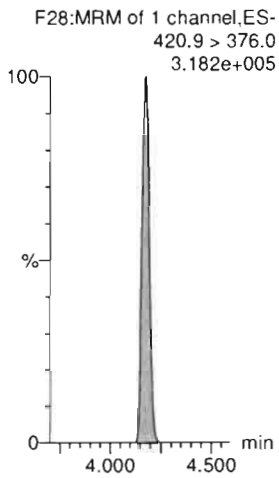
13C4-PFBA



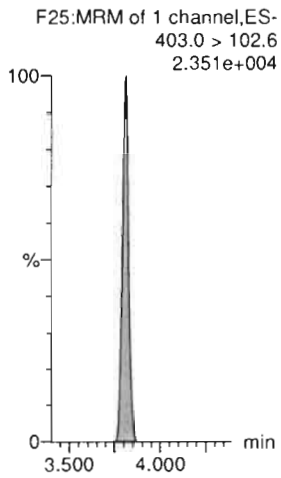
13C5-PFHxA



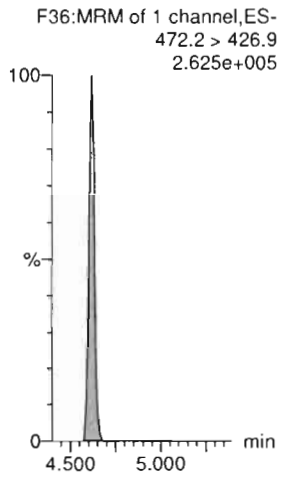
13C8-PFOA



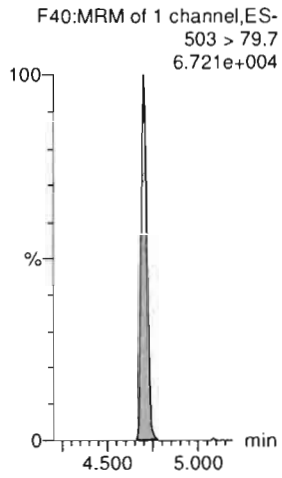
18O2-PFHxS



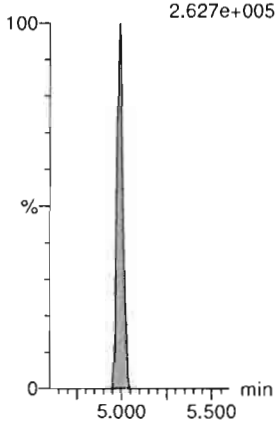
13C9-PFNA



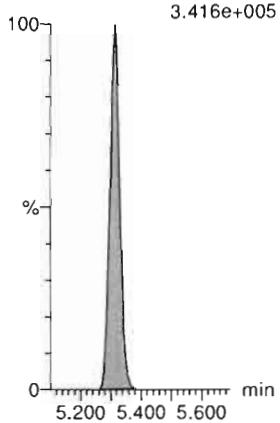
13C4-PFOS



13C6-PFDA



13C7-PFUdA

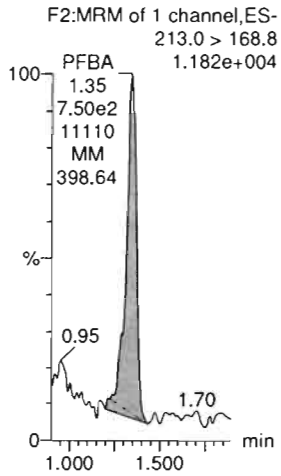


Dataset: Untitled

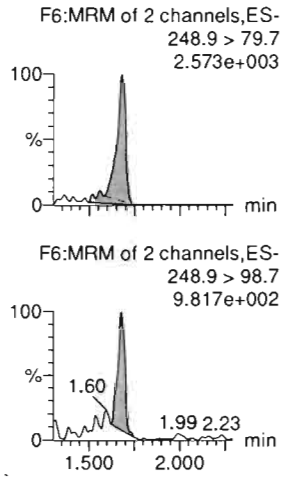
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

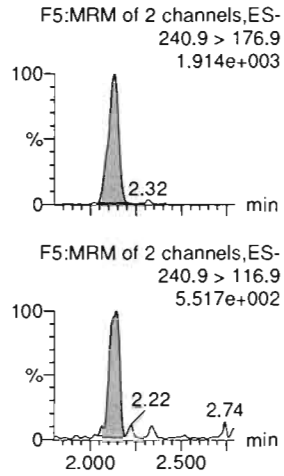
PFBA



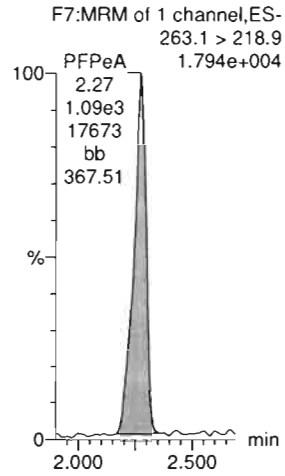
PFPrS



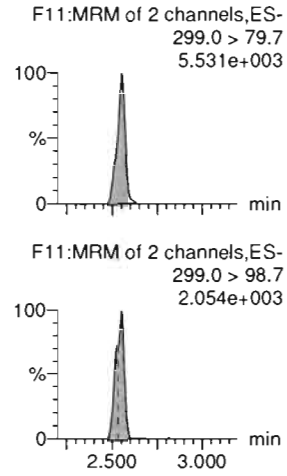
3:3 FTCA



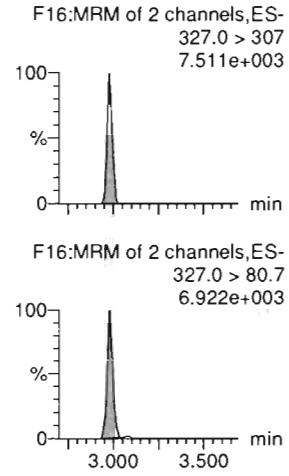
PFPeA



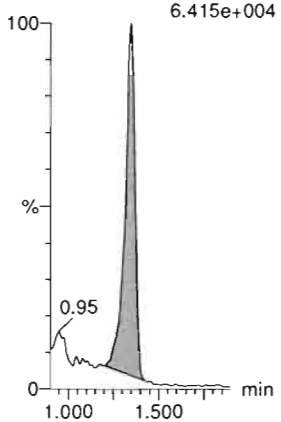
PFBS



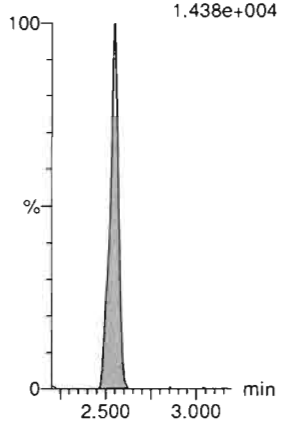
4:2 FTS



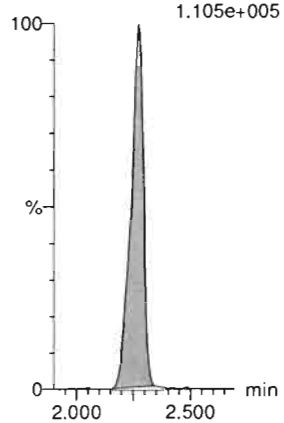
13C3-PFBA-EIS



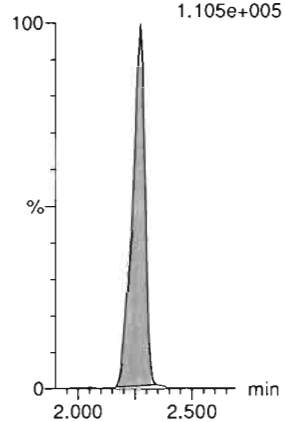
13C3-PFBS-EIS



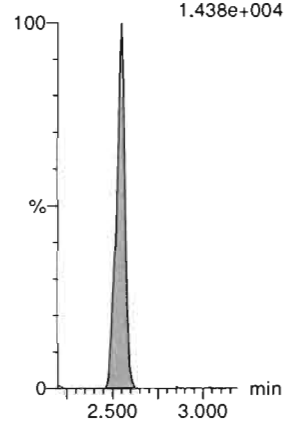
13C3-PFPeA-EIS



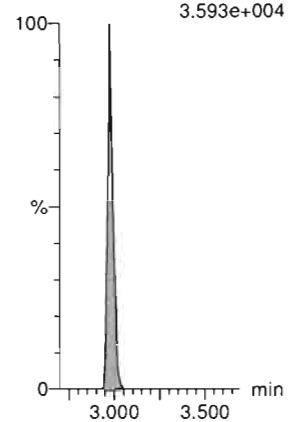
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

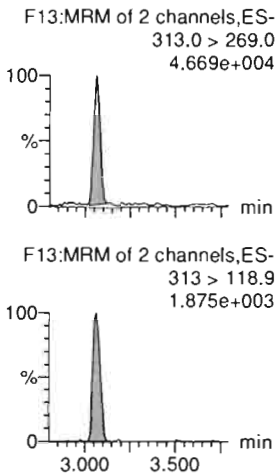


Dataset: Untitled

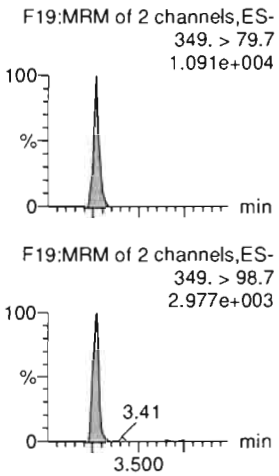
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

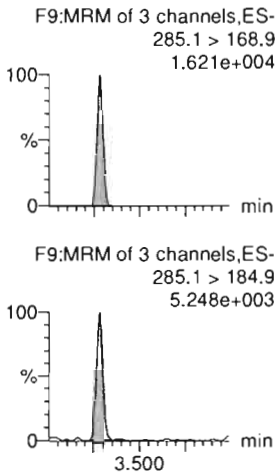
PFHxA



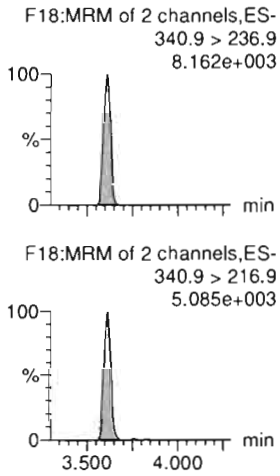
PFPeS



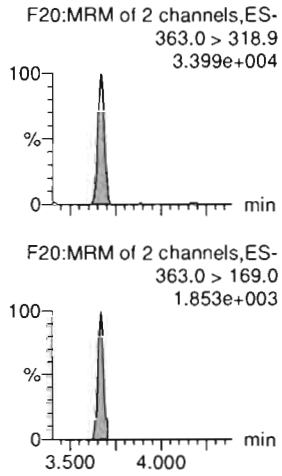
HFPO-DA



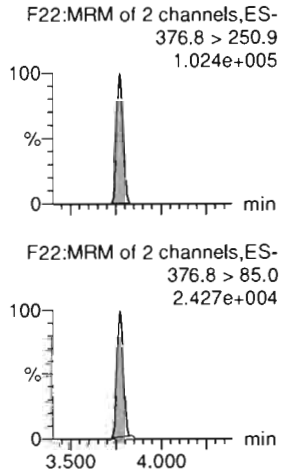
5:3 FTCA



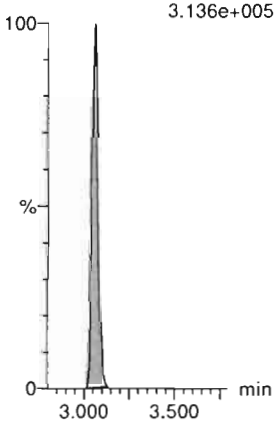
PFHpA



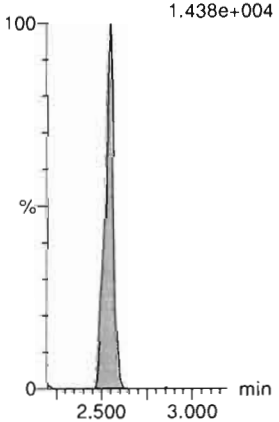
ADONA



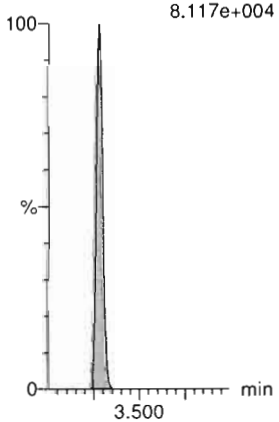
13C2-PFHxA-EIS



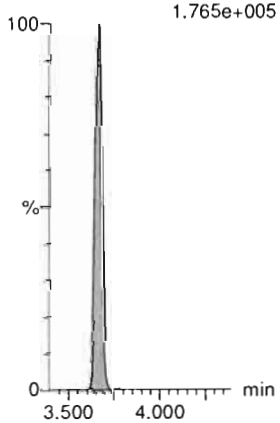
13C3-PFBS-EIS



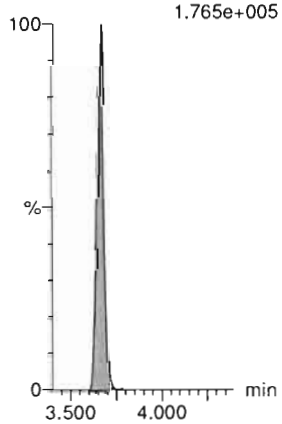
13C3-HFPO-DA-EIS



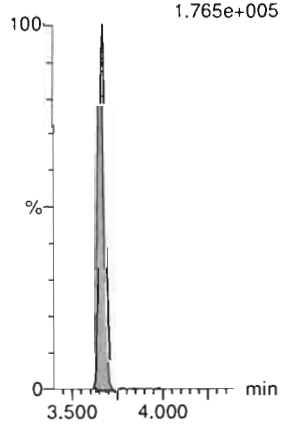
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

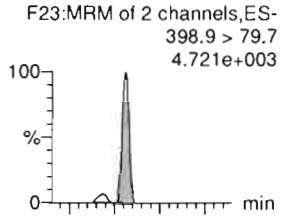


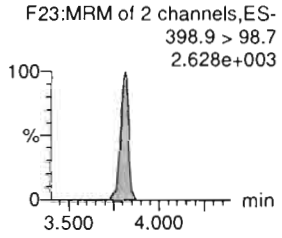
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

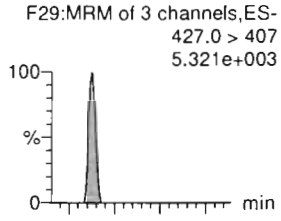
Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

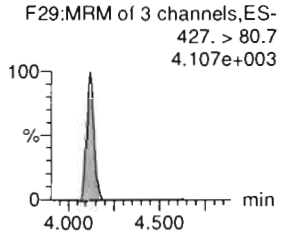
L-PFHxS



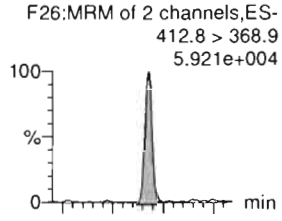


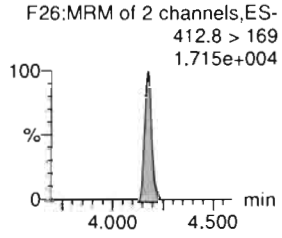
6:2 FTS



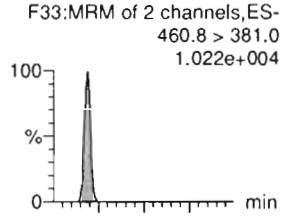


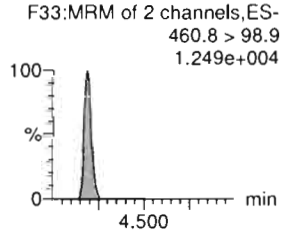
L-PFOA



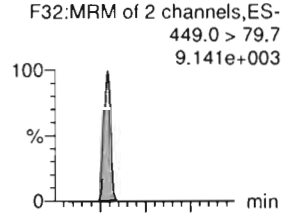


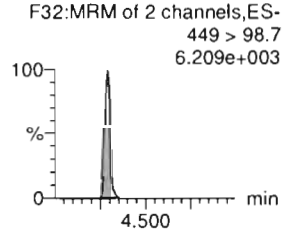
PFEChS



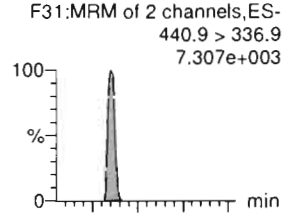


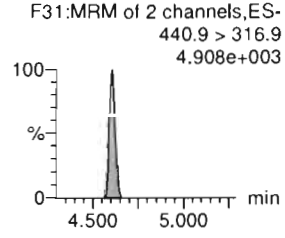
PFHpS



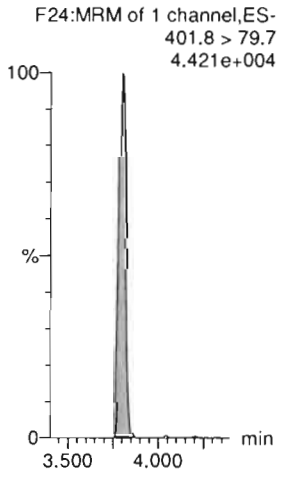


7:3 FTCA

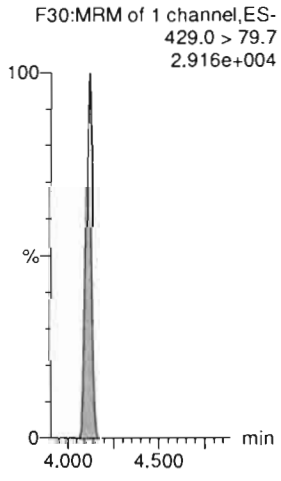




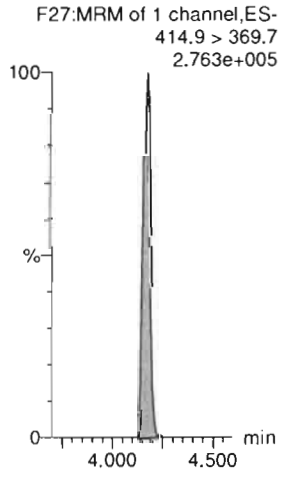
13C3-PFHxS-EIS



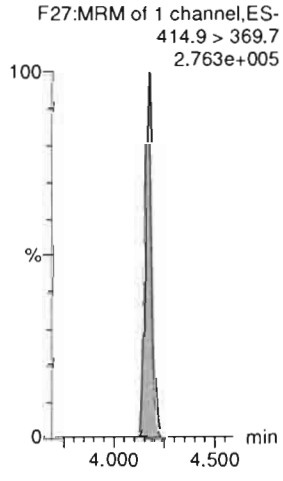
13C2-6:2 FTS-EIS



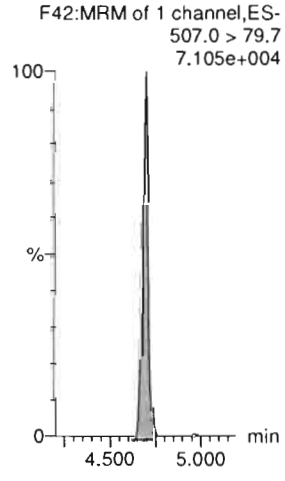
13C2-PFOA-EIS



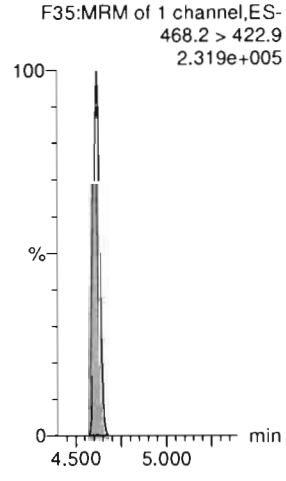
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

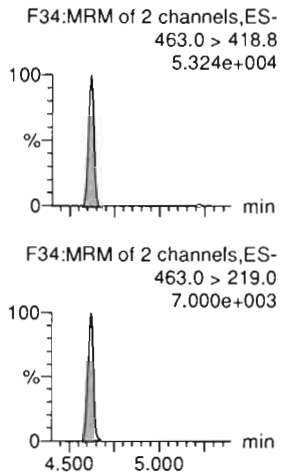


Dataset: Untitled

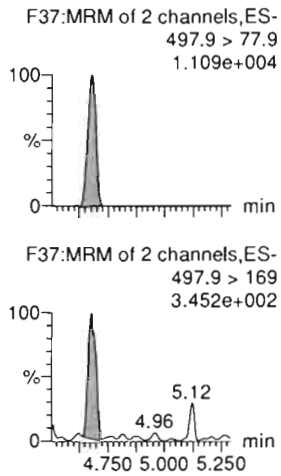
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

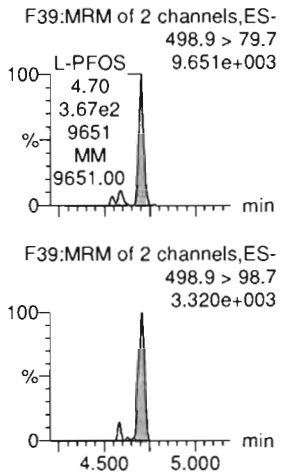
PFNA



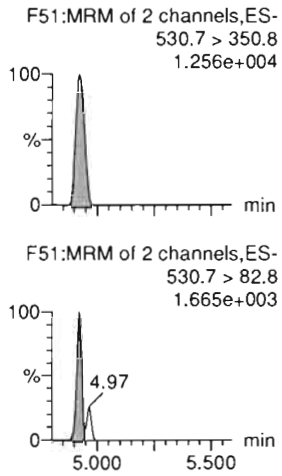
PFOSA



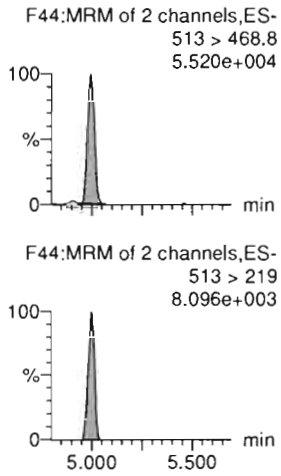
L-PFOS



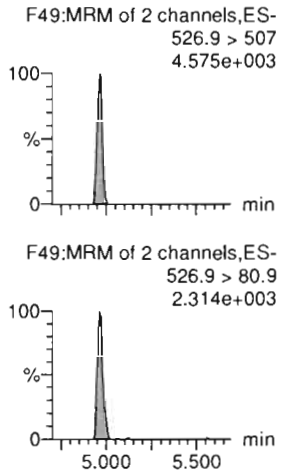
9Cl-PF30NS



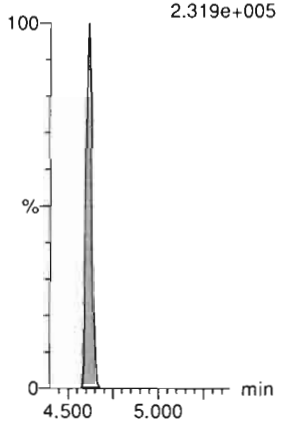
PFDA



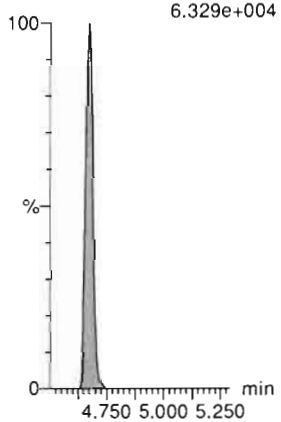
8:2 FTS



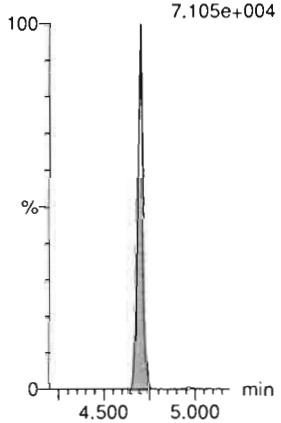
13C5-PFNA-EIS



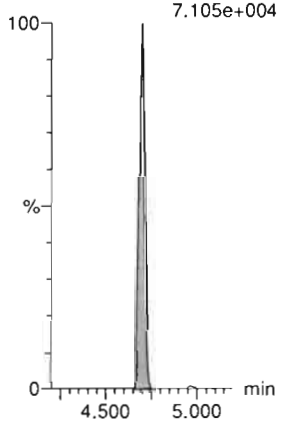
13C8-PFOSA-EIS



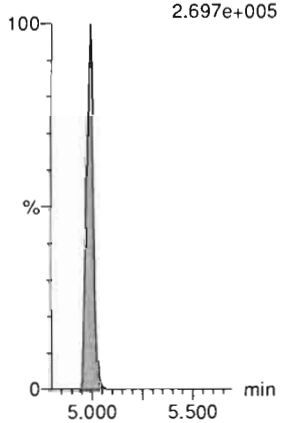
13C8-PFOS-EIS



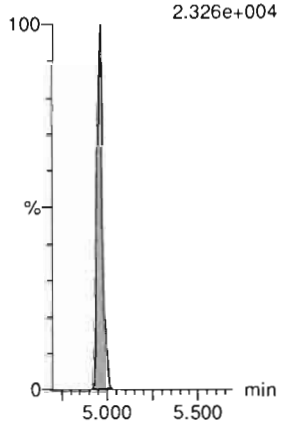
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

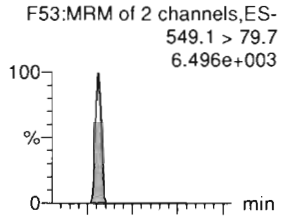


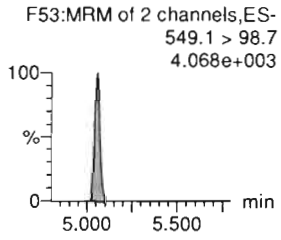
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

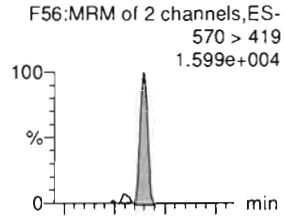
Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

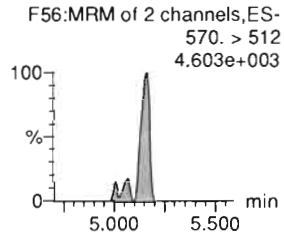
PFNS



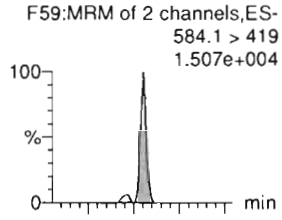


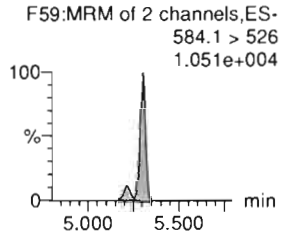
L-MeFOSAA



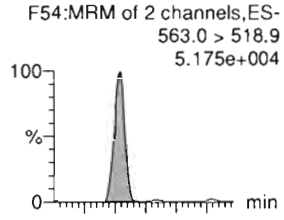


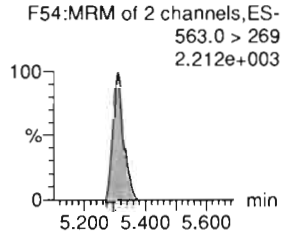
L-EtFOSAA



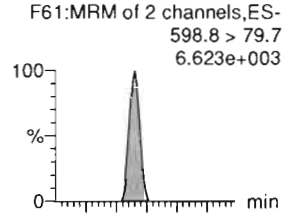


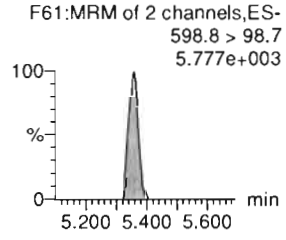
PFUdA



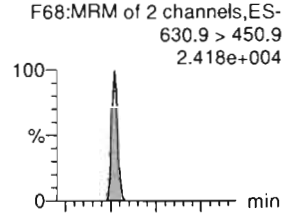


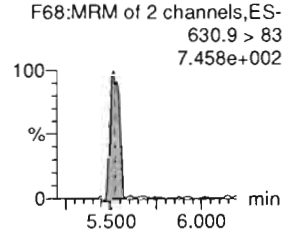
PFDS



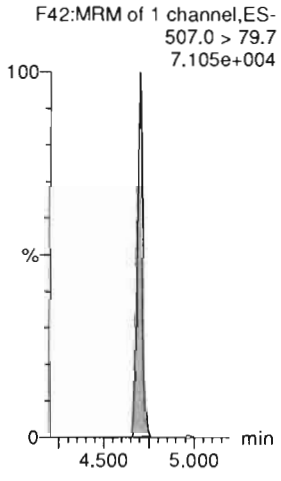


11Cl-PF30UdS

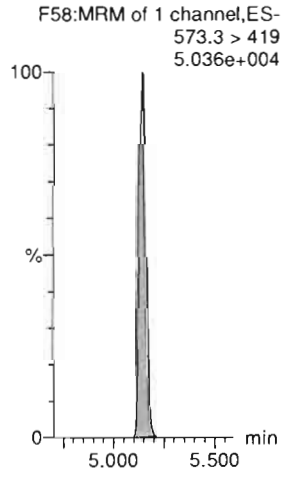




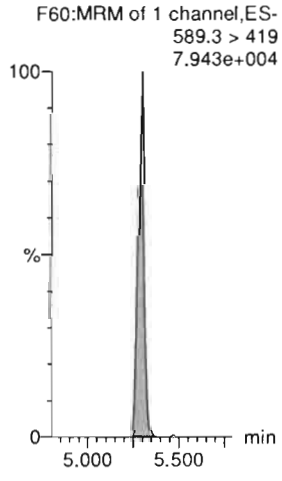
13C8-PFOS-EIS



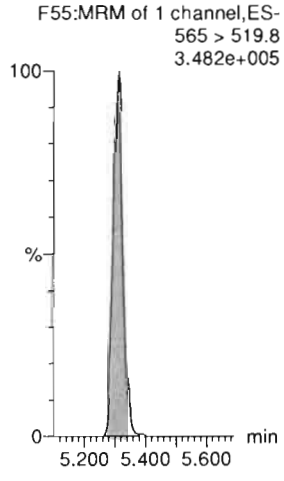
d3-N-MeFOSAA-EIS



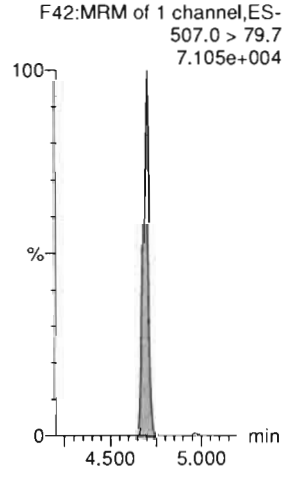
d5-N-EtFOSAA-EIS



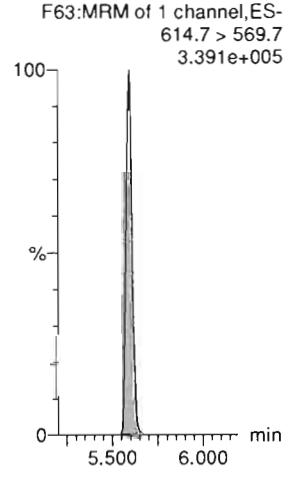
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

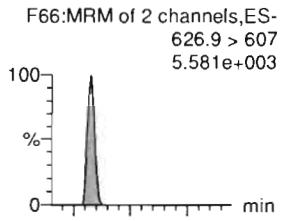


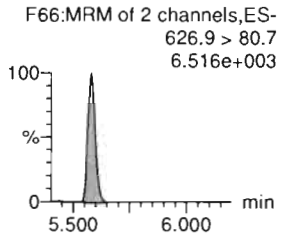
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

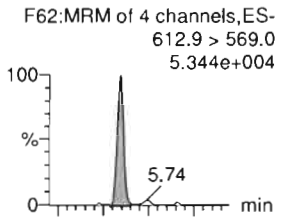
Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

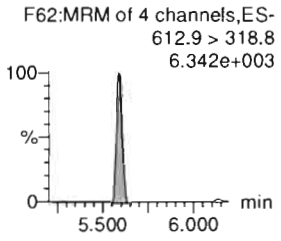
10:2 FTS



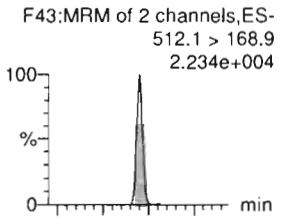


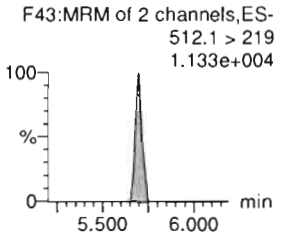
PFDoA



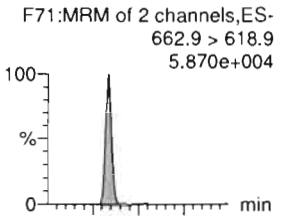


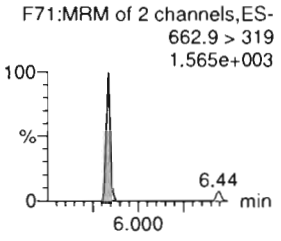
N-MeFOSA



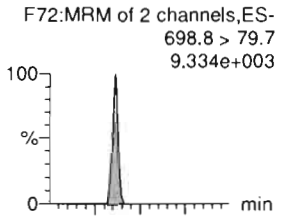


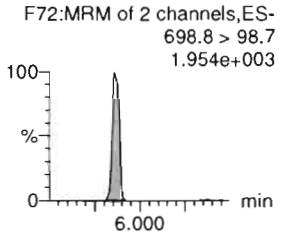
PFTrDA



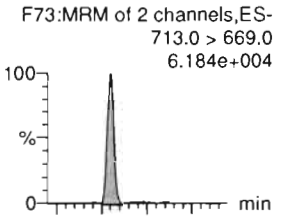


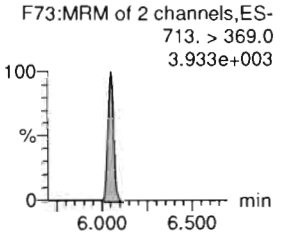
PFDoS



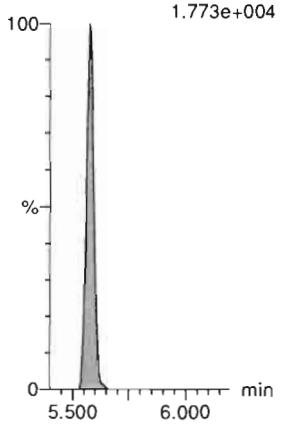


PFTeDA

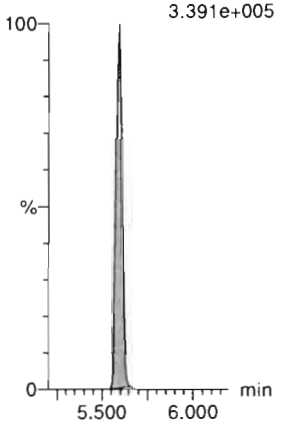




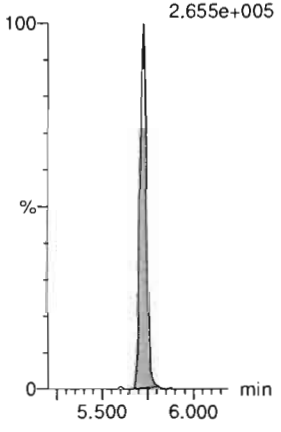
13C2-10:2 FTS-EIS



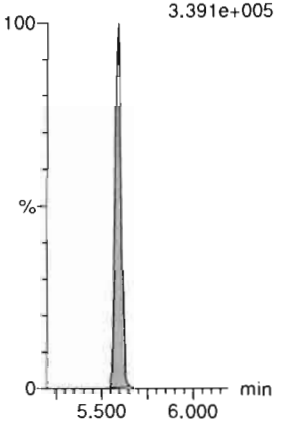
13C2-PFDoA-EIS



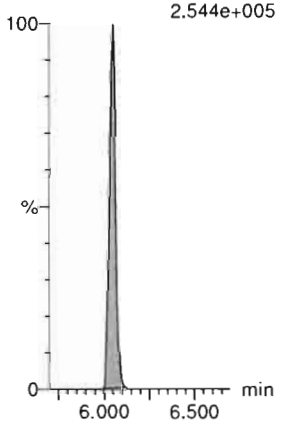
d3-N-MeFOSA-EIS



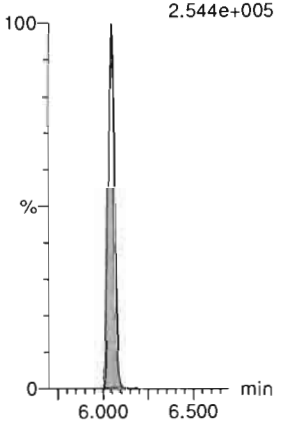
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

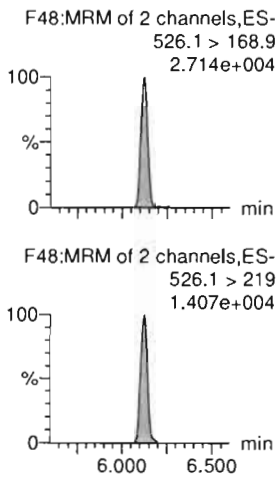


Dataset: Untitled

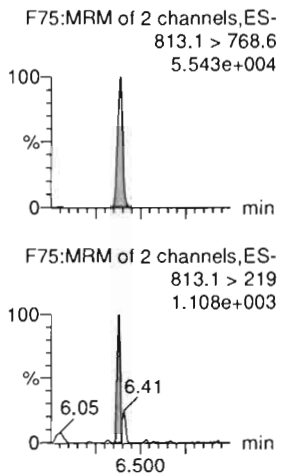
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

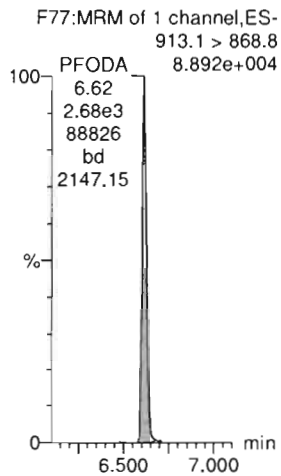
N-EtFOSA



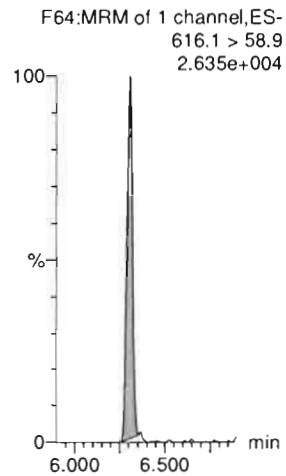
PFHxDA



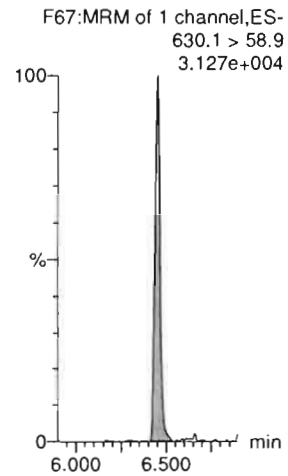
PFODA



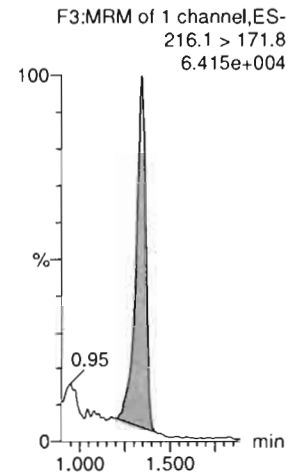
N-MeFOSE



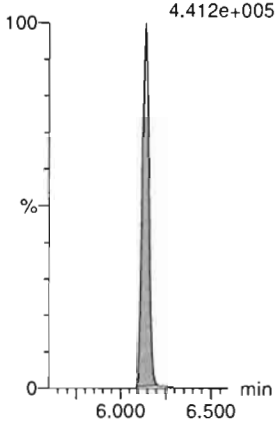
N-EtFOSE



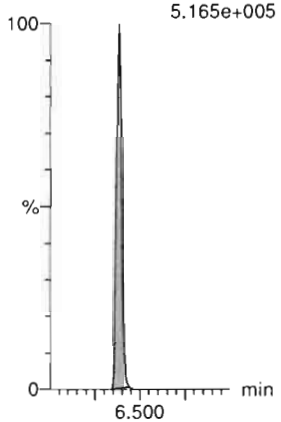
13C3-PFBA-RSD



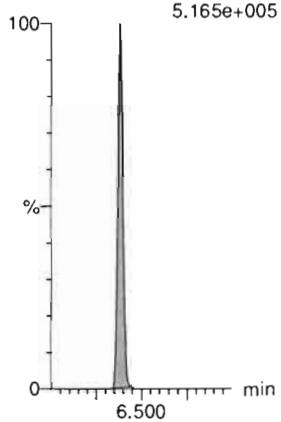
d5-N-ETFOSA-EIS



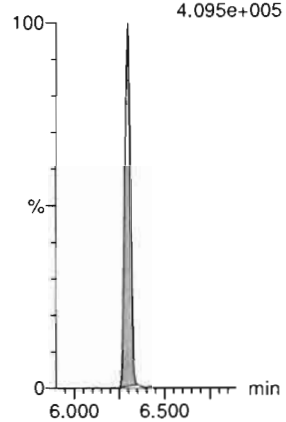
13C2-PFHxDA-EIS



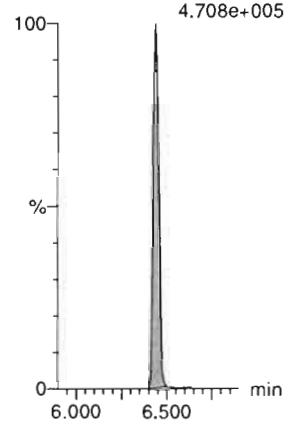
13C2-PFHxDA-EIS



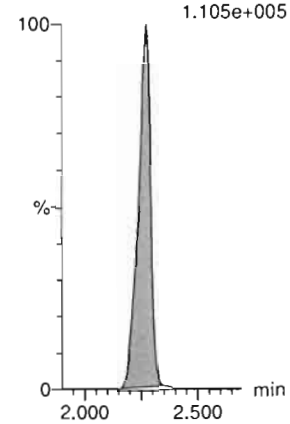
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

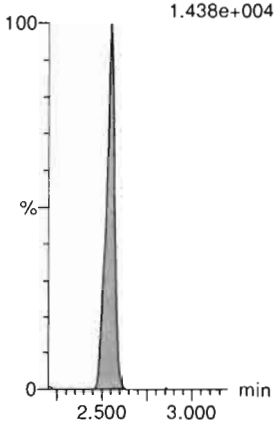


Dataset: Untitled

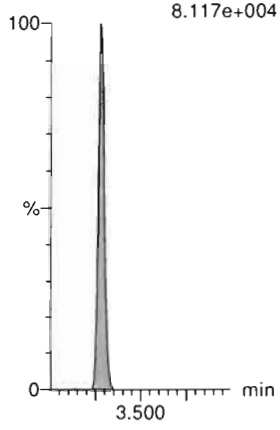
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

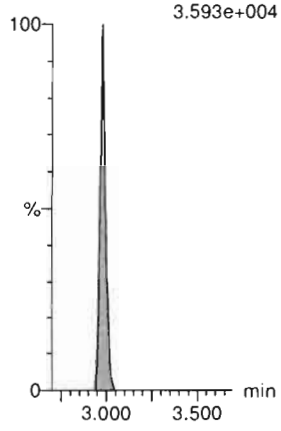
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.438e+004



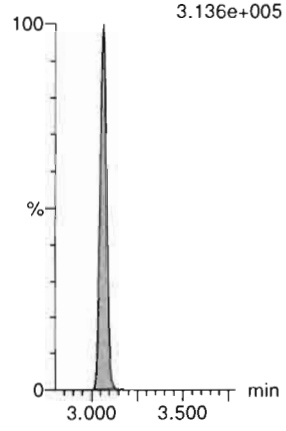
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.117e+004



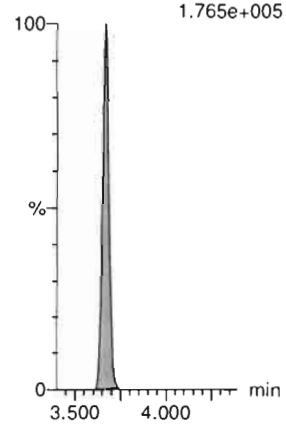
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.593e+004



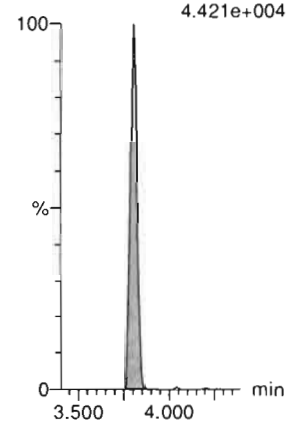
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.136e+005



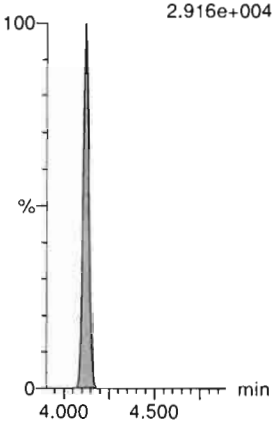
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.765e+005



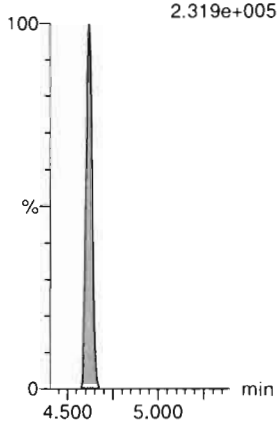
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
4.421e+004



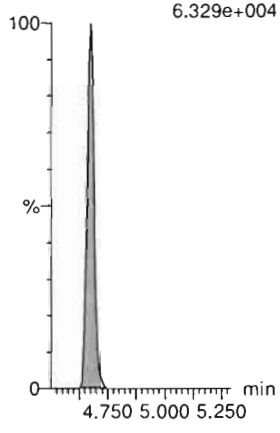
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.916e+004



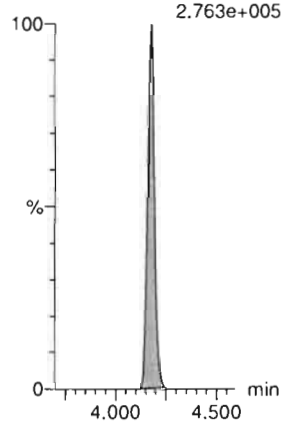
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.319e+005



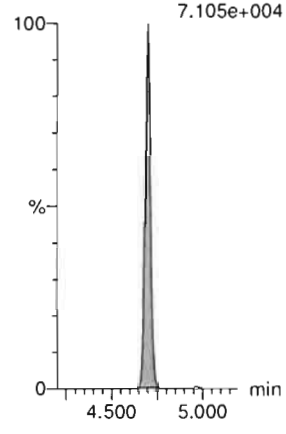
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
6.329e+004



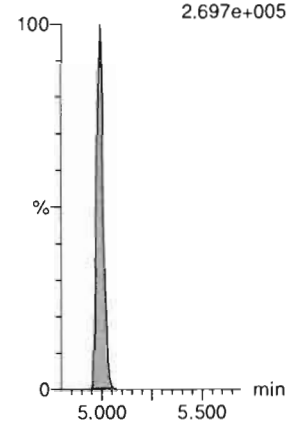
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.763e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
7.105e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.697e+005

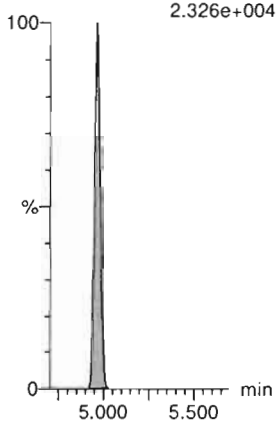


Dataset: Untitled

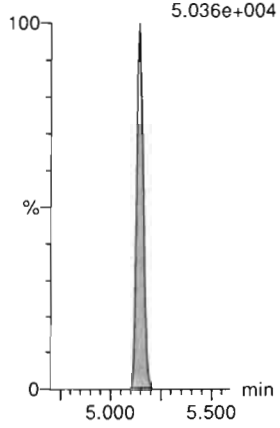
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

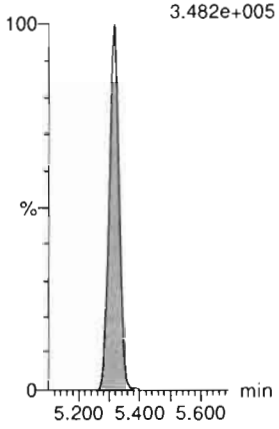
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.326e+004



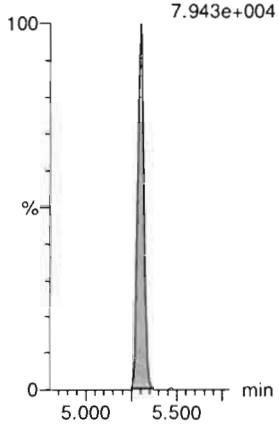
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
5.036e+004



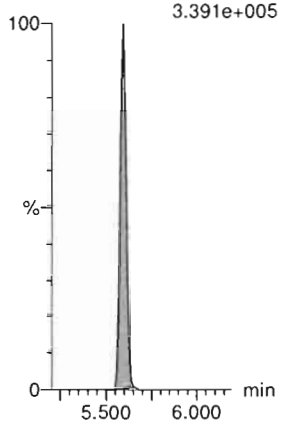
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.482e+005



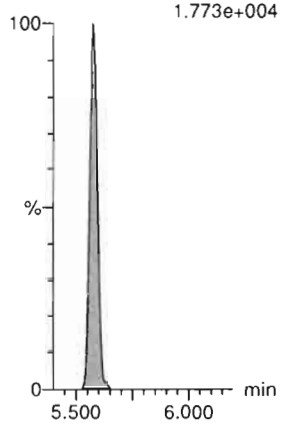
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
7.943e+004



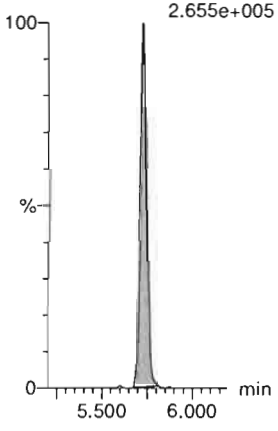
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.391e+005



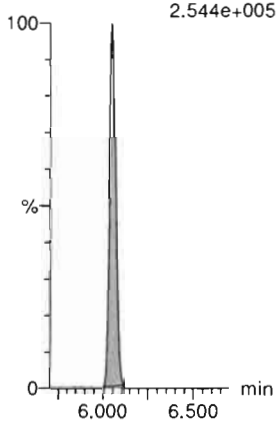
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.773e+004



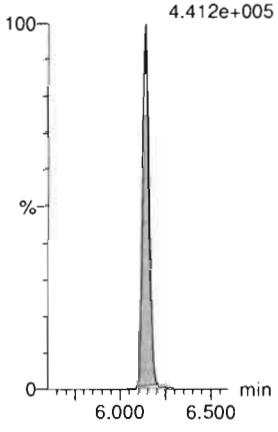
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.655e+005



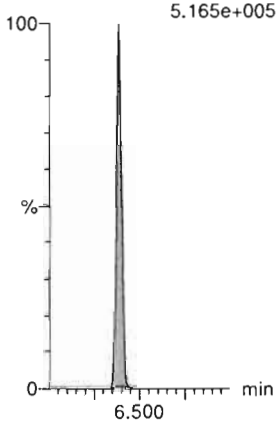
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.544e+005



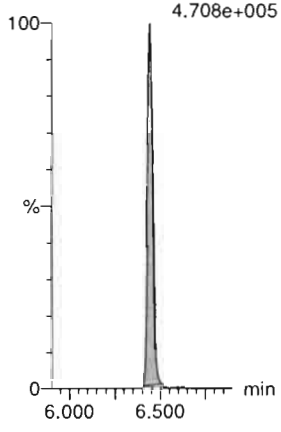
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.412e+005



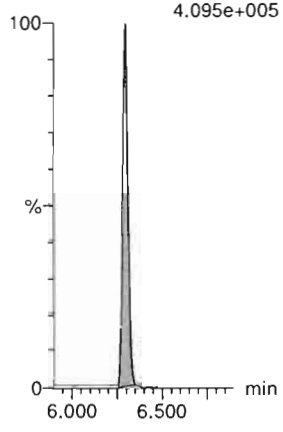
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.165e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
4.708e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.095e+005

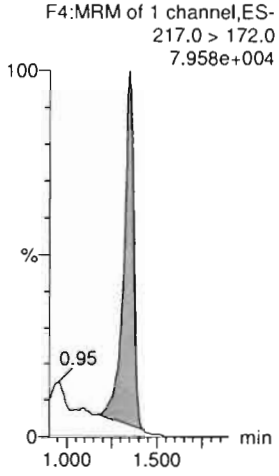


Dataset: Untitled

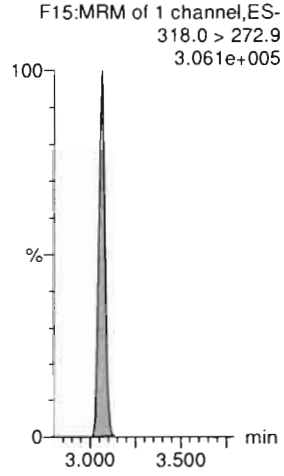
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-6, Date: 03-Mar-2020, Time: 17:36:41, ID: ST200303P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

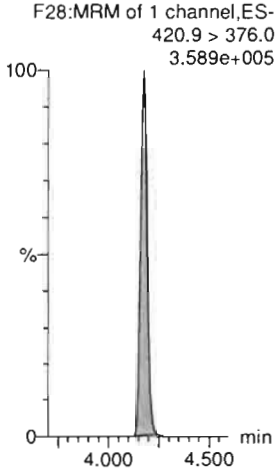
13C4-PFBA



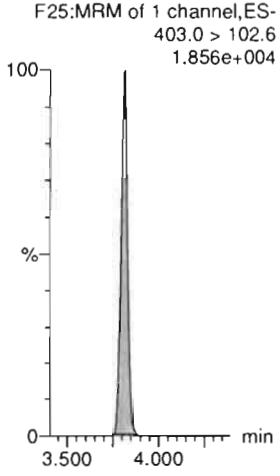
13C5-PFHxA



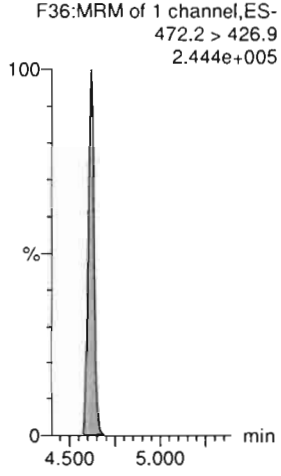
13C8-PFOA



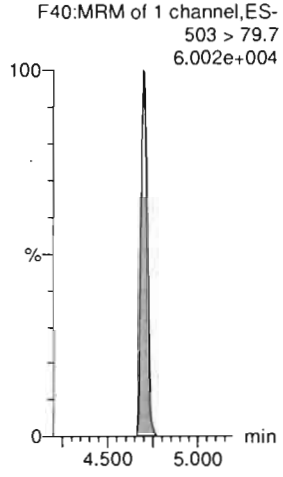
18O2-PFHxS



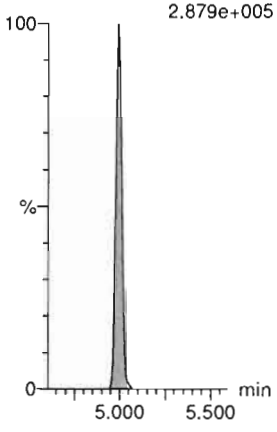
13C9-PFNA



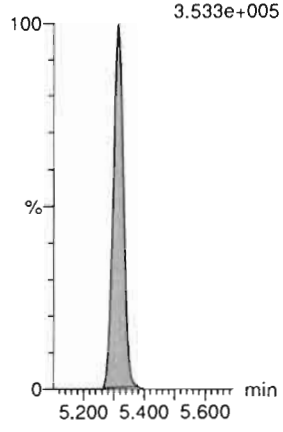
13C4-PFOS



13C6-PFDA



13C7-PFUdA

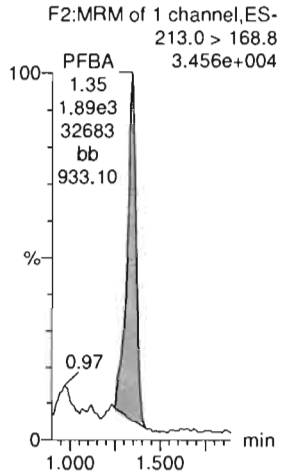


Dataset: Untitled

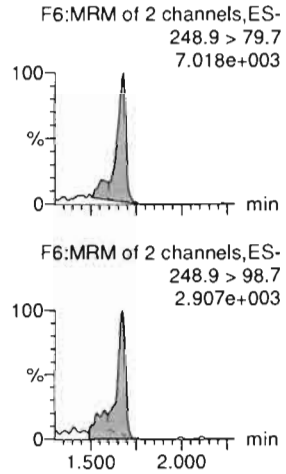
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

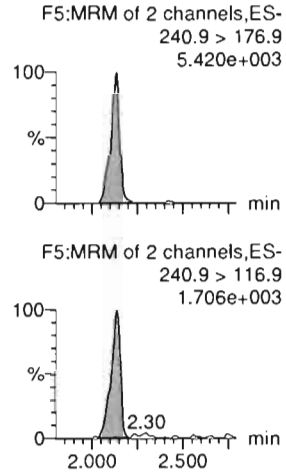
PFBA



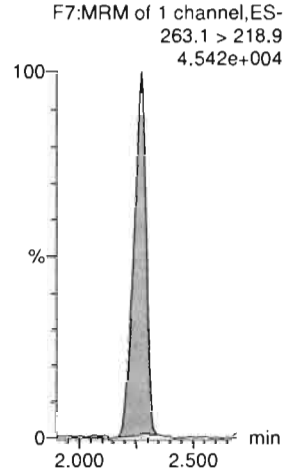
PFPrS



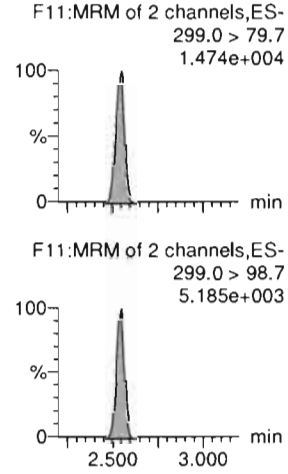
3:3 FTCA



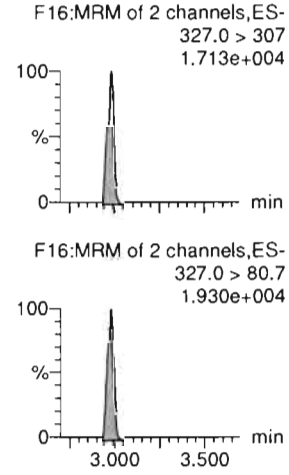
PFPeA



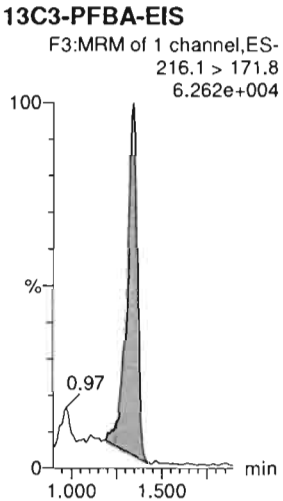
PFBS



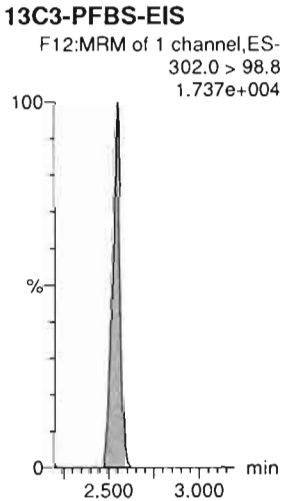
4:2 FTS



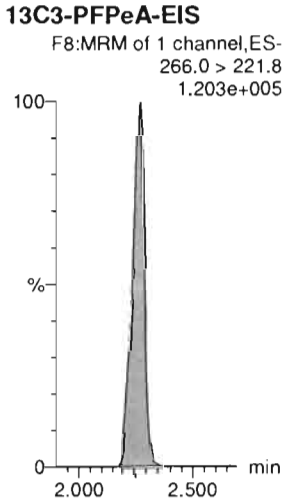
13C3-PFBA-EIS



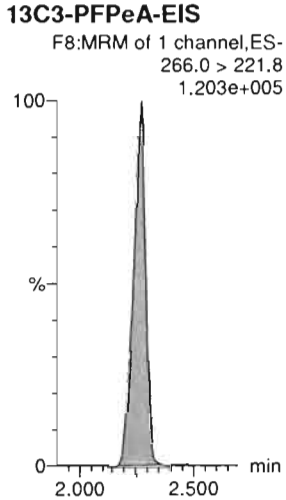
13C3-PFBS-EIS



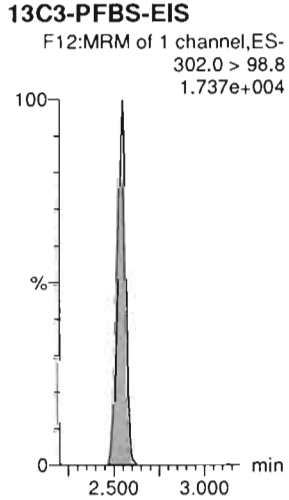
13C3-PFPeA-EIS



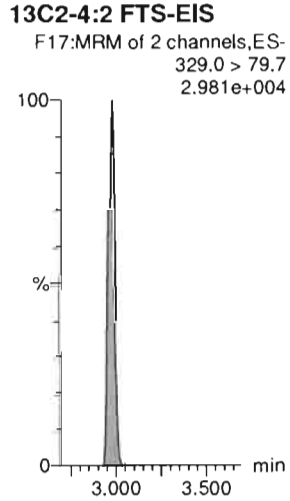
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

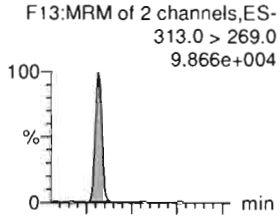


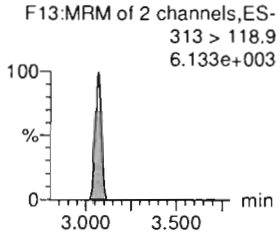
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

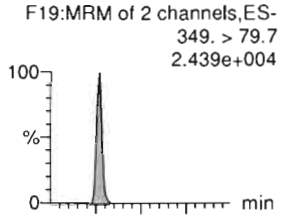
Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

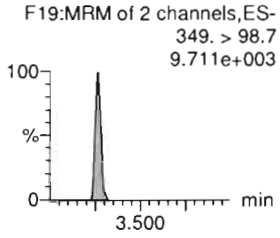
PFHxA



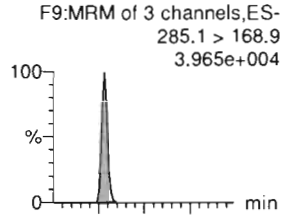


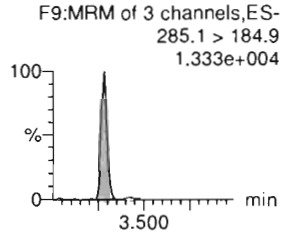
PFPeS



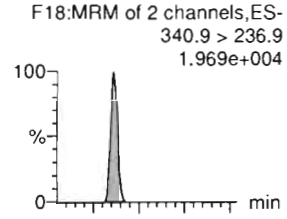


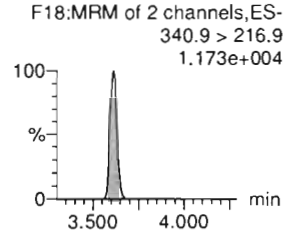
HFPO-DA



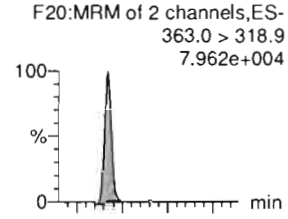


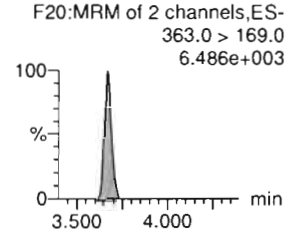
5:3 FTCA



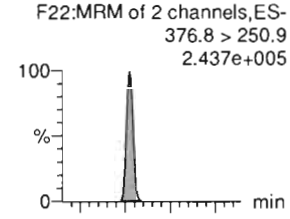


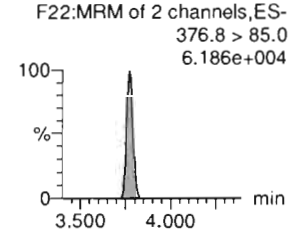
PFHpA



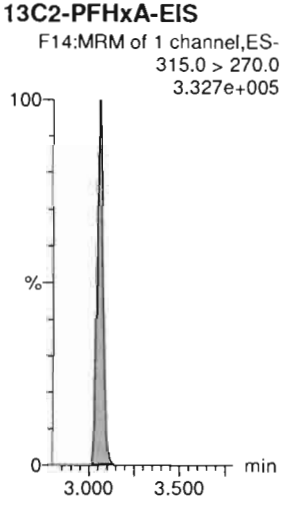


ADONA

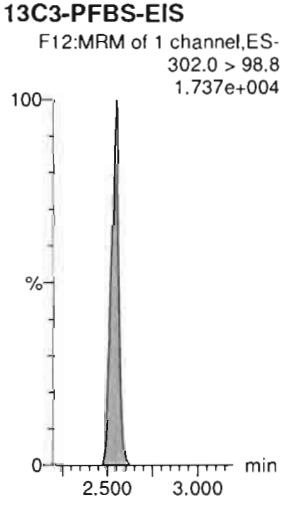




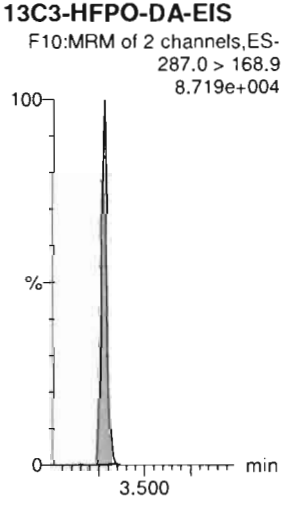
13C2-PFHxA-EIS



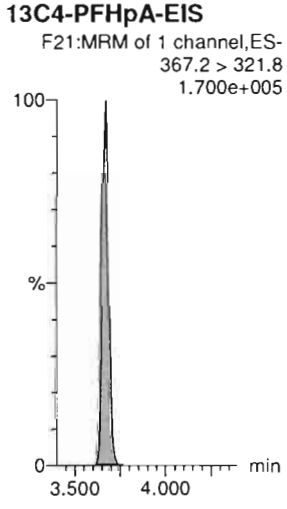
13C3-PFBS-EIS



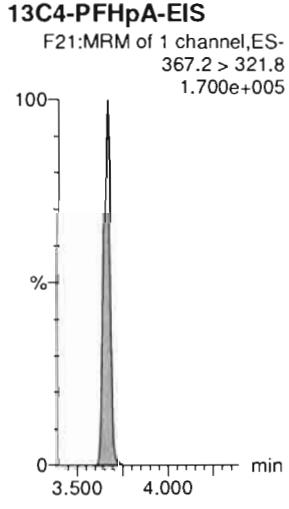
13C3-HFPO-DA-EIS



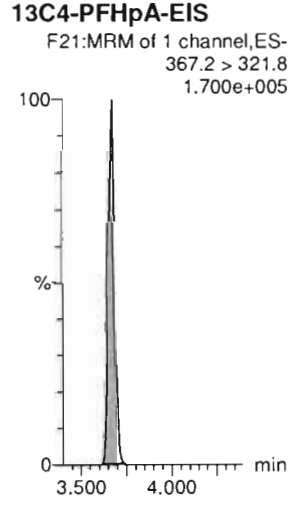
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

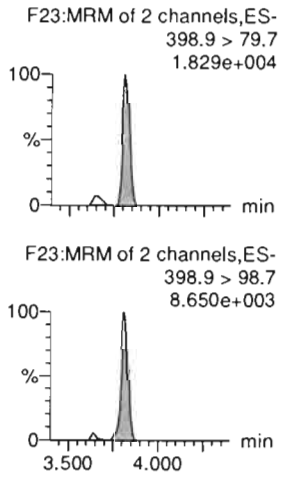


Dataset: Untitled

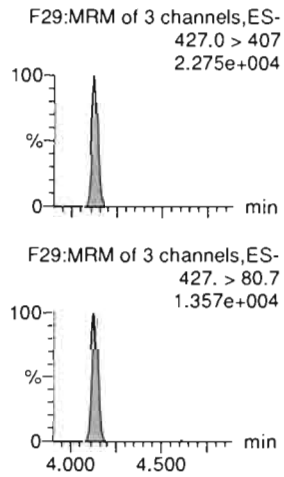
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

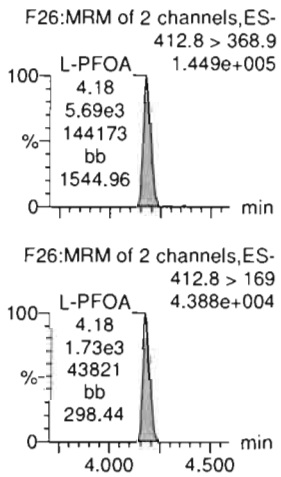
L-PFHxS



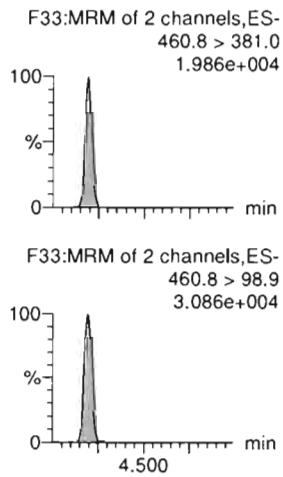
6:2 FTS



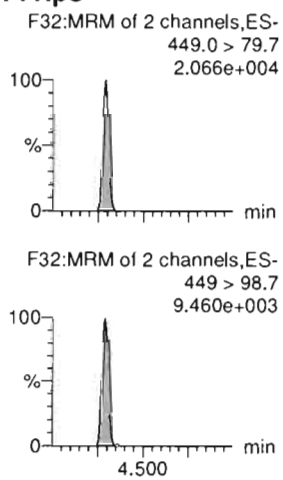
L-PFOA



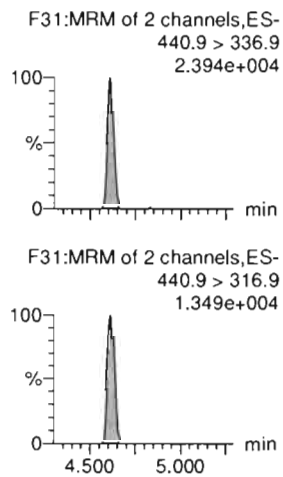
PFEChS



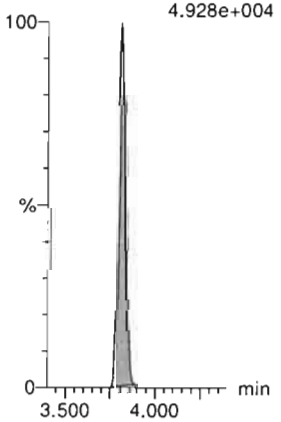
PFHpS



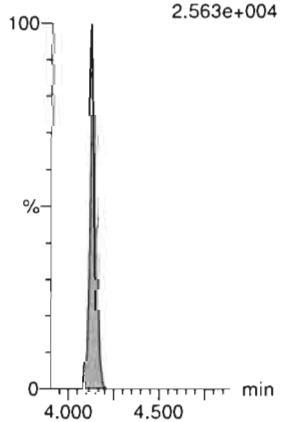
7:3 FTCA



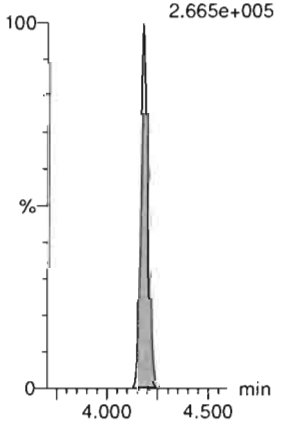
13C3-PFHxS-EIS



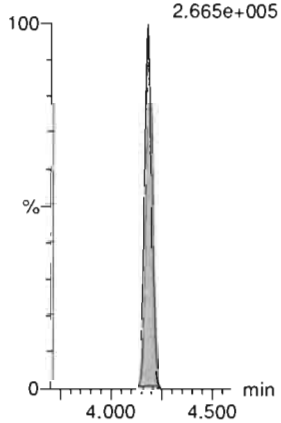
13C2-6:2 FTS-EIS



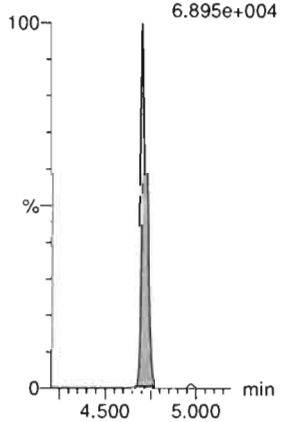
13C2-PFOA-EIS



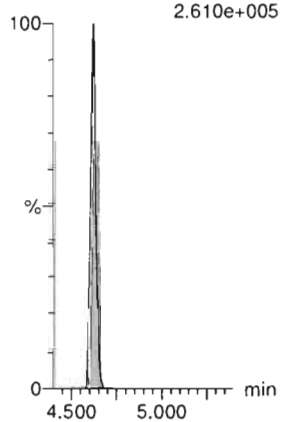
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

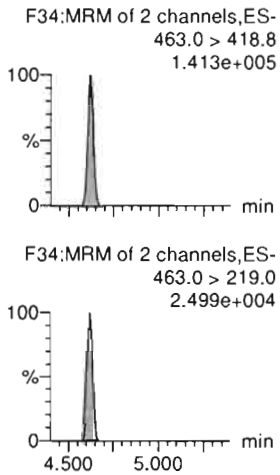


Dataset: Untitled

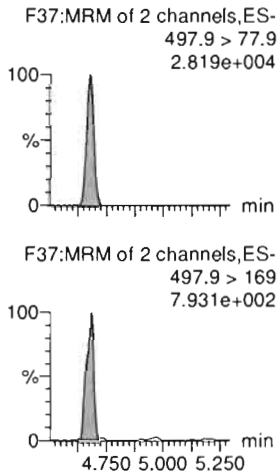
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

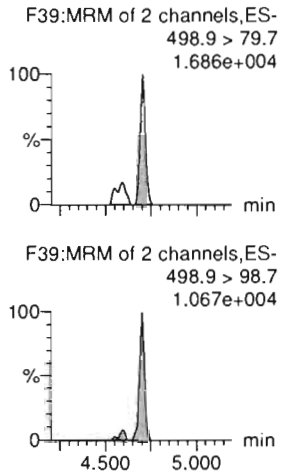
PFNA



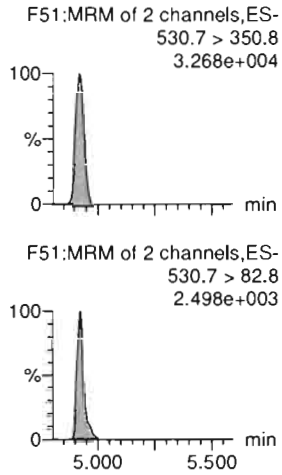
PFOSA



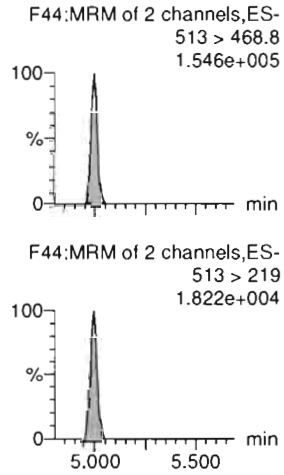
L-PFOS



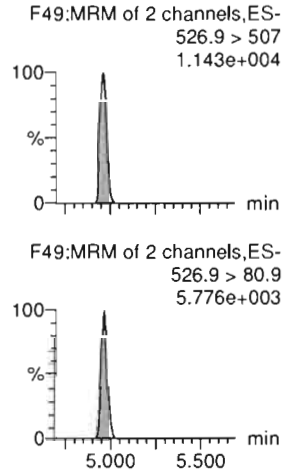
9CI-PF30NS



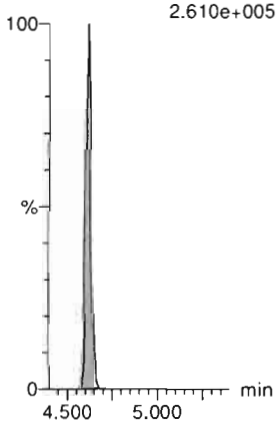
PFDA



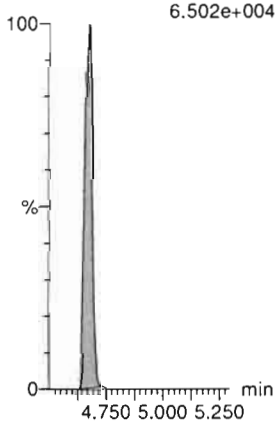
8:2 FTS



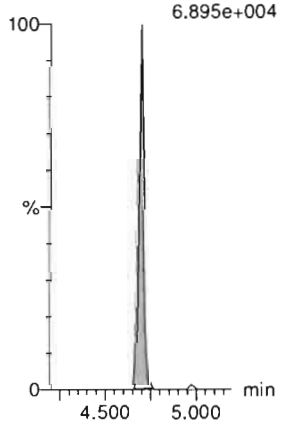
13C5-PFNA-EIS



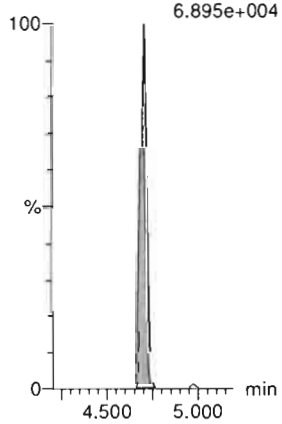
13C8-PFOSA-EIS



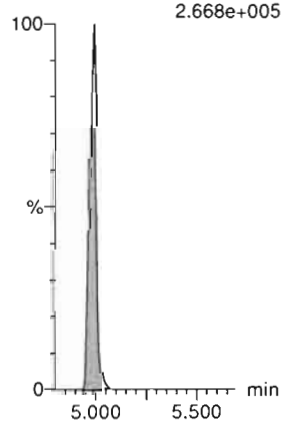
13C8-PFOS-EIS



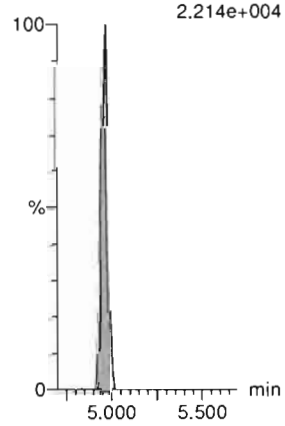
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

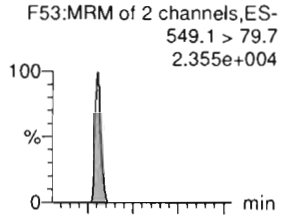


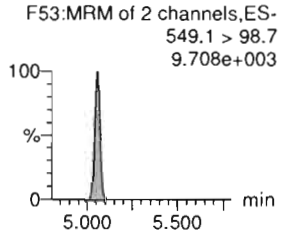
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

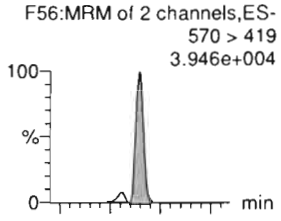
Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

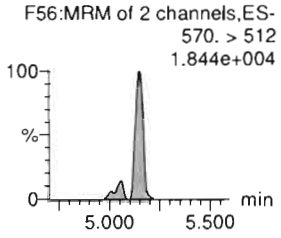
PFNS



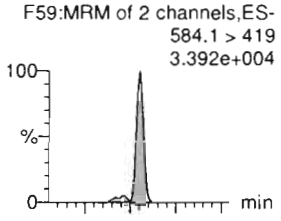


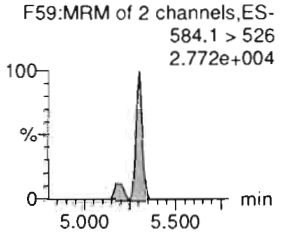
L-MeFOSAA



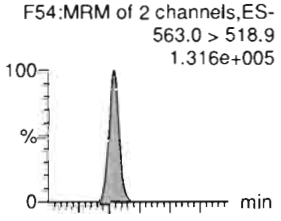


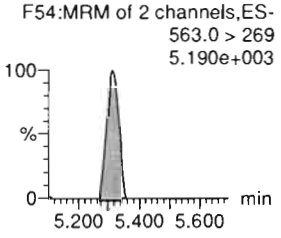
L-EtFOSAA



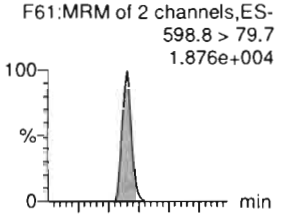


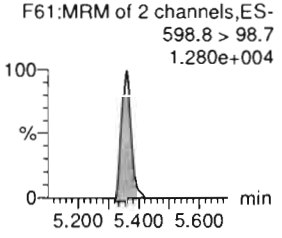
PFUdA



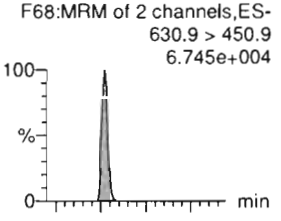


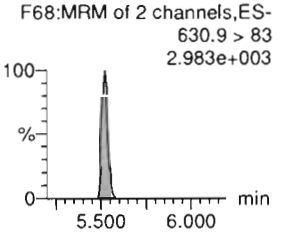
PFDS



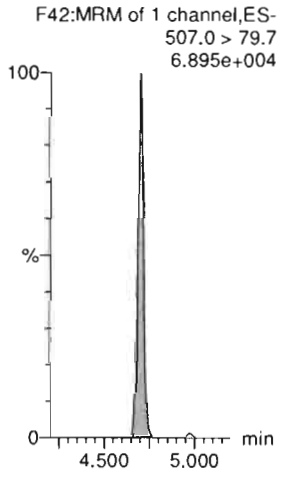


11Cl-PF30UdS

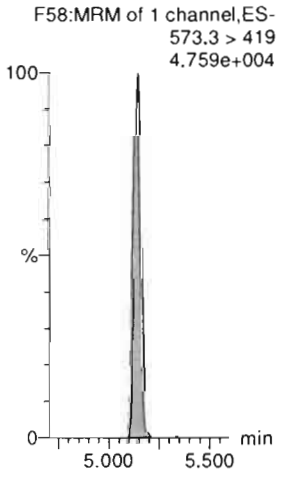




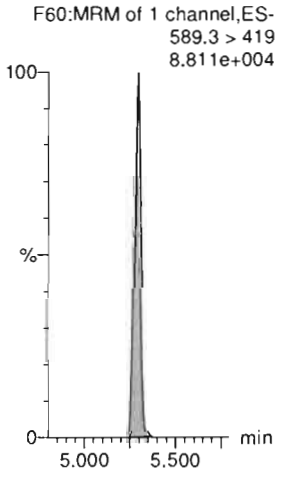
13C8-PFOS-EIS



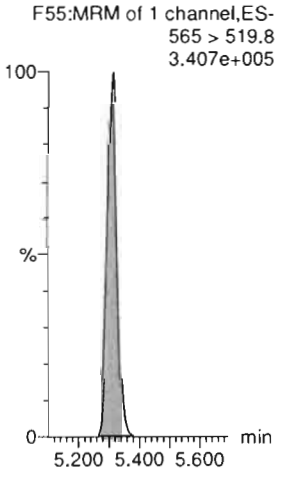
d3-N-MeFOSAA-EIS



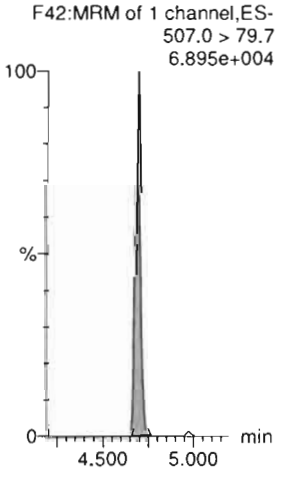
d5-N-EtFOSAA-EIS



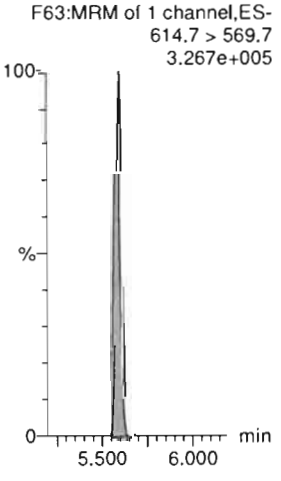
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

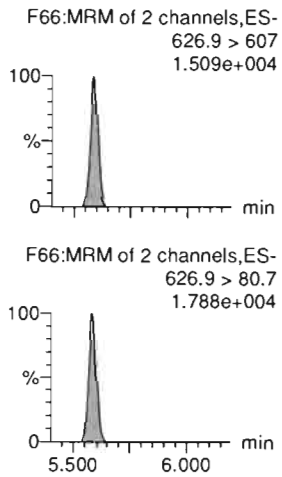


Dataset: Untitled

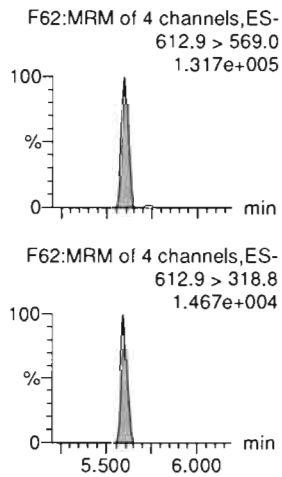
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

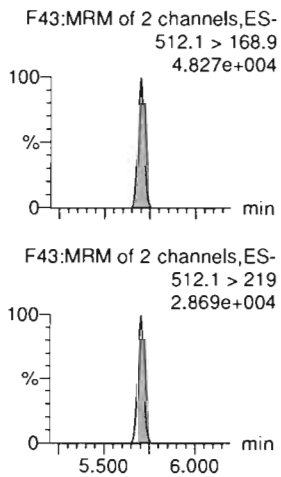
10:2 FTS



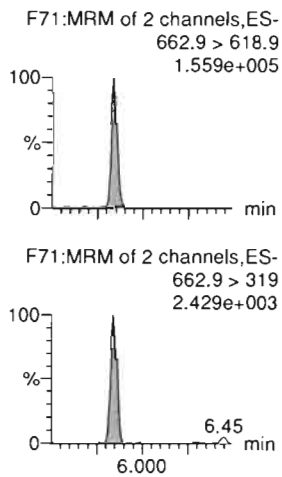
PFDoA



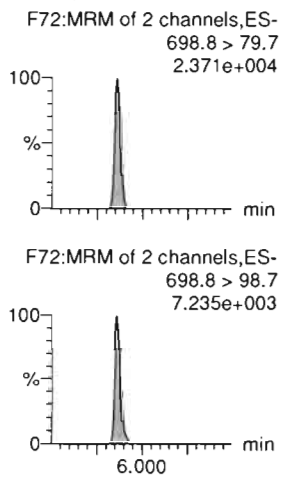
N-MeFOSA



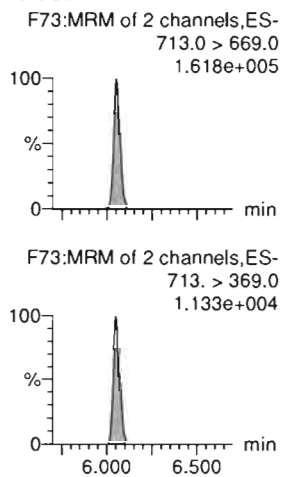
PFTrDA



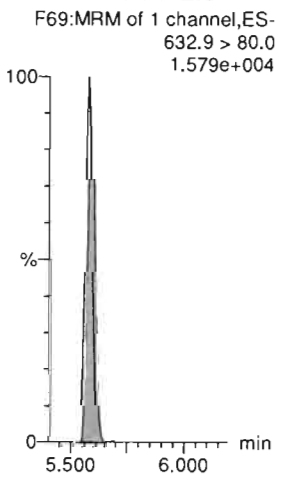
PFDoS



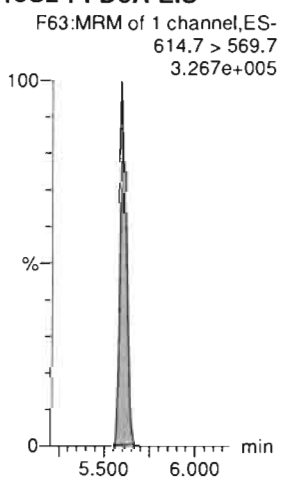
PFTeDA



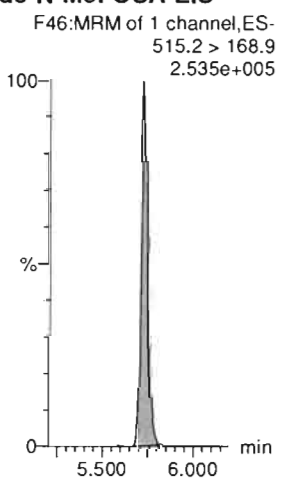
13C2-10:2 FTS-EIS



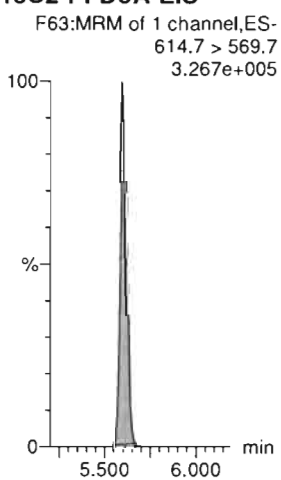
13C2-PFDoA-EIS



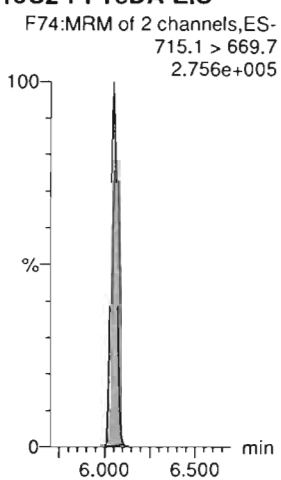
d3-N-MeFOSA-EIS



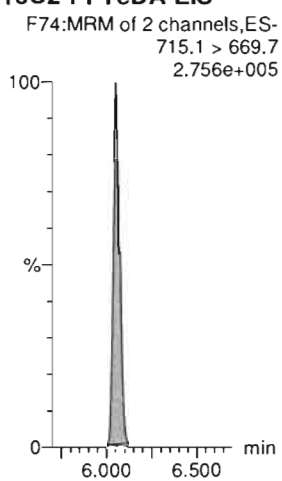
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

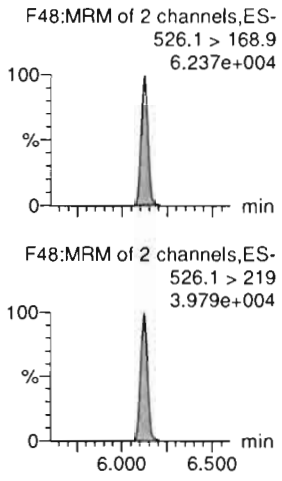


Dataset: Untitled

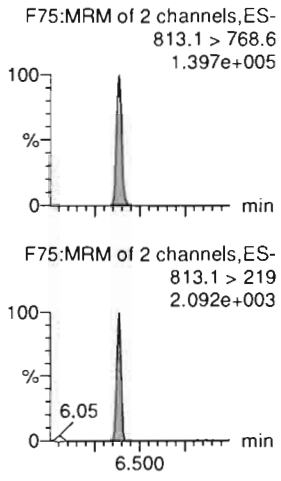
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

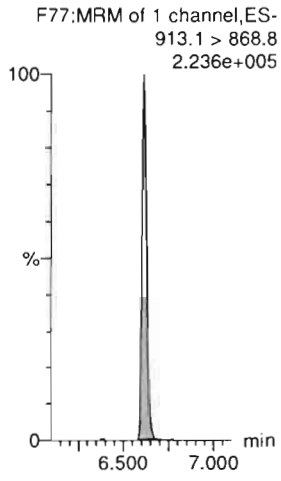
N-EtFOSA



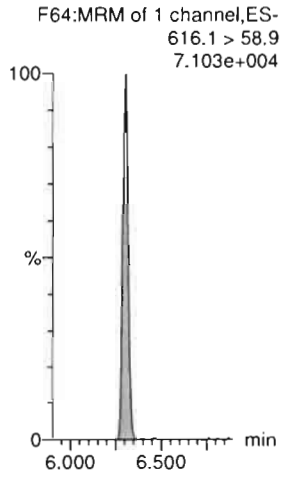
PFHxDA



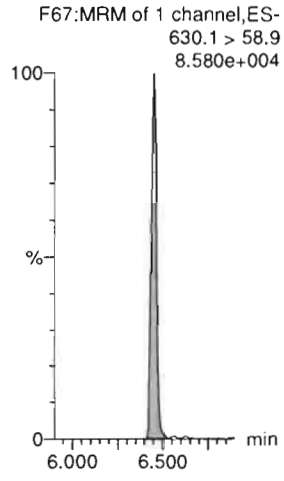
PFODA



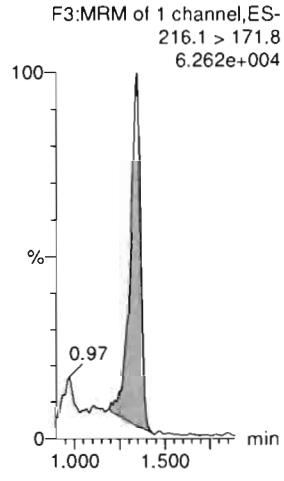
N-MeFOSE



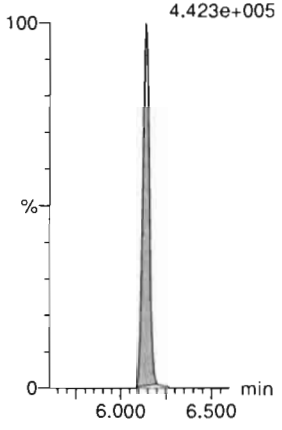
N-EtFOSE



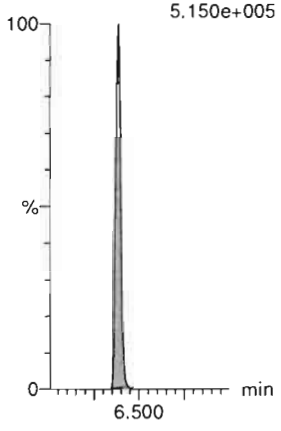
13C3-PFBA-RSD



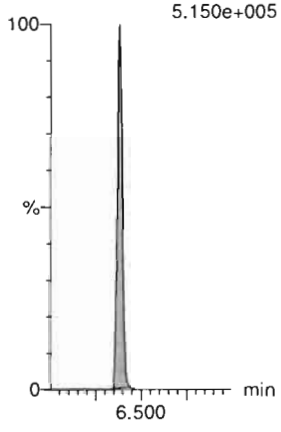
d5-N-ETFOSA-EIS



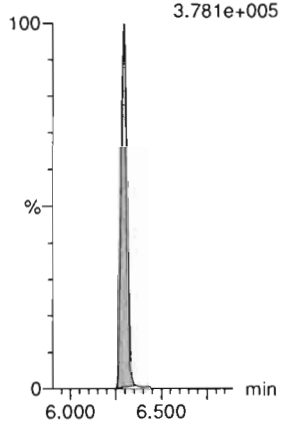
13C2-PFHxDA-EIS



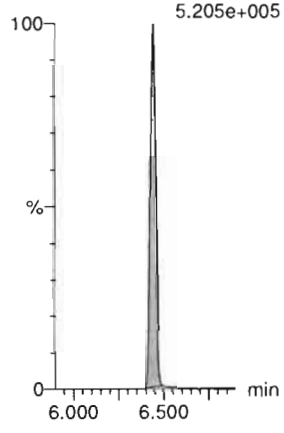
13C2-PFHxDA-EIS



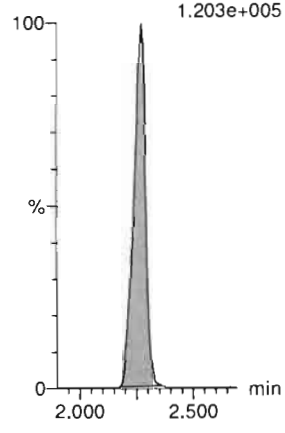
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

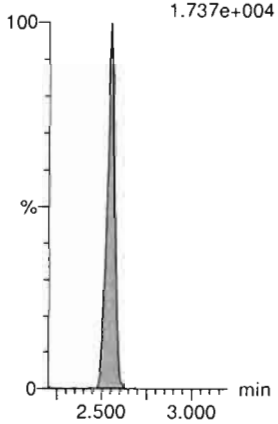


Dataset: Untitled

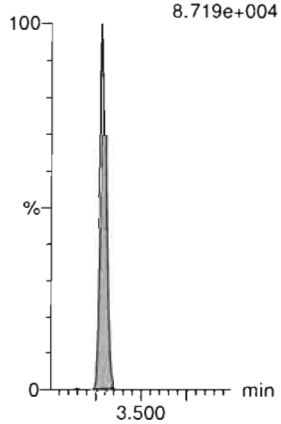
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

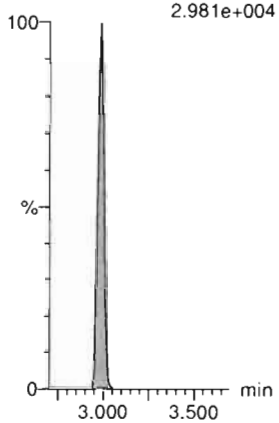
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.737e+004



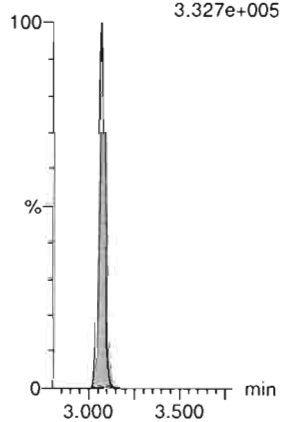
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.719e+004



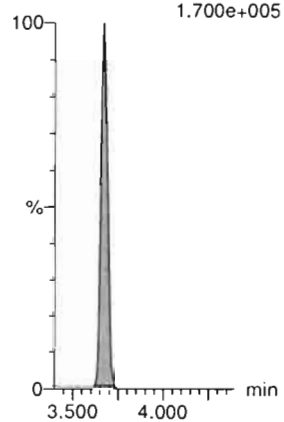
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.981e+004



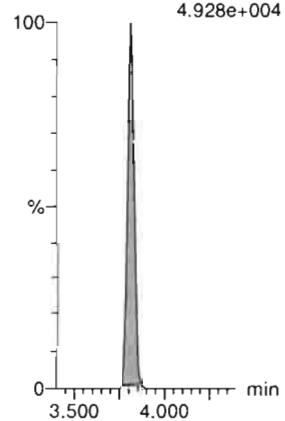
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.327e+005



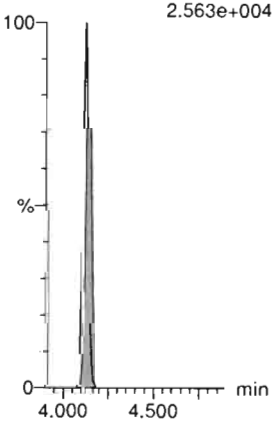
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.700e+005



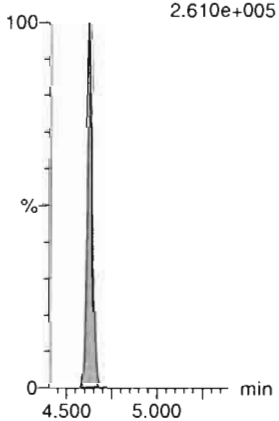
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
4.928e+004



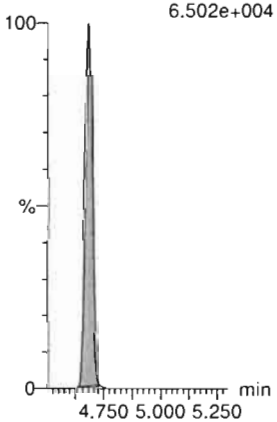
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.563e+004



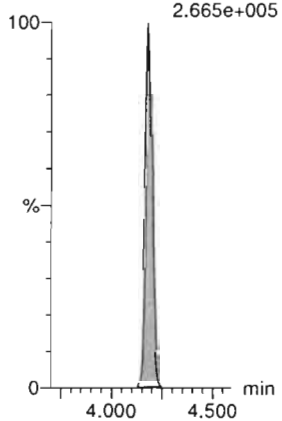
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.610e+005



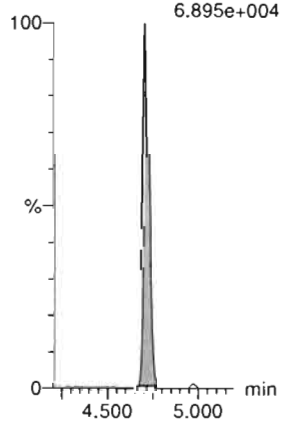
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
6.502e+004



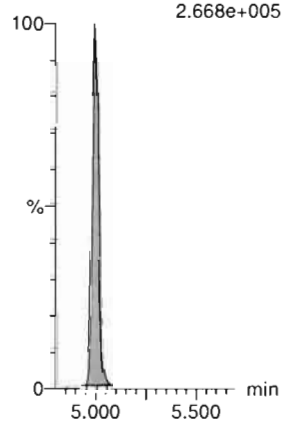
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.665e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.895e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.668e+005

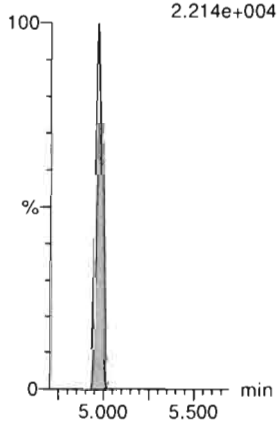


Dataset: Untitled

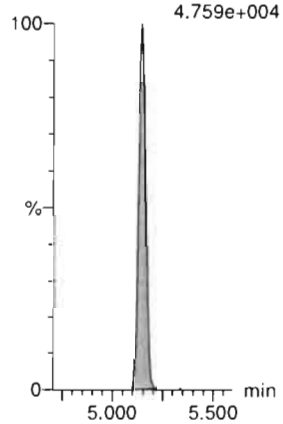
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

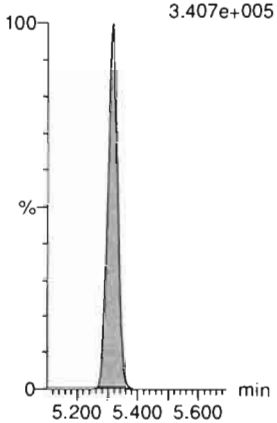
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.214e+004



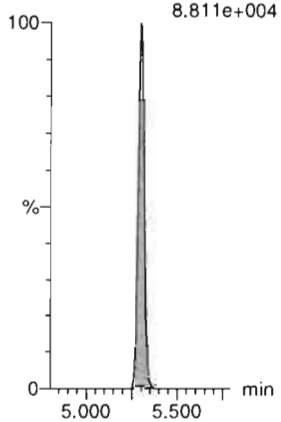
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.759e+004



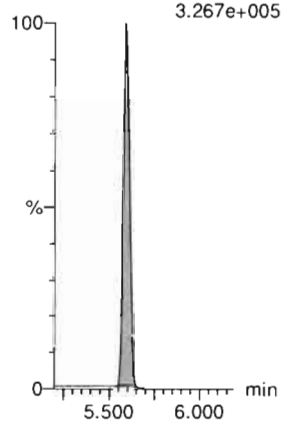
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.407e+005



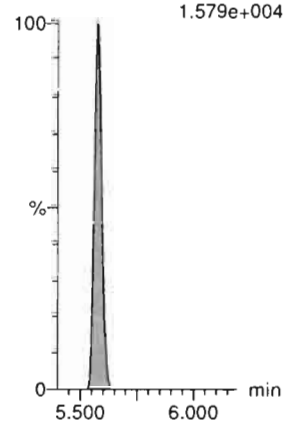
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.811e+004



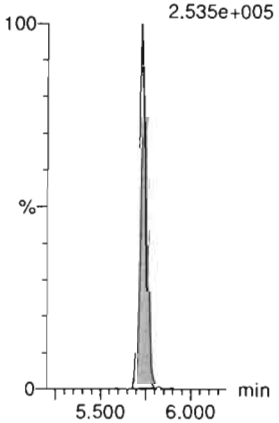
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.267e+005



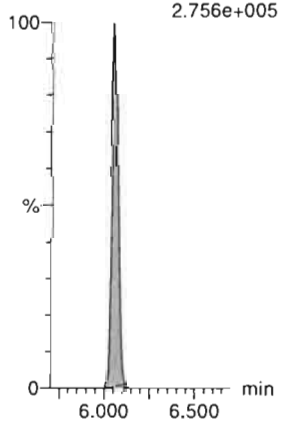
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.579e+004



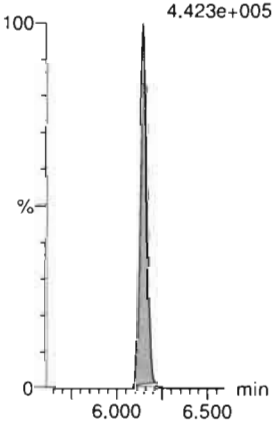
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.535e+005



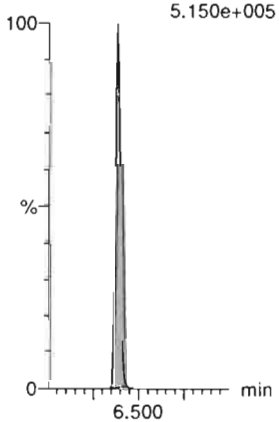
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.756e+005



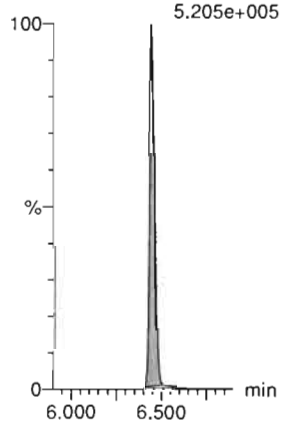
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.423e+005



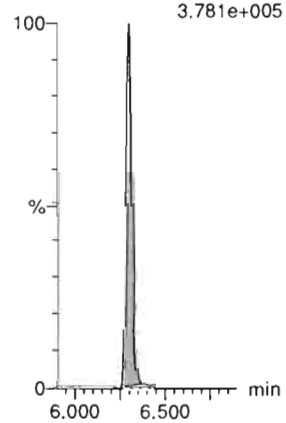
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.150e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.205e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
3.781e+005

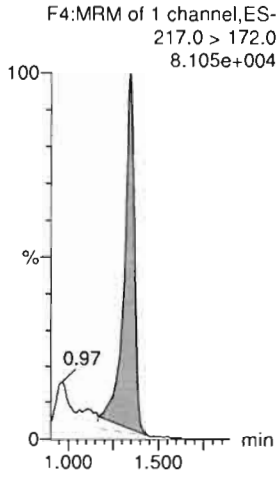


Dataset: Untitled

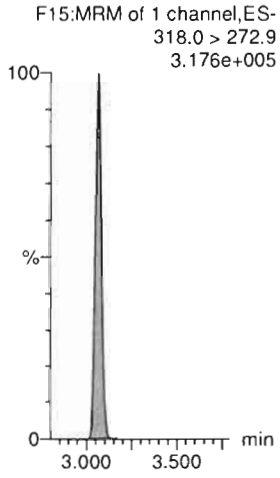
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-7, Date: 03-Mar-2020, Time: 17:47:13, ID: ST200303P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

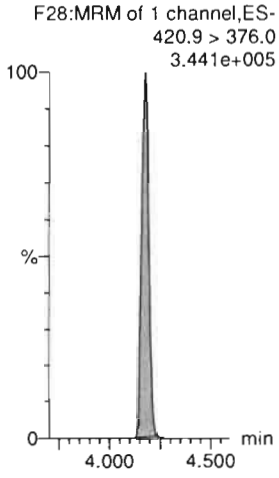
13C4-PFBA



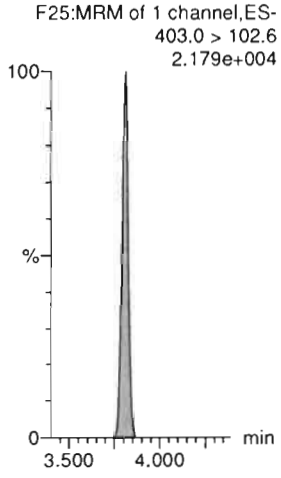
13C5-PFHxA



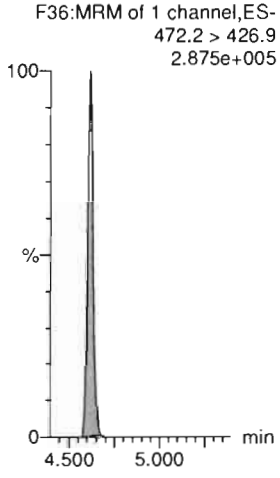
13C8-PFOA



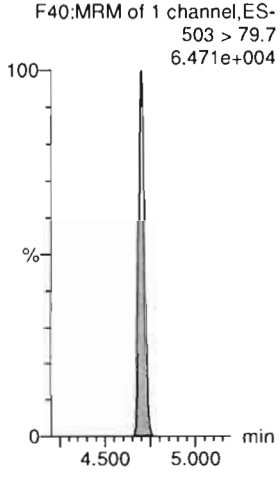
18O2-PFHxS



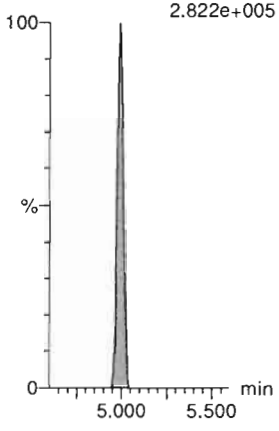
13C9-PFNA



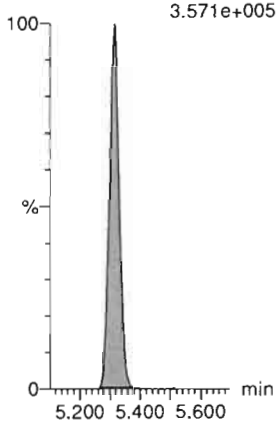
13C4-PFOS



13C6-PFDA



13C7-PFUdA

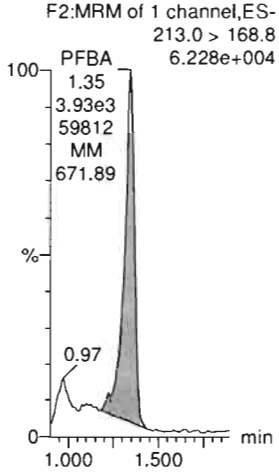


Dataset: Untitled

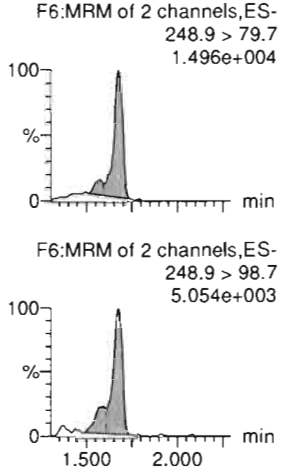
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

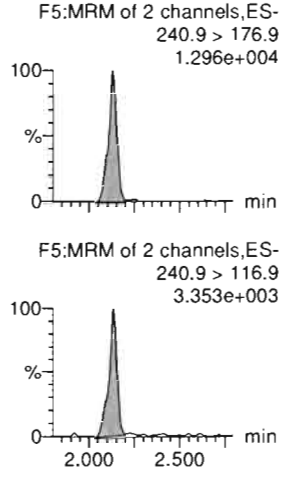
PFBA



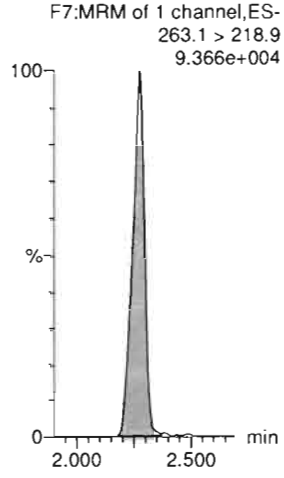
PFPrS



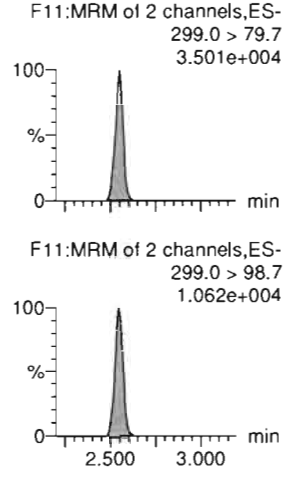
3:3 FTCA



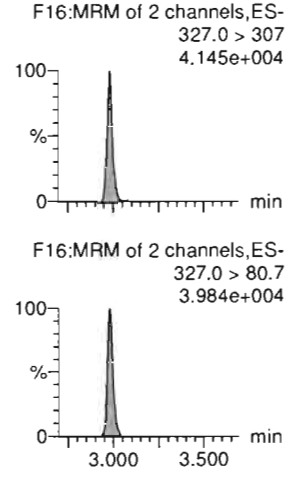
PFPeA



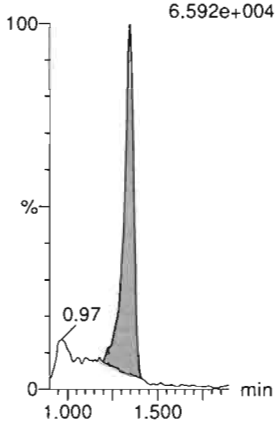
PFBS



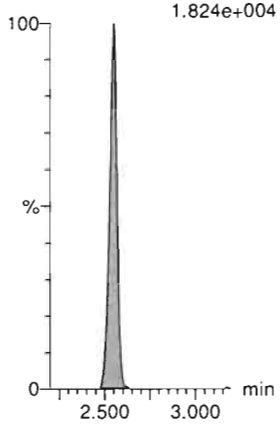
4:2 FTS



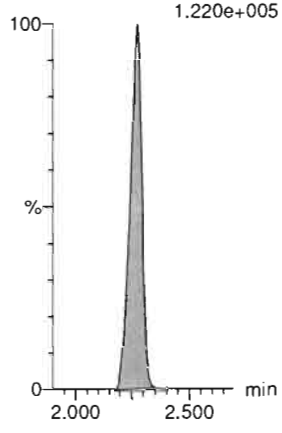
13C3-PFBA-EIS



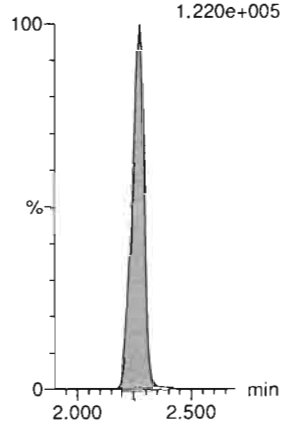
13C3-PFBS-EIS



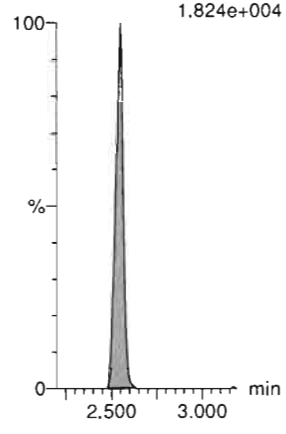
13C3-PFPeA-EIS



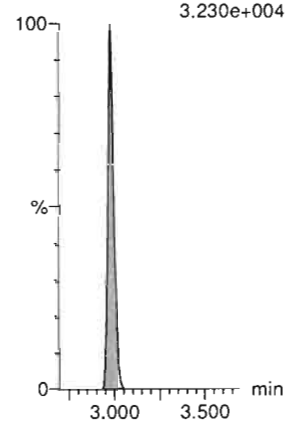
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

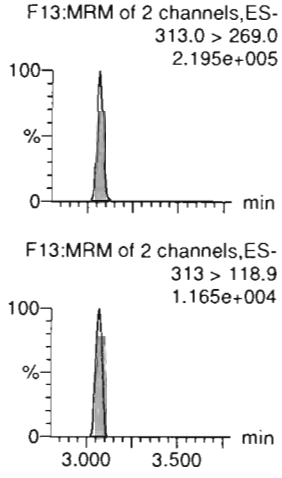


Dataset: Untitled

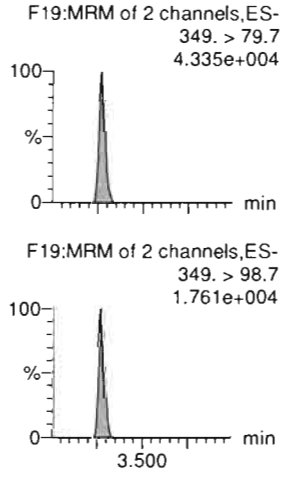
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

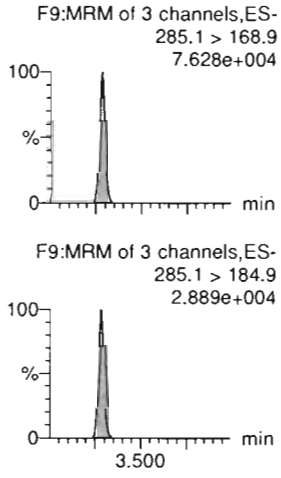
PFHxA



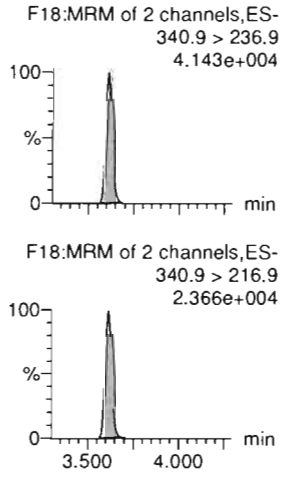
PFPeS



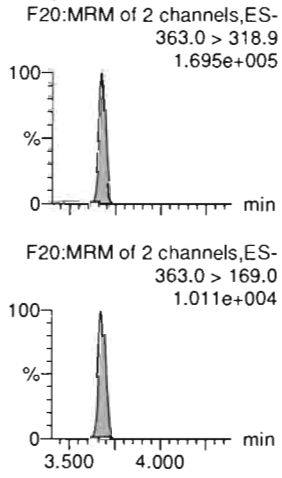
HFPO-DA



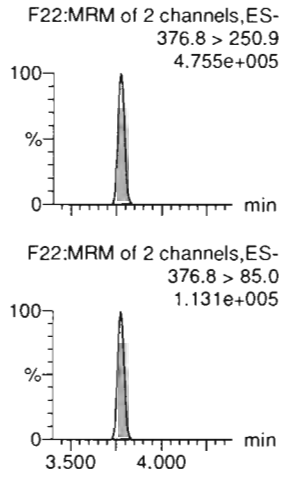
5:3 FTCA



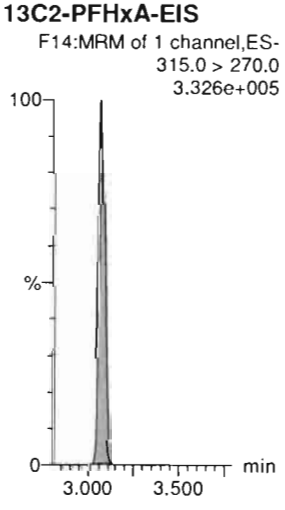
PFHpA



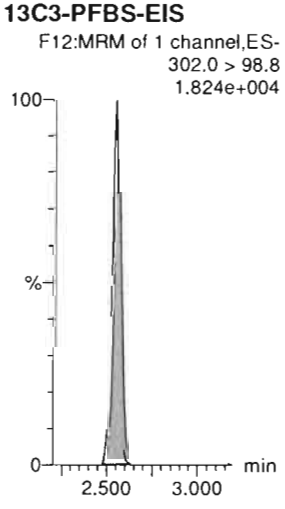
ADONA



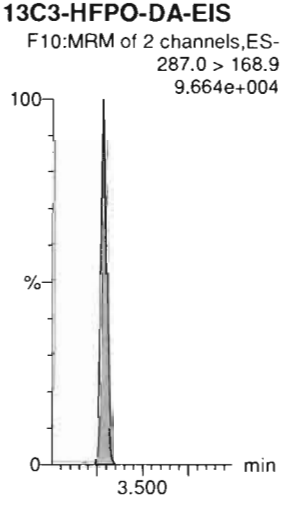
13C2-PFHxA-EIS



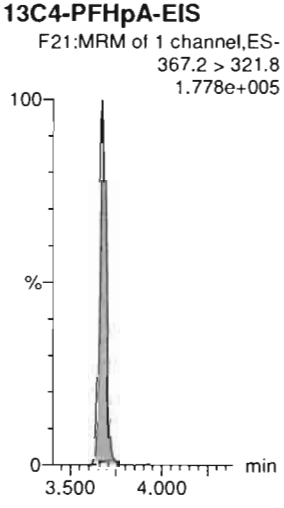
13C3-PFBS-EIS



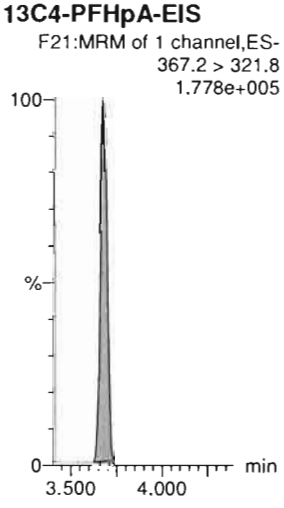
13C3-HFPO-DA-EIS



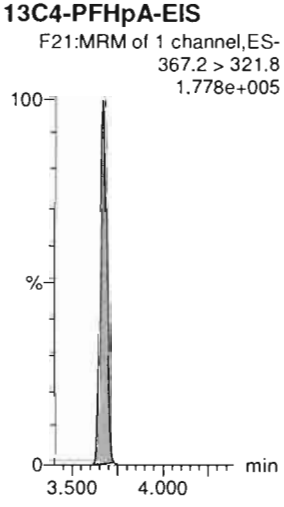
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

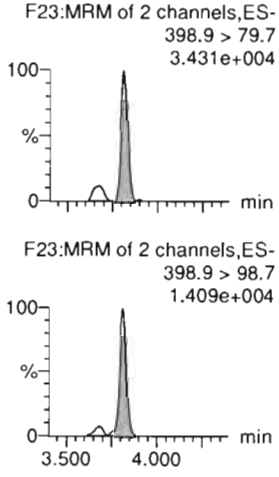


Dataset: Untitled

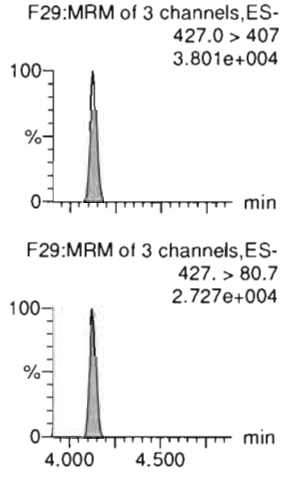
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

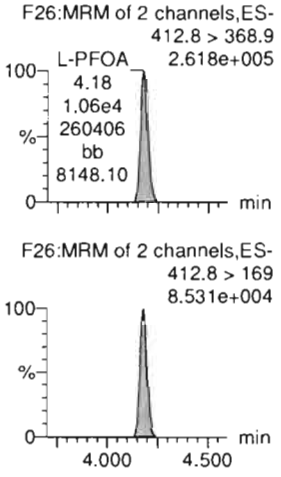
L-PFHxS



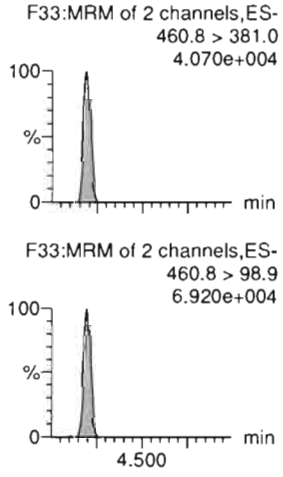
6:2 FTS



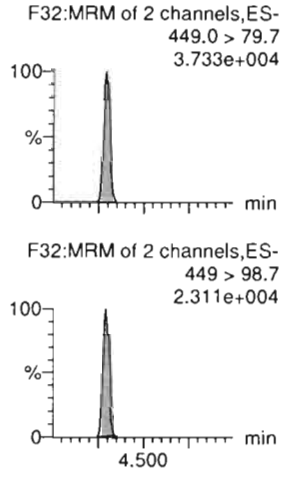
L-PFOA



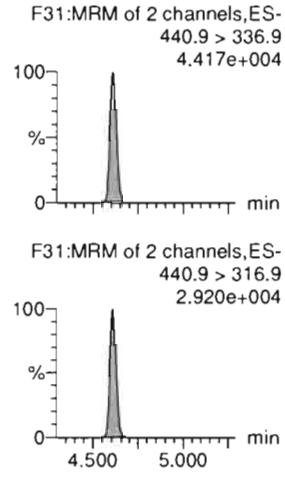
PFEChS



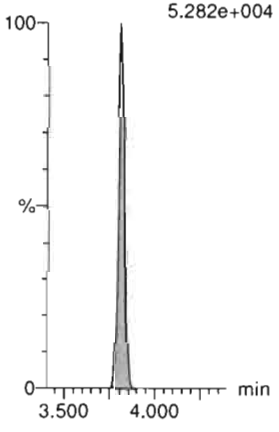
PFHpS



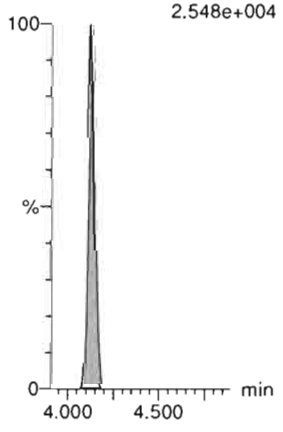
7:3 FTCA



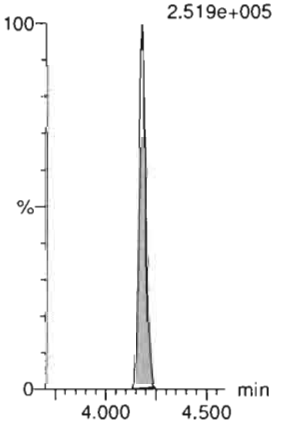
13C3-PFHxS-EIS



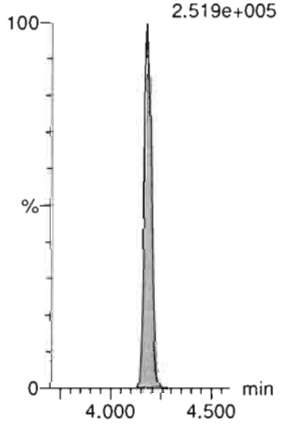
13C2-6:2 FTS-EIS



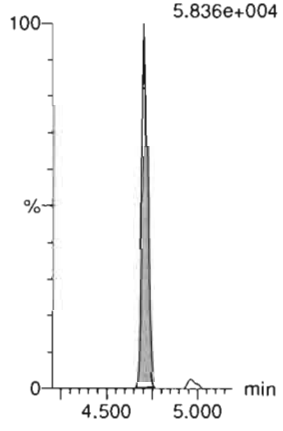
13C2-PFOA-EIS



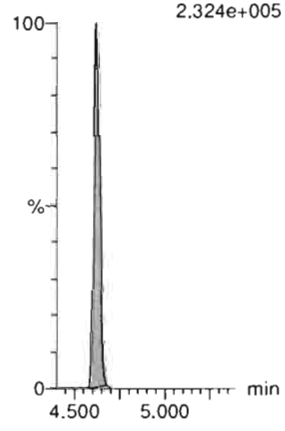
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

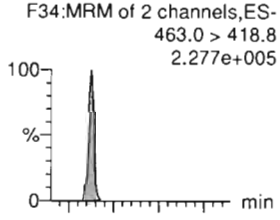


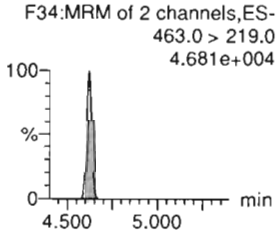
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

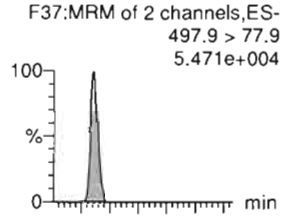
Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

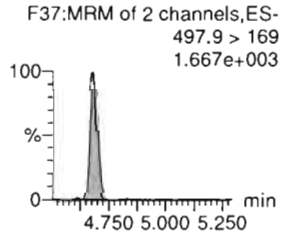
PFNA



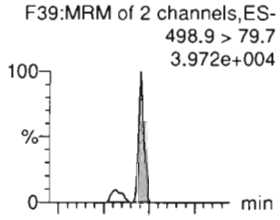


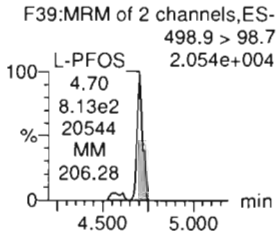
PFOSA



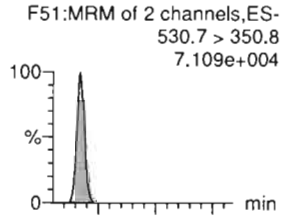


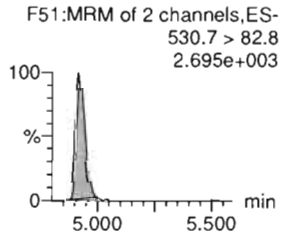
L-PFOS



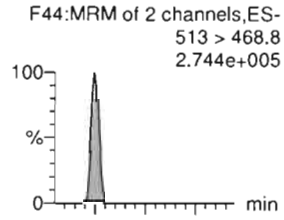


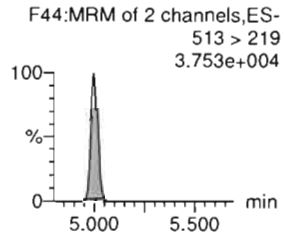
9Cl-PF30NS



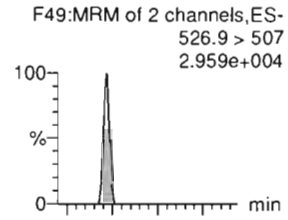


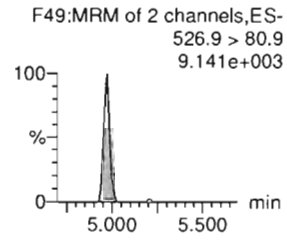
PFDA



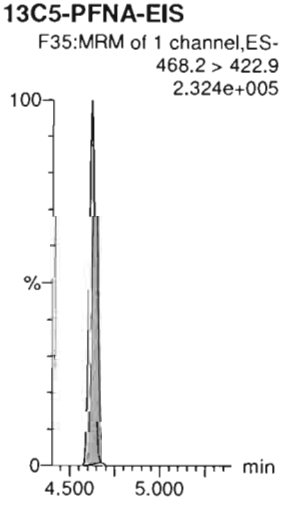


8:2 FTS

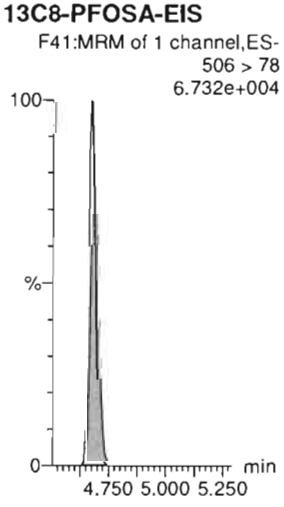




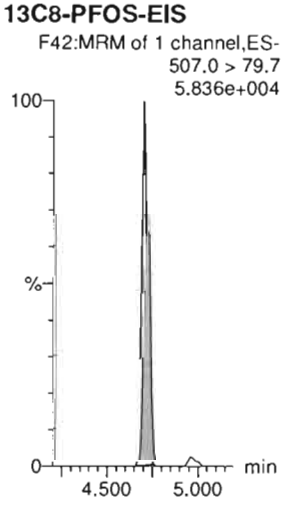
13C5-PFNA-EIS



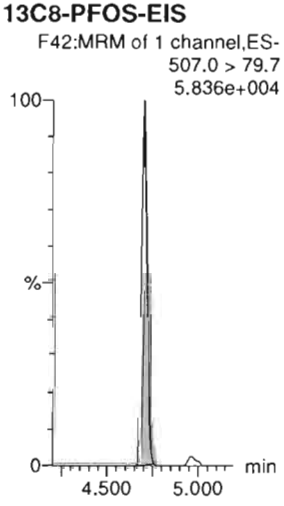
13C8-PFOSA-EIS



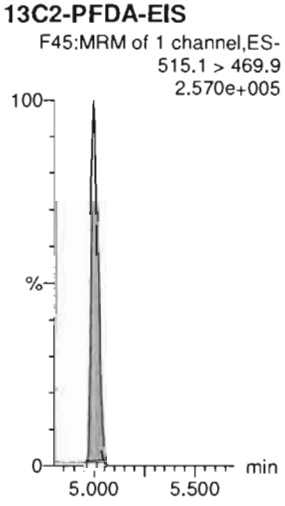
13C8-PFOS-EIS



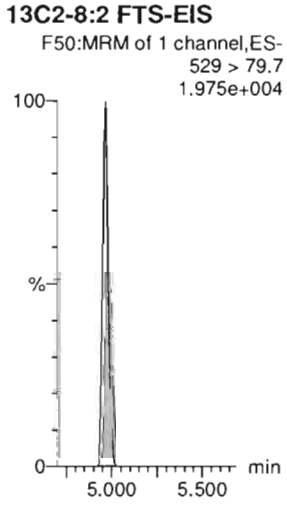
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

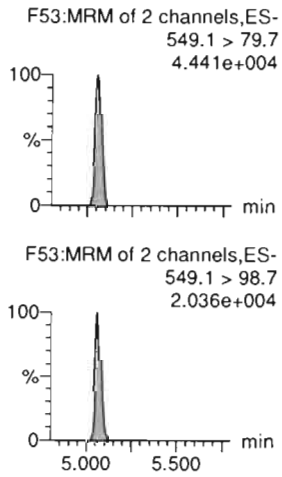


Dataset: Untitled

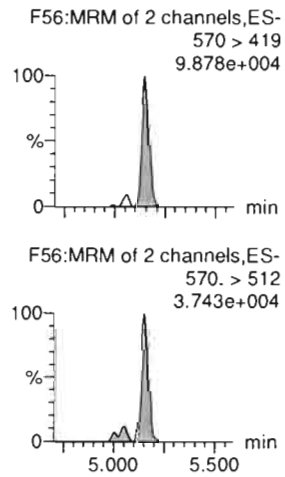
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

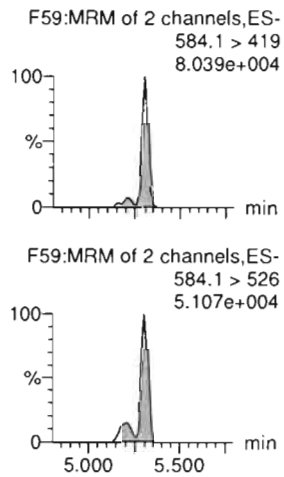
PFNS



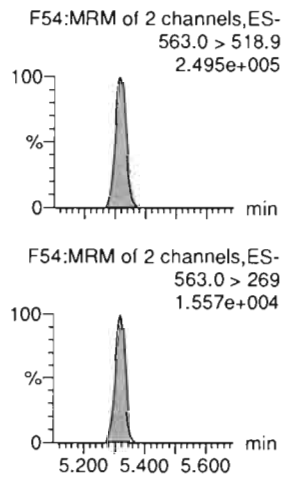
L-MeFOSAA



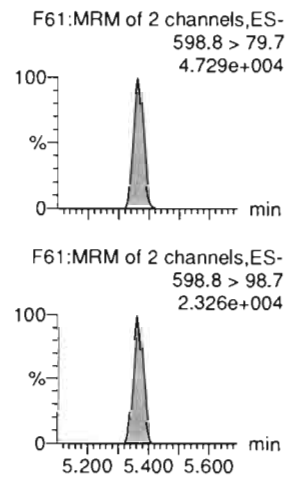
L-EtFOSAA



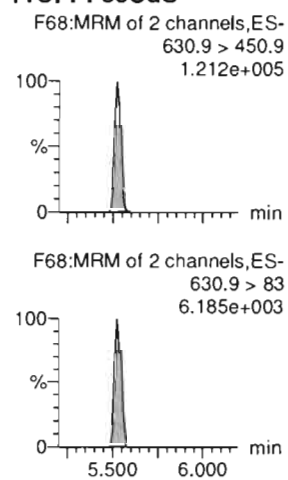
PFUdA



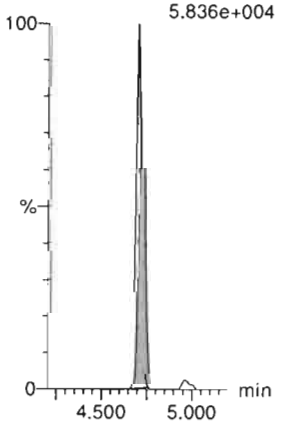
PFDS



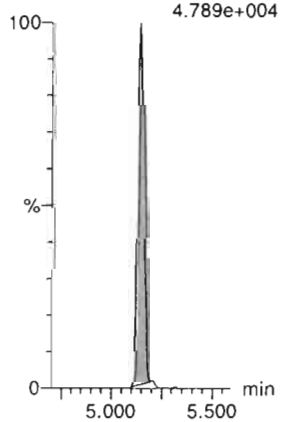
11Cl-PF30UdS



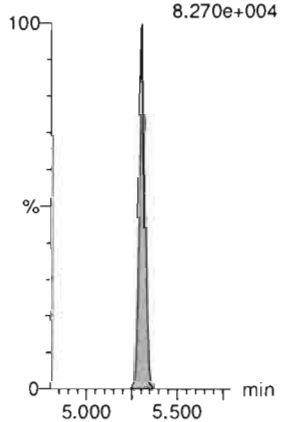
13C8-PFOS-EIS



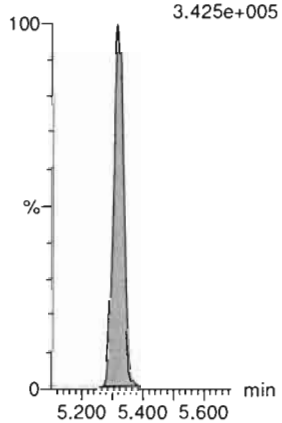
d3-N-MeFOSAA-EIS



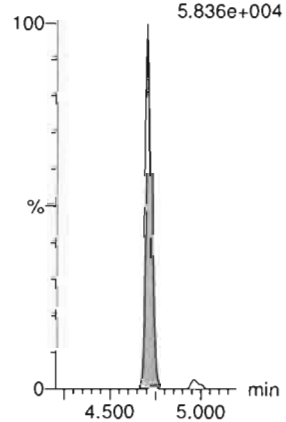
d5-N-EtFOSAA-EIS



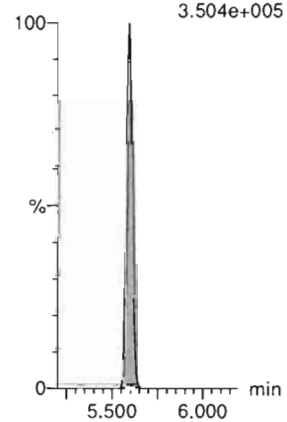
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

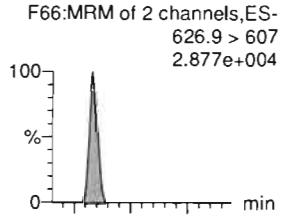


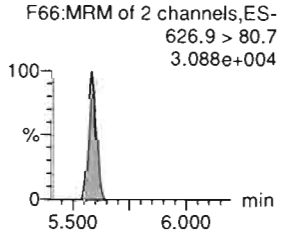
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

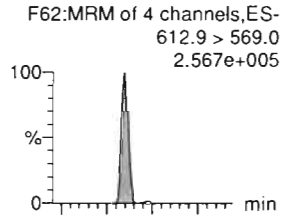
Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

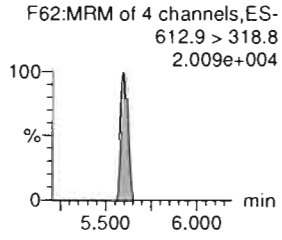
10:2 FTS



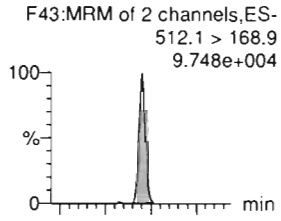


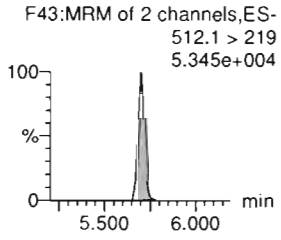
PFDoA



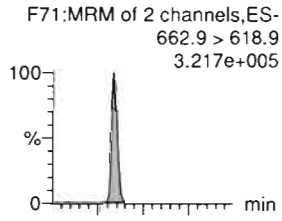


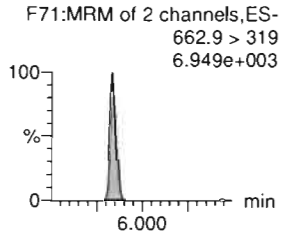
N-MeFOSA



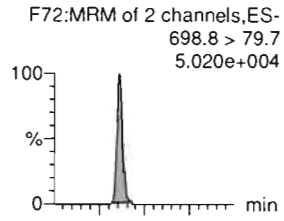


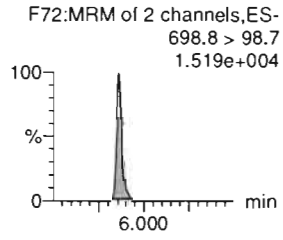
PFTrDA



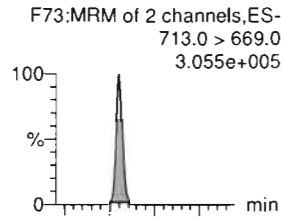


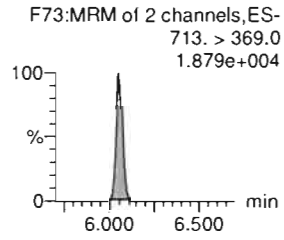
PFDoS



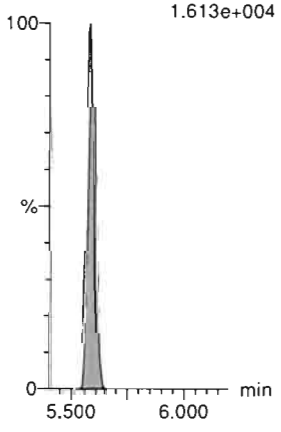


PFTeDA

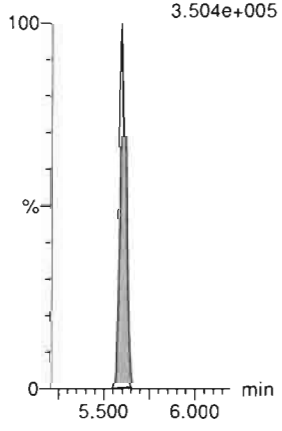




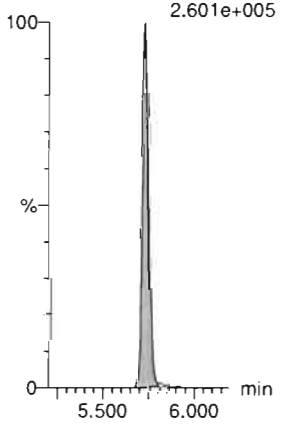
13C2-10:2 FTS-EIS



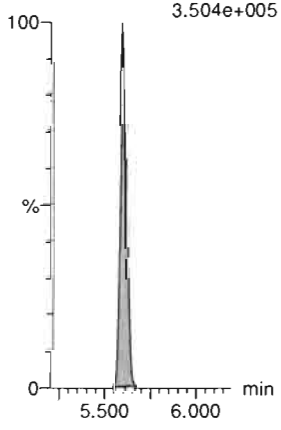
13C2-PFDoA-EIS



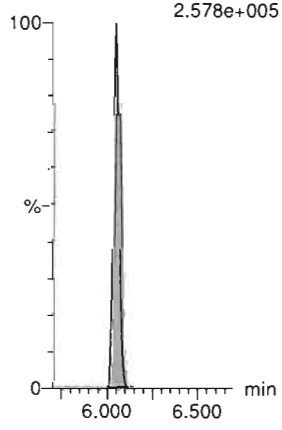
d3-N-MeFOSA-EIS



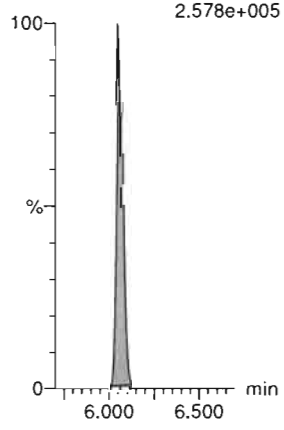
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

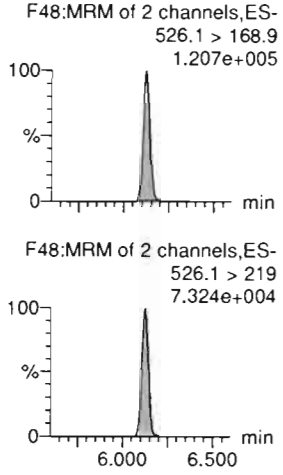


Dataset: Untitled

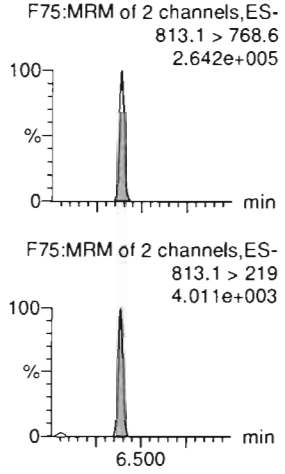
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

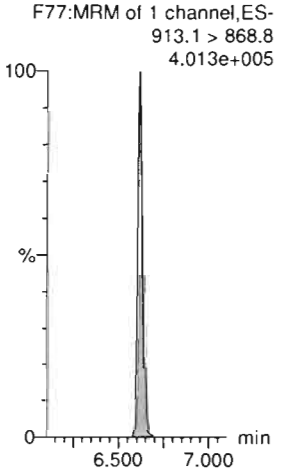
N-EtFOSA



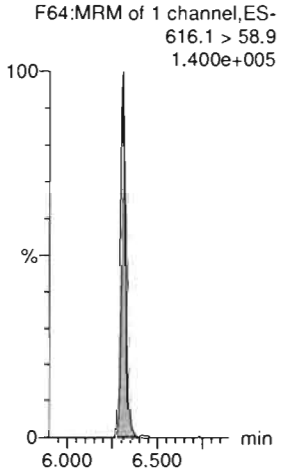
PFHxDA



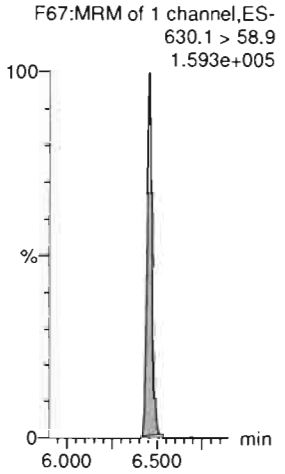
PFODA



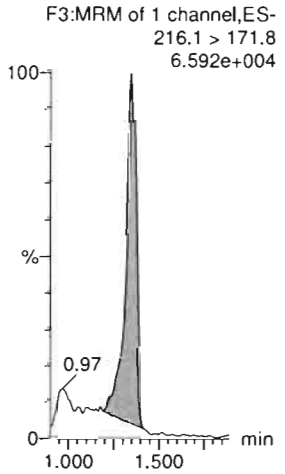
N-MeFOSE



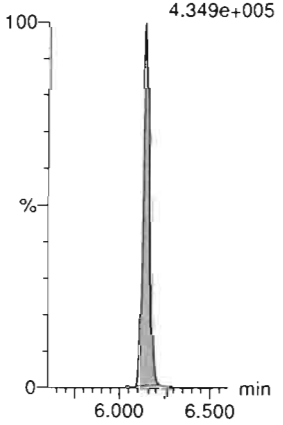
N-EtFOSE



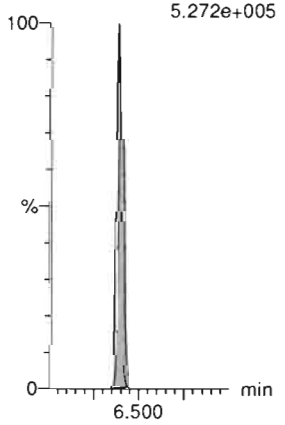
13C3-PFBA-RSD



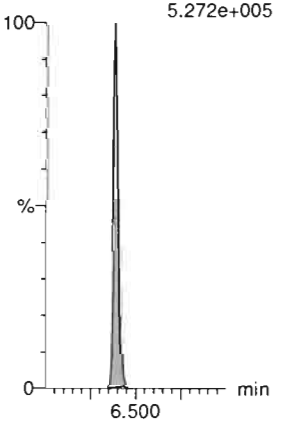
d5-N-ETFOSA-EIS



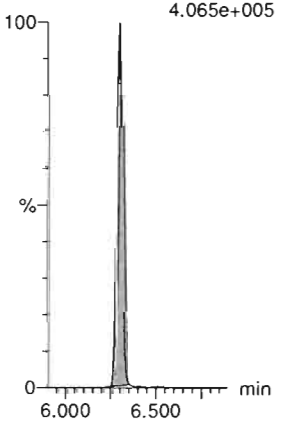
13C2-PFHxDA-EIS



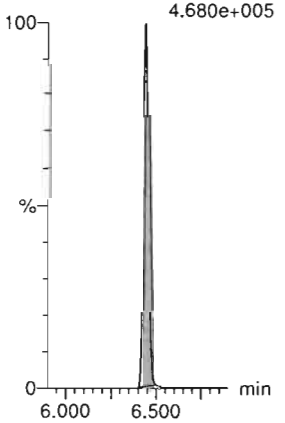
13C2-PFHxDA-EIS



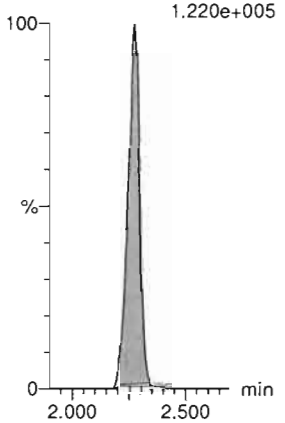
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

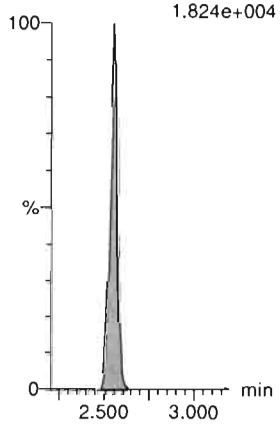


Dataset: Untitled

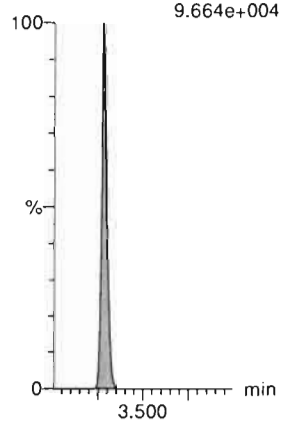
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

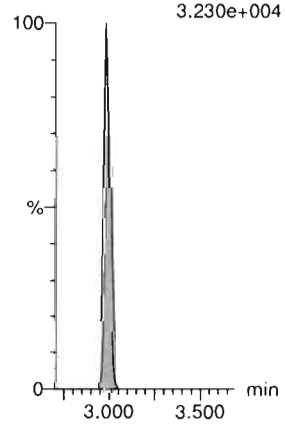
13C3-PFBS-RSD



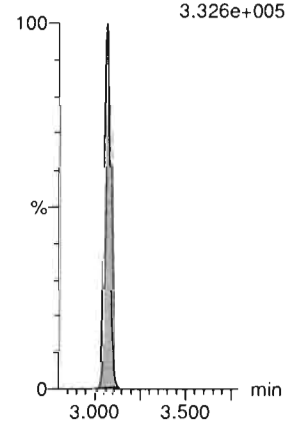
13C3-HFPO-DA-RSD



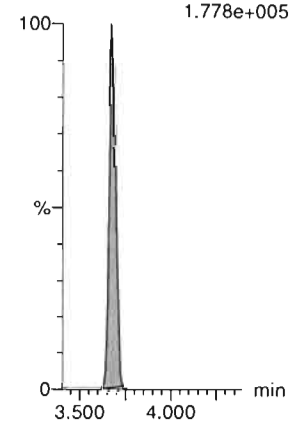
13C2-4:2 FTS-RSD



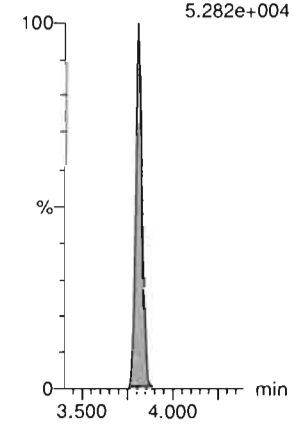
13C2-PFHxA-RSD



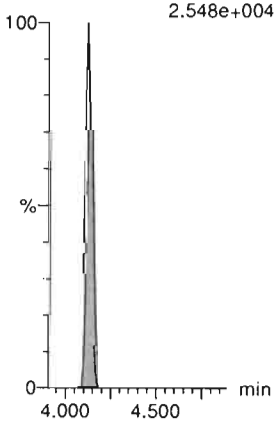
13C4-PFHpA-RSD



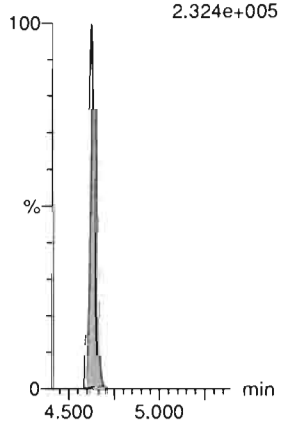
13C3-PFHxS-RSD



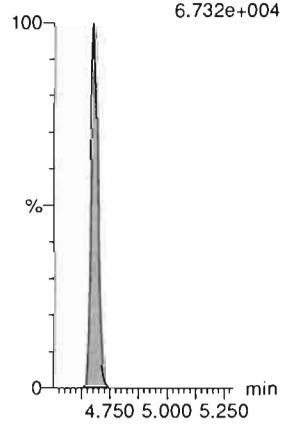
13C2-6:2 FTS-RSD



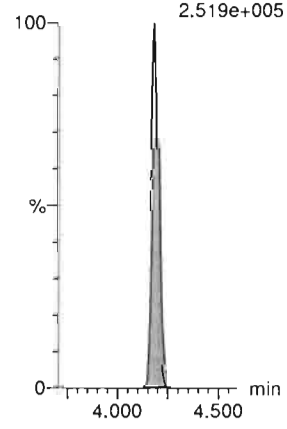
13C5-PFNA-RSD



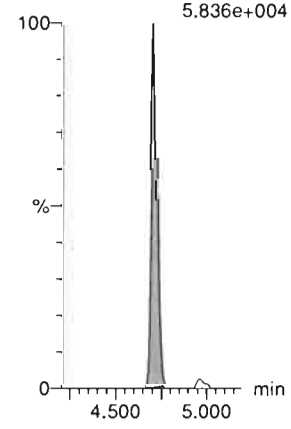
13C8-PFOSA-RSD



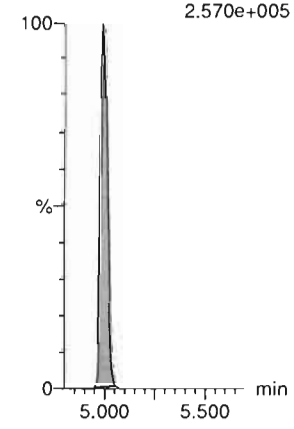
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD

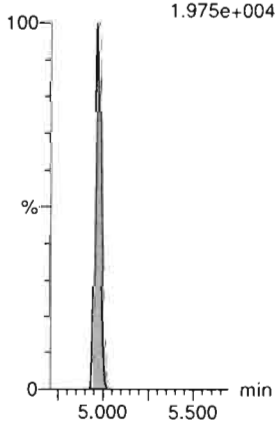


Dataset: Untitled

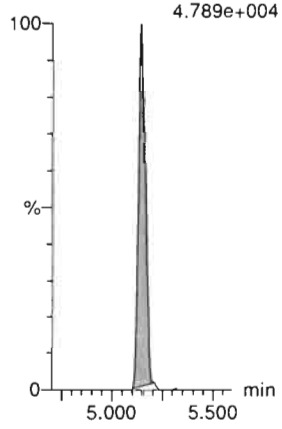
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

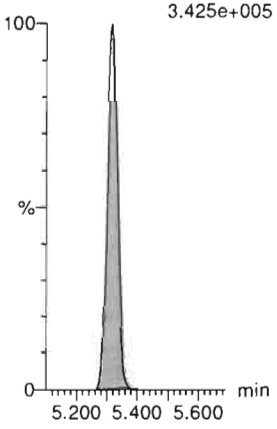
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
1.975e+004



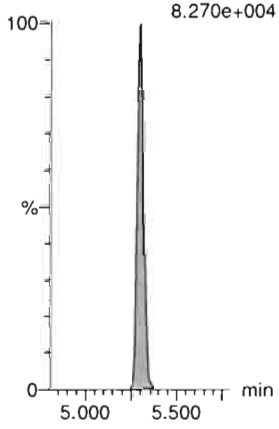
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.789e+004



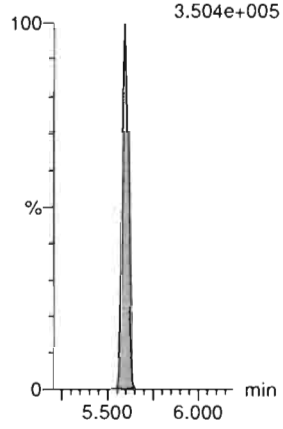
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.425e+005



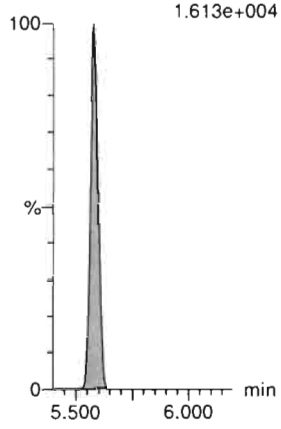
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.270e+004



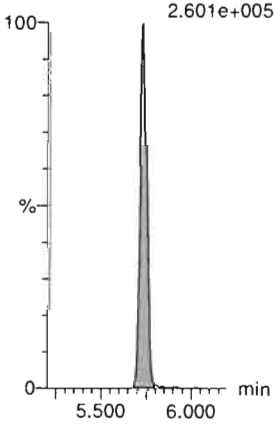
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.504e+005



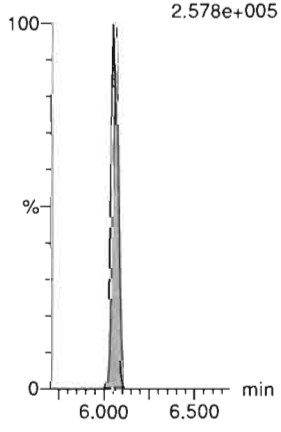
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.613e+004



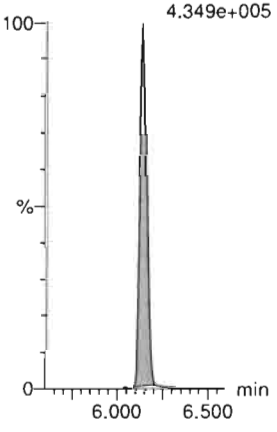
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.601e+005



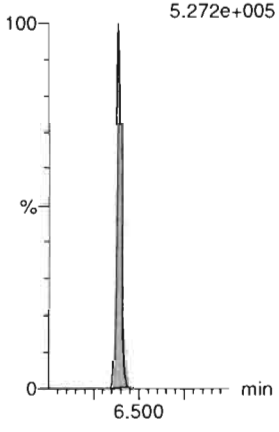
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.578e+005



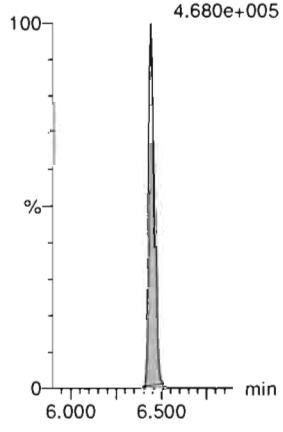
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.349e+005



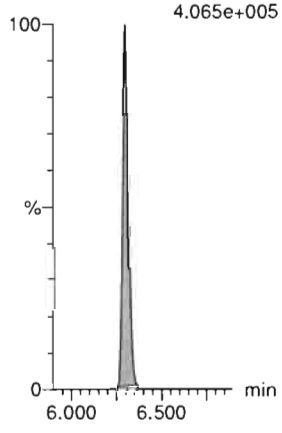
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.272e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
4.680e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.065e+005

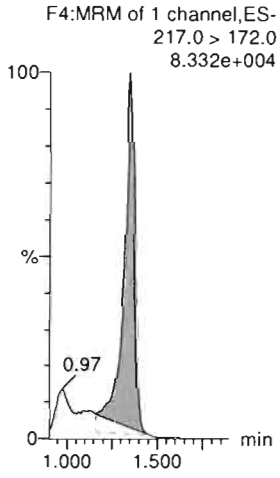


Dataset: Untitled

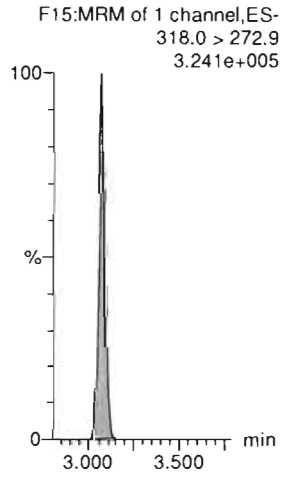
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-8, Date: 03-Mar-2020, Time: 17:57:42, ID: ST200303P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

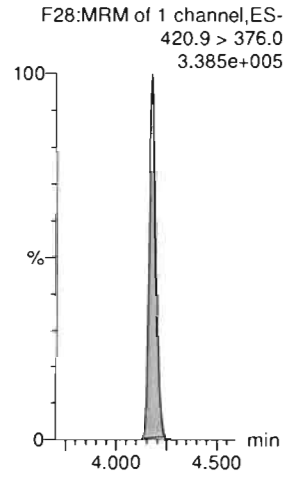
13C4-PFBA



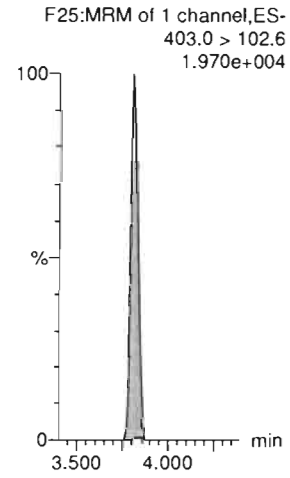
13C5-PFHxA



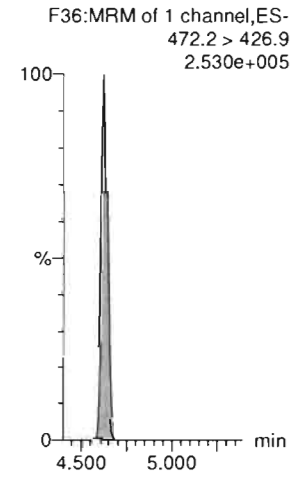
13C8-PFOA



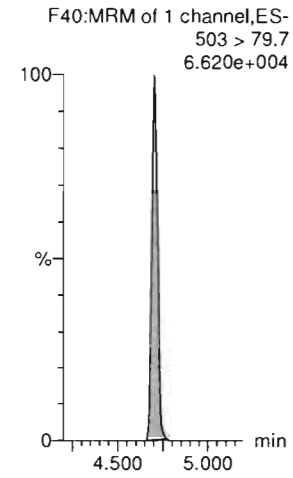
18O2-PFHxS



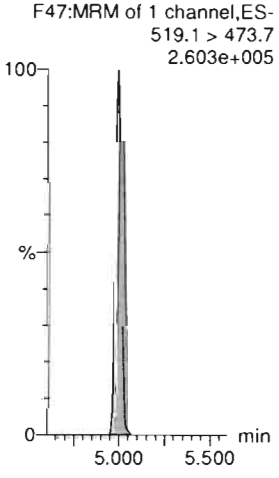
13C9-PFNA



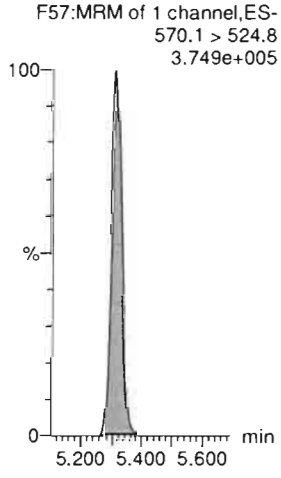
13C4-PFOS



13C6-PFDA



13C7-PFUdA

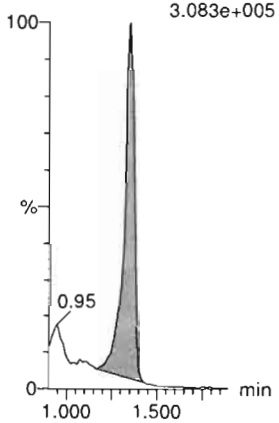


Dataset: Untitled

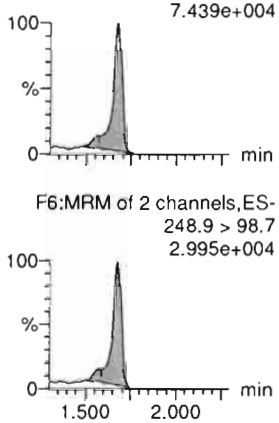
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

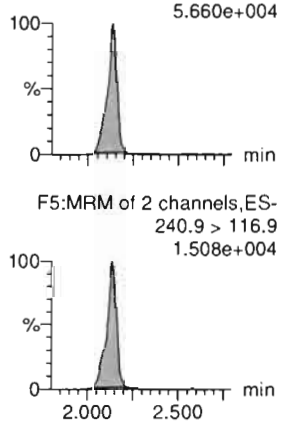
PFBA



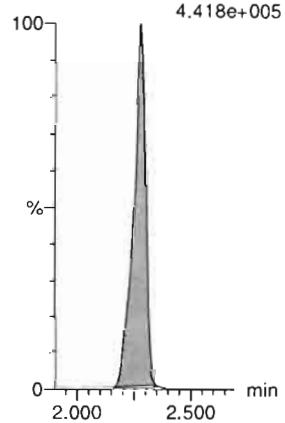
PFPrS



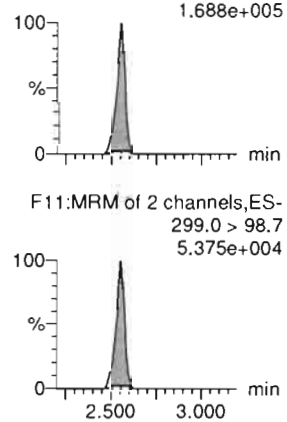
3:3 FTCA



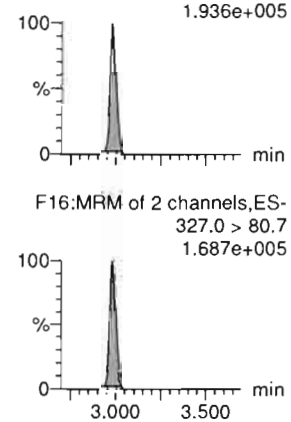
PFPeA



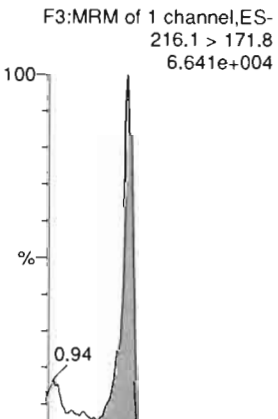
PFBS



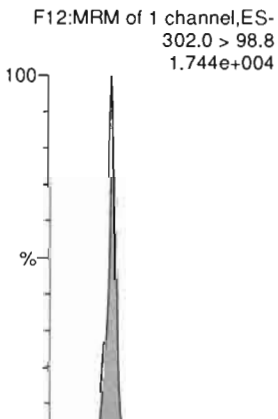
4:2 FTS



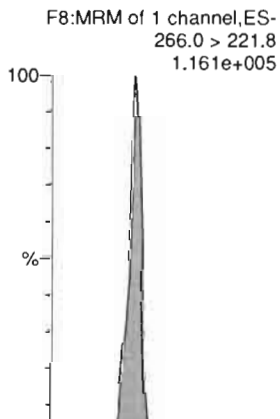
13C3-PFBA-EIS



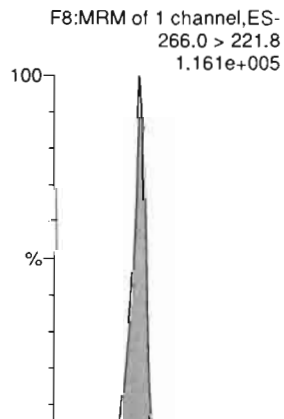
13C3-PFBS-EIS



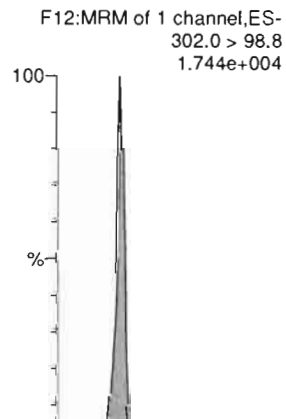
13C3-PFPeA-EIS



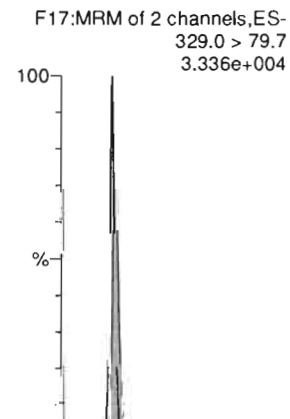
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

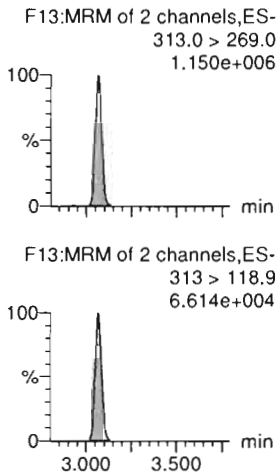


Dataset: Untitled

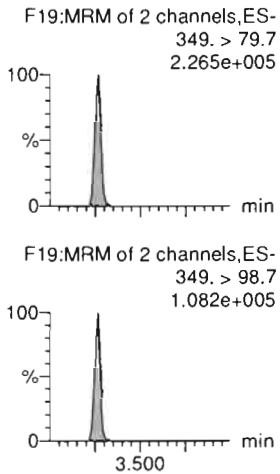
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

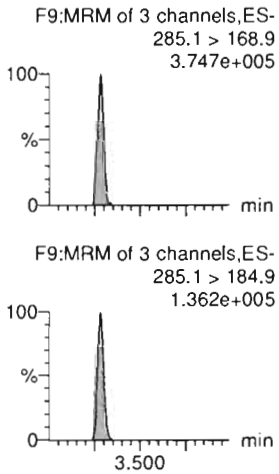
PFHxA



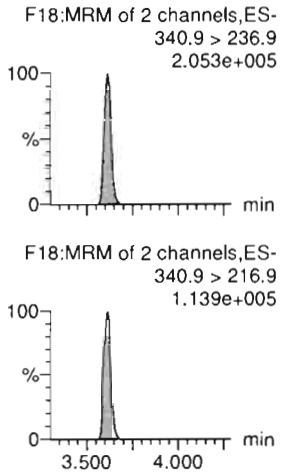
PFPeS



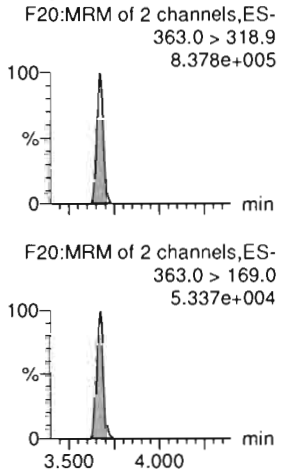
HFPO-DA



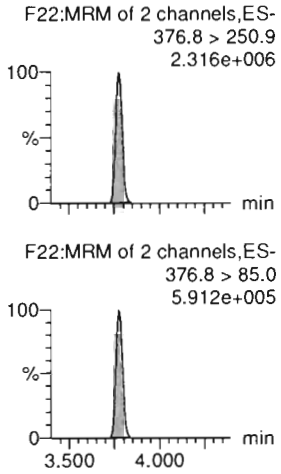
5:3 FTCA



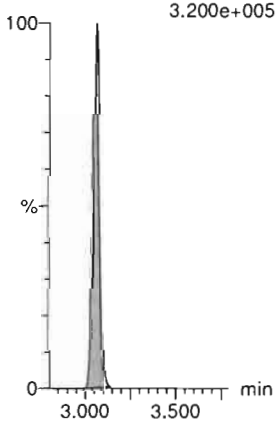
PFHpA



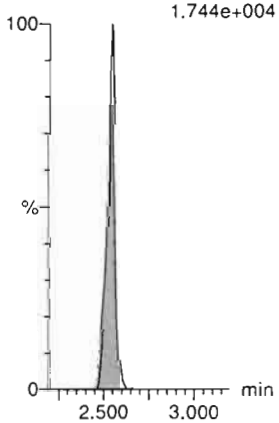
ADONA



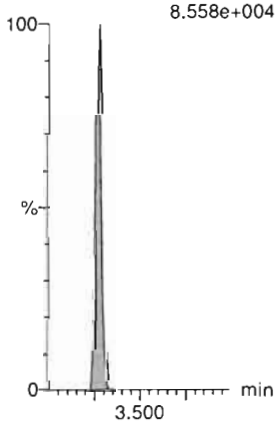
13C2-PFHxA-EIS



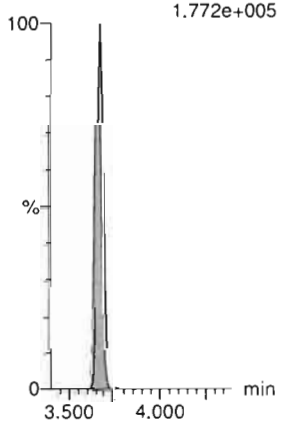
13C3-PFBS-EIS



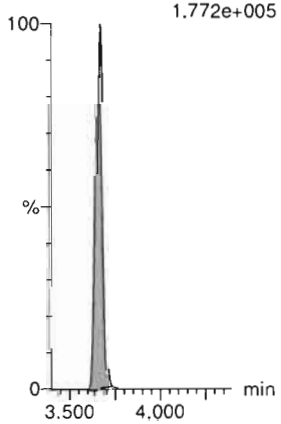
13C3-HFPO-DA-EIS



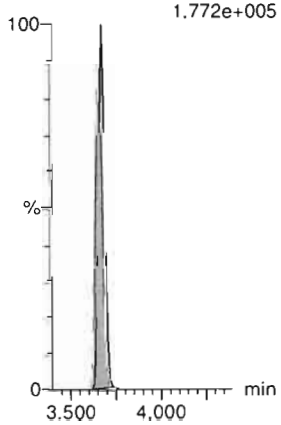
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

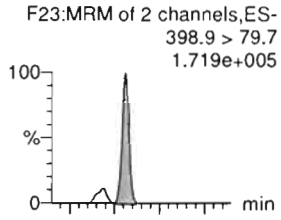


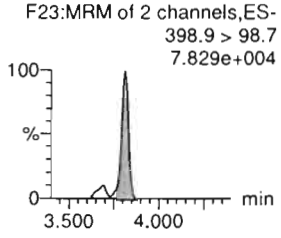
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

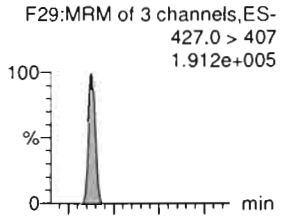
Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

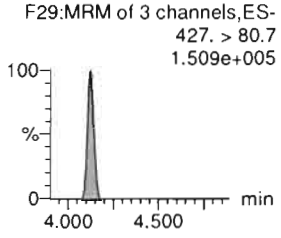
L-PFHxS



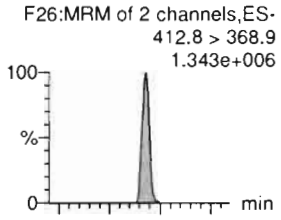


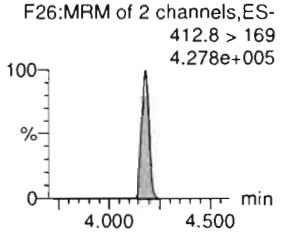
6:2 FTS



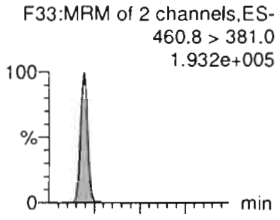


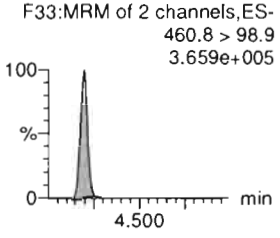
L-PFOA



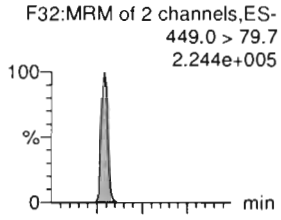


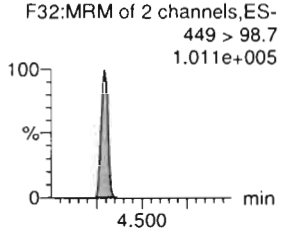
PFEChS



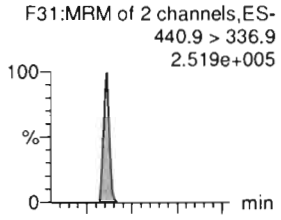


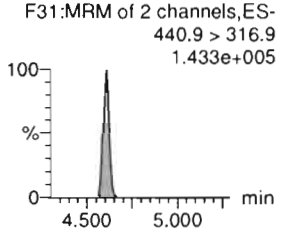
PFHpS



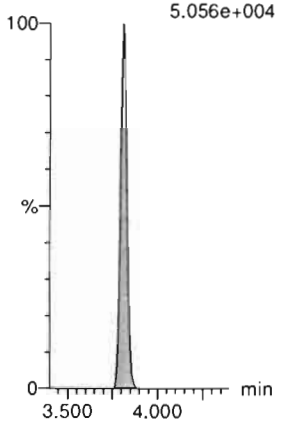


7:3 FTCA

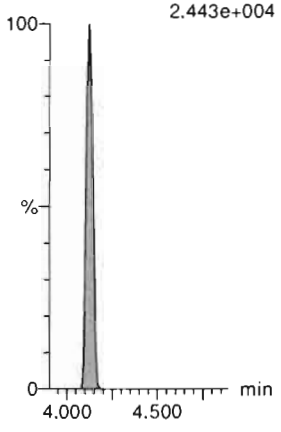




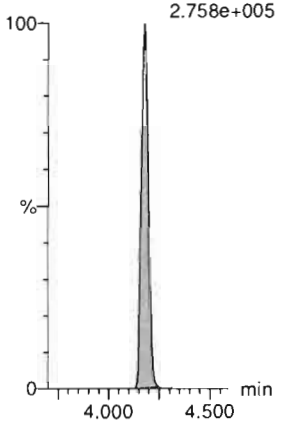
13C3-PFHxS-EIS



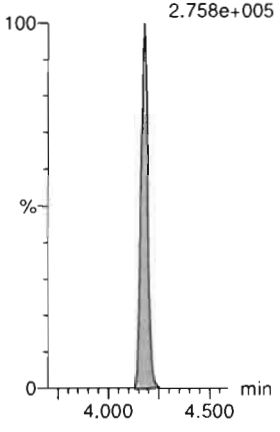
13C2-6:2 FTS-EIS



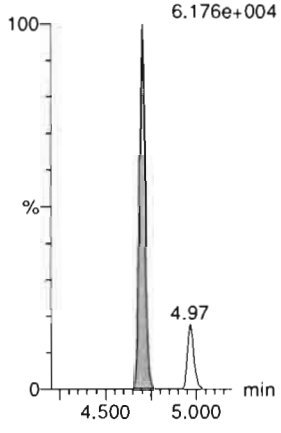
13C2-PFOA-EIS



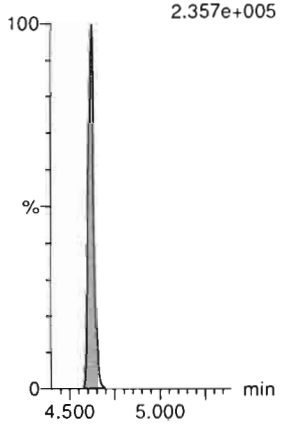
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

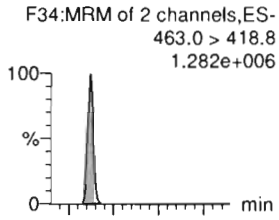


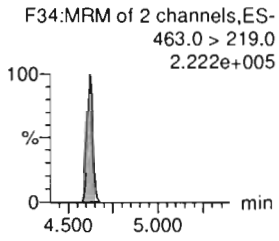
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

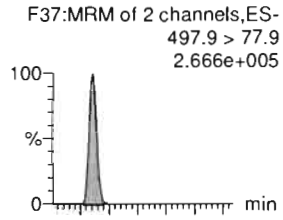
Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

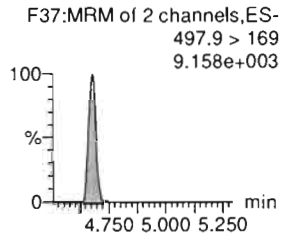
PFNA



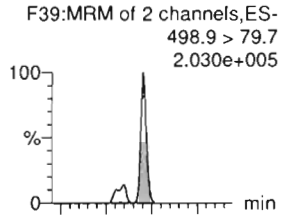


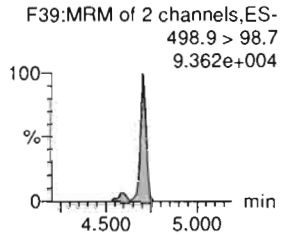
PFOSA



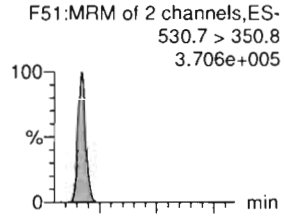


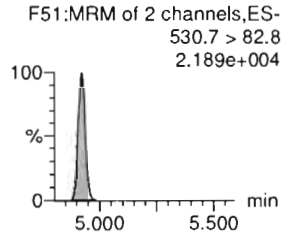
L-PFOS



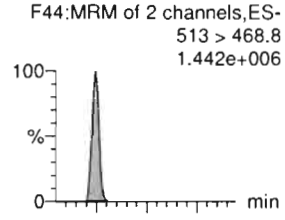


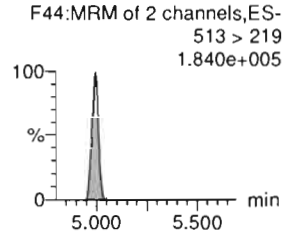
9Cl-PF30NS



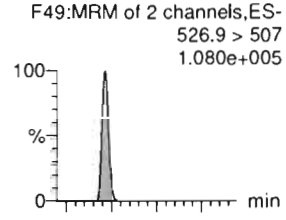


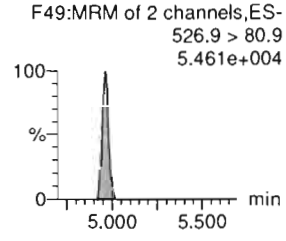
PFDA



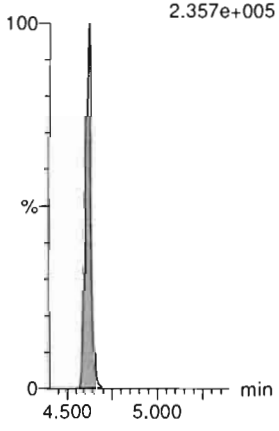


8:2 FTS

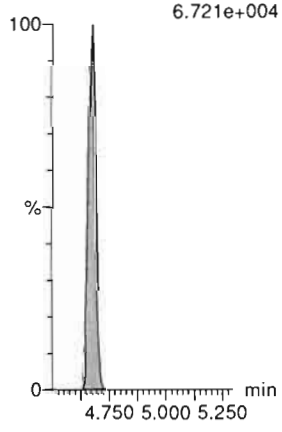




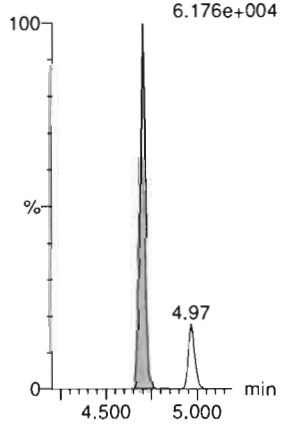
13C5-PFNA-EIS



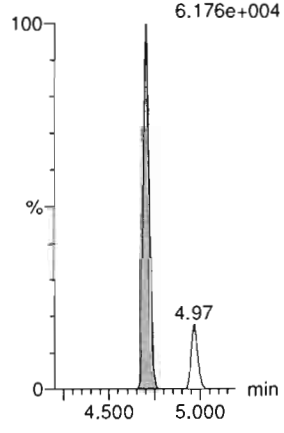
13C8-PFOSA-EIS



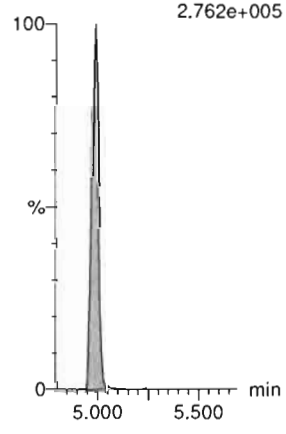
13C8-PFOS-EIS



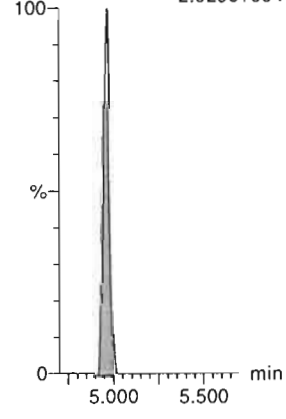
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

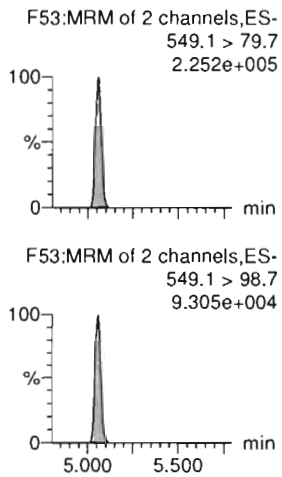


Dataset: Untitled

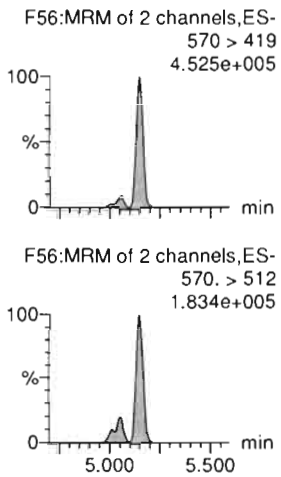
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

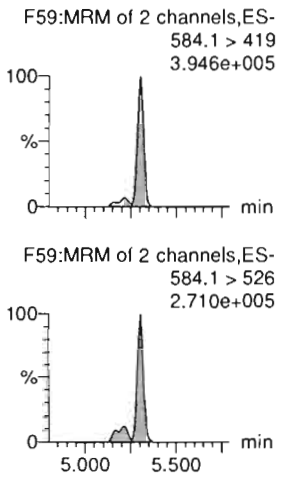
PFNS



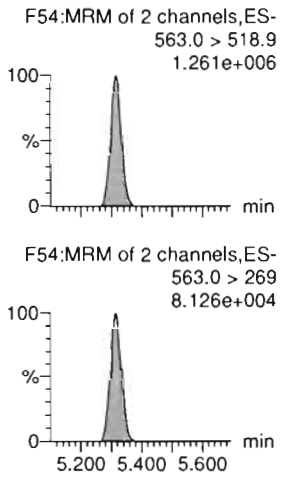
L-MeFOSAA



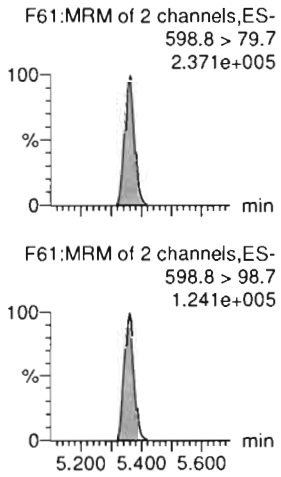
L-EtFOSAA



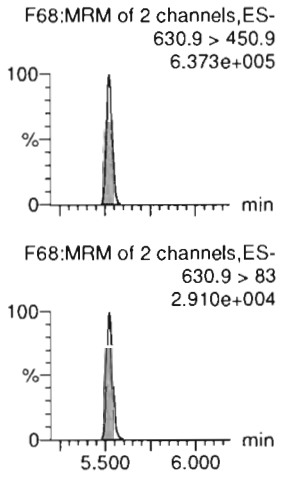
PFUdA



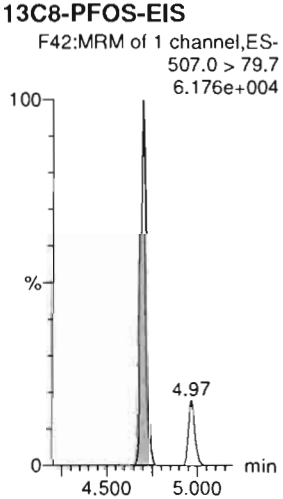
PFDS



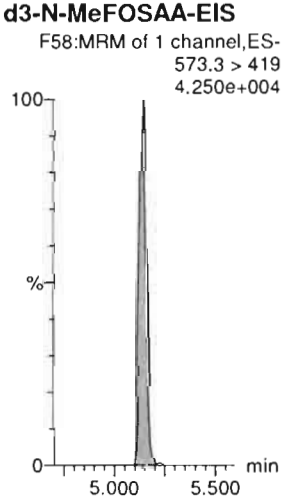
11Cl-PF30UdS



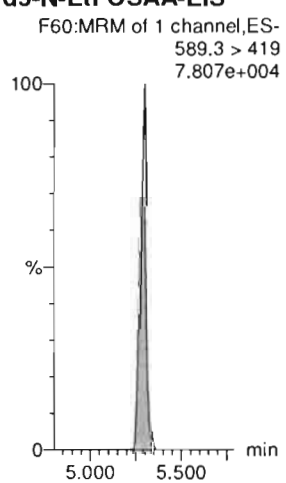
13C8-PFOS-EIS



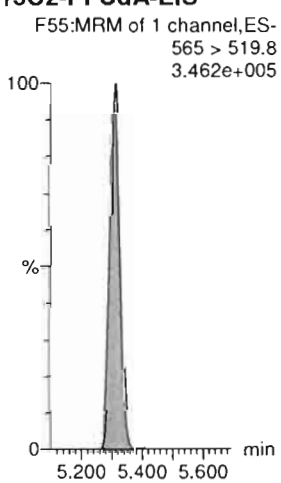
d3-N-MeFOSAA-EIS



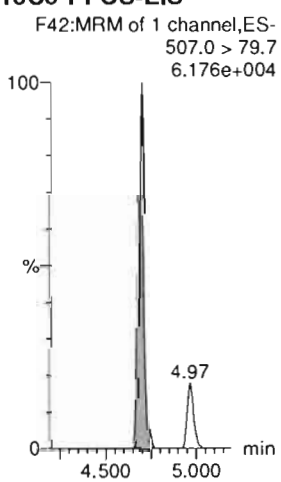
d5-N-EtFOSAA-EIS



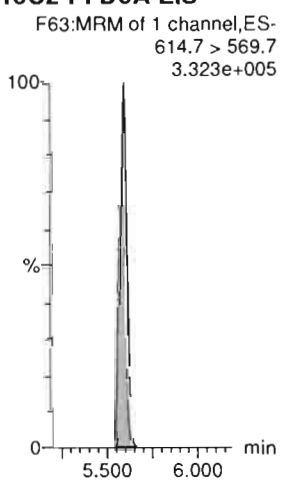
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

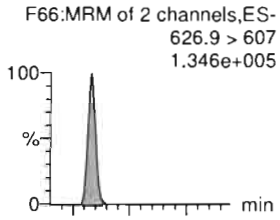


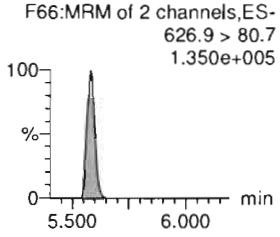
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

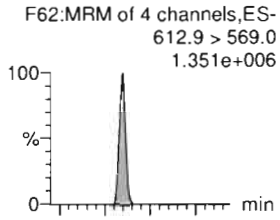
Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

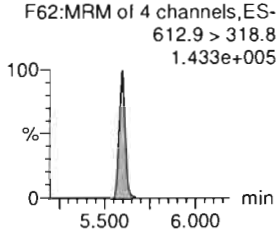
10:2 FTS



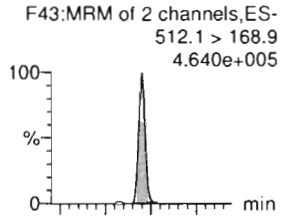


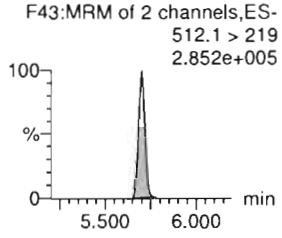
PFDoA



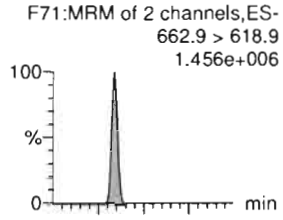


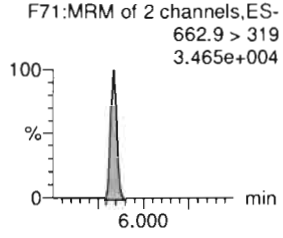
N-MeFOSA



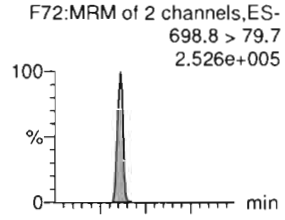


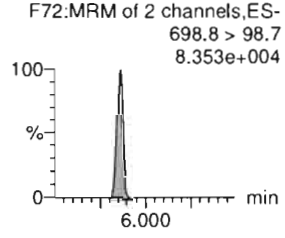
PFTrDA



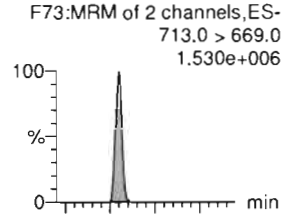


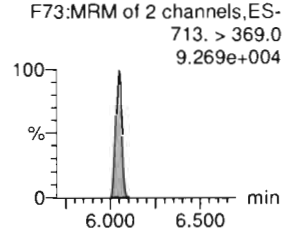
PFDoS



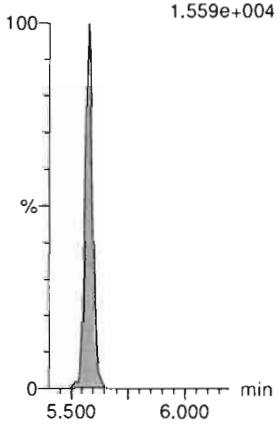


PFTeDA

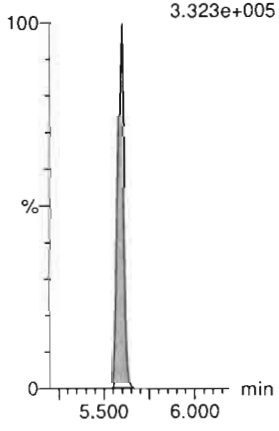




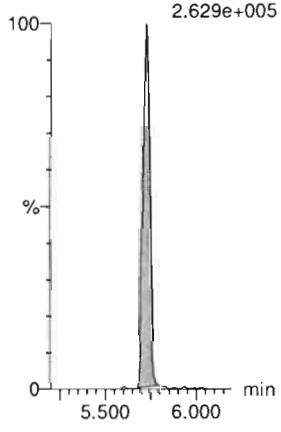
13C2-10:2 FTS-EIS



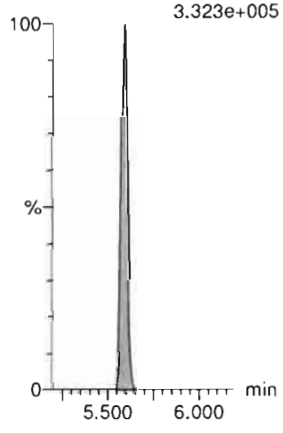
13C2-PFDoA-EIS



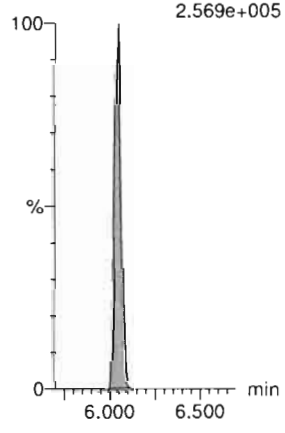
d3-N-MeFOSA-EIS



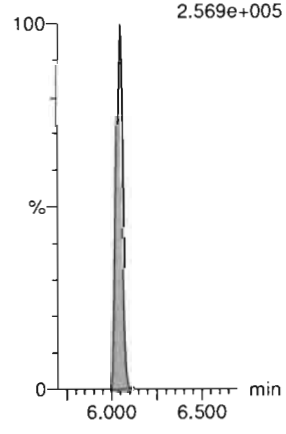
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

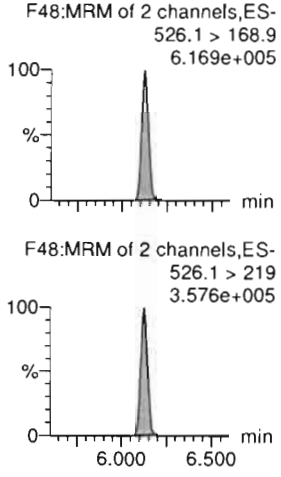


Dataset: Untitled

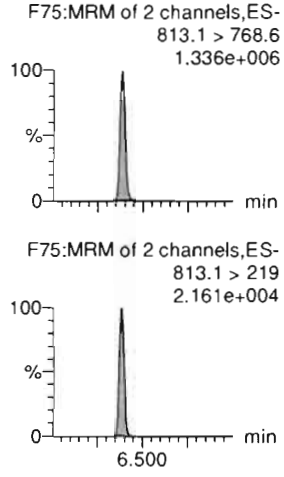
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

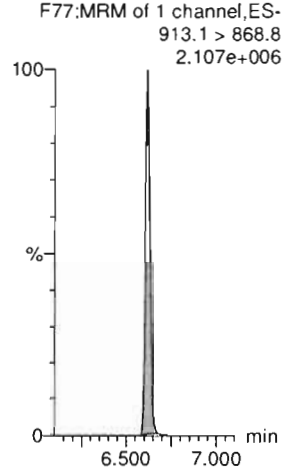
N-EtFOSA



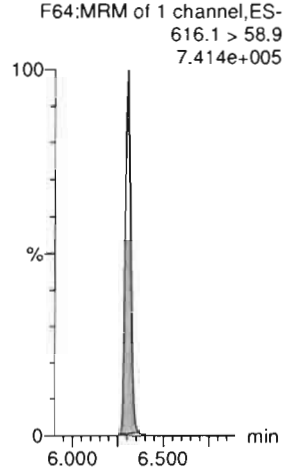
PFHxDA



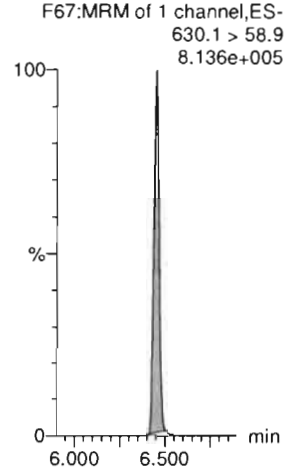
PFODA



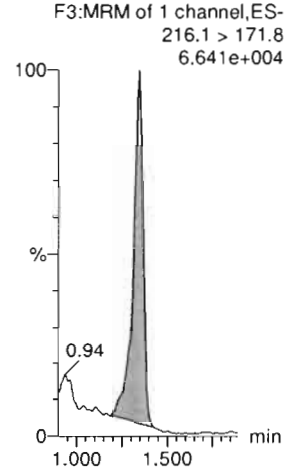
N-MeFOSE



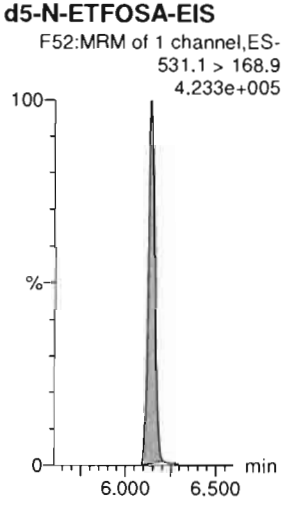
N-EtFOSE



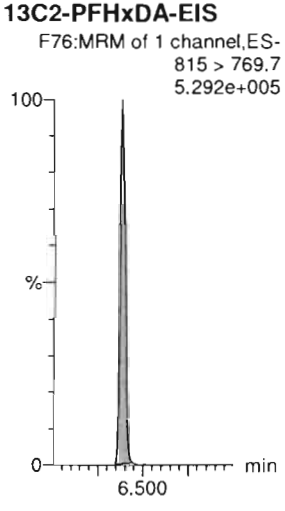
13C3-PFBA-RSD



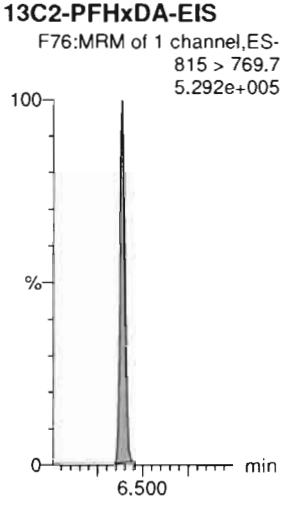
d5-N-ETFOSA-EIS



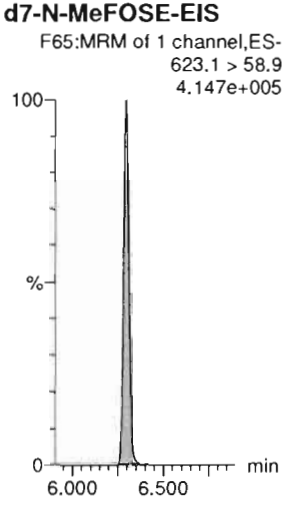
13C2-PFHxDA-EIS



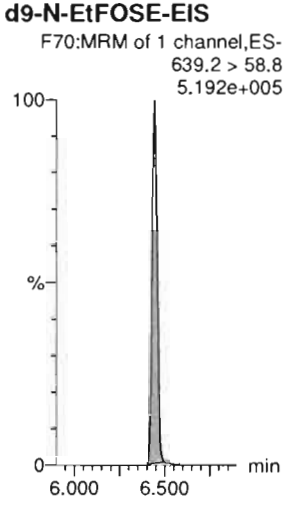
13C2-PFHxDA-EIS



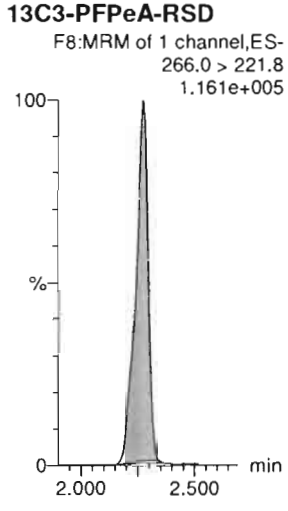
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

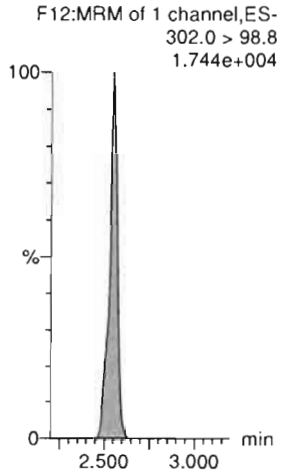


Dataset: Untitled

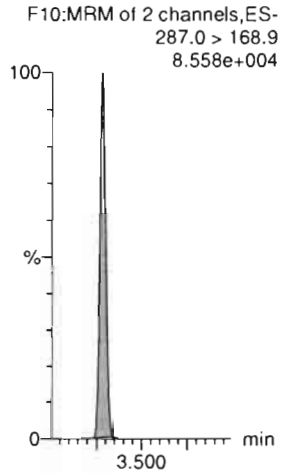
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

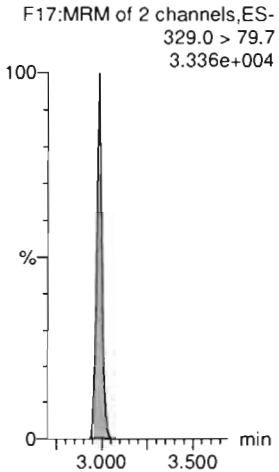
13C3-PFBS-RSD



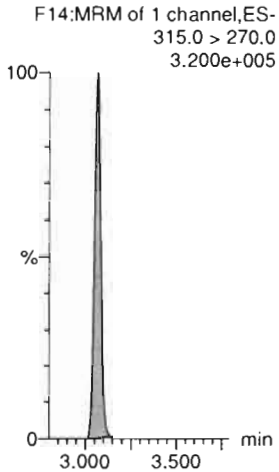
13C3-HFPO-DA-RSD



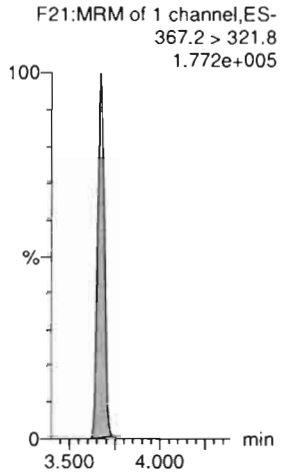
13C2-4:2 FTS-RSD



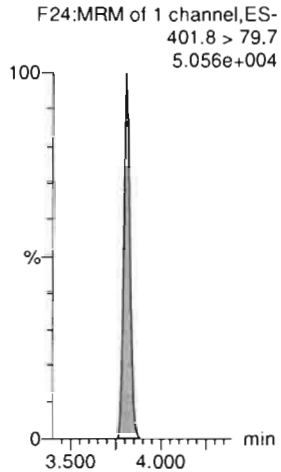
13C2-PFHxA-RSD



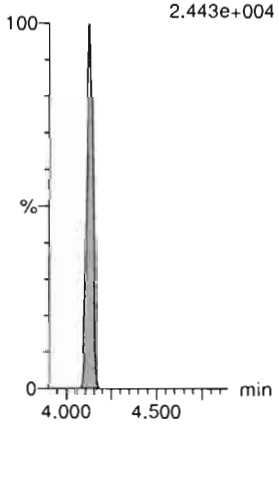
13C4-PFHpA-RSD



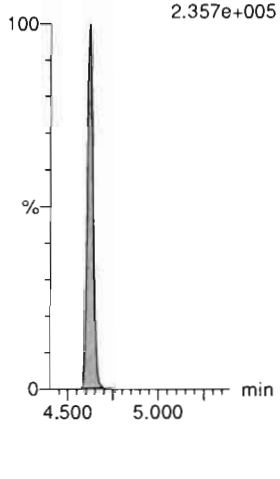
13C3-PFHxS-RSD



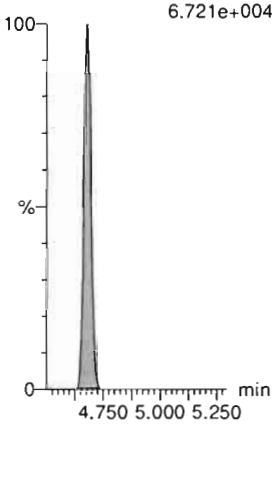
13C2-6:2 FTS-RSD



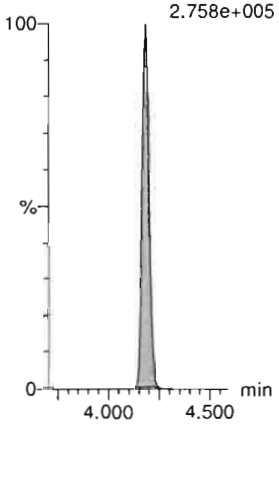
13C5-PFNA-RSD



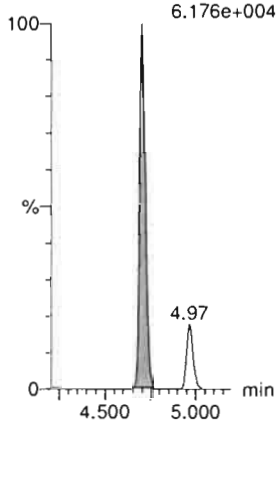
13C8-PFOSA-RSD



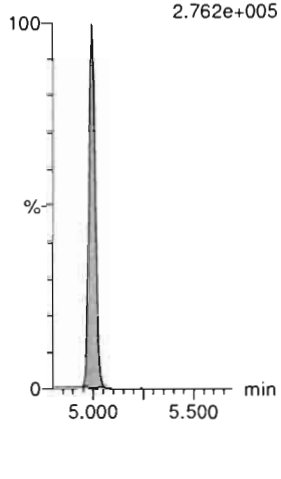
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD

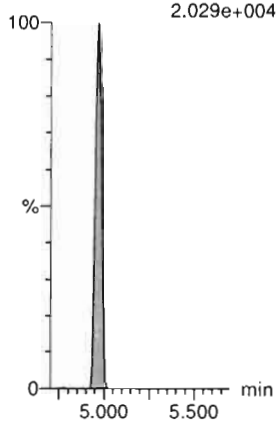


Dataset: Untitled

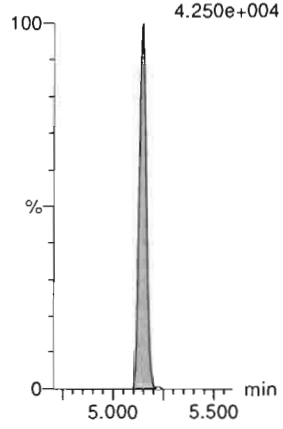
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

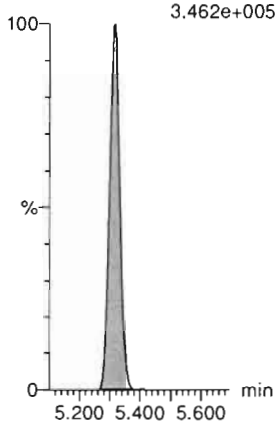
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.029e+004



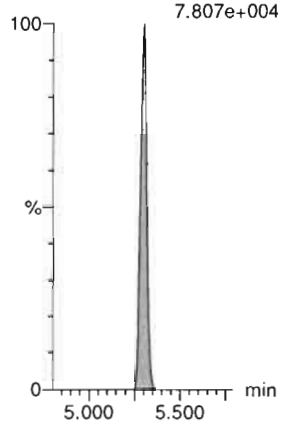
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.250e+004



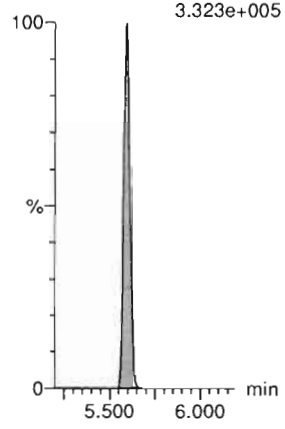
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.462e+005



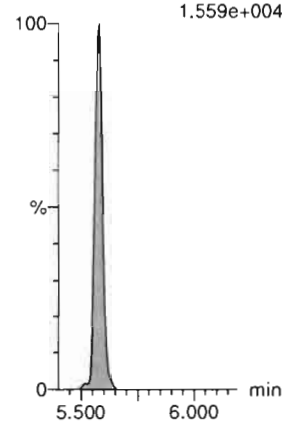
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
7.807e+004



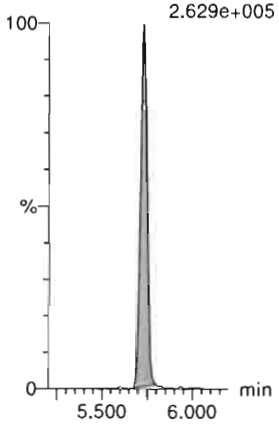
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.323e+005



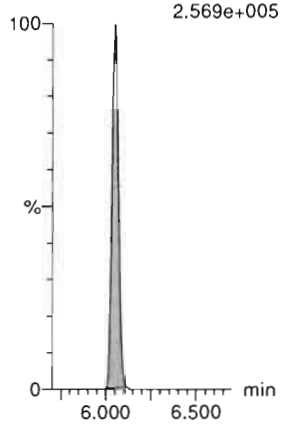
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.559e+004



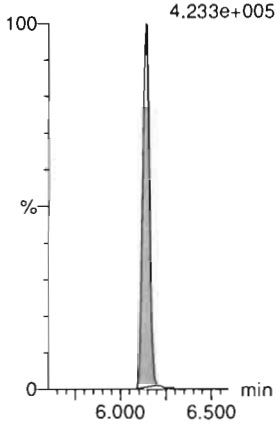
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.629e+005



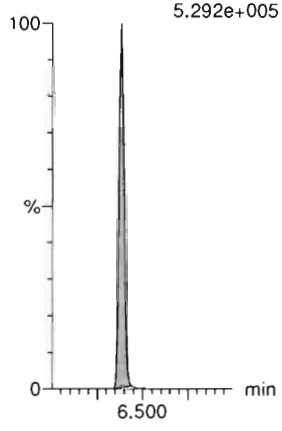
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.569e+005



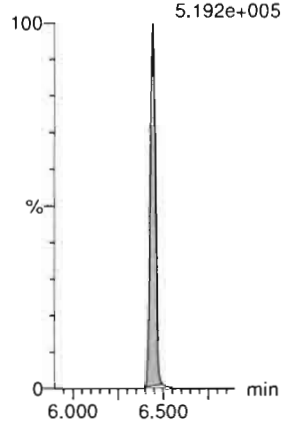
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.233e+005



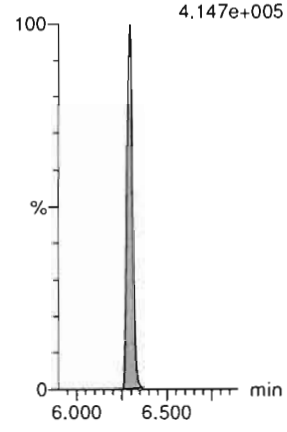
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.292e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.192e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.147e+005

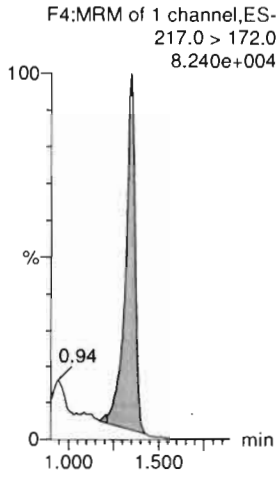


Dataset: Untitled

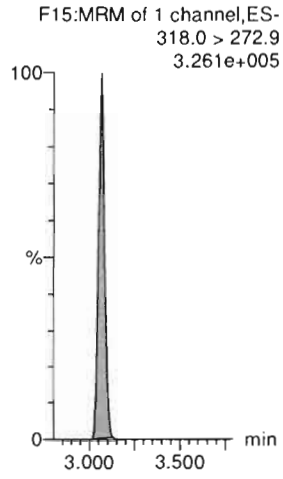
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-9, Date: 03-Mar-2020, Time: 18:08:13, ID: ST200303P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

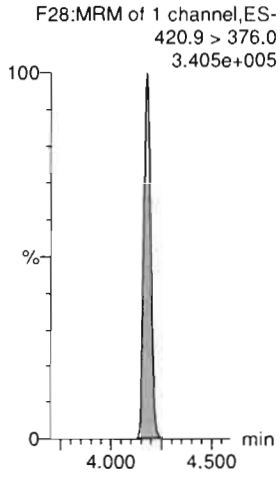
13C4-PFBA



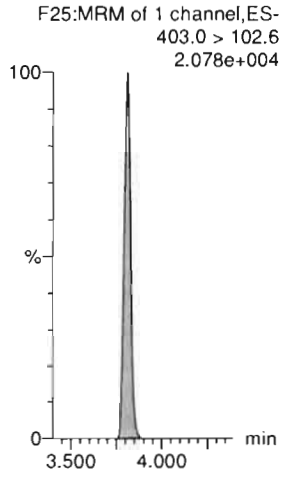
13C5-PFHxA



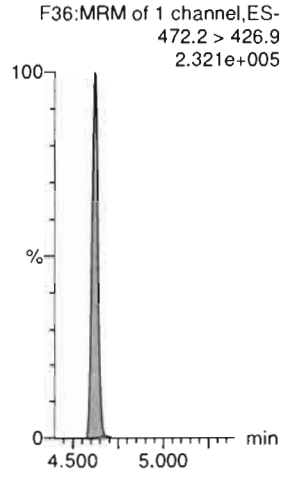
13C8-PFOA



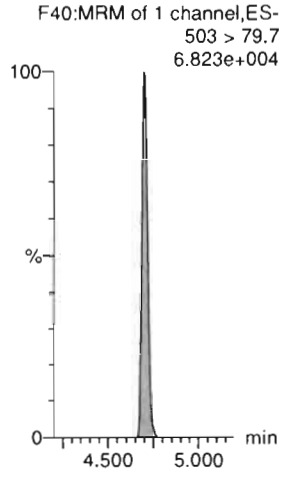
18O2-PFHxS



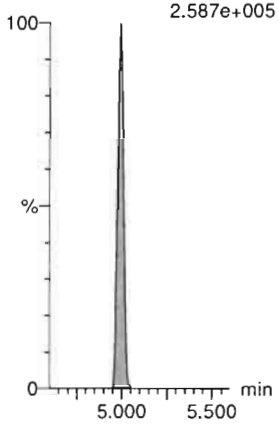
13C9-PFNA



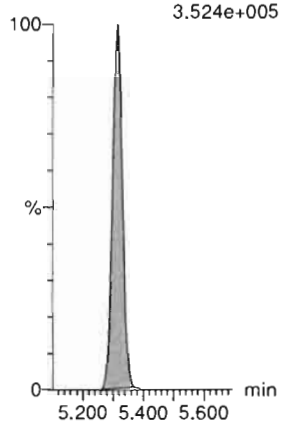
13C4-PFOS



13C6-PFDA



13C7-PFUdA

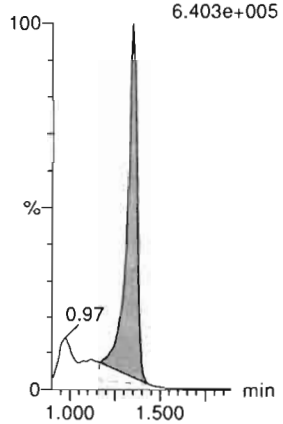


Dataset: Untitled

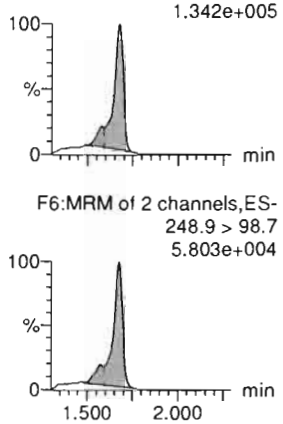
Last Altered: Wednesday, March 04, 2020 09:30:20 Pacific Standard Time
Printed: Wednesday, March 04, 2020 09:30:34 Pacific Standard Time

Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

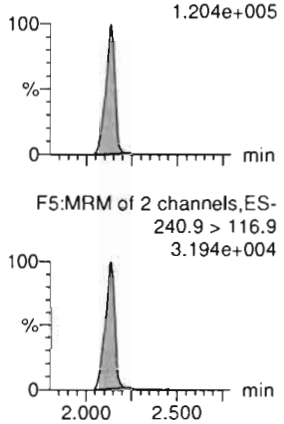
PFBA



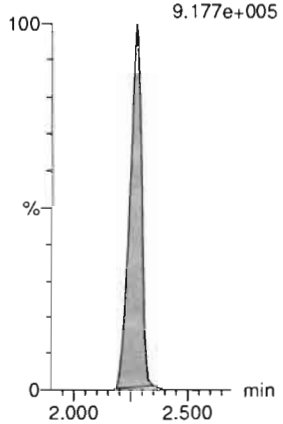
PFPrS



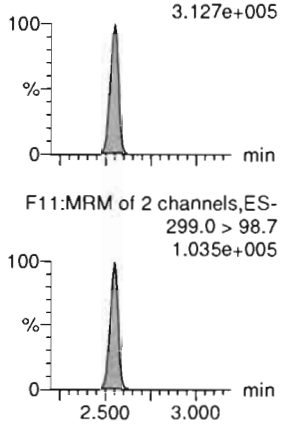
3:3 FTCA



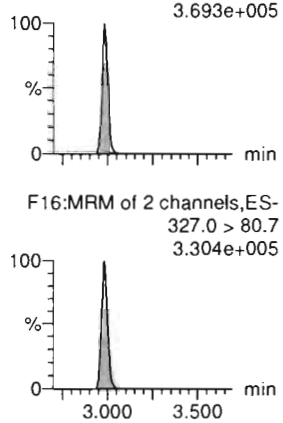
PFPeA



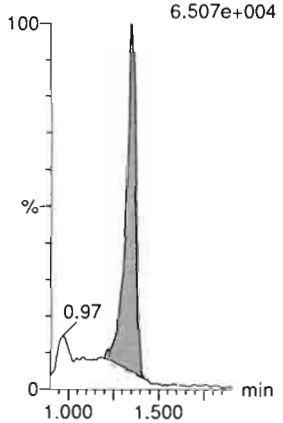
PFBS



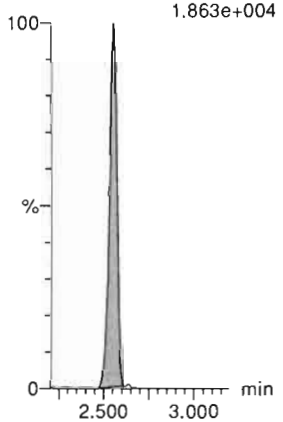
4:2 FTS



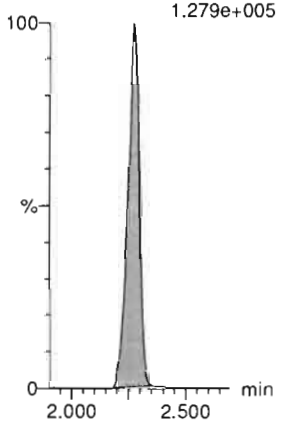
13C3-PFBA-EIS



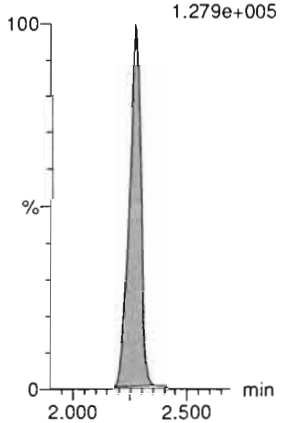
13C3-PFBS-EIS



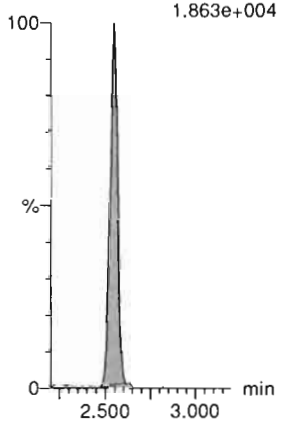
13C3-PFPeA-EIS



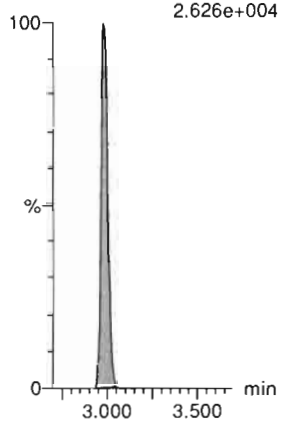
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

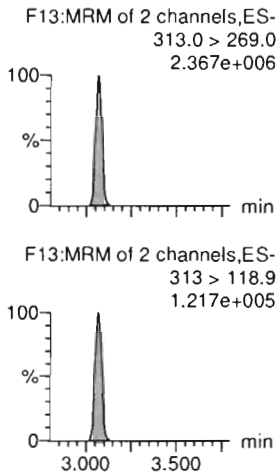


Dataset: Untitled

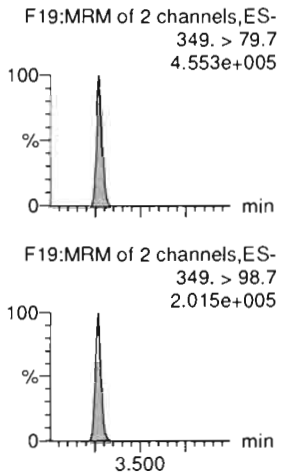
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

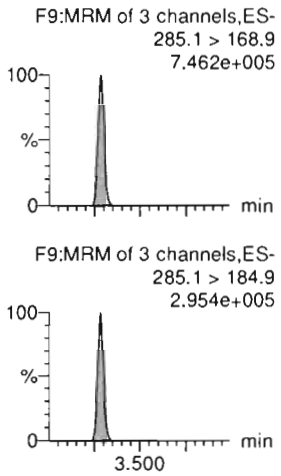
PFHxA



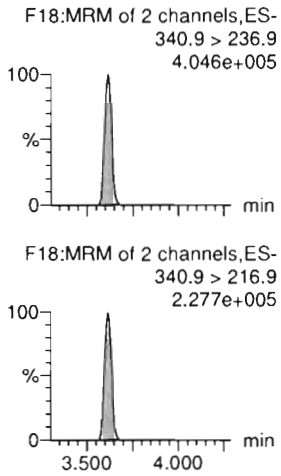
PFPeS



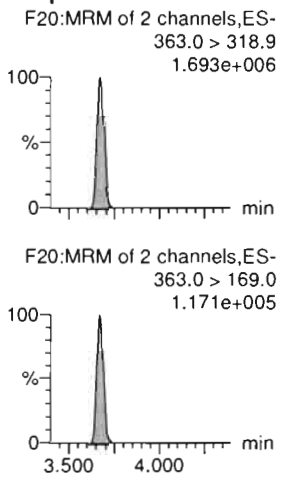
HFPO-DA



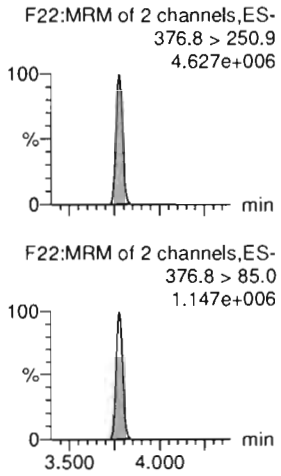
5:3 FTCA



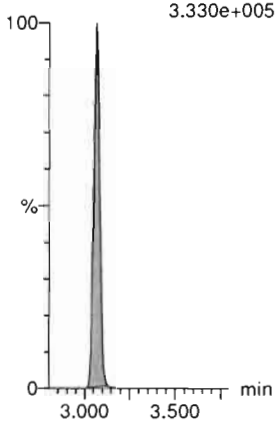
PFHpA



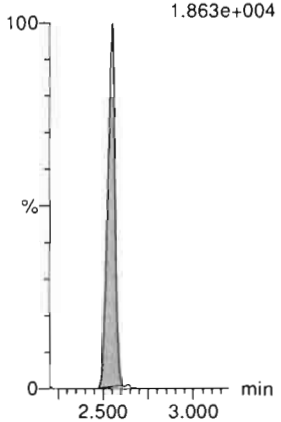
ADONA



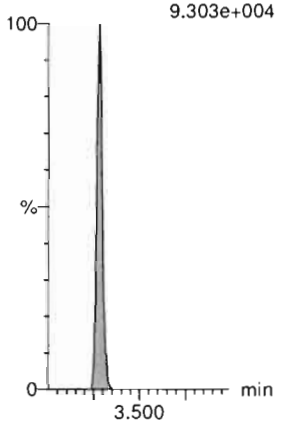
13C2-PFHxA-EIS



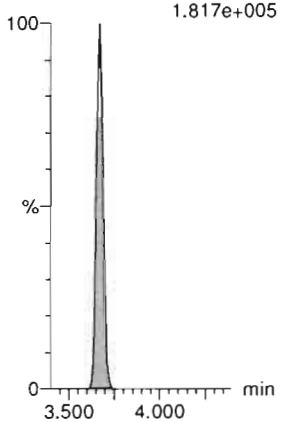
13C3-PFBS-EIS



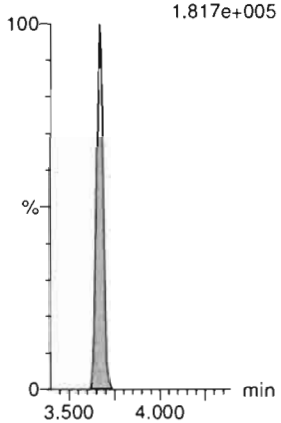
13C3-HFPO-DA-EIS



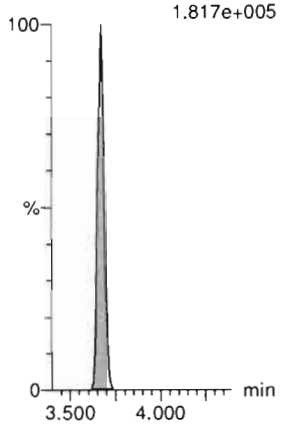
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

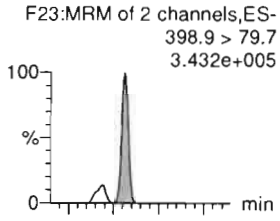


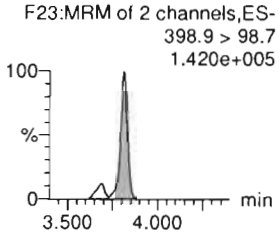
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

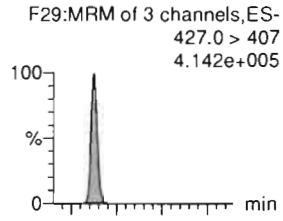
Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

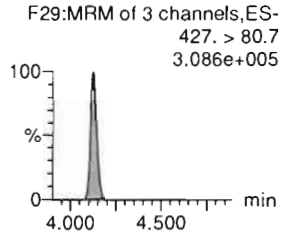
L-PFHxS



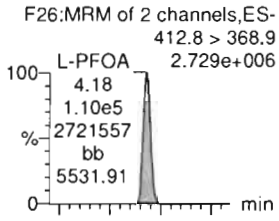


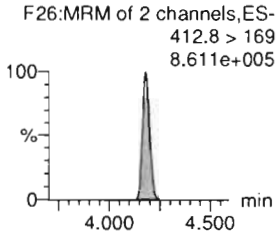
6:2 FTS



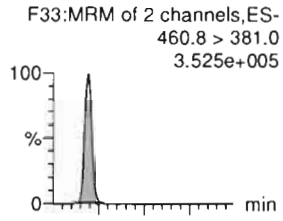


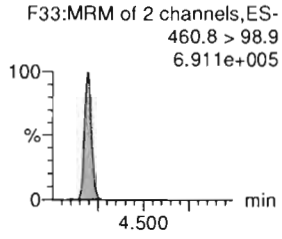
L-PFOA



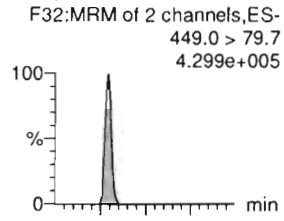


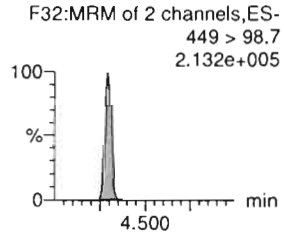
PFEChS



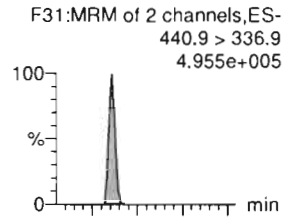


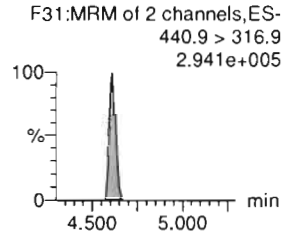
PFHpS



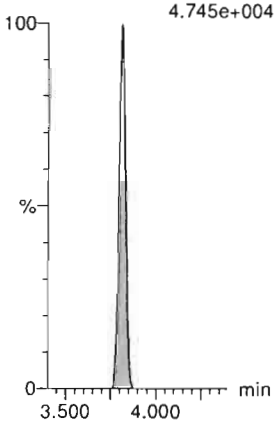


7:3 FTCA

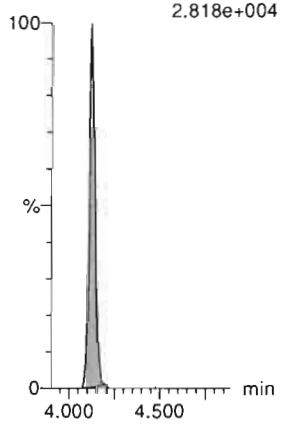




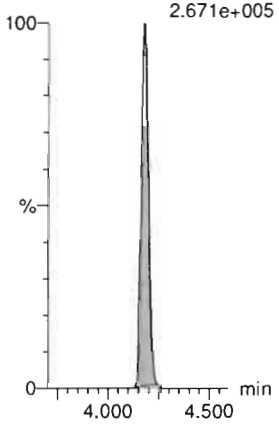
13C3-PFHxS-EIS



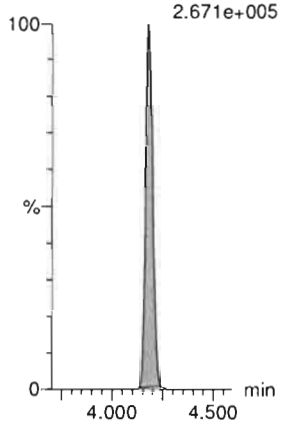
13C2-6:2 FTS-EIS



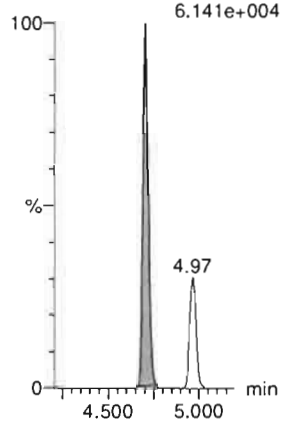
13C2-PFOA-EIS



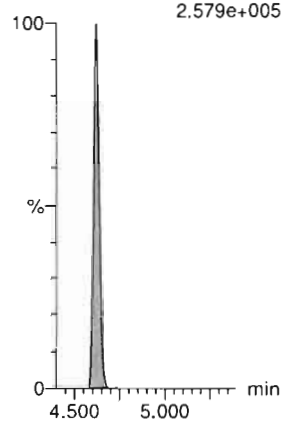
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

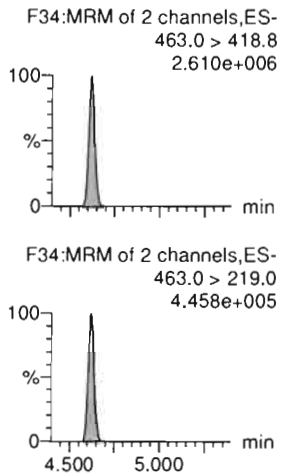


Dataset: Untitled

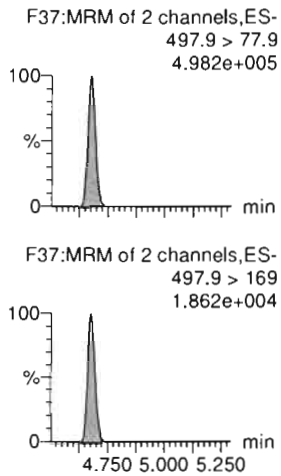
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

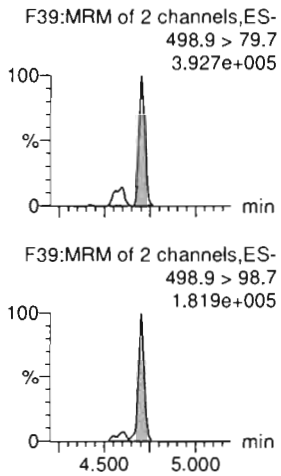
PFNA



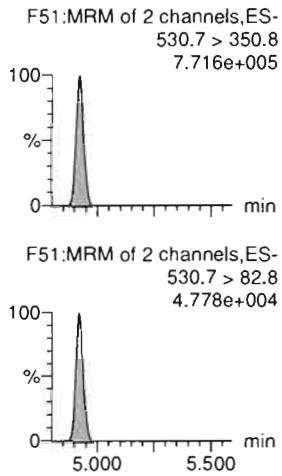
PFOSA



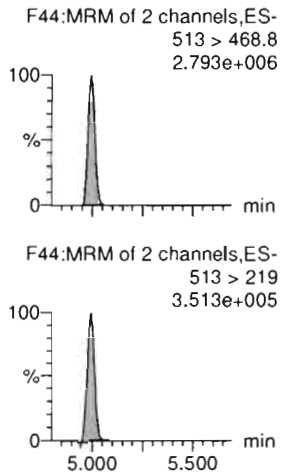
L-PFOS



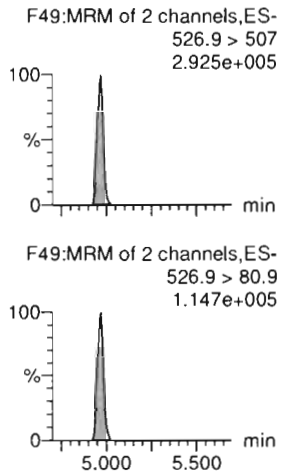
9Cl-PF30NS



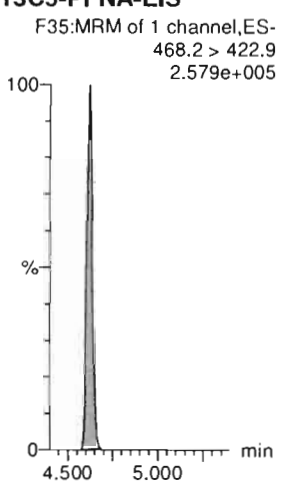
PFDA



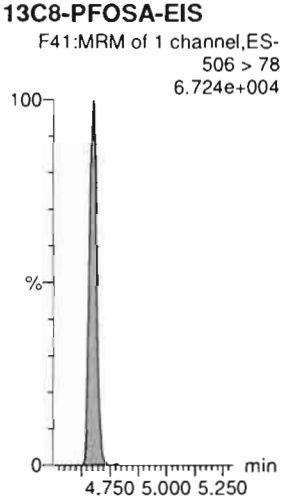
8:2 FTS



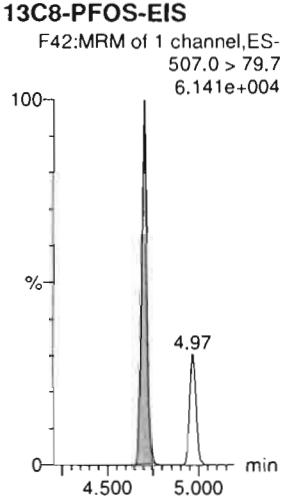
13C5-PFNA-EIS



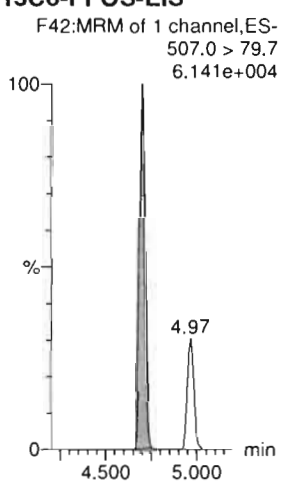
13C8-PFOSA-EIS



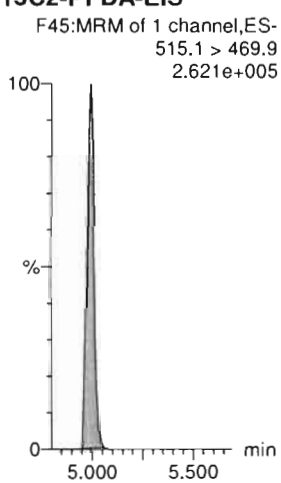
13C8-PFOS-EIS



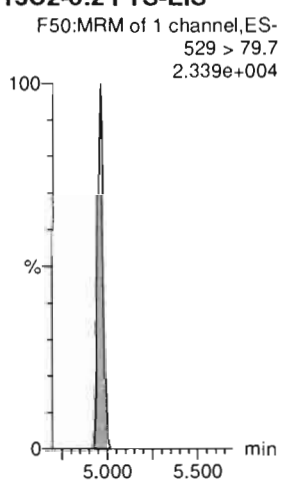
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

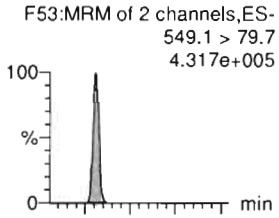


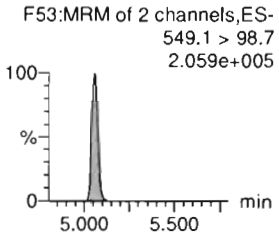
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

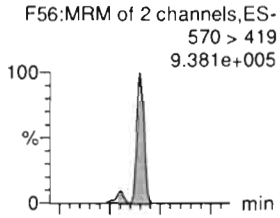
Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

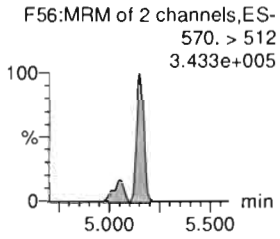
PFNS



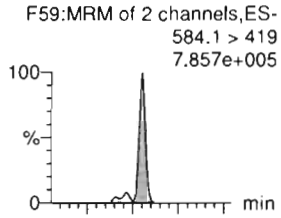


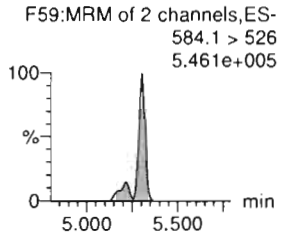
L-MeFOSAA



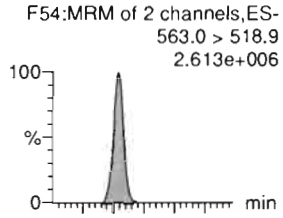


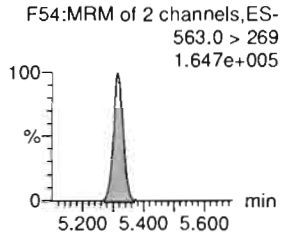
L-EtFOSAA



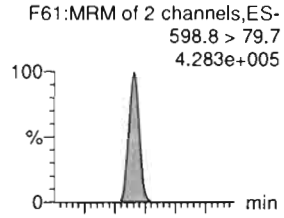


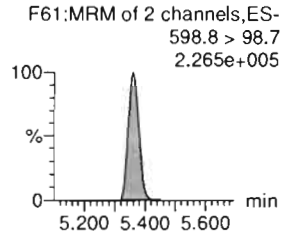
PFUdA



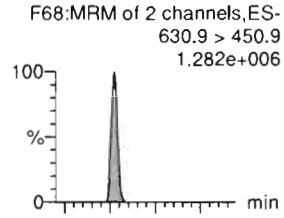


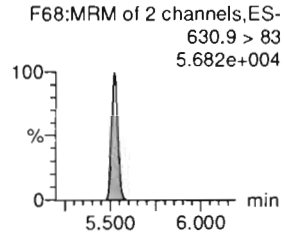
PFDS



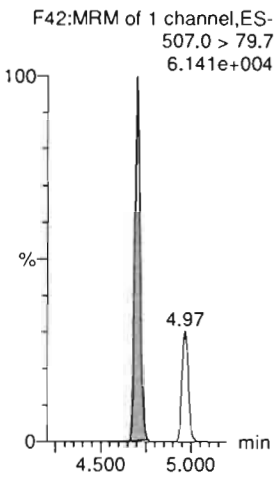


11Cl-PF30UdS

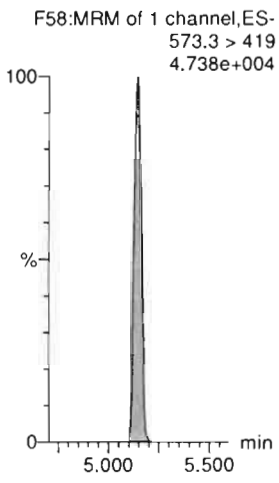




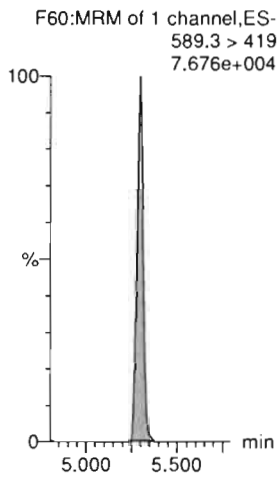
13C8-PFOS-EIS



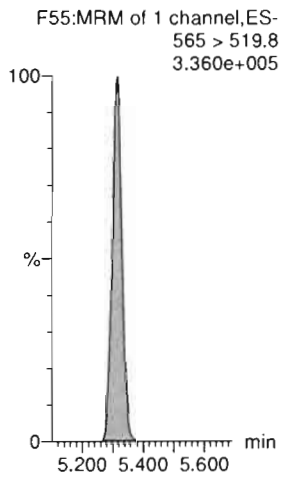
d3-N-MeFOSAA-EIS



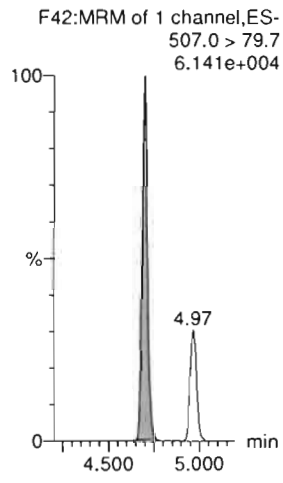
d5-N-EtFOSAA-EIS



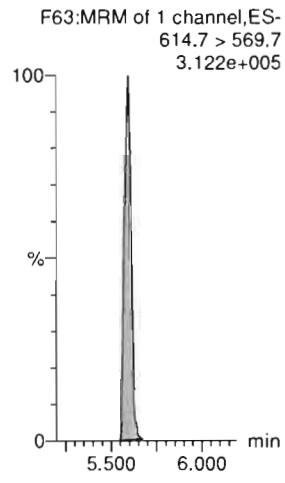
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

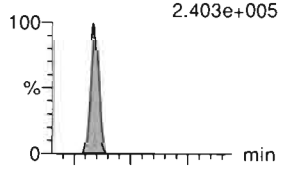


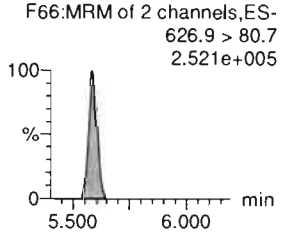
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

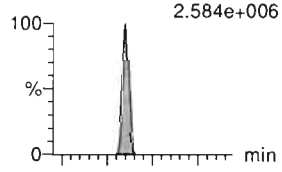
Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

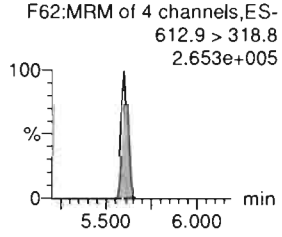
10:2 FTS



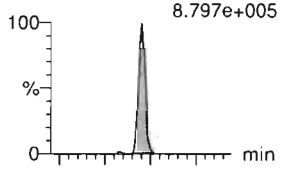


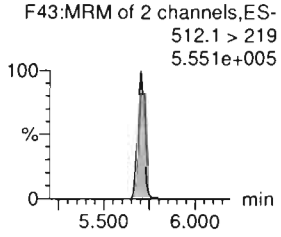
PFDoA



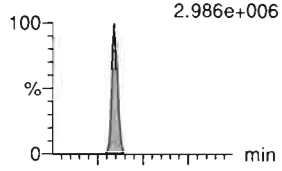


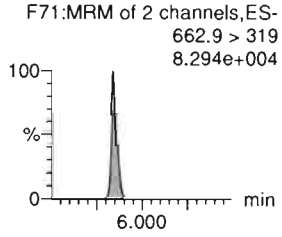
N-MeFOSA



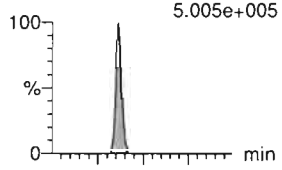


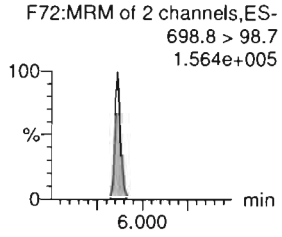
PFTrDA



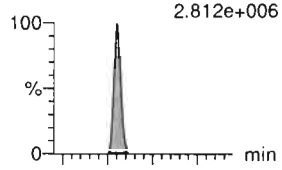


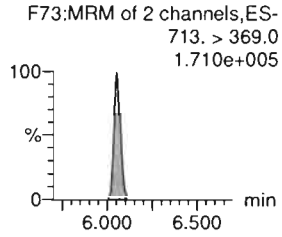
PFDoS



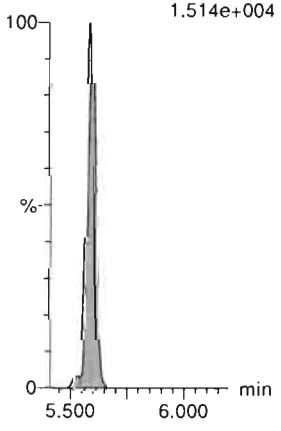


PFTeDA

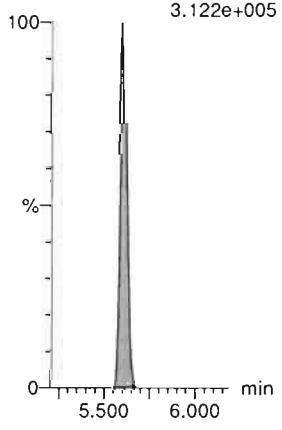




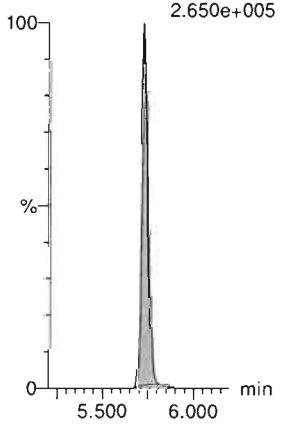
13C2-10:2 FTS-EIS



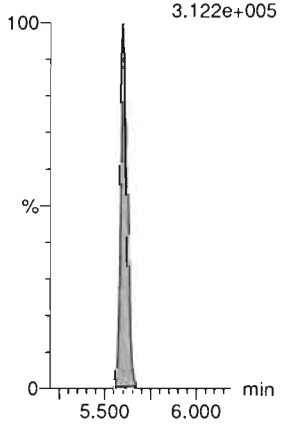
13C2-PFDoA-EIS



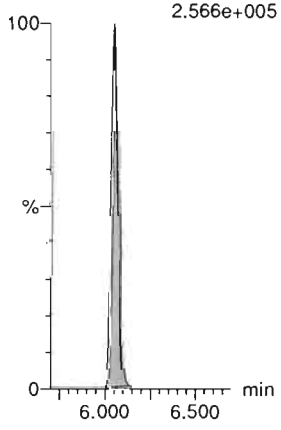
d3-N-MeFOSA-EIS



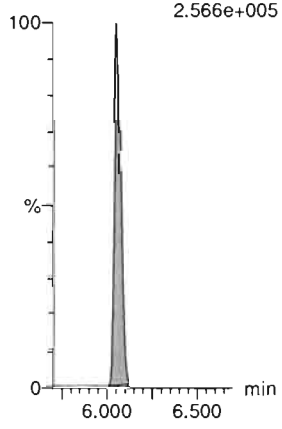
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

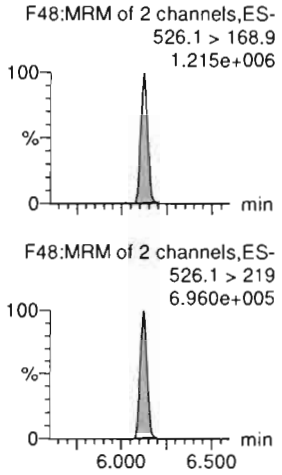


Dataset: Untitled

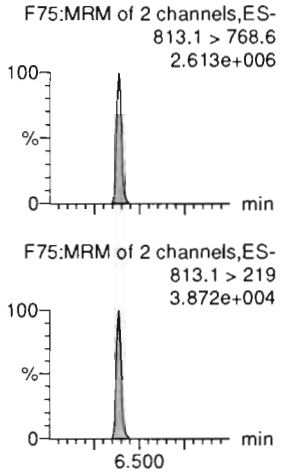
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

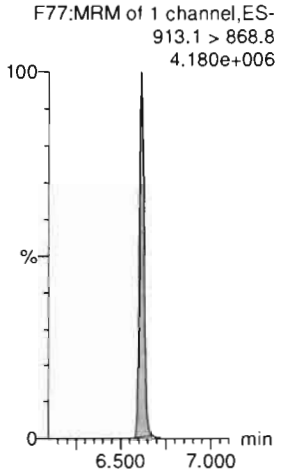
N-EtFOSA



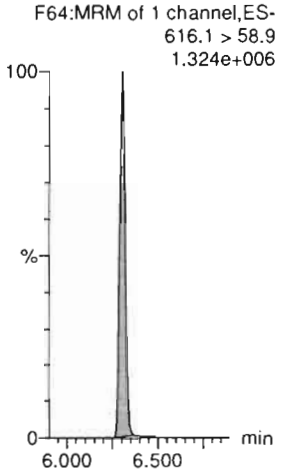
PFHxDA



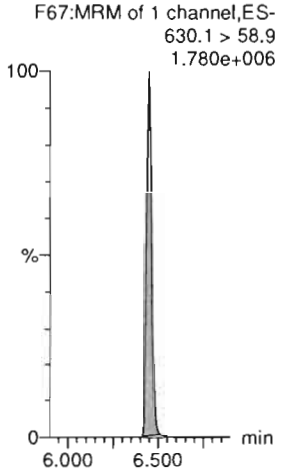
PFODA



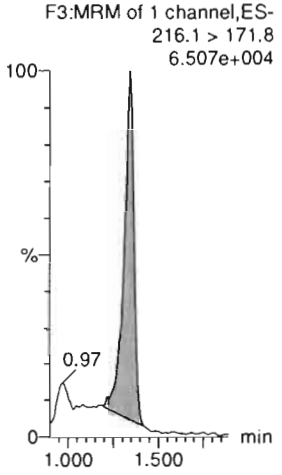
N-MeFOSE



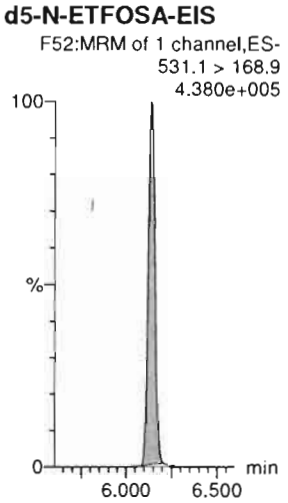
N-EtFOSE



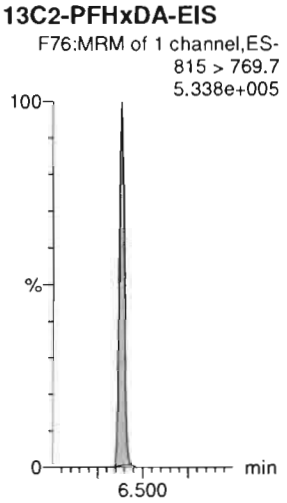
13C3-PFBA-RSD



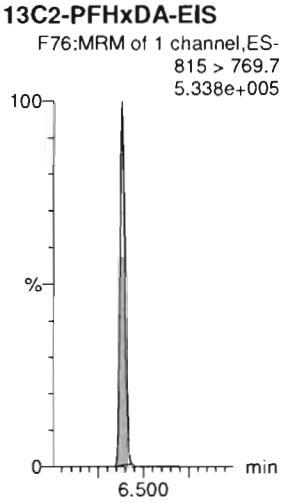
d5-N-ETFOSA-EIS



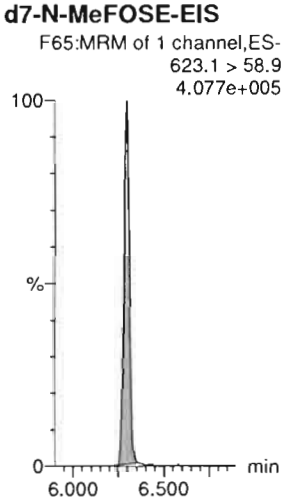
13C2-PFHxDA-EIS



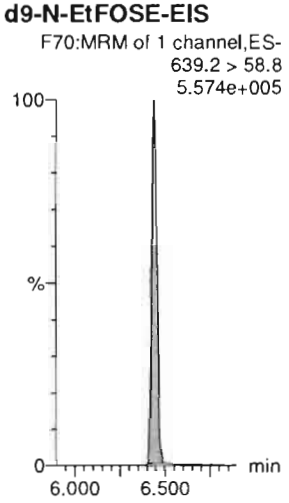
13C2-PFHxDA-EIS



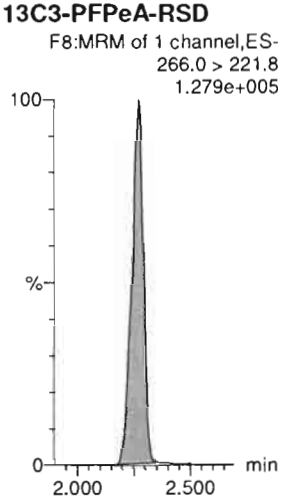
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

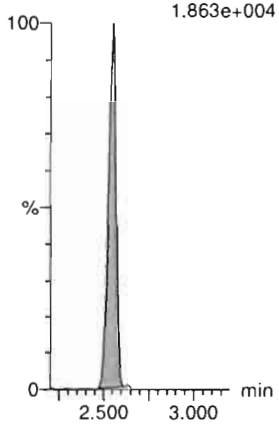


Dataset: Untitled

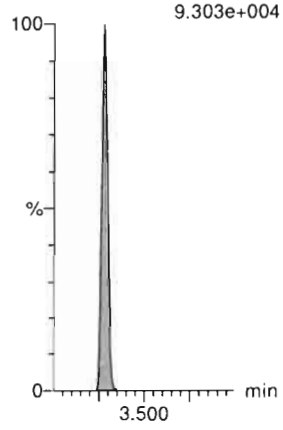
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

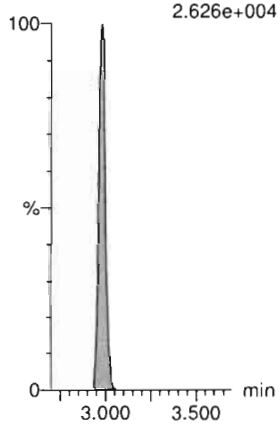
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.863e+004



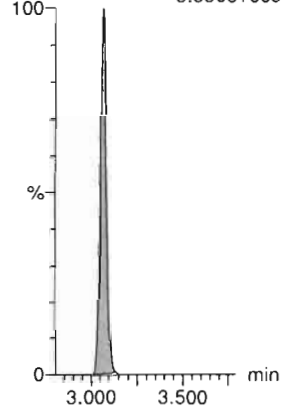
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.303e+004



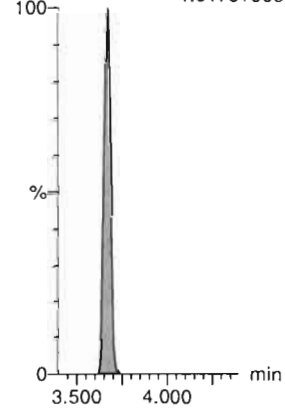
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.626e+004



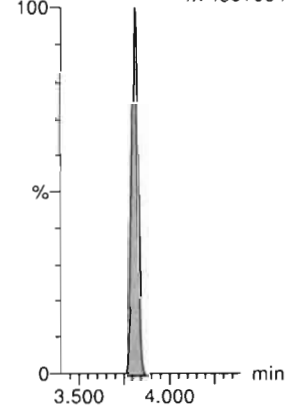
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.330e+005



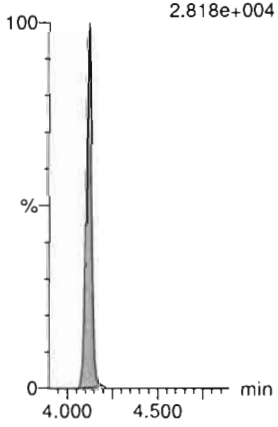
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.817e+005



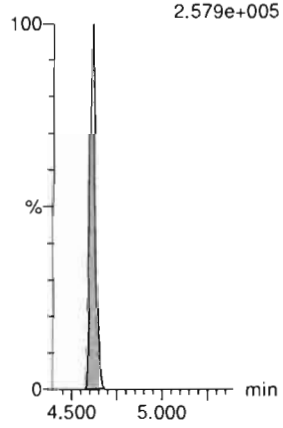
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
4.745e+004



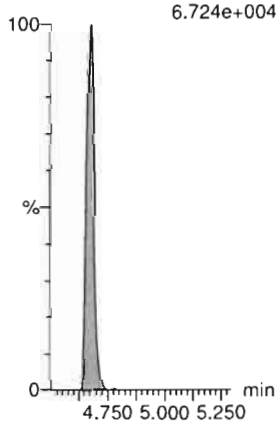
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.818e+004



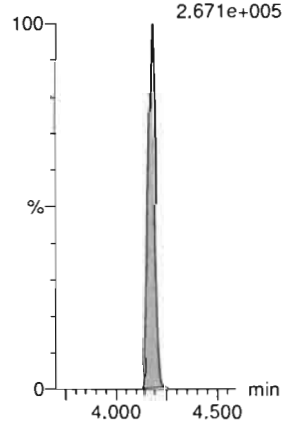
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.579e+005



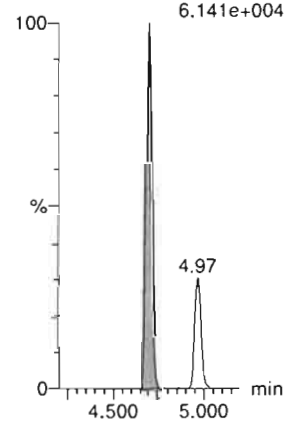
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
6.724e+004



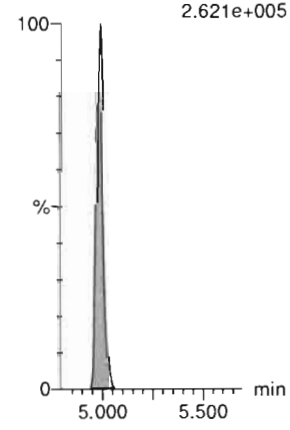
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.671e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.141e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.621e+005

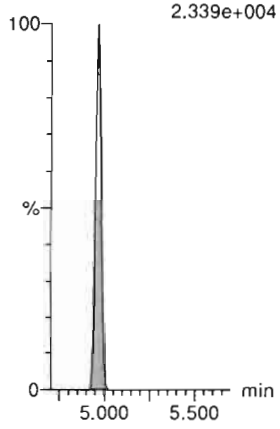


Dataset: Untitled

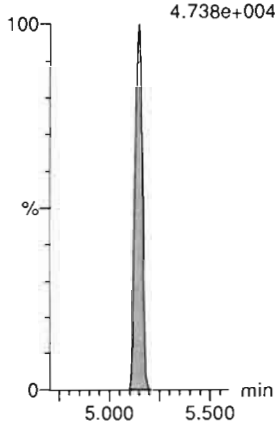
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

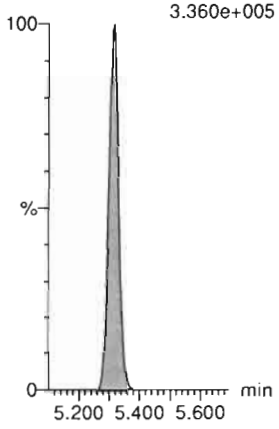
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.339e+004



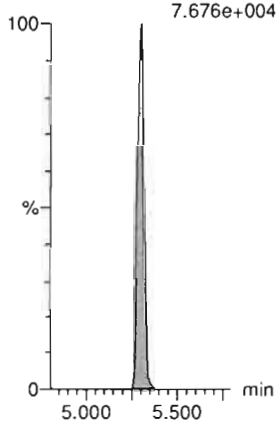
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.738e+004



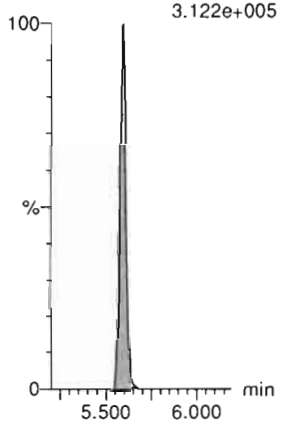
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.360e+005



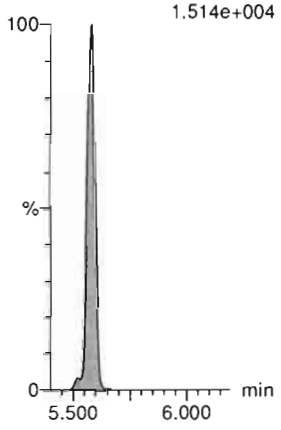
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
7.676e+004



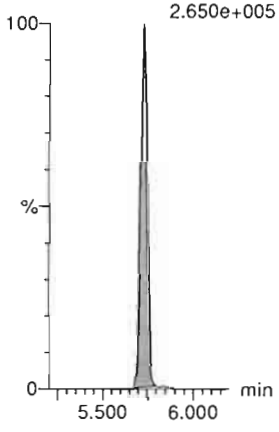
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.122e+005



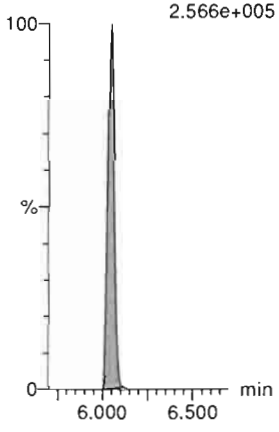
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.514e+004



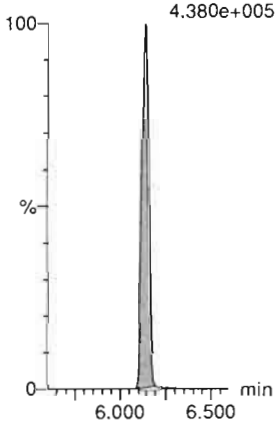
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.650e+005



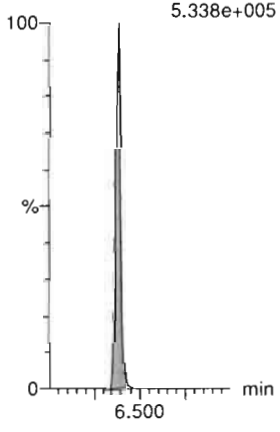
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.566e+005



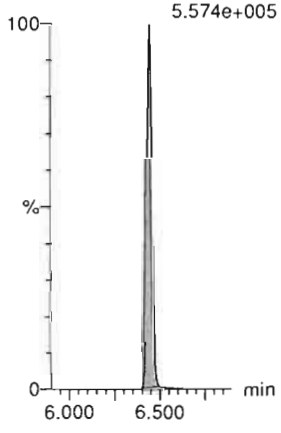
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.380e+005



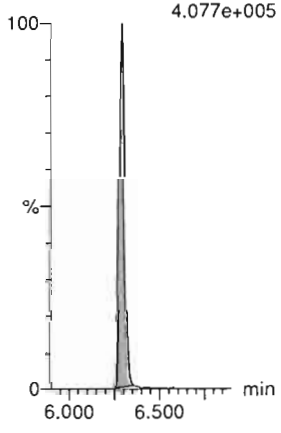
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.338e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.574e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.077e+005

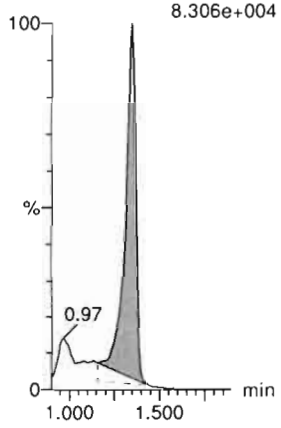


Dataset: Untitled

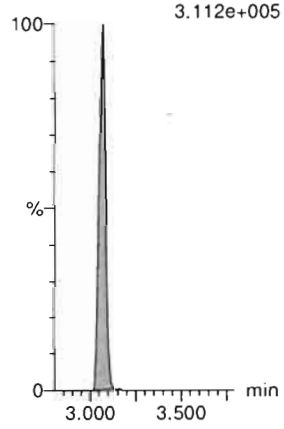
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-10, Date: 03-Mar-2020, Time: 18:18:44, ID: ST200303P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

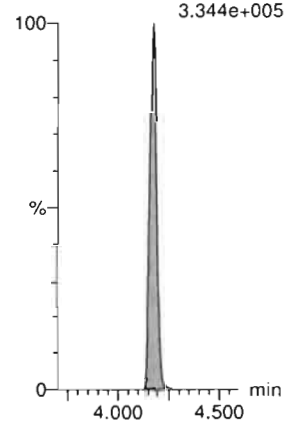
13C4-PFBA



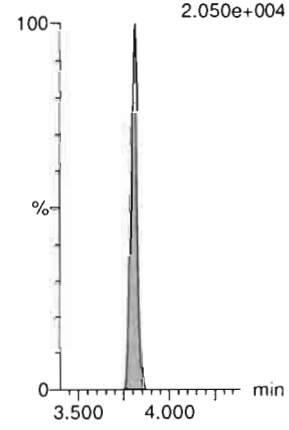
13C5-PFHxA



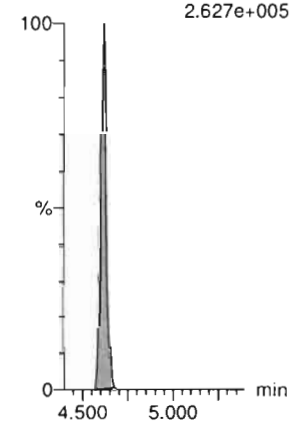
13C8-PFOA



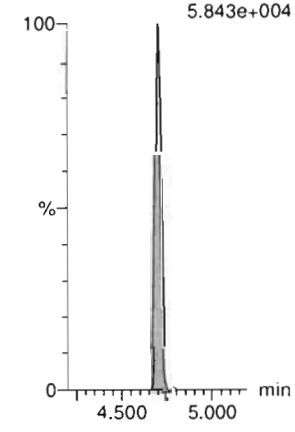
18O2-PFHxS



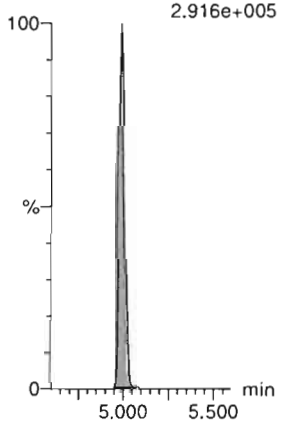
13C9-PFNA



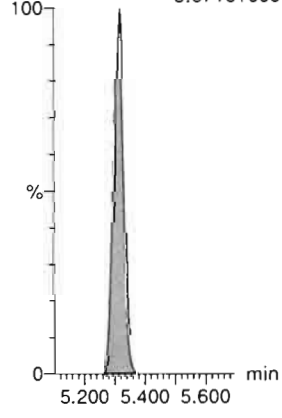
13C4-PFOS



13C6-PFDA



13C7-PFUdA

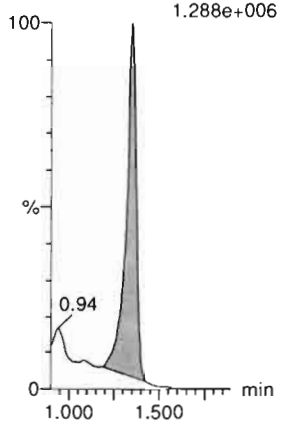


Dataset: Untitled

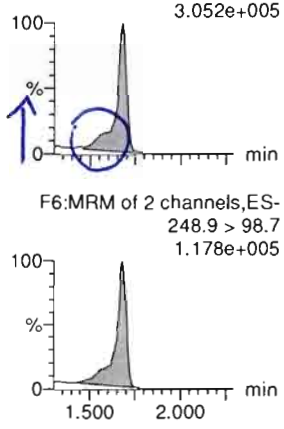
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

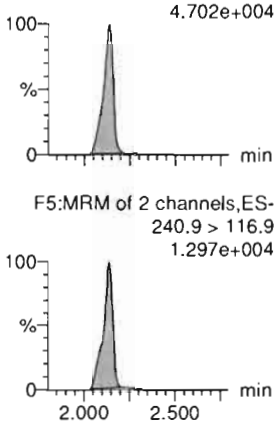
PFBA



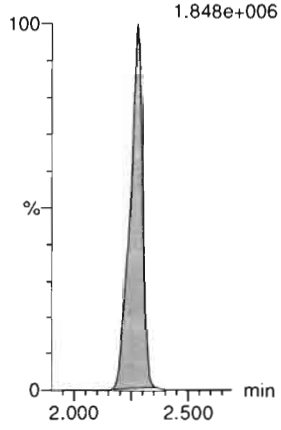
PFPrS



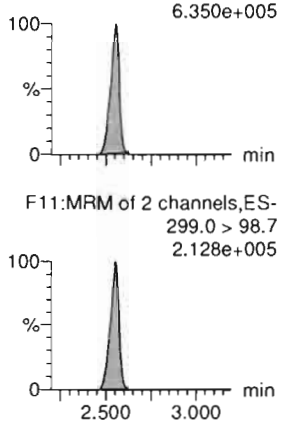
3:3 FTCA



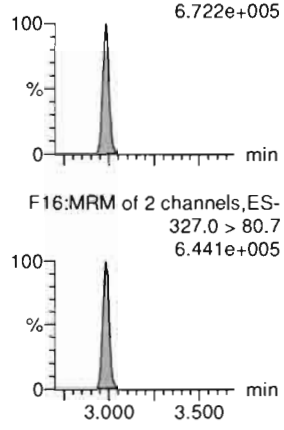
PFPeA



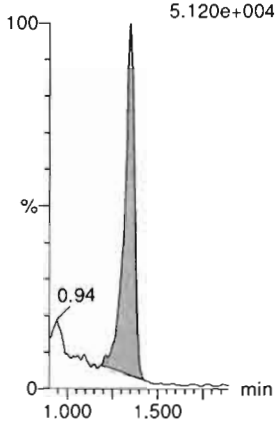
PFBS



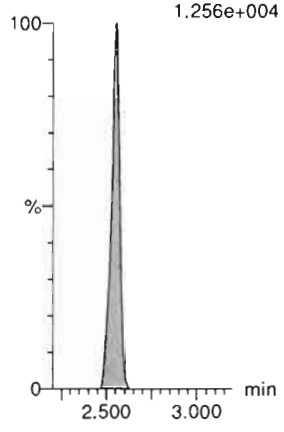
4:2 FTS



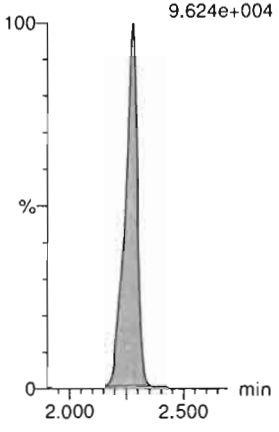
13C3-PFBA-EIS



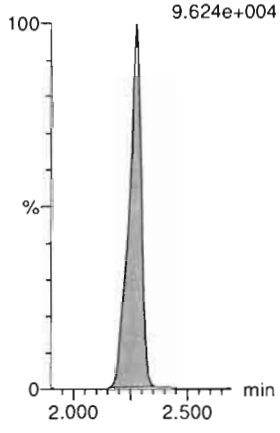
13C3-PFBS-EIS



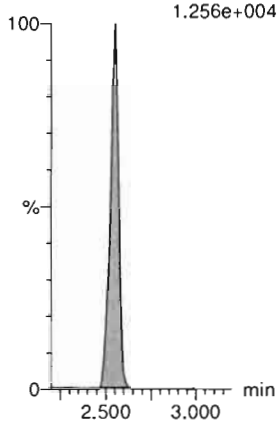
13C3-PFPeA-EIS



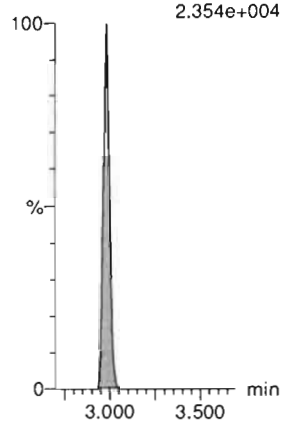
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

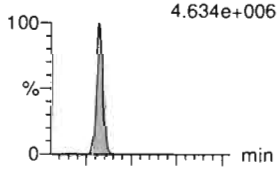


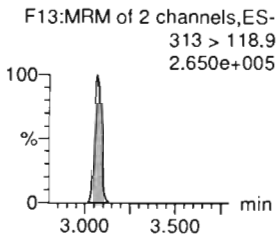
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

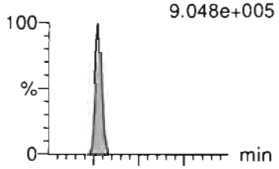
Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

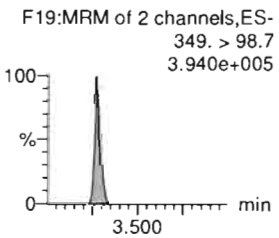
PFHxA



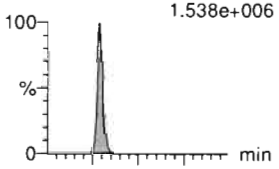


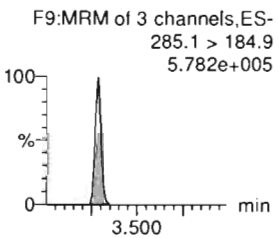
PFPeS



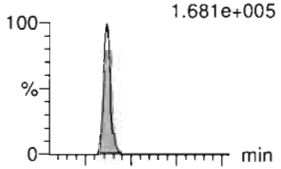


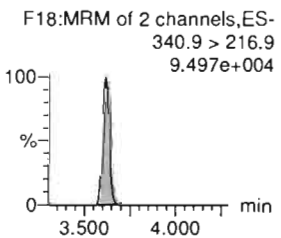
HFPO-DA



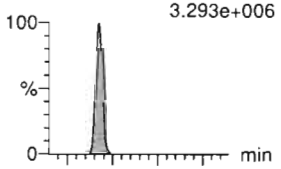


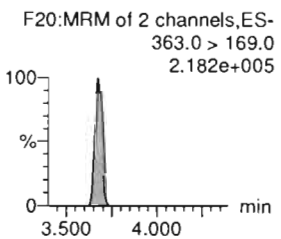
5:3 FTCA



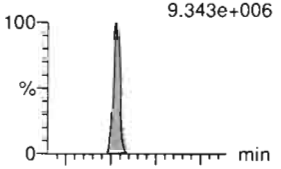


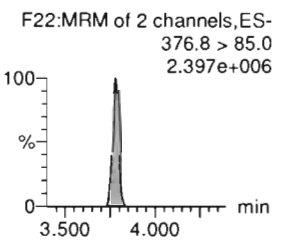
PFHpA



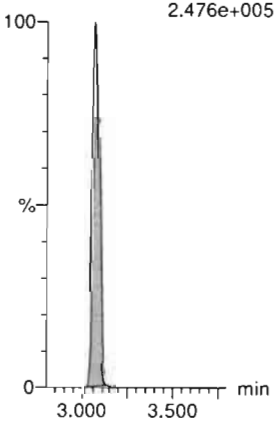


ADONA

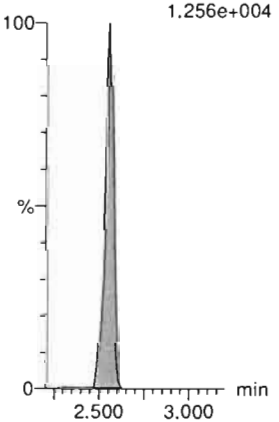




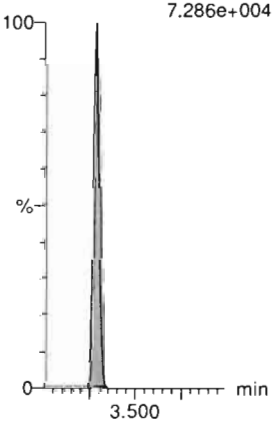
13C2-PFHxA-EIS



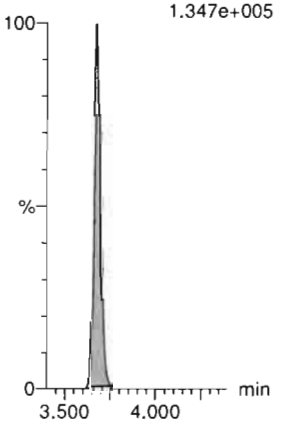
13C3-PFBS-EIS



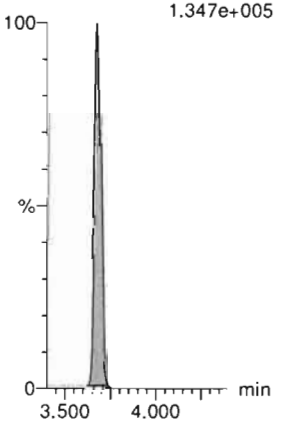
13C3-HFPO-DA-EIS



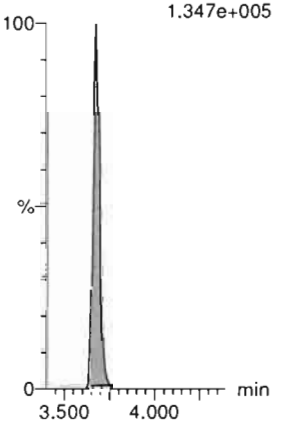
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

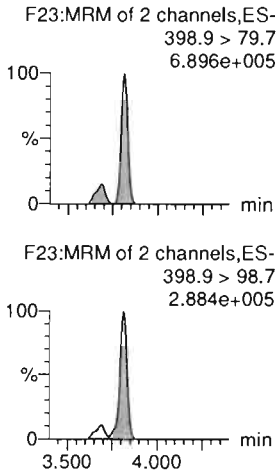


Dataset: Untitled

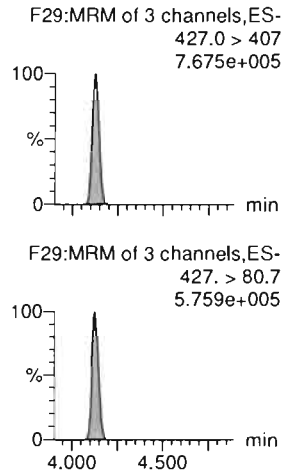
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

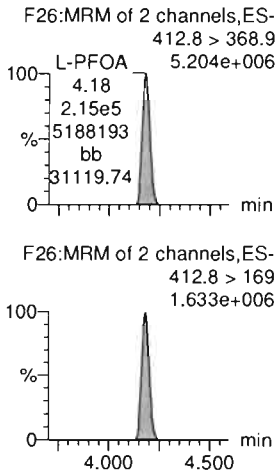
L-PFHxS



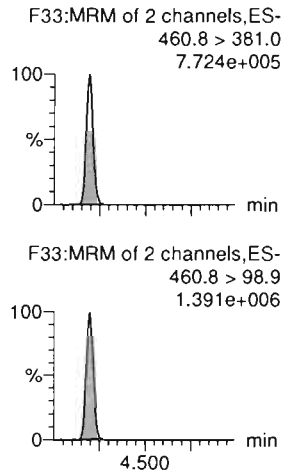
6:2 FTS



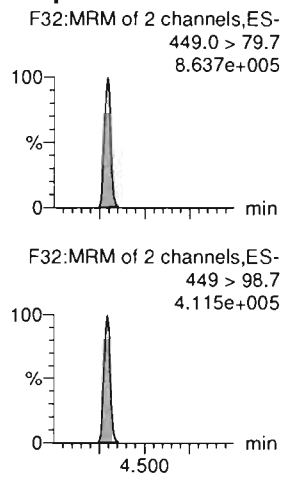
L-PFOA



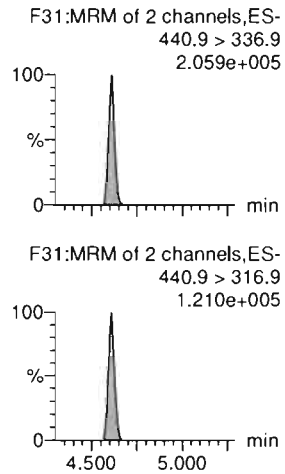
PFEChS



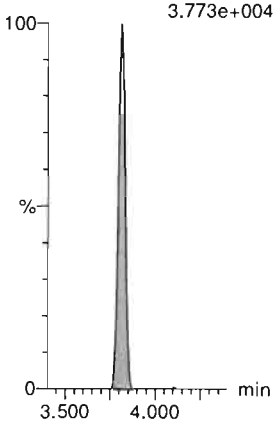
PFHpS



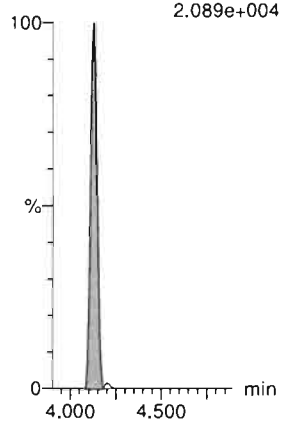
7:3 FTCA



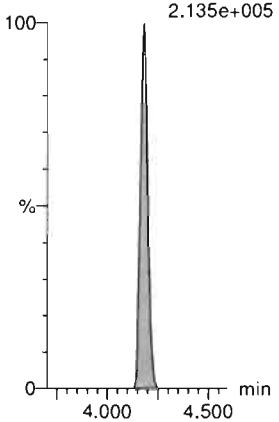
13C3-PFHxS-EIS



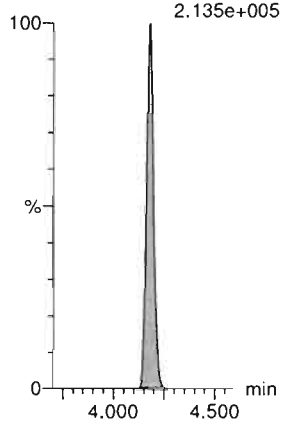
13C2-6:2 FTS-EIS



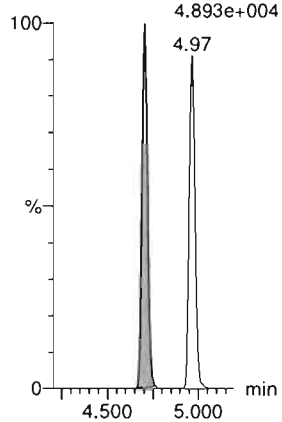
13C2-PFOA-EIS



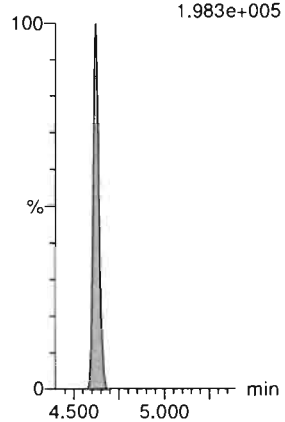
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

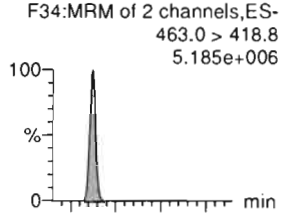


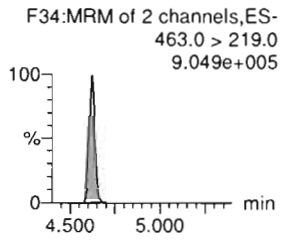
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

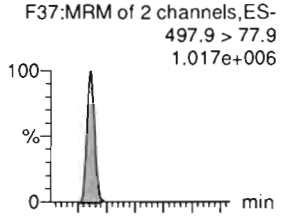
Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

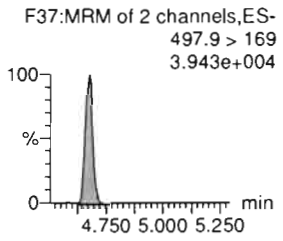
PFNA



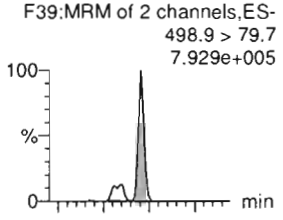


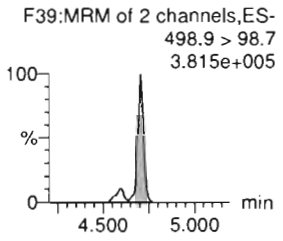
PFOSA



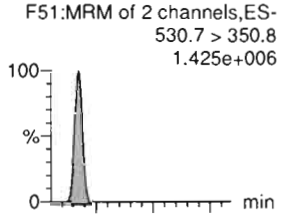


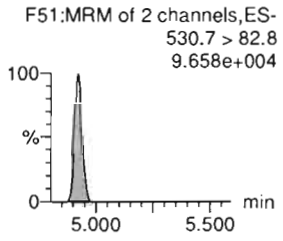
L-PFOS



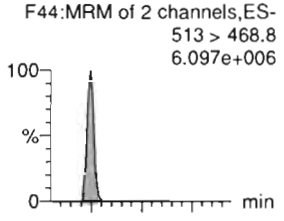


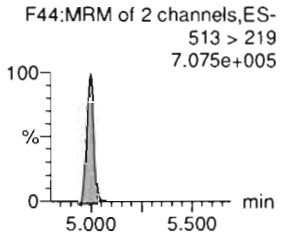
9Cl-PF30NS



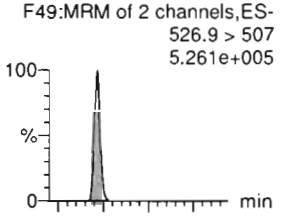


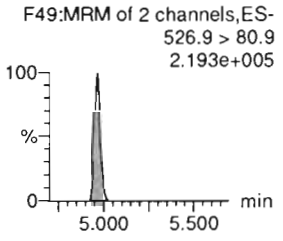
PFDA



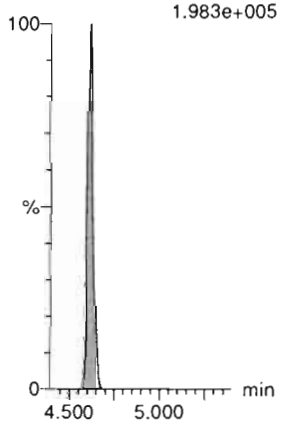


8:2 FTS

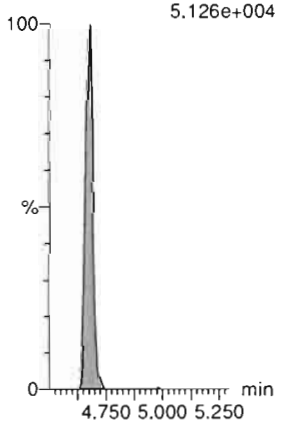




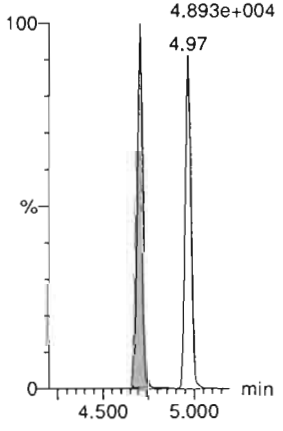
13C5-PFNA-EIS



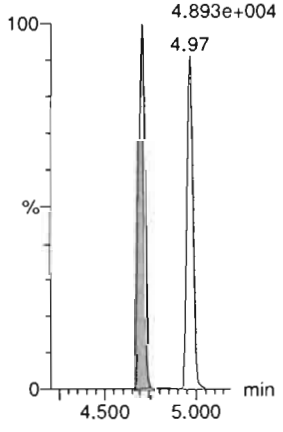
13C8-PFOSA-EIS



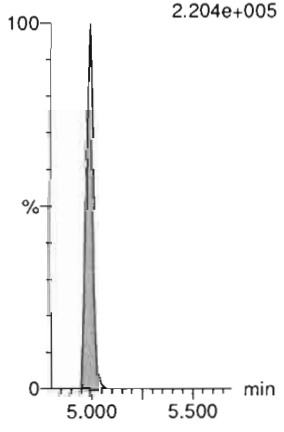
13C8-PFOS-EIS



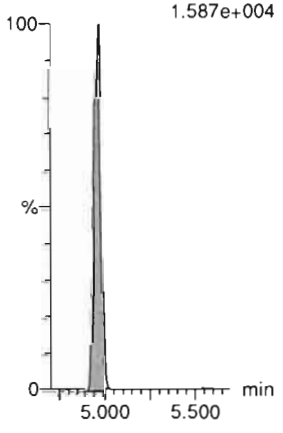
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

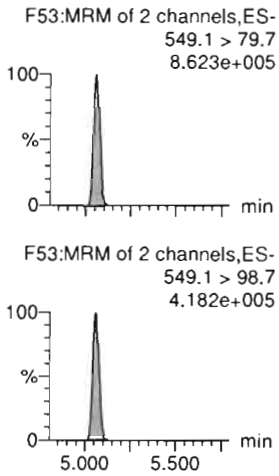


Dataset: Untitled

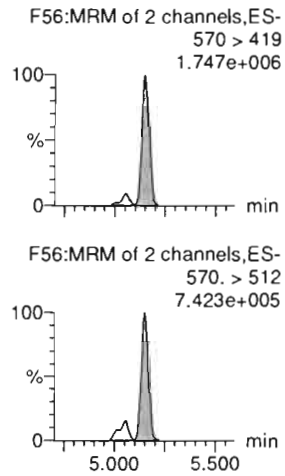
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

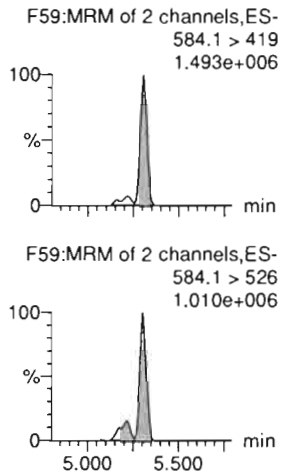
PFNS



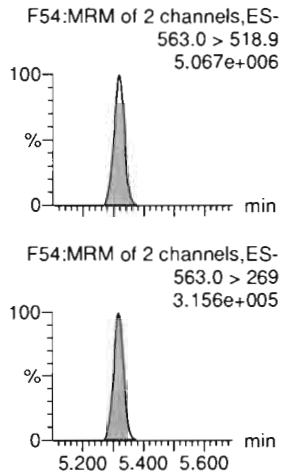
L-MeFOSAA



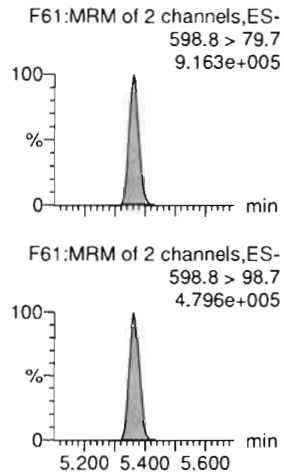
L-EtFOSAA



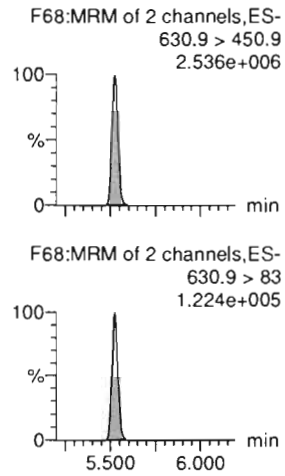
PFUdA



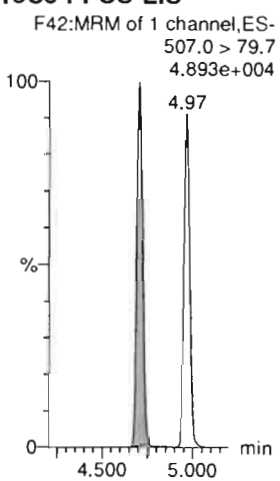
PFDS



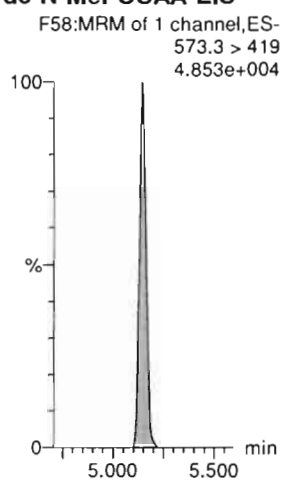
11Cl-PF30UdS



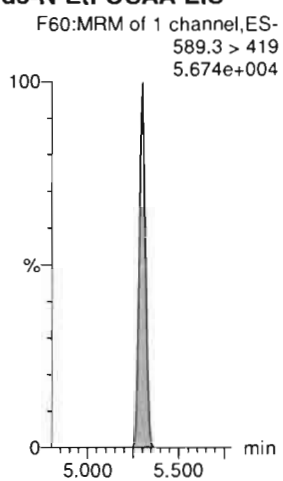
13C8-PFOS-EIS



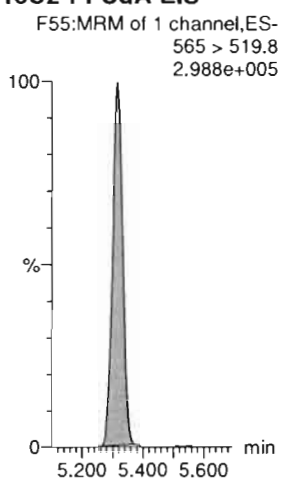
d3-N-MeFOSAA-EIS



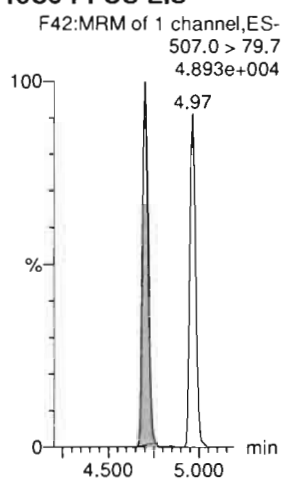
d5-N-EtFOSAA-EIS



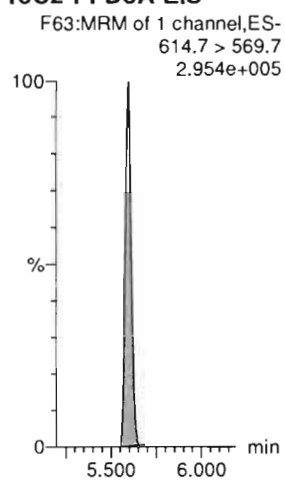
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

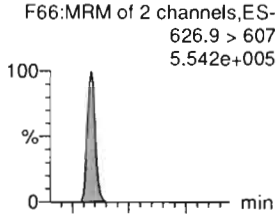


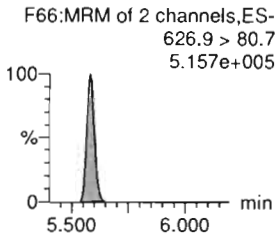
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

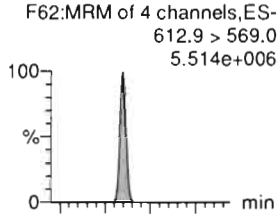
Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

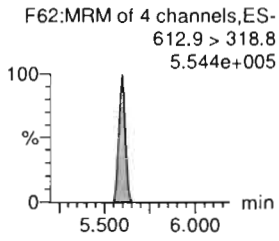
10:2 FTS



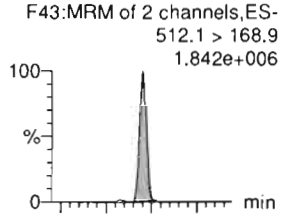


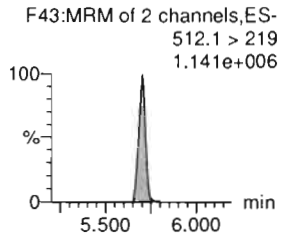
PFDoA



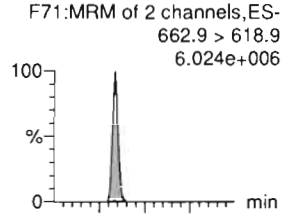


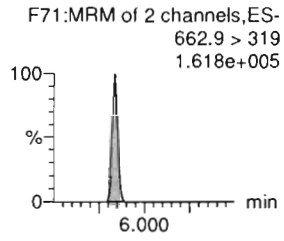
N-MeFOSA



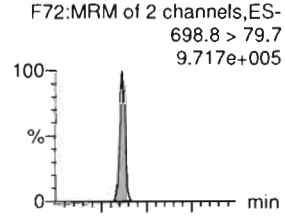


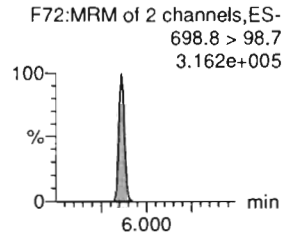
PFTrDA



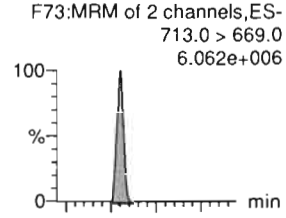


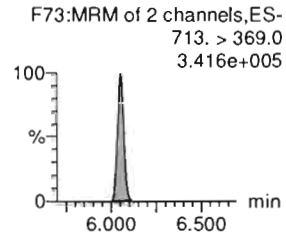
PFDoS



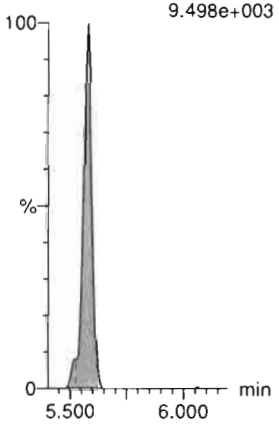


PFTeDA

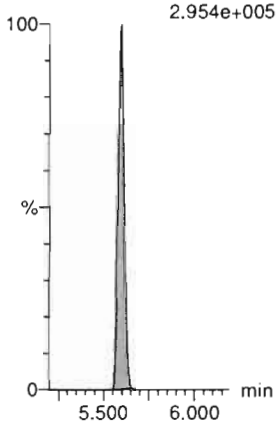




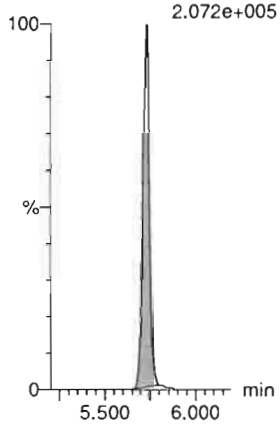
13C2-10:2 FTS-EIS



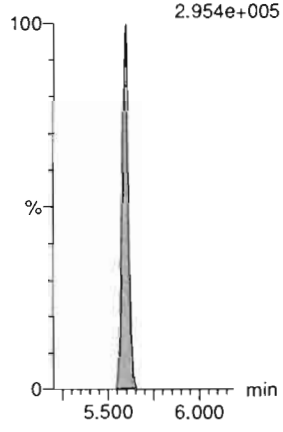
13C2-PFDoA-EIS



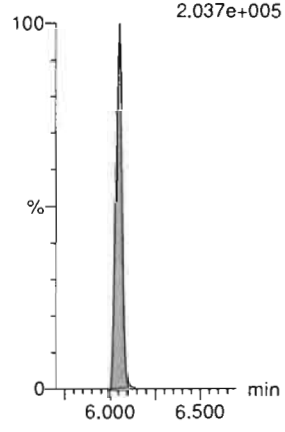
d3-N-MeFOSA-EIS



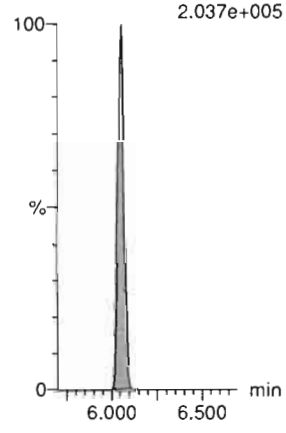
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

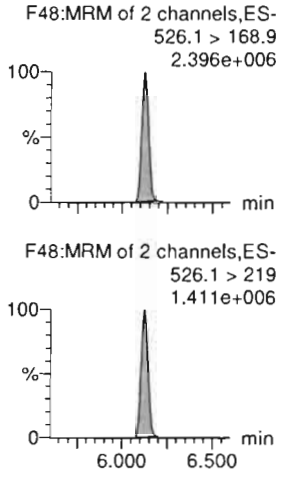


Dataset: Untitled

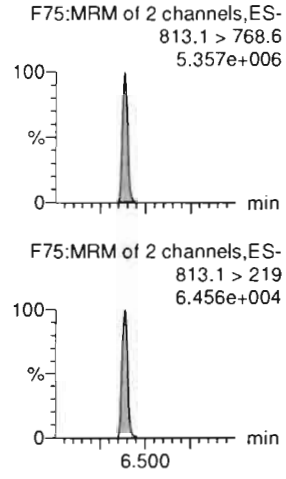
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

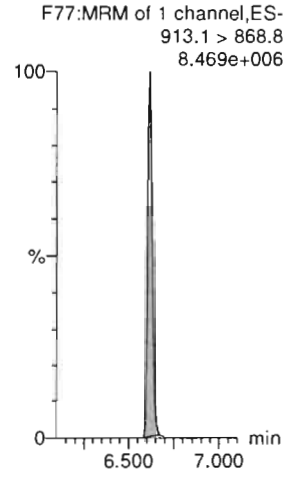
N-EtFOSA



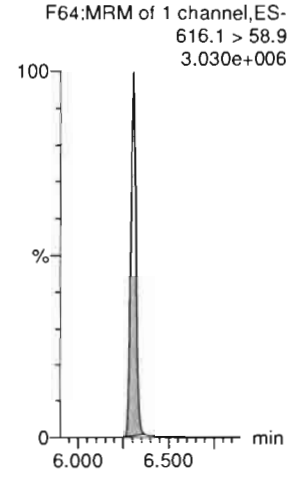
PFHxDA



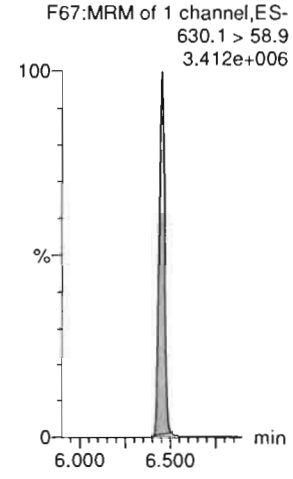
PFODA



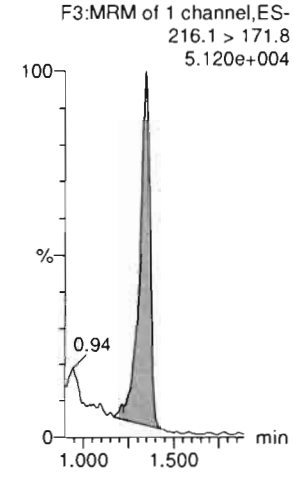
N-MeFOSE



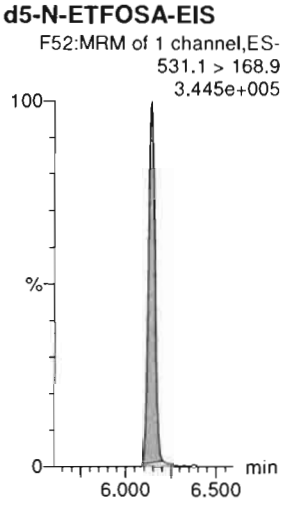
N-EtFOSE



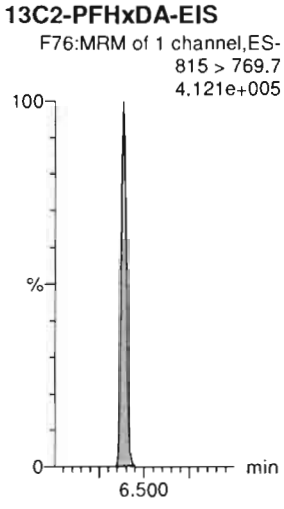
13C3-PFBA-RSD



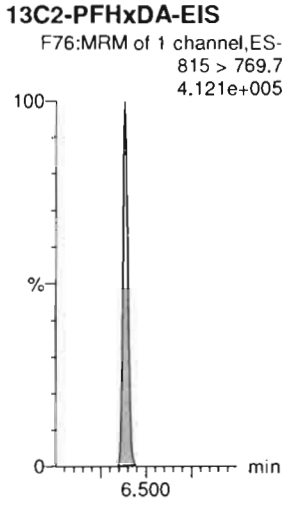
d5-N-ETFOSA-EIS



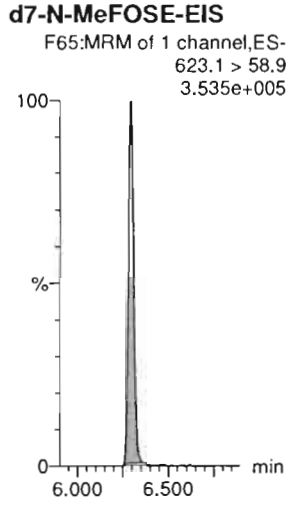
13C2-PFHxDA-EIS



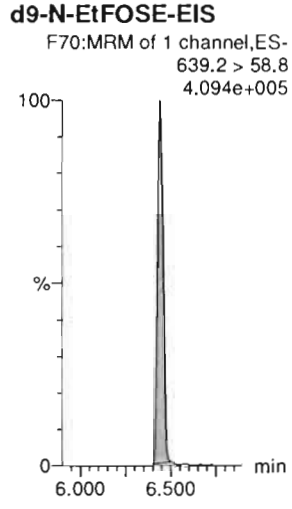
13C2-PFHxDA-EIS



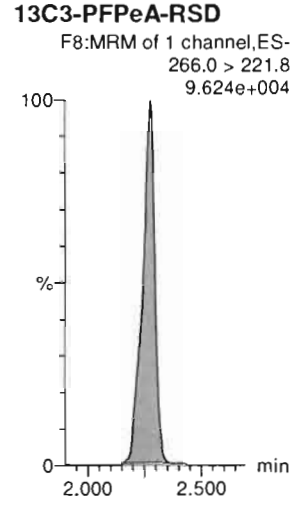
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

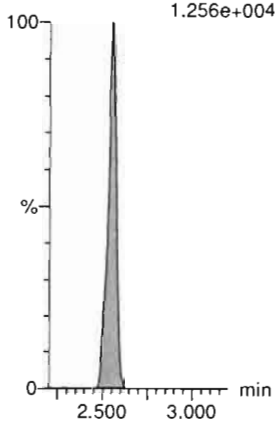


Dataset: Untitled

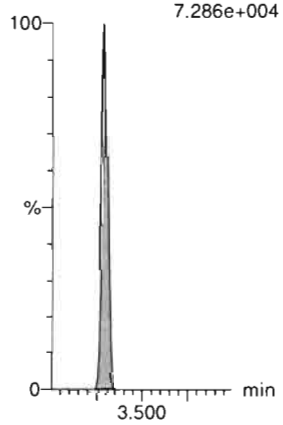
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

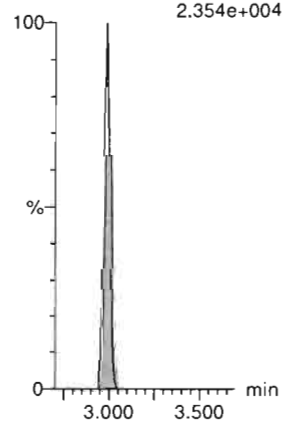
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.256e+004



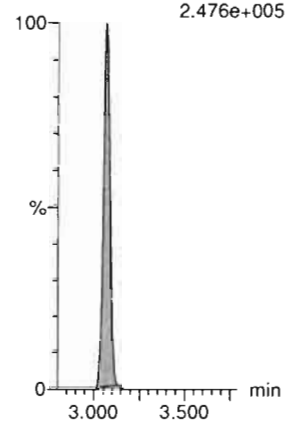
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
7.286e+004



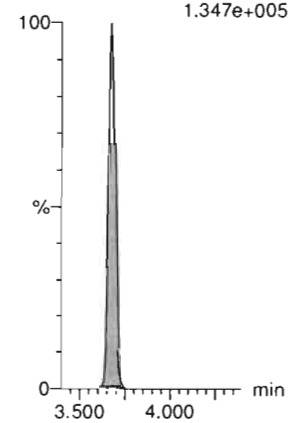
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.354e+004



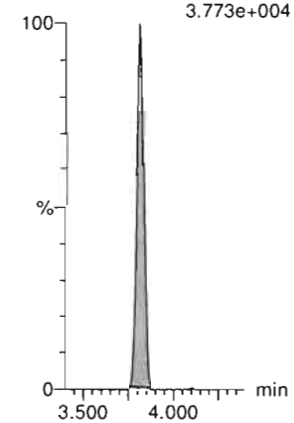
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.476e+005



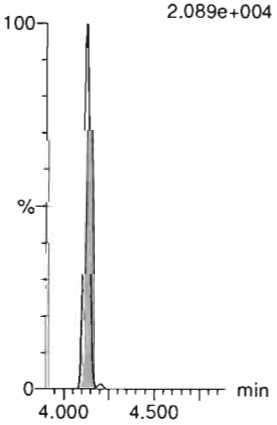
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.347e+005



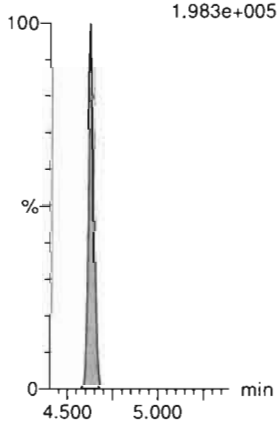
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
3.773e+004



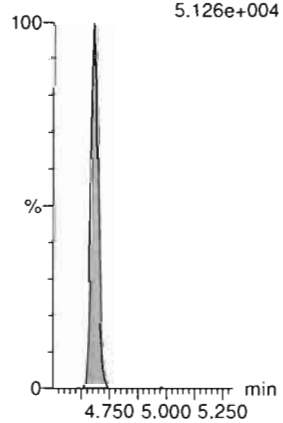
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.089e+004



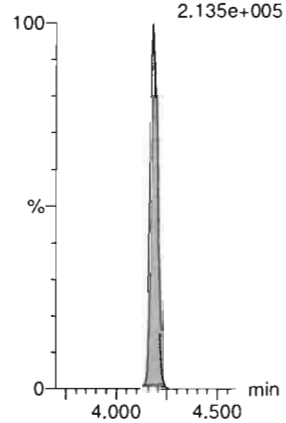
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
1.983e+005



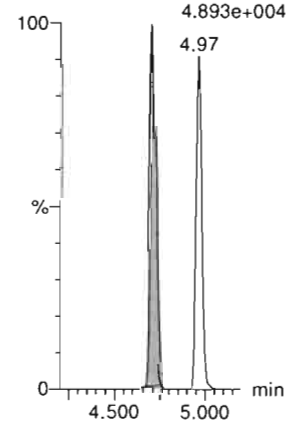
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
5.126e+004



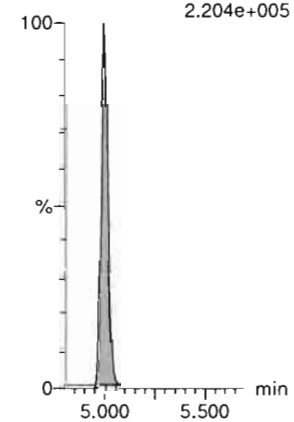
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.135e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
4.893e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.204e+005

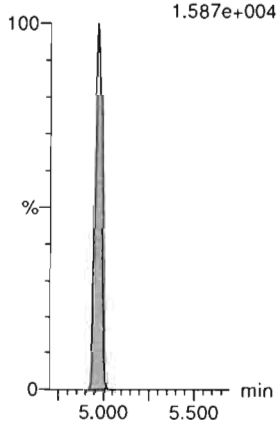


Dataset: Untitled

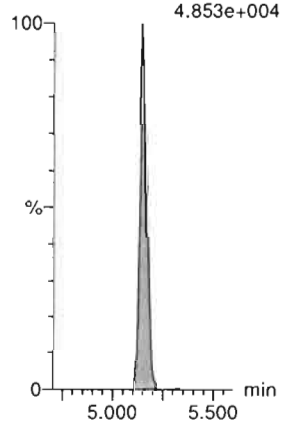
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

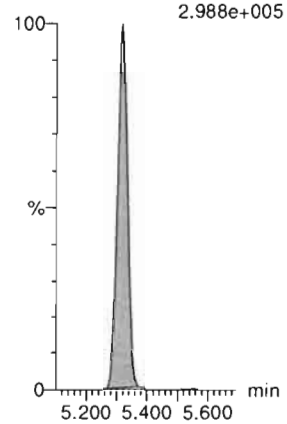
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
1.587e+004



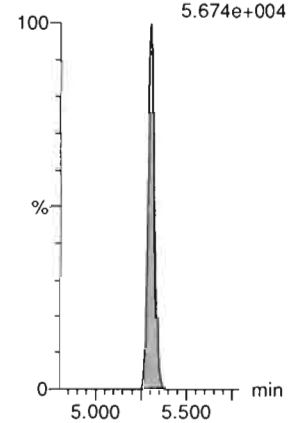
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.853e+004



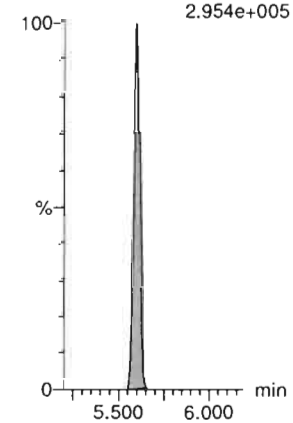
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
2.988e+005



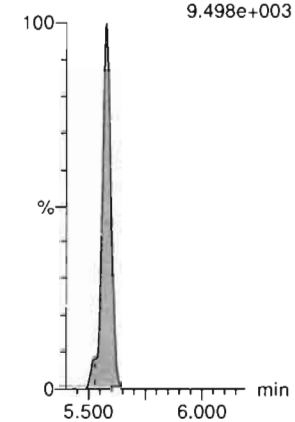
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
5.674e+004



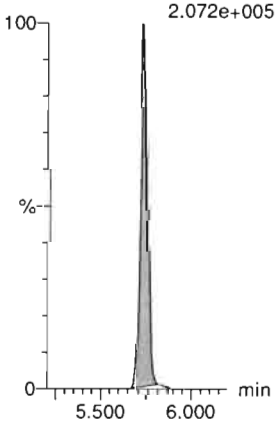
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
2.954e+005



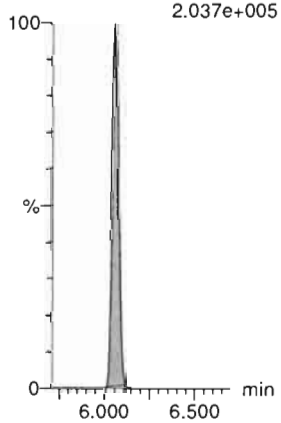
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
9.498e+003



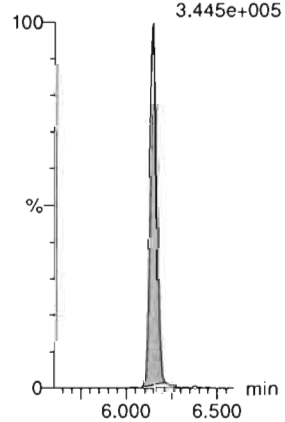
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.072e+005



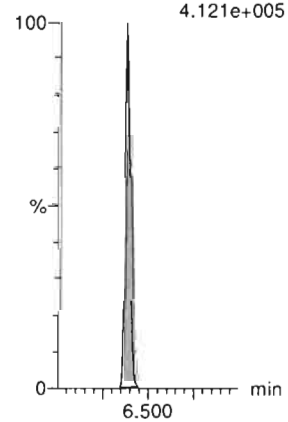
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.037e+005



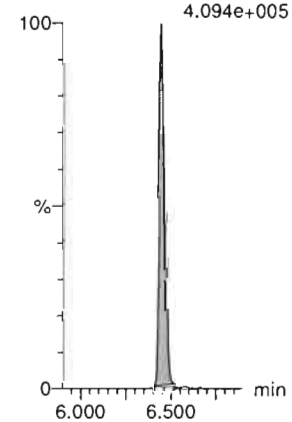
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
3.445e+005



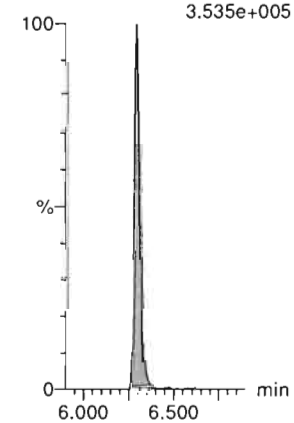
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
4.121e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
4.094e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
3.535e+005

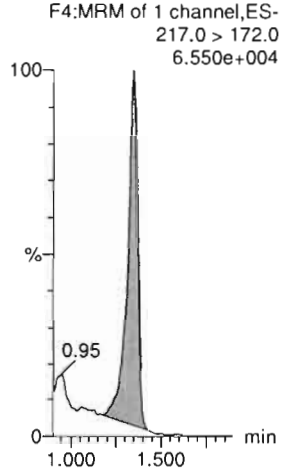


Dataset: Untitled

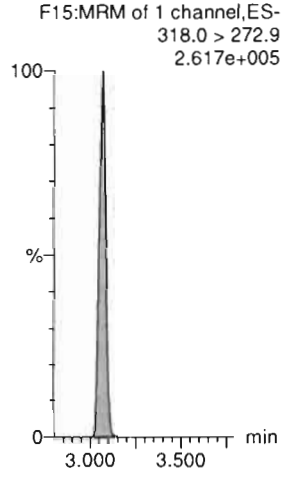
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-11, Date: 03-Mar-2020, Time: 18:29:13, ID: ST200303P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

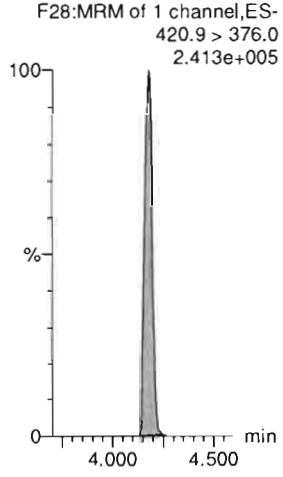
13C4-PFBA



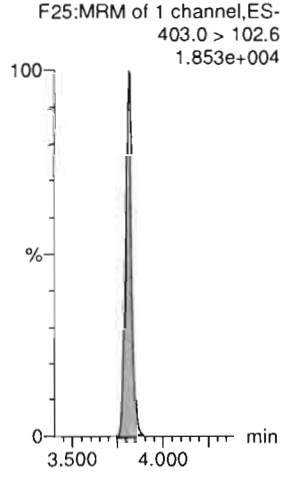
13C5-PFHxA



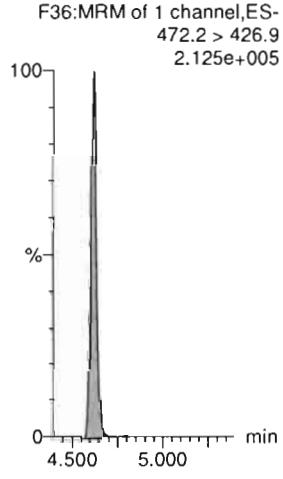
13C8-PFOA



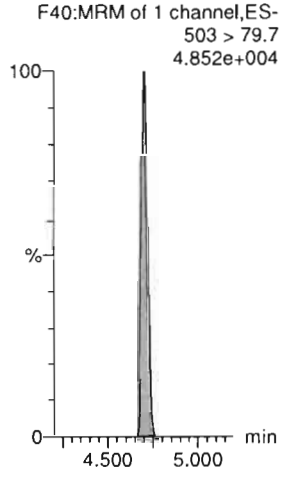
18O2-PFHxS



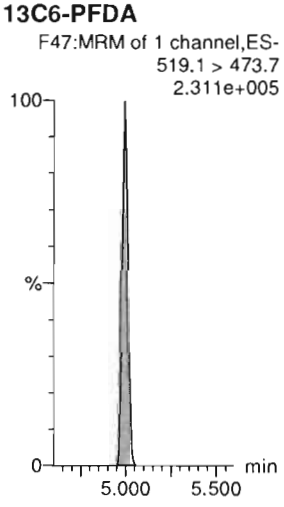
13C9-PFNA



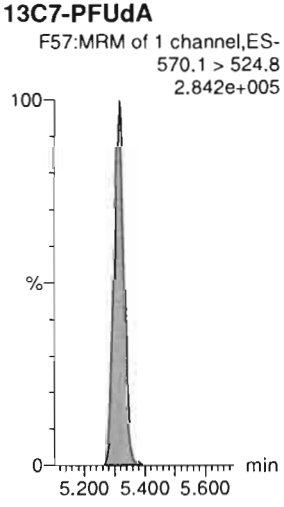
13C4-PFOS



13C6-PFDA



13C7-PFUdA

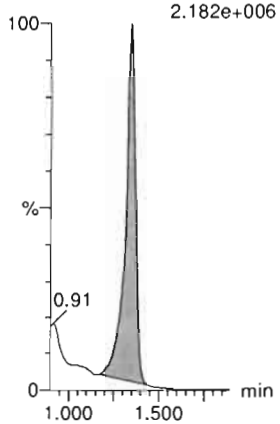


Dataset: Untitled

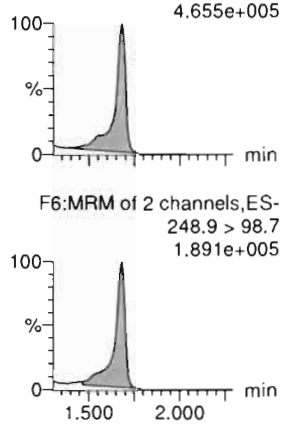
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

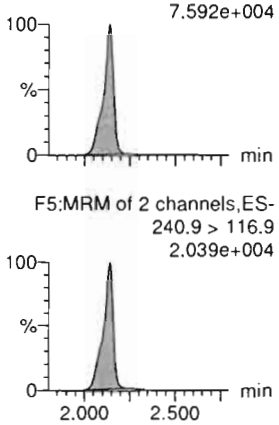
PFBA



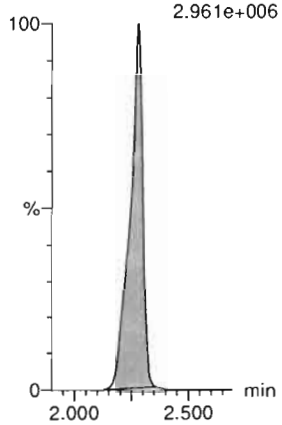
PFPrS



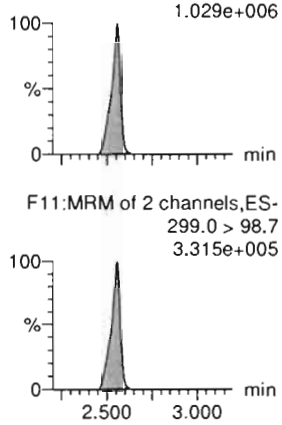
3:3 FTCA



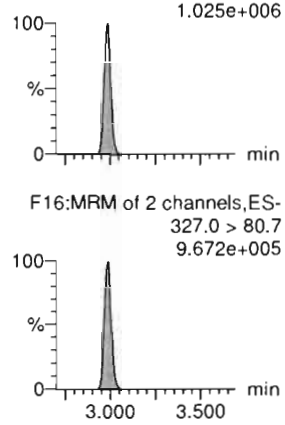
PFPeA



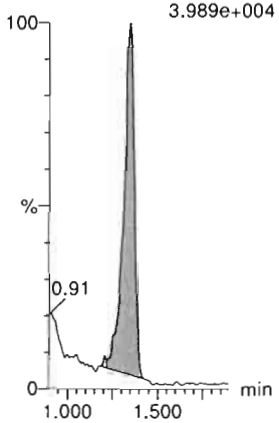
PFBS



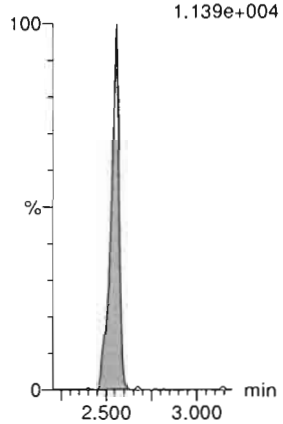
4:2 FTS



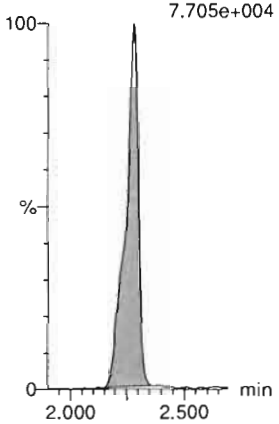
13C3-PFBA-EIS



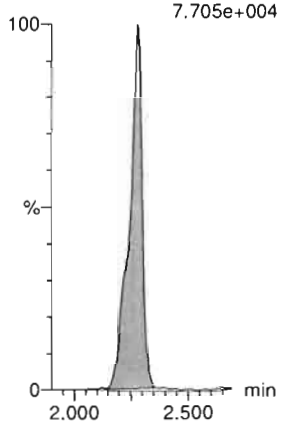
13C3-PFBS-EIS



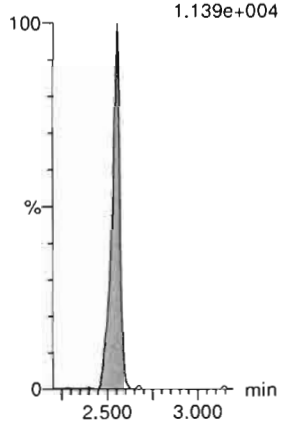
13C3-PFPeA-EIS



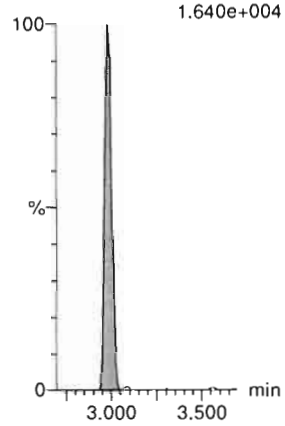
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

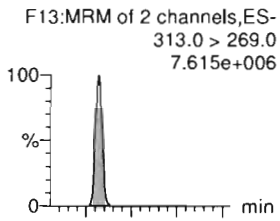


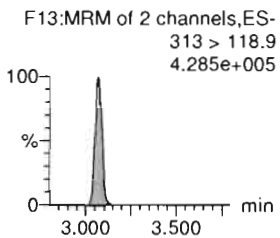
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

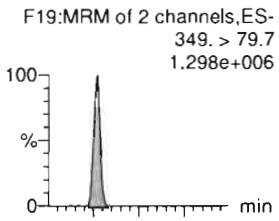
Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

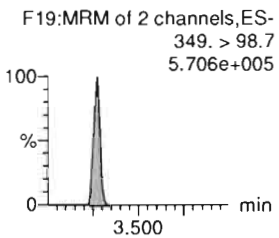
PFHxA



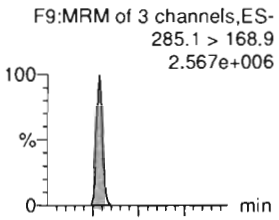


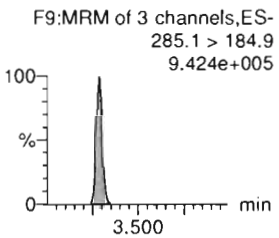
PFPeS



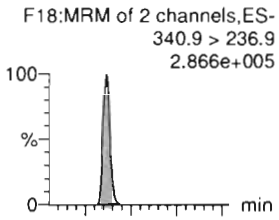


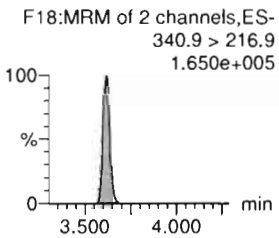
HFPO-DA



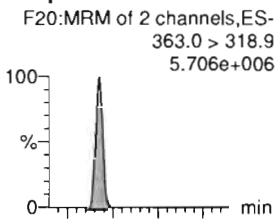


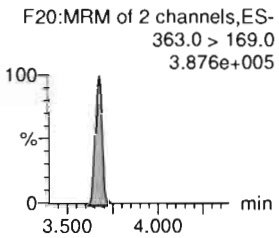
5:3 FTCA



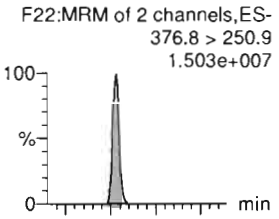


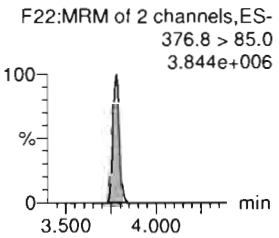
PFHpA



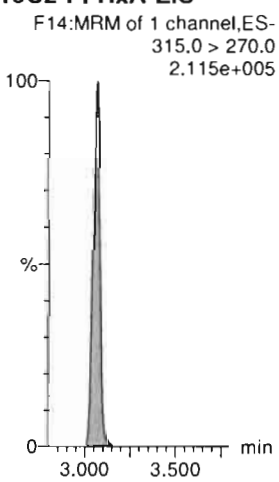


ADONA

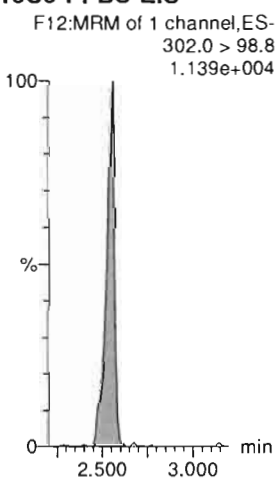




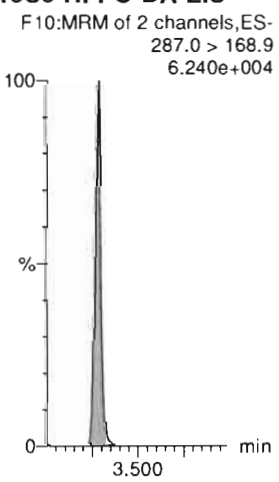
13C2-PFHxA-EIS



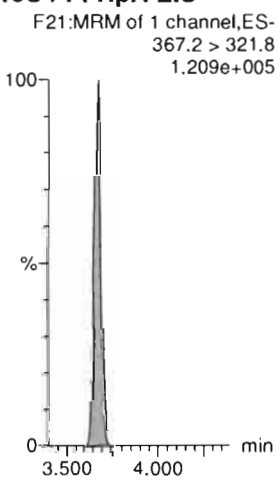
13C3-PFBS-EIS



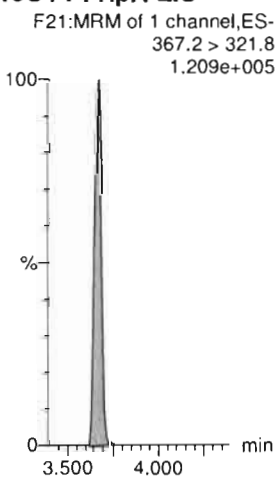
13C3-HFPO-DA-EIS



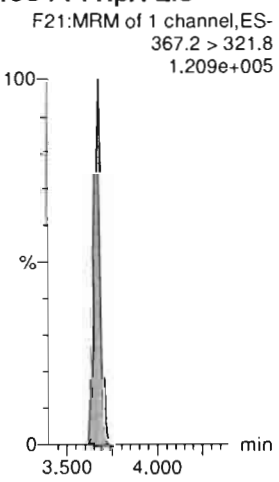
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

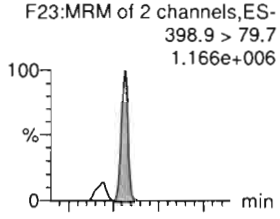


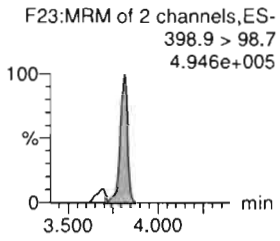
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

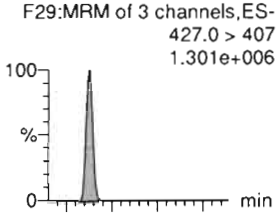
Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

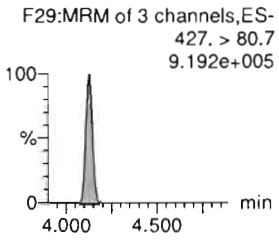
L-PFHxS



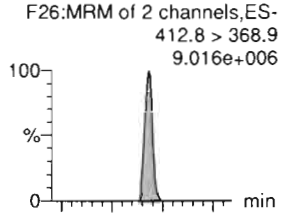


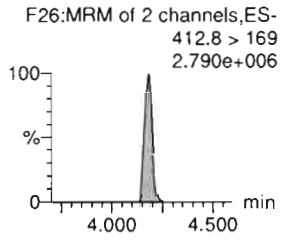
6:2 FTS



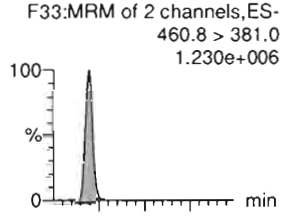


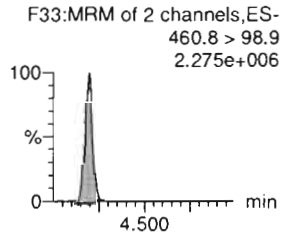
L-PFOA



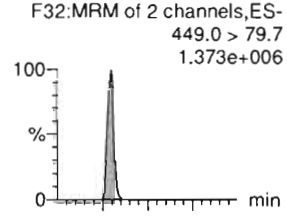


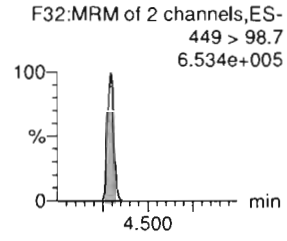
PFEChS



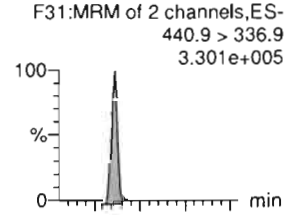


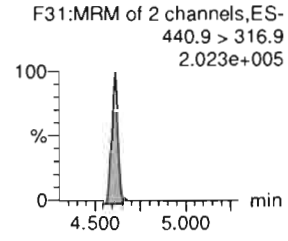
PFHpS



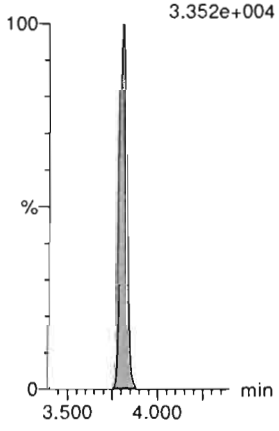


7:3 FTCA

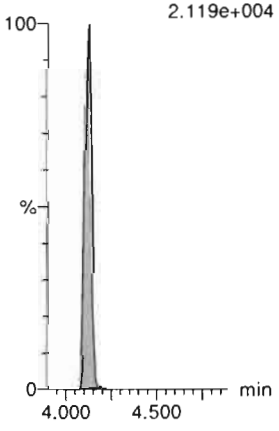




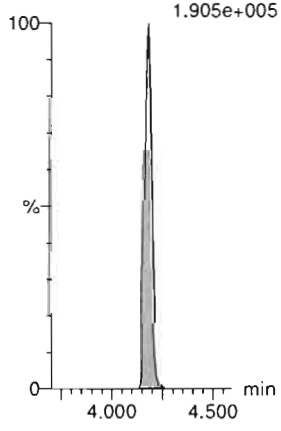
13C3-PFHxS-EIS



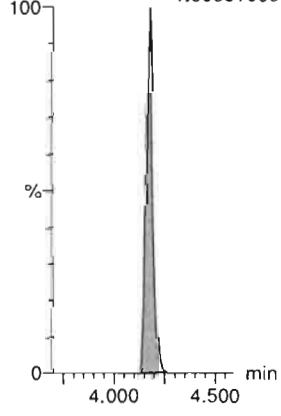
13C2-6:2 FTS-EIS



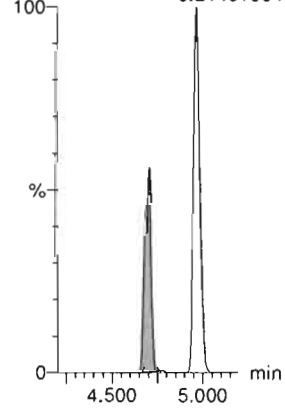
13C2-PFOA-EIS



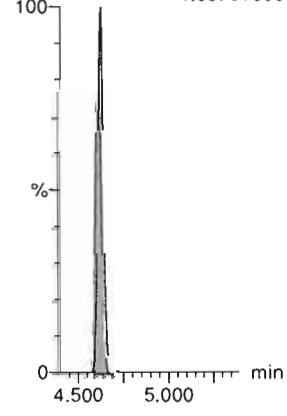
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

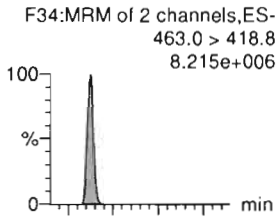


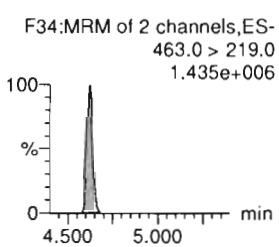
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

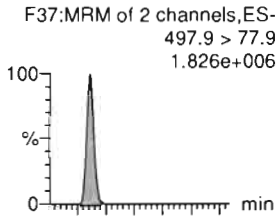
Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

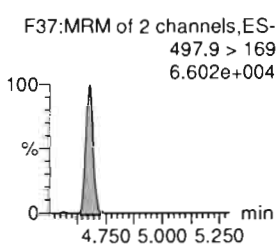
PFNA



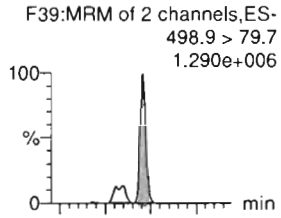


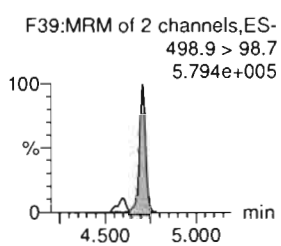
PFOSA



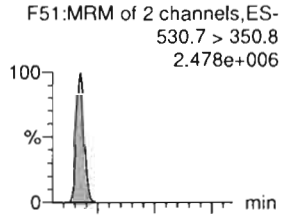


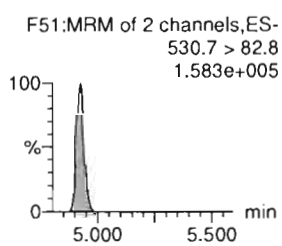
L-PFOS



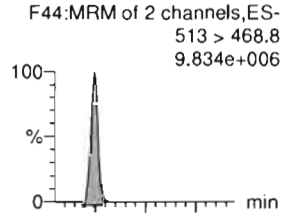


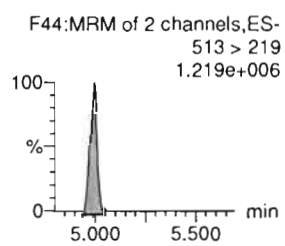
9Cl-PF30NS



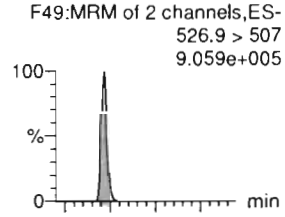


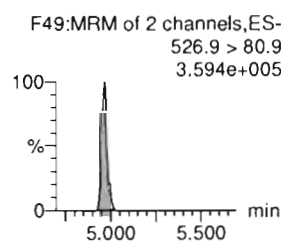
PFDA



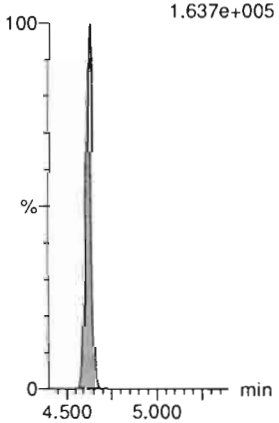


8:2 FTS

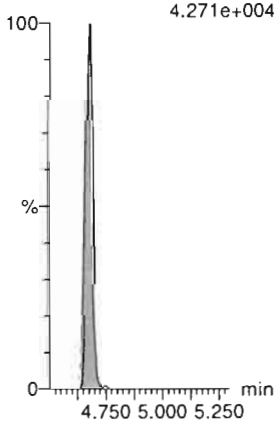




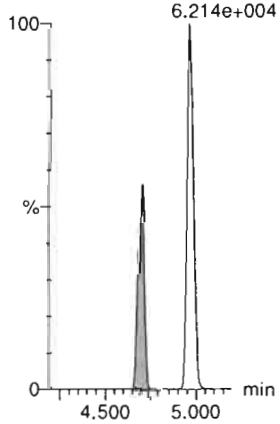
13C5-PFNA-EIS



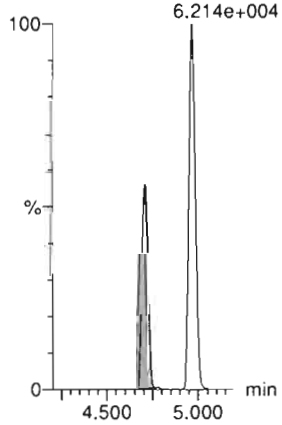
13C8-PFOSA-EIS



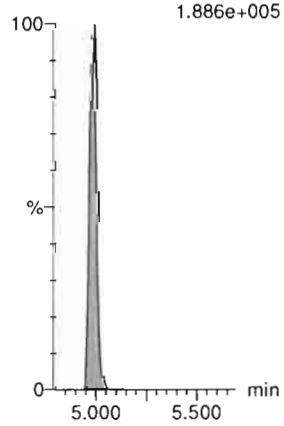
13C8-PFOS-EIS



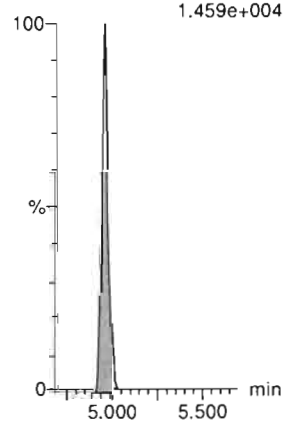
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

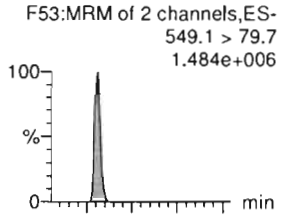


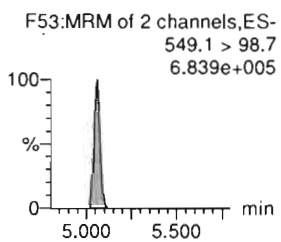
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

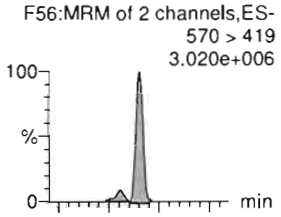
Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

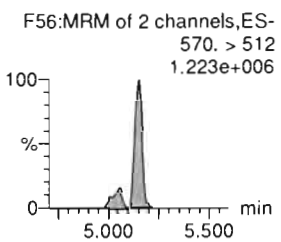
PFNS



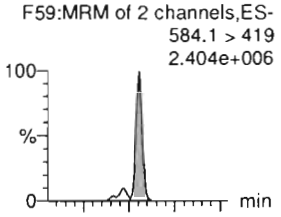


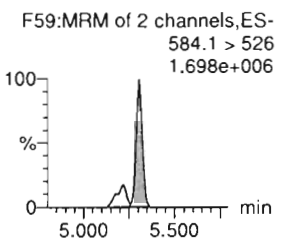
L-MeFOSAA



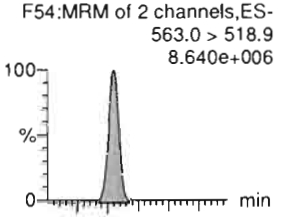


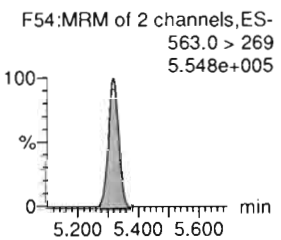
L-EtFOSAA



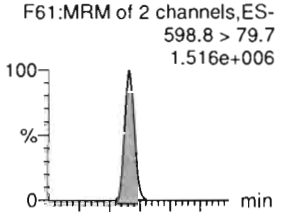


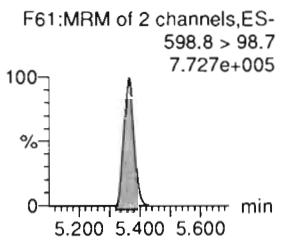
PFUdA



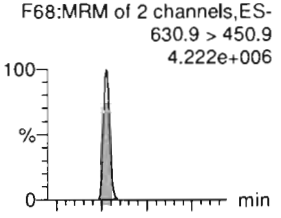


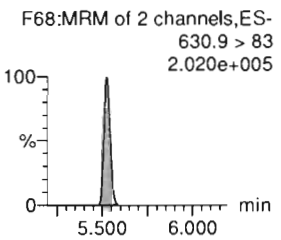
PFDS



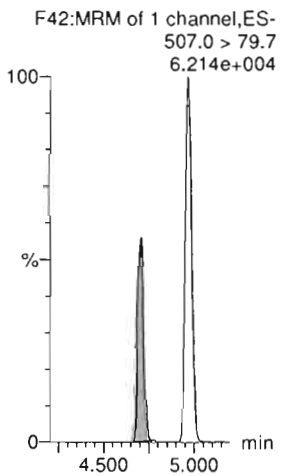


11Cl-PF30UdS

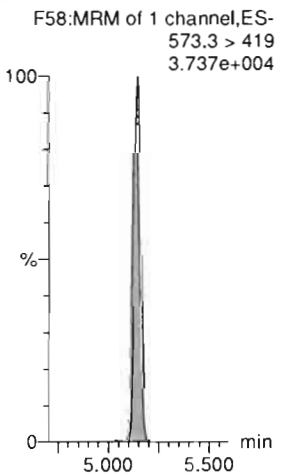




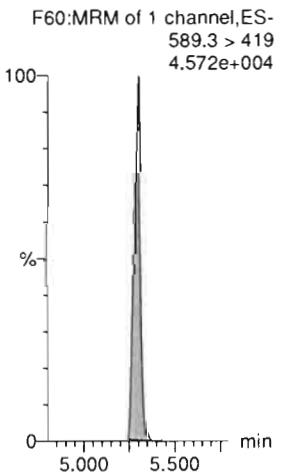
13C8-PFOS-EIS



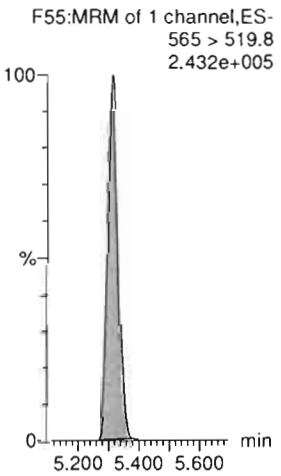
d3-N-MeFOSAA-EIS



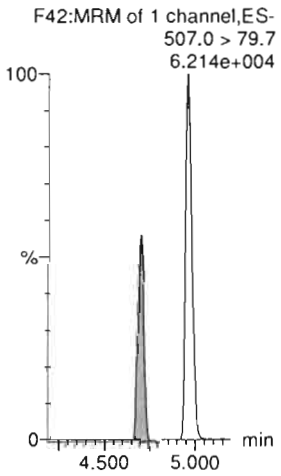
d5-N-EtFOSAA-EIS



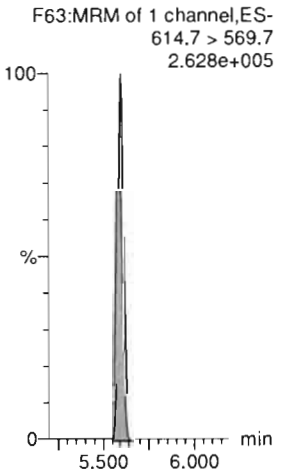
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

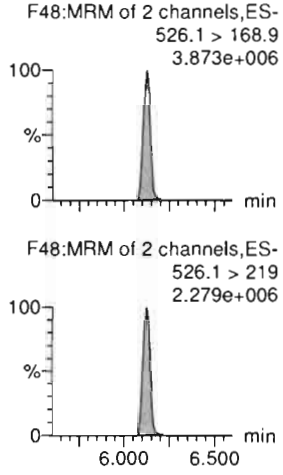


Dataset: Untitled

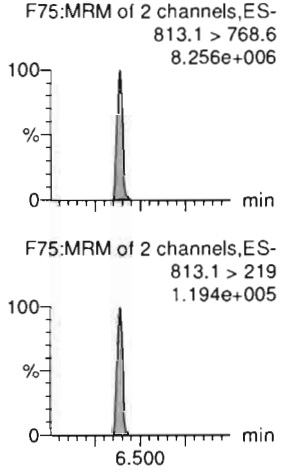
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

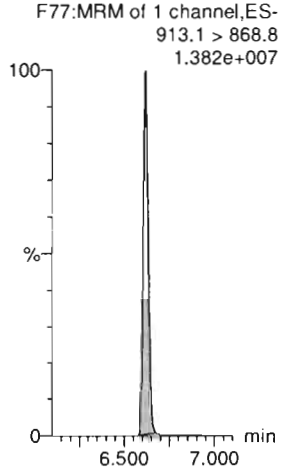
N-EtFOSA



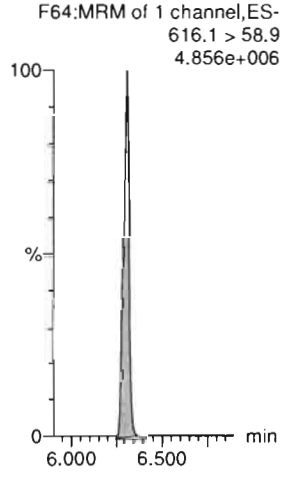
PFHxDA



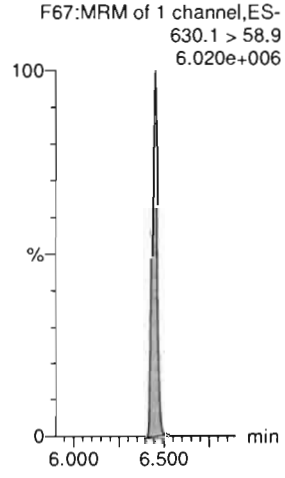
PFODA



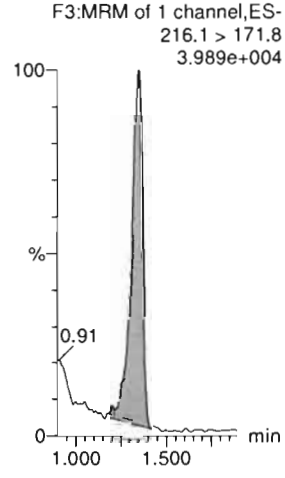
N-MeFOSE



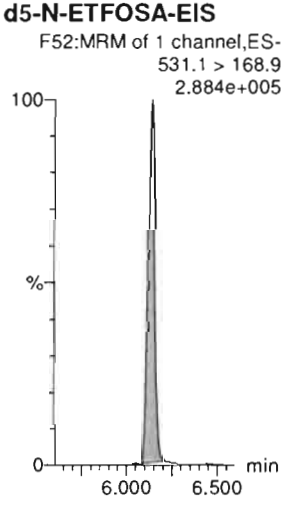
N-EtFOSE



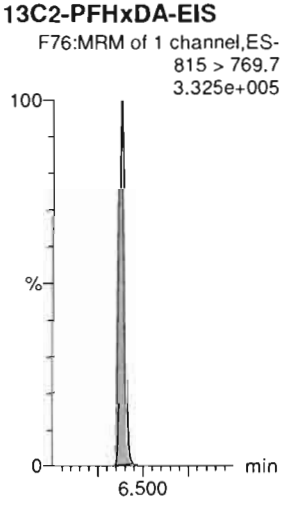
13C3-PFBA-RSD



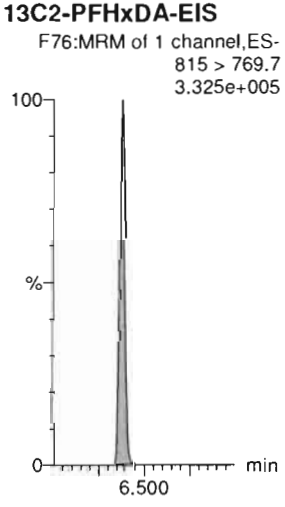
d5-N-ETFOSA-EIS



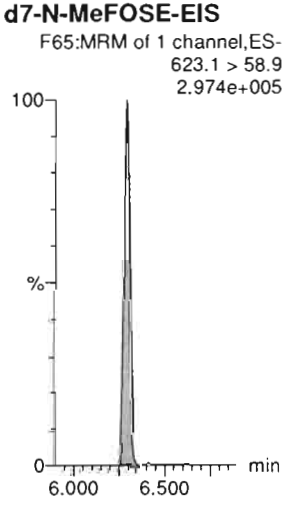
13C2-PFHxDA-EIS



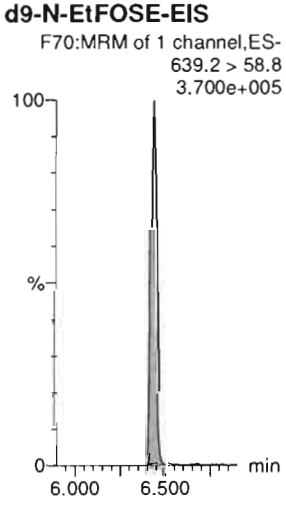
13C2-PFHxDA-EIS



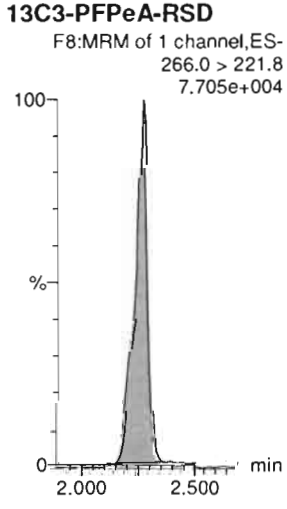
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

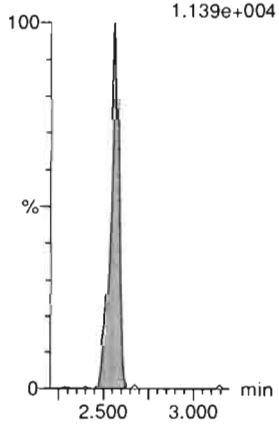


Dataset: Untitled

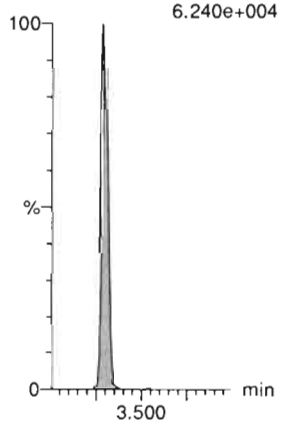
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

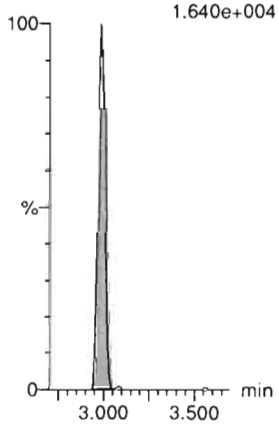
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.139e+004



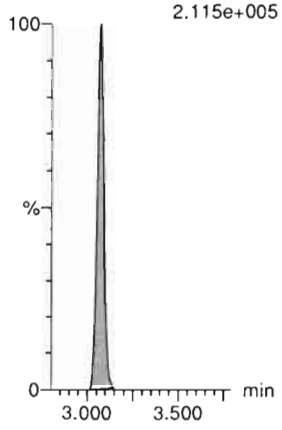
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
6.240e+004



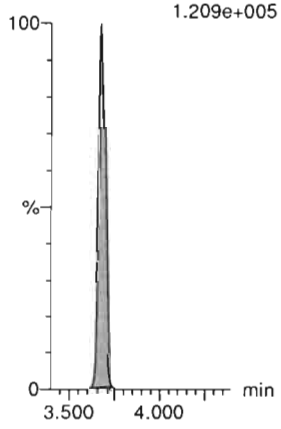
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
1.640e+004



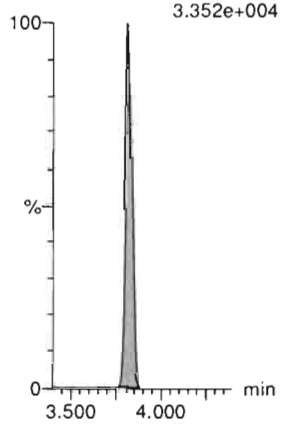
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.115e+005



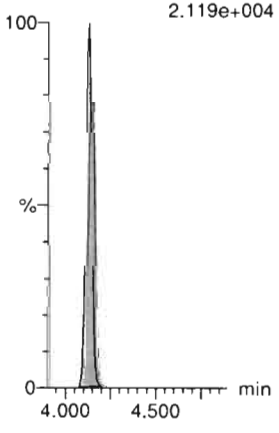
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.209e+005



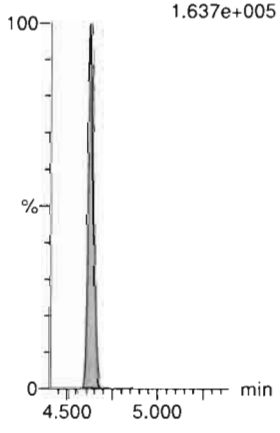
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
3.352e+004



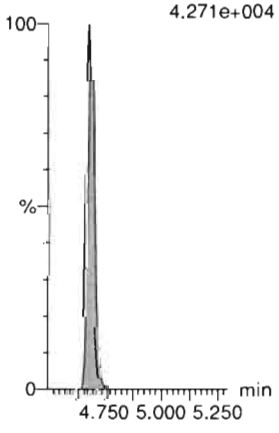
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.119e+004



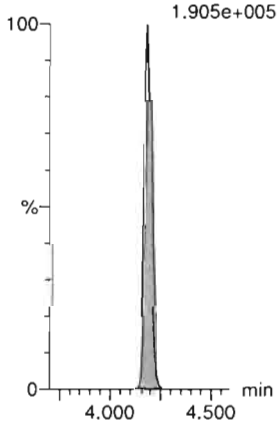
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
1.637e+005



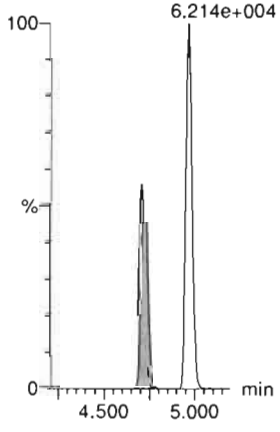
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
4.271e+004



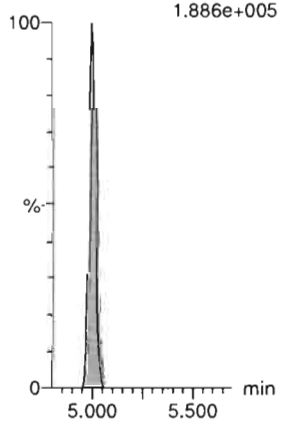
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
1.905e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.214e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
1.886e+005

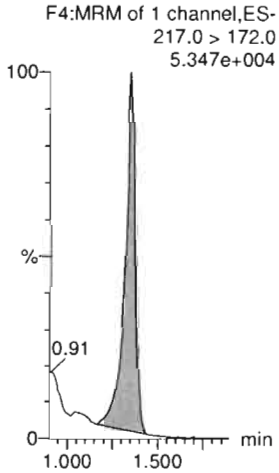


Dataset: Untitled

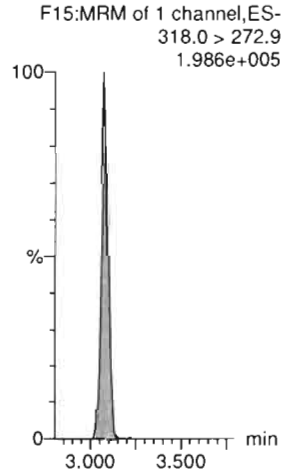
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

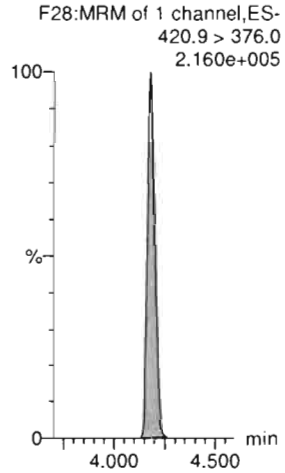
13C4-PFBA



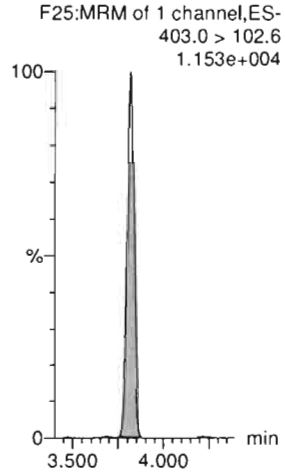
13C5-PFHxA



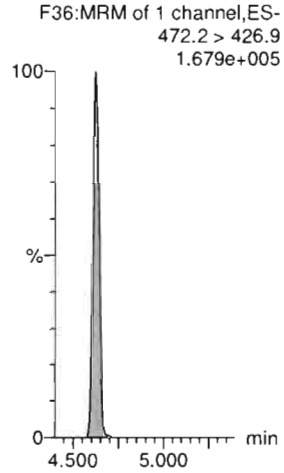
13C8-PFOA



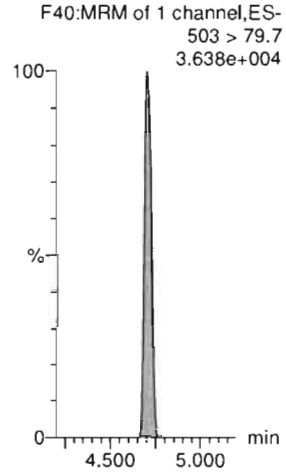
18O2-PFHxS



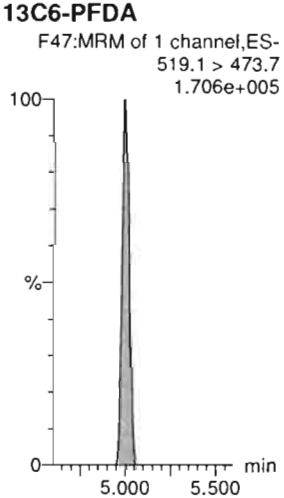
13C9-PFNA



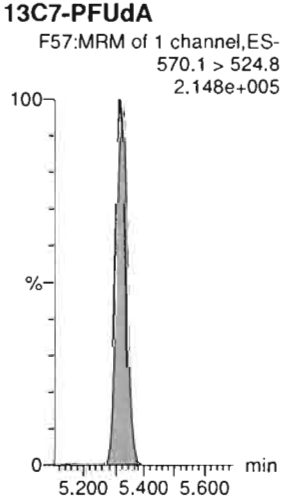
13C4-PFOS



13C6-PFDA



13C7-PFUdA

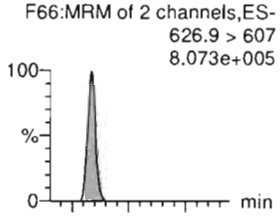


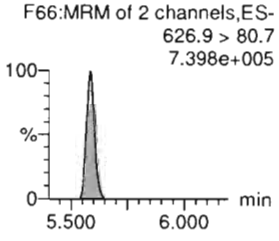
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

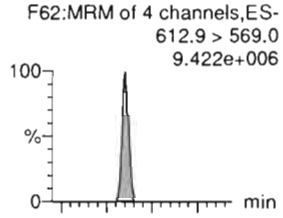
Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

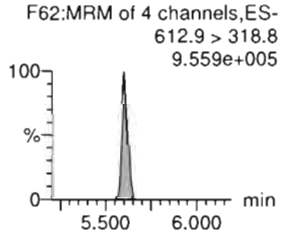
10:2 FTS



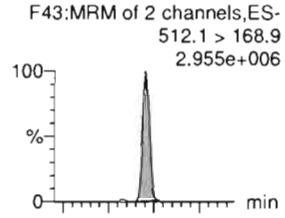


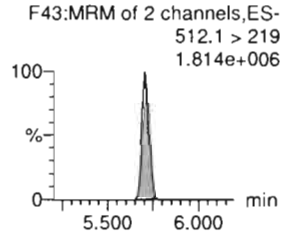
PFDoA



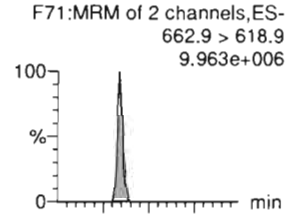


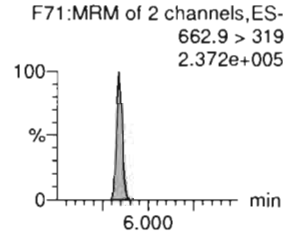
N-MeFOSA



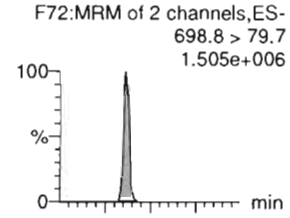


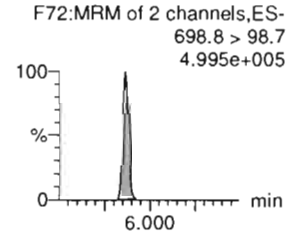
PFTrDA



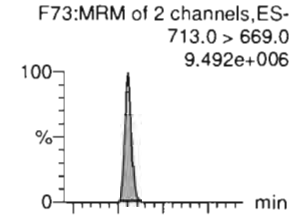


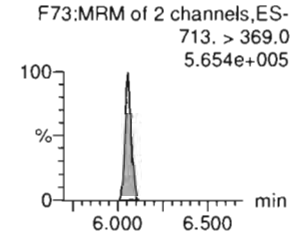
PFDoS



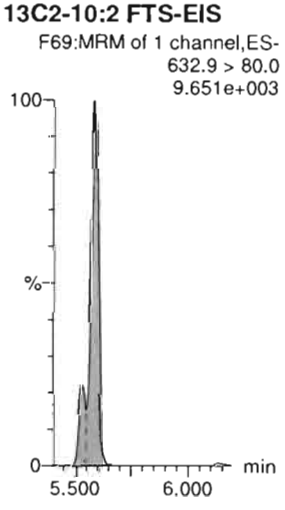


PFTeDA

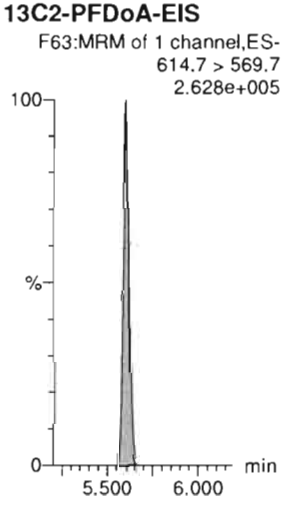




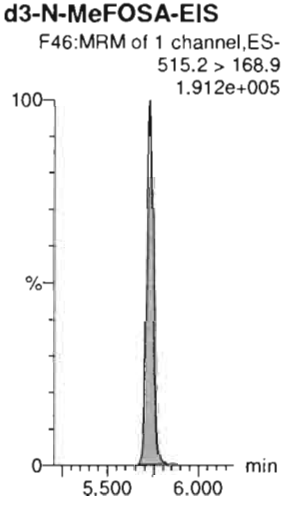
13C2-10:2 FTS-EIS



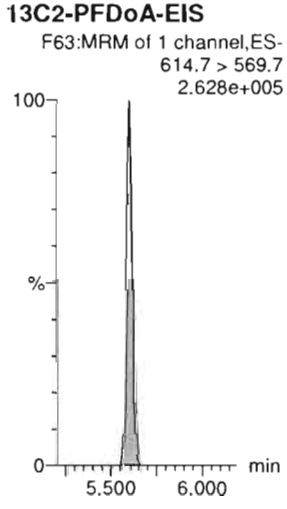
13C2-PFDoA-EIS



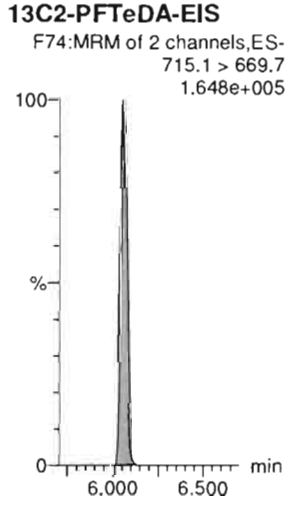
d3-N-MeFOSA-EIS



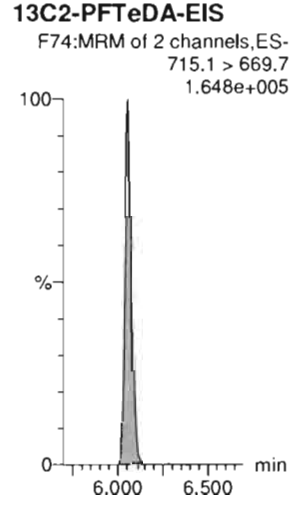
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

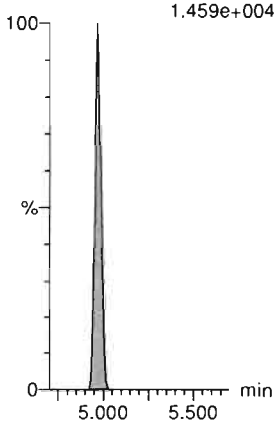


Dataset: Untitled

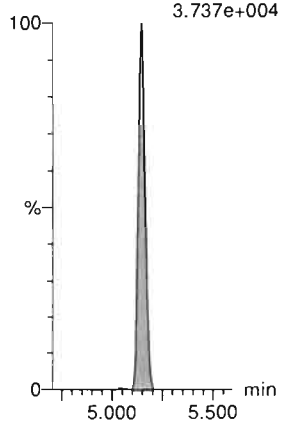
Last Altered: Wednesday, March 04, 2020 08:42:52 Pacific Standard Time
Printed: Wednesday, March 04, 2020 08:43:02 Pacific Standard Time

Name: 200303P2-12, Date: 03-Mar-2020, Time: 18:39:45, ID: ST200303P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

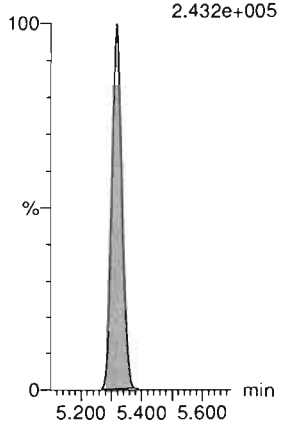
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
1.459e+004



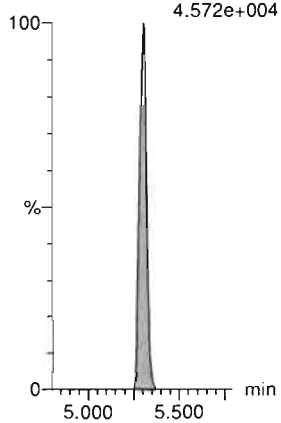
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
3.737e+004



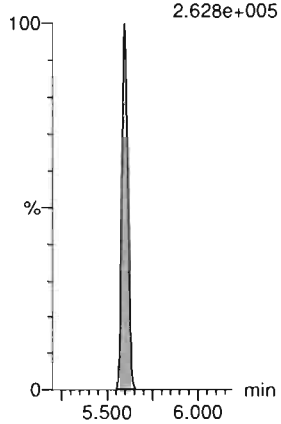
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
2.432e+005



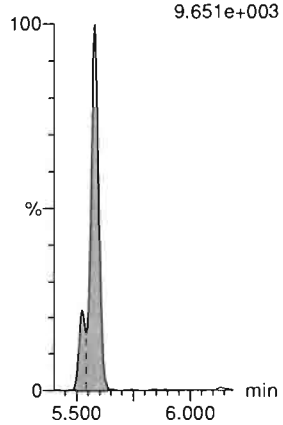
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
4.572e+004



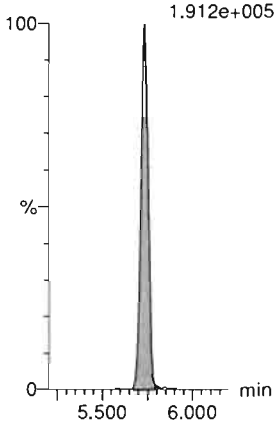
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
2.628e+005



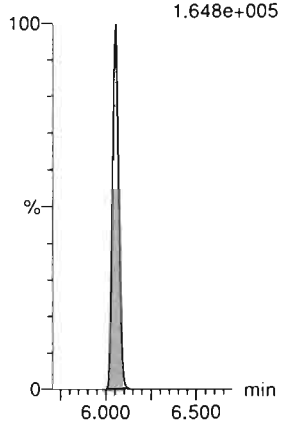
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
9.651e+003



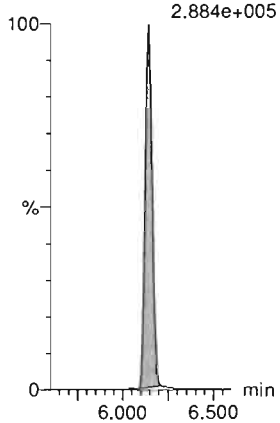
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
1.912e+005



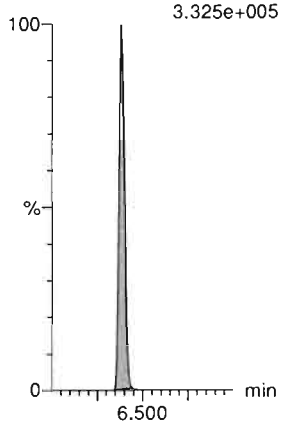
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
1.648e+005



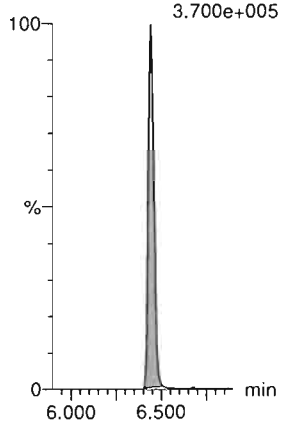
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
2.884e+005



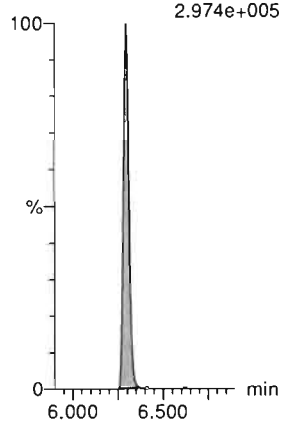
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
3.325e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
3.700e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
2.974e+005



Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

(A) not in ICV

✓ opV 03/04/20

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	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	4388.412	8292.216	1.00	1.35	13.231	10.000	10.9	108.7	NO		
2	2	PFPrS	248.9 > 79.7		1795.445	1.00			10.000		(A)	NO		YES
3	3	3:3 FTCA	240.9 > 176.9		14152.551	1.00			10.000			NO		YES
4	4	PFPeA	263.1 > 218.9	5913.027	14152.551	1.00	2.28	10.445	10.000	11.3	112.5	NO		
5	5	PFBS	299.0 > 79.7	1644.822	1795.445	1.00	2.55	22.903	8.840	9.24	104.5	NO	2.983	NO
6	6	4:2 FTS	327.0 > 307	1416.835	2507.617	1.00	2.98	14.125	9.360	9.58	102.3	NO	1.009	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	8292.216		1.00	1.35	8292.216	25.000	25.7	102.7	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	1795.445		1.00	2.56	1795.445	25.000	26.1	104.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	14152.551		1.00	2.28	14152.551	25.000	24.3	97.4	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	14152.551		1.00	2.28	14152.551	25.000	24.3	97.4	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	1795.445		1.00	2.56	1795.445	25.000	26.1	104.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	2507.617		1.00	2.98	2507.617	25.000	24.7	98.9	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	10713.538	26299.793	1.00	3.07	10.184	10.000	11.4	114.4	NO	20.177	NO
15	8	PFPeS	349.>79.7	1753.847	1795.445	1.00	3.27	24.421	9.360	9.49	101.4	NO	2.454	NO
16	9	HFPO-DA	285.1 > 168.9	3062.160	6697.274	1.00	3.28	11.431	10.000	10.8	107.6	NO	2.586	NO
17	10	5:3 FTCA	340.9 > 236.9		14675.000	1.00			10.000		(A)	NO		YES
18	11	PFHpA	363.0 > 318.9	7702.921	14675.000	1.00	3.67	13.123	10.000	10.9	109.0	NO	13.979	NO
19	12	ADONA	376.8 > 250.9	21955.682	14675.000	1.00	3.78	37.403	10.000	11.0	109.6	NO	4.023	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	26299.793		1.00	3.07	26299.793	25.000	24.8	99.1	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	1795.445		1.00	2.56	1795.445	25.000	26.1	104.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	6697.274		1.00	3.28	6697.274	25.000	24.3	97.0	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	14675.000		1.00	3.67	14675.000	25.000	24.4	97.5	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	14675.000		1.00	3.67	14675.000	25.000	24.4	97.5	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	14675.000		1.00	3.67	14675.000	25.000	24.4	97.5	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	1813.834	3820.314	1.00	3.82	11.870	9.120	11.5	125.6	NO	2.621	NO
28	15	6:2 FTS	427.0 > 407	1615.334	2179.081	1.00	4.12	18.532	9.480	9.39	99.1	NO	1.349	NO
29	16	L-PFOA	412.8 > 368.9	12272.458	21531.193	1.00	4.18	14.250	10.000	11.1	110.8	NO	3.180	NO
30	18	PFecHS	460.8 > 381.0		21531.193	1.00			10.000		(A)	NO		YES
31	19	PFHpS	449.0 > 79.7	1991.523	4833.368	1.00	4.29	10.301	9.480	10.9	114.6	NO	2.292	NO
32	20	7:3 FTCA	440.9 > 336.9		19038.402	1.00			10.000		(A)	NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	3820.314		1.00	3.81	3820.314	25.000	22.0	88.0	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	2179.081		1.00	4.13	2179.081	25.000	25.1	100.6	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	21531.193		1.00	4.18	21531.193	25.000	26.5	106.0	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	21531.193		1.00	4.18	21531.193	25.000	26.5	106.0	NO		

VV 03/04/20

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	4833.368		1.00	4.71	4833.368	25.000	28.3	113.1	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	19038.402		1.00	4.62	19038.402	25.000	26.6	106.5	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	10692.681	19038.402	1.00	4.62	14.041	10.000	11.0	109.5	NO	6.213	NO
41	22	PFOSA	497.9 > 77.9	2455.462	4983.204	1.00	4.68	12.319	10.000	11.7	116.5	NO	37.783	YES
42	23	L-PFOS	498.9 > 79.7	1890.267	4833.368	1.00	4.71	9.777	9.280	9.92	106.9	NO	2.641	NO
43	25	9Cl-PF30NS	530.7 > 350.8	3286.118	4833.368	1.00	4.92	16.997	9.280	10.5	113.0	NO	30.761	YES
44	26	PFDA	513 > 468.8	12512.151	20256.887	1.00	5.00	15.442	10.000	11.3	112.9	NO	8.368	NO
45	27	8:2 FTS	526.9 > 507	1236.443	1773.270	1.00	4.97	17.432	9.600	11.4	118.9	NO	2.637	YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	19038.402		1.00	4.62	19038.402	25.000	26.6	106.5	NO		
47	67	13C8-PFOSA-EIS	506 > 78	4983.204		1.00	4.68	4983.204	25.000	25.6	102.3	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	4833.368		1.00	4.71	4833.368	25.000	28.3	113.1	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	4833.368		1.00	4.71	4833.368	25.000	28.3	113.1	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	20256.887		1.00	5.00	20256.887	25.000	24.8	99.1	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1773.270		1.00	4.97	1773.270	25.000	30.1	120.5	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	1958.480	4833.368	1.00	5.06	10.130	9.600	11.7	121.5	NO	2.336	NO
54	29	L-MeFOSAA	570 > 419	4180.089	4072.838	1.00	5.15	25.658	10.000	10.3	102.8	NO	2.078	NO
55	31	L-EtFOSAA	584.1 > 419	3755.192	6845.070	1.00	5.31	13.715	10.000	9.45	94.5	NO	1.173	NO
56	33	PFUdA	563.0 > 518.9	11837.423	26408.230	1.00	5.32	11.206	10.000	12.5	125.5	NO	18.678	NO
57	34	PFDS	598.8 > 79.7	1753.818	4833.368	1.00	5.36	9.071	9.600	10.3	107.4	NO	1.929	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	5171.471	25414.553	1.00	5.52	5.087	9.440	11.7	123.7	NO	22.941	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	4833.368		1.00	4.71	4833.368	25.000	28.3	113.1	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	4072.838		1.00	5.15	4072.838	25.000	28.2	112.8	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	6845.070		1.00	5.30	6845.070	25.000	25.8	103.0	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	26408.230		1.00	5.32	26408.230	25.000	24.7	98.8	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	4833.368		1.00	4.71	4833.368	25.000	28.3	113.1	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	25414.553		1.00	5.60	25414.553	25.000	23.3	93.3	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		1330.897	1.00			10.000		(A)	NO		YES
67	37	PFDoA	612.9 > 569.0	11259.359	25414.553	1.00	5.60	11.076	10.000	11.1	110.9	NO	10.065	NO
68	38	N-MeFOSA	512.1 > 168.9		9985.007	1.00			9.600		(A)	NO		YES
69	39	PFTrDA	662.9 > 618.9	11958.154	25414.553	1.00	5.84	11.763	10.000	11.3	112.6	NO	37.051	NO
70	40	PFDoS	698.8 > 79.7		19533.469	1.00			10.000		(A)	NO		YES
71	41	PFTeDA	713.0 > 669.0	13525.570	19533.469	1.00	6.05	17.311	10.000	11.9	118.9	NO	19.837	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	1330.897		1.00	5.58	1330.897	25.000	26.1	104.5	NO		

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	25414.553		1.00	5.60	25414.553	25.000	23.3	93.3	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	9985.007		1.00	5.73	9985.007	149.200	140	94.1	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	25414.553		1.00	5.60	25414.553	25.000	23.3	93.3	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	19533.469		1.00	6.05	19533.469	25.000	23.9	95.4	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	19533.469		1.00	6.05	19533.469	25.000	23.9	95.4	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9		17296.631	1.00			9.600			NO		YES
80	43	PFHxDA	813.1 > 768.6		32805.488	1.00			10.000			NO		YES
81	44	PFODA	913.1 > 868.8		32805.488	1.00			10.000			NO		
82	45	N-MeFOSE	616.1 > 58.9		14099.830	1.00			9.600			NO		
83	46	N-EtFOSE	630.1 > 58.9		16536.934	1.00			9.600			NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	17296.631		1.00	6.14	17296.631	149.200	138	92.6	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	32805.488		1.00	6.38	32805.488	25.000	23.7	94.9	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	32805.488		1.00	6.38	32805.488	25.000	23.7	94.9	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	14099.830		1.00	6.30	14099.830	149.200	144	96.6	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	16536.934		1.00	6.44	16536.934	149.200	151	101.3	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	4833.368		1.00	4.71	4833.368	25.000	28.3	113.1	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	8270.403	5290.983	1.00	1.35	19.539	25.000	24.4	97.7	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	14152.551	12909.932	1.00	2.28	13.703	25.000	24.1	96.2	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	1795.445	845.250	1.00	2.56	26.552	25.000	26.1	104.3	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	6697.274	12909.932	1.00	3.28	6.485	25.000	24.5	98.0	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	2507.617	845.250	1.00	2.98	37.084	25.000	25.9	103.4	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	26299.793	12909.932	1.00	3.07	25.465	25.000	24.6	98.5	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	14675.000	12909.932	1.00	3.67	14.209	25.000	24.1	96.3	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	3820.314	845.250	1.00	3.81	56.497	25.000	23.2	92.7	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	2179.081	2253.859	1.00	4.13	12.085	25.000	27.0	108.1	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	19038.402	10105.433	1.00	4.62	23.550	25.000	25.0	99.9	NO		
101	68	13C8-PFOSA-RSD	506 > 78	4983.204	13133.063	1.00	4.68	4.743	25.000	26.3	105.1	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	21531.193	13734.829	1.00	4.18	19.595	25.000	24.0	95.9	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	4833.368	2253.859	1.00	4.71	26.806	25.000	27.8	111.3	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	20256.887	10901.237	1.00	5.00	23.228	25.000	24.2	96.6	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1773.270	2253.859	1.00	4.97	9.835	25.000	27.7	110.9	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	4072.838	13133.063	1.00	5.15	3.877	25.000	26.5	106.1	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	26408.230	13133.063	1.00	5.32	25.135	25.000	25.5	102.0	NO		

Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	6845.070	13133.063	1.00	5.30	6.515	25.000	27.3	109.2	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	25414.553	10901.237	1.00	5.60	29.142	25.000	23.0	91.9	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1330.897	2253.859	1.00	5.58	7.381	25.000	27.7	110.7	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	9985.007	13133.063	1.00	5.73	9.504	149.200	139	92.9	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	19533.469	13133.063	1.00	6.05	18.592	25.000	24.0	95.8	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	17296.631	13133.063	1.00	6.14	16.463	149.200	142	95.1	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	32805.488	13133.063	1.00	6.38	31.224	25.000	24.2	96.8	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	14099.830	13133.063	1.00	6.30	13.420	149.200	144	96.8	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	16536.934	13133.063	1.00	6.44	15.740	149.200	144	96.4	NO		
119	99	13C4-PFBA	217.0 > 172.0	5290.983	5290.983	1.00	1.35	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	12909.932	12909.932	1.00	3.07	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	13734.829	13734.829	1.00	4.18	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	845.250	845.250	1.00	3.81	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	10105.433	10105.433	1.00	4.62	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2253.859	2253.859	1.00	4.71	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	10901.237	10901.237	1.00	5.00	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	13133.063	13133.063	1.00	5.32	12.500	12.500	12.5	100.0	NO		

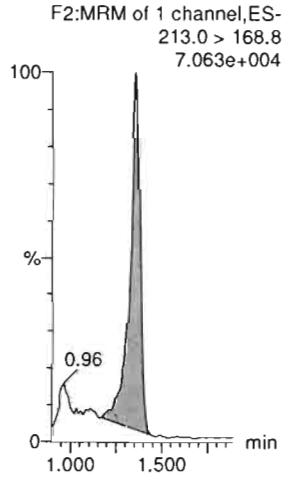
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

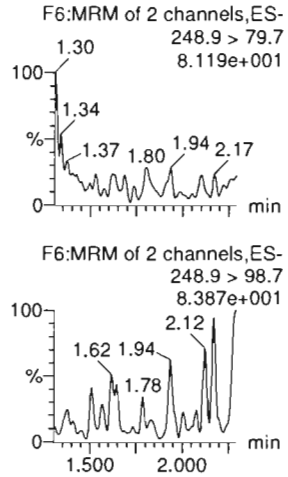
Method: D:\PFAS5.PRO\MethDB\PFAS_FULL_80C_030320_NEW_ICV.mdb 04 Mar 2020 10:29:05
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

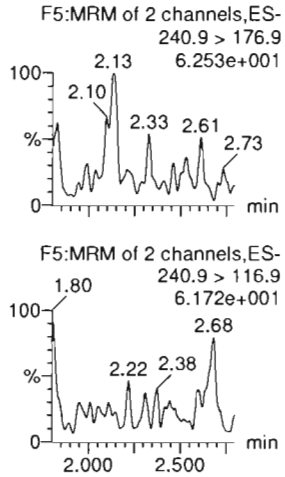
PFBA



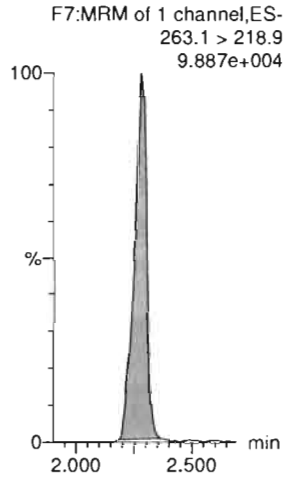
PFPrS



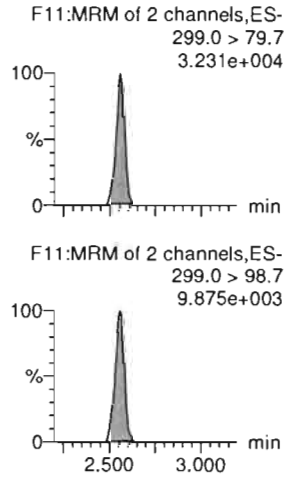
3:3 FTCA



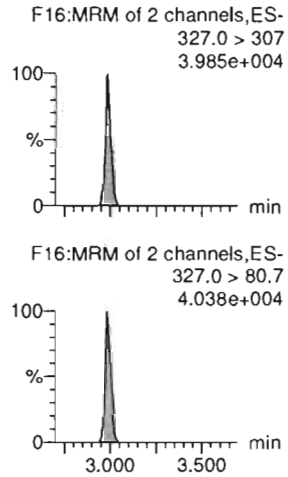
PFPeA



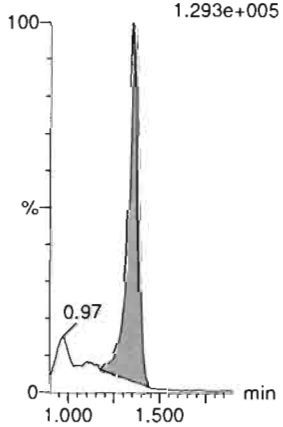
PFBS



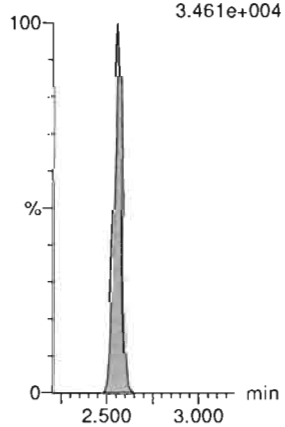
4:2 FTS



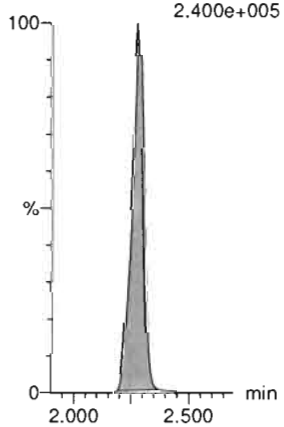
13C3-PFBA-EIS



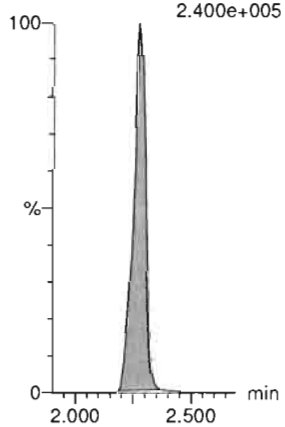
13C3-PFBS-EIS



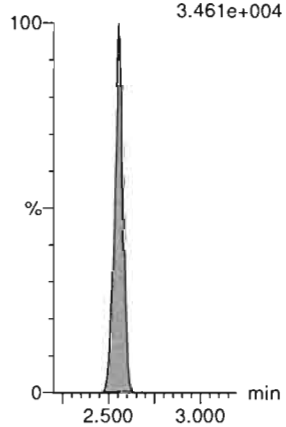
13C3-PFPeA-EIS



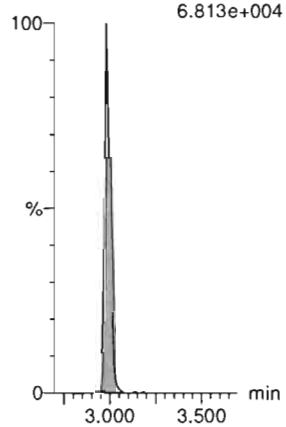
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

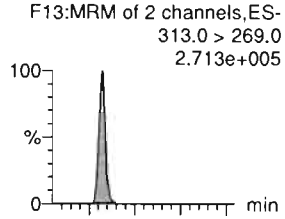


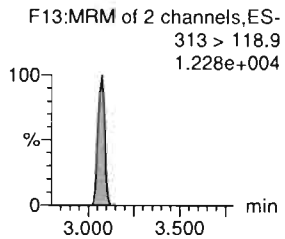
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

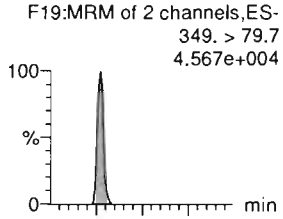
Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

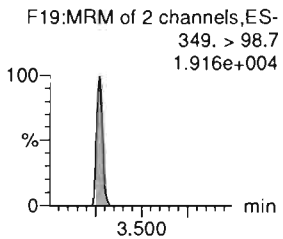
PFHxA



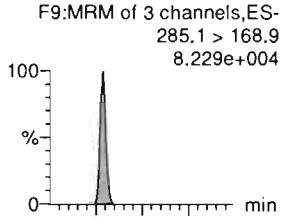


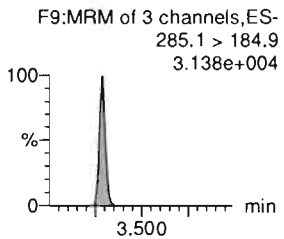
PFPeS



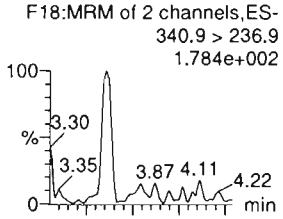


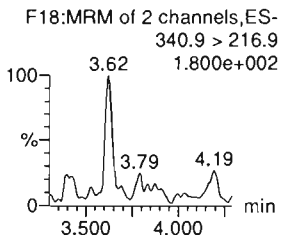
HFPO-DA



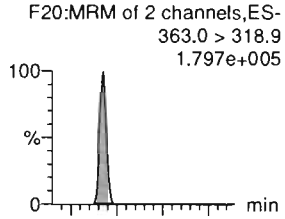


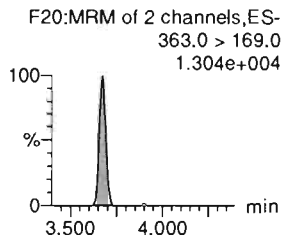
5:3 FTCA



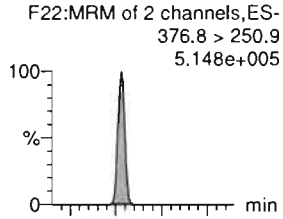


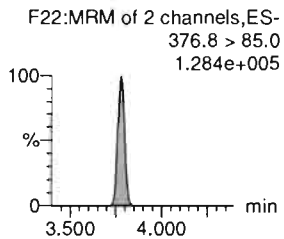
PFHpA



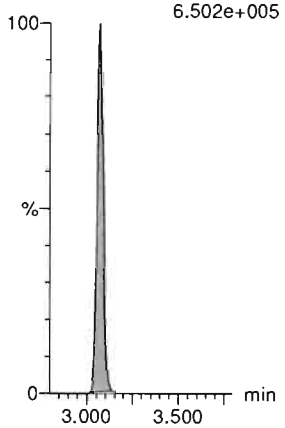


ADONA

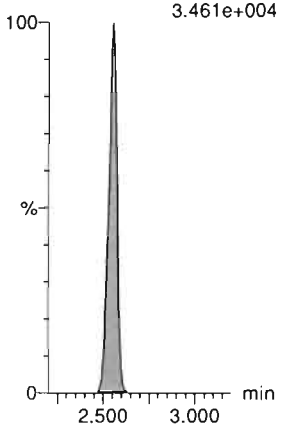




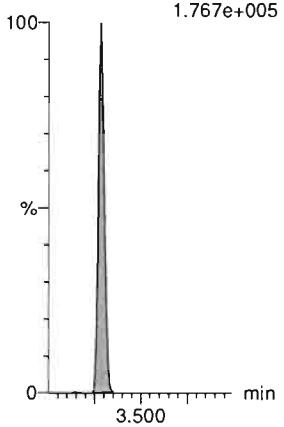
13C2-PFHxA-EIS



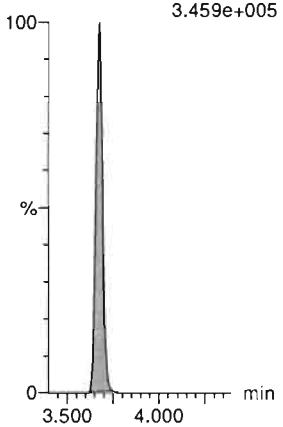
13C3-PFBS-EIS



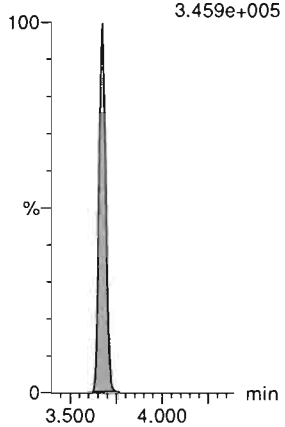
13C3-HFPO-DA-EIS



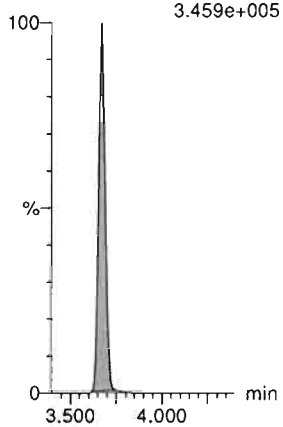
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

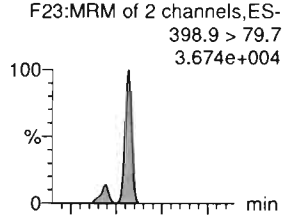


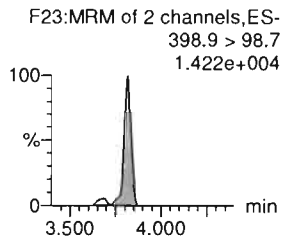
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

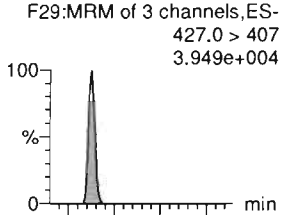
Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

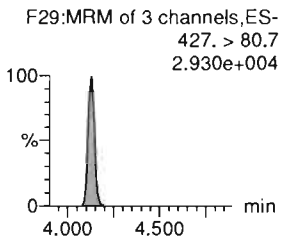
L-PFHxS



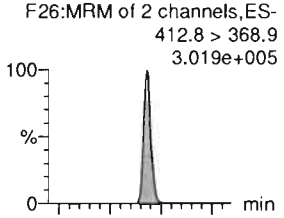


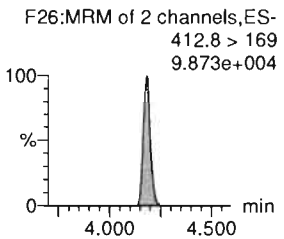
6:2 FTS



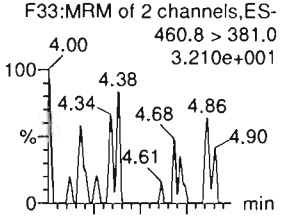


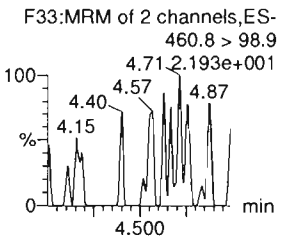
L-PFOA



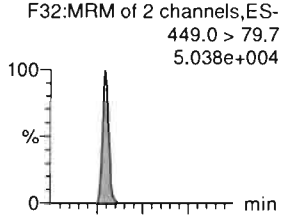


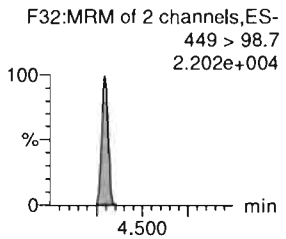
PFEChS



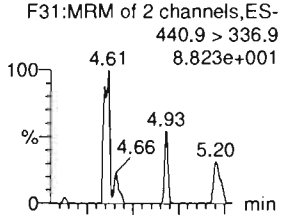


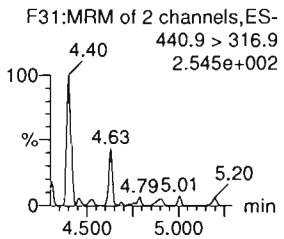
PFHpS



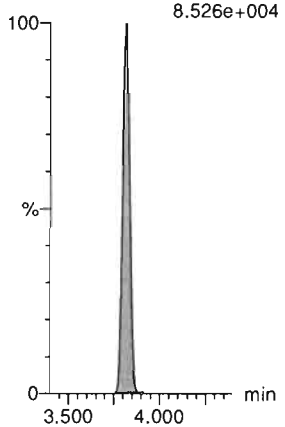


7:3 FTCA

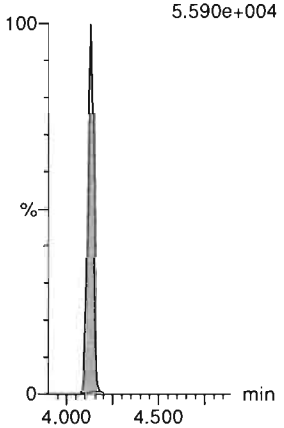




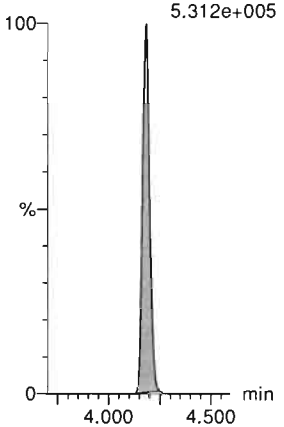
13C3-PFHxS-EIS



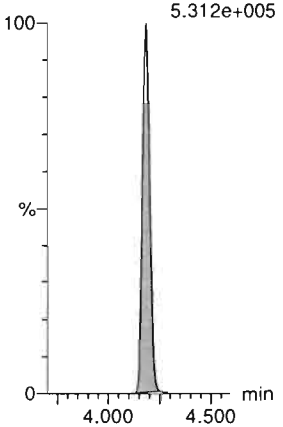
13C2-6:2 FTS-EIS



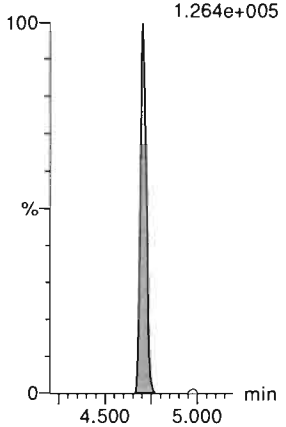
13C2-PFOA-EIS



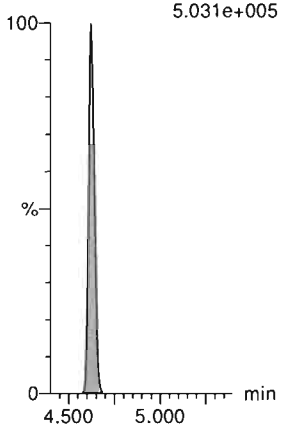
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

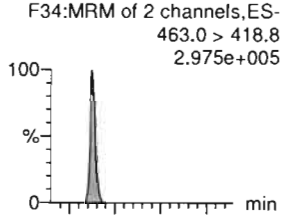


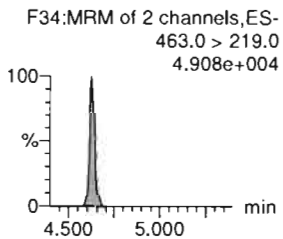
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

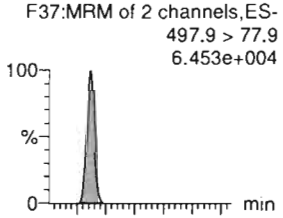
Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

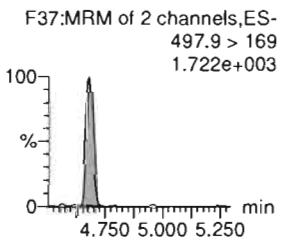
PFNA



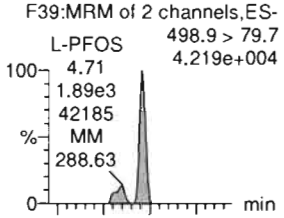


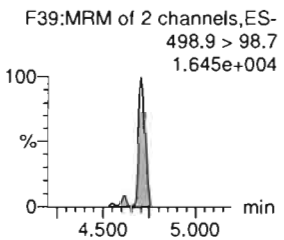
PFOSA



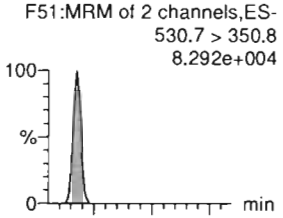


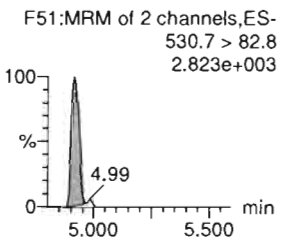
L-PFOS



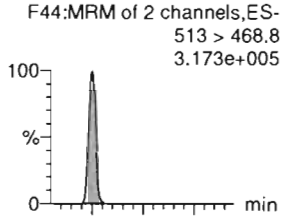


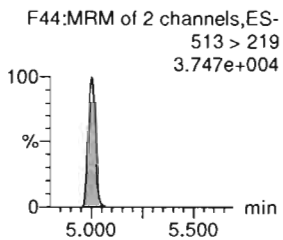
9Cl-PF30NS



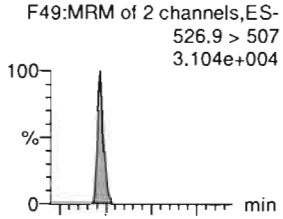


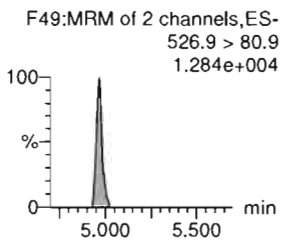
PFDA



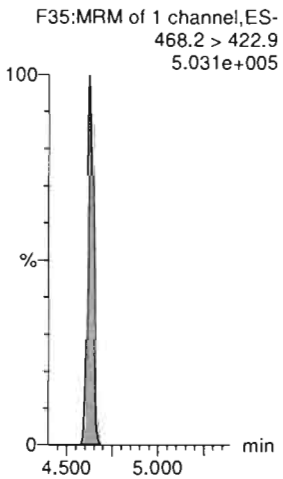


8:2 FTS

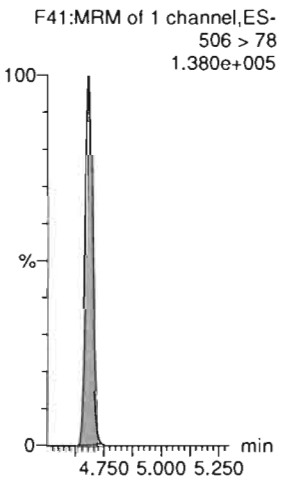




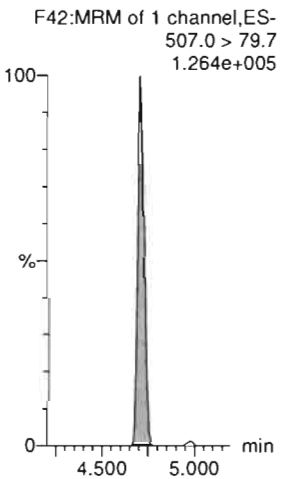
13C5-PFNA-EIS



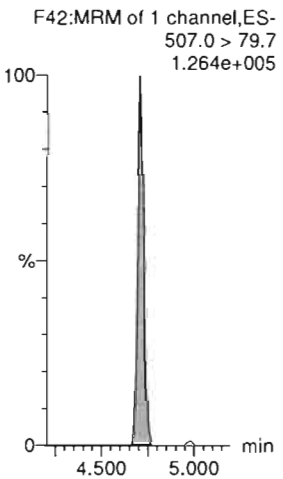
13C8-PFOSA-EIS



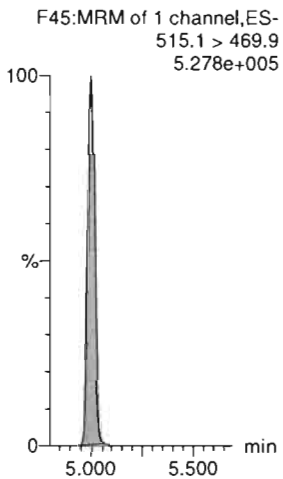
13C8-PFOS-EIS



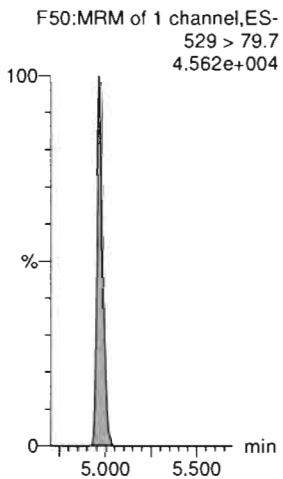
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

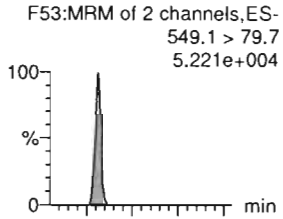


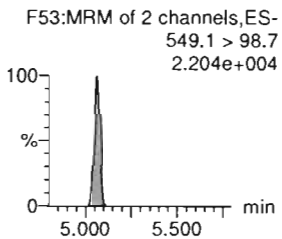
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

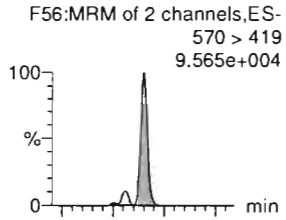
Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

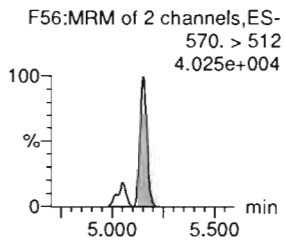
PFNS



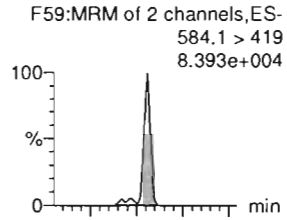


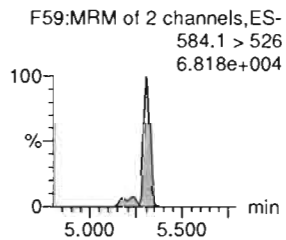
L-MeFOSAA



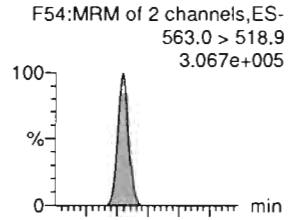


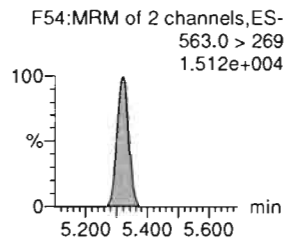
L-EtFOSAA



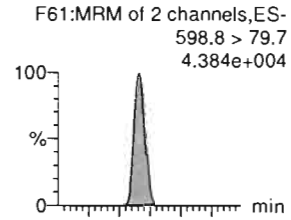


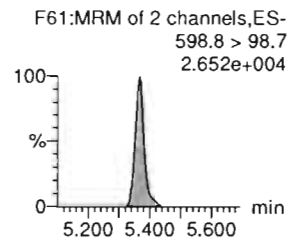
PFUdA



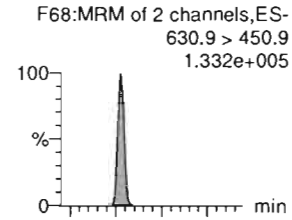


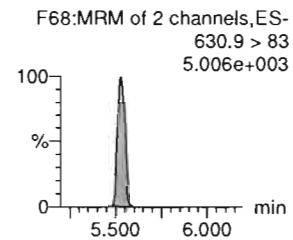
PFDS



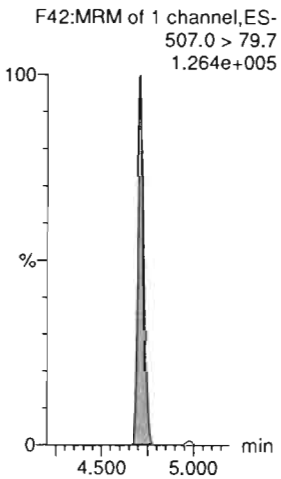


11Cl-PF30UdS

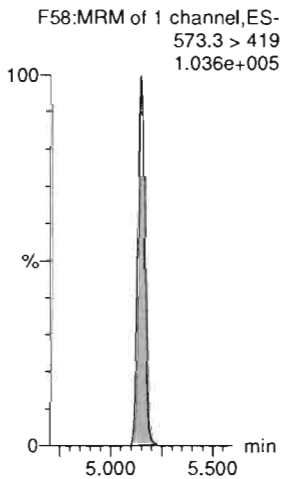




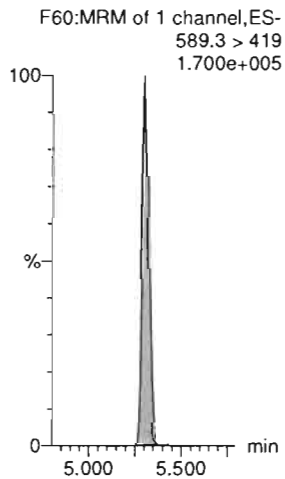
13C8-PFOS-EIS



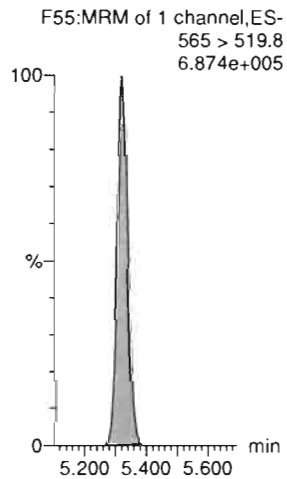
d3-N-MeFOSAA-EIS



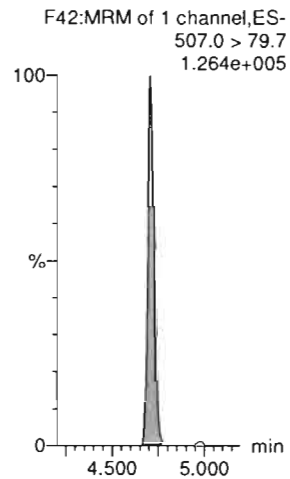
d5-N-EtFOSAA-EIS



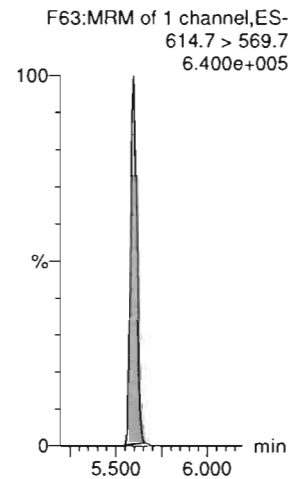
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

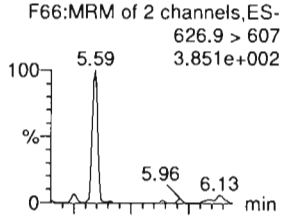


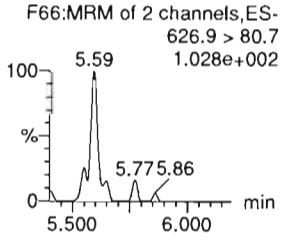
Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

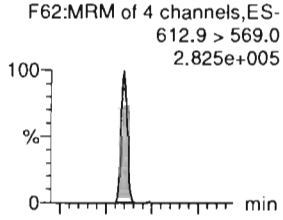
Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

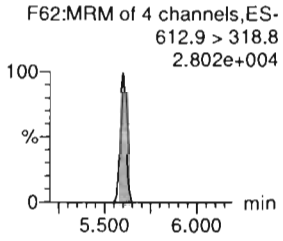
10:2 FTS



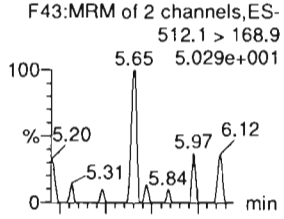


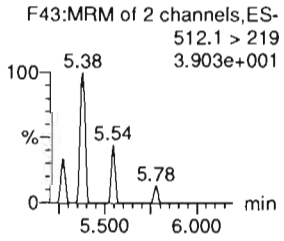
PFDoA



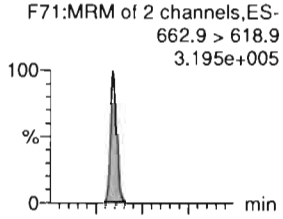


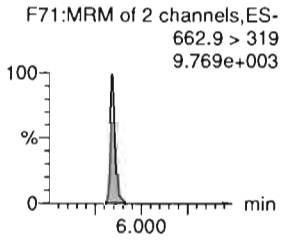
N-MeFOSA



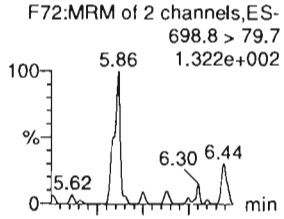


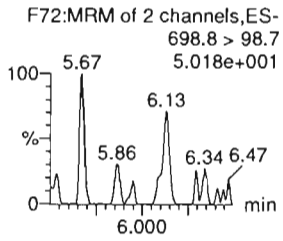
PFTrDA



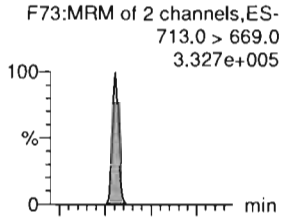


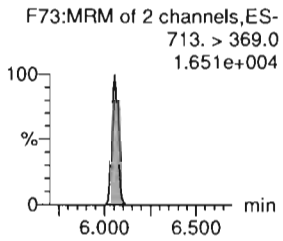
PFDoS



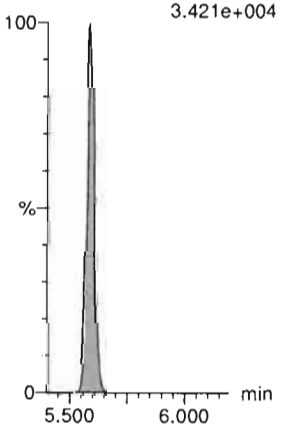


PFTeDA

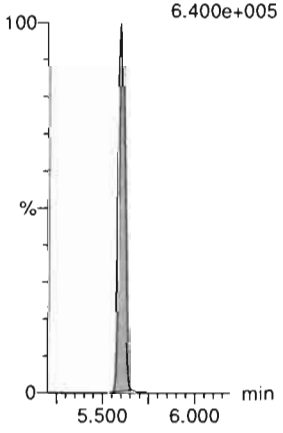




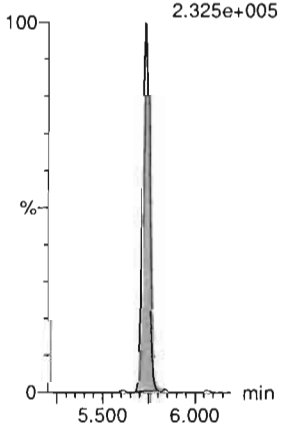
13C2-10:2 FTS-EIS



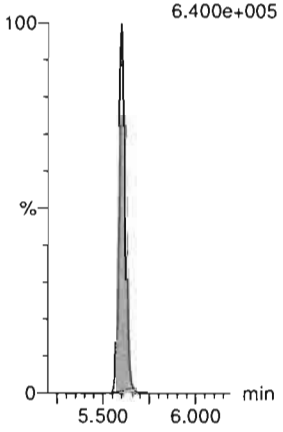
13C2-PFDoA-EIS



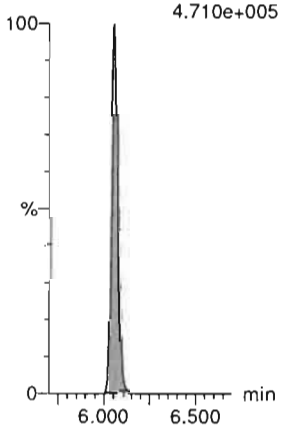
d3-N-MeFOSA-EIS



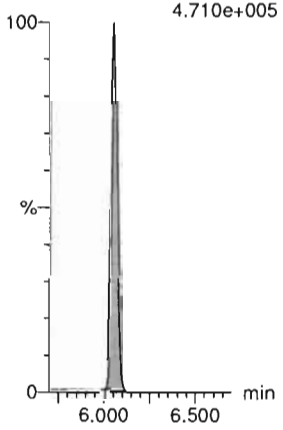
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

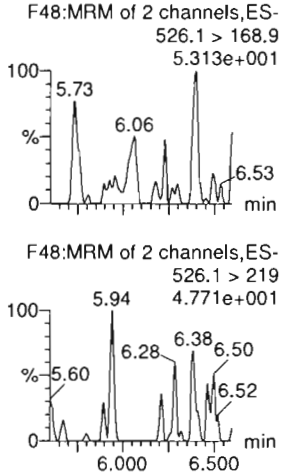


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

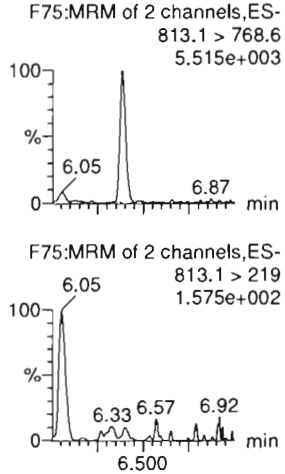
Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

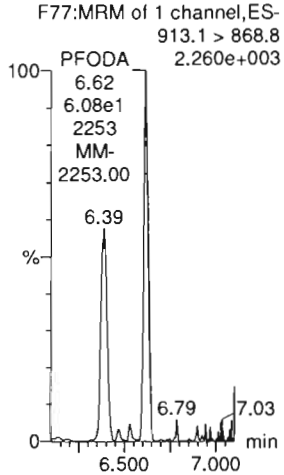
N-EtFOSA



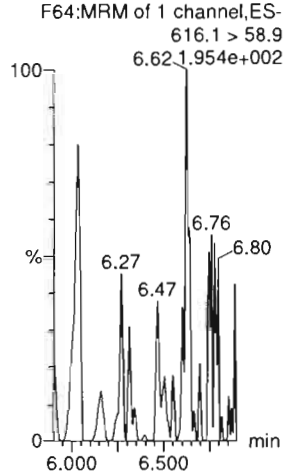
PFHxDA



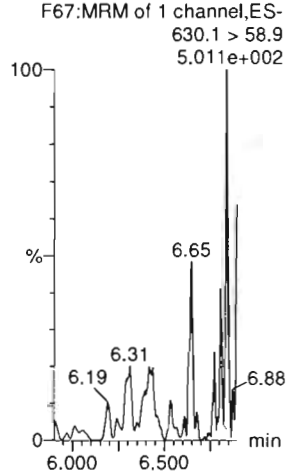
PFODA



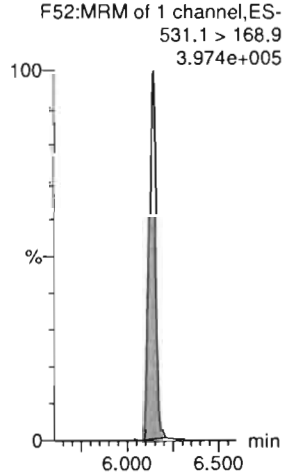
N-MeFOSE



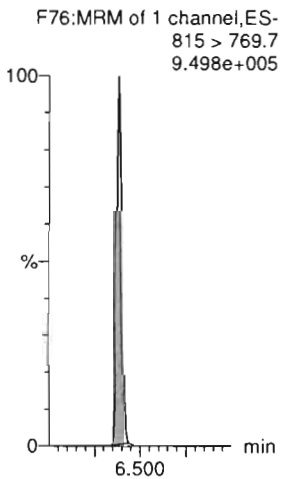
N-EtFOSE



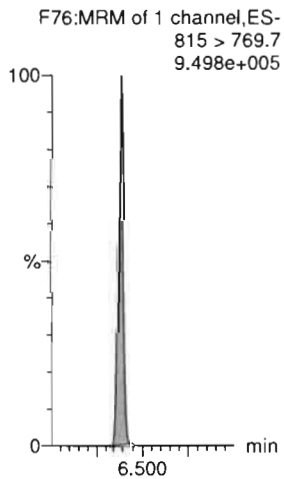
d5-N-ETFOSA-EIS



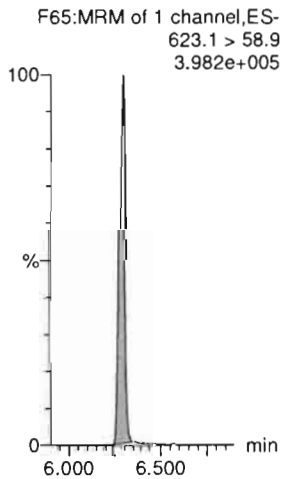
13C2-PFHxDA-EIS



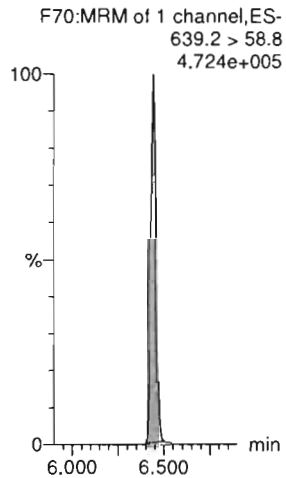
13C2-PFHxDA-EIS



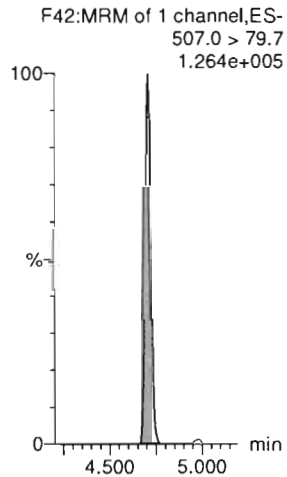
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS

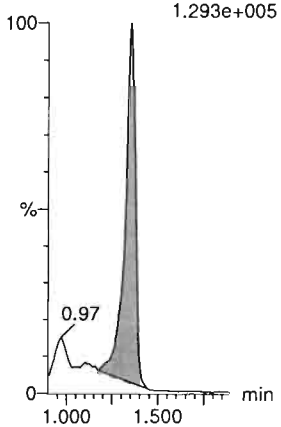


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

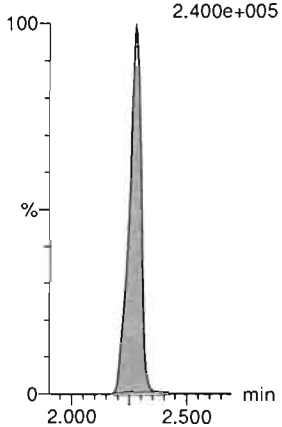
Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

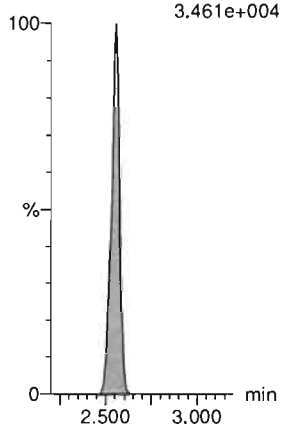
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
1.293e+005



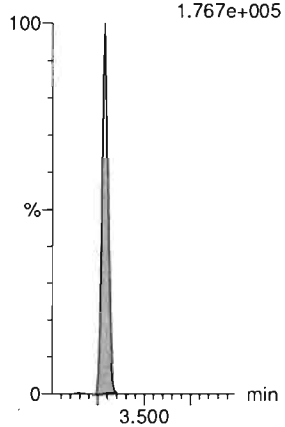
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
2.400e+005



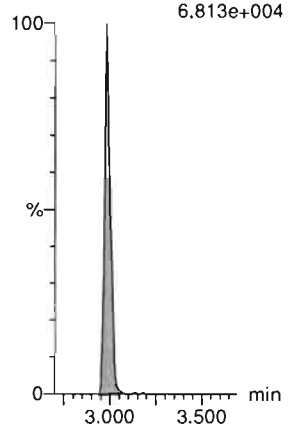
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
3.461e+004



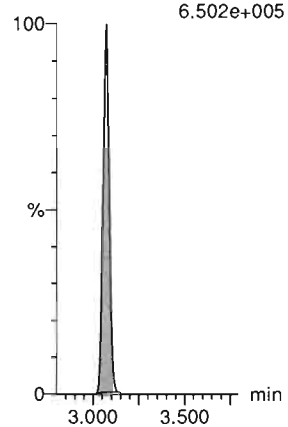
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
1.767e+005



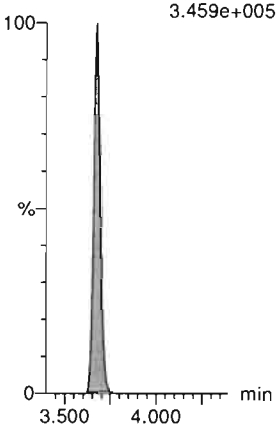
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
6.813e+004



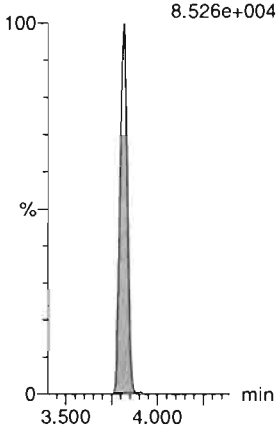
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
6.502e+005



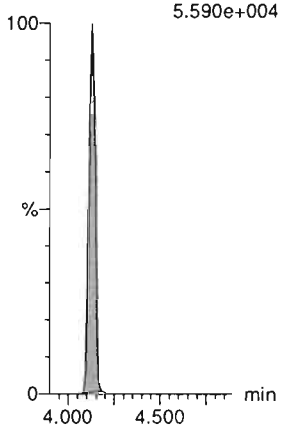
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.459e+005



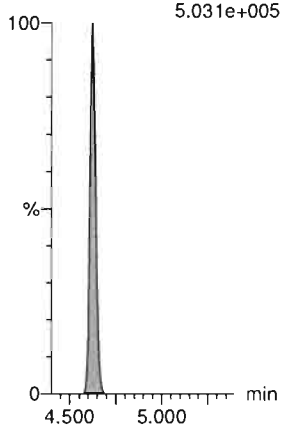
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
8.526e+004



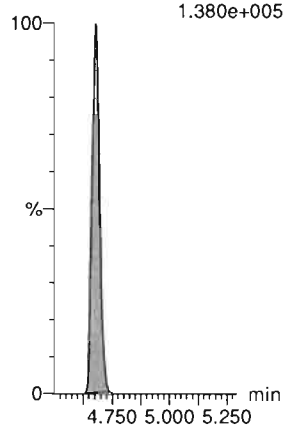
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.590e+004



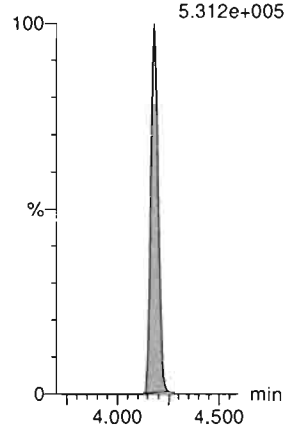
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
5.031e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
1.380e+005



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
5.312e+005

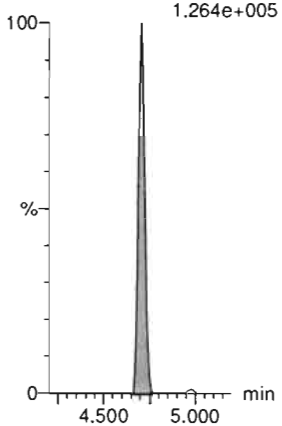


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

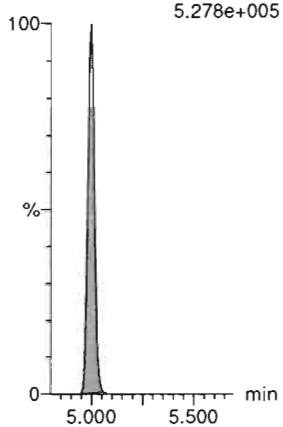
Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

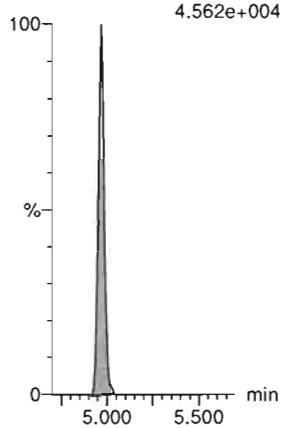
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
1.264e+005



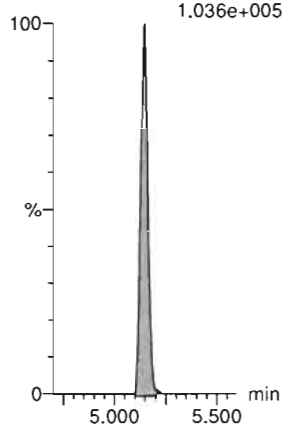
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
5.278e+005



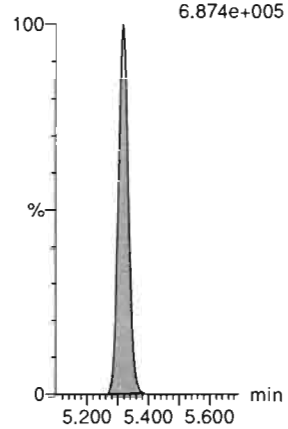
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
4.562e+004



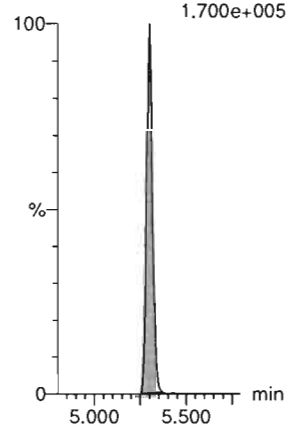
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.036e+005



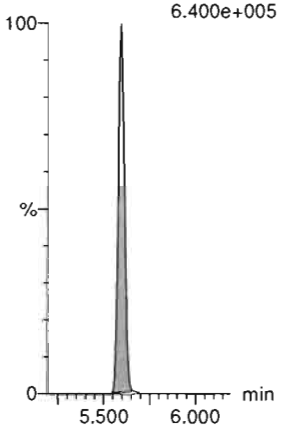
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
6.874e+005



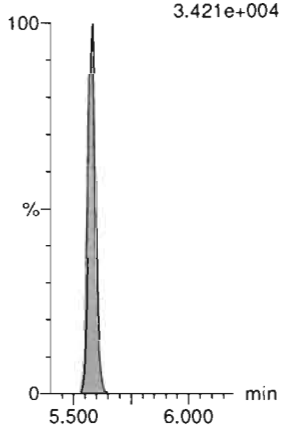
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.700e+005



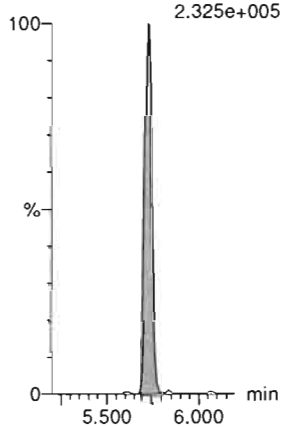
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
6.400e+005



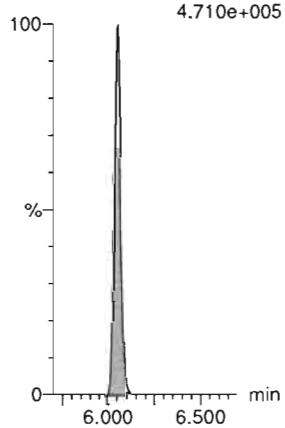
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
3.421e+004



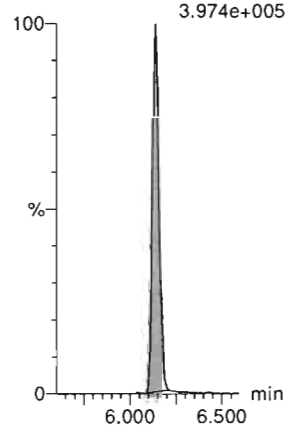
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.325e+005



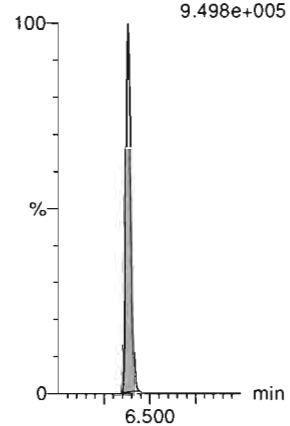
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
4.710e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
3.974e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
9.498e+005

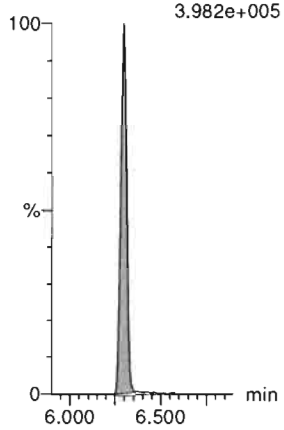


Dataset: D:\PFAS5.PRO\RESULTS\200303P2\200303P2-ICV.qld

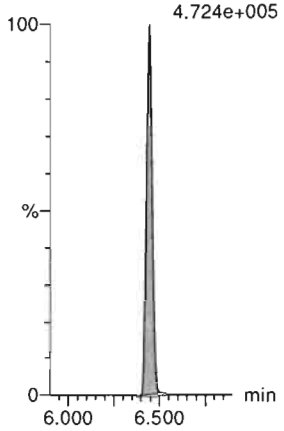
Last Altered: Wednesday, March 04, 2020 10:46:17 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:46:27 Pacific Standard Time

Name: 200303P2-14, Date: 03-Mar-2020, Time: 19:00:45, ID: ICV200303P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

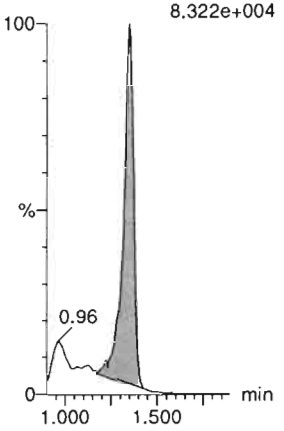
d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
3.982e+005



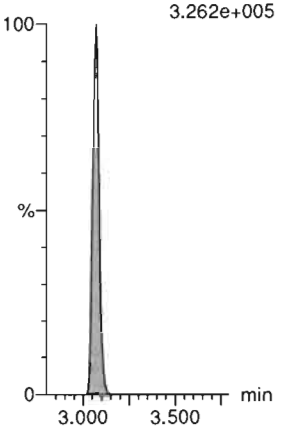
d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
4.724e+005



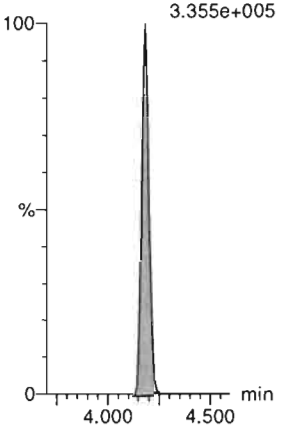
13C4-PFBA
F4:MRM of 1 channel,ES-
217.0 > 172.0
8.322e+004



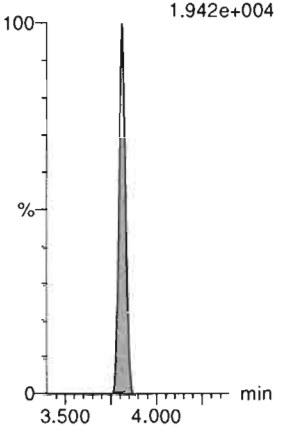
13C5-PFHxA
F15:MRM of 1 channel,ES-
318.0 > 272.9
3.262e+005



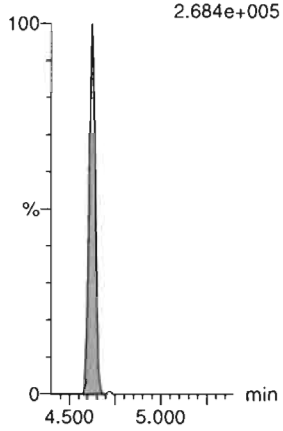
13C8-PFOA
F28:MRM of 1 channel,ES-
420.9 > 376.0
3.355e+005



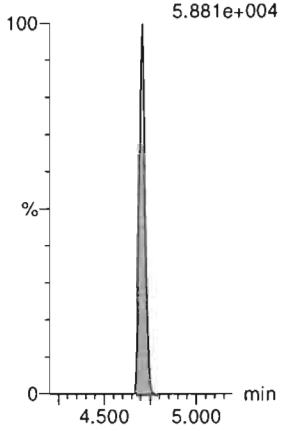
18O2-PFHxS
F25:MRM of 1 channel,ES-
403.0 > 102.6
1.942e+004



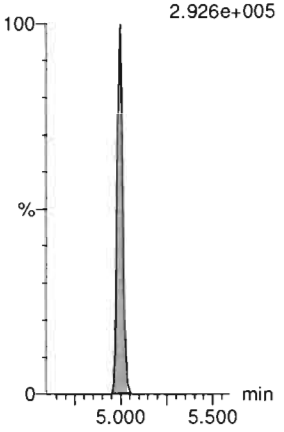
13C9-PFNA
F36:MRM of 1 channel,ES-
472.2 > 426.9
2.684e+005



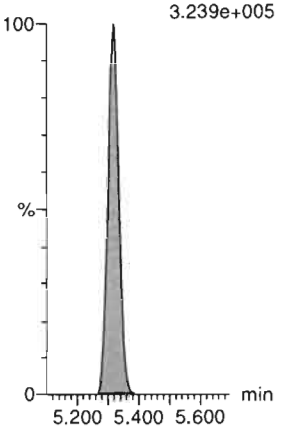
13C4-PFOS
F40:MRM of 1 channel,ES-
503 > 79.7
5.881e+004



13C6-PFDA
F47:MRM of 1 channel,ES-
519.1 > 473.7
2.926e+005



13C7-PFUdA
F57:MRM of 1 channel,ES-
570.1 > 524.8
3.239e+005



Vista Analytical Laboratory

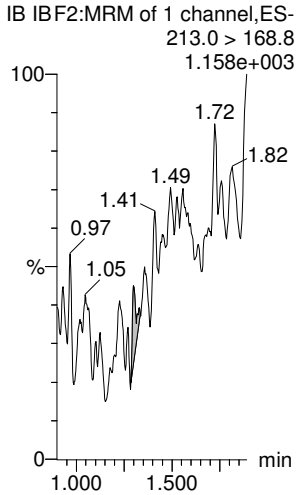
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

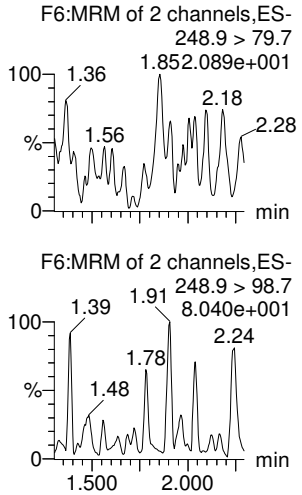
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:14:46
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-03-20.cdb 04 Mar 2020 10:03:58

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

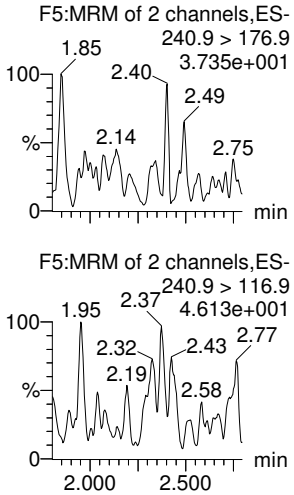
PFBA



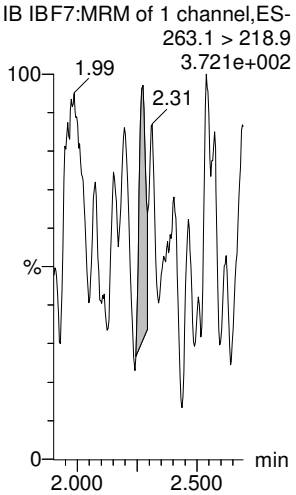
PFPrS



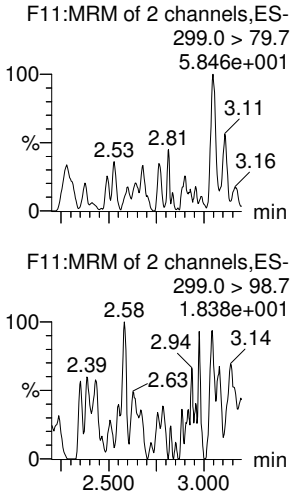
3:3 FTCA



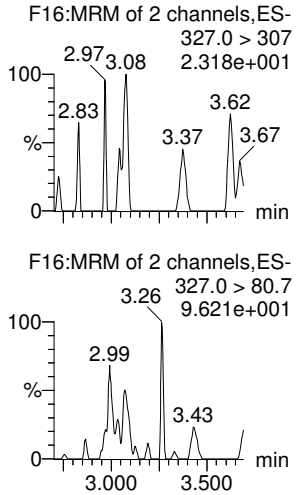
PFPeA



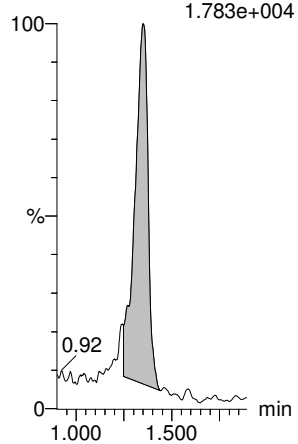
PFBS



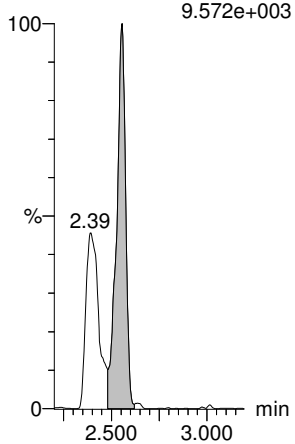
4:2 FTS



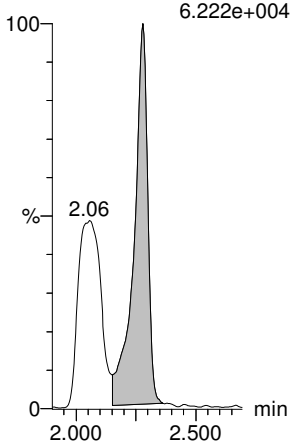
13C3-PFBA-EIS



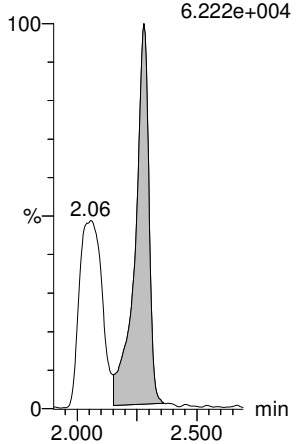
13C3-PFBS-EIS



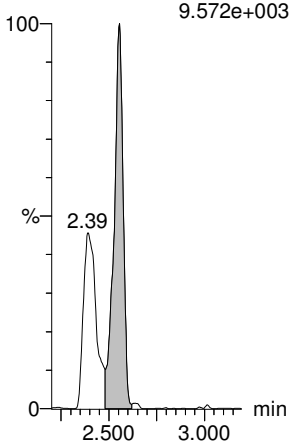
13C3-PFPeA-EIS



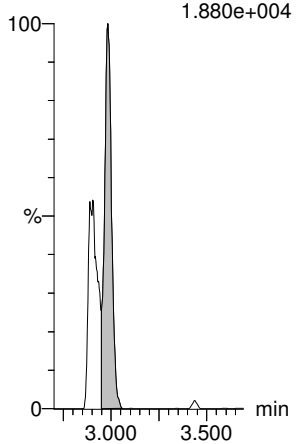
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

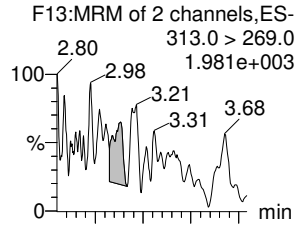


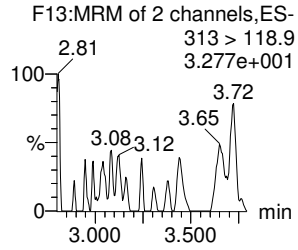
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

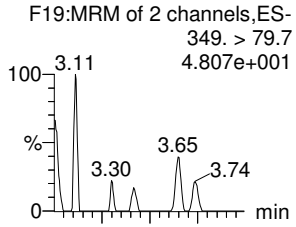
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

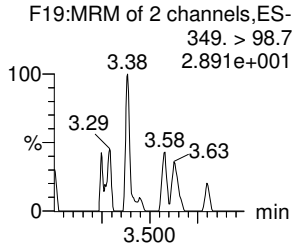
PFHxA



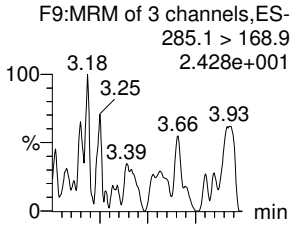


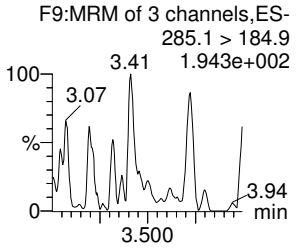
PFPeS



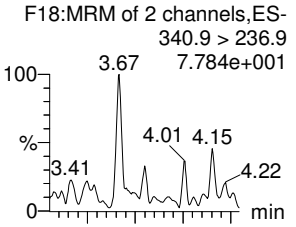


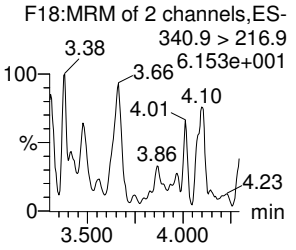
HFPO-DA



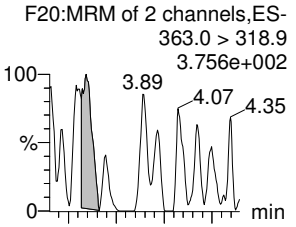


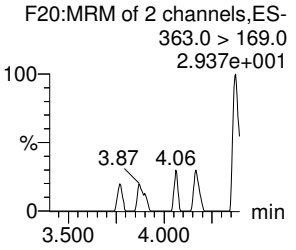
5:3 FTCA



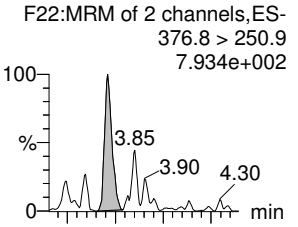


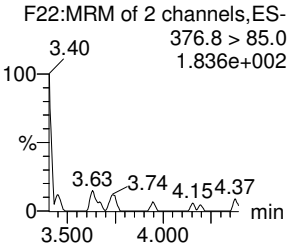
PFHpA



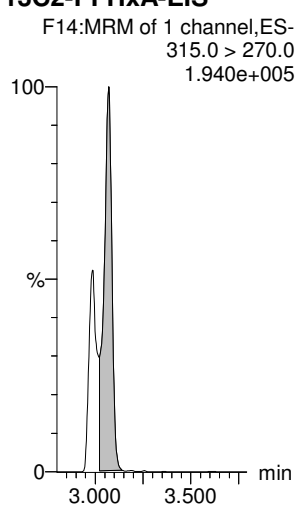


ADONA

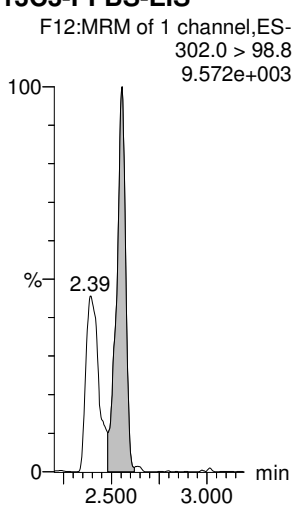




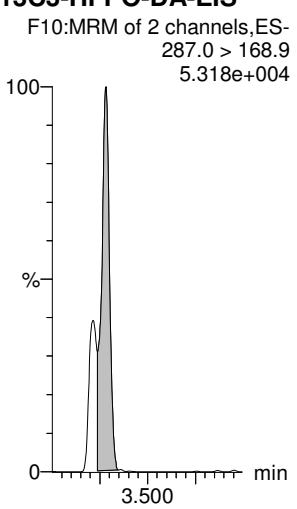
13C2-PFHxA-EIS



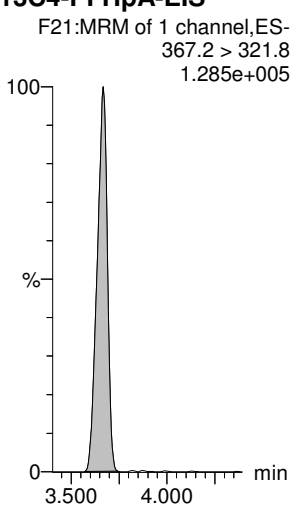
13C3-PFBS-EIS



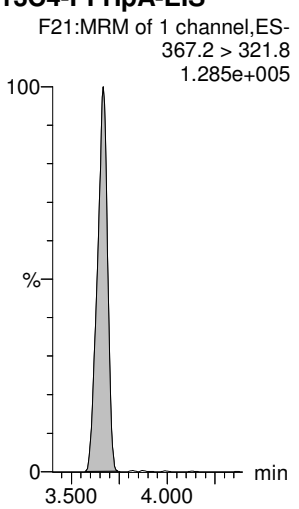
13C3-HFPO-DA-EIS



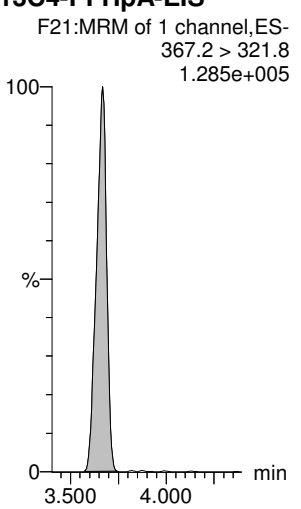
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

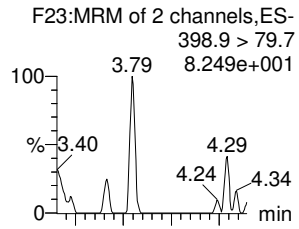


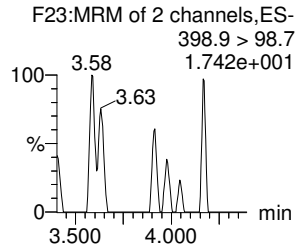
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

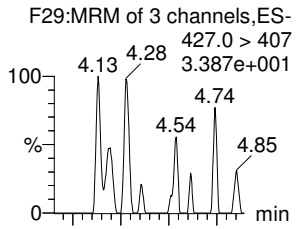
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

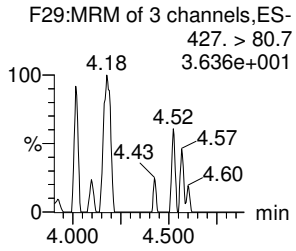
L-PFHxS



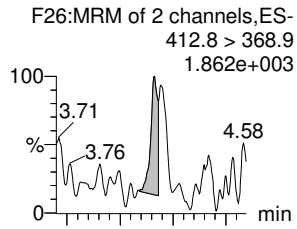


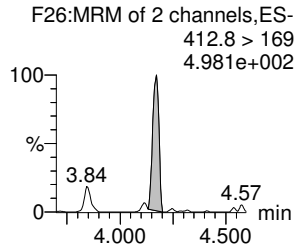
6:2 FTS



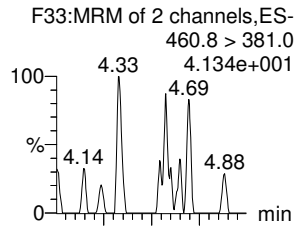


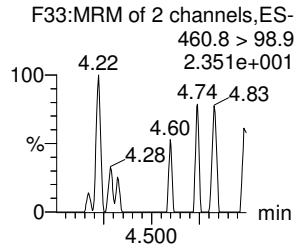
L-PFOA



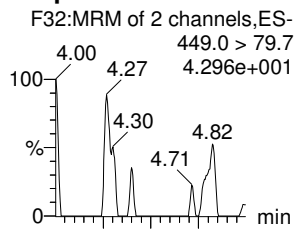


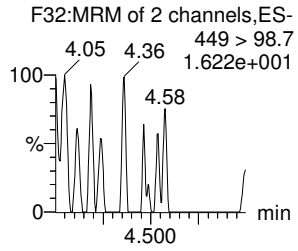
PFEChS



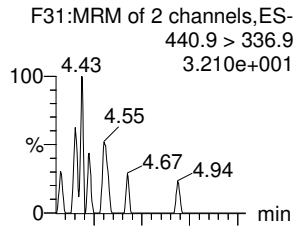


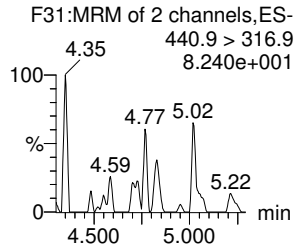
PFHpS



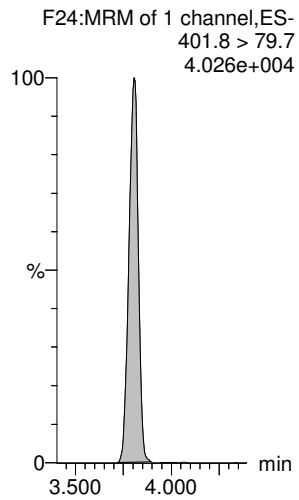


7:3 FTCA

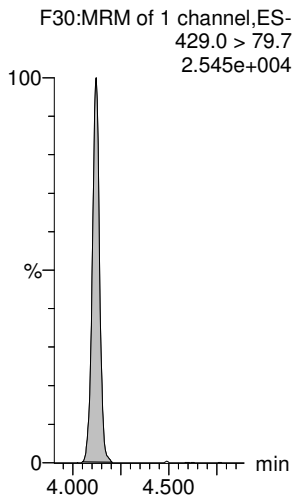




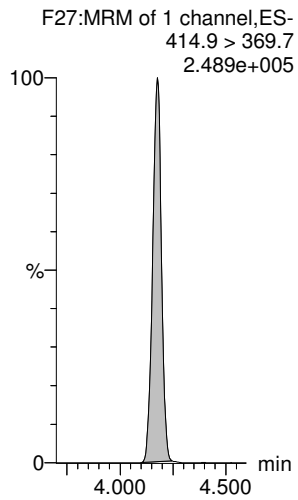
13C3-PFHxS-EIS



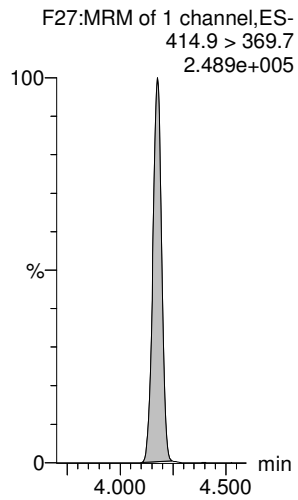
13C2-6:2 FTS-EIS



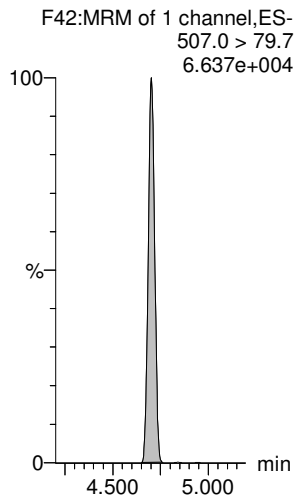
13C2-PFOA-EIS



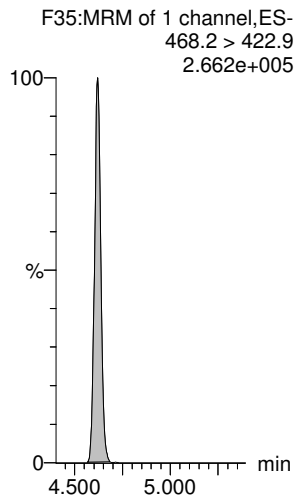
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

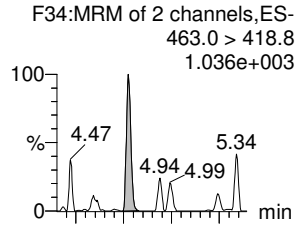


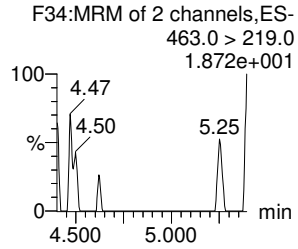
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

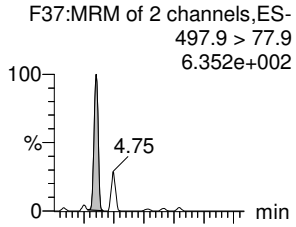
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

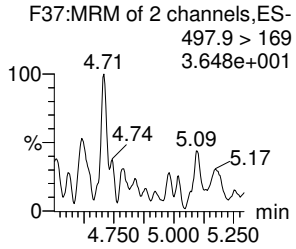
PFNA



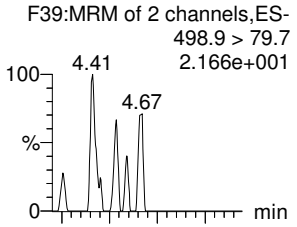


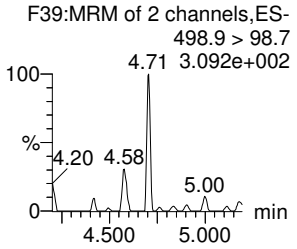
PFOSA



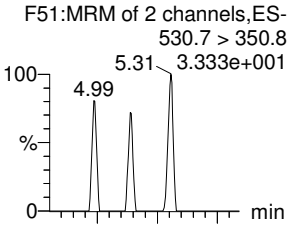


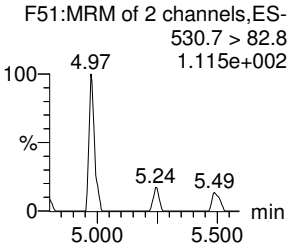
L-PFOS



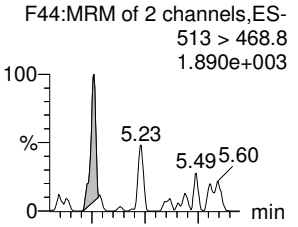


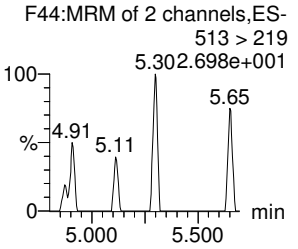
9Cl-PF30NS



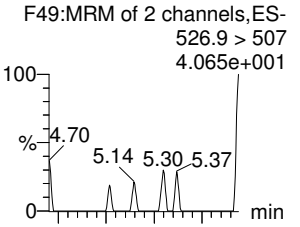


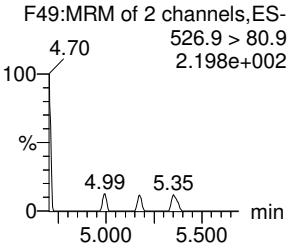
PFDA



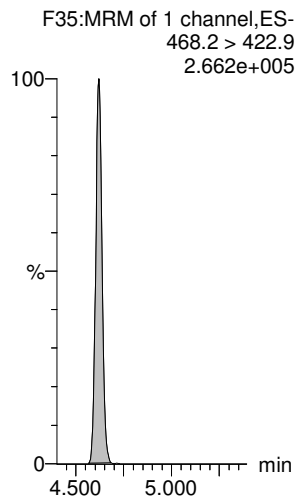


8:2 FTS

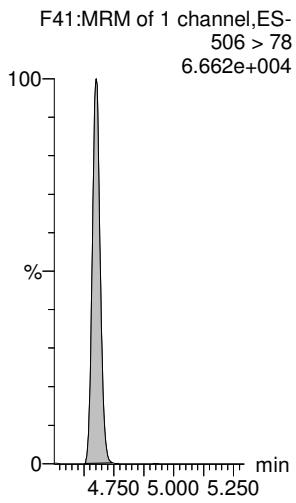




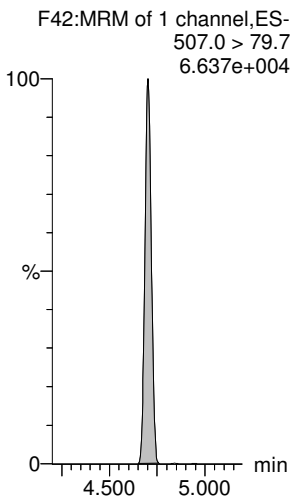
13C5-PFNA-EIS



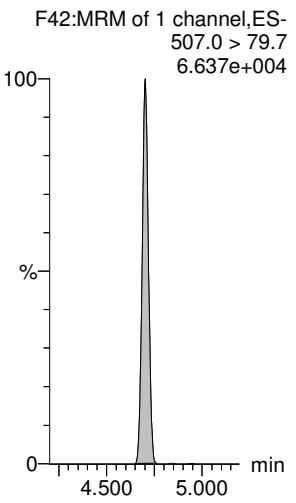
13C8-PFOSA-EIS



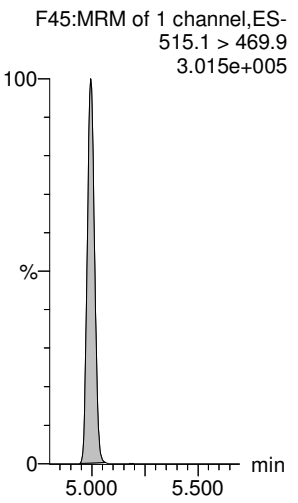
13C8-PFOS-EIS



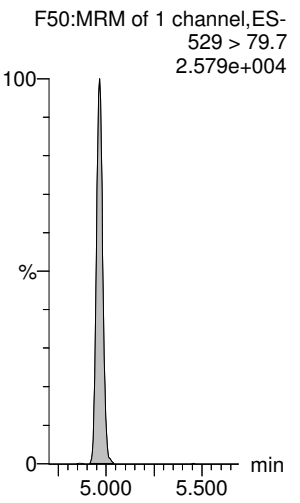
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

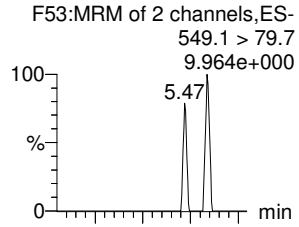


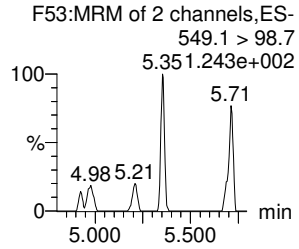
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

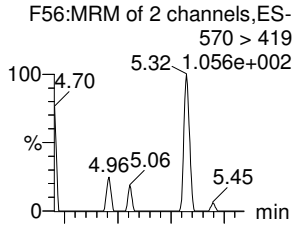
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

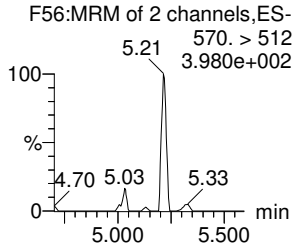
PFNS



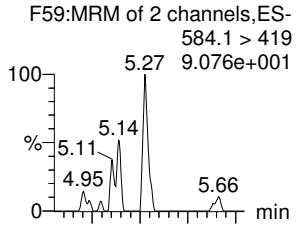


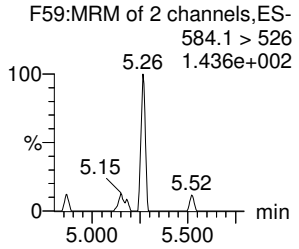
L-MeFOSAA



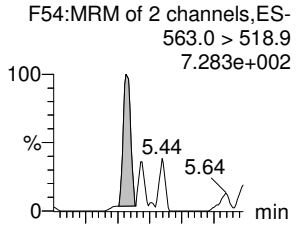


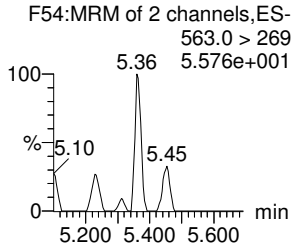
L-EtFOSAA



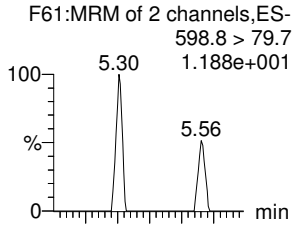


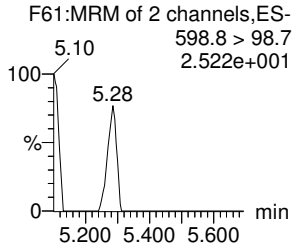
PFUdA



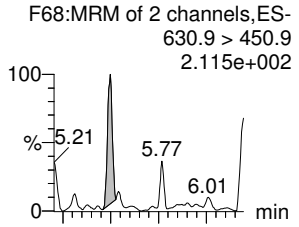


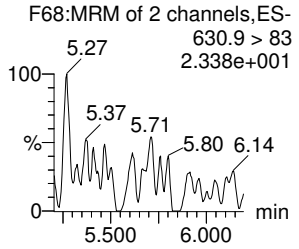
PFDS



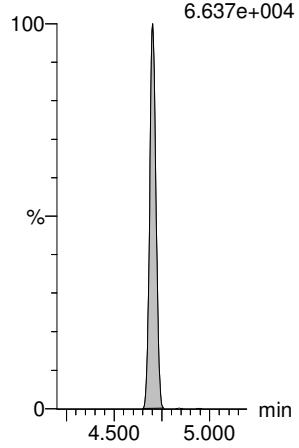


11Cl-PF30UdS

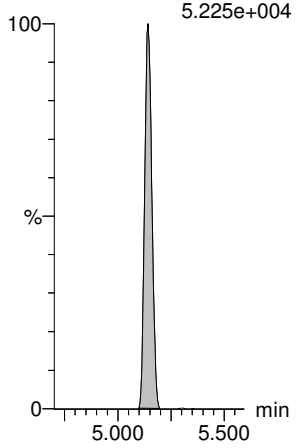




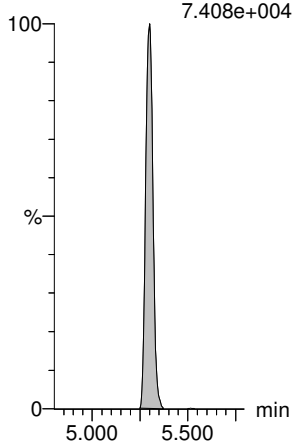
13C8-PFOS-EIS



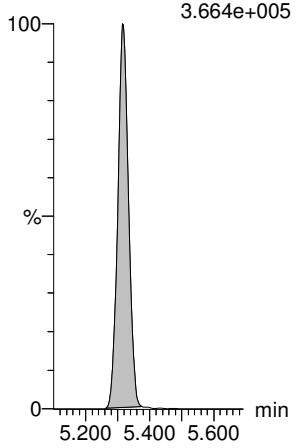
d3-N-MeFOSAA-EIS



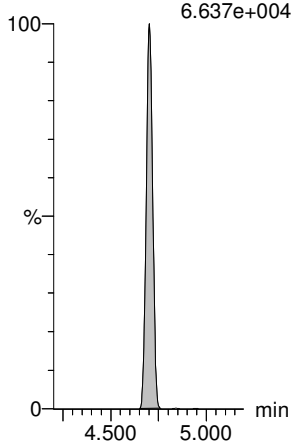
d5-N-EtFOSAA-EIS



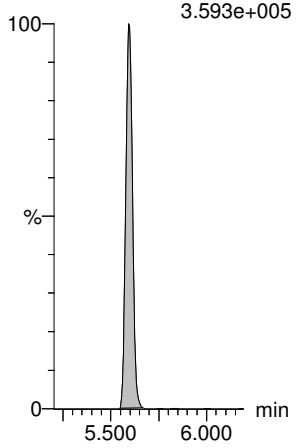
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

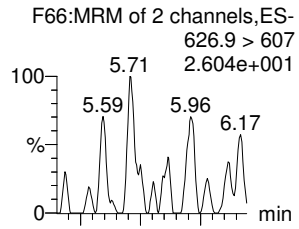


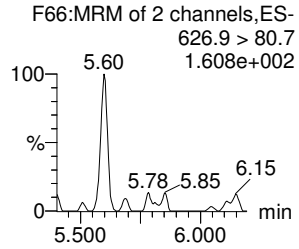
Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

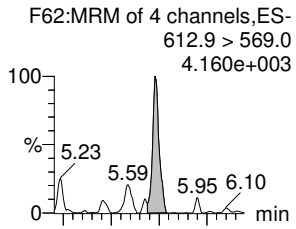
Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

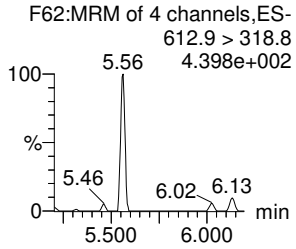
10:2 FTS



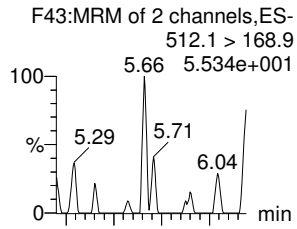


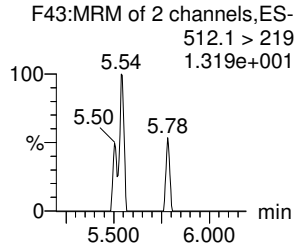
PFDoA



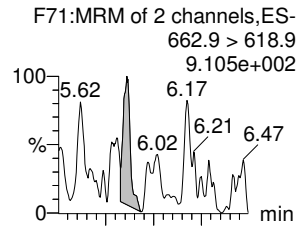


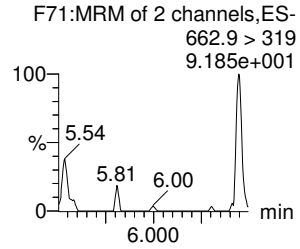
N-MeFOSA



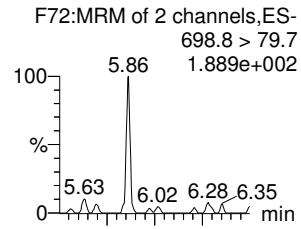


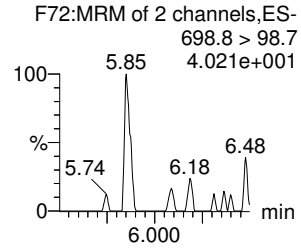
PFTrDA



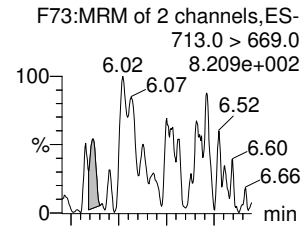


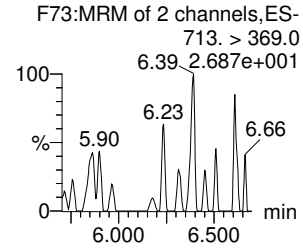
PFDoS



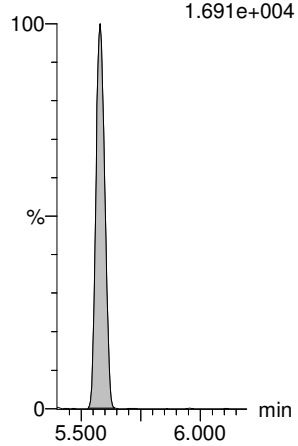


PFTeDA

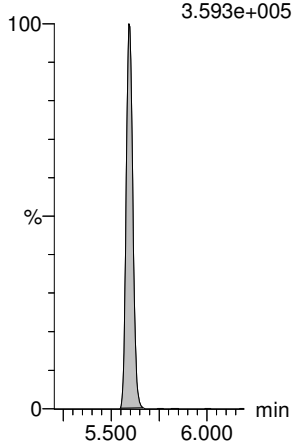




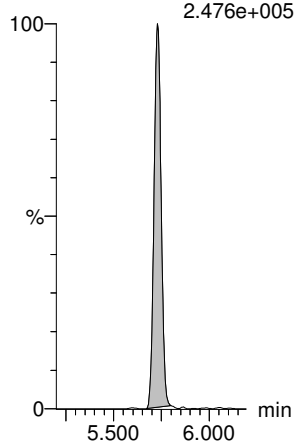
13C2-10:2 FTS-EIS



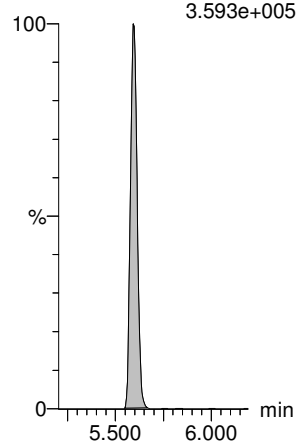
13C2-PFDoA-EIS



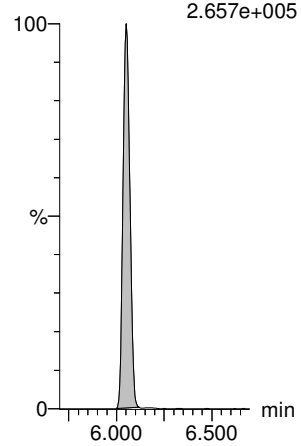
d3-N-MeFOSA-EIS



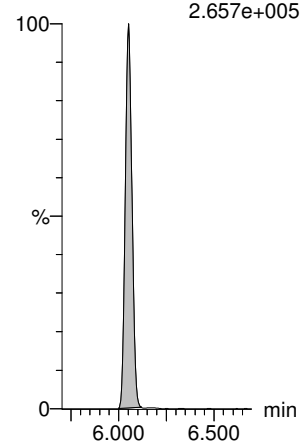
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

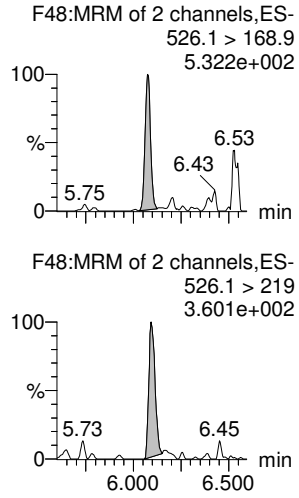


Dataset: Untitled

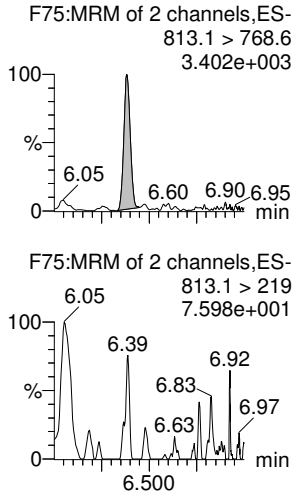
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

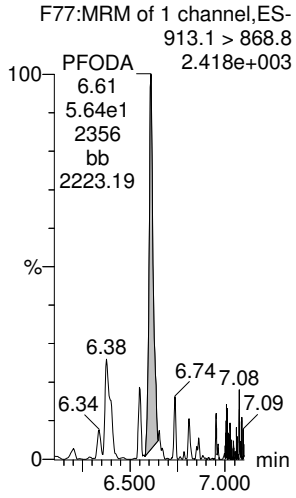
N-EtFOSA



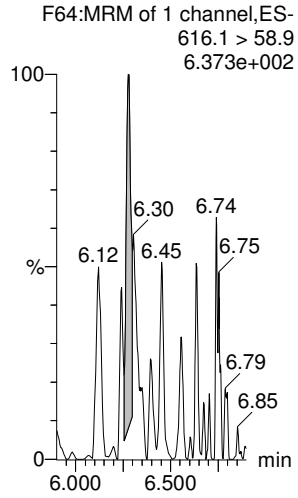
PFHxDA



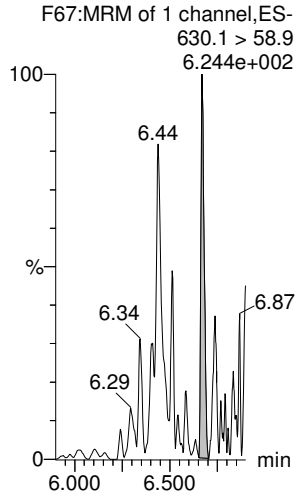
PFODA



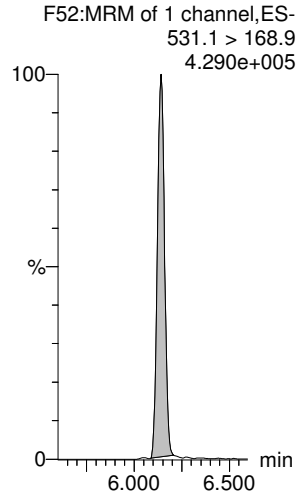
N-MeFOSE



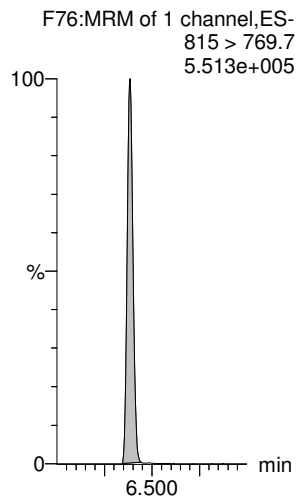
N-EtFOSE



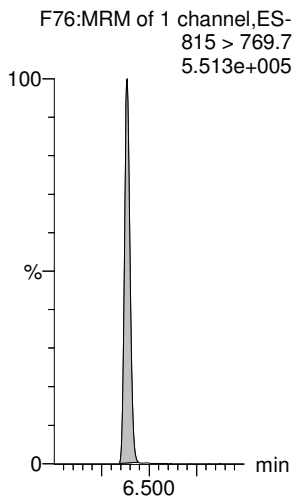
d5-N-ETFOSA-EIS



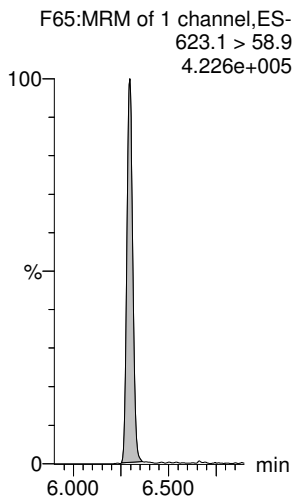
13C2-PFHxDA-EIS



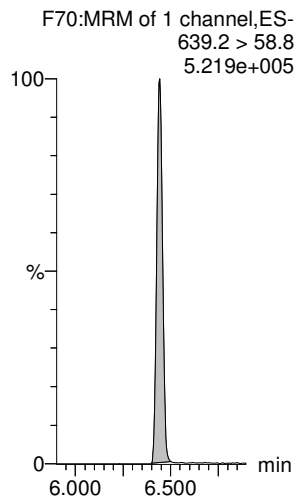
13C2-PFHxDA-EIS



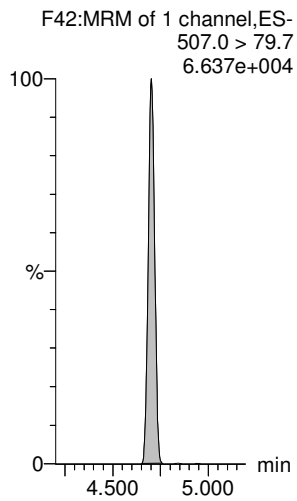
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS

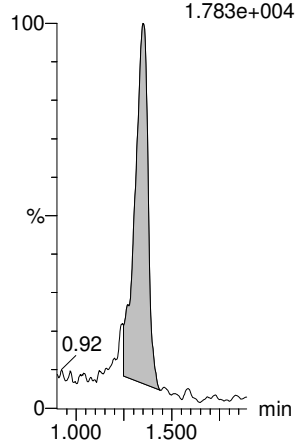


Dataset: Untitled

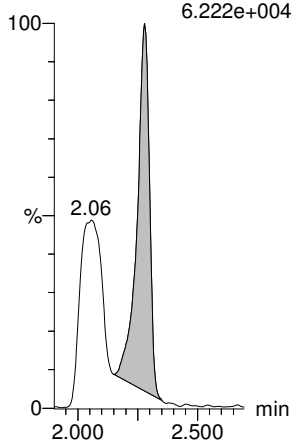
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

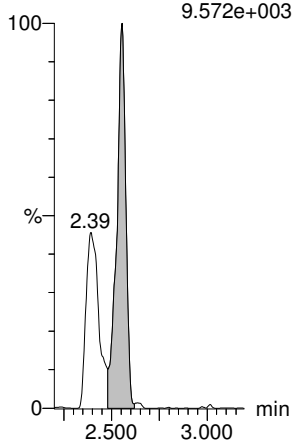
13C3-PFBA-RSD



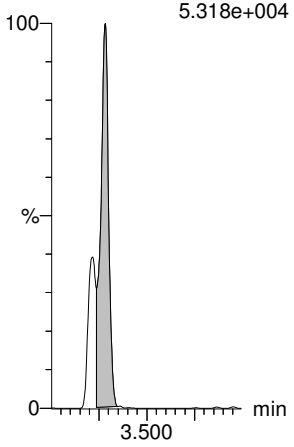
13C3-PFPeA-RSD



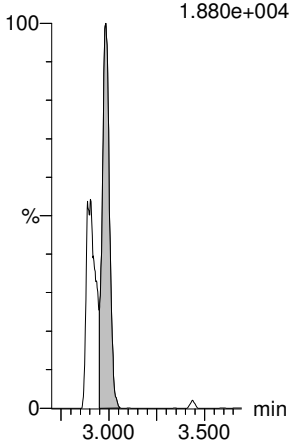
13C3-PFBS-RSD



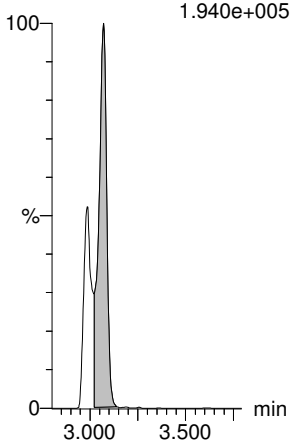
13C3-HFPO-DA-RSD



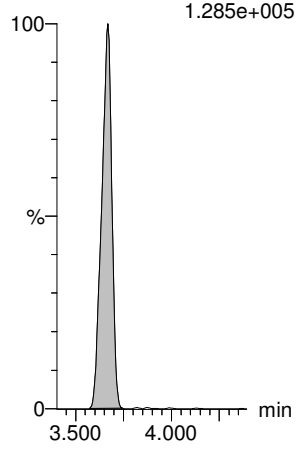
13C2-4:2 FTS-RSD



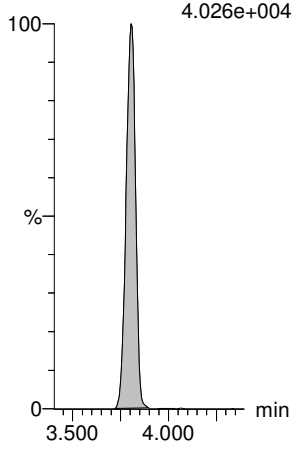
13C2-PFHxA-RSD



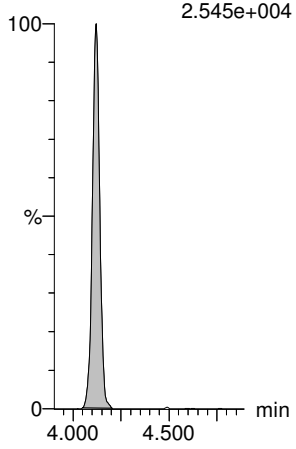
13C4-PFHpA-RSD



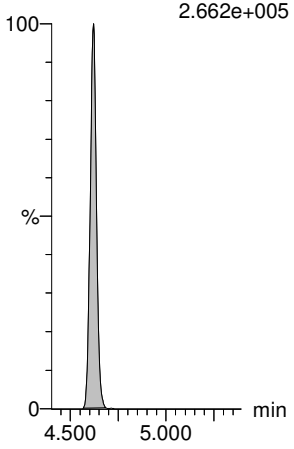
13C3-PFHxS-RSD



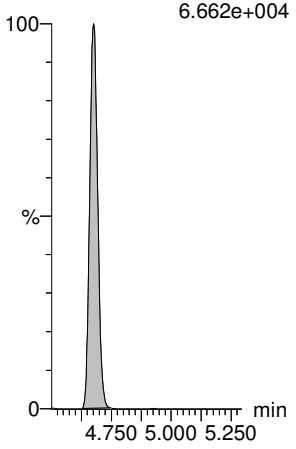
13C2-6:2 FTS-RSD



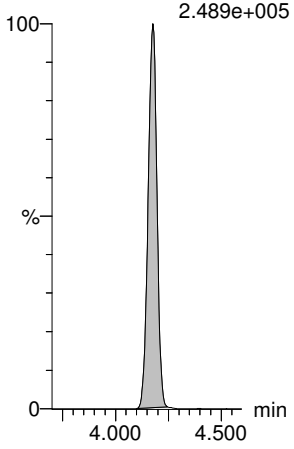
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD

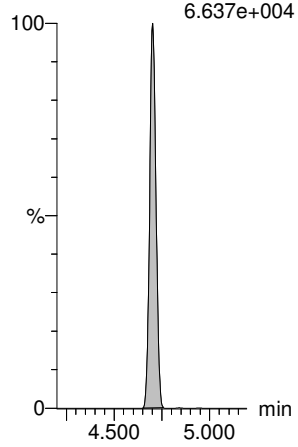


Dataset: Untitled

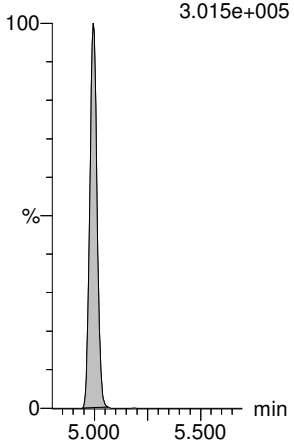
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

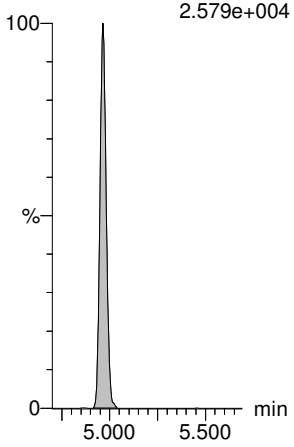
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.637e+004



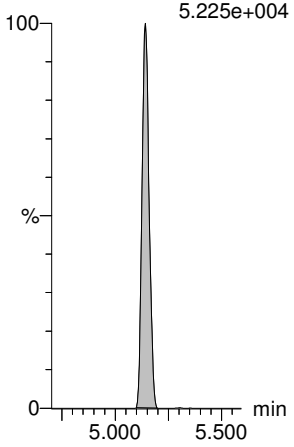
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.015e+005



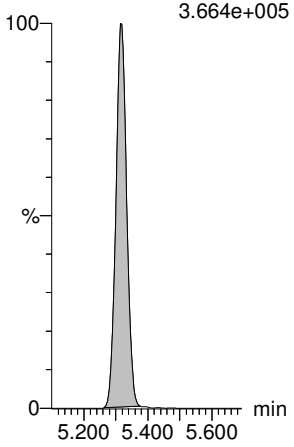
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.579e+004



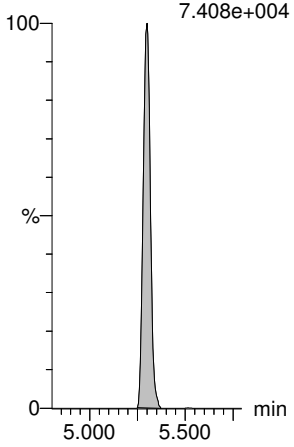
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
5.225e+004



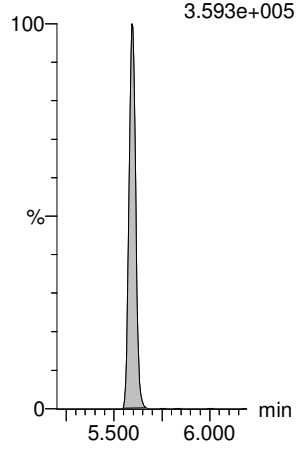
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.664e+005



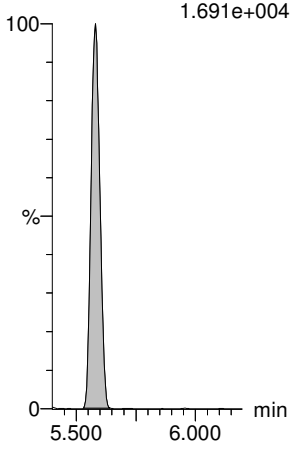
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
7.408e+004



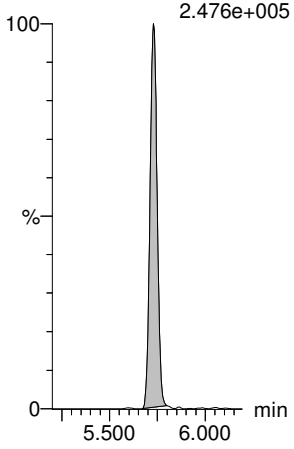
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.593e+005



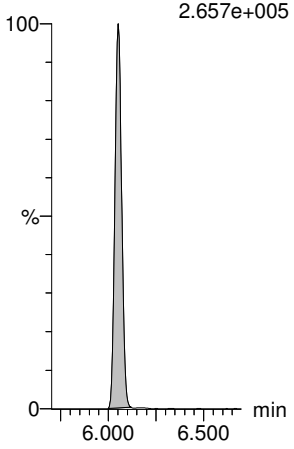
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.691e+004



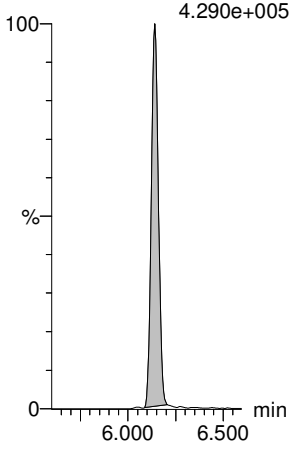
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.476e+005



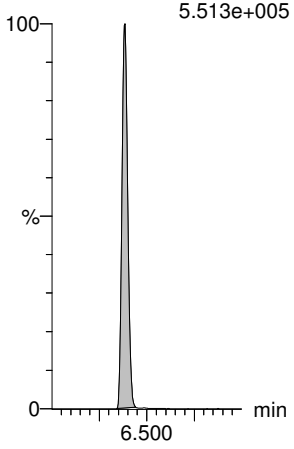
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.657e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.290e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.513e+005

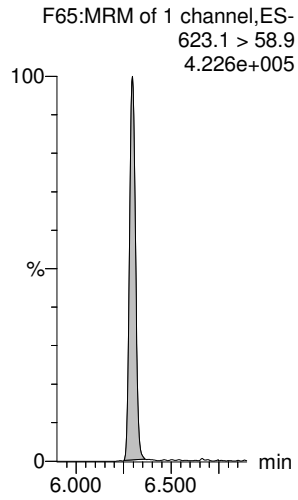


Dataset: Untitled

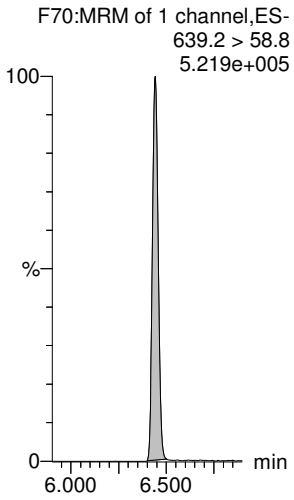
Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

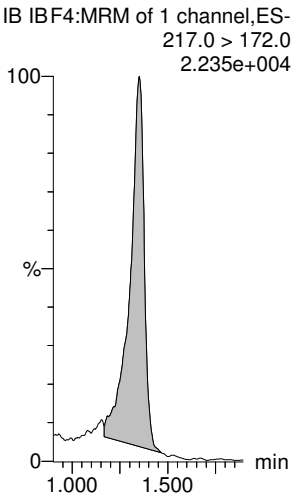
d7-N-MeFOSE-RSD



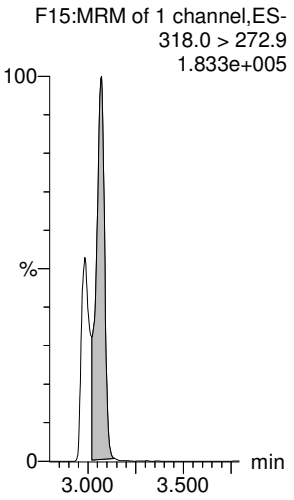
d9-N-EtFOSE-RSD



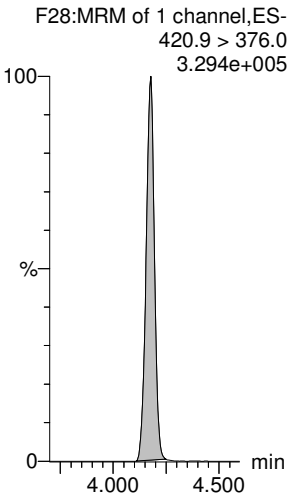
13C4-PFBA



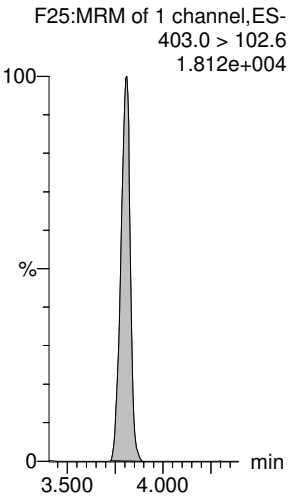
13C5-PFHxA



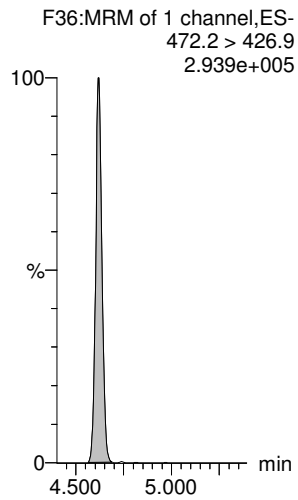
13C8-PFOA



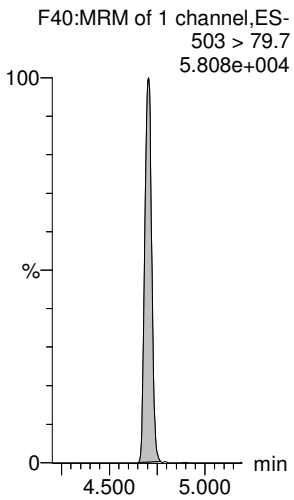
18O2-PFHxS



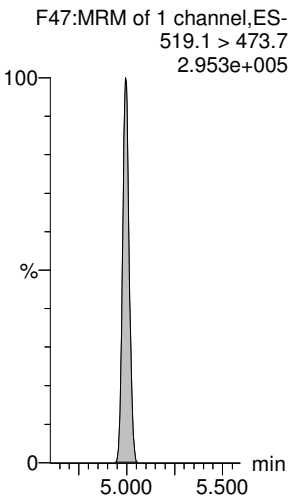
13C9-PFNA



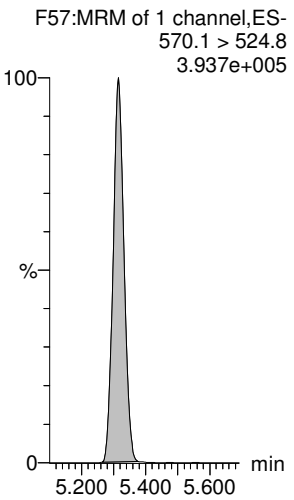
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, 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	5.054	1320.083	1.00	1.30	0.048		0.0348		NO		
2	2	PFPrS	248.9 > 79.7		519.862	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		4067.550	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	7.456	4067.550	1.00	2.27	0.023				NO		
5	5	PFBS	299.0 > 79.7		519.862	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		807.816	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1320.083		1.00	1.35	1320.083	12.500	4.09	32.7	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	519.862		1.00	2.56	519.862	12.500	7.56	60.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	4067.550		1.00	2.28	4067.550	12.500	7.00	56.0	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	4067.550		1.00	2.28	4067.550	12.500	7.00	56.0	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	519.862		1.00	2.56	519.862	12.500	7.56	60.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	807.816		1.00	2.98	807.816	12.500	7.97	63.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	54.915	9199.433	1.00	3.13	0.075		0.0574		NO		YES
15	8	PFPeS	349.>79.7		519.862	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2524.620	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		7798.205	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	21.491	7798.205	1.00	3.59	0.034		0.0005...		NO		YES
19	12	ADONA	376.8 > 250.9	34.768	7798.205	1.00	3.71	0.056				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	9199.433		1.00	3.07	9199.433	12.500	8.67	69.3	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	519.862		1.00	2.56	519.862	12.500	7.56	60.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2524.620		1.00	3.28	2524.620	12.500	9.14	73.1	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	7798.205		1.00	3.67	7798.205	12.500	13.0	103.6	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	7798.205		1.00	3.67	7798.205	12.500	13.0	103.6	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	7798.205		1.00	3.67	7798.205	12.500	13.0	103.6	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7		2273.999	1.00						NO		YES
28	15	6:2 FTS	427.0 > 407		1098.287	1.00						NO		YES
29	16	L-PFOA	412.8 > 368.9	58.178	11749.028	1.00	4.16	0.062				NO	3.537	NO
30	18	PFecHS	460.8 > 381.0		11749.028	1.00						NO		YES
31	19	PFHpS	449.0 > 79.7		2486.527	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		10123.158	1.00						NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2273.999		1.00	3.80	2273.999	12.500	13.1	104.8	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1098.287		1.00	4.12	1098.287	12.500	12.7	101.4	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	11749.028		1.00	4.18	11749.028	12.500	14.5	115.7	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	11749.028		1.00	4.18	11749.028	12.500	14.5	115.7	NO		

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, 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	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	10123.158		1.00	4.62	10123.158	12.500	14.2	113.2	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	26.945	10123.158	1.00	4.77	0.033		0.0262		NO		YES
41	22	PFOSA	497.9 > 77.9	12.617	2512.510	1.00	4.68	0.063		0.116		NO		YES
42	23	L-PFOS	498.9 > 79.7		2486.527	1.00						NO		YES
43	25	9Cl-PF30NS	530.7 > 350.8		2486.527	1.00						NO		YES
44	26	PFDA	513 > 468.8	47.474	11799.821	1.00	5.01	0.050		0.0240		NO		YES
45	27	8:2 FTS	526.9 > 507		964.547	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	10123.158		1.00	4.62	10123.158	12.500	14.2	113.2	NO		
47	67	13C8-PFOSA-EIS	506 > 78	2512.510		1.00	4.68	2512.510	12.500	12.9	103.2	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	11799.821		1.00	4.99	11799.821	12.500	14.4	115.5	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	964.547		1.00	4.97	964.547	12.500	16.4	131.1	NO		
52	-1													
53	28	PFNS	549.1 > 79.7		2486.527	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419		2007.039	1.00						NO		YES
55	31	L-EtFOSAA	584.1 > 419		3192.863	1.00						NO		YES
56	33	PFUdA	563.0 > 518.9	18.393	14050.710	1.00	5.33	0.016				NO		YES
57	34	PFDS	598.8 > 79.7		2486.527	1.00						NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9	5.717	14136.940	1.00	5.50	0.005				NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	2007.039		1.00	5.14	2007.039	12.500	13.9	111.1	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3192.863		1.00	5.30	3192.863	12.500	12.0	96.1	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	14050.710		1.00	5.31	14050.710	12.500	13.1	105.2	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	14136.940		1.00	5.59	14136.940	12.500	13.0	103.8	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		727.087	1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	163.986	14136.940	1.00	5.73	0.145		0.142		NO		YES
68	38	N-MeFOSA	512.1 > 168.9		10526.383	1.00						NO		YES
69	39	PFTrDA	662.9 > 618.9	37.643	14136.940	1.00	5.86	0.033		0.00936		NO		YES
70	40	PFDoS	698.8 > 79.7		10840.953	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	15.208	10840.953	1.00	5.86	0.018				NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	727.087		1.00	5.58	727.087	12.500	14.3	114.2	NO		

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, 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	614.7 > 569.7	14136.940		1.00	5.59	14136.940	12.500	13.0	103.8	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	10526.383		1.00	5.73	10526.383	149.200	148	99.2	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	14136.940		1.00	5.59	14136.940	12.500	13.0	103.8	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	10840.953		1.00	6.05	10840.953	12.500	13.2	105.9	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	10840.953		1.00	6.05	10840.953	12.500	13.2	105.9	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	17.820	18305.059	1.00	6.07	0.145		0.0906		NO	1.342	NO
80	43	PFHxDA	813.1 > 768.6	131.363	18624.898	1.00	6.38	0.088		0.00635		NO		YES
81	44	PFODA	913.1 > 868.8	56.439	18624.898	1.00	6.61	0.038		0.0527		NO		
82	45	N-MeFOSE	616.1 > 58.9	16.348	15053.555	1.00	6.28	0.162		0.145		NO		
83	46	N-EtFOSE	630.1 > 58.9	12.175	17781.639	1.00	6.67	0.102				NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	18305.059		1.00	6.14	18305.059	149.200	146	98.0	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	18624.898		1.00	6.39	18624.898	12.500	13.5	107.8	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	18624.898		1.00	6.39	18624.898	12.500	13.5	107.8	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	15053.555		1.00	6.29	15053.555	149.200	154	103.2	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	17781.639		1.00	6.44	17781.639	149.200	163	108.9	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2486.527		1.00	4.70	2486.527	12.500	14.5	116.4	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1320.083	1864.469	1.00	1.35	8.850	12.500	11.1	88.5	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	3532.243	9055.438	1.00	2.28	4.876	12.500	8.56	68.5	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	519.862	1021.538	1.00	2.56	6.361	12.500	6.25	50.0	YES		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2524.620	9055.438	1.00	3.28	3.485	12.500	13.2	105.4	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	807.816	1021.538	1.00	2.98	9.885	12.500	6.89	55.1	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	9199.433	9055.438	1.00	3.07	12.699	12.500	12.3	98.3	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	7798.205	9055.438	1.00	3.67	10.765	12.500	18.2	145.9	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2273.999	1021.538	1.00	3.80	27.826	12.500	11.4	91.3	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1098.287	2398.926	1.00	4.12	5.723	12.500	12.8	102.4	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	10123.158	11091.801	1.00	4.62	11.408	12.500	12.1	96.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	2512.510	15258.304	1.00	4.68	2.058	12.500	11.4	91.2	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	11749.028	14804.700	1.00	4.18	9.920	12.500	12.1	97.1	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2486.527	2398.926	1.00	4.70	12.956	12.500	13.4	107.6	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	11799.821	11708.404	1.00	4.99	12.598	12.500	13.1	104.8	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	964.547	2398.926	1.00	4.97	5.026	12.500	14.2	113.4	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	2007.039	15258.304	1.00	5.14	1.644	12.500	11.3	90.0	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	14050.710	15258.304	1.00	5.31	11.511	12.500	11.7	93.4	NO		

Dataset: Untitled

Last Altered: Wednesday, March 04, 2020 10:54:19 Pacific Standard Time
Printed: Wednesday, March 04, 2020 10:54:43 Pacific Standard Time

Name: 200303P2-13, Date: 03-Mar-2020, Time: 18:50:14, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	3192.863	15258.304	1.00	5.30	2.616	12.500	11.0	87.7	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	14136.940	11708.404	1.00	5.59	15.093	12.500	11.9	95.2	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	727.087	2398.926	1.00	5.58	3.789	12.500	14.2	113.6	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	10526.383	15258.304	1.00	5.73	8.623	149.200	126	84.3	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	10840.953	15258.304	1.00	6.05	8.881	12.500	11.4	91.5	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	18305.059	15258.304	1.00	6.14	14.996	149.200	129	86.6	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	18624.898	15258.304	1.00	6.39	15.258	12.500	11.8	94.6	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	15053.555	15258.304	1.00	6.29	12.332	149.200	133	88.9	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	17781.639	15258.304	1.00	6.44	14.567	149.200	133	89.2	NO		
119	99	13C4-PFBA	217.0 > 172.0	1864.469	1864.469	1.00	1.35	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	9055.438	9055.438	1.00	3.07	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	14804.700	14804.700	1.00	4.18	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1021.538	1021.538	1.00	3.81	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11091.801	11091.801	1.00	4.62	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2398.926	2398.926	1.00	4.71	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	11708.404	11708.404	1.00	4.99	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	15258.304	15258.304	1.00	5.31	12.500	12.500	12.5	100.0	NO		

Quantify Compound Summary Report **MassLynx V4.2 SCN977**
Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

VJ 03/05/20

low point
9Cl: 0.5
8:2 ~~FTCA~~ FTS: 0.5
10:2 FTS: 0.5
N-MeFOSA: 2.5

high point
3:3 FTCA: 100
5:3 FTCA: 100
7:3 FTCA: 100
9Cl: 250

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 09:48:04

Compound name: PFBA
Correlation coefficient: r = 0.999870, r^2 = 0.999739
Calibration curve: 1.22877 * x + -0.0485473
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

VOPV 03/05/20

	# Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1 200304P2-3	Standard	0.250	1.23	106.451	4402.323	0.302	0.3	14.2	NO	1.000	NO	MM
2	2 200304P2-4	Standard	0.500	1.24	211.015	4523.122	0.583	0.5	2.8	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	1.23	384.448	4593.813	1.046	0.9	-10.9	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	1.23	897.895	4614.375	2.432	2.0	0.9	NO	1.000	NO	bb
5	5 200304P2-7	Standard	5.000	1.23	2251.017	4510.145	6.239	5.1	2.3	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	1.23	4216.689	4645.938	11.345	9.3	-7.3	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	1.23	22361.617	4583.611	60.983	49.7	-0.7	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	1.23	45028.648	4727.791	119.053	96.9	-3.1	NO	1.000	NO	MM
9	9 200304P2-11	Standard	250.000	1.23	88963.188	3562.562	312.146	254.1	1.6	NO	1.000	NO	bb
10	10 200304P2-12	Standard	500.000	1.23	152122.063	3095.351	614.317	500.0	-0.0	NO	1.000	NO	bb

Compound name: PFPrS
Correlation coefficient: r = 0.996168, r^2 = 0.992351
Calibration curve: 1.22997 * x + -0.0283487
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 200304P2-3	Standard	0.250	1.53	24.122	944.498	0.319	0.3	13.0	NO	0.992	NO	MM
2	2 200304P2-4	Standard	0.500	1.54	42.099	926.629	0.568	0.5	-3.0	NO	0.992	NO	MM
3	3 200304P2-5	Standard	1.000	1.53	79.518	931.432	1.067	0.9	-10.9	NO	0.992	NO	MM
4	4 200304P2-6	Standard	2.000	1.53	185.355	979.440	2.366	1.9	-2.7	NO	0.992	NO	MM
5	5 200304P2-7	Standard	5.000	1.53	499.523	1022.516	6.107	5.0	-0.2	NO	0.992	NO	MM
6	6 200304P2-8	Standard	10.000	1.53	951.755	1033.085	11.516	9.4	-6.1	NO	0.992	NO	MM
7	7 200304P2-9	Standard	50.000	1.53	4673.519	1018.825	57.340	46.6	-6.7	NO	0.992	NO	bb
8	8 200304P2-10	Standard	100.000	1.53	9951.688	1015.569	122.489	99.6	-0.4	NO	0.992	NO	bb
9	9 200304P2-11	Standard	250.000	1.53	19883.764	709.261	350.431	284.9	14.0	NO	0.992	NO	MM
10	10 200304P2-12	Standard	500.000	1.53	29207.746	632.153	577.545	469.6	-6.1	NO	0.992	NO	MM

VJ 03/05/20

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999269
Calibration curve: -3.67081e-005 * x^2 + 0.150027 * x + -0.0084447
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 200304P2-3	Standard	0.250	2.00	16.639	8063.190	0.026	0.2	-8.7	NO	0.999	NO	MM
2	2 200304P2-4	Standard	0.500	2.00	47.007	8473.734	0.069	0.5	3.7	NO	0.999	NO	bb
3	3 200304P2-5	Standard	1.000	2.00	92.228	8350.816	0.138	1.0	-2.3	NO	0.999	NO	MM
4	4 200304P2-6	Standard	2.000	2.00	180.163	8447.558	0.267	1.8	-8.3	NO	0.999	NO	bb
5	5 200304P2-7	Standard	5.000	2.00	476.698	8522.696	0.699	4.7	-5.6	NO	0.999	NO	bb
6	6 200304P2-8	Standard	10.000	2.00	974.832	8513.549	1.431	9.6	-3.8	NO	0.999	NO	bb
7	7 200304P2-9	Standard	50.000	2.00	5135.647	8403.462	7.639	51.6	3.3	NO	0.999	NO	bd
8	8 200304P2-10	Standard	100.000	2.00	10179.168	8765.210	14.516	99.2	-0.8	NO	0.999	NO	bb
9	9 200304P2-11	Standard	250.000	2.00	4117.748	6657.588	7.731	52.3	-79.1	YES	0.999	NO	bbX
10	10 200304P2-12	Standard	500.000	2.00	6912.938	5716.588	15.116	103.4	-79.3	YES	0.999	NO	bbX

Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999784
Calibration curve: 1.01374e-005 * x^2 + 0.947655 * x + 0.00565638
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 200304P2-3	Standard	0.250	2.14	165.294	8063.190	0.256	0.3	5.8	NO	1.000	NO	bb
2	2 200304P2-4	Standard	0.500	2.13	304.193	8473.734	0.449	0.5	-6.5	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	2.13	651.669	8350.816	0.975	1.0	2.3	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	2.13	1297.164	8447.558	1.919	2.0	1.0	NO	1.000	NO	bb
5	5 200304P2-7	Standard	5.000	2.13	3282.896	8522.696	4.815	5.1	1.5	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	2.13	6470.257	8513.549	9.500	10.0	0.2	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	2.13	31702.072	8403.462	47.156	49.7	-0.5	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	2.13	64573.207	8765.210	92.087	97.1	-2.9	NO	1.000	NO	bb
9	9 200304P2-11	Standard	250.000	2.13	129025.805	6657.588	242.253	254.9	2.0	NO	1.000	NO	bb
10	10 200304P2-12	Standard	500.000	2.13	217047.063	5716.588	474.599	498.2	-0.4	NO	1.000	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: PFBS
Correlation coefficient: r = 0.999122, r^2 = 0.998244
Calibration curve: 2.59023 * x + -0.116823
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	200304P2-3	Standard	0.250	2.40	44.368	944.498	0.587	0.3	8.7	NO	0.998	NO	MM
2	2	200304P2-4	Standard	0.500	2.40	96.554	926.629	1.302	0.5	9.6	NO	0.998	NO	MM
3	3	200304P2-5	Standard	1.000	2.40	177.525	931.432	2.382	1.0	-3.5	NO	0.998	NO	bb
4	4	200304P2-6	Standard	2.000	2.40	363.583	979.440	4.640	1.8	-8.2	NO	0.998	NO	bb
5	5	200304P2-7	Standard	5.000	2.41	1017.387	1022.516	12.437	4.8	-3.1	NO	0.998	NO	bb
6	6	200304P2-8	Standard	10.000	2.41	1841.729	1033.085	22.284	8.6	-13.5	NO	0.998	NO	MM
7	7	200304P2-9	Standard	50.000	2.41	9819.501	1018.825	120.476	46.6	-6.9	NO	0.998	NO	bb
8	8	200304P2-10	Standard	100.000	2.40	19732.361	1015.569	242.873	93.8	-6.2	NO	0.998	NO	bb
9	9	200304P2-11	Standard	250.000	2.40	38751.766	709.261	682.960	263.7	5.5	NO	0.998	NO	bb
10	10	200304P2-12	Standard	500.000	2.41	65170.457	632.153	1288.661	497.6	-0.5	NO	0.998	NO	bb

Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999395
Calibration curve: -0.000488235 * x^2 + 1.57983 * x + -0.224097
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None

	#	Name	Type	Std. Conc	RT	Area	IS Area	Response	Conc.	%Dev	Conc. Flag	CoD	CoD Flag	x=excluded
1	1	200304P2-3	Standard	0.250	2.85	30.564	1425.508	0.268	0.3	24.6	NO	0.999	NO	bb
2	2	200304P2-4	Standard	0.500	2.86	75.893	1625.470	0.584	0.5	2.3	NO	0.999	NO	bb
3	3	200304P2-5	Standard	1.000	2.86	143.525	1479.255	1.213	0.9	-9.0	NO	0.999	NO	bb
4	4	200304P2-6	Standard	2.000	2.85	376.538	1649.539	2.853	1.9	-2.5	NO	0.999	NO	bb
5	5	200304P2-7	Standard	5.000	2.85	864.044	1543.641	6.997	4.6	-8.5	NO	0.999	NO	bb
6	6	200304P2-8	Standard	10.000	2.85	1655.124	1509.876	13.702	8.8	-11.6	NO	0.999	NO	bb
7	7	200304P2-9	Standard	50.000	2.85	8962.080	1356.426	82.589	53.3	6.6	NO	0.999	NO	bb
8	8	200304P2-10	Standard	100.000	2.85	16774.352	1399.257	149.851	98.0	-2.0	NO	0.999	NO	bb
9	9	200304P2-11	Standard	250.000	2.85	30750.594	1052.841	365.091	250.7	0.3	NO	0.999	NO	bb
10	10	200304P2-12	Standard	500.000	2.85	49872.043	934.155	667.342	499.7	-0.1	NO	0.999	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: PFHxA
Correlation coefficient: r = 0.999772, r^2 = 0.999543
Calibration curve: 0.877166 * x + 0.0585886
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 200304P2-3	Standard	0.250	2.94	361.076	14509.173	0.311	0.3	15.1	NO	1.000	NO	MM
2	2 200304P2-4	Standard	0.500	2.94	638.306	14849.003	0.537	0.5	9.2	NO	1.000	NO	MM
3	3 200304P2-5	Standard	1.000	2.94	1142.623	15509.219	0.921	1.0	-1.7	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	2.94	2189.881	15098.153	1.813	2.0	0.0	NO	1.000	NO	bb
5	5 200304P2-7	Standard	5.000	2.94	5496.962	15357.925	4.474	5.0	0.7	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	2.94	11119.762	15163.504	9.167	10.4	3.8	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	2.94	52564.230	14979.496	43.863	49.9	-0.1	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	2.94	108298.438	15772.194	85.830	97.8	-2.2	NO	1.000	NO	bb
9	9 200304P2-11	Standard	250.000	2.94	210286.391	11616.815	226.274	257.9	3.2	NO	1.000	NO	bb
10	10 200304P2-12	Standard	500.000	2.94	348792.656	10062.281	433.292	493.9	-1.2	NO	1.000	NO	bb

Compound name: PFPeS
Correlation coefficient: r = 0.998482, r^2 = 0.996966
Calibration curve: 2.32483 * x + -0.043047
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 200304P2-3	Standard	0.250	3.12	34.517	944.498	0.457	0.2	-14.0	NO	0.997	NO	bb
2	2 200304P2-4	Standard	0.500	3.13	65.392	926.629	0.882	0.4	-20.4	NO	0.997	NO	bb
3	3 200304P2-5	Standard	1.000	3.13	194.933	931.432	2.616	1.1	14.4	NO	0.997	NO	bb
4	4 200304P2-6	Standard	2.000	3.13	366.238	979.440	4.674	2.0	1.5	NO	0.997	NO	bb
5	5 200304P2-7	Standard	5.000	3.13	960.176	1022.516	11.738	5.1	1.3	NO	0.997	NO	bb
6	6 200304P2-8	Standard	10.000	3.13	1971.296	1033.085	23.852	10.3	2.8	NO	0.997	NO	bb
7	7 200304P2-9	Standard	50.000	3.13	9914.851	1018.825	121.646	52.3	4.7	NO	0.997	NO	bb
8	8 200304P2-10	Standard	100.000	3.13	18609.518	1015.569	229.053	98.5	-1.5	NO	0.997	NO	bb
9	9 200304P2-11	Standard	250.000	3.13	35655.414	709.261	628.390	270.3	8.1	NO	0.997	NO	bb
10	10 200304P2-12	Standard	500.000	3.13	56246.297	632.153	1112.197	478.4	-4.3	NO	0.997	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.999734
Calibration curve: -0.000291166 * x^2 + 1.11135 * x + -0.00438747
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 200304P2-3	Standard	0.250	3.14	86.328	3365.811	0.321	0.3	17.0	NO	1.000	NO	bb
2	2 200304P2-4	Standard	0.500	3.15	128.368	3514.446	0.457	0.4	-17.0	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	3.14	315.901	3675.547	1.074	1.0	-2.9	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	3.14	635.486	3660.667	2.170	2.0	-2.1	NO	1.000	NO	bb
5	5 200304P2-7	Standard	5.000	3.14	1586.639	3336.894	5.944	5.4	7.2	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	3.14	3072.865	3502.690	10.966	9.9	-1.0	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	3.14	15497.971	3621.955	53.486	48.8	-2.5	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	3.14	30821.723	3622.897	106.343	98.2	-1.8	NO	1.000	NO	bb
9	9 200304P2-11	Standard	250.000	3.14	62366.672	2944.603	264.750	255.3	2.1	NO	1.000	NO	bb
10	10 200304P2-12	Standard	500.000	3.14	101278.023	2632.906	480.828	497.5	-0.5	NO	1.000	NO	bb

Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999383
Calibration curve: -0.000189215 * x^2 + 0.387413 * x + -0.0250636
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 200304P2-3	Standard	0.250	3.47	50.360	7836.800	0.080	0.3	8.8	NO	0.999	NO	bb
2	2 200304P2-4	Standard	0.500	3.47	113.700	8147.872	0.174	0.5	3.0	NO	0.999	NO	bb
3	3 200304P2-5	Standard	1.000	3.47	244.575	8334.623	0.367	1.0	1.2	NO	0.999	NO	bb
4	4 200304P2-6	Standard	2.000	3.47	474.437	8280.926	0.716	1.9	-4.2	NO	0.999	NO	bb
5	5 200304P2-7	Standard	5.000	3.47	1257.433	8897.463	1.767	4.6	-7.3	NO	0.999	NO	bb
6	6 200304P2-8	Standard	10.000	3.47	2491.258	8450.053	3.685	9.6	-3.8	NO	0.999	NO	bb
7	7 200304P2-9	Standard	50.000	3.47	12276.574	7899.096	19.427	51.5	3.0	NO	0.999	NO	bb
8	8 200304P2-10	Standard	100.000	3.47	24878.275	8503.916	36.569	99.3	-0.7	NO	0.999	NO	bb
9	9 200304P2-11	Standard	250.000	3.47	9984.608	6681.411	18.680	49.5	-80.2	YES	0.999	NO	bbX
10	10 200304P2-12	Standard	500.000	3.47	16424.561	5411.800	37.937	103.2	-79.4	YES	0.999	NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: PFHpA
Correlation coefficient: r = 0.999380, r^2 = 0.998760
Calibration curve: 1.19534 * x + 0.12732
Response type: Internal Std (Ref 59), 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 200304P2-3	Standard	0.250	3.53	260.709	7836.800	0.416	0.2	-3.5	NO	0.999	NO	bb
2	2 200304P2-4	Standard	0.500	3.54	431.817	8147.872	0.662	0.4	-10.5	NO	0.999	NO	bb
3	3 200304P2-5	Standard	1.000	3.54	768.436	8334.623	1.152	0.9	-14.2	NO	0.999	NO	bb
4	4 200304P2-6	Standard	2.000	3.54	1815.026	8280.926	2.740	2.2	9.3	NO	0.999	NO	bb
5	5 200304P2-7	Standard	5.000	3.54	4354.429	8897.463	6.118	5.0	0.2	NO	0.999	NO	bb
6	6 200304P2-8	Standard	10.000	3.54	8830.096	8450.053	13.062	10.8	8.2	NO	0.999	NO	bb
7	7 200304P2-9	Standard	50.000	3.54	41651.848	7899.096	65.912	55.0	10.1	NO	0.999	NO	bb
8	8 200304P2-10	Standard	100.000	3.53	81608.414	8503.916	119.957	100.2	0.2	NO	0.999	NO	bb
9	9 200304P2-11	Standard	250.000	3.54	164079.438	6681.411	306.970	256.7	2.7	NO	0.999	NO	bb
10	10 200304P2-12	Standard	500.000	3.53	252191.266	5411.800	582.503	487.2	-2.6	NO	0.999	NO	bb

Compound name: ADONA
Coefficient of Determination: R^2 = 0.999377
Calibration curve: 6.47742e-005 * x^2 + 3.40294 * x + 0.107116
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 200304P2-3	Standard	0.250	3.64	605.293	7836.800	0.965	0.3	0.9	NO	0.999	NO	bb
2	2 200304P2-4	Standard	0.500	3.64	1191.161	8147.872	1.827	0.5	1.1	NO	0.999	NO	bb
3	3 200304P2-5	Standard	1.000	3.64	2305.535	8334.623	3.458	1.0	-1.5	NO	0.999	NO	bb
4	4 200304P2-6	Standard	2.000	3.64	4497.291	8280.926	6.789	2.0	-1.8	NO	0.999	NO	bb
5	5 200304P2-7	Standard	5.000	3.64	12005.535	8897.463	16.867	4.9	-1.5	NO	0.999	NO	bb
6	6 200304P2-8	Standard	10.000	3.64	22506.025	8450.053	33.293	9.8	-2.5	NO	0.999	NO	bb
7	7 200304P2-9	Standard	50.000	3.64	117689.984	7899.096	186.240	54.6	9.3	NO	0.999	NO	bb
8	8 200304P2-10	Standard	100.000	3.64	224610.328	8503.916	330.157	96.8	-3.2	NO	0.999	NO	bb
9	9 200304P2-11	Standard	250.000	3.64	452364.781	6681.411	846.312	247.5	-1.0	NO	0.999	NO	bb
10	10 200304P2-12	Standard	500.000	3.64	745823.438	5411.800	1722.679	501.4	0.3	NO	0.999	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: L-PFHxS
Correlation coefficient: r = 0.999868, r^2 = 0.999736
Calibration curve: 1.02796 * x + -0.0723975
Response type: Internal Std (Ref 61), 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 200304P2-3	Standard	0.250	3.67	34.781	2244.017	0.194	0.3	3.6	NO	1.000	NO	MM
2	2 200304P2-4	Standard	0.500	3.69	55.246	2219.308	0.311	0.4	-25.4	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	3.68	177.689	2314.499	0.960	1.0	0.4	NO	1.000	NO	MM
4	4 200304P2-6	Standard	2.000	3.68	426.901	2343.224	2.277	2.3	14.3	NO	1.000	NO	MM
5	5 200304P2-7	Standard	5.000	3.68	1054.128	2472.347	5.330	5.3	5.1	NO	1.000	NO	MM
6	6 200304P2-8	Standard	10.000	3.68	1923.361	2375.726	10.120	9.9	-0.8	NO	1.000	NO	MM
7	7 200304P2-9	Standard	50.000	3.68	9776.357	2325.628	52.547	51.2	2.4	NO	1.000	NO	MM
8	8 200304P2-10	Standard	100.000	3.68	19506.957	2373.408	102.737	100.0	0.0	NO	1.000	NO	MM
9	9 200304P2-11	Standard	250.000	3.68	37936.953	1816.874	261.004	254.0	1.6	NO	1.000	NO	MM
10	10 200304P2-12	Standard	500.000	3.68	60718.355	1493.357	508.237	494.5	-1.1	NO	1.000	NO	MM

Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998778
Calibration curve: -0.000416301 * x^2 + 1.91794 * x + -0.0251531
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 200304P2-3	Standard	0.250	4.01	31.653	1219.295	0.325	0.2	-27.1	NO	0.999	NO	bb
2	2 200304P2-4	Standard	0.500	4.00	125.807	1300.462	1.209	0.6	28.7	NO	0.999	NO	bb
3	3 200304P2-5	Standard	1.000	4.00	158.685	1230.747	1.612	0.9	-14.6	NO	0.999	NO	bb
4	4 200304P2-6	Standard	2.000	4.00	350.349	1325.912	3.303	1.7	-13.2	NO	0.999	NO	bb
5	5 200304P2-7	Standard	5.000	3.99	999.470	1358.383	9.197	4.8	-3.7	NO	0.999	NO	bb
6	6 200304P2-8	Standard	10.000	4.00	2124.607	1126.713	23.571	12.3	23.4	NO	0.999	NO	bb
7	7 200304P2-9	Standard	50.000	4.00	9794.355	1253.748	97.651	51.5	3.0	NO	0.999	NO	bb
8	8 200304P2-10	Standard	100.000	4.00	19186.371	1268.946	188.999	100.8	0.8	NO	0.999	NO	bb
9	9 200304P2-11	Standard	250.000	4.00	35099.590	998.548	439.383	241.8	-3.3	NO	0.999	NO	bb
10	10 200304P2-12	Standard	500.000	3.99	56947.449	826.518	861.255	504.3	0.9	NO	0.999	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999780
Calibration curve: -7.77191e-005 * x^2 + 1.26767 * x + 0.134631
Response type: Internal Std (Ref 69), 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	200304P2-3	Standard	0.250	4.05	376.004	11962.581	0.393	0.2	-18.5	NO	1.000	NO	bb
2	2	200304P2-4	Standard	0.500	4.05	816.069	12456.621	0.819	0.5	8.0	NO	1.000	NO	dd
3	3	200304P2-5	Standard	1.000	4.05	1482.646	12396.286	1.495	1.1	7.3	NO	1.000	NO	bb
4	4	200304P2-6	Standard	2.000	4.05	2579.941	12098.559	2.666	2.0	-0.2	NO	1.000	NO	bb
5	5	200304P2-7	Standard	5.000	4.06	7047.730	12792.719	6.886	5.3	6.6	NO	1.000	NO	bb
6	6	200304P2-8	Standard	10.000	4.06	12647.805	12706.853	12.442	9.7	-2.9	NO	1.000	NO	bb
7	7	200304P2-9	Standard	50.000	4.05	62735.492	12183.001	64.368	50.8	1.7	NO	1.000	NO	bb
8	8	200304P2-10	Standard	100.000	4.06	120910.031	12355.636	122.323	97.0	-3.0	NO	1.000	NO	bb
9	9	200304P2-11	Standard	250.000	4.06	245225.344	9696.579	316.124	253.2	1.3	NO	1.000	NO	bb
10	10	200304P2-12	Standard	500.000	4.05	375690.594	7657.978	613.234	498.9	-0.2	NO	1.000	NO	bb

Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999622
Calibration curve: -5.1658e-006 * x^2 + 0.197943 * x + -0.0130452
Response type: Internal Std (Ref 69), 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	200304P2-3	Standard	0.250	4.08	24.145	11962.581	0.025	0.2	-22.7	NO	1.000	NO	bb
2	2	200304P2-4	Standard	0.500	4.07	80.644	12456.621	0.081	0.5	-5.1	NO	1.000	NO	bb
3	3	200304P2-5	Standard	1.000	4.06	210.794	12396.286	0.213	1.1	14.0	NO	1.000	NO	bb
4	4	200304P2-6	Standard	2.000	4.07	402.178	12098.559	0.416	2.2	8.3	NO	1.000	NO	bb
5	5	200304P2-7	Standard	5.000	4.07	1073.392	12792.719	1.049	5.4	7.3	NO	1.000	NO	bb
6	6	200304P2-8	Standard	10.000	4.07	1888.510	12706.853	1.858	9.5	-5.5	NO	1.000	NO	bb
7	7	200304P2-9	Standard	50.000	4.07	10075.730	12183.001	10.338	52.4	4.7	NO	1.000	NO	bb
8	8	200304P2-10	Standard	100.000	4.07	19607.482	12355.636	19.837	100.5	0.5	NO	1.000	NO	bb
9	9	200304P2-11	Standard	250.000	4.07	37327.504	9696.579	48.119	244.7	-2.1	NO	1.000	NO	bd
10	10	200304P2-12	Standard	500.000	4.07	60109.285	7657.978	98.115	502.3	0.5	NO	1.000	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999650
Calibration curve: 0.000156607 * x^2 + 0.906492 * x + 0.0221239
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 200304P2-3	Standard	0.250	4.17	46.770	2486.245	0.235	0.2	-6.0	NO	1.000	NO	bb
2	2 200304P2-4	Standard	0.500	4.17	104.236	2666.816	0.489	0.5	2.9	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	4.17	211.882	2443.940	1.084	1.2	17.1	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	4.18	340.114	2726.697	1.559	1.7	-15.2	NO	1.000	NO	bb
5	5 200304P2-7	Standard	5.000	4.17	1046.732	2631.129	4.973	5.5	9.1	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	4.17	1860.679	2599.295	8.948	9.8	-1.7	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	4.17	10094.089	2622.791	48.108	52.6	5.1	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	4.17	19806.426	2688.689	92.082	99.8	-0.2	NO	1.000	NO	bb
9	9 200304P2-11	Standard	250.000	4.17	39062.816	2103.390	232.142	245.6	-1.7	NO	1.000	NO	bb
10	10 200304P2-12	Standard	500.000	4.17	64288.020	1625.539	494.359	501.8	0.4	NO	1.000	NO	MM

Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999627
Calibration curve: -3.85292e-006 * x^2 + 0.289803 * x + -0.0102751
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 200304P2-3	Standard	0.250	4.50	49.657	10236.276	0.061	0.2	-2.1	NO	1.000	NO	bb
2	2 200304P2-4	Standard	0.500	4.49	106.174	10902.920	0.122	0.5	-8.9	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	4.50	254.897	10857.461	0.293	1.0	4.8	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	4.49	496.816	11028.038	0.563	2.0	-1.1	NO	1.000	NO	bb
5	5 200304P2-7	Standard	5.000	4.49	1263.472	10389.095	1.520	5.3	5.6	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	4.49	2588.376	10842.604	2.984	10.3	3.3	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	4.49	12184.954	10760.623	14.155	48.9	-2.2	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	4.49	24817.146	10669.225	29.076	100.5	0.5	NO	1.000	NO	bb
9	9 200304P2-11	Standard	250.000	4.49	9851.047	8471.279	14.536	50.2	-79.9	YES	1.000	NO	bbX
10	10 200304P2-12	Standard	500.000	4.49	16597.367	6981.723	29.716	102.7	-79.5	YES	1.000	NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: PFNA
Correlation coefficient: r = 0.999943, r^2 = 0.999887
Calibration curve: 1.24763 * x + 0.03244
Response type: Internal Std (Ref 65), 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	200304P2-3	Standard	0.250	4.50	280.176	10236.276	0.342	0.2	-0.7	NO	1.000	NO	bb
2	2	200304P2-4	Standard	0.500	4.51	579.010	10902.920	0.664	0.5	1.2	NO	1.000	NO	bb
3	3	200304P2-5	Standard	1.000	4.51	1215.880	10857.461	1.400	1.1	9.6	NO	1.000	NO	bb
4	4	200304P2-6	Standard	2.000	4.51	2217.431	11028.038	2.513	2.0	-0.6	NO	1.000	NO	bb
5	5	200304P2-7	Standard	5.000	4.51	5360.472	10389.095	6.450	5.1	2.9	NO	1.000	NO	bb
6	6	200304P2-8	Standard	10.000	4.51	10600.131	10842.604	12.220	9.8	-2.3	NO	1.000	NO	bb
7	7	200304P2-9	Standard	50.000	4.51	54774.344	10760.623	63.628	51.0	1.9	NO	1.000	NO	bb
8	8	200304P2-10	Standard	100.000	4.51	105364.023	10669.225	123.444	98.9	-1.1	NO	1.000	NO	bb
9	9	200304P2-11	Standard	250.000	4.51	208970.172	8471.279	308.351	247.1	-1.2	NO	1.000	NO	bb
10	10	200304P2-12	Standard	500.000	4.51	350521.563	6981.723	627.570	503.0	0.6	NO	1.000	NO	bb

Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999772
Calibration curve: 0.000232487 * x^2 + 0.926276 * x + 0.158051
Response type: Internal Std (Ref 67), 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	200304P2-3	Standard	0.250	4.56	102.301	3240.639	0.395	0.3	2.1	NO	1.000	NO	bb
2	2	200304P2-4	Standard	0.500	4.55	178.515	3221.668	0.693	0.6	15.4	NO	1.000	NO	bb
3	3	200304P2-5	Standard	1.000	4.56	290.617	3272.469	1.110	1.0	2.8	NO	1.000	NO	bb
4	4	200304P2-6	Standard	2.000	4.56	441.905	3442.417	1.605	1.6	-21.9	NO	1.000	NO	bb
5	5	200304P2-7	Standard	5.000	4.56	1217.721	3379.171	4.505	4.7	-6.3	NO	1.000	NO	bb
6	6	200304P2-8	Standard	10.000	4.56	2547.329	3191.502	9.977	10.6	5.7	NO	1.000	NO	bb
7	7	200304P2-9	Standard	50.000	4.56	13257.215	3402.070	48.710	51.7	3.5	NO	1.000	NO	bb
8	8	200304P2-10	Standard	100.000	4.56	25559.625	3389.875	94.250	99.1	-0.9	NO	1.000	NO	bb
9	9	200304P2-11	Standard	250.000	4.56	50120.078	2559.343	244.790	248.6	-0.6	NO	1.000	NO	bb
10	10	200304P2-12	Standard	500.000	4.56	84862.664	2031.562	522.152	500.6	0.1	NO	1.000	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999622
Calibration curve: 0.00015808 * x^2 + 0.933834 * x + -0.0156559
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	200304P2-3	Standard	0.250	4.60	52.374	2486.245	0.263	0.3	19.5	NO	1.000	NO	MM
2	2	200304P2-4	Standard	0.500	4.59	80.956	2666.816	0.379	0.4	-15.4	NO	1.000	NO	MM
3	3	200304P2-5	Standard	1.000	4.60	151.285	2443.940	0.774	0.8	-15.5	NO	1.000	NO	MM
4	4	200304P2-6	Standard	2.000	4.60	376.933	2726.697	1.728	1.9	-6.7	NO	1.000	NO	MM
5	5	200304P2-7	Standard	5.000	4.60	1081.886	2631.129	5.140	5.5	10.3	NO	1.000	NO	MM
6	6	200304P2-8	Standard	10.000	4.60	2046.481	2599.295	9.842	10.5	5.4	NO	1.000	NO	MM
7	7	200304P2-9	Standard	50.000	4.60	10149.154	2622.791	48.370	51.4	2.7	NO	1.000	NO	MM
8	8	200304P2-10	Standard	100.000	4.60	20743.611	2688.689	96.439	101.5	1.5	NO	1.000	NO	MM
9	9	200304P2-11	Standard	250.000	4.60	39922.070	2103.390	237.248	244.0	-2.4	NO	1.000	NO	MM
10	10	200304P2-12	Standard	500.000	4.60	66194.086	1625.539	509.016	502.4	0.5	NO	1.000	NO	MM

Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999244
Calibration curve: -0.000203218 * x^2 + 1.56445 * x + 0.0154204
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	200304P2-3	Standard	0.250	4.82	137.460	2486.245	0.691	0.4	72.8	YES	0.999	NO	bbX
2	2	200304P2-4	Standard	0.500	4.82	125.536	2666.816	0.588	0.4	-26.7	NO	0.999	NO	bb
3	3	200304P2-5	Standard	1.000	4.83	364.700	2443.940	1.865	1.2	18.3	NO	0.999	NO	bb
4	4	200304P2-6	Standard	2.000	4.82	663.882	2726.697	3.043	1.9	-3.2	NO	0.999	NO	bb
5	5	200304P2-7	Standard	5.000	4.82	1850.353	2631.129	8.791	5.6	12.3	NO	0.999	NO	bb
6	6	200304P2-8	Standard	10.000	4.82	3213.050	2599.295	15.452	9.9	-1.2	NO	0.999	NO	bb
7	7	200304P2-9	Standard	50.000	4.82	16841.313	2622.791	80.264	51.6	3.3	NO	0.999	NO	bb
8	8	200304P2-10	Standard	100.000	4.82	32226.652	2688.689	149.825	97.0	-3.0	NO	0.999	NO	bb
9	9	200304P2-11	Standard	250.000	4.82	63901.152	2103.390	379.751	250.9	0.4	NO	0.999	NO	bb
10	10	200304P2-12	Standard	500.000	4.82	101211.344	1625.539	778.291	534.6	6.9	NO	0.999	NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999870
Calibration curve: -8.43611e-005 * x^2 + 1.33585 * x + 0.0646678
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 200304P2-3	Standard	0.250	4.91	351.805	11630.392	0.378	0.2	-6.1	NO	1.000	NO	bb
2	2 200304P2-4	Standard	0.500	4.90	789.351	12905.041	0.765	0.5	4.8	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	4.90	1550.192	11539.324	1.679	1.2	20.9	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	4.90	2659.881	12846.407	2.588	1.9	-5.5	NO	1.000	NO	bd
5	5 200304P2-7	Standard	5.000	4.90	6968.416	12592.307	6.917	5.1	2.6	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	4.90	13251.632	11812.490	14.023	10.5	4.6	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	4.90	66758.969	12809.952	65.144	48.9	-2.3	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	4.90	126203.219	11822.187	133.439	100.5	0.5	NO	1.000	NO	bb
9	9 200304P2-11	Standard	250.000	4.90	251751.422	9576.072	328.620	249.9	-0.0	NO	1.000	NO	bb
10	10 200304P2-12	Standard	500.000	4.90	412989.219	7979.246	646.974	500.1	0.0	NO	1.000	NO	bb

Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.998078
Calibration curve: -0.000554636 * x^2 + 1.63509 * x + 0.0342798
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 200304P2-3	Standard	0.250	4.86	10.750	995.327	0.135	0.1	-75.4	YES	0.998	NO	bbX
2	2 200304P2-4	Standard	0.500	4.87	70.903	975.824	0.908	0.5	6.9	NO	0.998	NO	bb
3	3 200304P2-5	Standard	1.000	4.87	155.680	1093.071	1.780	1.1	6.8	NO	0.998	NO	bb
4	4 200304P2-6	Standard	2.000	4.87	325.377	1197.075	3.398	2.1	2.9	NO	0.998	NO	bb
5	5 200304P2-7	Standard	5.000	4.87	713.943	1130.040	7.897	4.8	-3.7	NO	0.998	NO	bb
6	6 200304P2-8	Standard	10.000	4.87	1321.077	1090.783	15.139	9.3	-7.3	NO	0.998	NO	bb
7	7 200304P2-9	Standard	50.000	4.87	6541.082	1073.573	76.160	47.3	-5.4	NO	0.998	NO	bb
8	8 200304P2-10	Standard	100.000	4.87	13064.128	1090.699	149.722	94.6	-5.4	NO	0.998	NO	bb
9	9 200304P2-11	Standard	250.000	4.87	25175.764	791.861	397.415	267.3	6.9	NO	0.998	NO	bb
10	10 200304P2-12	Standard	500.000	4.87	38423.227	717.508	669.387	491.2	-1.8	NO	0.998	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 09:51:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:56:37 Pacific Standard Time

Compound name: PFNS
Correlation coefficient: r = 0.999568, r^2 = 0.999135
Calibration curve: 0.889815 * x + -0.0800002
Response type: Internal Std (Ref 71), 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	200304P2-3	Standard	0.250	4.96	15.468	2486.245	0.078	0.2	-29.1	NO	0.999	NO	bb
2	2	200304P2-4	Standard	0.500	4.97	83.184	2666.816	0.390	0.5	5.6	NO	0.999	NO	bb
3	3	200304P2-5	Standard	1.000	4.96	127.982	2443.940	0.655	0.8	-17.4	NO	0.999	NO	bb
4	4	200304P2-6	Standard	2.000	4.97	349.011	2726.697	1.600	1.9	-5.6	NO	0.999	NO	bb
5	5	200304P2-7	Standard	5.000	4.97	1012.583	2631.129	4.811	5.5	9.9	NO	0.999	NO	bb
6	6	200304P2-8	Standard	10.000	4.97	1879.969	2599.295	9.041	10.3	2.5	NO	0.999	NO	bb
7	7	200304P2-9	Standard	50.000	4.96	9555.288	2622.791	45.540	51.3	2.5	NO	0.999	NO	bb
8	8	200304P2-10	Standard	100.000	4.97	18573.645	2688.689	86.351	97.1	-2.9	NO	0.999	NO	bb
9	9	200304P2-11	Standard	250.000	4.97	36078.398	2103.390	214.406	241.0	-3.6	NO	0.999	NO	bb
10	10	200304P2-12	Standard	500.000	4.96	59019.711	1625.539	453.847	510.1	2.0	NO	0.999	NO	bb

Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.998149
Calibration curve: -5.05982e-006 * x^2 + 2.09223 * x + -0.0722389
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	200304P2-3	Standard	0.250	5.06	70.699	2518.952	0.351	0.2	-19.1	NO	0.998	NO	MM
2	2	200304P2-4	Standard	0.500	5.06	187.553	2322.667	1.009	0.5	3.4	NO	0.998	NO	bb
3	3	200304P2-5	Standard	1.000	5.06	404.371	2473.148	2.044	1.0	1.1	NO	0.998	NO	MM
4	4	200304P2-6	Standard	2.000	5.06	778.922	2658.003	3.663	1.8	-10.7	NO	0.998	NO	MM
5	5	200304P2-7	Standard	5.000	5.06	2288.061	2450.393	11.672	5.6	12.3	NO	0.998	NO	MM
6	6	200304P2-8	Standard	10.000	5.06	4265.580	2438.336	21.867	10.5	4.9	NO	0.998	NO	MM
7	7	200304P2-9	Standard	50.000	5.06	21581.094	2613.591	103.216	49.4	-1.3	NO	0.998	NO	MM
8	8	200304P2-10	Standard	100.000	5.06	41343.492	2709.132	190.760	91.2	-8.8	NO	0.998	NO	MM
9	9	200304P2-11	Standard	250.000	5.06	84521.875	1918.110	550.815	263.5	5.4	NO	0.998	NO	MM
10	10	200304P2-12	Standard	500.000	5.06	137697.406	1663.858	1034.474	495.1	-1.0	NO	0.998	NO	MM

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.998874, r^2 = 0.997750
Calibration curve: 1.32406 * x + -0.0705772
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	200304P2-3	Standard	0.250	5.22	69.024	3589.006	0.240	0.2	-6.1	NO	0.998	NO	MM
2	2	200304P2-4	Standard	0.500	5.22	129.323	3786.040	0.427	0.4	-24.8	NO	0.998	NO	MM
3	3	200304P2-5	Standard	1.000	5.22	383.115	3572.632	1.340	1.1	6.6	NO	0.998	NO	MM
4	4	200304P2-6	Standard	2.000	5.22	712.370	3638.702	2.447	1.9	-4.9	NO	0.998	NO	MM
5	5	200304P2-7	Standard	5.000	5.22	2003.673	3747.157	6.684	5.1	2.0	NO	0.998	NO	MM
6	6	200304P2-8	Standard	10.000	5.22	3695.556	3600.419	12.830	9.7	-2.6	NO	0.998	NO	MM
7	7	200304P2-9	Standard	50.000	5.22	20175.709	3572.146	70.601	53.4	6.7	NO	0.998	NO	MM
8	8	200304P2-10	Standard	100.000	5.22	37461.602	3581.539	130.745	98.8	-1.2	NO	0.998	NO	MM
9	9	200304P2-11	Standard	250.000	5.22	70627.180	2503.029	352.709	266.4	6.6	NO	0.998	NO	MM
10	10	200304P2-12	Standard	500.000	5.22	110921.148	2174.078	637.748	481.7	-3.7	NO	0.998	NO	MM

Compound name: PFUdA
Correlation coefficient: r = 0.999241, r^2 = 0.998484
Calibration curve: 0.932703 * x + 0.0893084
Response type: Internal Std (Ref 79), 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	200304P2-3	Standard	0.250	5.24	342.580	13986.149	0.306	0.2	-7.0	NO	0.998	NO	bb
2	2	200304P2-4	Standard	0.500	5.24	646.949	14588.602	0.554	0.5	-0.3	NO	0.998	NO	bb
3	3	200304P2-5	Standard	1.000	5.23	1124.149	15326.997	0.917	0.9	-11.3	NO	0.998	NO	db
4	4	200304P2-6	Standard	2.000	5.24	2582.842	15895.778	2.031	2.1	4.1	NO	0.998	NO	bb
5	5	200304P2-7	Standard	5.000	5.24	6454.685	16044.878	5.029	5.3	5.9	NO	0.998	NO	bb
6	6	200304P2-8	Standard	10.000	5.24	11971.809	15333.686	9.759	10.4	3.7	NO	0.998	NO	bb
7	7	200304P2-9	Standard	50.000	5.23	58003.938	14660.305	49.457	52.9	5.9	NO	0.998	NO	bb
8	8	200304P2-10	Standard	100.000	5.24	112135.141	15577.330	89.983	96.4	-3.6	NO	0.998	NO	bb
9	9	200304P2-11	Standard	250.000	5.24	225137.750	11464.172	245.480	263.1	5.2	NO	0.998	NO	bb
10	10	200304P2-12	Standard	500.000	5.23	346550.750	9535.332	454.298	487.0	-2.6	NO	0.998	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: PFDS
Coefficient of Determination: R^2 = 0.999638
Calibration curve: 3.89757e-005 * x^2 + 0.882121 * x + 0.0622793
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	200304P2-3	Standard	0.250	5.28	53.567	2486.245	0.269	0.2	-6.1	NO	1.000	NO	MM
2	2	200304P2-4	Standard	0.500	5.28	102.982	2666.816	0.483	0.5	-4.7	NO	1.000	NO	bb
3	3	200304P2-5	Standard	1.000	5.28	236.043	2443.940	1.207	1.3	29.8	NO	1.000	NO	bb
4	4	200304P2-6	Standard	2.000	5.28	363.555	2726.697	1.667	1.8	-9.1	NO	1.000	NO	bb
5	5	200304P2-7	Standard	5.000	5.28	1068.681	2631.129	5.077	5.7	13.7	NO	1.000	NO	bb
6	6	200304P2-8	Standard	10.000	5.28	1913.895	2599.295	9.204	10.4	3.6	NO	1.000	NO	bd
7	7	200304P2-9	Standard	50.000	5.28	9563.985	2622.791	45.581	51.5	3.0	NO	1.000	NO	bb
8	8	200304P2-10	Standard	100.000	5.28	18900.871	2688.689	87.872	99.1	-0.9	NO	1.000	NO	bb
9	9	200304P2-11	Standard	250.000	5.28	37015.516	2103.390	219.975	246.6	-1.4	NO	1.000	NO	bb
10	10	200304P2-12	Standard	500.000	5.28	58832.504	1625.539	452.408	501.7	0.3	NO	1.000	NO	bb

Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.999339, r^2 = 0.998678
Calibration curve: 0.452206 * x + -0.00335863
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	200304P2-3	Standard	0.250	5.45	133.131	14975.688	0.111	0.3	1.3	NO	0.999	NO	bb
2	2	200304P2-4	Standard	0.500	5.45	276.798	15521.729	0.223	0.5	0.1	NO	0.999	NO	bb
3	3	200304P2-5	Standard	1.000	5.45	522.954	15446.988	0.423	0.9	-5.7	NO	0.999	NO	bb
4	4	200304P2-6	Standard	2.000	5.45	1111.722	15279.108	0.910	2.0	0.9	NO	0.999	NO	bb
5	5	200304P2-7	Standard	5.000	5.45	2993.457	16333.823	2.291	5.1	1.5	NO	0.999	NO	bb
6	6	200304P2-8	Standard	10.000	5.45	5817.941	15150.304	4.800	10.6	6.2	NO	0.999	NO	bb
7	7	200304P2-9	Standard	50.000	5.45	28520.188	15336.411	23.245	51.4	2.8	NO	0.999	NO	bb
8	8	200304P2-10	Standard	100.000	5.45	55290.699	16243.715	42.548	94.1	-5.9	NO	0.999	NO	bb
9	9	200304P2-11	Standard	250.000	5.45	110970.539	12775.509	108.577	240.1	-4.0	NO	0.999	NO	bb
10	10	200304P2-12	Standard	500.000	5.45	181759.766	9780.345	232.302	513.7	2.7	NO	0.999	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999279
Calibration curve: -0.000180939 * x^2 + 2.28371 * x + -0.0530499
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	200304P2-3	Standard	0.250	5.52	15.155	761.356	0.249	0.1	-47.1	YES	0.999	NO	bbX
2	2	200304P2-4	Standard	0.500	5.51	59.925	893.221	0.839	0.4	-21.9	NO	0.999	NO	bb
3	3	200304P2-5	Standard	1.000	5.51	148.644	801.870	2.317	1.0	3.8	NO	0.999	NO	bb
4	4	200304P2-6	Standard	2.000	5.51	262.226	771.722	4.247	1.9	-5.8	NO	0.999	NO	bb
5	5	200304P2-7	Standard	5.000	5.51	772.587	810.089	11.921	5.2	4.9	NO	0.999	NO	bb
6	6	200304P2-8	Standard	10.000	5.51	1440.248	715.079	25.176	11.1	10.6	NO	0.999	NO	bb
7	7	200304P2-9	Standard	50.000	5.51	6596.637	676.500	121.889	53.6	7.2	NO	0.999	NO	bb
8	8	200304P2-10	Standard	100.000	5.51	13043.731	730.327	223.252	98.6	-1.4	NO	0.999	NO	bb
9	9	200304P2-11	Standard	250.000	5.51	24109.164	552.938	545.024	243.4	-2.7	NO	0.999	NO	bb
10	10	200304P2-12	Standard	500.000	5.51	37566.203	425.490	1103.616	503.4	0.7	NO	0.999	NO	bb

Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999054
Calibration curve: 6.05516e-005 * x^2 + 0.981539 * x + 0.207633
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	200304P2-3	Standard	0.250	5.54	520.103	14975.688	0.434	0.2	-7.7	NO	0.999	NO	MM
2	2	200304P2-4	Standard	0.500	5.53	996.613	15521.729	0.803	0.6	21.2	NO	0.999	NO	bb
3	3	200304P2-5	Standard	1.000	5.53	1820.122	15446.988	1.473	1.3	28.9	NO	0.999	NO	bb
4	4	200304P2-6	Standard	2.000	5.53	3150.176	15279.108	2.577	2.4	20.7	NO	0.999	NO	bb
5	5	200304P2-7	Standard	5.000	5.52	7348.811	16333.823	5.624	5.5	10.3	NO	0.999	NO	bb
6	6	200304P2-8	Standard	10.000	5.52	13308.725	15150.304	10.981	11.0	9.7	NO	0.999	NO	bb
7	7	200304P2-9	Standard	50.000	5.52	62875.223	15336.411	51.247	51.8	3.7	NO	0.999	NO	bb
8	8	200304P2-10	Standard	100.000	5.52	129058.211	16243.715	99.314	100.3	0.3	NO	0.999	NO	bb
9	9	200304P2-11	Standard	250.000	5.52	246462.813	12775.509	241.148	241.9	-3.3	NO	0.999	NO	bb
10	10	200304P2-12	Standard	500.000	5.52	399001.063	9780.345	509.953	503.7	0.7	NO	0.999	NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999695
Calibration curve: -4.32992e-005 * x^2 + 1.02257 * x + 0.260289
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	200304P2-3	Standard	1.250	5.52	70.426	12411.970	0.847	0.6	-54.1	YES	1.000	NO	bbX
2	2	200304P2-4	Standard	2.500	5.52	229.867	13206.982	2.597	2.3	-8.6	NO	1.000	NO	bb
3	3	200304P2-5	Standard	5.000	5.52	453.332	13376.281	5.056	4.7	-6.2	NO	1.000	NO	bb
4	4	200304P2-6	Standard	10.000	5.52	996.247	13200.816	11.260	10.8	7.6	NO	1.000	NO	bb
5	5	200304P2-7	Standard	25.000	5.52	2441.544	13332.186	27.323	26.5	6.0	NO	1.000	NO	bb
6	6	200304P2-8	Standard	50.000	5.52	4881.039	12541.115	58.069	56.7	13.3	NO	1.000	NO	bb
7	7	200304P2-9	Standard	250.000	5.52	22637.475	13452.481	251.070	247.9	-0.8	NO	1.000	NO	bb
8	8	200304P2-10	Standard	500.000	5.52	44666.691	13400.754	497.306	496.5	-0.7	NO	1.000	NO	bb
9	9	200304P2-11	Standard	1250.000	5.52	86454.406	10719.670	1203.302	1241.8	-0.7	NO	1.000	NO	bb
10	10	200304P2-12	Standard	2500.000	5.52	137942.141	8985.102	2290.566	2505.6	0.2	NO	1.000	NO	bb

Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.998738
Calibration curve: -7.60291e-005 * x^2 + 1.03461 * x + 0.194492
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	200304P2-3	Standard	0.250	5.77	480.598	14975.688	0.401	0.2	-20.1	NO	0.999	NO	bb
2	2	200304P2-4	Standard	0.500	5.77	749.191	15521.729	0.603	0.4	-21.0	NO	0.999	NO	bb
3	3	200304P2-5	Standard	1.000	5.77	1629.643	15446.988	1.319	1.1	8.7	NO	0.999	NO	bd
4	4	200304P2-6	Standard	2.000	5.77	3020.809	15279.108	2.471	2.2	10.1	NO	0.999	NO	bb
5	5	200304P2-7	Standard	5.000	5.77	7415.407	16333.823	5.675	5.3	6.0	NO	0.999	NO	bb
6	6	200304P2-8	Standard	10.000	5.77	14143.641	15150.304	11.669	11.1	11.0	NO	0.999	NO	bb
7	7	200304P2-9	Standard	50.000	5.77	69259.297	15336.411	56.450	54.6	9.2	NO	0.999	NO	bb
8	8	200304P2-10	Standard	100.000	5.77	132933.656	16243.715	102.296	99.4	-0.6	NO	0.999	NO	bb
9	9	200304P2-11	Standard	250.000	5.77	248817.516	12775.509	243.452	239.3	-4.3	NO	0.999	NO	bb
10	10	200304P2-12	Standard	500.000	5.77	393899.813	9780.345	503.433	505.2	1.0	NO	0.999	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999587
Calibration curve: 2.48924e-005 * x^2 + 0.192004 * x + 0.00333864
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 200304P2-3	Standard	0.250	5.80	64.309	12643.240	0.064	0.3	25.5	NO	1.000	NO	bb
2	2 200304P2-4	Standard	0.500	5.80	97.156	13202.983	0.092	0.5	-7.7	NO	1.000	NO	bb
3	3 200304P2-5	Standard	1.000	5.80	203.151	14128.079	0.180	0.9	-8.1	NO	1.000	NO	bb
4	4 200304P2-6	Standard	2.000	5.80	392.701	13911.713	0.353	1.8	-9.0	NO	1.000	NO	bb
5	5 200304P2-7	Standard	5.000	5.80	1066.265	14095.519	0.946	4.9	-1.9	NO	1.000	NO	bb
6	6 200304P2-8	Standard	10.000	5.80	2052.470	13365.991	1.919	10.0	-0.3	NO	1.000	NO	bb
7	7 200304P2-9	Standard	50.000	5.80	10256.451	13432.020	9.545	49.4	-1.2	NO	1.000	NO	bb
8	8 200304P2-10	Standard	100.000	5.80	20515.176	12597.357	20.357	104.6	4.6	NO	1.000	NO	bb
9	9 200304P2-11	Standard	250.000	5.80	38847.848	10018.346	48.471	244.7	-2.1	NO	1.000	NO	bb
10	10 200304P2-12	Standard	500.000	5.80	59927.699	7300.786	102.605	501.7	0.3	NO	1.000	NO	bb

Compound name: PFTeDA
Correlation coefficient: r = 0.998829, r^2 = 0.997658
Calibration curve: 1.42837 * x + -0.0322598
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 200304P2-3	Standard	0.250	5.99	361.679	12643.240	0.358	0.3	9.2	NO	0.998	NO	MM
2	2 200304P2-4	Standard	0.500	6.00	760.713	13202.983	0.720	0.5	5.4	NO	0.998	NO	MM
3	3 200304P2-5	Standard	1.000	5.99	1638.783	14128.079	1.450	1.0	3.8	NO	0.998	NO	bb
4	4 200304P2-6	Standard	2.000	5.99	2931.904	13911.713	2.634	1.9	-6.7	NO	0.998	NO	MM
5	5 200304P2-7	Standard	5.000	5.99	8069.897	14095.519	7.156	5.0	0.7	NO	0.998	NO	bb
6	6 200304P2-8	Standard	10.000	5.99	14086.068	13365.991	13.173	9.2	-7.5	NO	0.998	NO	bb
7	7 200304P2-9	Standard	50.000	5.99	74936.914	13432.020	69.737	48.8	-2.3	NO	0.998	NO	db
8	8 200304P2-10	Standard	100.000	5.99	145314.859	12597.357	144.192	101.0	1.0	NO	0.998	NO	bb
9	9 200304P2-11	Standard	250.000	5.99	265540.219	10018.346	331.317	232.0	-7.2	NO	0.998	NO	bb
10	10 200304P2-12	Standard	500.000	5.99	432940.750	7300.786	741.257	519.0	3.8	NO	0.998	NO	db

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999833
Calibration curve: -2.57826e-005 * x^2 + 0.876385 * x + 0.179923
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	200304P2-3	Standard	1.250	5.99	171.549	21034.195	1.217	1.2	-5.3	NO	1.000	NO	bb
2	2	200304P2-4	Standard	2.500	5.99	334.031	21302.590	2.340	2.5	-1.4	NO	1.000	NO	bb
3	3	200304P2-5	Standard	5.000	5.99	730.969	21913.150	4.977	5.5	9.5	NO	1.000	NO	bb
4	4	200304P2-6	Standard	10.000	5.99	1207.008	21527.838	8.365	9.3	-6.6	NO	1.000	NO	bb
5	5	200304P2-7	Standard	25.000	5.99	3447.382	22135.055	23.237	26.3	5.3	NO	1.000	NO	bb
6	6	200304P2-8	Standard	50.000	5.99	6368.637	21696.475	43.795	49.8	-0.3	NO	1.000	NO	bb
7	7	200304P2-9	Standard	250.000	5.99	31421.488	21505.869	217.991	250.4	0.2	NO	1.000	NO	bb
8	8	200304P2-10	Standard	500.000	5.99	59123.660	20927.984	421.505	487.8	-2.4	NO	1.000	NO	bb
9	9	200304P2-11	Standard	1250.000	5.99	115373.625	16088.674	1069.929	1267.9	1.4	NO	1.000	NO	bb
10	10	200304P2-12	Standard	2500.000	5.99	180188.688	13277.647	2024.768	2493.0	-0.3	NO	1.000	NO	bb

Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999870
Calibration curve: -0.000132812 * x^2 + 0.671946 * x + 0.0858042
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	200304P2-3	Standard	0.250	6.34	387.367	20568.721	0.235	0.2	-10.9	NO	1.000	NO	bb
2	2	200304P2-4	Standard	0.500	6.34	748.602	20939.432	0.447	0.5	7.5	NO	1.000	NO	bb
3	3	200304P2-5	Standard	1.000	6.34	1299.980	20448.461	0.795	1.1	5.5	NO	1.000	NO	bb
4	4	200304P2-6	Standard	2.000	6.34	2357.784	20766.674	1.419	2.0	-0.7	NO	1.000	NO	bb
5	5	200304P2-7	Standard	5.000	6.34	5867.944	20828.457	3.522	5.1	2.4	NO	1.000	NO	bb
6	6	200304P2-8	Standard	10.000	6.34	11023.527	21034.990	6.551	9.6	-3.6	NO	1.000	NO	bb
7	7	200304P2-9	Standard	50.000	6.34	54531.621	20219.934	33.712	50.5	1.1	NO	1.000	NO	bb
8	8	200304P2-10	Standard	100.000	6.34	106108.758	20536.414	64.586	97.9	-2.1	NO	1.000	NO	bb
9	9	200304P2-11	Standard	250.000	6.34	209623.297	16218.968	161.557	253.0	1.2	NO	1.000	NO	bb
10	10	200304P2-12	Standard	500.000	6.34	310015.375	12823.098	302.204	498.8	-0.2	NO	1.000	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.999840
Calibration curve: -7.84163e-005 * x^2 + 0.925009 * x + -0.0217035
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	200304P2-3	Standard	0.250	6.58	268.493	20568.721	0.163	0.2	-20.1	NO	1.000	NO	MM
2	2	200304P2-4	Standard	0.500	6.58	679.823	20939.432	0.406	0.5	-7.6	NO	1.000	NO	bb
3	3	200304P2-5	Standard	1.000	6.58	1719.993	20448.461	1.051	1.2	16.0	NO	1.000	NO	bb
4	4	200304P2-6	Standard	2.000	6.59	3201.033	20766.674	1.927	2.1	5.3	NO	1.000	NO	MM
5	5	200304P2-7	Standard	5.000	6.58	7397.082	20828.457	4.439	4.8	-3.5	NO	1.000	NO	bb
6	6	200304P2-8	Standard	10.000	6.58	15846.798	21034.990	9.417	10.2	2.1	NO	1.000	NO	bb
7	7	200304P2-9	Standard	50.000	6.58	73603.852	20219.934	45.502	49.4	-1.2	NO	1.000	NO	bb
8	8	200304P2-10	Standard	100.000	6.59	148122.344	20536.414	90.158	98.3	-1.7	NO	1.000	NO	bb
9	9	200304P2-11	Standard	250.000	6.58	297585.000	16218.968	229.350	253.4	1.4	NO	1.000	NO	bb
10	10	200304P2-12	Standard	500.000	6.58	453143.969	12823.098	441.726	498.6	-0.3	NO	1.000	NO	bb

Compound name: N-MeFOSE
Correlation coefficient: r = 0.999567, r^2 = 0.999134
Calibration curve: 1.01157 * x + -0.0701665
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	200304P2-3	Standard	1.250	6.24	177.576	18841.561	1.406	1.5	16.8	NO	0.999	NO	bb
2	2	200304P2-4	Standard	2.500	6.25	300.611	18907.783	2.372	2.4	-3.4	NO	0.999	NO	bb
3	3	200304P2-5	Standard	5.000	6.25	686.281	18921.934	5.411	5.4	8.4	NO	0.999	NO	bb
4	4	200304P2-6	Standard	10.000	6.25	1241.734	19029.912	9.736	9.7	-3.1	NO	0.999	NO	bb
5	5	200304P2-7	Standard	25.000	6.25	3196.819	19414.918	24.567	24.4	-2.6	NO	0.999	NO	bb
6	6	200304P2-8	Standard	50.000	6.25	6178.604	20014.893	46.058	45.6	-8.8	NO	0.999	NO	bb
7	7	200304P2-9	Standard	250.000	6.25	31601.070	19361.348	243.520	240.8	-3.7	NO	0.999	NO	bb
8	8	200304P2-10	Standard	500.000	6.25	63058.039	19294.727	487.608	482.1	-3.6	NO	0.999	NO	bb
9	9	200304P2-11	Standard	1250.000	6.25	131453.781	15920.189	1231.952	1217.9	-2.6	NO	0.999	NO	bb
10	10	200304P2-12	Standard	2500.000	6.25	229135.375	13181.493	2593.560	2564.0	2.6	NO	0.999	NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999962, r^2 = 0.999924
Calibration curve: 0.96721 * x + -0.0485328
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 200304P2-3	Standard	1.250	6.40	163.592	21483.859	1.136	1.2	-2.0	NO	1.000	NO	db
2	2 200304P2-4	Standard	2.500	6.40	363.014	21706.154	2.495	2.6	5.2	NO	1.000	NO	bb
3	3 200304P2-5	Standard	5.000	6.40	737.134	22207.584	4.952	5.2	3.4	NO	1.000	NO	bb
4	4 200304P2-6	Standard	10.000	6.40	1459.686	22550.350	9.658	10.0	0.4	NO	1.000	NO	bb
5	5 200304P2-7	Standard	25.000	6.40	3487.438	22518.729	23.106	23.9	-4.2	NO	1.000	NO	bb
6	6 200304P2-8	Standard	50.000	6.40	7114.336	22643.750	46.876	48.5	-3.0	NO	1.000	NO	bb
7	7 200304P2-9	Standard	250.000	6.40	36005.262	22333.270	240.537	248.7	-0.5	NO	1.000	NO	bb
8	8 200304P2-10	Standard	500.000	6.40	71395.102	22022.555	483.693	500.1	0.0	NO	1.000	NO	bb
9	9 200304P2-11	Standard	1250.000	6.40	145658.688	17761.475	1223.563	1265.1	1.2	NO	1.000	NO	bb
10	10 200304P2-12	Standard	2500.000	6.40	236572.375	14666.474	2406.618	2488.3	-0.5	NO	1.000	NO	bb

Compound name: 13C3-PFBA-EIS
Response Factor: 371.675
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 200304P2-3	Standard	12.500	1.23	4402.323		4402.323	11.8	-5.2	NO		NO	bbX
2	2 200304P2-4	Standard	12.500	1.23	4523.122		4523.122	12.2	-2.6	NO		NO	MMX
3	3 200304P2-5	Standard	12.500	1.23	4593.813		4593.813	12.4	-1.1	NO		NO	bbX
4	4 200304P2-6	Standard	12.500	1.23	4614.375		4614.375	12.4	-0.7	NO		NO	bbX
5	5 200304P2-7	Standard	12.500	1.23	4510.145		4510.145	12.1	-2.9	NO		NO	bbX
6	6 200304P2-8	Standard	12.500	1.23	4645.938		4645.938	12.5	0.0	NO		NO	MM
7	7 200304P2-9	Standard	12.500	1.23	4583.611		4583.611	12.3	-1.3	NO		NO	bbX
8	8 200304P2-10	Standard	12.500	1.23	4727.791		4727.791	12.7	1.8	NO		NO	MMX
9	9 200304P2-11	Standard	12.500	1.23	3562.562		3562.562	9.6	-23.3	NO		NO	bbX
10	10 200304P2-12	Standard	12.500	1.23	3095.351		3095.351	8.3	-33.4	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C3-PFBA-RSD
Response Factor: 0.797493
RRF SD: 0.0159423, Relative SD: 1.99905
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	200304P2-3	Standard	12.500	1.23	4402.323	5526.569	9.957	12.5	-0.1	NO		NO	bb
2	2	200304P2-4	Standard	12.500	1.23	4478.059	5829.053	9.603	12.0	-3.7	NO		NO	MM
3	3	200304P2-5	Standard	12.500	1.23	4593.813	5658.267	10.148	12.7	1.8	NO		NO	bb
4	4	200304P2-6	Standard	12.500	1.23	4614.375	5755.885	10.021	12.6	0.5	NO		NO	bb
5	5	200304P2-7	Standard	12.500	1.23	4510.145	5735.158	9.830	12.3	-1.4	NO		NO	bb
6	6	200304P2-8	Standard	12.500	1.23	4683.711	5718.201	10.239	12.8	2.7	NO		NO	MM
7	7	200304P2-9	Standard	12.500	1.23	4583.611	5839.218	9.812	12.3	-1.6	NO		NO	bb
8	8	200304P2-10	Standard	12.500	1.23	4727.791	5921.604	9.980	12.5	0.1	NO		NO	MM
9	9	200304P2-11	Standard	12.500	1.23	3701.051	4526.713	10.220	12.8	2.5	NO		NO	MM
10	10	200304P2-12	Standard	12.500	1.23	3095.351	3917.625	9.876	12.4	-0.9	NO		NO	bb

Compound name: 13C3-PFPeA-EIS
Response Factor: 681.084
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	200304P2-3	Standard	12.500	2.13	8063.190		8063.190	11.8	-5.3	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	2.13	8473.734		8473.734	12.4	-0.5	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	2.13	8350.816		8350.816	12.3	-1.9	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	2.13	8447.558		8447.558	12.4	-0.8	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	2.13	8522.696		8522.696	12.5	0.1	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	2.13	8513.549		8513.549	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	2.13	8403.462		8403.462	12.3	-1.3	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	2.13	8765.210		8765.210	12.9	3.0	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	2.13	6657.588		6657.588	9.8	-21.8	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	2.13	5716.588		5716.588	8.4	-32.9	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C3-PFPeA-RSD
Response Factor: 0.568929
RRF SD: 0.0104136, Relative SD: 1.83039
Response type: Internal Std (Ref 100), 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 200304P2-3	Standard	12.500	2.13	7916.325	13804.979	7.168	12.6	0.8	NO		NO	MM
2	2 200304P2-4	Standard	12.500	2.13	8371.446	15035.333	6.960	12.2	-2.1	NO		NO	MM
3	3 200304P2-5	Standard	12.500	2.13	8286.785	14964.110	6.922	12.2	-2.7	NO		NO	MM
4	4 200304P2-6	Standard	12.500	2.13	8427.991	14885.100	7.078	12.4	-0.5	NO		NO	MM
5	5 200304P2-7	Standard	12.500	2.13	8422.743	14761.557	7.132	12.5	0.3	NO		NO	MM
6	6 200304P2-8	Standard	12.500	2.13	8487.761	14681.915	7.226	12.7	1.6	NO		NO	MM
7	7 200304P2-9	Standard	12.500	2.13	8314.831	14929.965	6.962	12.2	-2.1	NO		NO	MM
8	8 200304P2-10	Standard	12.500	2.13	8556.028	14616.780	7.317	12.9	2.9	NO		NO	MM
9	9 200304P2-11	Standard	12.500	2.13	6657.027	11536.978	7.213	12.7	1.4	NO		NO	MM
10	10 200304P2-12	Standard	12.500	2.13	5509.420	9647.108	7.139	12.5	0.4	NO		NO	MM

Compound name: 13C3-PFBS-EIS
Response Factor: 82.6468
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 200304P2-3	Standard	12.500	2.41	944.498		944.498	11.4	-8.6	NO		NO	bbX
2	2 200304P2-4	Standard	12.500	2.41	926.629		926.629	11.2	-10.3	NO		NO	bbX
3	3 200304P2-5	Standard	12.500	2.41	931.432		931.432	11.3	-9.8	NO		NO	MMX
4	4 200304P2-6	Standard	12.500	2.41	979.440		979.440	11.9	-5.2	NO		NO	bbX
5	5 200304P2-7	Standard	12.500	2.41	1022.516		1022.516	12.4	-1.0	NO		NO	bbX
6	6 200304P2-8	Standard	12.500	2.41	1033.085		1033.085	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	2.41	1018.825		1018.825	12.3	-1.4	NO		NO	bbX
8	8 200304P2-10	Standard	12.500	2.41	1015.569		1015.569	12.3	-1.7	NO		NO	bbX
9	9 200304P2-11	Standard	12.500	2.41	709.261		709.261	8.6	-31.3	NO		NO	bbX
10	10 200304P2-12	Standard	12.500	2.41	632.153		632.153	7.6	-38.8	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C3-PFBS-RSD
Response Factor: 1.00588
RRF SD: 0.0619324, Relative SD: 6.15704
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 200304P2-3	Standard	12.500	2.41	944.498	989.156	11.936	11.9	-5.1	NO		NO	bb
2	2 200304P2-4	Standard	12.500	2.41	926.629	956.648	12.108	12.0	-3.7	NO		NO	bb
3	3 200304P2-5	Standard	12.500	2.41	960.497	948.934	12.652	12.6	0.6	NO		NO	bd
4	4 200304P2-6	Standard	12.500	2.41	979.440	1004.360	12.190	12.1	-3.1	NO		NO	bb
5	5 200304P2-7	Standard	12.500	2.41	1022.516	1006.445	12.700	12.6	1.0	NO		NO	bb
6	6 200304P2-8	Standard	12.500	2.41	1033.085	971.809	13.288	13.2	5.7	NO		NO	bb
7	7 200304P2-9	Standard	12.500	2.41	1018.825	961.273	13.248	13.2	5.4	NO		NO	bb
8	8 200304P2-10	Standard	12.500	2.41	1015.569	900.798	14.093	14.0	12.1	NO		NO	bb
9	9 200304P2-11	Standard	12.500	2.41	709.261	756.725	11.716	11.6	-6.8	NO		NO	bb
10	10 200304P2-12	Standard	12.500	2.41	632.153	669.401	11.804	11.7	-6.1	NO		NO	bb

Compound name: 13C3-HFPO-DA-EIS
Response Factor: 280.215
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 200304P2-3	Standard	12.500	3.14	3365.811		3365.811	12.0	-3.9	NO		NO	bbX
2	2 200304P2-4	Standard	12.500	3.14	3514.446		3514.446	12.5	0.3	NO		NO	bbX
3	3 200304P2-5	Standard	12.500	3.14	3675.547		3675.547	13.1	4.9	NO		NO	bbX
4	4 200304P2-6	Standard	12.500	3.14	3660.667		3660.667	13.1	4.5	NO		NO	bbX
5	5 200304P2-7	Standard	12.500	3.14	3336.894		3336.894	11.9	-4.7	NO		NO	bbX
6	6 200304P2-8	Standard	12.500	3.14	3502.690		3502.690	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	3.14	3621.955		3621.955	12.9	3.4	NO		NO	bbX
8	8 200304P2-10	Standard	12.500	3.14	3622.897		3622.897	12.9	3.4	NO		NO	bbX
9	9 200304P2-11	Standard	12.500	3.14	2944.603		2944.603	10.5	-15.9	NO		NO	bbX
10	10 200304P2-12	Standard	12.500	3.14	2632.906		2632.906	9.4	-24.8	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C3-HFPO-DA-RSD
Response Factor: 0.245234
RRF SD: 0.0125934, Relative SD: 5.13526
Response type: Internal Std (Ref 100), 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	200304P2-3	Standard	12.500	3.14	3365.811	13804.979	3.048	12.4	-0.6	NO		NO	bb
2	2	200304P2-4	Standard	12.500	3.14	3514.446	15035.333	2.922	11.9	-4.7	NO		NO	bb
3	3	200304P2-5	Standard	12.500	3.14	3675.547	14964.110	3.070	12.5	0.2	NO		NO	bb
4	4	200304P2-6	Standard	12.500	3.14	3660.667	14885.100	3.074	12.5	0.3	NO		NO	bb
5	5	200304P2-7	Standard	12.500	3.14	3336.894	14761.557	2.826	11.5	-7.8	NO		NO	bb
6	6	200304P2-8	Standard	12.500	3.14	3502.690	14681.915	2.982	12.2	-2.7	NO		NO	bb
7	7	200304P2-9	Standard	12.500	3.14	3621.955	14929.965	3.032	12.4	-1.1	NO		NO	bb
8	8	200304P2-10	Standard	12.500	3.14	3622.897	14616.780	3.098	12.6	1.1	NO		NO	bb
9	9	200304P2-11	Standard	12.500	3.14	2944.603	11536.978	3.190	13.0	4.1	NO		NO	bb
10	10	200304P2-12	Standard	12.500	3.14	2632.906	9647.108	3.412	13.9	11.3	NO		NO	bb

Compound name: 13C2-4:2 FTS-EIS
Response Factor: 120.79
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	200304P2-3	Standard	12.500	2.85	1425.508		1425.508	11.8	-5.6	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	2.85	1625.470		1625.470	13.5	7.7	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	2.85	1479.255		1479.255	12.2	-2.0	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	2.85	1649.539		1649.539	13.7	9.2	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	2.85	1543.641		1543.641	12.8	2.2	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	2.85	1509.876		1509.876	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	2.85	1356.426		1356.426	11.2	-10.2	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	2.85	1399.257		1399.257	11.6	-7.3	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	2.85	1052.841		1052.841	8.7	-30.3	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	2.85	934.155		934.155	7.7	-38.1	NO		NO	bdX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-4:2 FTS-RSD
Response Factor: 1.51802
RRF SD: 0.105995, Relative SD: 6.98244
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 200304P2-3	Standard	12.500	2.85	1425.508	989.156	18.014	11.9	-5.1	NO		NO	bb
2	2 200304P2-4	Standard	12.500	2.85	1625.470	956.648	21.239	14.0	11.9	NO		NO	bb
3	3 200304P2-5	Standard	12.500	2.85	1479.255	948.934	19.486	12.8	2.7	NO		NO	bb
4	4 200304P2-6	Standard	12.500	2.85	1649.539	1004.360	20.530	13.5	8.2	NO		NO	bb
5	5 200304P2-7	Standard	12.500	2.85	1543.641	1006.445	19.172	12.6	1.0	NO		NO	bb
6	6 200304P2-8	Standard	12.500	2.85	1509.876	971.809	19.421	12.8	2.3	NO		NO	bb
7	7 200304P2-9	Standard	12.500	2.85	1356.426	961.273	17.638	11.6	-7.0	NO		NO	bb
8	8 200304P2-10	Standard	12.500	2.85	1399.257	900.798	19.417	12.8	2.3	NO		NO	bb
9	9 200304P2-11	Standard	12.500	2.85	1052.841	756.725	17.391	11.5	-8.3	NO		NO	bb
10	10 200304P2-12	Standard	12.500	2.85	934.155	669.401	17.444	11.5	-8.1	NO		NO	bd

Compound name: 13C2-PFHxA-EIS
Response Factor: 1213.08
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 200304P2-3	Standard	12.500	2.94	14509.173		14509.173	12.0	-4.3	NO		NO	bbX
2	2 200304P2-4	Standard	12.500	2.94	14849.003		14849.003	12.2	-2.1	NO		NO	bbX
3	3 200304P2-5	Standard	12.500	2.94	15509.219		15509.219	12.8	2.3	NO		NO	bbX
4	4 200304P2-6	Standard	12.500	2.94	15098.153		15098.153	12.4	-0.4	NO		NO	bbX
5	5 200304P2-7	Standard	12.500	2.94	15357.925		15357.925	12.7	1.3	NO		NO	bbX
6	6 200304P2-8	Standard	12.500	2.94	15163.504		15163.504	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	2.94	14979.496		14979.496	12.3	-1.2	NO		NO	bbX
8	8 200304P2-10	Standard	12.500	2.94	15772.194		15772.194	13.0	4.0	NO		NO	bbX
9	9 200304P2-11	Standard	12.500	2.94	11616.815		11616.815	9.6	-23.4	NO		NO	bbX
10	10 200304P2-12	Standard	12.500	2.94	10062.281		10062.281	8.3	-33.6	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-PFHxA-RSD
Response Factor: 1.02949
RRF SD: 0.0267904, Relative SD: 2.60231
Response type: Internal Std (Ref 100), 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	200304P2-3	Standard	12.500	2.94	14509.173	13804.979	13.138	12.8	2.1	NO		NO	bb
2	2	200304P2-4	Standard	12.500	2.94	14849.003	15035.333	12.345	12.0	-4.1	NO		NO	bb
3	3	200304P2-5	Standard	12.500	2.94	15509.219	14964.110	12.955	12.6	0.7	NO		NO	bb
4	4	200304P2-6	Standard	12.500	2.94	15098.153	14885.100	12.679	12.3	-1.5	NO		NO	bb
5	5	200304P2-7	Standard	12.500	2.94	15357.925	14761.557	13.005	12.6	1.1	NO		NO	bb
6	6	200304P2-8	Standard	12.500	2.94	15163.504	14681.915	12.910	12.5	0.3	NO		NO	bb
7	7	200304P2-9	Standard	12.500	2.94	14979.496	14929.965	12.541	12.2	-2.5	NO		NO	bb
8	8	200304P2-10	Standard	12.500	2.94	15772.194	14616.780	13.488	13.1	4.8	NO		NO	bb
9	9	200304P2-11	Standard	12.500	2.94	11616.815	11536.978	12.587	12.2	-2.2	NO		NO	bb
10	10	200304P2-12	Standard	12.500	2.94	10062.281	9647.108	13.038	12.7	1.3	NO		NO	bb

Compound name: 13C4-PFHpA-EIS
Response Factor: 676.004
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	200304P2-3	Standard	12.500	3.53	7836.800		7836.800	11.6	-7.3	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	3.53	8147.872		8147.872	12.1	-3.6	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	3.53	8334.623		8334.623	12.3	-1.4	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	3.53	8280.926		8280.926	12.2	-2.0	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	3.54	8897.463		8897.463	13.2	5.3	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	3.53	8450.053		8450.053	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	3.53	7899.096		7899.096	11.7	-6.5	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	3.53	8503.916		8503.916	12.6	0.6	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	3.53	6681.411		6681.411	9.9	-20.9	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	3.53	5411.800		5411.800	8.0	-36.0	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C4-PFHpA-RSD
Response Factor: 0.565215
RRF SD: 0.021091, Relative SD: 3.7315
Response type: Internal Std (Ref 100), 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	200304P2-3	Standard	12.500	3.53	7836.800	13804.979	7.096	12.6	0.4	NO		NO	bb
2	2	200304P2-4	Standard	12.500	3.53	8147.872	15035.333	6.774	12.0	-4.1	NO		NO	bb
3	3	200304P2-5	Standard	12.500	3.53	8334.623	14964.110	6.962	12.3	-1.5	NO		NO	bb
4	4	200304P2-6	Standard	12.500	3.53	8280.926	14885.100	6.954	12.3	-1.6	NO		NO	bb
5	5	200304P2-7	Standard	12.500	3.54	8897.463	14761.557	7.534	13.3	6.6	NO		NO	bb
6	6	200304P2-8	Standard	12.500	3.53	8450.053	14681.915	7.194	12.7	1.8	NO		NO	bb
7	7	200304P2-9	Standard	12.500	3.53	7899.096	14929.965	6.613	11.7	-6.4	NO		NO	bb
8	8	200304P2-10	Standard	12.500	3.53	8503.916	14616.780	7.272	12.9	2.9	NO		NO	bb
9	9	200304P2-11	Standard	12.500	3.53	6681.411	11536.978	7.239	12.8	2.5	NO		NO	bb
10	10	200304P2-12	Standard	12.500	3.53	5411.800	9647.108	7.012	12.4	-0.7	NO		NO	bb

Compound name: 13C3-PFHxS-EIS
Response Factor: 190.058
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	200304P2-3	Standard	12.500	3.68	2244.017		2244.017	11.8	-5.5	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	3.68	2219.308		2219.308	11.7	-6.6	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	3.68	2314.499		2314.499	12.2	-2.6	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	3.68	2343.224		2343.224	12.3	-1.4	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	3.68	2472.347		2472.347	13.0	4.1	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	3.68	2375.726		2375.726	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	3.68	2325.628		2325.628	12.2	-2.1	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	3.68	2373.408		2373.408	12.5	-0.1	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	3.68	1816.874		1816.874	9.6	-23.5	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	3.67	1493.357		1493.357	7.9	-37.1	NO		NO	bdX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C3-PFHxS-RSD
Response Factor: 2.39477
RRF SD: 0.114842, Relative SD: 4.79554
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	200304P2-3	Standard	12.500	3.68	2244.017	989.156	28.358	11.8	-5.3	NO		NO	bb
2	2	200304P2-4	Standard	12.500	3.68	2219.308	956.648	28.998	12.1	-3.1	NO		NO	bb
3	3	200304P2-5	Standard	12.500	3.68	2314.499	948.934	30.488	12.7	1.8	NO		NO	bb
4	4	200304P2-6	Standard	12.500	3.68	2343.224	1004.360	29.163	12.2	-2.6	NO		NO	bb
5	5	200304P2-7	Standard	12.500	3.68	2472.347	1006.445	30.706	12.8	2.6	NO		NO	bb
6	6	200304P2-8	Standard	12.500	3.68	2375.726	971.809	30.558	12.8	2.1	NO		NO	bb
7	7	200304P2-9	Standard	12.500	3.68	2325.628	961.273	30.242	12.6	1.0	NO		NO	bb
8	8	200304P2-10	Standard	12.500	3.68	2373.408	900.798	32.935	13.8	10.0	NO		NO	bb
9	9	200304P2-11	Standard	12.500	3.68	1816.874	756.725	30.012	12.5	0.3	NO		NO	bb
10	10	200304P2-12	Standard	12.500	3.67	1493.357	669.401	27.886	11.6	-6.8	NO		NO	bd

Compound name: 13C2-6:2 FTS-EIS
Response Factor: 90.137
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	200304P2-3	Standard	12.500	4.00	1219.295		1219.295	13.5	8.2	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	3.99	1300.462		1300.462	14.4	15.4	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	4.00	1230.747		1230.747	13.7	9.2	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	4.00	1325.912		1325.912	14.7	17.7	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	4.00	1358.383		1358.383	15.1	20.6	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	4.00	1126.713		1126.713	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.00	1253.748		1253.748	13.9	11.3	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	4.00	1268.946		1268.946	14.1	12.6	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	4.00	998.548		998.548	11.1	-11.4	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	3.99	826.518		826.518	9.2	-26.6	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-6:2 FTS-RSD
Response Factor: 0.480081
RRF SD: 0.0263075, Relative SD: 5.47979
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 200304P2-3	Standard	12.500	4.00	1219.295	2700.339	5.644	11.8	-5.9	NO		NO	bb
2	2 200304P2-4	Standard	12.500	3.99	1300.462	2645.743	6.144	12.8	2.4	NO		NO	bb
3	3 200304P2-5	Standard	12.500	4.00	1230.747	2613.269	5.887	12.3	-1.9	NO		NO	bb
4	4 200304P2-6	Standard	12.500	4.00	1325.912	2610.713	6.348	13.2	5.8	NO		NO	bb
5	5 200304P2-7	Standard	12.500	4.00	1358.383	2608.924	6.508	13.6	8.5	NO		NO	bb
6	6 200304P2-8	Standard	12.500	4.00	1126.713	2621.303	5.373	11.2	-10.5	NO		NO	bb
7	7 200304P2-9	Standard	12.500	4.00	1253.748	2629.795	5.959	12.4	-0.7	NO		NO	bb
8	8 200304P2-10	Standard	12.500	4.00	1268.946	2686.450	5.904	12.3	-1.6	NO		NO	bb
9	9 200304P2-11	Standard	12.500	4.00	998.548	2040.663	6.117	12.7	1.9	NO		NO	bb
10	10 200304P2-12	Standard	12.500	3.99	826.518	1686.791	6.125	12.8	2.1	NO		NO	bb

Compound name: 13C5-PFNA-EIS
Response Factor: 867.408
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 200304P2-3	Standard	12.500	4.51	10236.276		10236.276	11.8	-5.6	NO		NO	bbX
2	2 200304P2-4	Standard	12.500	4.51	10902.920		10902.920	12.6	0.6	NO		NO	bbX
3	3 200304P2-5	Standard	12.500	4.51	10857.461		10857.461	12.5	0.1	NO		NO	bbX
4	4 200304P2-6	Standard	12.500	4.51	11028.038		11028.038	12.7	1.7	NO		NO	bbX
5	5 200304P2-7	Standard	12.500	4.51	10389.095		10389.095	12.0	-4.2	NO		NO	bbX
6	6 200304P2-8	Standard	12.500	4.51	10842.604		10842.604	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	4.51	10760.623		10760.623	12.4	-0.8	NO		NO	bbX
8	8 200304P2-10	Standard	12.500	4.51	10669.225		10669.225	12.3	-1.6	NO		NO	bbX
9	9 200304P2-11	Standard	12.500	4.51	8471.279		8471.279	9.8	-21.9	NO		NO	bbX
10	10 200304P2-12	Standard	12.500	4.51	6981.723		6981.723	8.0	-35.6	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C5-PFNA-RSD
Response Factor: 0.934221
RRF SD: 0.0425405, Relative SD: 4.55358
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	200304P2-3	Standard	12.500	4.51	10236.276	11461.869	11.163	11.9	-4.4	NO		NO	bb
2	2	200304P2-4	Standard	12.500	4.51	10902.920	11902.924	11.450	12.3	-2.0	NO		NO	bb
3	3	200304P2-5	Standard	12.500	4.51	10857.461	11445.872	11.857	12.7	1.5	NO		NO	bb
4	4	200304P2-6	Standard	12.500	4.51	11028.038	11926.093	11.559	12.4	-1.0	NO		NO	bb
5	5	200304P2-7	Standard	12.500	4.51	10389.095	12077.129	10.753	11.5	-7.9	NO		NO	bb
6	6	200304P2-8	Standard	12.500	4.51	10842.604	11265.634	12.031	12.9	3.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.51	10760.623	11489.718	11.707	12.5	0.2	NO		NO	bb
8	8	200304P2-10	Standard	12.500	4.51	10669.225	11272.323	11.831	12.7	1.3	NO		NO	bb
9	9	200304P2-11	Standard	12.500	4.51	8471.279	8296.820	12.763	13.7	9.3	NO		NO	bb
10	10	200304P2-12	Standard	12.500	4.51	6981.723	7482.180	11.664	12.5	-0.1	NO		NO	bb

Compound name: 13C8-PFOSA-EIS
Response Factor: 255.32
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	200304P2-3	Standard	12.500	4.56	3240.639		3240.639	12.7	1.5	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	4.56	3221.668		3221.668	12.6	0.9	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	4.56	3272.469		3272.469	12.8	2.5	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	4.56	3442.417		3442.417	13.5	7.9	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	4.56	3379.171		3379.171	13.2	5.9	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	4.56	3191.502		3191.502	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.56	3402.070		3402.070	13.3	6.6	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	4.56	3389.875		3389.875	13.3	6.2	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	4.56	2559.343		2559.343	10.0	-19.8	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	4.56	2031.562		2031.562	8.0	-36.3	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C8-PFOSA-RSD
Response Factor: 0.210843
RRF SD: 0.00807586, Relative SD: 3.83026
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	200304P2-3	Standard	12.500	4.56	3240.639	14942.221	2.711	12.9	2.9	NO		NO	bb
2	2	200304P2-4	Standard	12.500	4.56	3221.668	15394.384	2.616	12.4	-0.7	NO		NO	bb
3	3	200304P2-5	Standard	12.500	4.56	3272.469	15002.663	2.727	12.9	3.5	NO		NO	bb
4	4	200304P2-6	Standard	12.500	4.56	3442.417	16038.360	2.683	12.7	1.8	NO		NO	bb
5	5	200304P2-7	Standard	12.500	4.56	3379.171	16869.279	2.504	11.9	-5.0	NO		NO	bb
6	6	200304P2-8	Standard	12.500	4.56	3191.502	15873.069	2.513	11.9	-4.6	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.56	3402.070	16794.652	2.532	12.0	-3.9	NO		NO	bb
8	8	200304P2-10	Standard	12.500	4.56	3389.875	16182.857	2.618	12.4	-0.6	NO		NO	bb
9	9	200304P2-11	Standard	12.500	4.56	2559.343	11368.781	2.814	13.3	6.8	NO		NO	bb
10	10	200304P2-12	Standard	12.500	4.56	2031.562	9629.320	2.637	12.5	0.1	NO		NO	bb

Compound name: 13C2-PFOA-EIS
Response Factor: 1016.55
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	200304P2-3	Standard	12.500	4.05	11962.581		11962.581	11.8	-5.9	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	4.06	12456.621		12456.621	12.3	-2.0	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	4.05	12396.286		12396.286	12.2	-2.4	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	4.06	12098.559		12098.559	11.9	-4.8	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	4.06	12792.719		12792.719	12.6	0.7	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	4.06	12706.853		12706.853	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.05	12183.001		12183.001	12.0	-4.1	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	4.05	12355.636		12355.636	12.2	-2.8	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	4.06	9696.579		9696.579	9.5	-23.7	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	4.05	7657.978		7657.978	7.5	-39.7	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-PFOA-RSD
Response Factor: 0.821629
RRF SD: 0.0244247, Relative SD: 2.97272
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	200304P2-3	Standard	12.500	4.05	11962.581	14644.351	10.211	12.4	-0.6	NO		NO	bb
2	2	200304P2-4	Standard	12.500	4.06	12456.621	15478.947	10.059	12.2	-2.1	NO		NO	bb
3	3	200304P2-5	Standard	12.500	4.05	12396.286	15183.021	10.206	12.4	-0.6	NO		NO	bb
4	4	200304P2-6	Standard	12.500	4.06	12098.559	15389.105	9.827	12.0	-4.3	NO		NO	bb
5	5	200304P2-7	Standard	12.500	4.06	12792.719	15782.379	10.132	12.3	-1.3	NO		NO	bb
6	6	200304P2-8	Standard	12.500	4.06	12706.853	15318.031	10.369	12.6	1.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.05	12183.001	14917.743	10.208	12.4	-0.6	NO		NO	bb
8	8	200304P2-10	Standard	12.500	4.05	12355.636	15129.512	10.208	12.4	-0.6	NO		NO	bb
9	9	200304P2-11	Standard	12.500	4.06	9696.579	11042.833	10.976	13.4	6.9	NO		NO	bb
10	10	200304P2-12	Standard	12.500	4.05	7657.978	9111.191	10.506	12.8	2.3	NO		NO	bb

Compound name: 13C8-PFOS-EIS
Response Factor: 207.944
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	200304P2-3	Standard	12.500	4.60	2486.245		2486.245	12.0	-4.3	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	4.60	2666.816		2666.816	12.8	2.6	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	4.60	2443.940		2443.940	11.8	-6.0	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	4.60	2726.697		2726.697	13.1	4.9	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	4.60	2631.129		2631.129	12.7	1.2	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	4.60	2599.295		2599.295	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.60	2622.791		2622.791	12.6	0.9	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	4.60	2688.689		2688.689	12.9	3.4	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	4.60	2103.390		2103.390	10.1	-19.1	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	4.60	1625.539		1625.539	7.8	-37.5	NO		NO	MMX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C8-PFOS-RSD
Response Factor: 0.989578
RRF SD: 0.0396599, Relative SD: 4.00776
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	200304P2-3	Standard	12.500	4.60	2486.245	2700.339	11.509	11.6	-7.0	NO		NO	bb
2	2	200304P2-4	Standard	12.500	4.60	2666.816	2645.743	12.600	12.7	1.9	NO		NO	bb
3	3	200304P2-5	Standard	12.500	4.60	2443.940	2613.269	11.690	11.8	-5.5	NO		NO	bb
4	4	200304P2-6	Standard	12.500	4.60	2726.697	2610.713	13.055	13.2	5.5	NO		NO	bb
5	5	200304P2-7	Standard	12.500	4.60	2631.129	2608.924	12.606	12.7	1.9	NO		NO	bb
6	6	200304P2-8	Standard	12.500	4.60	2599.295	2621.303	12.395	12.5	0.2	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.60	2619.232	2629.795	12.450	12.6	0.6	NO		NO	bb
8	8	200304P2-10	Standard	12.500	4.60	2688.689	2686.450	12.510	12.6	1.1	NO		NO	bb
9	9	200304P2-11	Standard	12.500	4.60	2103.390	2040.663	12.884	13.0	4.2	NO		NO	bb
10	10	200304P2-12	Standard	12.500	4.60	1618.980	1686.791	11.997	12.1	-3.0	NO		NO	bb

Compound name: 13C2-PFDA-EIS
Response Factor: 944.999
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	200304P2-3	Standard	12.500	4.90	11630.392		11630.392	12.3	-1.5	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	4.90	12905.041		12905.041	13.7	9.2	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	4.90	11539.324		11539.324	12.2	-2.3	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	4.90	12846.407		12846.407	13.6	8.8	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	4.90	12592.307		12592.307	13.3	6.6	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	4.90	11812.490		11812.490	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.90	12809.952		12809.952	13.6	8.4	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	4.90	11822.187		11822.187	12.5	0.1	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	4.90	9576.072		9576.072	10.1	-18.9	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	4.90	7979.246		7979.246	8.4	-32.5	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-PFDA-RSD
Response Factor: 0.981866
RRF SD: 0.0687978, Relative SD: 7.00684
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	200304P2-3	Standard	12.500	4.90	11630.392	12201.438	11.915	12.1	-2.9	NO		NO	bb
2	2	200304P2-4	Standard	12.500	4.90	12905.041	12128.779	13.300	13.5	8.4	NO		NO	bb
3	3	200304P2-5	Standard	12.500	4.90	11539.324	12931.947	11.154	11.4	-9.1	NO		NO	bb
4	4	200304P2-6	Standard	12.500	4.90	12846.407	14112.664	11.378	11.6	-7.3	NO		NO	bb
5	5	200304P2-7	Standard	12.500	4.90	12592.307	12685.072	12.409	12.6	1.1	NO		NO	bb
6	6	200304P2-8	Standard	12.500	4.90	11812.490	11404.034	12.948	13.2	5.5	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.90	12809.952	13787.399	11.614	11.8	-5.4	NO		NO	bb
8	8	200304P2-10	Standard	12.500	4.90	11822.187	12624.012	11.706	11.9	-4.6	NO		NO	bb
9	9	200304P2-11	Standard	12.500	4.90	9576.072	9506.756	12.591	12.8	2.6	NO		NO	bb
10	10	200304P2-12	Standard	12.500	4.90	7979.246	7270.491	13.719	14.0	11.8	NO		NO	bb

Compound name: 13C2-8:2 FTS-EIS
Response Factor: 87.2626
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	200304P2-3	Standard	12.500	4.87	995.327		995.327	11.4	-8.8	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	4.87	975.824		975.824	11.2	-10.5	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	4.87	1093.071		1093.071	12.5	0.2	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	4.87	1197.075		1197.075	13.7	9.7	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	4.87	1130.040		1130.040	12.9	3.6	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	4.87	1090.783		1090.783	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.87	1073.573		1073.573	12.3	-1.6	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	4.87	1090.699		1090.699	12.5	-0.0	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	4.87	791.861		791.861	9.1	-27.4	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	4.87	717.508		717.508	8.2	-34.2	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-8:2 FTS-RSD
Response Factor: 0.409113
RRF SD: 0.0281574, Relative SD: 6.88253
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 200304P2-3	Standard	12.500	4.87	995.327	2700.339	4.607	11.3	-9.9	NO		NO	bb
2	2 200304P2-4	Standard	12.500	4.87	975.824	2645.743	4.610	11.3	-9.8	NO		NO	bb
3	3 200304P2-5	Standard	12.500	4.87	1093.071	2613.269	5.228	12.8	2.2	NO		NO	bb
4	4 200304P2-6	Standard	12.500	4.87	1197.075	2610.713	5.732	14.0	12.1	NO		NO	bb
5	5 200304P2-7	Standard	12.500	4.87	1130.040	2608.924	5.414	13.2	5.9	NO		NO	bb
6	6 200304P2-8	Standard	12.500	4.87	1090.783	2621.303	5.202	12.7	1.7	NO		NO	bb
7	7 200304P2-9	Standard	12.500	4.87	1073.573	2629.795	5.103	12.5	-0.2	NO		NO	bb
8	8 200304P2-10	Standard	12.500	4.87	1090.699	2686.450	5.075	12.4	-0.8	NO		NO	bb
9	9 200304P2-11	Standard	12.500	4.87	791.861	2040.663	4.851	11.9	-5.2	NO		NO	bb
10	10 200304P2-12	Standard	12.500	4.87	717.508	1686.791	5.317	13.0	4.0	NO		NO	bb

Compound name: d3-N-MeFOSAA-EIS
Response Factor: 195.067
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 200304P2-3	Standard	12.500	5.06	2518.952		2518.952	12.9	3.3	NO		NO	bbX
2	2 200304P2-4	Standard	12.500	5.06	2322.667		2322.667	11.9	-4.7	NO		NO	bbX
3	3 200304P2-5	Standard	12.500	5.05	2473.148		2473.148	12.7	1.4	NO		NO	bbX
4	4 200304P2-6	Standard	12.500	5.05	2658.003		2658.003	13.6	9.0	NO		NO	bbX
5	5 200304P2-7	Standard	12.500	5.06	2450.393		2450.393	12.6	0.5	NO		NO	bbX
6	6 200304P2-8	Standard	12.500	5.05	2438.336		2438.336	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	5.06	2613.591		2613.591	13.4	7.2	NO		NO	bbX
8	8 200304P2-10	Standard	12.500	5.06	2709.132		2709.132	13.9	11.1	NO		NO	bbX
9	9 200304P2-11	Standard	12.500	5.06	1918.110		1918.110	9.8	-21.3	NO		NO	bbX
10	10 200304P2-12	Standard	12.500	5.05	1663.858		1663.858	8.5	-31.8	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: d3-N-MeFOSAA-RSD
Response Factor: 0.161344
RRF SD: 0.00923051, Relative SD: 5.72101
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	200304P2-3	Standard	12.500	5.06	2518.952	14942.221	2.107	13.1	4.5	NO		NO	bb
2	2	200304P2-4	Standard	12.500	5.06	2322.667	15394.384	1.886	11.7	-6.5	NO		NO	bb
3	3	200304P2-5	Standard	12.500	5.05	2473.148	15002.663	2.061	12.8	2.2	NO		NO	bb
4	4	200304P2-6	Standard	12.500	5.05	2658.003	16038.360	2.072	12.8	2.7	NO		NO	bb
5	5	200304P2-7	Standard	12.500	5.06	2450.393	16869.279	1.816	11.3	-10.0	NO		NO	bb
6	6	200304P2-8	Standard	12.500	5.05	2438.336	15873.069	1.920	11.9	-4.8	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.06	2613.591	16794.652	1.945	12.1	-3.5	NO		NO	bb
8	8	200304P2-10	Standard	12.500	5.06	2709.132	16182.857	2.093	13.0	3.8	NO		NO	bb
9	9	200304P2-11	Standard	12.500	5.06	1918.110	11368.781	2.109	13.1	4.6	NO		NO	bb
10	10	200304P2-12	Standard	12.500	5.05	1663.858	9629.320	2.160	13.4	7.1	NO		NO	bb

Compound name: 13C2-PFUdA-EIS
Response Factor: 1226.69
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	200304P2-3	Standard	12.500	5.23	13986.149		13986.149	11.4	-8.8	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	5.23	14588.602		14588.602	11.9	-4.9	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	5.23	15326.997		15326.997	12.5	-0.0	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	5.24	15895.778		15895.778	13.0	3.7	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	5.24	16044.878		16044.878	13.1	4.6	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	5.24	15333.686		15333.686	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.23	14660.305		14660.305	12.0	-4.4	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	5.23	15577.330		15577.330	12.7	1.6	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	5.24	11464.172		11464.172	9.3	-25.2	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	5.23	9535.332		9535.332	7.8	-37.8	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-PFUdA-RSD
Response Factor: 0.964768
RRF SD: 0.0424609, Relative SD: 4.40116
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	200304P2-3	Standard	12.500	5.23	13986.149	14942.221	11.700	12.1	-3.0	NO		NO	bb
2	2	200304P2-4	Standard	12.500	5.23	14588.602	15394.384	11.846	12.3	-1.8	NO		NO	bb
3	3	200304P2-5	Standard	12.500	5.23	15326.997	15002.663	12.770	13.2	5.9	NO		NO	bb
4	4	200304P2-6	Standard	12.500	5.24	15895.778	16038.360	12.389	12.8	2.7	NO		NO	bb
5	5	200304P2-7	Standard	12.500	5.24	16044.878	16869.279	11.889	12.3	-1.4	NO		NO	bb
6	6	200304P2-8	Standard	12.500	5.24	15333.686	15873.069	12.075	12.5	0.1	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.23	14660.305	16794.652	10.911	11.3	-9.5	NO		NO	bb
8	8	200304P2-10	Standard	12.500	5.23	15577.330	16182.857	12.032	12.5	-0.2	NO		NO	bb
9	9	200304P2-11	Standard	12.500	5.24	11464.172	11368.781	12.605	13.1	4.5	NO		NO	bb
10	10	200304P2-12	Standard	12.500	5.23	9535.332	9629.320	12.378	12.8	2.6	NO		NO	bb

Compound name: d5-N-EtFOSAA-EIS
Response Factor: 288.034
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	200304P2-3	Standard	12.500	5.22	3589.006		3589.006	12.5	-0.3	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	5.22	3786.040		3786.040	13.1	5.2	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	5.22	3572.632		3572.632	12.4	-0.8	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	5.21	3638.702		3638.702	12.6	1.1	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	5.22	3747.157		3747.157	13.0	4.1	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	5.22	3600.419		3600.419	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.22	3572.146		3572.146	12.4	-0.8	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	5.21	3581.539		3581.539	12.4	-0.5	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	5.21	2503.029		2503.029	8.7	-30.5	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	5.21	2174.078		2174.078	7.5	-39.6	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: d5-N-EtFOSAA-RSD
Response Factor: 0.228005
RRF SD: 0.0103029, Relative SD: 4.51874
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	200304P2-3	Standard	12.500	5.22	3589.006	14942.221	3.002	13.2	5.3	NO		NO	bb
2	2	200304P2-4	Standard	12.500	5.22	3786.040	15394.384	3.074	13.5	7.9	NO		NO	bb
3	3	200304P2-5	Standard	12.500	5.22	3572.632	15002.663	2.977	13.1	4.4	NO		NO	bb
4	4	200304P2-6	Standard	12.500	5.21	3638.702	16038.360	2.836	12.4	-0.5	NO		NO	bb
5	5	200304P2-7	Standard	12.500	5.22	3747.157	16869.279	2.777	12.2	-2.6	NO		NO	bb
6	6	200304P2-8	Standard	12.500	5.22	3600.419	15873.069	2.835	12.4	-0.5	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.22	3572.146	16794.652	2.659	11.7	-6.7	NO		NO	bb
8	8	200304P2-10	Standard	12.500	5.21	3581.539	16182.857	2.766	12.1	-2.9	NO		NO	bb
9	9	200304P2-11	Standard	12.500	5.21	2503.029	11368.781	2.752	12.1	-3.4	NO		NO	bb
10	10	200304P2-12	Standard	12.500	5.21	2174.078	9629.320	2.822	12.4	-1.0	NO		NO	bb

Compound name: 13C2-PFDoA-EIS
Response Factor: 1212.02
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	200304P2-3	Standard	12.500	5.52	14975.688		14975.688	12.4	-1.2	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	5.52	15521.729		15521.729	12.8	2.5	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	5.52	15446.988		15446.988	12.7	2.0	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	5.52	15279.108		15279.108	12.6	0.9	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	5.52	16333.823		16333.823	13.5	7.8	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	5.52	15150.304		15150.304	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.52	15336.411		15336.411	12.7	1.2	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	5.52	16243.715		16243.715	13.4	7.2	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	5.52	12775.509		12775.509	10.5	-15.7	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	5.52	9780.345		9780.345	8.1	-35.4	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-PFDoA-RSD
Response Factor: 1.24885
RRF SD: 0.0932247, Relative SD: 7.46483
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	200304P2-3	Standard	12.500	5.52	14975.688	12201.438	15.342	12.3	-1.7	NO		NO	bb
2	2	200304P2-4	Standard	12.500	5.52	15521.729	12128.779	15.997	12.8	2.5	NO		NO	bb
3	3	200304P2-5	Standard	12.500	5.52	15446.988	12931.947	14.931	12.0	-4.4	NO		NO	bb
4	4	200304P2-6	Standard	12.500	5.52	15279.108	14112.664	13.533	10.8	-13.3	NO		NO	bb
5	5	200304P2-7	Standard	12.500	5.52	16333.823	12685.072	16.096	12.9	3.1	NO		NO	bb
6	6	200304P2-8	Standard	12.500	5.52	15150.304	11404.034	16.606	13.3	6.4	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.52	15336.411	13787.399	13.904	11.1	-10.9	NO		NO	bb
8	8	200304P2-10	Standard	12.500	5.52	16243.715	12624.012	16.084	12.9	3.0	NO		NO	bb
9	9	200304P2-11	Standard	12.500	5.52	12775.509	9506.756	16.798	13.5	7.6	NO		NO	bb
10	10	200304P2-12	Standard	12.500	5.52	9780.345	7270.491	16.815	13.5	7.7	NO		NO	bb

Compound name: 13C2-10:2 FTS-EIS
Response Factor: 57.2063
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	200304P2-3	Standard	12.500	5.51	761.356		761.356	13.3	6.5	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	5.50	893.221		893.221	15.6	24.9	NO		NO	bbX
3	3	200304P2-5	Standard	12.500	5.50	801.870		801.870	14.0	12.1	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	5.50	771.722		771.722	13.5	7.9	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	5.51	810.089		810.089	14.2	13.3	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	5.50	715.079		715.079	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.50	676.500		676.500	11.8	-5.4	NO		NO	MMX
8	8	200304P2-10	Standard	12.500	5.50	730.327		730.327	12.8	2.1	NO		NO	MMX
9	9	200304P2-11	Standard	12.500	5.50	552.938		552.938	9.7	-22.7	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	5.50	425.490		425.490	7.4	-40.5	YES		NO	MMX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-10:2 FTS-RSD
Response Factor: 0.285593
RRF SD: 0.026844, Relative SD: 9.39939
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	200304P2-3	Standard	12.500	5.51	761.356	2700.339	3.524	12.3	-1.3	NO		NO	bb
2	2	200304P2-4	Standard	12.500	5.50	893.221	2645.743	4.220	14.8	18.2	NO		NO	bb
3	3	200304P2-5	Standard	12.500	5.50	801.870	2613.269	3.836	13.4	7.4	NO		NO	bb
4	4	200304P2-6	Standard	12.500	5.50	771.722	2610.713	3.695	12.9	3.5	NO		NO	bb
5	5	200304P2-7	Standard	12.500	5.51	810.089	2608.924	3.881	13.6	8.7	NO		NO	bb
6	6	200304P2-8	Standard	12.500	5.50	715.079	2621.303	3.410	11.9	-4.5	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.50	675.903	2629.795	3.213	11.2	-10.0	NO		NO	MM
8	8	200304P2-10	Standard	12.500	5.50	730.339	2686.450	3.398	11.9	-4.8	NO		NO	MM
9	9	200304P2-11	Standard	12.500	5.50	552.938	2040.663	3.387	11.9	-5.1	NO		NO	bb
10	10	200304P2-12	Standard	12.500	5.50	423.033	1686.791	3.135	11.0	-12.2	NO		NO	MM

Compound name: d3-N-MeFOSA-EIS
Response Factor: 84.0557
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	200304P2-3	Standard	149.200	5.55	12411.970		12411.970	147.7	-1.0	NO		NO	bbX
2	2	200304P2-4	Standard	149.200	5.55	13206.982		13206.982	157.1	5.3	NO		NO	MMX
3	3	200304P2-5	Standard	149.200	5.55	13376.281		13376.281	159.1	6.7	NO		NO	bbX
4	4	200304P2-6	Standard	149.200	5.55	13200.816		13200.816	157.0	5.3	NO		NO	bbX
5	5	200304P2-7	Standard	149.200	5.55	13332.186		13332.186	158.6	6.3	NO		NO	bbX
6	6	200304P2-8	Standard	149.200	5.55	12541.115		12541.115	149.2	0.0	NO		NO	bb
7	7	200304P2-9	Standard	149.200	5.55	13452.481		13452.481	160.0	7.3	NO		NO	bbX
8	8	200304P2-10	Standard	149.200	5.55	13400.754		13400.754	159.4	6.9	NO		NO	MMX
9	9	200304P2-11	Standard	149.200	5.55	10719.670		10719.670	127.5	-14.5	NO		NO	bbX
10	10	200304P2-12	Standard	149.200	5.55	8985.102		8985.102	106.9	-28.4	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: d3-N-MeFOSA-RSD
Response Factor: 0.0712065
RRF SD: 0.00469218, Relative SD: 6.58954
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 200304P2-3	Standard	149.200	5.55	12411.970	14942.221	10.383	145.8	-2.3	NO		NO	bb
2	2 200304P2-4	Standard	149.200	5.55	13248.598	15394.384	10.758	151.1	1.3	NO		NO	bd
3	3 200304P2-5	Standard	149.200	5.55	13376.281	15002.663	11.145	156.5	4.9	NO		NO	bb
4	4 200304P2-6	Standard	149.200	5.55	13200.816	16038.360	10.288	144.5	-3.2	NO		NO	bb
5	5 200304P2-7	Standard	149.200	5.55	13332.186	16869.279	9.879	138.7	-7.0	NO		NO	bb
6	6 200304P2-8	Standard	149.200	5.55	12541.115	15873.069	9.876	138.7	-7.0	NO		NO	bb
7	7 200304P2-9	Standard	149.200	5.55	13452.481	16794.652	10.012	140.6	-5.8	NO		NO	bb
8	8 200304P2-10	Standard	149.200	5.55	13526.464	16182.857	10.448	146.7	-1.7	NO		NO	bd
9	9 200304P2-11	Standard	149.200	5.55	10719.670	11368.781	11.786	165.5	10.9	NO		NO	bb
10	10 200304P2-12	Standard	149.200	5.55	8985.102	9629.320	11.664	163.8	9.8	NO		NO	bb

Compound name: 13C2-PFTeDA-EIS
Response Factor: 1069.28
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 200304P2-3	Standard	12.500	5.99	12643.240		12643.240	11.8	-5.4	NO		NO	bbX
2	2 200304P2-4	Standard	12.500	5.99	13202.983		13202.983	12.3	-1.2	NO		NO	bbX
3	3 200304P2-5	Standard	12.500	5.99	14128.079		14128.079	13.2	5.7	NO		NO	bbX
4	4 200304P2-6	Standard	12.500	5.99	13911.713		13911.713	13.0	4.1	NO		NO	bbX
5	5 200304P2-7	Standard	12.500	5.99	14095.519		14095.519	13.2	5.5	NO		NO	bbX
6	6 200304P2-8	Standard	12.500	5.99	13365.991		13365.991	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	5.99	13432.020		13432.020	12.6	0.5	NO		NO	bbX
8	8 200304P2-10	Standard	12.500	5.99	12597.357		12597.357	11.8	-5.8	NO		NO	bbX
9	9 200304P2-11	Standard	12.500	5.99	10018.346		10018.346	9.4	-25.0	NO		NO	bbX
10	10 200304P2-12	Standard	12.500	5.99	7300.786		7300.786	6.8	-45.4	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-PFTeDA-RSD
Response Factor: 0.840346
RRF SD: 0.0529478, Relative SD: 6.30072
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	200304P2-3	Standard	12.500	5.99	12573.312	14942.221	10.518	12.5	0.1	NO		NO	MM
2	2	200304P2-4	Standard	12.500	5.99	13202.983	15394.384	10.721	12.8	2.1	NO		NO	bb
3	3	200304P2-5	Standard	12.500	5.99	14128.079	15002.663	11.771	14.0	12.1	NO		NO	bb
4	4	200304P2-6	Standard	12.500	5.99	13911.713	16038.360	10.843	12.9	3.2	NO		NO	bb
5	5	200304P2-7	Standard	12.500	5.99	14095.519	16869.279	10.445	12.4	-0.6	NO		NO	bb
6	6	200304P2-8	Standard	12.500	5.99	13365.991	15873.069	10.526	12.5	0.2	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.99	13432.020	16794.652	9.997	11.9	-4.8	NO		NO	bb
8	8	200304P2-10	Standard	12.500	5.99	12597.357	16182.857	9.730	11.6	-7.4	NO		NO	bb
9	9	200304P2-11	Standard	12.500	5.99	10018.346	11368.781	11.015	13.1	4.9	NO		NO	bb
10	10	200304P2-12	Standard	12.500	5.99	7300.786	9629.320	9.477	11.3	-9.8	NO		NO	bb

Compound name: d5-N-ETFOSA-EIS
Response Factor: 145.419
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	200304P2-3	Standard	149.200	6.01	21034.195		21034.195	144.6	-3.1	NO		NO	bbX
2	2	200304P2-4	Standard	149.200	6.01	21302.590		21302.590	146.5	-1.8	NO		NO	bbX
3	3	200304P2-5	Standard	149.200	6.01	21913.150		21913.150	150.7	1.0	NO		NO	bbX
4	4	200304P2-6	Standard	149.200	6.01	21527.838		21527.838	148.0	-0.8	NO		NO	bbX
5	5	200304P2-7	Standard	149.200	6.01	22135.055		22135.055	152.2	2.0	NO		NO	bbX
6	6	200304P2-8	Standard	149.200	6.01	21696.475		21696.475	149.2	0.0	NO		NO	bb
7	7	200304P2-9	Standard	149.200	6.01	21505.869		21505.869	147.9	-0.9	NO		NO	bbX
8	8	200304P2-10	Standard	149.200	6.01	20927.984		20927.984	143.9	-3.5	NO		NO	bbX
9	9	200304P2-11	Standard	149.200	6.01	16088.674		16088.674	110.6	-25.8	NO		NO	bbX
10	10	200304P2-12	Standard	149.200	6.01	13277.647		13277.647	91.3	-38.8	NO		NO	bbX

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: d5-N-ETFOSA-RSD
Response Factor: 0.114286
RRF SD: 0.00480655, Relative SD: 4.20571
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	200304P2-3	Standard	149.200	6.01	21034.195	14942.221	17.596	154.0	3.2	NO		NO	bb
2	2	200304P2-4	Standard	149.200	6.01	21302.590	15394.384	17.297	151.4	1.4	NO		NO	bb
3	3	200304P2-5	Standard	149.200	6.01	21913.150	15002.663	18.258	159.8	7.1	NO		NO	bb
4	4	200304P2-6	Standard	149.200	6.01	21527.838	16038.360	16.778	146.8	-1.6	NO		NO	bb
5	5	200304P2-7	Standard	149.200	6.01	22135.055	16869.279	16.402	143.5	-3.8	NO		NO	bb
6	6	200304P2-8	Standard	149.200	6.01	21696.475	15873.069	17.086	149.5	0.2	NO		NO	bb
7	7	200304P2-9	Standard	149.200	6.01	21505.869	16794.652	16.006	140.1	-6.1	NO		NO	bb
8	8	200304P2-10	Standard	149.200	6.01	20927.984	16182.857	16.165	141.4	-5.2	NO		NO	bb
9	9	200304P2-11	Standard	149.200	6.01	16088.674	11368.781	17.690	154.8	3.7	NO		NO	bb
10	10	200304P2-12	Standard	149.200	6.01	13277.647	9629.320	17.236	150.8	1.1	NO		NO	bb

Compound name: 13C2-PFHxDA-EIS
Response Factor: 1682.8
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	200304P2-3	Standard	12.500	6.34	20568.721		20568.721	12.2	-2.2	NO		NO	bbX
2	2	200304P2-4	Standard	12.500	6.34	20939.432		20939.432	12.4	-0.5	NO		NO	MMX
3	3	200304P2-5	Standard	12.500	6.34	20448.461		20448.461	12.2	-2.8	NO		NO	bbX
4	4	200304P2-6	Standard	12.500	6.34	20766.674		20766.674	12.3	-1.3	NO		NO	bbX
5	5	200304P2-7	Standard	12.500	6.34	20828.457		20828.457	12.4	-1.0	NO		NO	bbX
6	6	200304P2-8	Standard	12.500	6.34	21034.990		21034.990	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	6.34	20219.934		20219.934	12.0	-3.9	NO		NO	bbX
8	8	200304P2-10	Standard	12.500	6.34	20536.414		20536.414	12.2	-2.4	NO		NO	bbX
9	9	200304P2-11	Standard	12.500	6.34	16218.968		16218.968	9.6	-22.9	NO		NO	bbX
10	10	200304P2-12	Standard	12.500	6.34	12823.098		12823.098	7.6	-39.0	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C2-PFHxDA-RSD
Response Factor: 1.31879
RRF SD: 0.0685866, Relative SD: 5.20072
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	200304P2-3	Standard	12.500	6.34	20568.721	14942.221	17.207	13.0	4.4	NO		NO	bb
2	2	200304P2-4	Standard	12.500	6.34	20973.158	15394.384	17.030	12.9	3.3	NO		NO	bd
3	3	200304P2-5	Standard	12.500	6.34	20448.461	15002.663	17.037	12.9	3.4	NO		NO	bb
4	4	200304P2-6	Standard	12.500	6.34	20766.674	16038.360	16.185	12.3	-1.8	NO		NO	bb
5	5	200304P2-7	Standard	12.500	6.34	20828.457	16869.279	15.434	11.7	-6.4	NO		NO	bb
6	6	200304P2-8	Standard	12.500	6.34	21034.990	15873.069	16.565	12.6	0.5	NO		NO	bb
7	7	200304P2-9	Standard	12.500	6.34	20219.934	16794.652	15.049	11.4	-8.7	NO		NO	bb
8	8	200304P2-10	Standard	12.500	6.34	20536.414	16182.857	15.863	12.0	-3.8	NO		NO	bb
9	9	200304P2-11	Standard	12.500	6.34	16218.968	11368.781	17.833	13.5	8.2	NO		NO	bb
10	10	200304P2-12	Standard	12.500	6.34	12823.098	9629.320	16.646	12.6	1.0	NO		NO	bb

Compound name: d7-N-MeFOSE-EIS
Response Factor: 134.148
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	200304P2-3	Standard	149.200	6.24	18841.561		18841.561	140.5	-5.9	NO		NO	bbX
2	2	200304P2-4	Standard	149.200	6.24	18907.783		18907.783	140.9	-5.5	NO		NO	bbX
3	3	200304P2-5	Standard	149.200	6.24	18921.934		18921.934	141.1	-5.5	NO		NO	bbX
4	4	200304P2-6	Standard	149.200	6.24	19029.912		19029.912	141.9	-4.9	NO		NO	bbX
5	5	200304P2-7	Standard	149.200	6.24	19414.918		19414.918	144.7	-3.0	NO		NO	bbX
6	6	200304P2-8	Standard	149.200	6.24	20014.893		20014.893	149.2	0.0	NO		NO	bb
7	7	200304P2-9	Standard	149.200	6.24	19361.348		19361.348	144.3	-3.3	NO		NO	bbX
8	8	200304P2-10	Standard	149.200	6.24	19294.727		19294.727	143.8	-3.6	NO		NO	bbX
9	9	200304P2-11	Standard	149.200	6.24	15920.189		15920.189	118.7	-20.5	NO		NO	bbX
10	10	200304P2-12	Standard	149.200	6.24	13181.493		13181.493	98.3	-34.1	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: d7-N-MeFOSE-RSD
Response Factor: 0.104416
RRF SD: 0.00706848, Relative SD: 6.76951
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 200304P2-3	Standard	149.200	6.24	18841.561	14942.221	15.762	151.0	1.2	NO		NO	bb
2	2 200304P2-4	Standard	149.200	6.24	18907.783	15394.384	15.353	147.0	-1.5	NO		NO	bb
3	3 200304P2-5	Standard	149.200	6.24	18921.934	15002.663	15.765	151.0	1.2	NO		NO	bb
4	4 200304P2-6	Standard	149.200	6.24	19029.912	16038.360	14.832	142.0	-4.8	NO		NO	bb
5	5 200304P2-7	Standard	149.200	6.24	19414.918	16869.279	14.386	137.8	-7.7	NO		NO	bb
6	6 200304P2-8	Standard	149.200	6.24	20014.893	15873.069	15.762	151.0	1.2	NO		NO	bb
7	7 200304P2-9	Standard	149.200	6.24	19361.348	16794.652	14.410	138.0	-7.5	NO		NO	bb
8	8 200304P2-10	Standard	149.200	6.24	19294.727	16182.857	14.904	142.7	-4.3	NO		NO	bb
9	9 200304P2-11	Standard	149.200	6.24	15920.189	11368.781	17.504	167.6	12.4	NO		NO	bb
10	10 200304P2-12	Standard	149.200	6.24	13181.493	9629.320	17.111	163.9	9.8	NO		NO	bb

Compound name: d9-N-EtFOSE-EIS
Response Factor: 151.768
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 200304P2-3	Standard	149.200	6.39	21483.859		21483.859	141.6	-5.1	NO		NO	bbX
2	2 200304P2-4	Standard	149.200	6.39	21706.154		21706.154	143.0	-4.1	NO		NO	bbX
3	3 200304P2-5	Standard	149.200	6.39	22207.584		22207.584	146.3	-1.9	NO		NO	bbX
4	4 200304P2-6	Standard	149.200	6.39	22550.350		22550.350	148.6	-0.4	NO		NO	bbX
5	5 200304P2-7	Standard	149.200	6.39	22518.729		22518.729	148.4	-0.6	NO		NO	bbX
6	6 200304P2-8	Standard	149.200	6.39	22643.750		22643.750	149.2	0.0	NO		NO	bb
7	7 200304P2-9	Standard	149.200	6.39	22333.270		22333.270	147.2	-1.4	NO		NO	bbX
8	8 200304P2-10	Standard	149.200	6.39	22022.555		22022.555	145.1	-2.7	NO		NO	bbX
9	9 200304P2-11	Standard	149.200	6.39	17761.475		17761.475	117.0	-21.6	NO		NO	bbX
10	10 200304P2-12	Standard	149.200	6.39	14666.474		14666.474	96.6	-35.2	NO		NO	bbX

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: d9-N-EtFOSE-RSD
Response Factor: 0.119567
RRF SD: 0.0064614, Relative SD: 5.40398
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 200304P2-3	Standard	149.200	6.39	21483.859	14942.221	17.972	150.3	0.7	NO		NO	bb
2	2 200304P2-4	Standard	149.200	6.39	21706.154	15394.384	17.625	147.4	-1.2	NO		NO	bb
3	3 200304P2-5	Standard	149.200	6.39	22207.584	15002.663	18.503	154.7	3.7	NO		NO	bb
4	4 200304P2-6	Standard	149.200	6.39	22550.350	16038.360	17.575	147.0	-1.5	NO		NO	bb
5	5 200304P2-7	Standard	149.200	6.39	22518.729	16869.279	16.686	139.6	-6.5	NO		NO	bb
6	6 200304P2-8	Standard	149.200	6.39	22643.750	15873.069	17.832	149.1	-0.0	NO		NO	bb
7	7 200304P2-9	Standard	149.200	6.39	22333.270	16794.652	16.622	139.0	-6.8	NO		NO	bb
8	8 200304P2-10	Standard	149.200	6.39	22022.555	16182.857	17.011	142.3	-4.6	NO		NO	bb
9	9 200304P2-11	Standard	149.200	6.39	17761.475	11368.781	19.529	163.3	9.5	NO		NO	bb
10	10 200304P2-12	Standard	149.200	6.39	14666.474	9629.320	19.039	159.2	6.7	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 200304P2-3	Standard	12.500	1.23	5526.569	5526.569	12.500	12.5	0.0	NO		NO	bb
2	2 200304P2-4	Standard	12.500	1.23	5829.053	5829.053	12.500	12.5	0.0	NO		NO	MM
3	3 200304P2-5	Standard	12.500	1.23	5658.267	5658.267	12.500	12.5	0.0	NO		NO	bb
4	4 200304P2-6	Standard	12.500	1.23	5755.885	5755.885	12.500	12.5	0.0	NO		NO	MM
5	5 200304P2-7	Standard	12.500	1.23	5735.158	5735.158	12.500	12.5	0.0	NO		NO	bb
6	6 200304P2-8	Standard	12.500	1.23	5718.201	5718.201	12.500	12.5	0.0	NO		NO	MM
7	7 200304P2-9	Standard	12.500	1.23	5839.218	5839.218	12.500	12.5	0.0	NO		NO	bb
8	8 200304P2-10	Standard	12.500	1.23	5921.604	5921.604	12.500	12.5	0.0	NO		NO	MM
9	9 200304P2-11	Standard	12.500	1.23	4526.713	4526.713	12.500	12.5	0.0	NO		NO	MM
10	10 200304P2-12	Standard	12.500	1.23	3917.625	3917.625	12.500	12.5	0.0	NO		NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C5-PFHxA
Response Factor: 1
RRF SD: 9.06493e-017, Relative SD: 9.06493e-015
Response type: Internal Std (Ref 100), 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	200304P2-3	Standard	12.500	2.94	13804.979	13804.979	12.500	12.5	0.0	NO		NO	bb
2	2	200304P2-4	Standard	12.500	2.94	15035.333	15035.333	12.500	12.5	0.0	NO		NO	bb
3	3	200304P2-5	Standard	12.500	2.94	14964.110	14964.110	12.500	12.5	0.0	NO		NO	bb
4	4	200304P2-6	Standard	12.500	2.94	14885.100	14885.100	12.500	12.5	0.0	NO		NO	bb
5	5	200304P2-7	Standard	12.500	2.94	14761.557	14761.557	12.500	12.5	0.0	NO		NO	bb
6	6	200304P2-8	Standard	12.500	2.94	14681.915	14681.915	12.500	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	2.94	14929.965	14929.965	12.500	12.5	0.0	NO		NO	bb
8	8	200304P2-10	Standard	12.500	2.94	14616.780	14616.780	12.500	12.5	0.0	NO		NO	bb
9	9	200304P2-11	Standard	12.500	2.94	11536.978	11536.978	12.500	12.5	0.0	NO		NO	bb
10	10	200304P2-12	Standard	12.500	2.94	9647.108	9647.108	12.500	12.5	0.0	NO		NO	bb

Compound name: 18O2-PFHxS
Response Factor: 1
RRF SD: 0, Relative SD: 0
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	200304P2-3	Standard	12.500	3.67	989.156	989.156	12.500	12.5	0.0	NO		NO	bb
2	2	200304P2-4	Standard	12.500	3.68	956.648	956.648	12.500	12.5	0.0	NO		NO	bb
3	3	200304P2-5	Standard	12.500	3.68	948.934	948.934	12.500	12.5	0.0	NO		NO	bb
4	4	200304P2-6	Standard	12.500	3.68	1004.360	1004.360	12.500	12.5	0.0	NO		NO	bb
5	5	200304P2-7	Standard	12.500	3.68	1006.445	1006.445	12.500	12.5	0.0	NO		NO	bb
6	6	200304P2-8	Standard	12.500	3.68	971.809	971.809	12.500	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	3.67	961.273	961.273	12.500	12.5	0.0	NO		NO	bb
8	8	200304P2-10	Standard	12.500	3.68	900.798	900.798	12.500	12.5	0.0	NO		NO	bb
9	9	200304P2-11	Standard	12.500	3.68	756.725	756.725	12.500	12.5	0.0	NO		NO	bb
10	10	200304P2-12	Standard	12.500	3.67	669.401	669.401	12.500	12.5	0.0	NO		NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C8-PFOA
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 200304P2-3	Standard	12.500	4.05	14644.351	14644.351	12.500	12.5	0.0	NO		NO	bb
2	2 200304P2-4	Standard	12.500	4.05	15478.947	15478.947	12.500	12.5	0.0	NO		NO	bb
3	3 200304P2-5	Standard	12.500	4.05	15183.021	15183.021	12.500	12.5	0.0	NO		NO	bb
4	4 200304P2-6	Standard	12.500	4.05	15389.105	15389.105	12.500	12.5	0.0	NO		NO	bb
5	5 200304P2-7	Standard	12.500	4.05	15782.379	15782.379	12.500	12.5	0.0	NO		NO	bb
6	6 200304P2-8	Standard	12.500	4.05	15318.031	15318.031	12.500	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	4.05	14917.743	14917.743	12.500	12.5	0.0	NO		NO	bb
8	8 200304P2-10	Standard	12.500	4.06	15129.512	15129.512	12.500	12.5	0.0	NO		NO	bb
9	9 200304P2-11	Standard	12.500	4.06	11042.833	11042.833	12.500	12.5	0.0	NO		NO	bb
10	10 200304P2-12	Standard	12.500	4.05	9111.191	9111.191	12.500	12.5	0.0	NO		NO	bb

Compound name: 13C9-PFNA
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 200304P2-3	Standard	12.500	4.51	11461.869	11461.869	12.500	12.5	0.0	NO		NO	bb
2	2 200304P2-4	Standard	12.500	4.51	11902.924	11902.924	12.500	12.5	0.0	NO		NO	bb
3	3 200304P2-5	Standard	12.500	4.51	11445.872	11445.872	12.500	12.5	0.0	NO		NO	bb
4	4 200304P2-6	Standard	12.500	4.51	11926.093	11926.093	12.500	12.5	0.0	NO		NO	bb
5	5 200304P2-7	Standard	12.500	4.51	12077.129	12077.129	12.500	12.5	0.0	NO		NO	bb
6	6 200304P2-8	Standard	12.500	4.51	11265.634	11265.634	12.500	12.5	0.0	NO		NO	bb
7	7 200304P2-9	Standard	12.500	4.51	11489.718	11489.718	12.500	12.5	0.0	NO		NO	bb
8	8 200304P2-10	Standard	12.500	4.51	11272.323	11272.323	12.500	12.5	0.0	NO		NO	bb
9	9 200304P2-11	Standard	12.500	4.51	8296.820	8296.820	12.500	12.5	0.0	NO		NO	bb
10	10 200304P2-12	Standard	12.500	4.51	7482.180	7482.180	12.500	12.5	0.0	NO		NO	bb

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C4-PFOS
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	200304P2-3	Standard	12.500	4.60	2700.339	2700.339	12.500	12.5	0.0	NO		NO	bb
2	2	200304P2-4	Standard	12.500	4.60	2645.743	2645.743	12.500	12.5	0.0	NO		NO	bb
3	3	200304P2-5	Standard	12.500	4.60	2613.269	2613.269	12.500	12.5	0.0	NO		NO	bb
4	4	200304P2-6	Standard	12.500	4.60	2610.713	2610.713	12.500	12.5	0.0	NO		NO	bb
5	5	200304P2-7	Standard	12.500	4.60	2608.924	2608.924	12.500	12.5	0.0	NO		NO	bb
6	6	200304P2-8	Standard	12.500	4.60	2621.303	2621.303	12.500	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.60	2629.795	2629.795	12.500	12.5	0.0	NO		NO	bb
8	8	200304P2-10	Standard	12.500	4.60	2686.450	2686.450	12.500	12.5	0.0	NO		NO	bb
9	9	200304P2-11	Standard	12.500	4.60	2040.663	2040.663	12.500	12.5	0.0	NO		NO	bb
10	10	200304P2-12	Standard	12.500	4.60	1686.791	1686.791	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 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	200304P2-3	Standard	12.500	4.90	12201.438	12201.438	12.500	12.5	0.0	NO		NO	bb
2	2	200304P2-4	Standard	12.500	4.90	12128.779	12128.779	12.500	12.5	0.0	NO		NO	bb
3	3	200304P2-5	Standard	12.500	4.90	12931.947	12931.947	12.500	12.5	0.0	NO		NO	bb
4	4	200304P2-6	Standard	12.500	4.90	14112.664	14112.664	12.500	12.5	0.0	NO		NO	bb
5	5	200304P2-7	Standard	12.500	4.90	12685.072	12685.072	12.500	12.5	0.0	NO		NO	bb
6	6	200304P2-8	Standard	12.500	4.90	11404.034	11404.034	12.500	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	4.90	13787.399	13787.399	12.500	12.5	0.0	NO		NO	bb
8	8	200304P2-10	Standard	12.500	4.91	12624.012	12624.012	12.500	12.5	0.0	NO		NO	bb
9	9	200304P2-11	Standard	12.500	4.90	9506.756	9506.756	12.500	12.5	0.0	NO		NO	bb
10	10	200304P2-12	Standard	12.500	4.90	7270.491	7270.491	12.500	12.5	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:01:06 Pacific Standard Time

Compound name: 13C7-PFUdA
Response Factor: 1
RRF SD: 1.17028e-016, Relative SD: 1.17028e-014
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	200304P2-3	Standard	12.500	5.23	14942.221	14942.221	12.500	12.5	0.0	NO		NO	bb
2	2	200304P2-4	Standard	12.500	5.23	15394.384	15394.384	12.500	12.5	0.0	NO		NO	bb
3	3	200304P2-5	Standard	12.500	5.23	15002.663	15002.663	12.500	12.5	0.0	NO		NO	bb
4	4	200304P2-6	Standard	12.500	5.23	16038.360	16038.360	12.500	12.5	0.0	NO		NO	bb
5	5	200304P2-7	Standard	12.500	5.24	16869.279	16869.279	12.500	12.5	0.0	NO		NO	bb
6	6	200304P2-8	Standard	12.500	5.23	15873.069	15873.069	12.500	12.5	0.0	NO		NO	bb
7	7	200304P2-9	Standard	12.500	5.23	16794.652	16794.652	12.500	12.5	0.0	NO		NO	bb
8	8	200304P2-10	Standard	12.500	5.24	16182.857	16182.857	12.500	12.5	0.0	NO		NO	bb
9	9	200304P2-11	Standard	12.500	5.23	11368.781	11368.781	12.500	12.5	0.0	NO		NO	bb
10	10	200304P2-12	Standard	12.500	5.23	9629.320	9629.320	12.500	12.5	0.0	NO		NO	bb

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:06:21 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
1	1	PFBA	47	0.9997	NO	
2	2	PFPrS	51	0.9924	NO	
3	3	3:3 FTCA	49	0.9993	NO	
4	4	PFPeA	49	0.9998	NO	
5	5	PFBS	51	0.9982	NO	
6	6	4:2 FTS	55	0.9994	NO	
7	7	PFHxA	57	0.9995	NO	
8	8	PFPeS	51	0.9970	NO	
9	9	HFPO-DA	53	0.9997	NO	
10	10	5:3 FTCA	59	0.9994	NO	
11	11	PFHpA	59	0.9988	NO	
12	12	ADONA	59	0.9994	NO	
13	13	L-PFHxS	61	0.9997	NO	
14	15	6:2 FTS	63	0.9988	NO	
15	16	L-PFOA	69	0.9998	NO	
16	18	PFecHS	69	0.9996	NO	
17	19	PFHpS	71	0.9996	NO	
18	20	7:3 FTCA	65	0.9996	NO	
19	21	PFNA	65	0.9999	NO	
20	22	PFOSA	67	0.9998	NO	
21	23	L-PFOS	71	0.9996	NO	
22	25	9Cl-PF30NS	71	0.9992	NO	
23	26	PFDA	73	0.9999	NO	
24	27	8:2 FTS	75	0.9981	NO	
25	28	PFNS	71	0.9991	NO	
26	29	L-MeFOSAA	77	0.9981	NO	

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:06:54 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
1	31	L-EtFOSAA	81	0.9978	NO	
2	33	PFUdA	79	0.9985	NO	
3	34	PFDS	71	0.9996	NO	
4	35	11Cl-PF30UdS	83	0.9987	NO	
5	36	10:2 FTS	85	0.9993	NO	
6	37	PFDoA	83	0.9991	NO	
7	38	N-MeFOSA	87	0.9997	NO	
8	39	PFTrDA	83	0.9987	NO	
9	40	PFDoS	89	0.9996	NO	
10	41	PFTeDA	89	0.9977	NO	
11	42	N-EtFOSA	91	0.9998	NO	
12	43	PFHxDA	93	0.9999	NO	
13	44	PFODA	93	0.9998	NO	
14	45	N-MeFOSE	95	0.9991	NO	
15	46	N-EtFOSE	97	0.9999	NO	
16	47	13C3-PFBA-EIS			NO	0.000
17	48	13C3-PFBA-RSD	99		NO	1.999
18	49	13C3-PFPeA-EIS			NO	0.000
19	50	13C3-PFPeA-RSD	100		NO	1.830
20	51	13C3-PFBS-EIS			NO	0.000
21	52	13C3-PFBS-RSD	101		NO	6.157
22	53	13C3-HFPO-DA-EIS			NO	0.000
23	54	13C3-HFPO-DA-RSD	100		NO	5.135
24	55	13C2-4:2 FTS-EIS			NO	0.000
25	56	13C2-4:2 FTS-RSD	101		NO	6.982
26	57	13C2-PFHxA-EIS			NO	0.000
27	58	13C2-PFHxA-RSD	100		NO	2.602
28	59	13C4-PFHpA-EIS			NO	0.000
29	60	13C4-PFHpA-RSD	100		NO	3.731
30	61	13C3-PFHxS-EIS			NO	0.000
31	62	13C3-PFHxS-RSD	101		NO	4.796
32	63	13C2-6:2 FTS-EIS			NO	0.000

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:06:54 Pacific Standard Time

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
33	64	13C2-6:2 FTS-RSD	104		NO	5.480
34	65	13C5-PFNA-EIS			NO	0.000
35	66	13C5-PFNA-RSD	103		NO	4.554
36	67	13C8-PFOSA-EIS			NO	0.000
37	68	13C8-PFOSA-RSD	106		NO	3.830
38	69	13C2-PFOA-EIS			NO	0.000
39	70	13C2-PFOA-RSD	102		NO	2.973
40	71	13C8-PFOS-EIS			NO	0.000
41	72	13C8-PFOS-RSD	104		NO	4.008
42	73	13C2-PFDA-EIS			NO	0.000
43	74	13C2-PFDA-RSD	105		NO	7.007
44	75	13C2-8:2 FTS-EIS			NO	0.000
45	76	13C2-8:2 FTS-RSD	104		NO	6.883
46	77	d3-N-MeFOSAA-EIS			NO	0.000
47	78	d3-N-MeFOSAA-RSD	106		NO	5.721
48	79	13C2-PFUdA-EIS			NO	0.000
49	80	13C2-PFUdA-RSD	106		NO	4.401
50	81	d5-N-EtFOSAA-EIS			NO	0.000
51	82	d5-N-EtFOSAA-RSD	106		NO	4.519
52	83	13C2-PFDoA-EIS			NO	0.000
53	84	13C2-PFDoA-RSD	105		NO	7.465
54	85	13C2-10:2 FTS-EIS			NO	0.000
55	86	13C2-10:2 FTS-RSD	104		NO	9.399
56	87	d3-N-MeFOSA-EIS			NO	0.000
57	88	d3-N-MeFOSA-RSD	106		NO	6.590
58	89	13C2-PFTeDA-EIS			NO	0.000
59	90	13C2-PFTeDA-RSD	106		NO	6.301
60	91	d5-N-ETFOSA-EIS			NO	0.000
61	92	d5-N-ETFOSA-RSD	106		NO	4.206
62	93	13C2-PFHxDA-EIS			NO	0.000
63	94	13C2-PFHxDA-RSD	106		NO	5.201
64	95	d7-N-MeFOSE-EIS			NO	0.000
65	96	d7-N-MeFOSE-RSD	106		NO	6.770
66	97	d9-N-EtFOSE-EIS			NO	0.000
67	98	d9-N-EtFOSE-RSD	106		NO	5.404
68	99	13C4-PFBA	99		NO	0.000

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:06:54 Pacific Standard Time

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	#	Name	IS#	CoD	CoD Flag	%RSD
69	1...	13C5-PFHxA	100		NO	0.000
70	1...	18O2-PFHxS	101		NO	0.000
71	1...	13C8-PFOA	102		NO	0.000
72	1...	13C9-PFNA	103		NO	0.000
73	1...	13C4-PFOS	104		NO	0.000
74	1...	13C6-PFDA	105		NO	0.000
75	1...	13C7-PFUdA	106		NO	0.000

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:10:01 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	PFBA	1.23	1.23			
2	PFPrS	1.62	1.53	2.560	2.528	NO
3	3:3 FTCA	2.00	2.00	4.187	3.785	NO
4	PFPeA	2.13	2.13			
5	PFBS	2.41	2.41	3.171	3.093	NO
6	4:2 FTS	2.85	2.85	0.987	1.066	NO
7	PFHxA	2.94	2.94	17.202	17.857	NO
8	PFPeS	3.04	3.13	2.435	2.529	NO
9	HFPO-DA	3.14	3.14	2.632	2.657	NO
10	5:3 FTCA	3.48	3.47	1.741	1.830	NO
11	PFHpA	3.53	3.54	16.764	14.505	NO
12	ADONA	3.62	3.64	4.212	3.925	NO
13	L-PFHxS	3.68	3.68	2.577	2.479	NO
14	6:2 FTS	4.00	4.00	1.368	1.506	NO
15	L-PFOA	4.06	4.06	3.084	3.082	NO
16	PFecHS	4.07	4.07	0.604	0.532	NO
17	PFHpS	4.22	4.17	1.721	1.758	NO
18	7:3 FTCA	4.50	4.49	1.613	1.905	NO
19	PFNA	4.51	4.51	5.337	5.604	NO
20	PFOSA	4.56	4.56	32.007	30.440	NO
21	L-PFOS	4.60	4.60	2.054	2.256	NO
22	9Cl-PF30NS	4.80	4.82	24.839	14.781	NO
23	PFDA	4.90	4.90	8.114	8.070	NO
24	8:2 FTS	4.87	4.87	3.211	2.864	NO
25	PFNS	4.94	4.97	2.515	1.994	NO
26	L-MeFOSAA	5.05	5.06	2.451	2.181	NO

Vista Analytical Laboratory

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:10:28 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

	Name	Pred.RT	RT	Pred. Ratio	Ion Ratio	Ratio out?
1	L-EtFOSAA	5.22	5.22	1.317	1.210	NO
2	PFUdA	5.24	5.24	17.647	16.133	NO
3	PFDS	5.21	5.28	2.055	2.007	NO
4	11Cl-PF30UdS	5.45	5.45	20.284	22.826	NO
5	10:2 FTS	5.50	5.51	0.941	1.103	NO
6	PFDoA	5.52	5.52	11.533	9.979	NO
7	N-MeFOSA	5.54	5.52	1.793	1.628	NO
8	PFTrDA	5.77	5.77	43.400	44.148	NO
9	PFDoS	5.80	5.80	3.341	3.090	NO
10	PFTeDA	5.99	5.99	16.724	16.938	NO
11	N-EtFOSA	5.99	5.99	1.645	1.780	NO
12	PFHxDA	6.34	6.34	67.004	71.454	NO
13	PFODA	6.55	6.58			
14	N-MeFOSE	6.24	6.25			
15	N-EtFOSE	6.39	6.40			

Vista Analytical Laboratory

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:12:17 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:12:34 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Compound name: PFBA

	#	Name	ID	Acq.Date	Acq.Time
1	1	200304P2-1	IPA	04-Mar-20	19:10:51
2	2	200304P2-2	IPA	04-Mar-20	19:21:20
3	3	200304P2-3	ST200304P2-1 PFC CS-2 20C0304	04-Mar-20	19:31:52
4	4	200304P2-4	ST200304P2-2 PFC CS-1 20C0305	04-Mar-20	19:42:23
5	5	200304P2-5	ST200304P2-3 PFC CS0 20C0306	04-Mar-20	19:52:51
6	6	200304P2-6	ST200304P2-4 PFC CS1 20C0307	04-Mar-20	20:03:23
7	7	200304P2-7	ST200304P2-5 PFC CS2 20C0308	04-Mar-20	20:13:54
8	8	200304P2-8	ST200304P2-6 PFC CS3 20C0309	04-Mar-20	20:24:22
9	9	200304P2-9	ST200304P2-7 PFC CS4 20C0310	04-Mar-20	20:34:54
10	10	200304P2-10	ST200304P2-8 PFC CS5 20C0311	04-Mar-20	20:45:22
11	11	200304P2-11	ST200304P2-9 PFC CS6 20C0312	04-Mar-20	20:55:55
12	12	200304P2-12	ST200304P2-10 PFC CS7 20C0313	04-Mar-20	21:06:25
13	13	200304P2-13	IB	04-Mar-20	21:16:56
14	14	200304P2-14	ICV200304P2-1 PFC ICV 20C0314	04-Mar-20	21:27:24
15	15	200304P2-15	IB	04-Mar-20	21:37:55

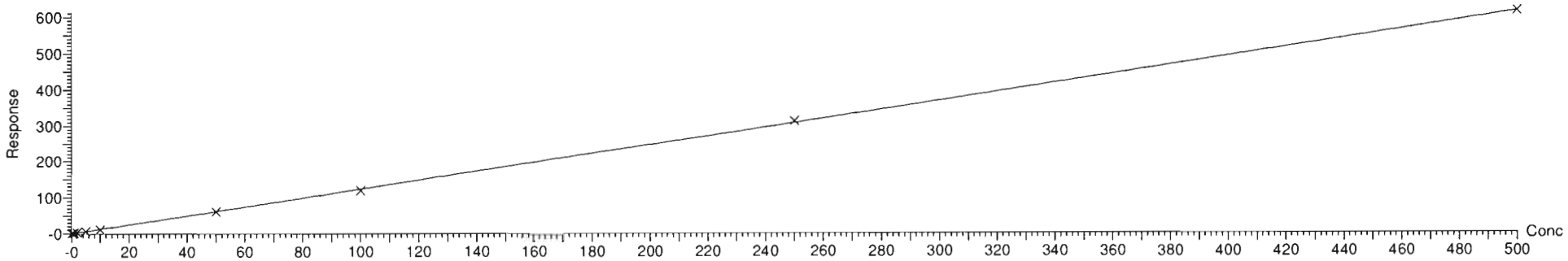
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

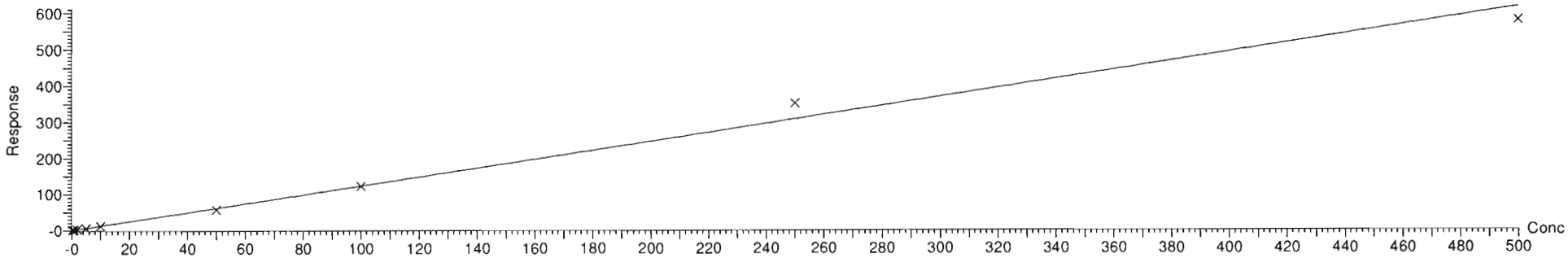
Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Compound name: PFBA
Correlation coefficient: r = 0.999870, r^2 = 0.999739
Calibration curve: 1.22877 * x + -0.0485473
Response type: Internal Std (Ref 47), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



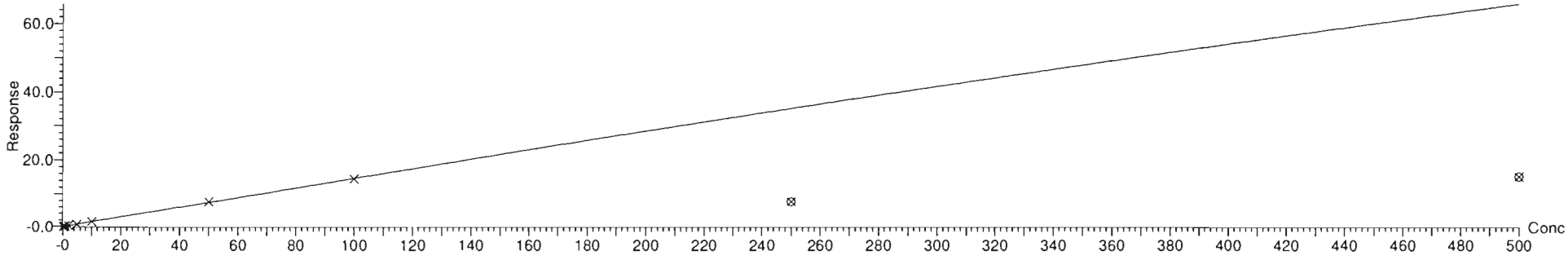
Compound name: PFPrS
Correlation coefficient: r = 0.996168, r^2 = 0.992351
Calibration curve: 1.22997 * x + -0.0283487
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



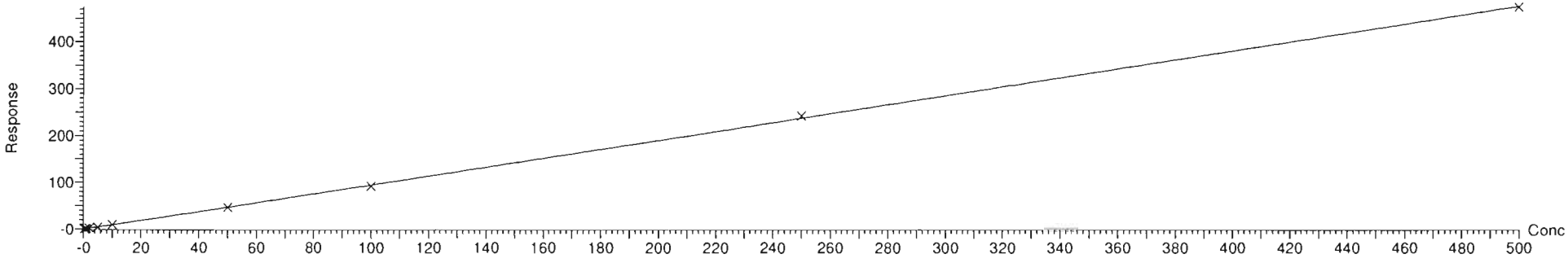
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: 3:3 FTCA
Coefficient of Determination: R^2 = 0.999269
Calibration curve: -3.67081e-005 * x^2 + 0.150027 * x + -0.0084447
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



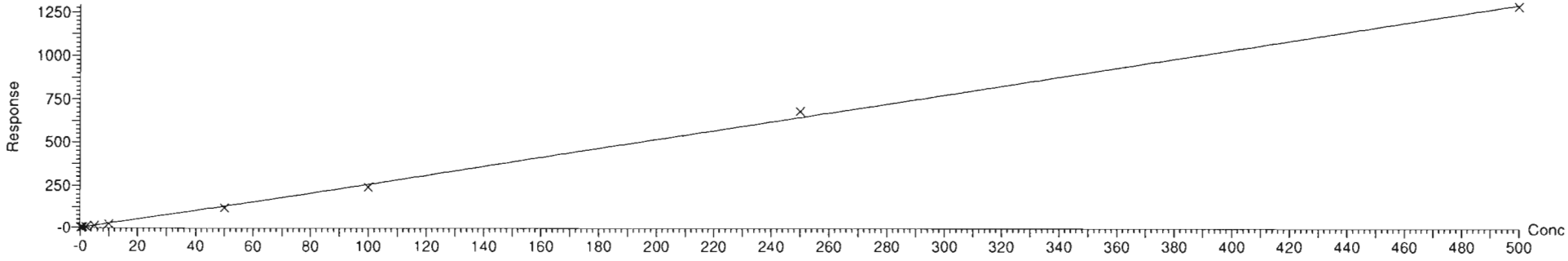
Compound name: PFPeA
Coefficient of Determination: R^2 = 0.999784
Calibration curve: 1.01374e-005 * x^2 + 0.947655 * x + 0.00565638
Response type: Internal Std (Ref 49), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



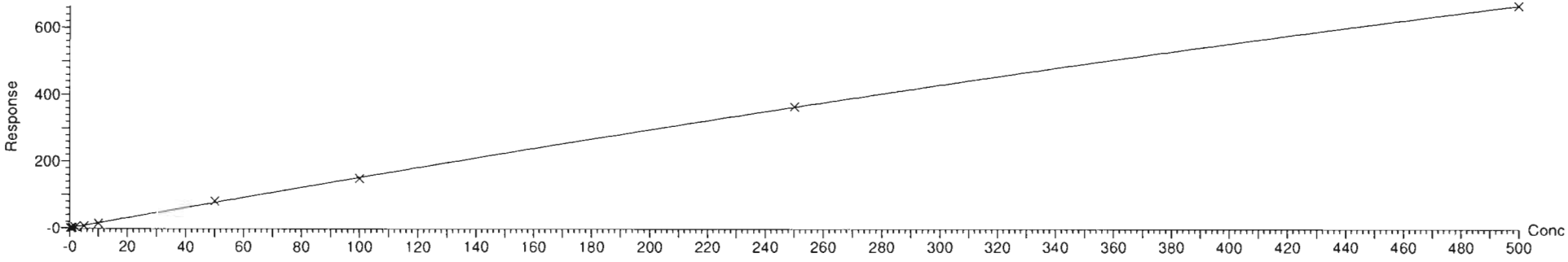
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: PFBS
Correlation coefficient: r = 0.999122, r^2 = 0.998244
Calibration curve: 2.59023 * x + -0.116823
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



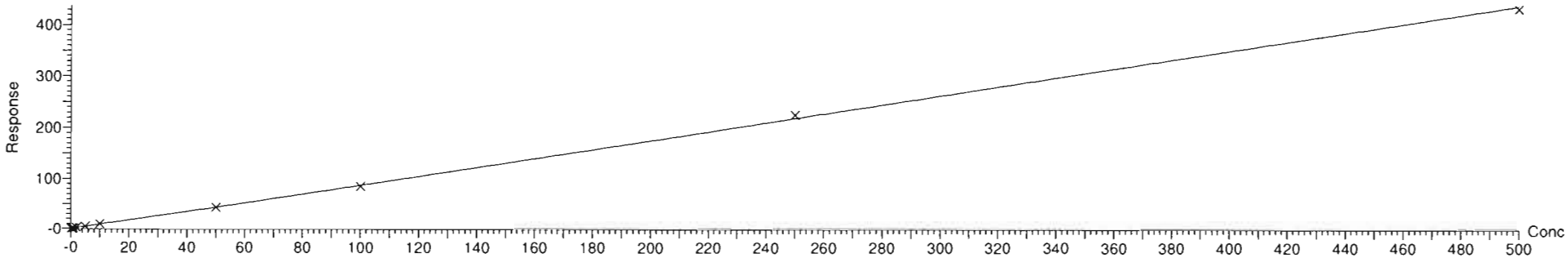
Compound name: 4:2 FTS
Coefficient of Determination: R^2 = 0.999395
Calibration curve: -0.000488235 * x^2 + 1.57983 * x + -0.224097
Response type: Internal Std (Ref 55), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



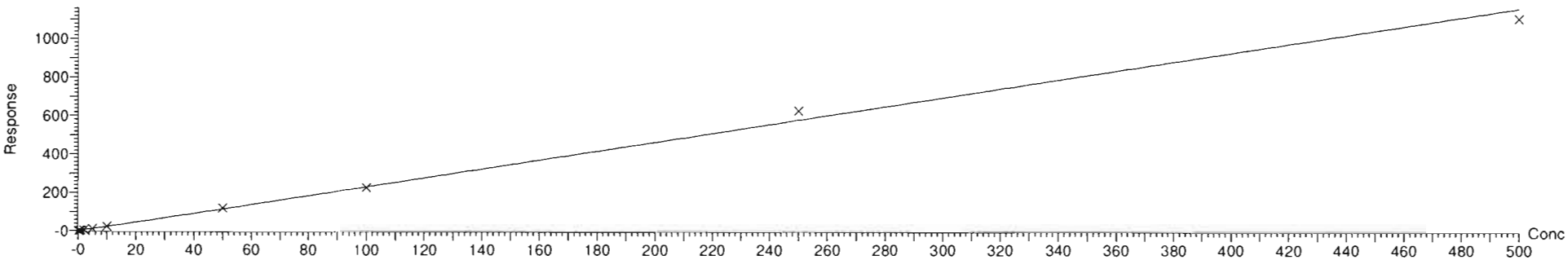
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: PFHxA
Correlation coefficient: r = 0.999772, r^2 = 0.999543
Calibration curve: 0.877166 * x + 0.0585886
Response type: Internal Std (Ref 57), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



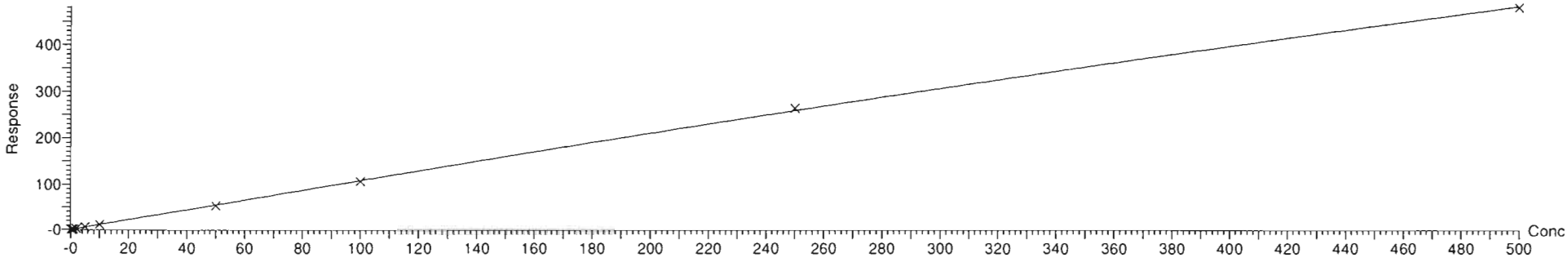
Compound name: PFPeS
Correlation coefficient: r = 0.998482, r^2 = 0.996966
Calibration curve: 2.32483 * x + -0.043047
Response type: Internal Std (Ref 51), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



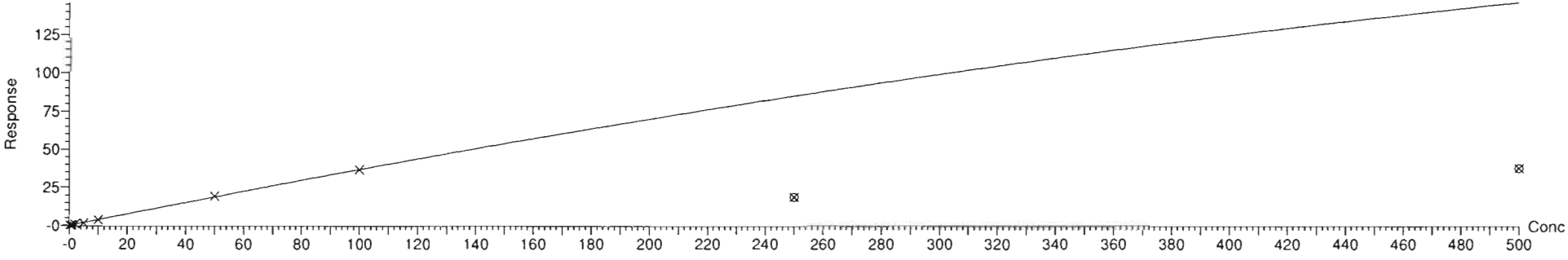
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: HFPO-DA
Coefficient of Determination: R^2 = 0.999734
Calibration curve: -0.000291166 * x^2 + 1.11135 * x + -0.00438747
Response type: Internal Std (Ref 53), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



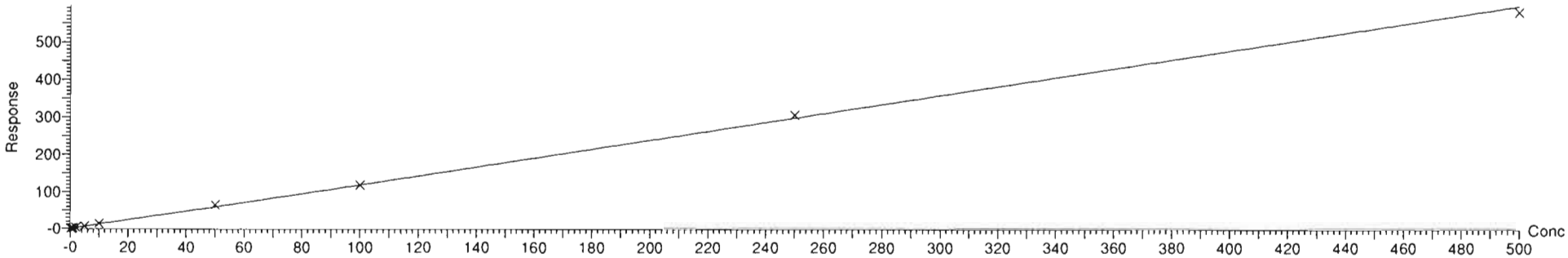
Compound name: 5:3 FTCA
Coefficient of Determination: R^2 = 0.999383
Calibration curve: -0.000189215 * x^2 + 0.387413 * x + -0.0250636
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



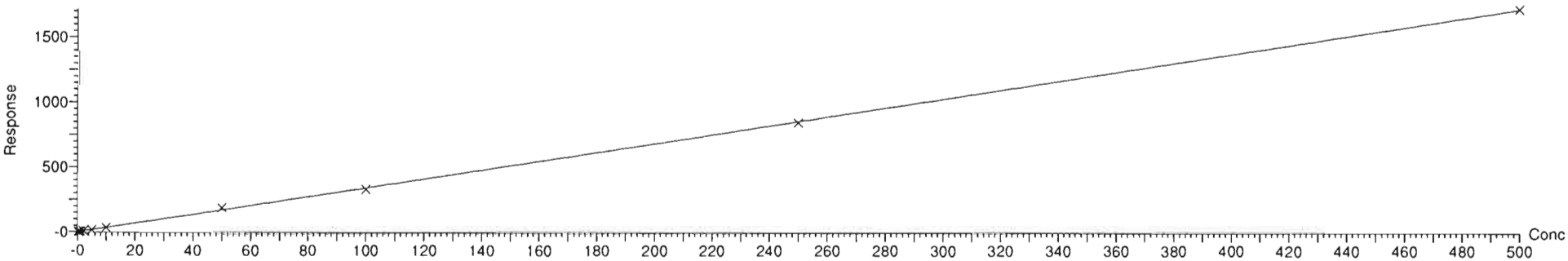
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: PFHpA
Correlation coefficient: r = 0.999380, r^2 = 0.998760
Calibration curve: 1.19534 * x + 0.12732
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



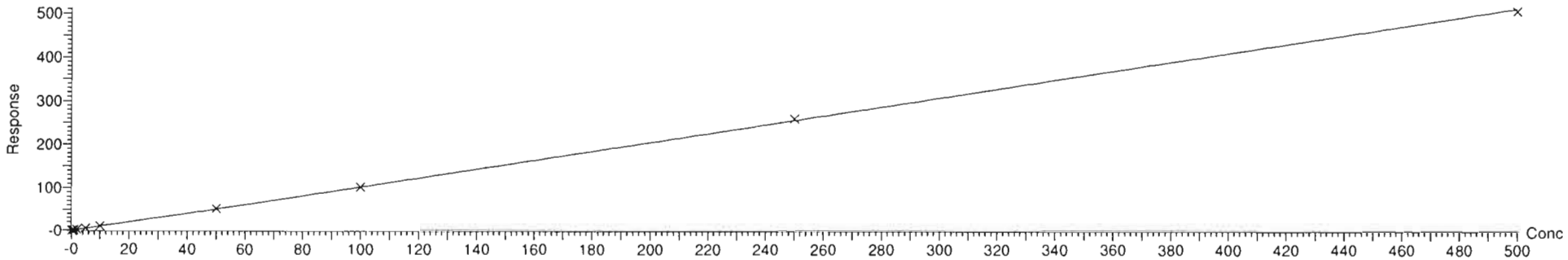
Compound name: ADONA
Coefficient of Determination: R^2 = 0.999377
Calibration curve: 6.47742e-005 * x^2 + 3.40294 * x + 0.107116
Response type: Internal Std (Ref 59), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



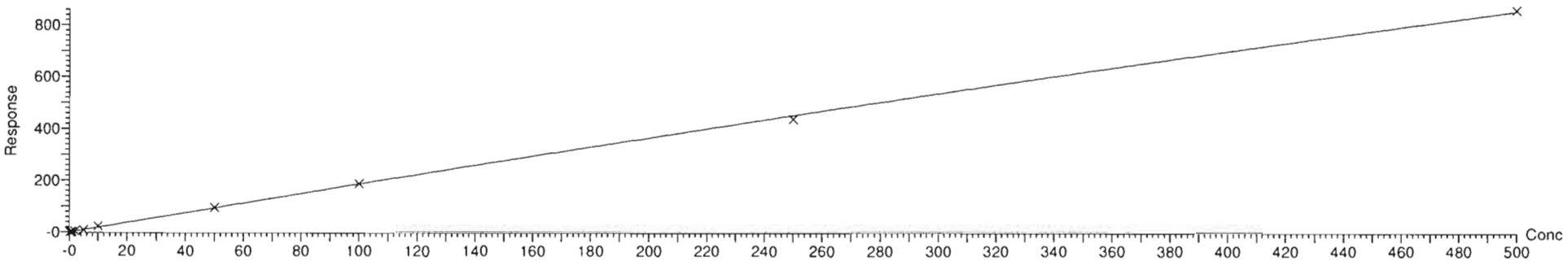
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: L-PFHxS
Correlation coefficient: r = 0.999868, r^2 = 0.999736
Calibration curve: 1.02796 * x + -0.0723975
Response type: Internal Std (Ref 61), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



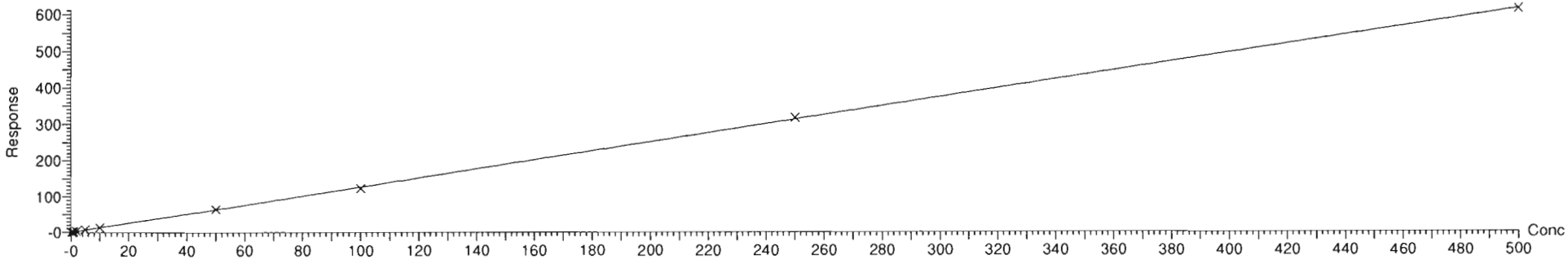
Compound name: 6:2 FTS
Coefficient of Determination: R^2 = 0.998778
Calibration curve: -0.000416301 * x^2 + 1.91794 * x + -0.0251531
Response type: Internal Std (Ref 63), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



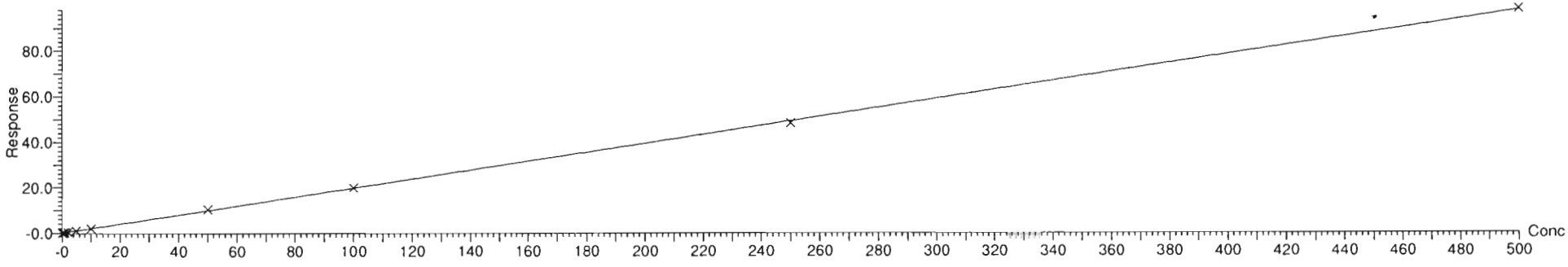
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: L-PFOA
Coefficient of Determination: R^2 = 0.999780
Calibration curve: -7.77191e-005 * x^2 + 1.26767 * x + 0.134631
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



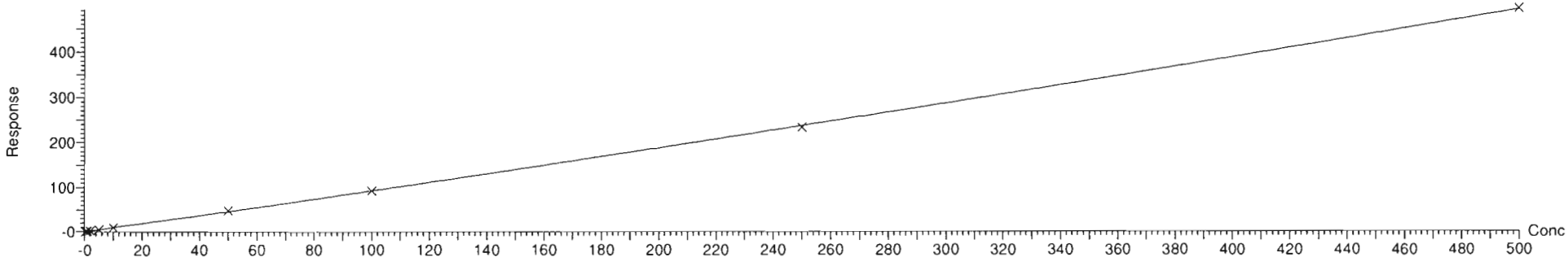
Compound name: PFecHS
Coefficient of Determination: R^2 = 0.999622
Calibration curve: -5.1658e-006 * x^2 + 0.197943 * x + -0.0130452
Response type: Internal Std (Ref 69), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



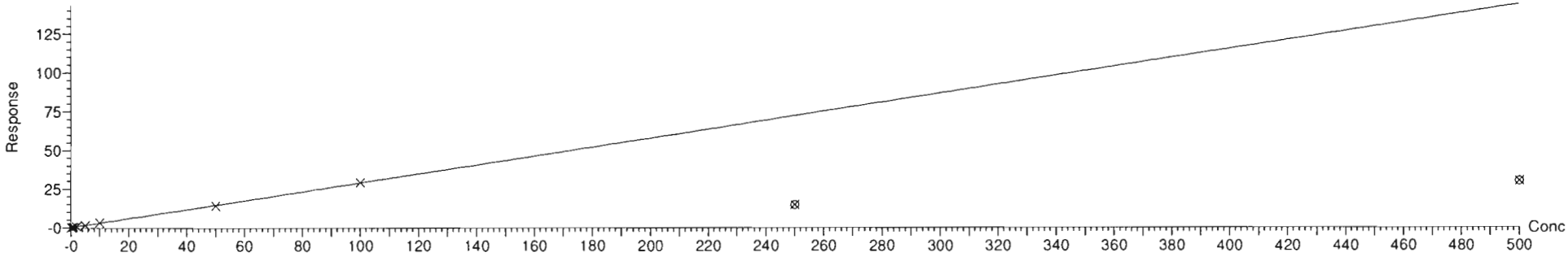
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: PFHpS
Coefficient of Determination: R^2 = 0.999650
Calibration curve: 0.000156607 * x^2 + 0.906492 * x + 0.0221239
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



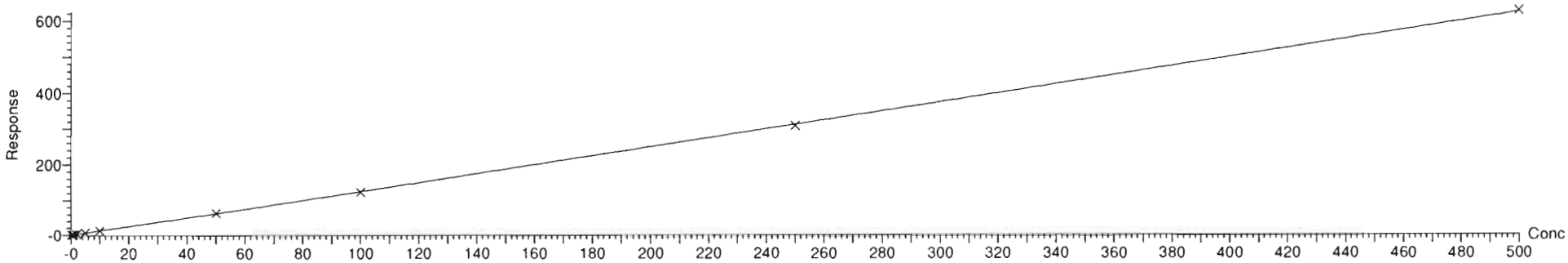
Compound name: 7:3 FTCA
Coefficient of Determination: R^2 = 0.999627
Calibration curve: -3.85292e-006 * x^2 + 0.289803 * x + -0.0102751
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



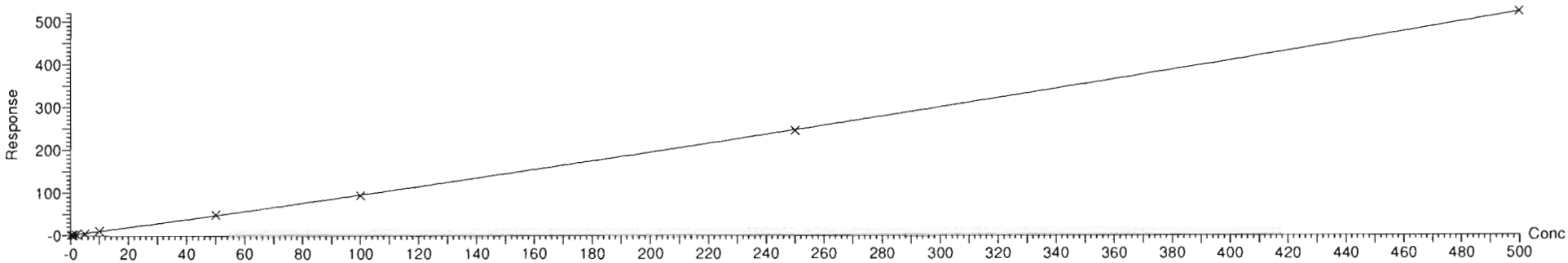
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: PFNA
Correlation coefficient: r = 0.999943, r^2 = 0.999887
Calibration curve: 1.24763 * x + 0.03244
Response type: Internal Std (Ref 65), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



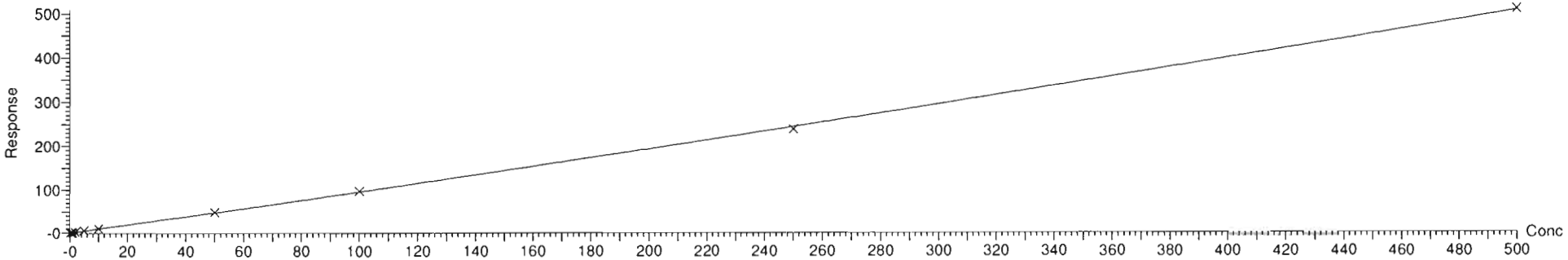
Compound name: PFOSA
Coefficient of Determination: R^2 = 0.999772
Calibration curve: 0.000232487 * x^2 + 0.926276 * x + 0.158051
Response type: Internal Std (Ref 67), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



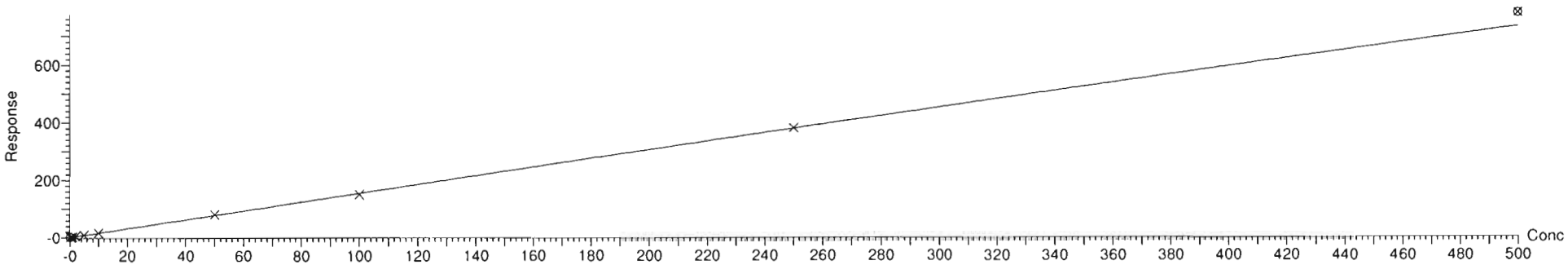
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: L-PFOS
Coefficient of Determination: R^2 = 0.999622
Calibration curve: 0.00015808 * x^2 + 0.933834 * x + -0.0156559
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



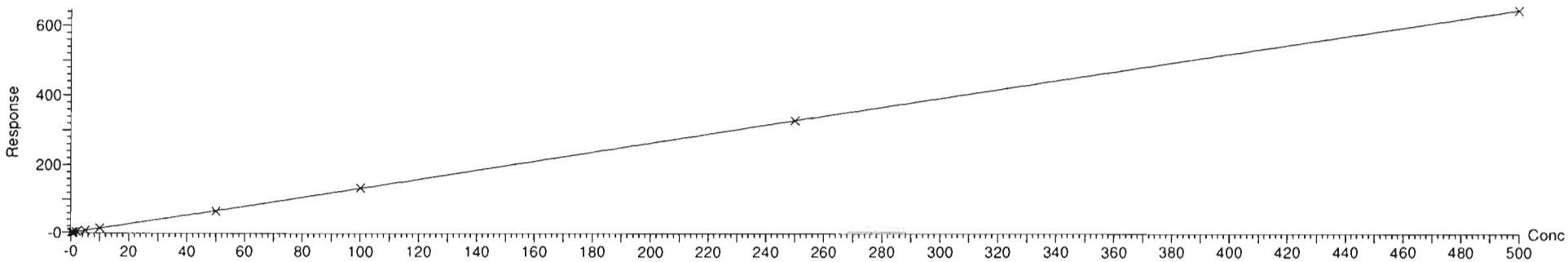
Compound name: 9Cl-PF30NS
Coefficient of Determination: R^2 = 0.999244
Calibration curve: -0.000203218 * x^2 + 1.56445 * x + 0.0154204
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



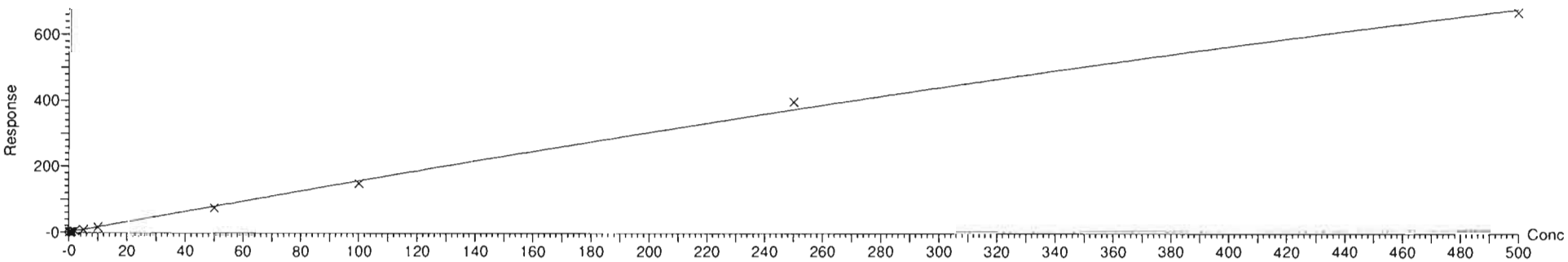
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: PFDA
Coefficient of Determination: R^2 = 0.999870
Calibration curve: -8.43611e-005 * x^2 + 1.33585 * x + 0.0646678
Response type: Internal Std (Ref 73), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



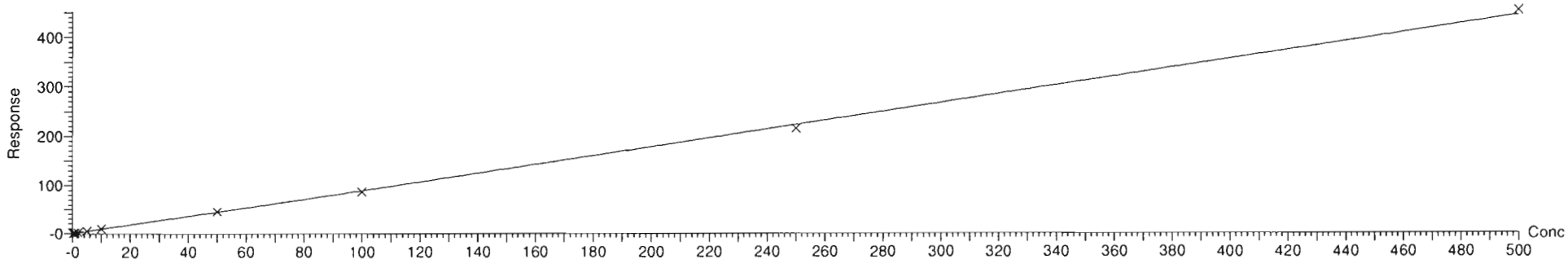
Compound name: 8:2 FTS
Coefficient of Determination: R^2 = 0.998078
Calibration curve: -0.000554636 * x^2 + 1.63509 * x + 0.0342798
Response type: Internal Std (Ref 75), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



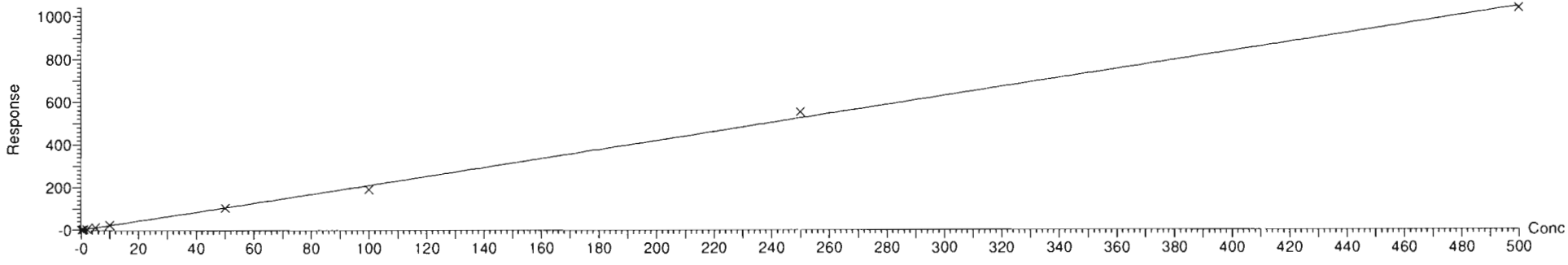
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:07:52 Pacific Standard Time

Compound name: PFNS
Correlation coefficient: r = 0.999568, r^2 = 0.999135
Calibration curve: 0.889815 * x + -0.0800002
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



Compound name: L-MeFOSAA
Coefficient of Determination: R^2 = 0.998149
Calibration curve: -5.05982e-006 * x^2 + 2.09223 * x + -0.0722389
Response type: Internal Std (Ref 77), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



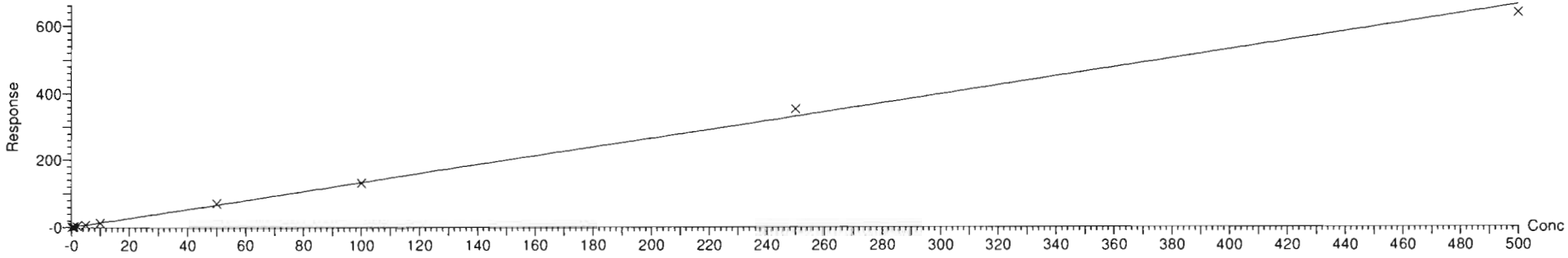
Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

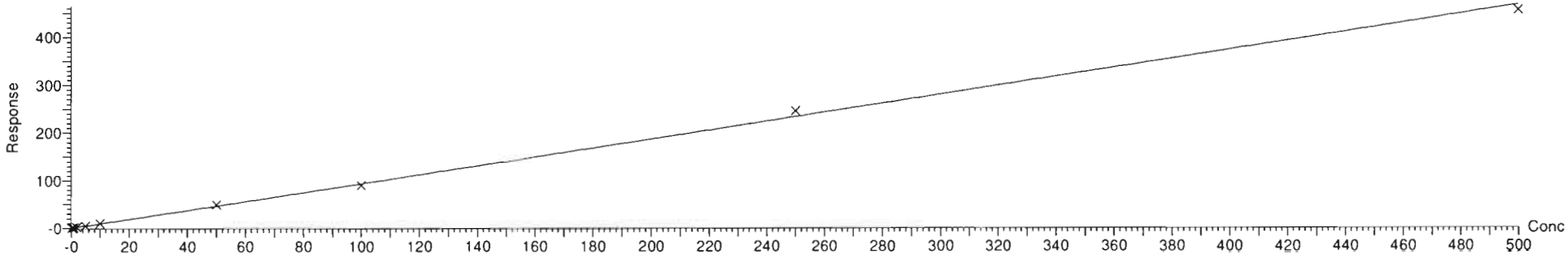
Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Compound name: L-EtFOSAA
Correlation coefficient: r = 0.998874, r^2 = 0.997750
Calibration curve: 1.32406 * x + -0.0705772
Response type: Internal Std (Ref 81), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Include, Weighting: 1/x, Axis trans: None



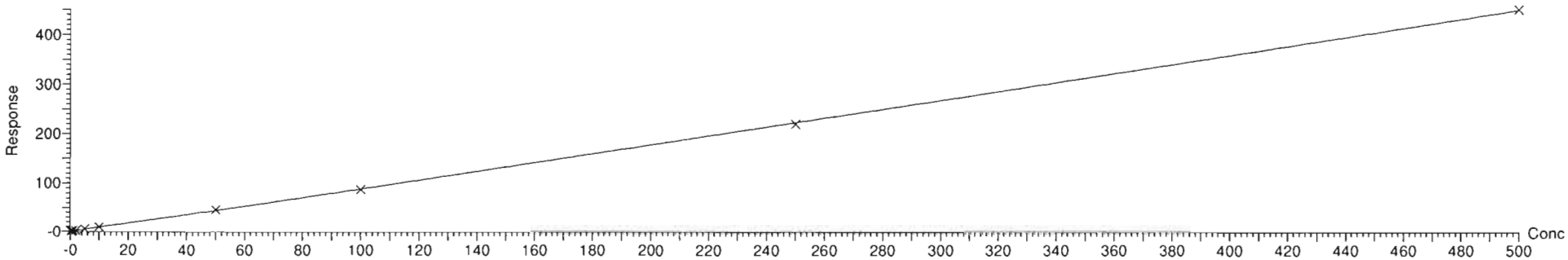
Compound name: PFUdA
Correlation coefficient: r = 0.999241, r^2 = 0.998484
Calibration curve: 0.932703 * x + 0.0893084
Response type: Internal Std (Ref 79), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



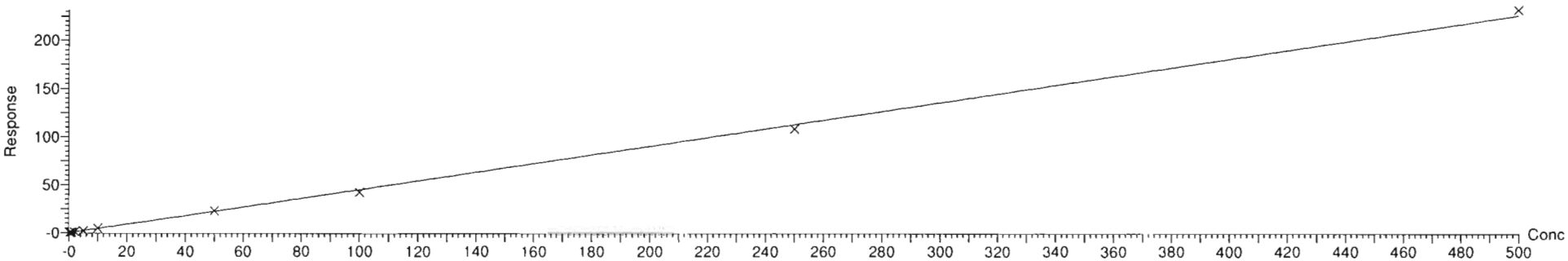
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Compound name: PFDS
Coefficient of Determination: R^2 = 0.999638
Calibration curve: 3.89757e-005 * x^2 + 0.882121 * x + 0.0622793
Response type: Internal Std (Ref 71), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



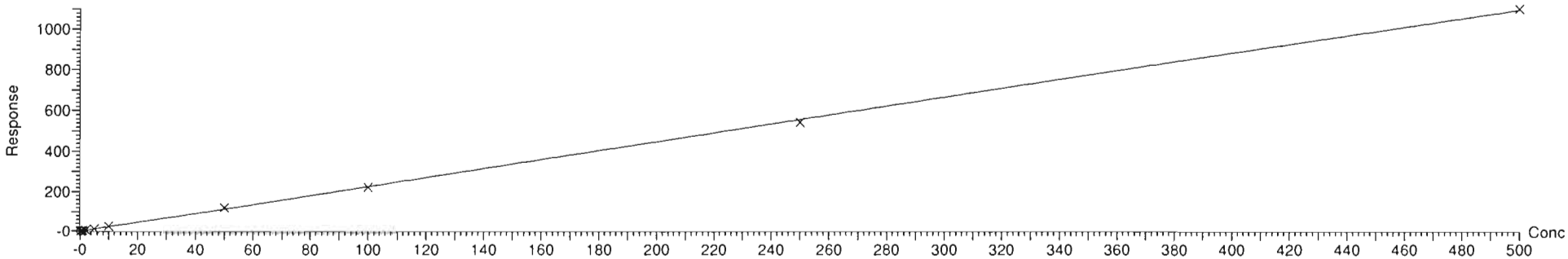
Compound name: 11Cl-PF30UdS
Correlation coefficient: r = 0.999339, r^2 = 0.998678
Calibration curve: 0.452206 * x + -0.00335863
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



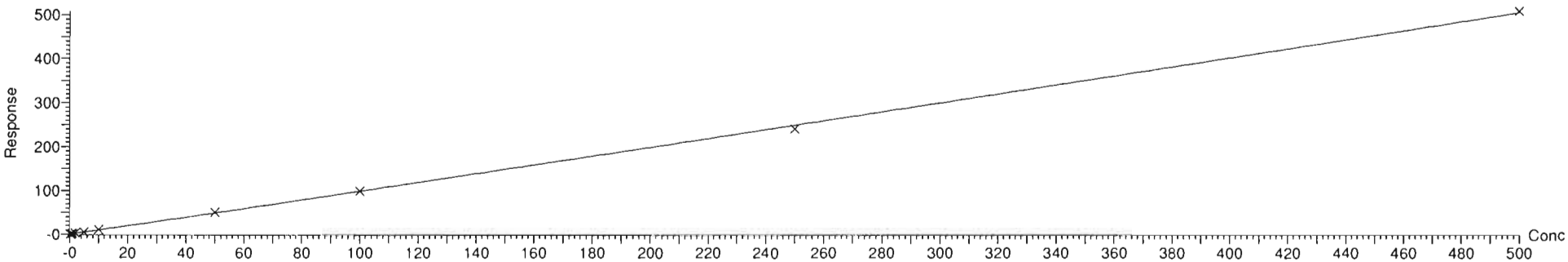
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Compound name: 10:2 FTS
Coefficient of Determination: R^2 = 0.999279
Calibration curve: -0.000180939 * x^2 + 2.28371 * x + -0.0530499
Response type: Internal Std (Ref 85), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



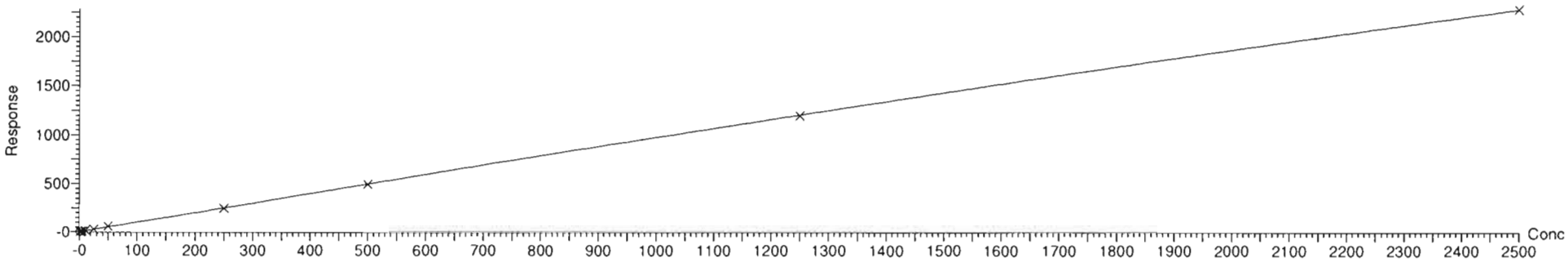
Compound name: PFDoA
Coefficient of Determination: R^2 = 0.999054
Calibration curve: 6.05516e-005 * x^2 + 0.981539 * x + 0.207633
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



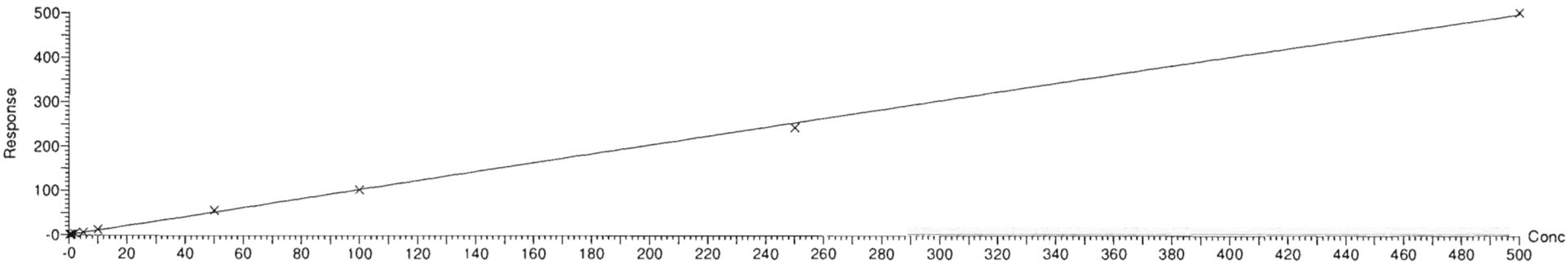
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Compound name: N-MeFOSA
Coefficient of Determination: R^2 = 0.999695
Calibration curve: -4.32992e-005 * x^2 + 1.02257 * x + 0.260289
Response type: Internal Std (Ref 87), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Include, Weighting: 1/x, Axis trans: None



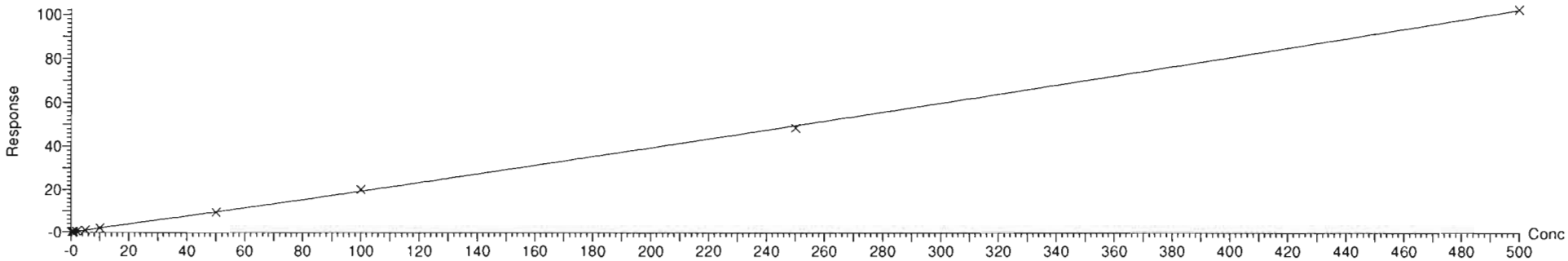
Compound name: PFTrDA
Coefficient of Determination: R^2 = 0.998738
Calibration curve: -7.60291e-005 * x^2 + 1.03461 * x + 0.194492
Response type: Internal Std (Ref 83), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



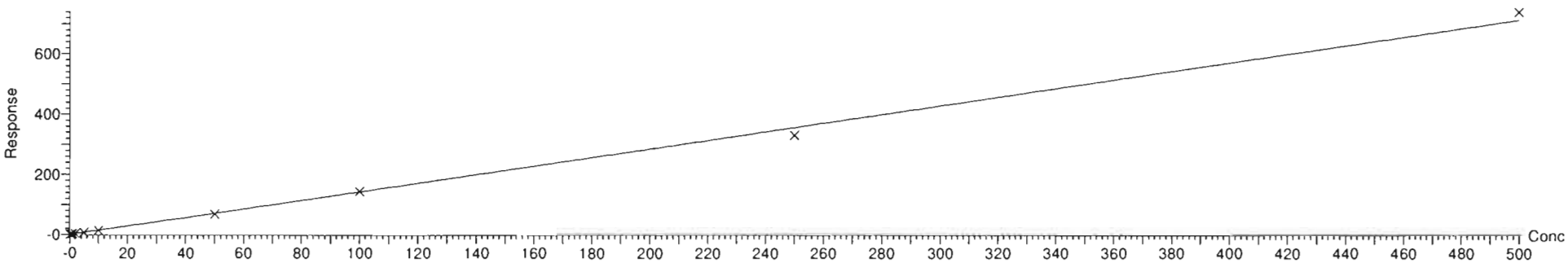
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Compound name: PFDoS
Coefficient of Determination: R^2 = 0.999587
Calibration curve: 2.48924e-005 * x^2 + 0.192004 * x + 0.00333864
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



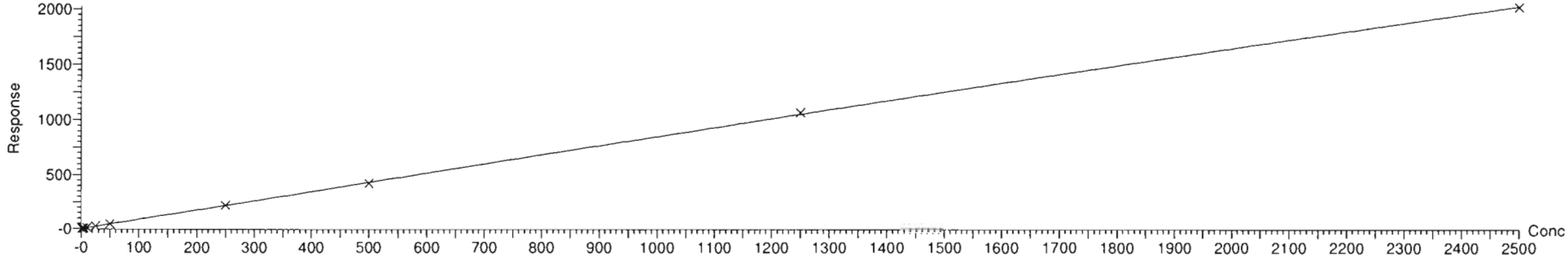
Compound name: PFTeDA
Correlation coefficient: r = 0.998829, r^2 = 0.997658
Calibration curve: 1.42837 * x + -0.0322598
Response type: Internal Std (Ref 89), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None



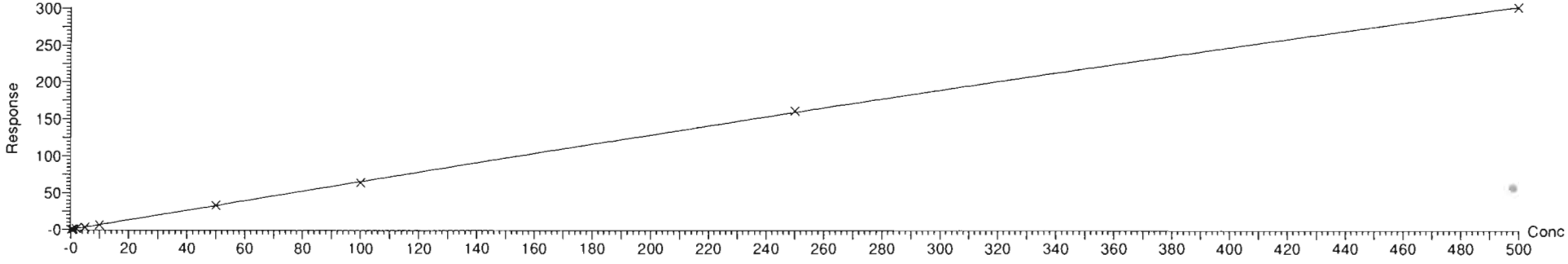
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Compound name: N-EtFOSA
Coefficient of Determination: R^2 = 0.999833
Calibration curve: -2.57826e-005 * x^2 + 0.876385 * x + 0.179923
Response type: Internal Std (Ref 91), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



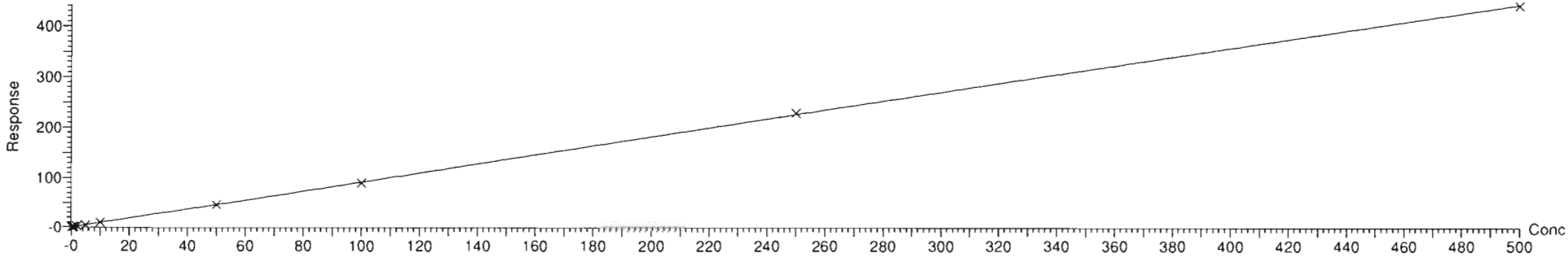
Compound name: PFHxDA
Coefficient of Determination: R^2 = 0.999870
Calibration curve: -0.000132812 * x^2 + 0.671946 * x + 0.0858042
Response type: Internal Std (Ref 93), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x, Axis trans: None



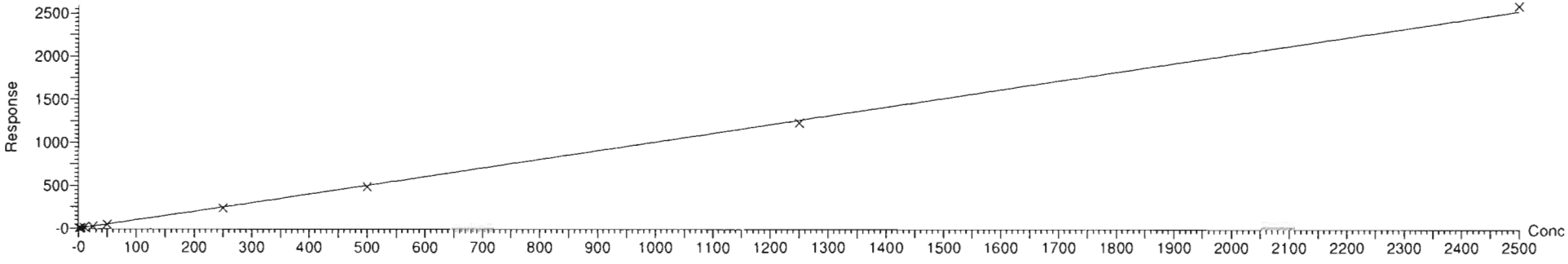
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Compound name: PFODA
Coefficient of Determination: R^2 = 0.999840
Calibration curve: -7.84163e-005 * x^2 + 0.925009 * x + -0.0217035
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 = 0.999567, r^2 = 0.999134
Calibration curve: 1.01157 * x + -0.0701665
Response type: Internal Std (Ref 95), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x, Axis trans: None

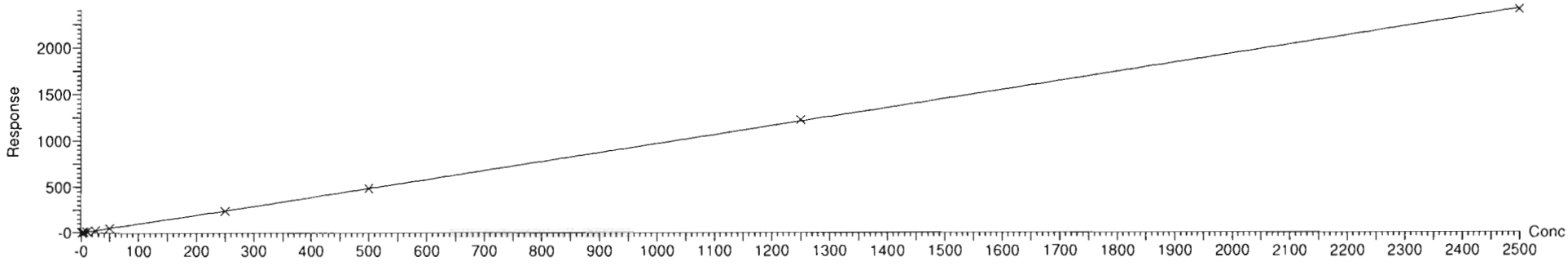


Vista Analytical Laboratory Q1

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-CRV.qld

Last Altered: Thursday, March 05, 2020 10:00:36 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:08:42 Pacific Standard Time

Compound name: N-EtFOSE
Correlation coefficient: r = 0.999962, r^2 = 0.999924
Calibration curve: 0.96721 * x + -0.0485328
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

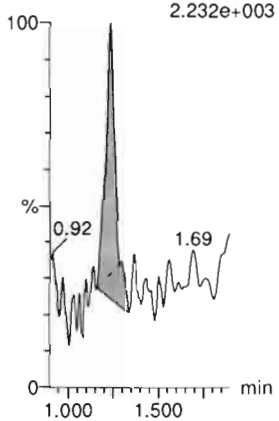
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 09:34:37 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:35:09 Pacific Standard Time

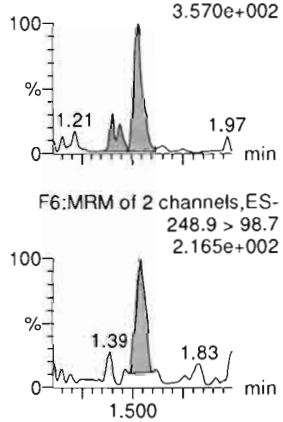
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030320.mdb 04 Mar 2020 10:58:08
Calibration: 05 Mar 2020 09:34:37

Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

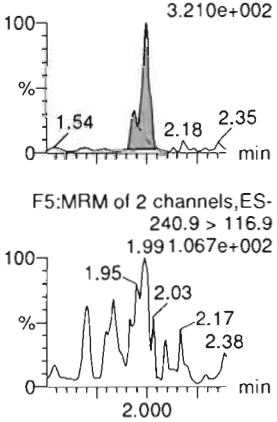
PFBA



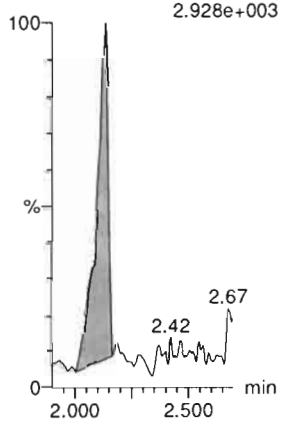
PFPrS



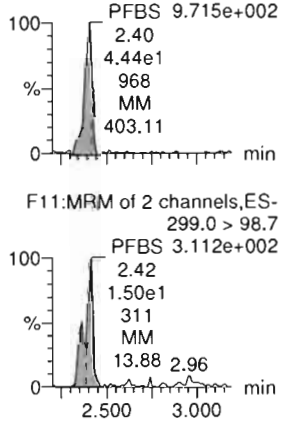
3:3 FTCA



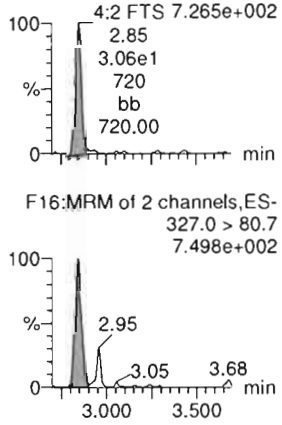
PFPeA



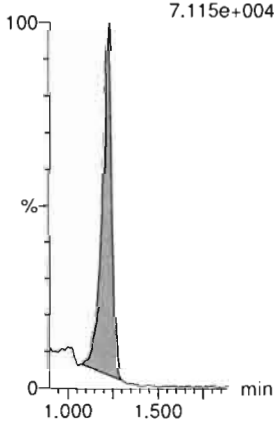
PFBS



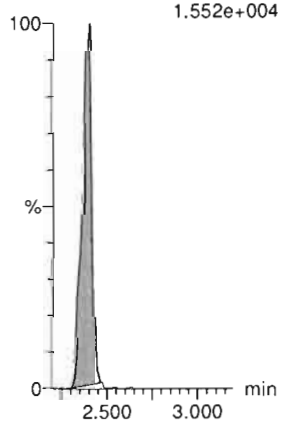
4:2 FTS



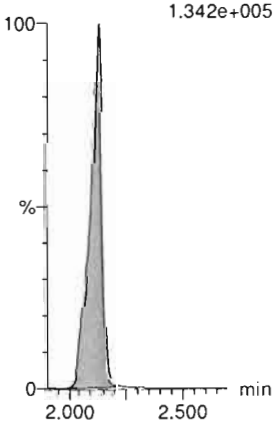
13C3-PFBA-EIS



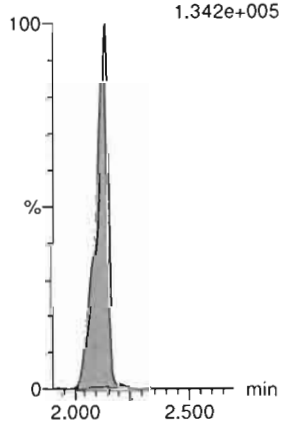
13C3-PFBS-EIS



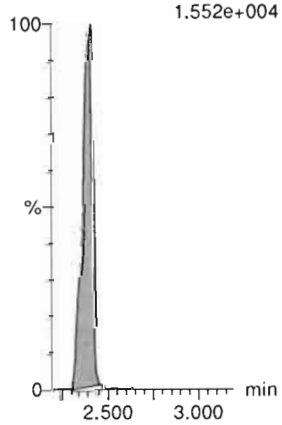
13C3-PFPeA-EIS



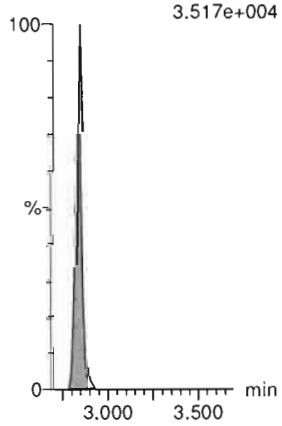
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

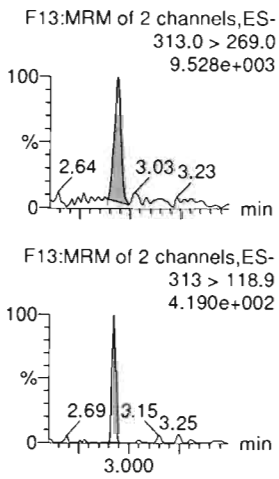


Dataset: Untitled

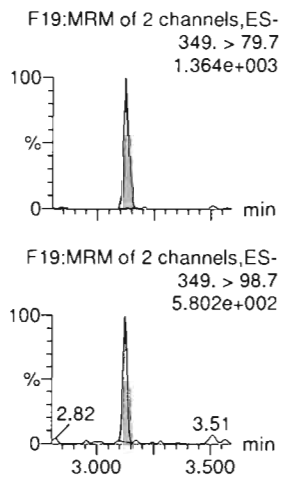
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

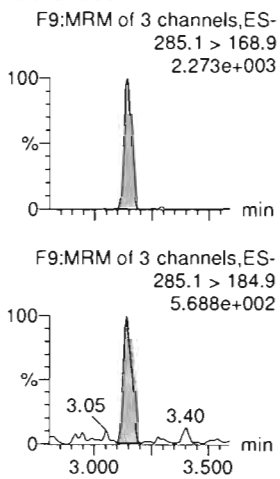
PFHxA



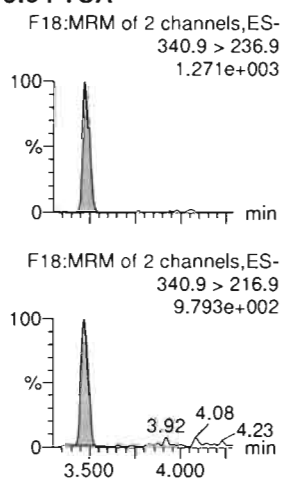
PFPeS



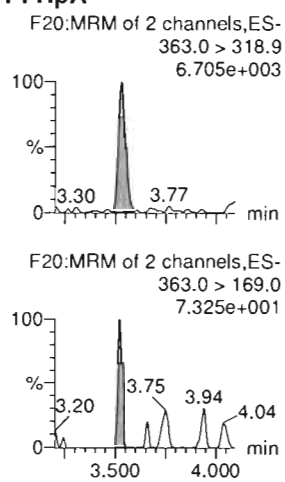
HFPO-DA



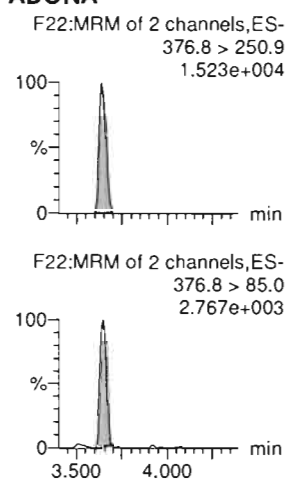
5:3 FTCA



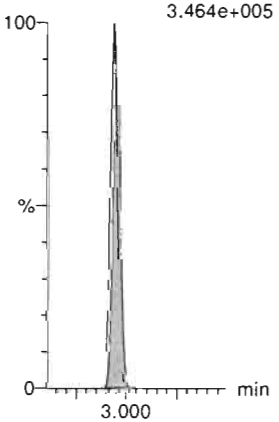
PFHpA



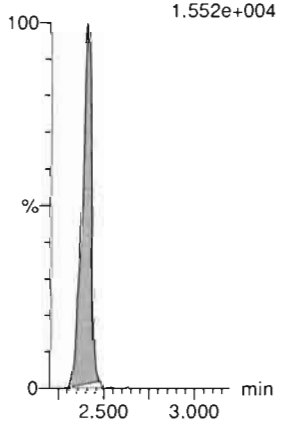
ADONA



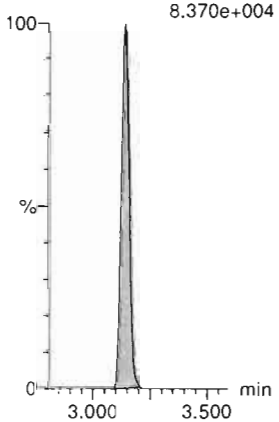
13C2-PFHxA-EIS



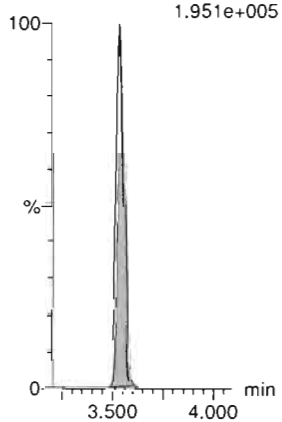
13C3-PFBS-EIS



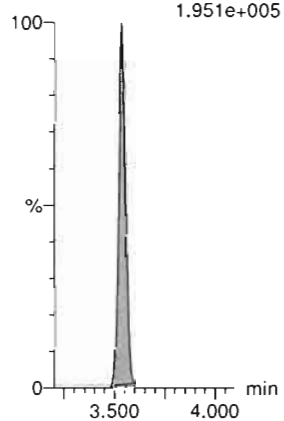
13C3-HFPO-DA-EIS



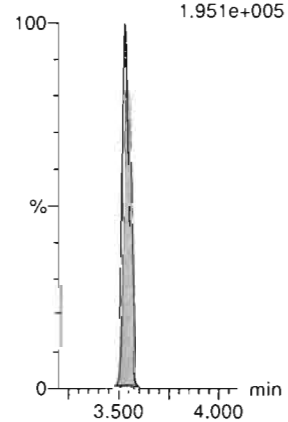
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

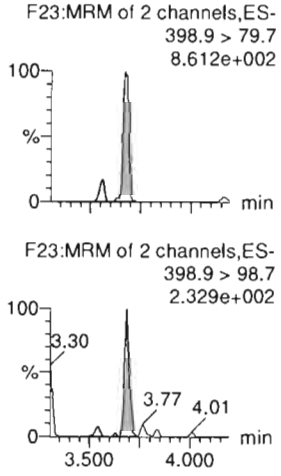


Dataset: Untitled

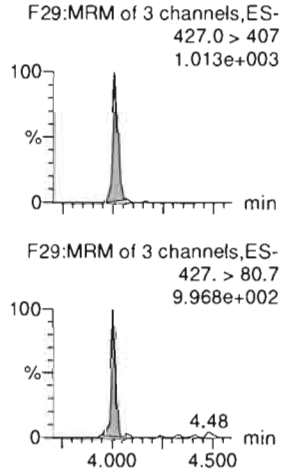
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

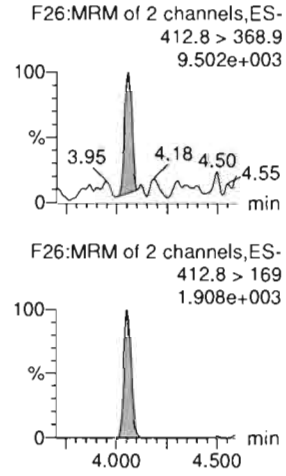
L-PFHxS



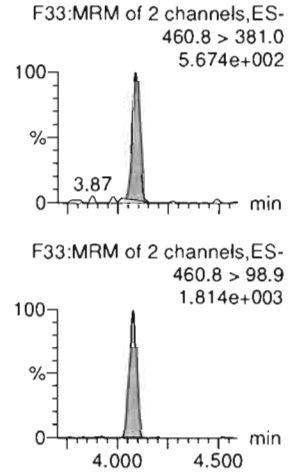
6:2 FTS



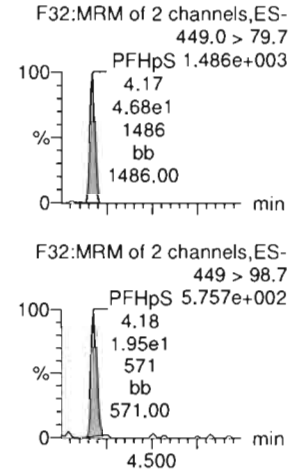
L-PFOA



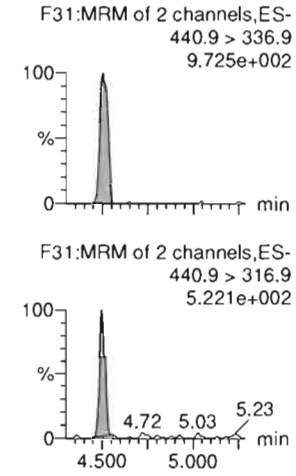
PFEChS



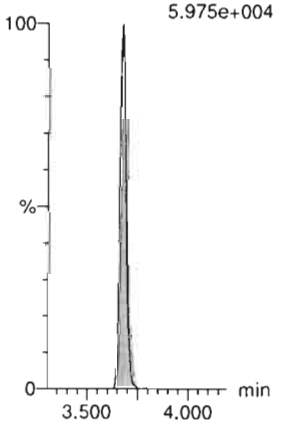
PFHpS



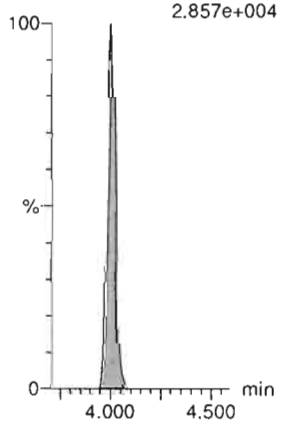
7:3 FTCA



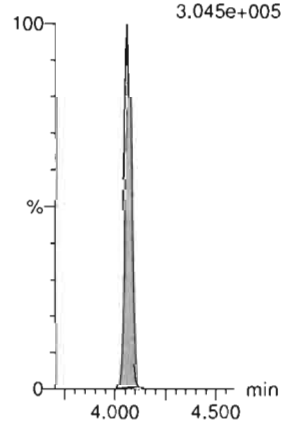
13C3-PFHxS-EIS



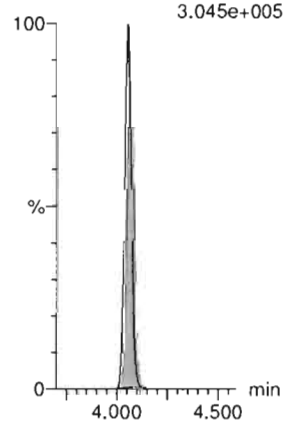
13C2-6:2 FTS-EIS



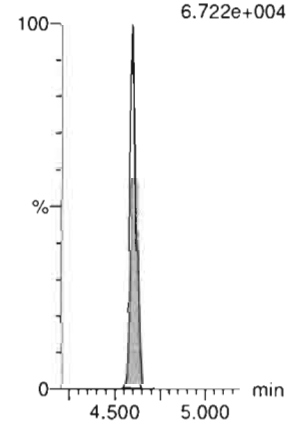
13C2-PFOA-EIS



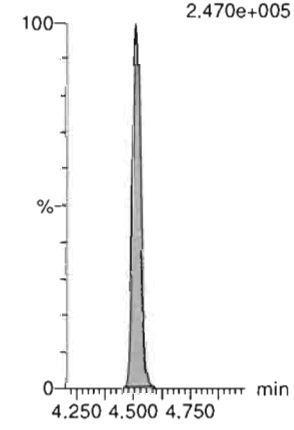
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

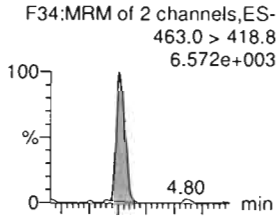


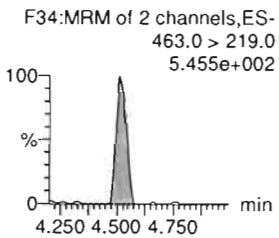
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

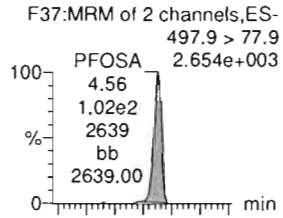
Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

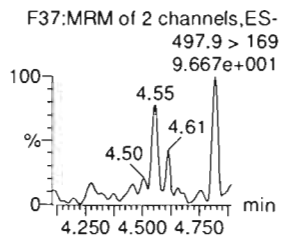
PFNA



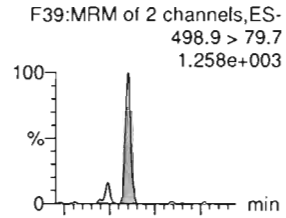


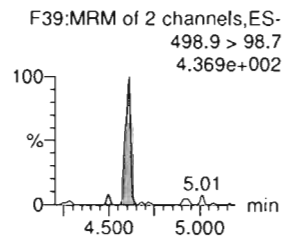
PFOSA



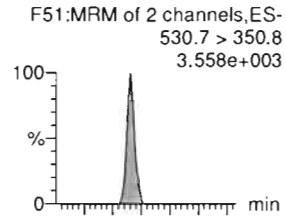


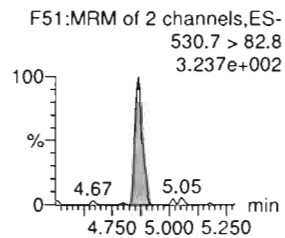
L-PFOS



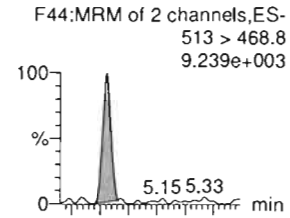


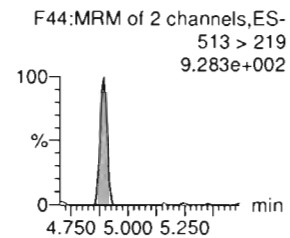
9Cl-PF30NS



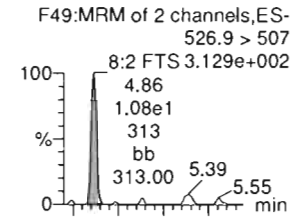


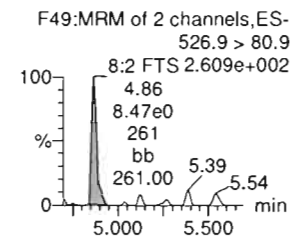
PFDA



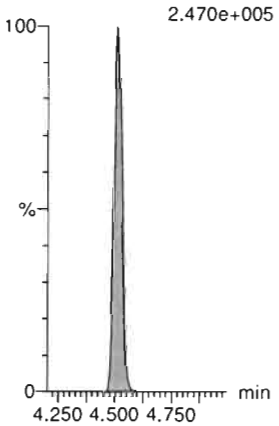


8:2 FTS

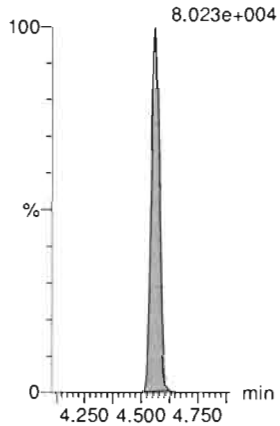




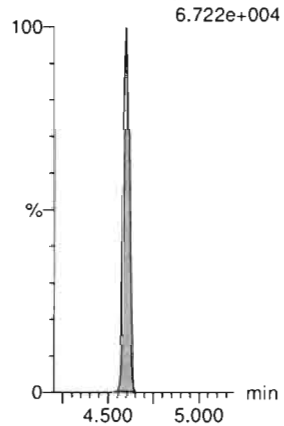
13C5-PFNA-EIS



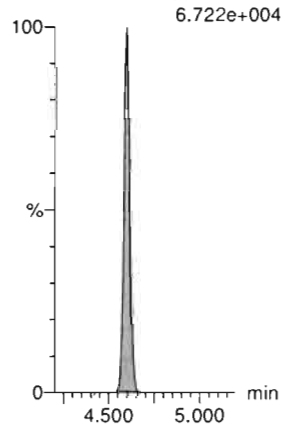
13C8-PFOSA-EIS



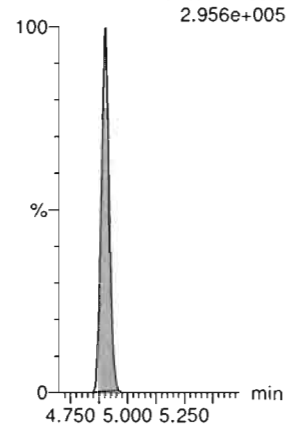
13C8-PFOS-EIS



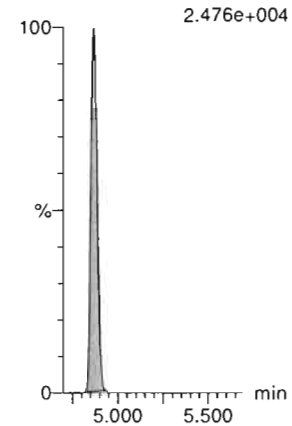
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

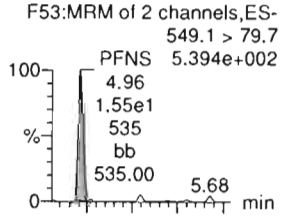


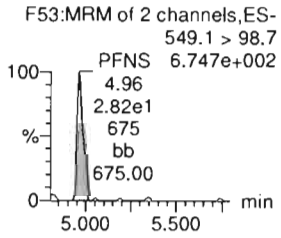
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 09:34:37 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:35:09 Pacific Standard Time

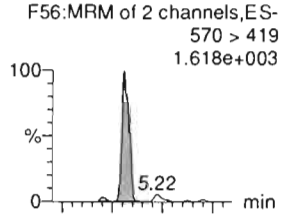
Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

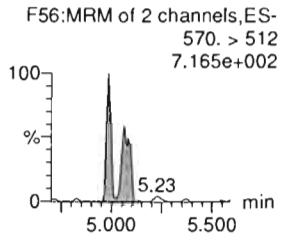
PFNS



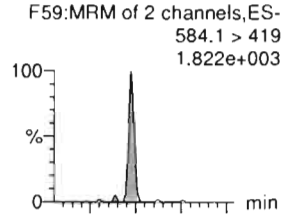


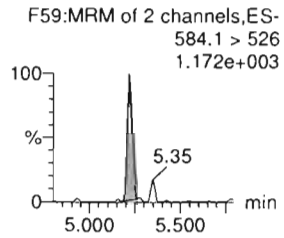
L-MeFOSAA



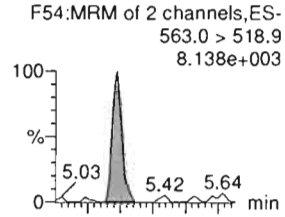


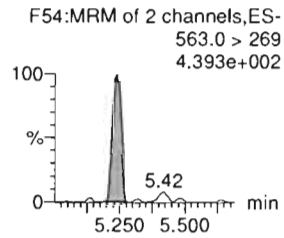
L-EtFOSAA



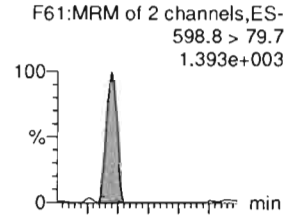


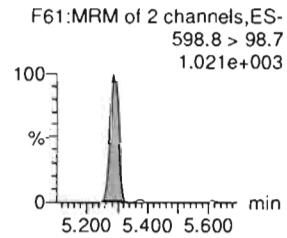
PFUdA



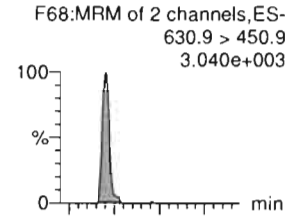


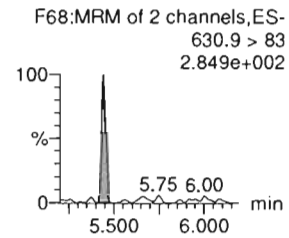
PFDS



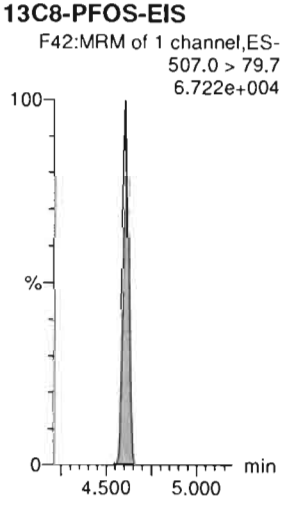


11Cl-PF30UdS

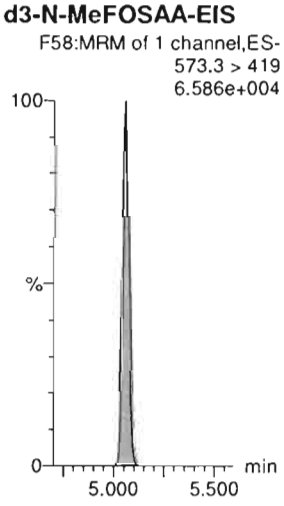




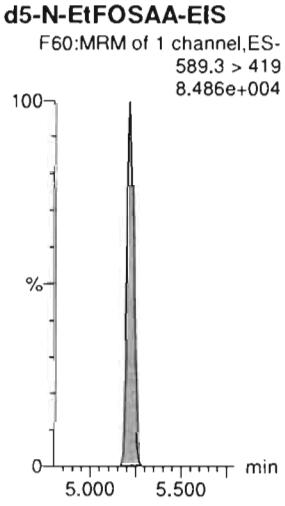
13C8-PFOS-EIS



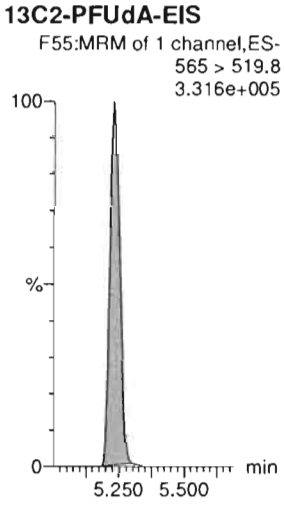
d3-N-MeFOSAA-EIS



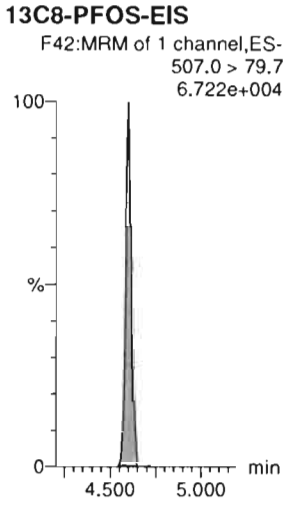
d5-N-EtFOSAA-EIS



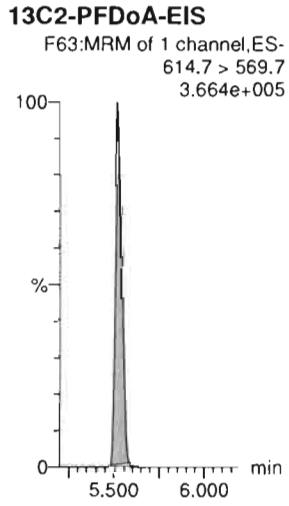
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

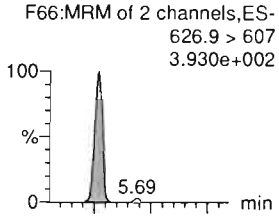


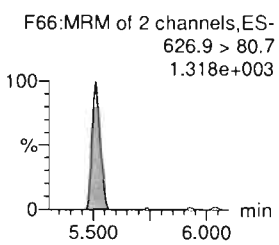
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

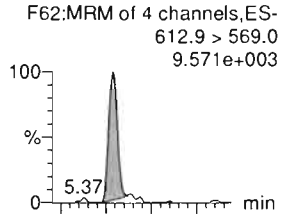
Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

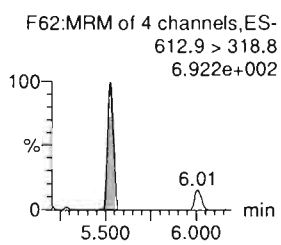
10:2 FTS



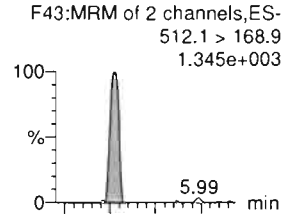


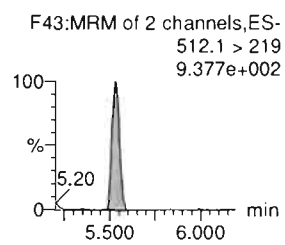
PFDoA



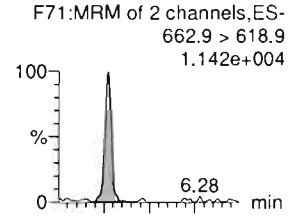


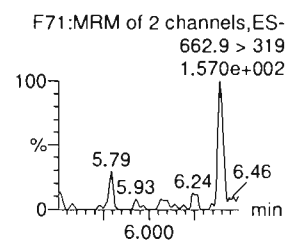
N-MeFOSA



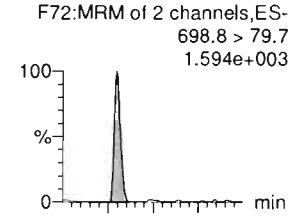


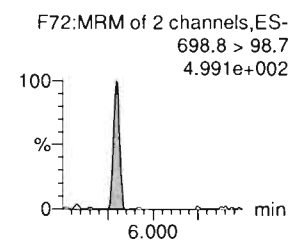
PFTrDA



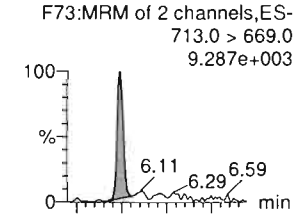


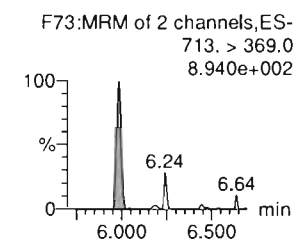
PFDoS



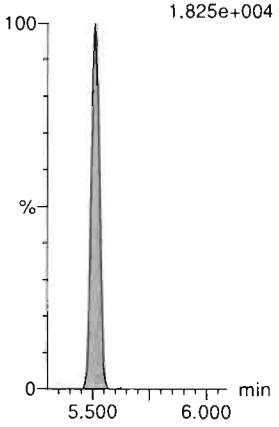


PFTeDA

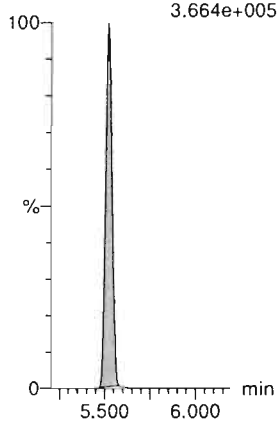




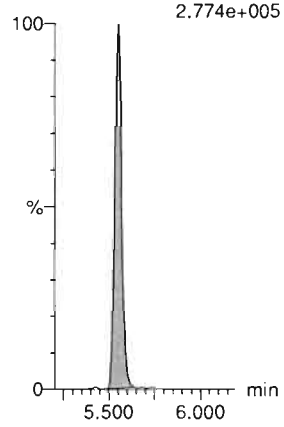
13C2-10:2 FTS-EIS



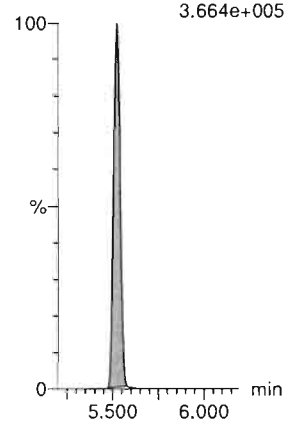
13C2-PFDoA-EIS



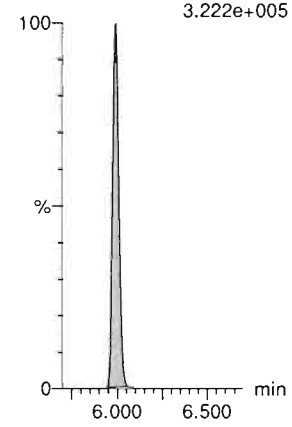
d3-N-MeFOSA-EIS



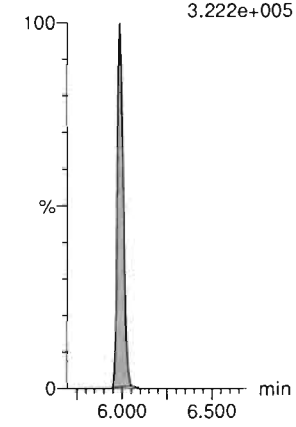
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

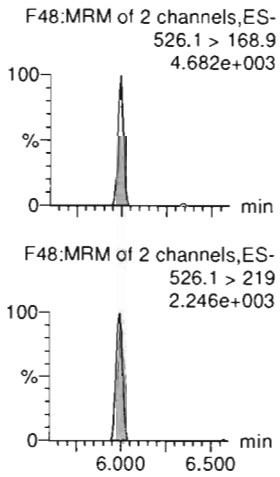


Dataset: Untitled

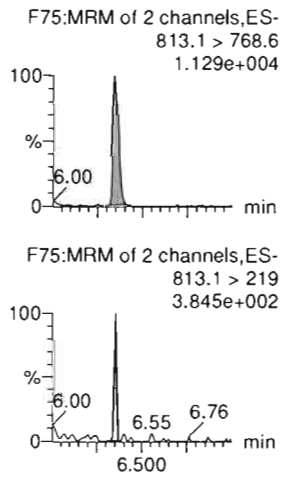
Last Altered: Thursday, March 05, 2020 09:34:37 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:35:09 Pacific Standard Time

Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

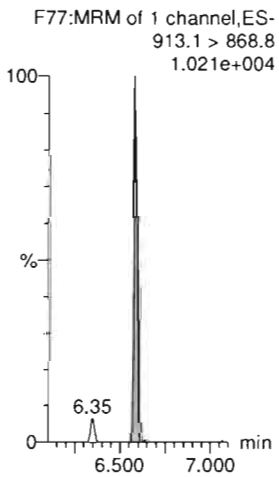
N-EtFOSA



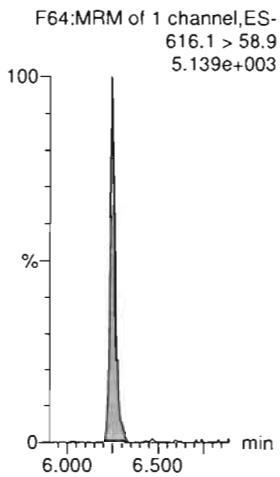
PFHxDA



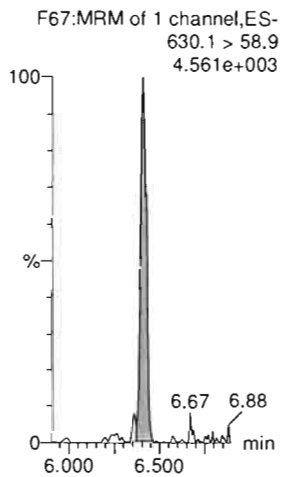
PFODA



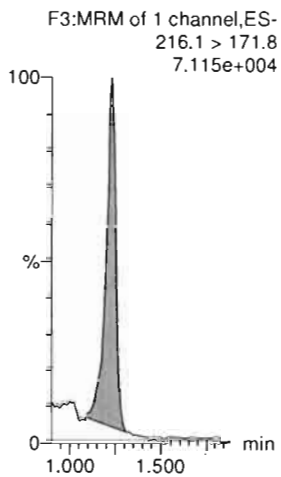
N-MeFOSE



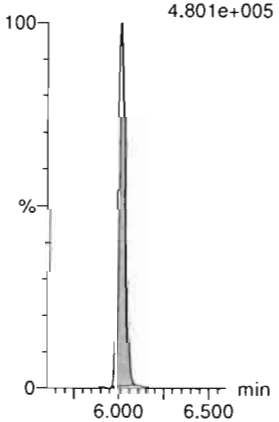
N-EtFOSE



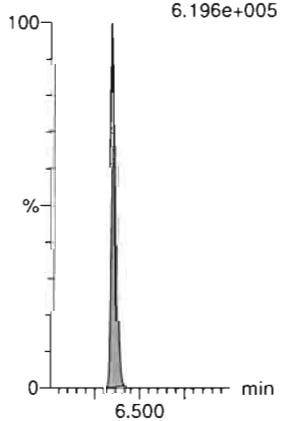
13C3-PFBA-RSD



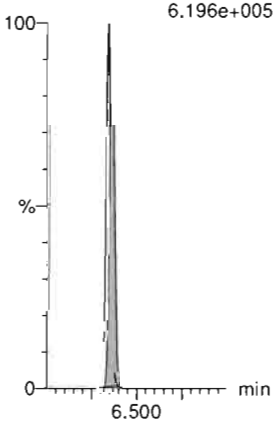
d5-N-ETFOSA-EIS



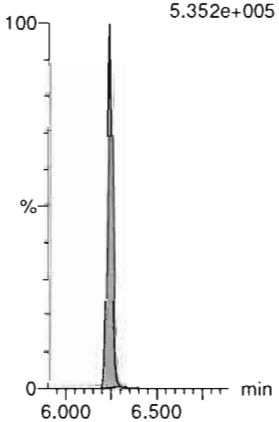
13C2-PFHxDA-EIS



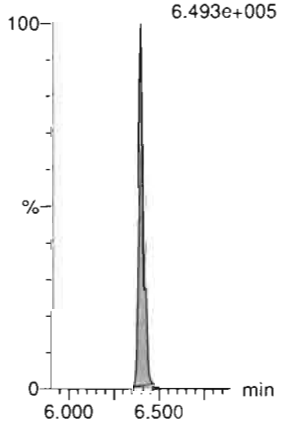
13C2-PFHxDA-EIS



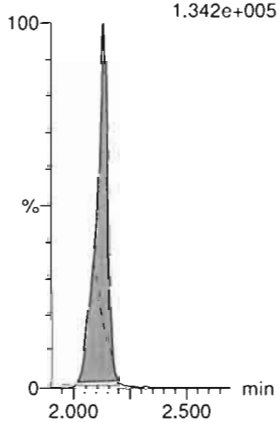
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

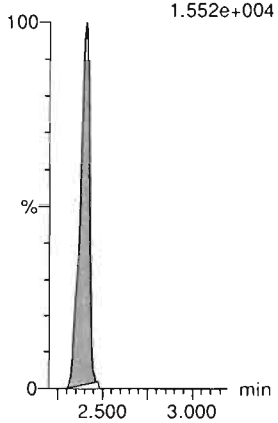


Dataset: Untitled

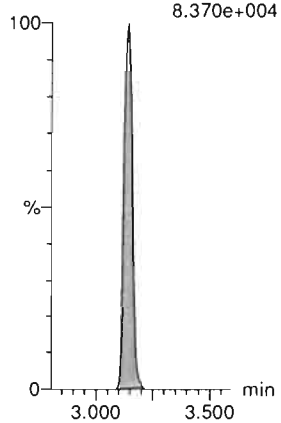
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

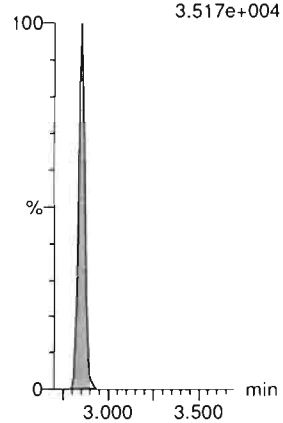
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.552e+004



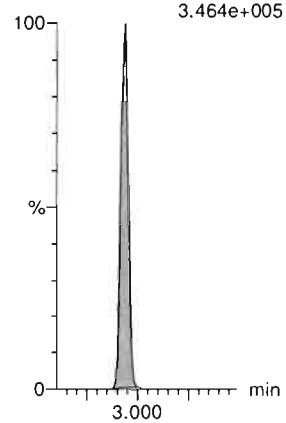
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.370e+004



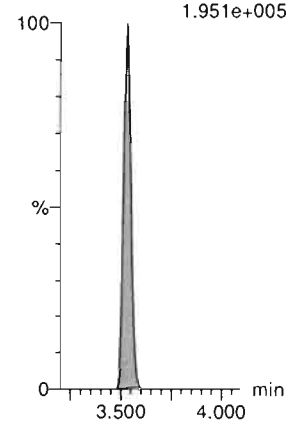
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.517e+004



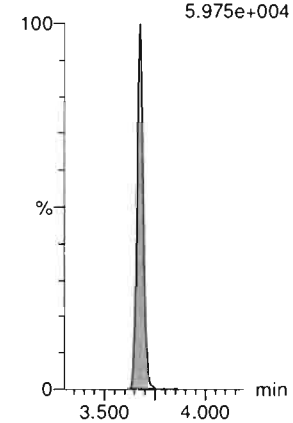
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.464e+005



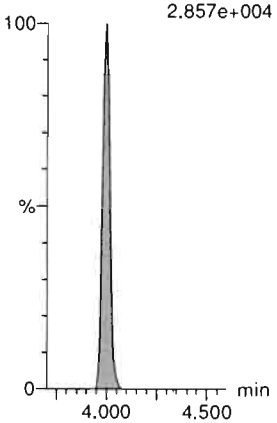
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.951e+005



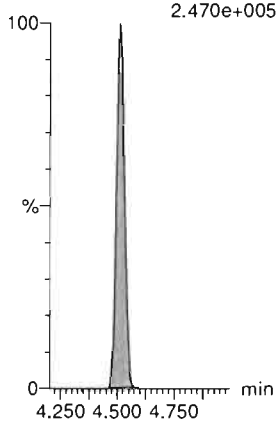
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
5.975e+004



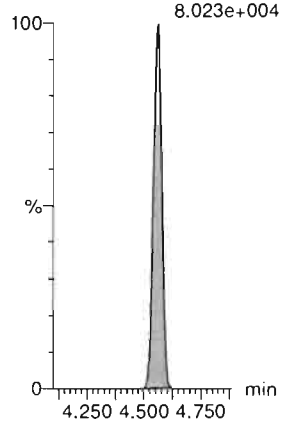
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.857e+004



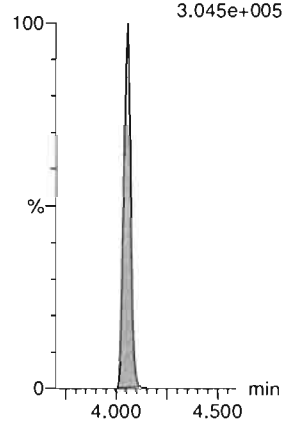
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.470e+005



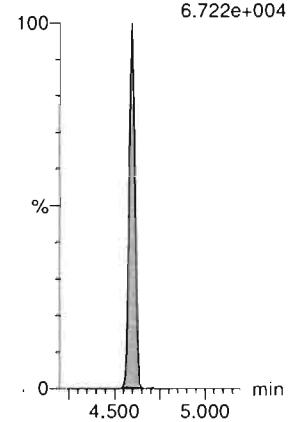
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.023e+004



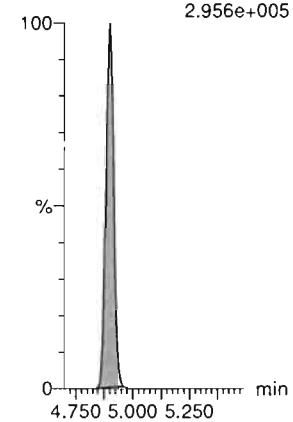
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.045e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.722e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.956e+005

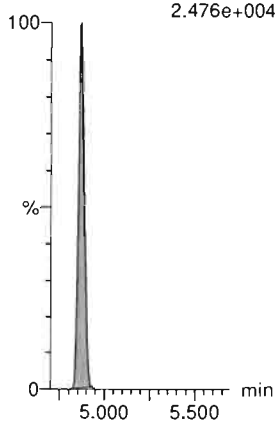


Dataset: Untitled

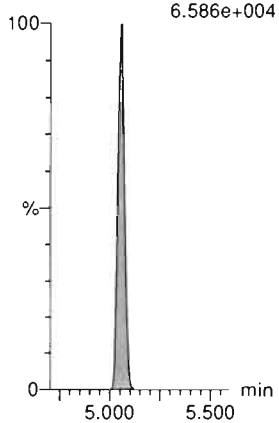
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

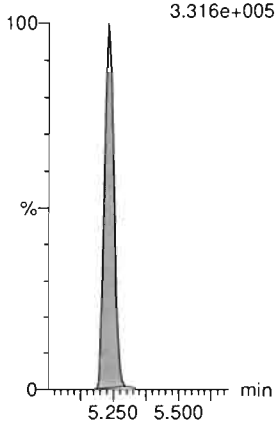
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.476e+004



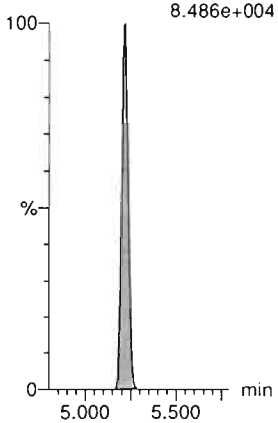
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.586e+004



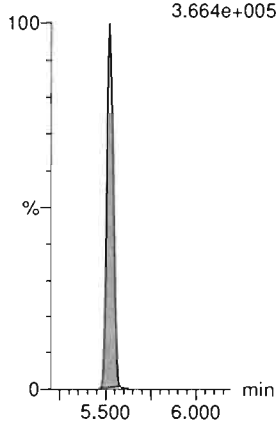
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.316e+005



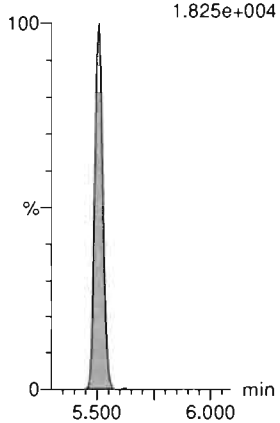
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.486e+004



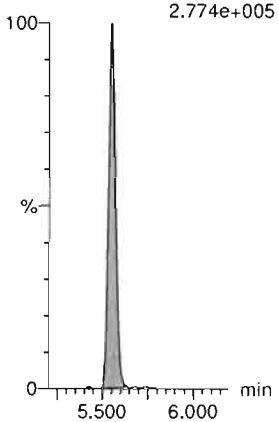
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.664e+005



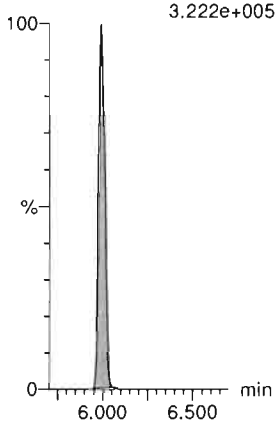
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.825e+004



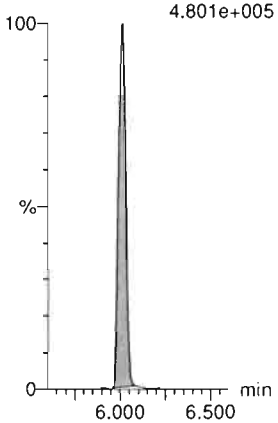
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.774e+005



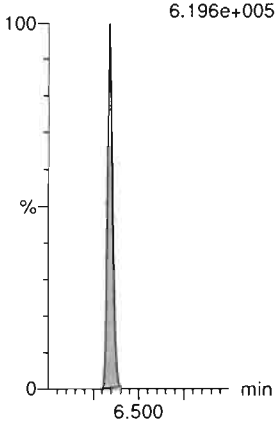
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.222e+005



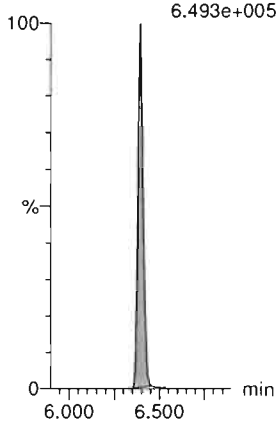
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.801e+005



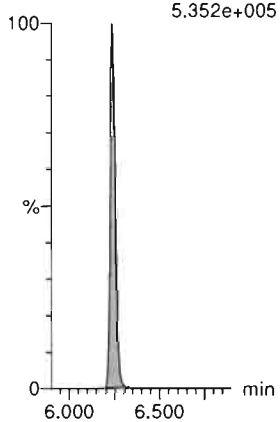
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.196e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.493e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.352e+005

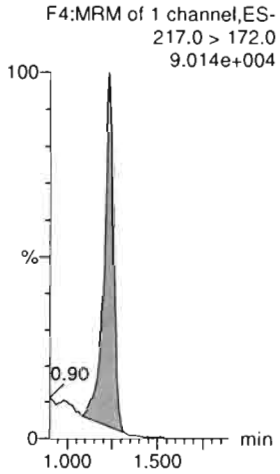


Dataset: Untitled

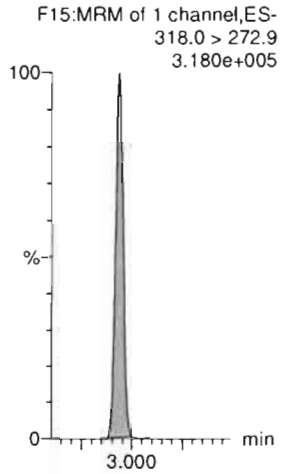
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-3, Date: 04-Mar-2020, Time: 19:31:52, ID: ST200304P2-1 PFC CS-2 20C0304, Description: PFC CS-2 20C0304

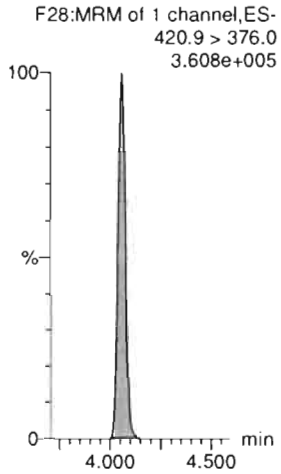
13C4-PFBA



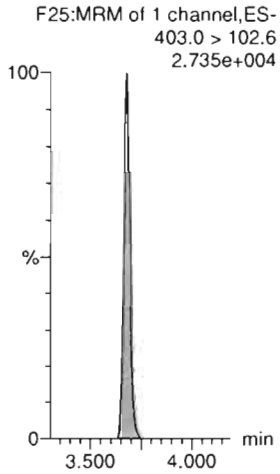
13C5-PFHxA



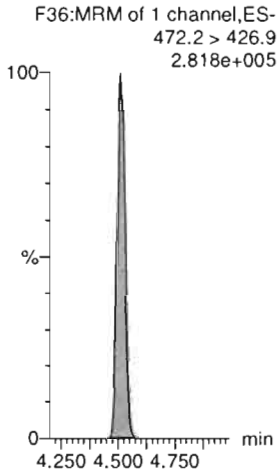
13C8-PFOA



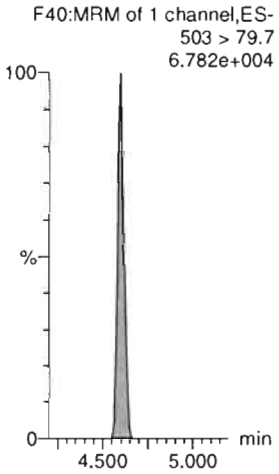
18O2-PFHxS



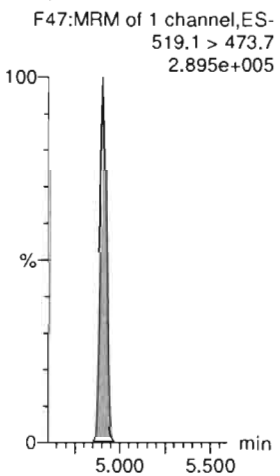
13C9-PFNA



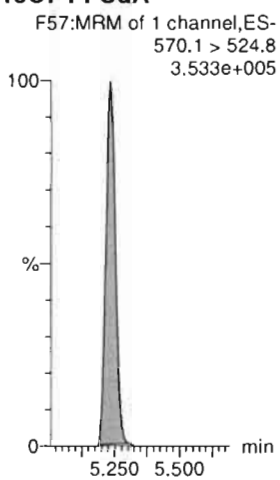
13C4-PFOS



13C6-PFDA



13C7-PFUdA

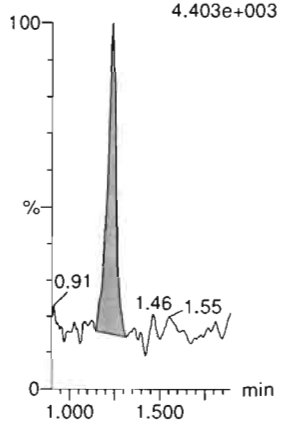


Dataset: Untitled

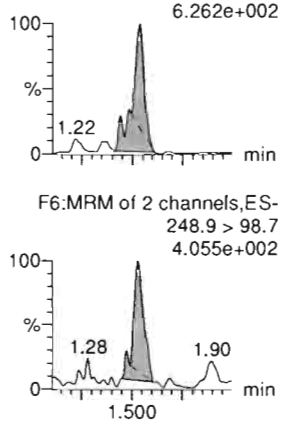
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

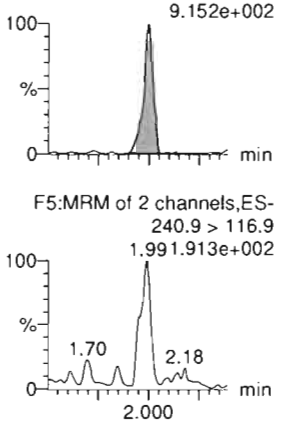
PFBA



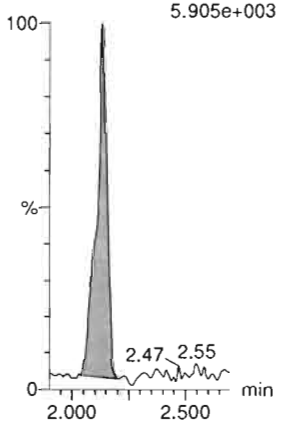
PFPrS



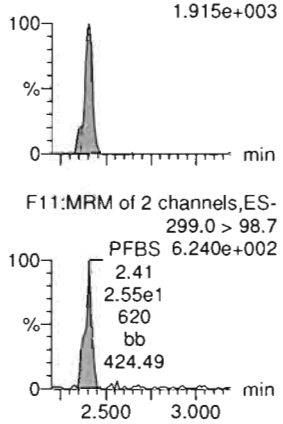
3:3 FTCA



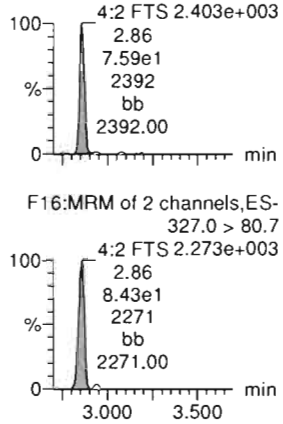
PFPeA



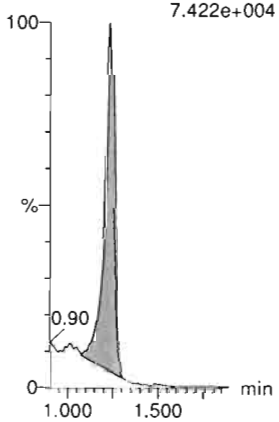
PFBS



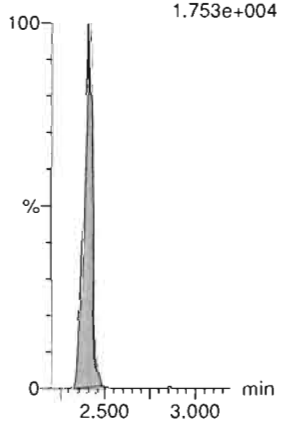
4:2 FTS



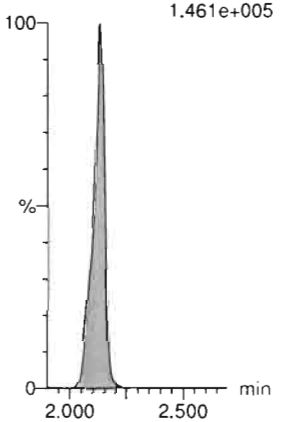
13C3-PFBA-EIS



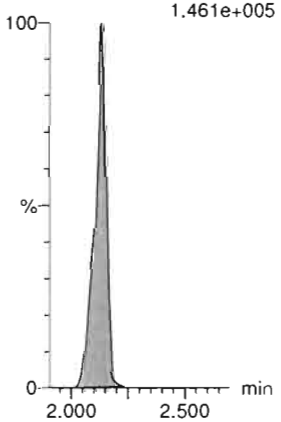
13C3-PFBS-EIS



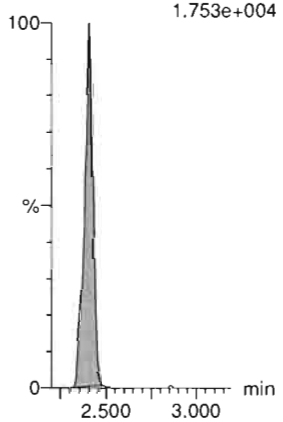
13C3-PFPeA-EIS



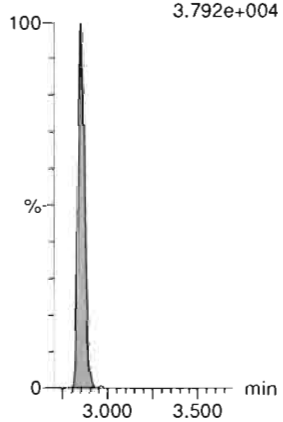
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

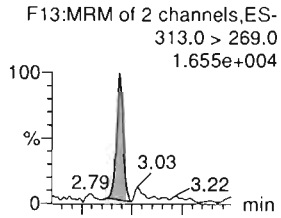


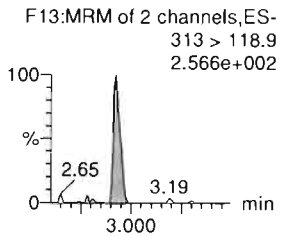
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

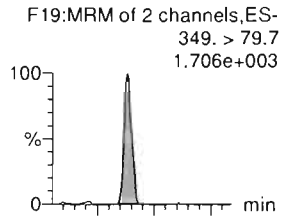
Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

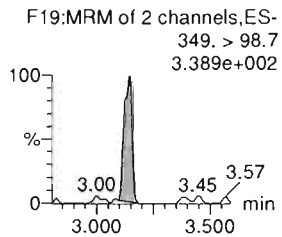
PFHxA



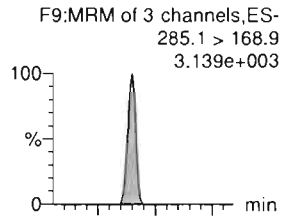


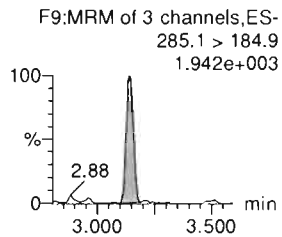
PFPeS



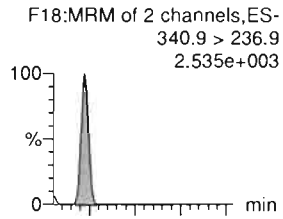


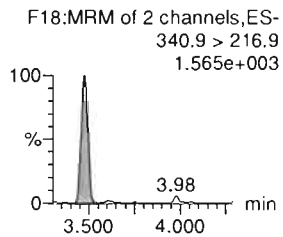
HFPO-DA



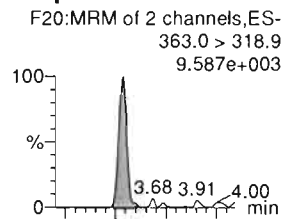


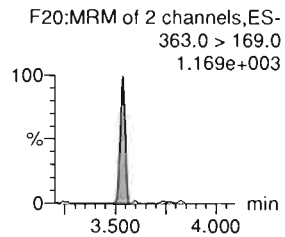
5:3 FTCA



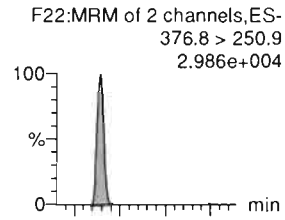


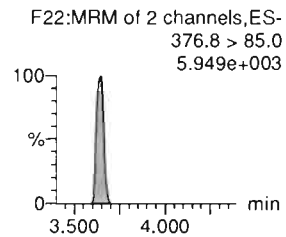
PFHpA



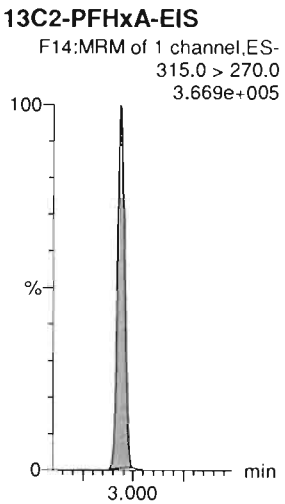


ADONA

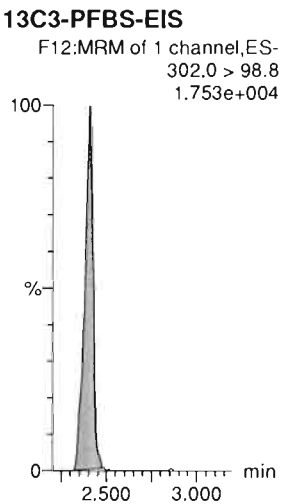




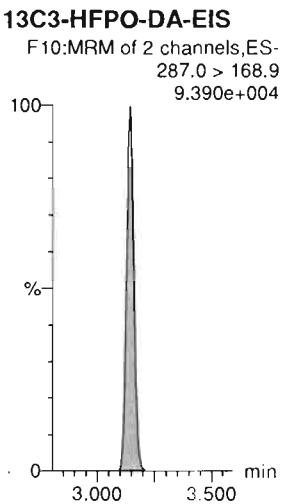
13C2-PFHxA-EIS



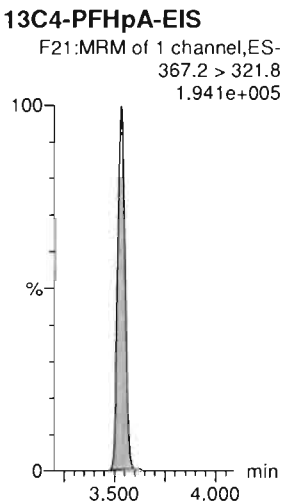
13C3-PFBS-EIS



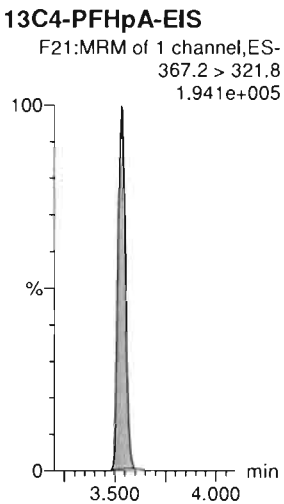
13C3-HFPO-DA-EIS



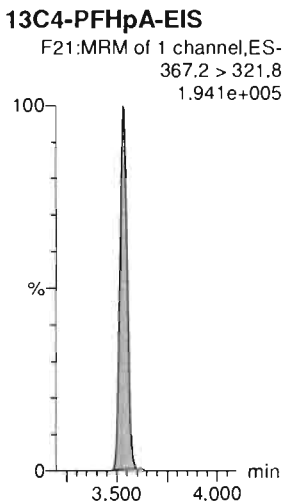
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

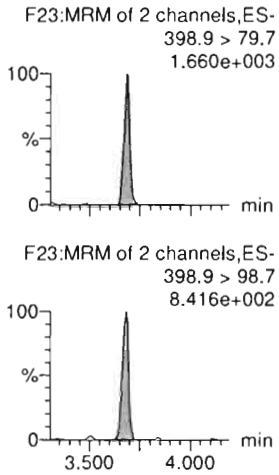


Dataset: Untitled

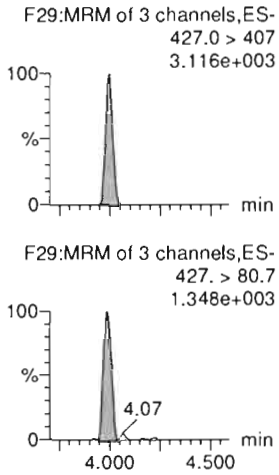
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

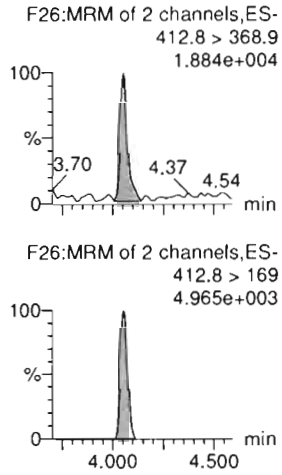
L-PFHxS



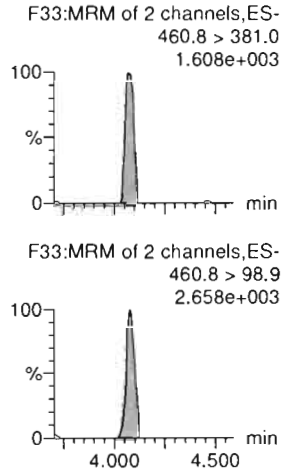
6:2 FTS



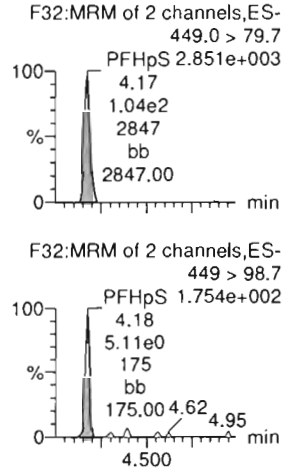
L-PFOA



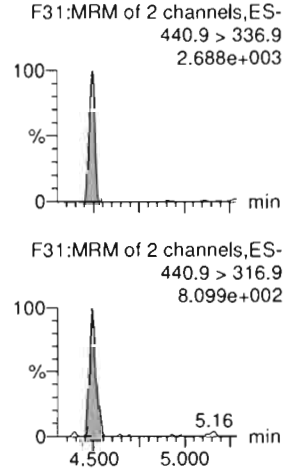
PFEChS



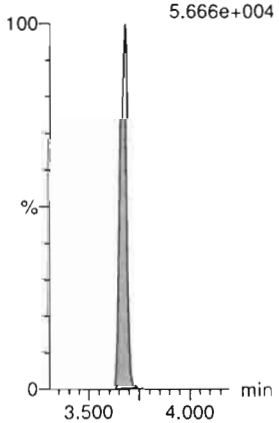
PFHpS



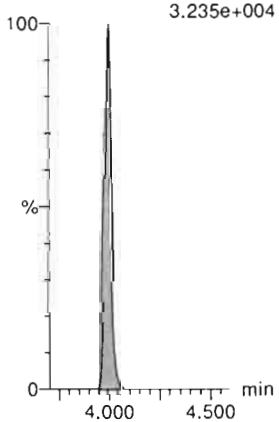
7:3 FTCA



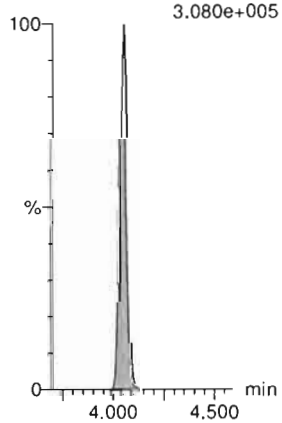
13C3-PFHxS-EIS



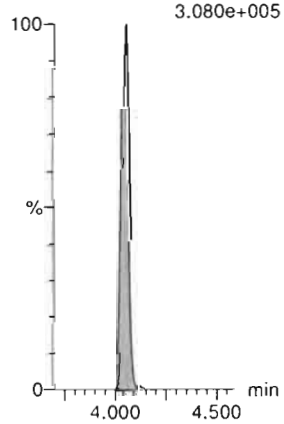
13C2-6:2 FTS-EIS



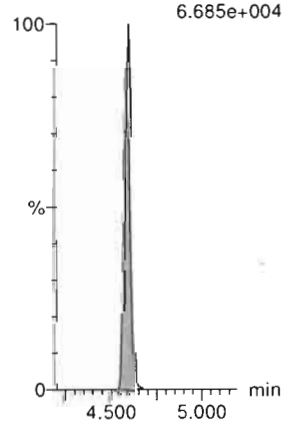
13C2-PFOA-EIS



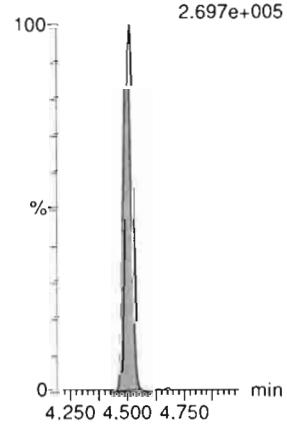
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

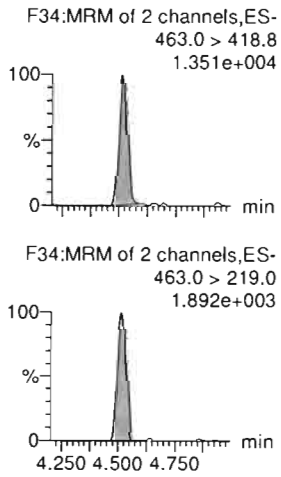


Dataset: Untitled

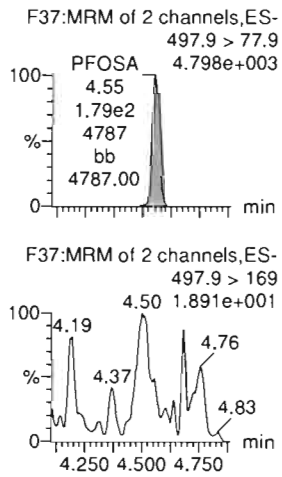
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

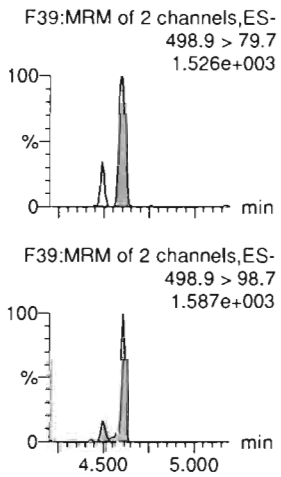
PFNA



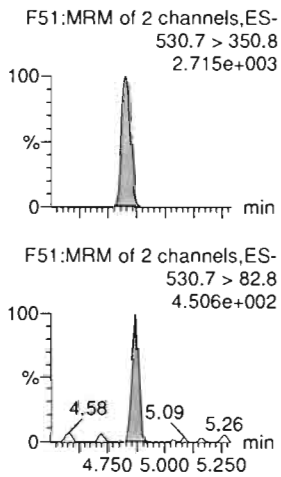
PFOSA



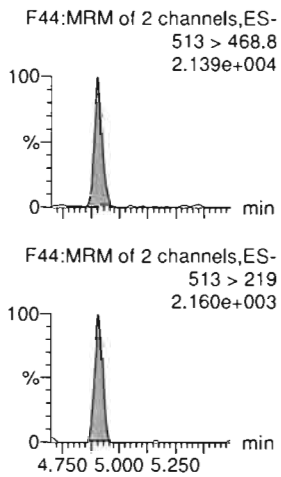
L-PFOS



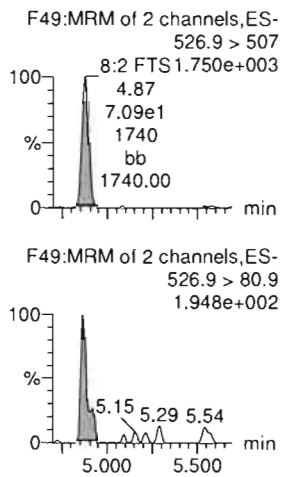
9Cl-PF30NS



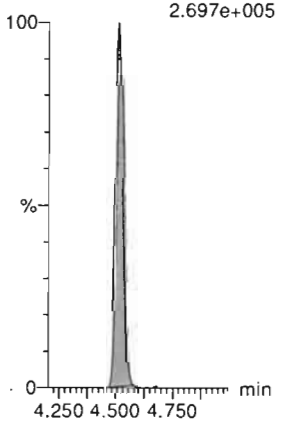
PFDA



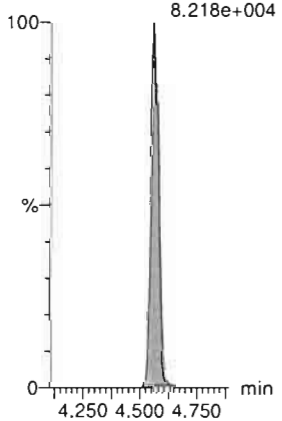
8:2 FTS



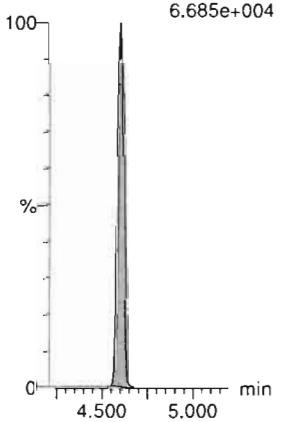
13C5-PFNA-EIS



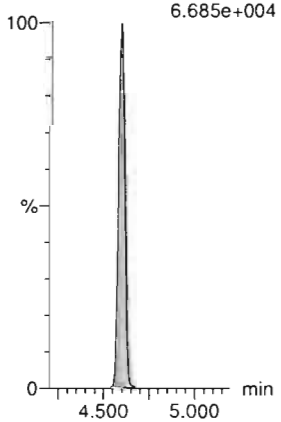
13C8-PFOSA-EIS



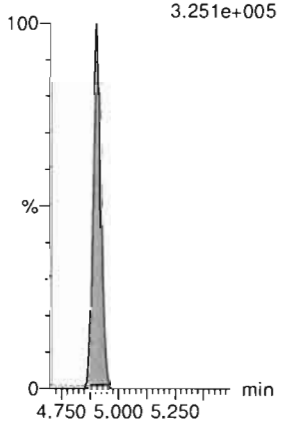
13C8-PFOS-EIS



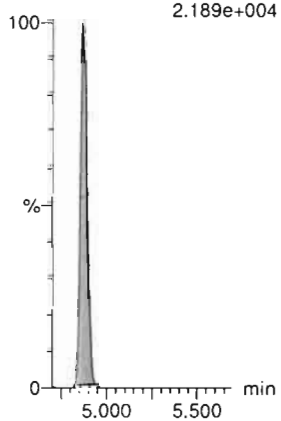
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

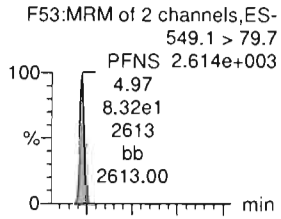


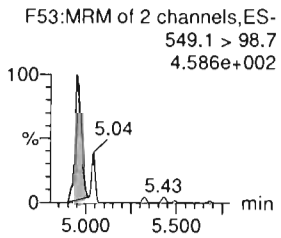
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

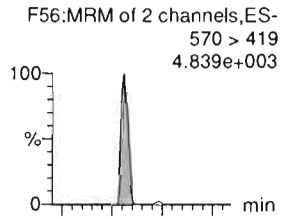
Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

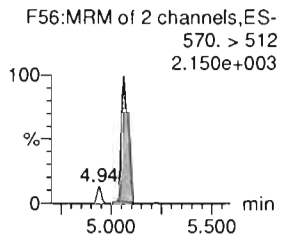
PFNS



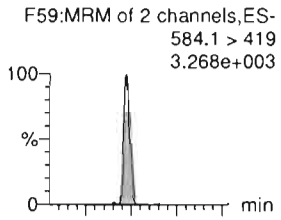


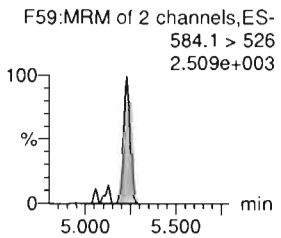
L-MeFOSAA



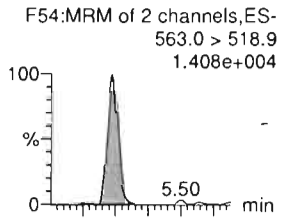


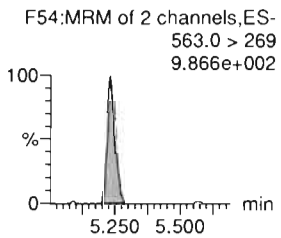
L-EtFOSAA



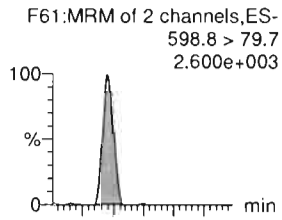


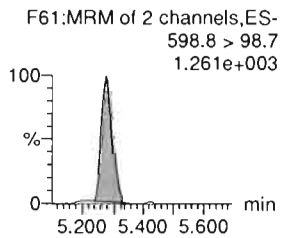
PFUdA



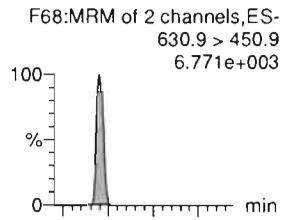


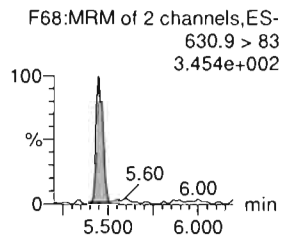
PFDS



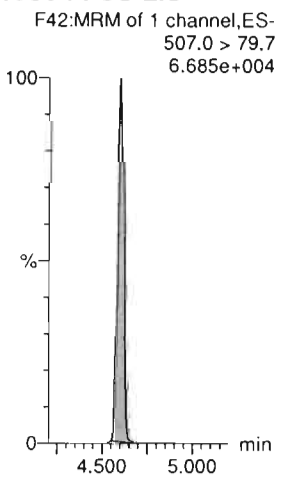


11Cl-PF30UdS

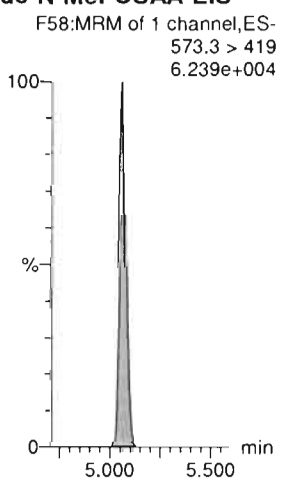




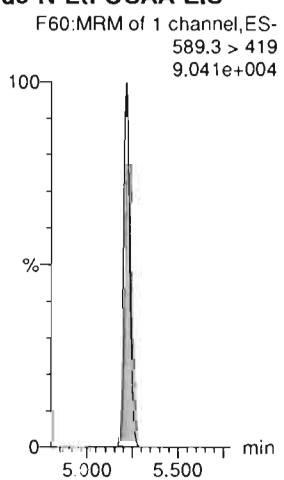
13C8-PFOS-EIS



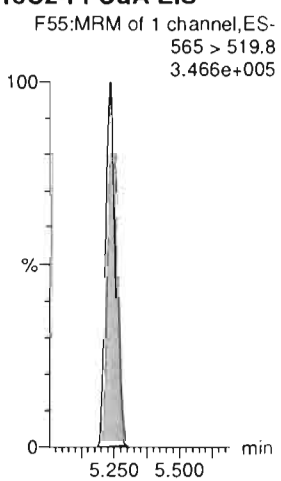
d3-N-MeFOSAA-EIS



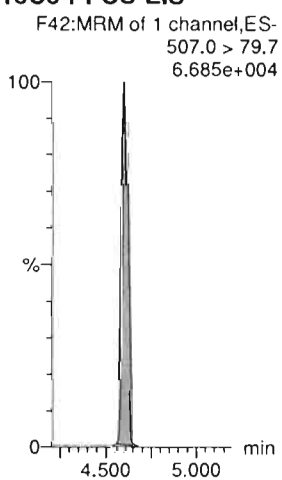
d5-N-EtFOSAA-EIS



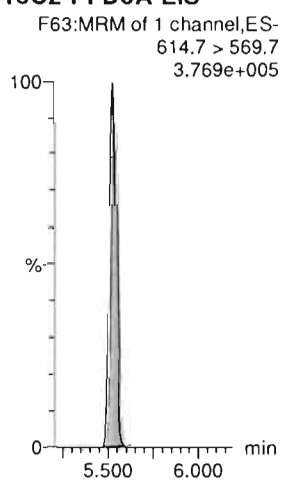
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

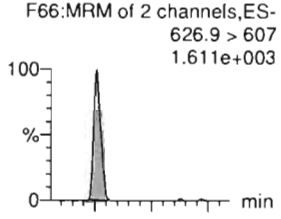


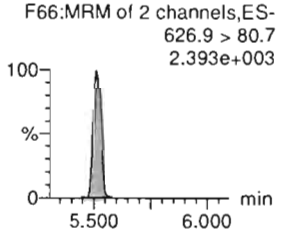
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

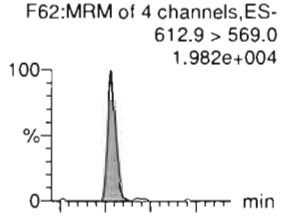
Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

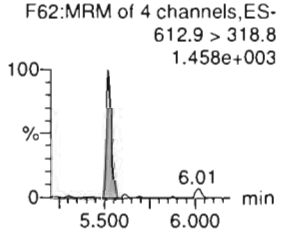
10:2 FTS



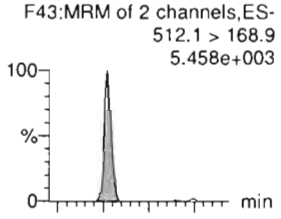


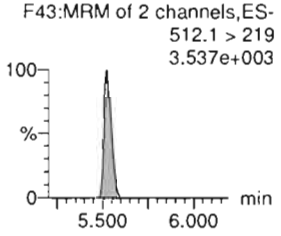
PFDoA



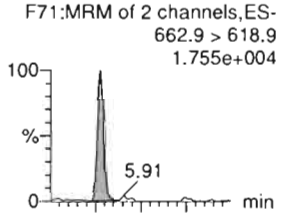


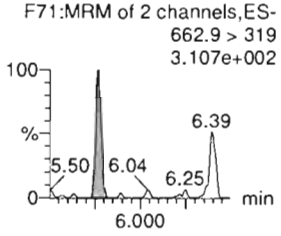
N-MeFOSA



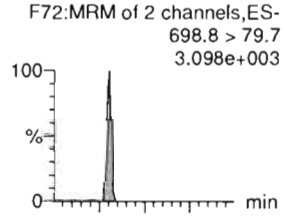


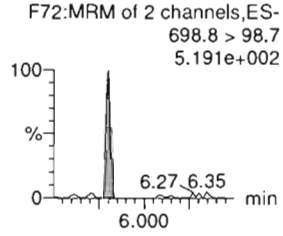
PFTrDA



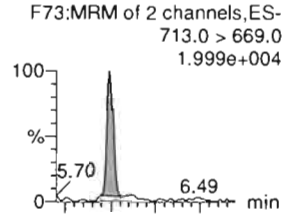


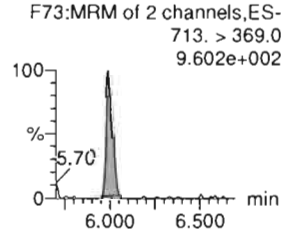
PFDoS



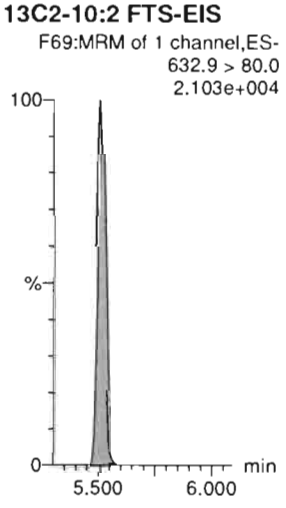


PFTeDA

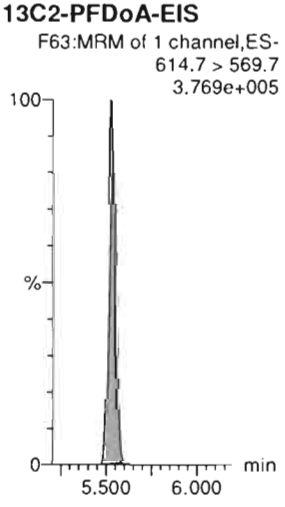




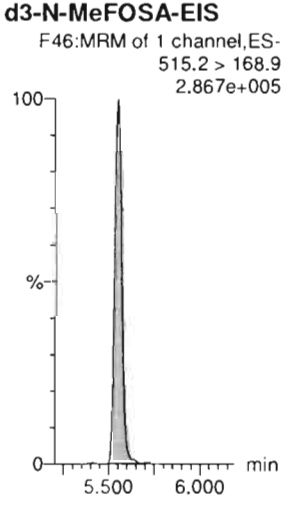
13C2-10:2 FTS-EIS



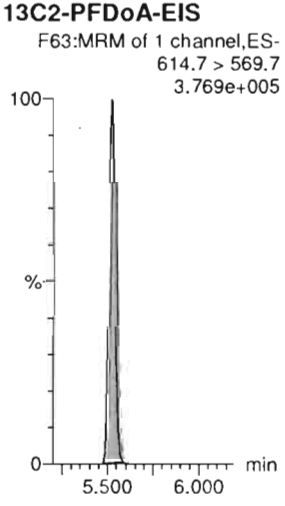
13C2-PFDoA-EIS



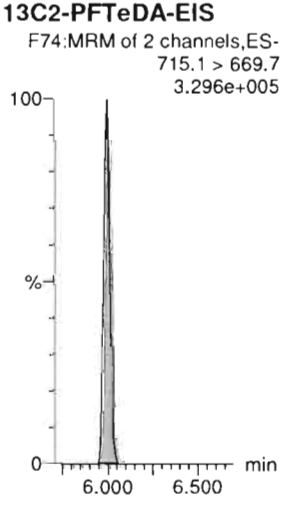
d3-N-MeFOSA-EIS



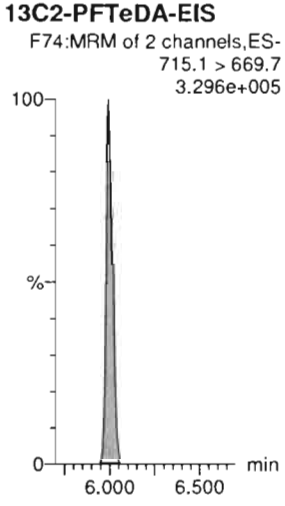
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

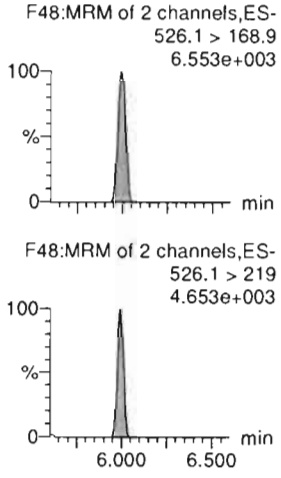


Dataset: Untitled

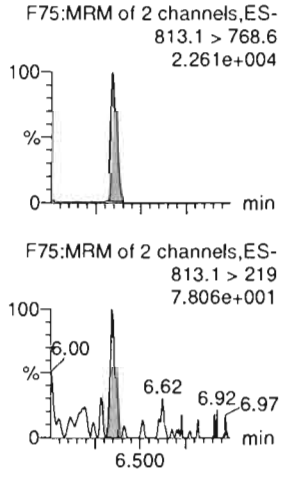
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

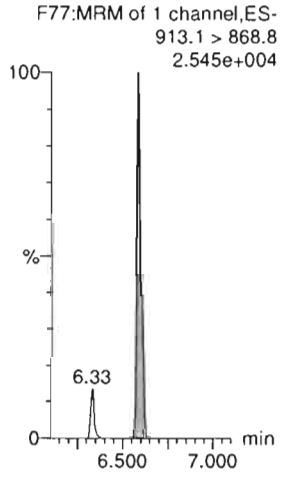
N-EtFOSA



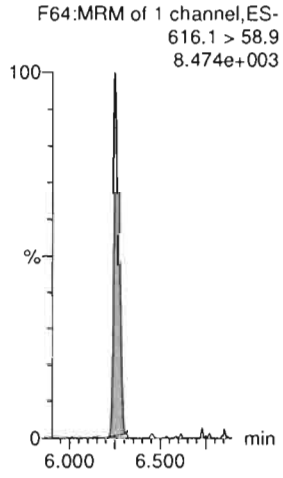
PFHxDA



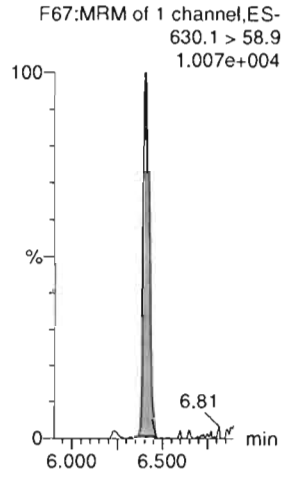
PFODA



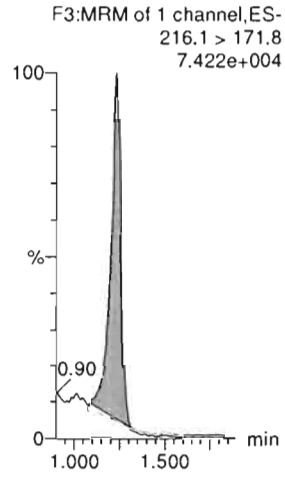
N-MeFOSE



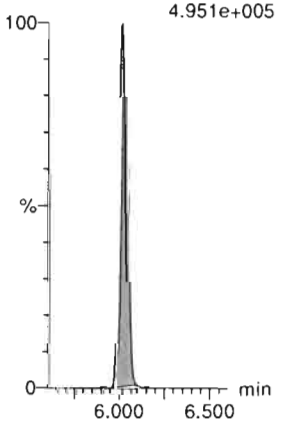
N-EtFOSE



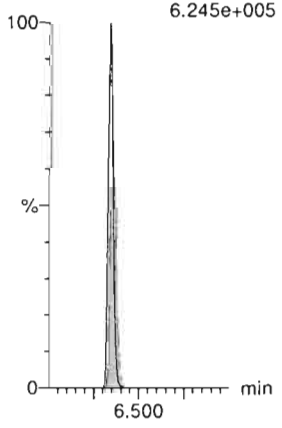
13C3-PFBA-RSD



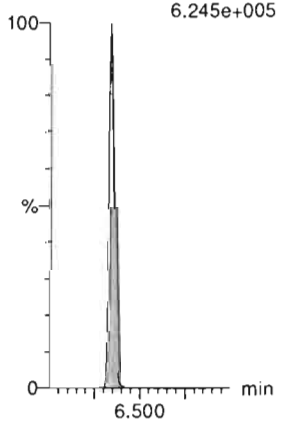
d5-N-ETFOSA-EIS



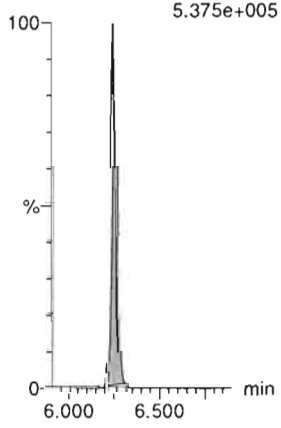
13C2-PFHxDA-EIS



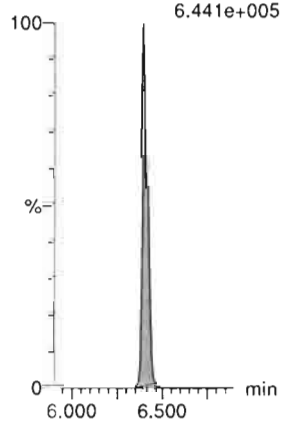
13C2-PFHxDA-EIS



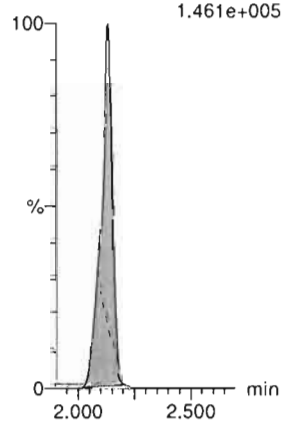
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

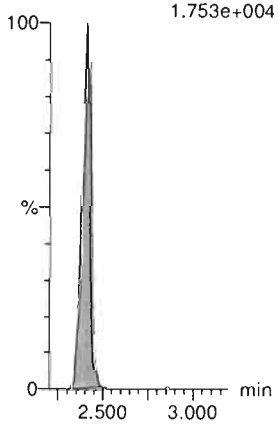


Dataset: Untitled

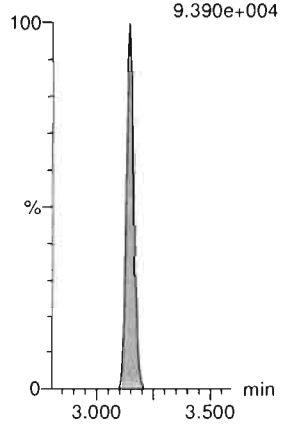
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

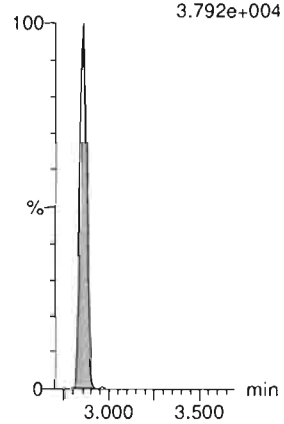
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.753e+004



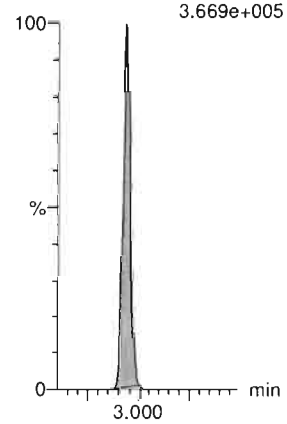
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.390e+004



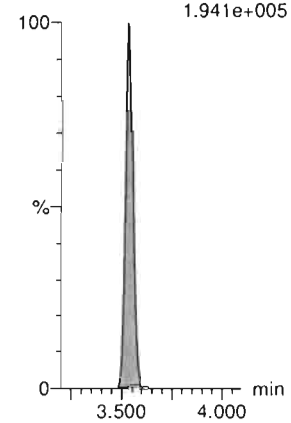
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.792e+004



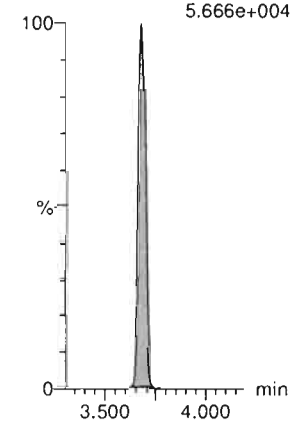
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.669e+005



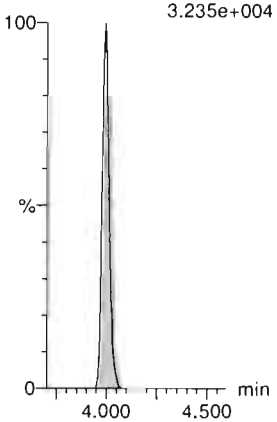
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.941e+005



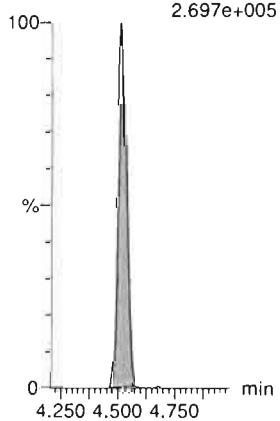
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
5.666e+004



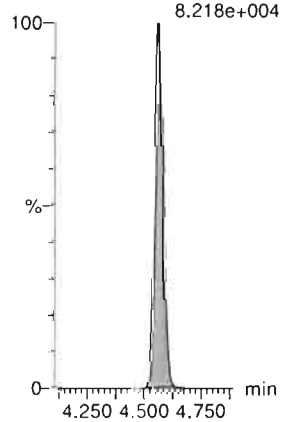
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.235e+004



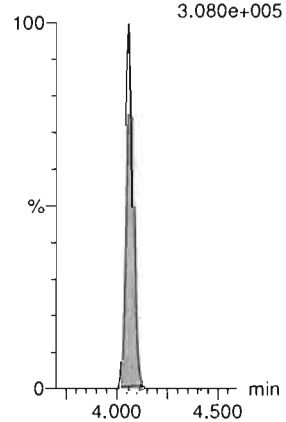
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.697e+005



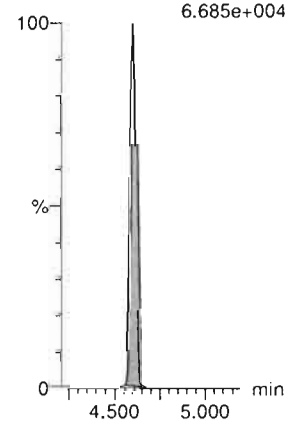
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.218e+004



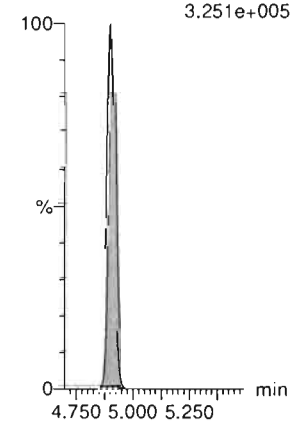
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.080e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.685e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.251e+005

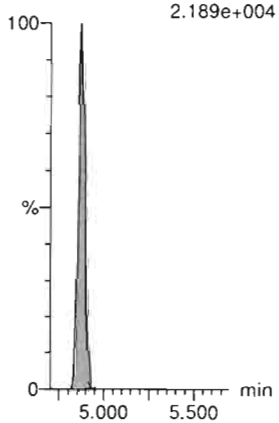


Dataset: Untitled

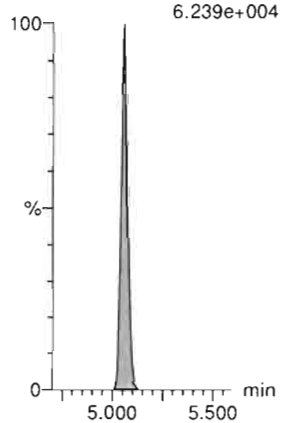
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

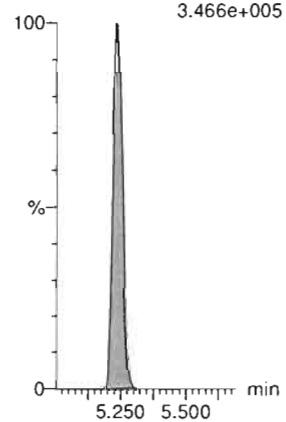
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.189e+004



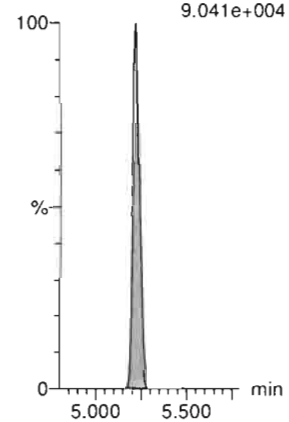
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.239e+004



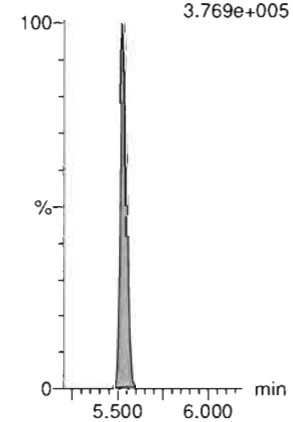
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.466e+005



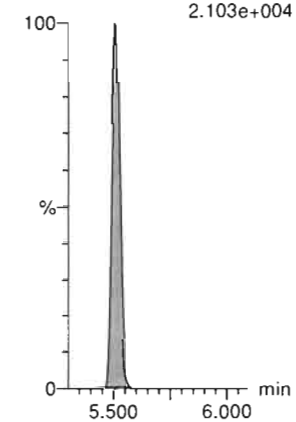
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
9.041e+004



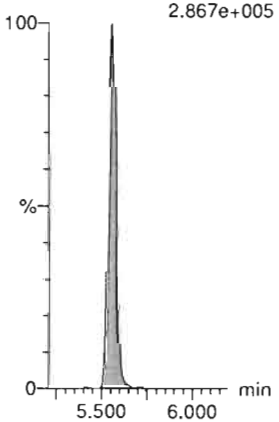
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.769e+005



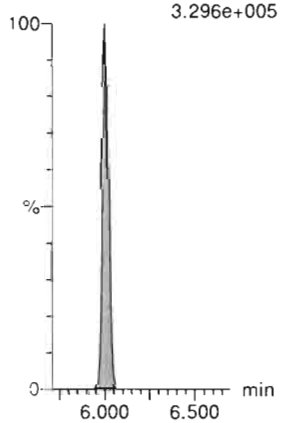
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.103e+004



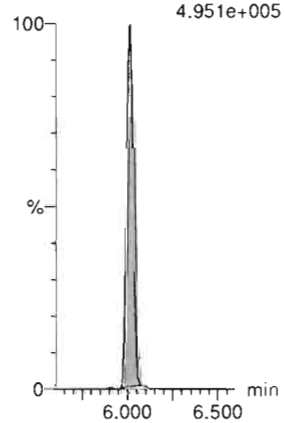
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.867e+005



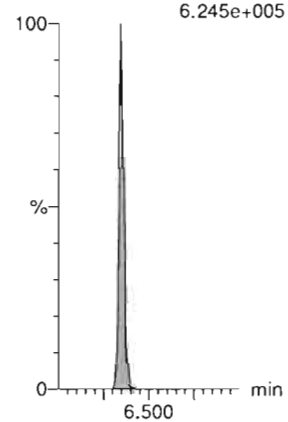
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.296e+005



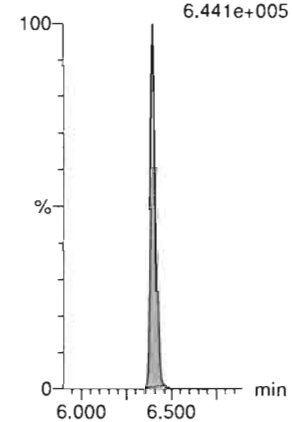
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.951e+005



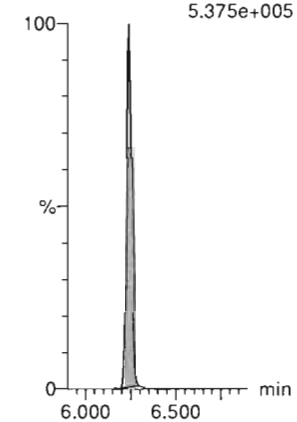
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.245e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.441e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.375e+005

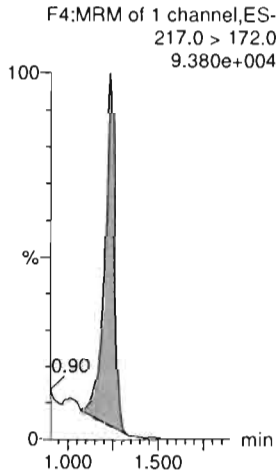


Dataset: Untitled

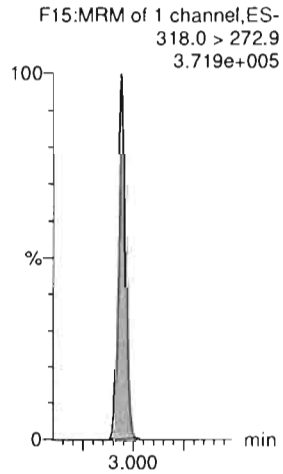
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-4, Date: 04-Mar-2020, Time: 19:42:23, ID: ST200304P2-2 PFC CS-1 20C0305, Description: PFC CS-1 20C0305

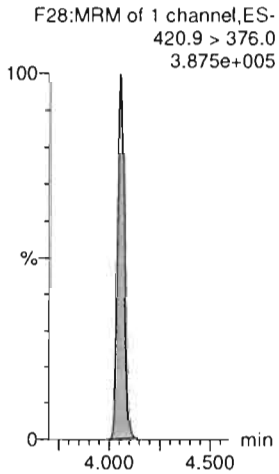
13C4-PFBA



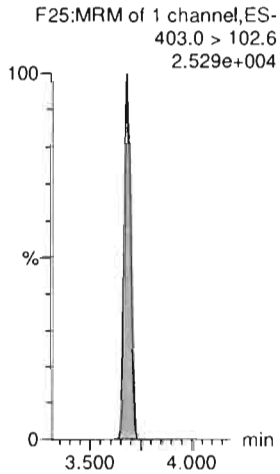
13C5-PFHxA



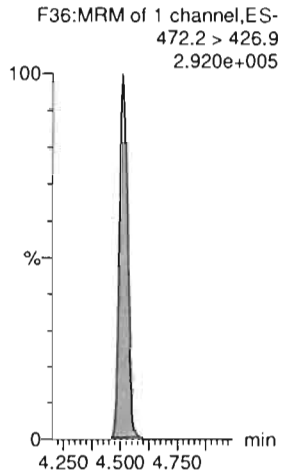
13C8-PFOA



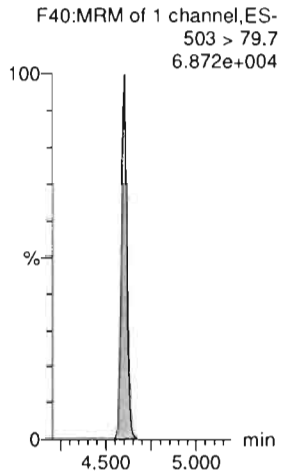
18O2-PFHxS



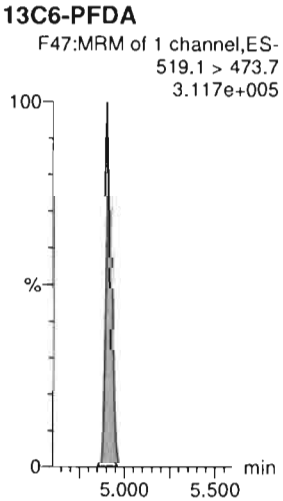
13C9-PFNA



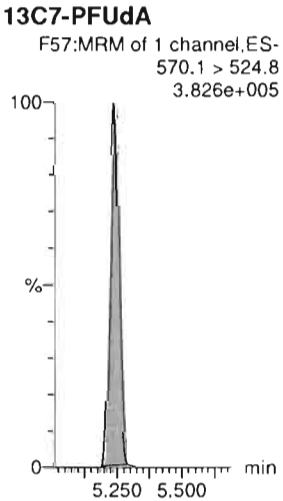
13C4-PFOS



13C6-PFDA



13C7-PFUdA

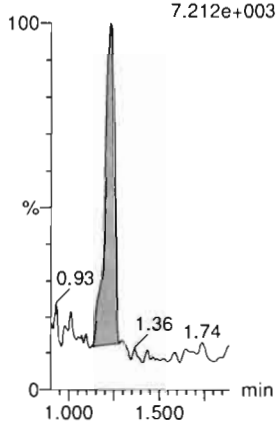


Dataset: Untitled

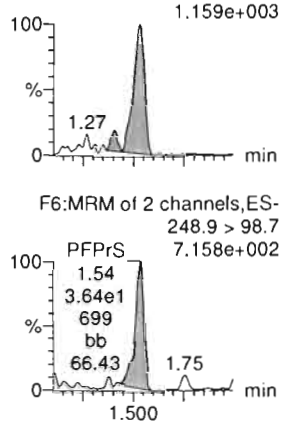
Last Altered: Thursday, March 05, 2020 09:34:37 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:35:09 Pacific Standard Time

Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

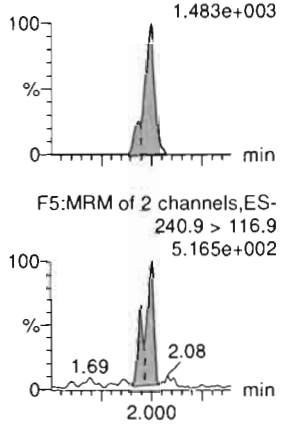
PFBA



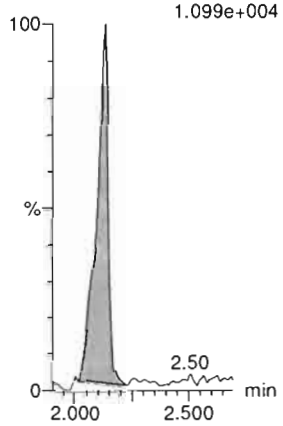
PFPrS



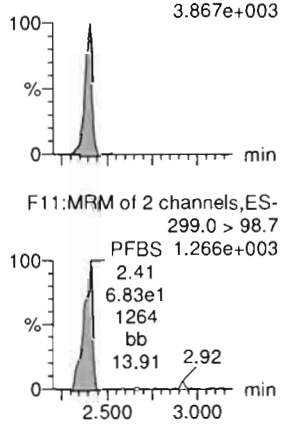
3:3 FTCA



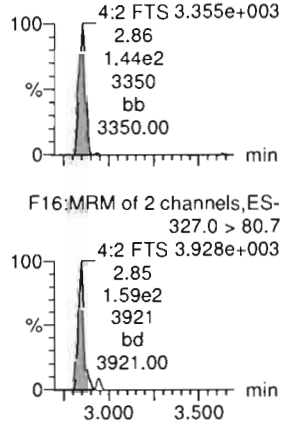
PFPeA



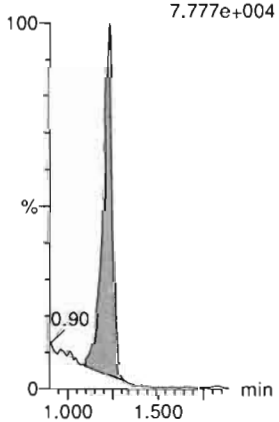
PFBS



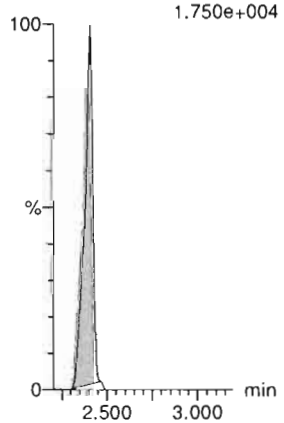
4:2 FTS



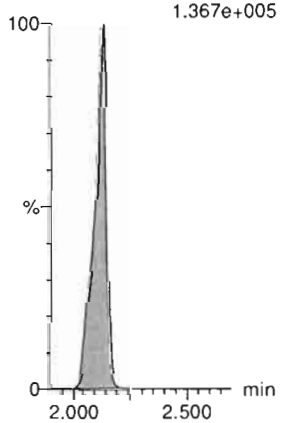
13C3-PFBA-EIS



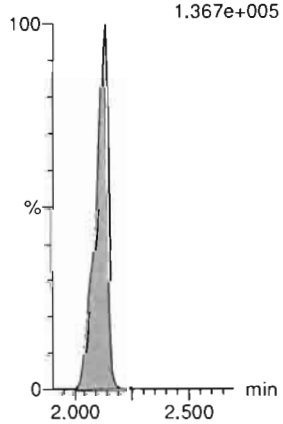
13C3-PFBS-EIS



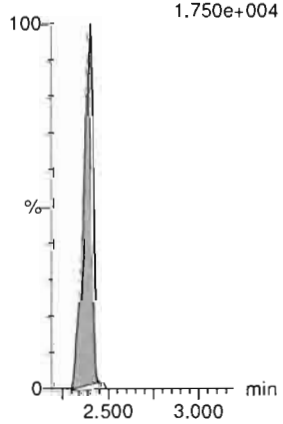
13C3-PFPeA-EIS



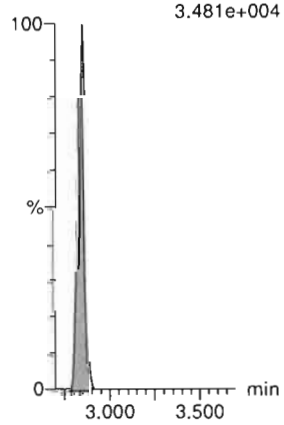
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

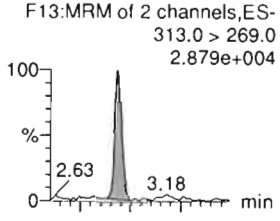


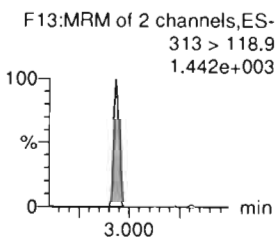
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

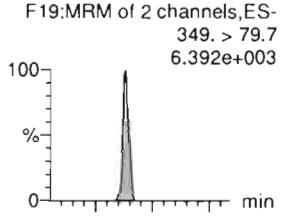
Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

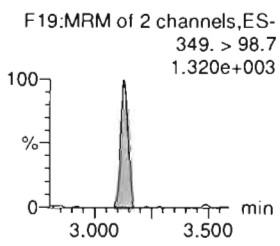
PFHxA



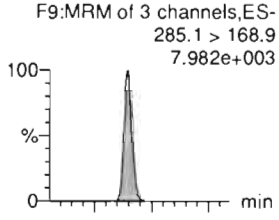


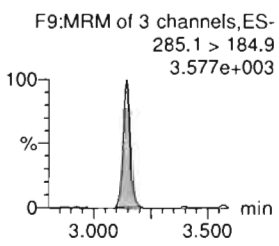
PFPeS



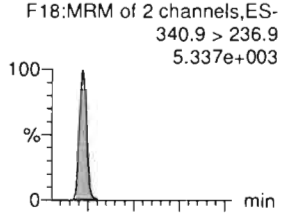


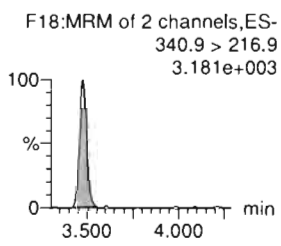
HFPO-DA



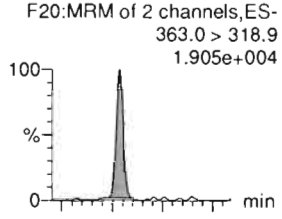


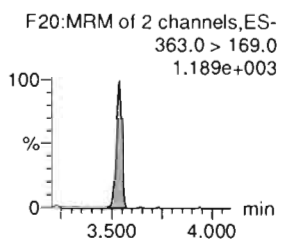
5:3 FTCA



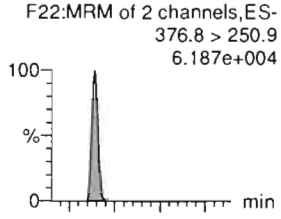


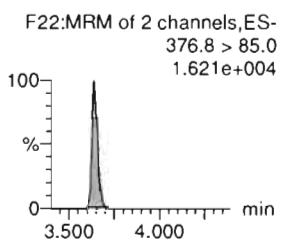
PFHpA



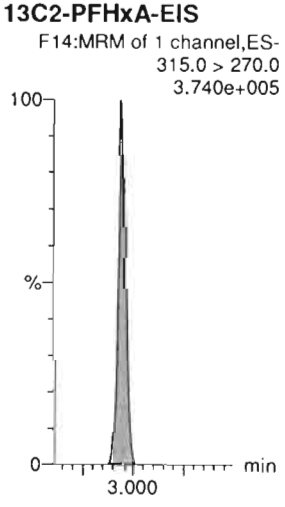


ADONA

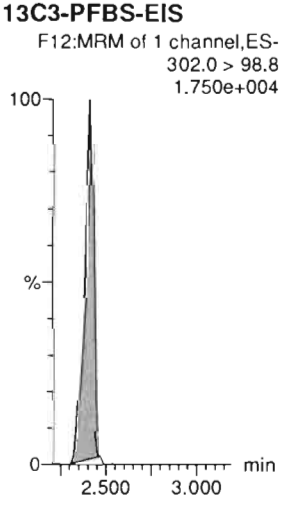




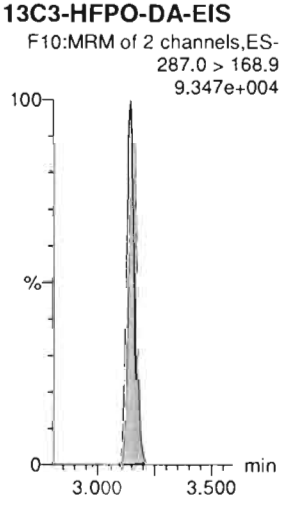
13C2-PFHxA-EIS



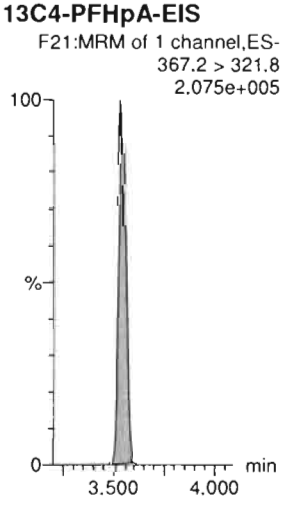
13C3-PFBS-EIS



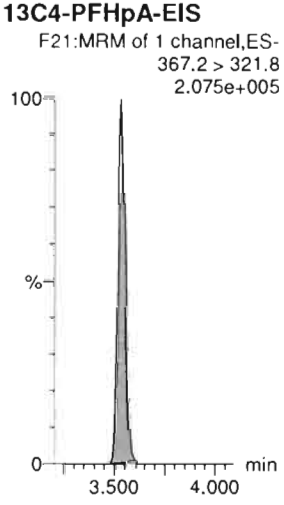
13C3-HFPO-DA-EIS



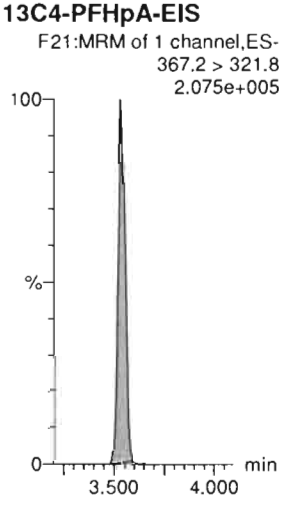
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

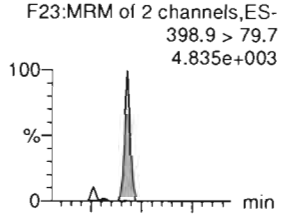


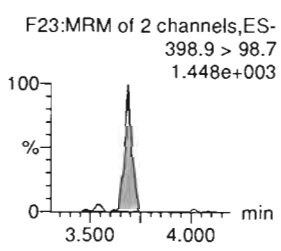
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

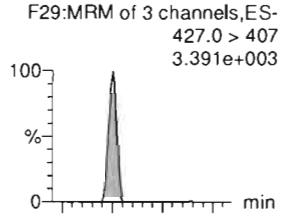
Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

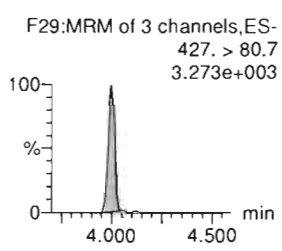
L-PFHxS



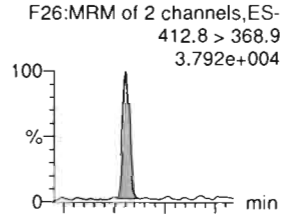


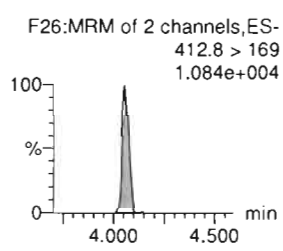
6:2 FTS



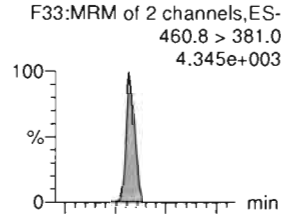


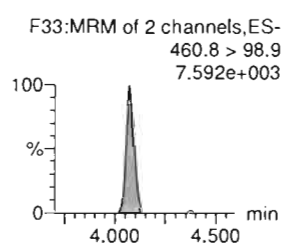
L-PFOA



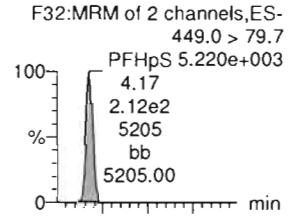


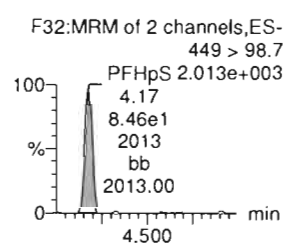
PFEChS



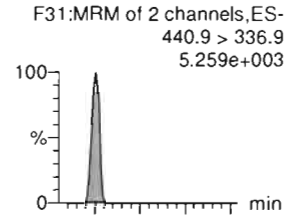


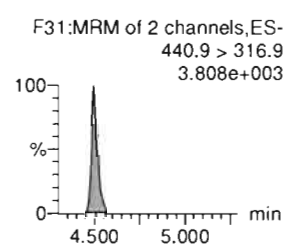
PFHpS



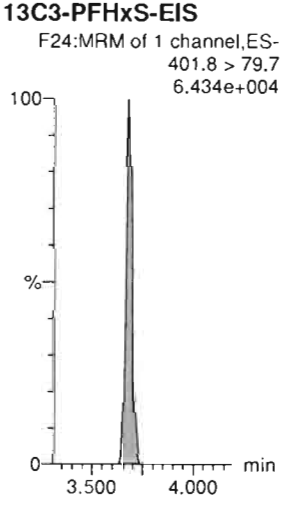


7:3 FTCA

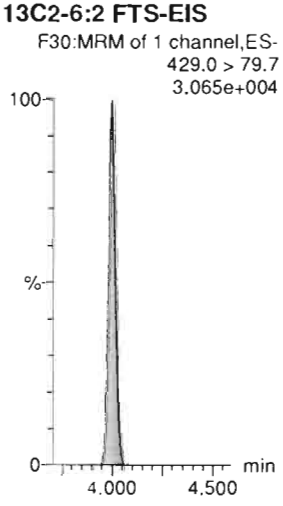




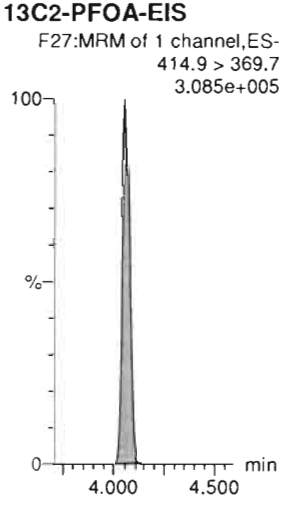
13C3-PFHxS-EIS



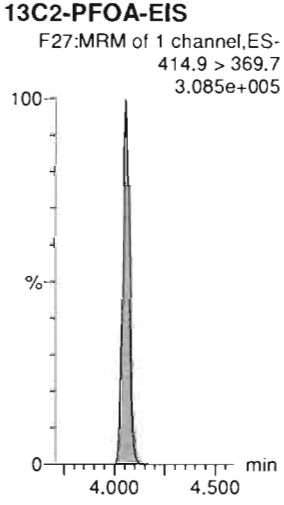
13C2-6:2 FTS-EIS



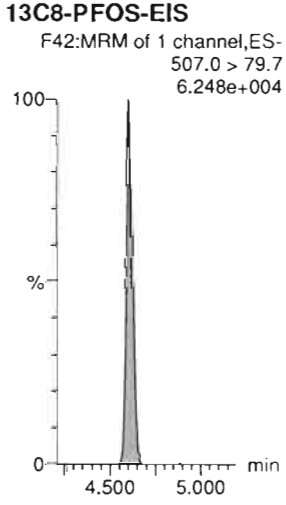
13C2-PFOA-EIS



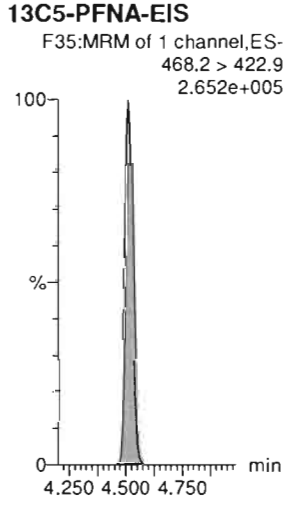
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

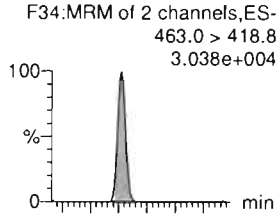


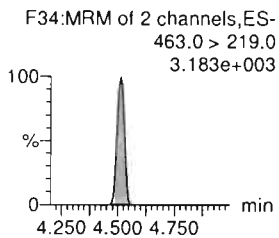
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

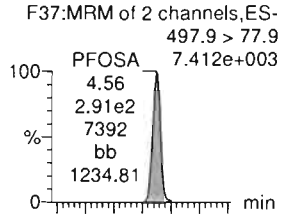
Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

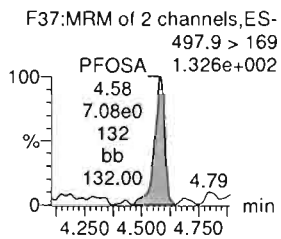
PFNA



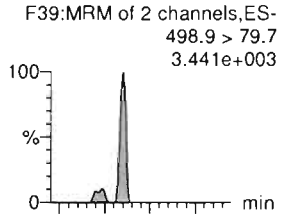


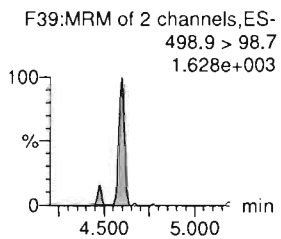
PFOSA



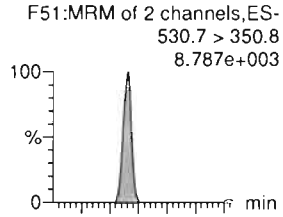


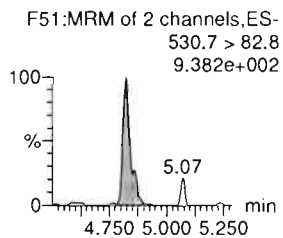
L-PFOS



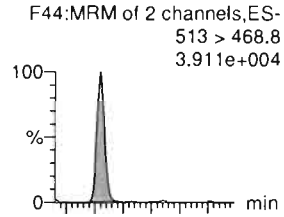


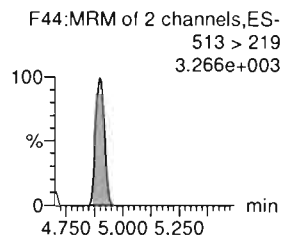
9Cl-PF30NS



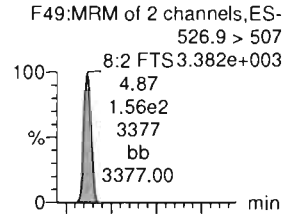


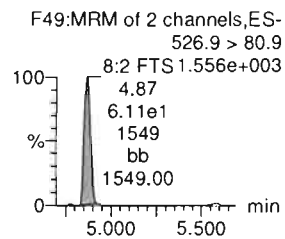
PFDA



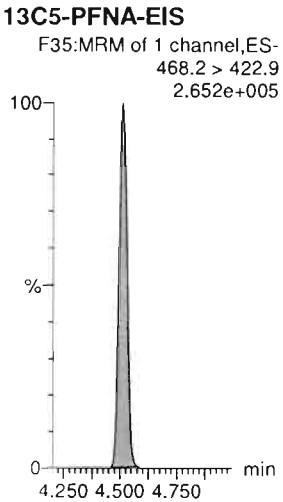


8:2 FTS

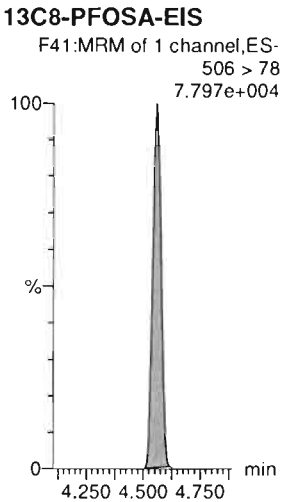




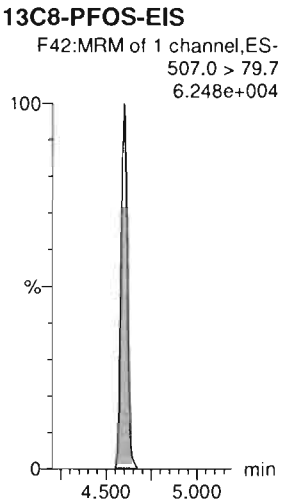
13C5-PFNA-EIS



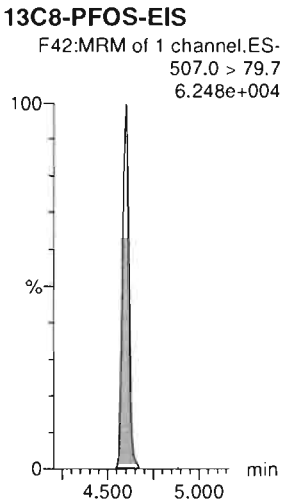
13C8-PFOSA-EIS



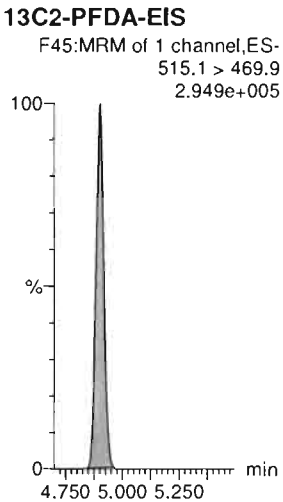
13C8-PFOS-EIS



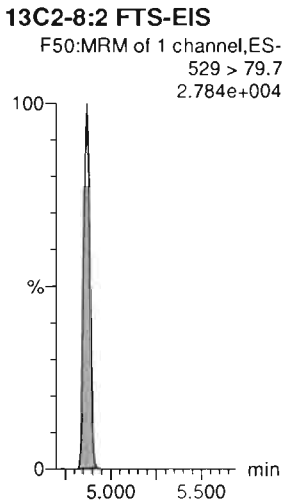
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

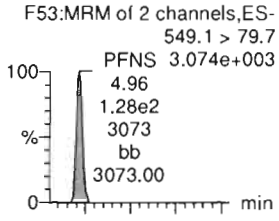


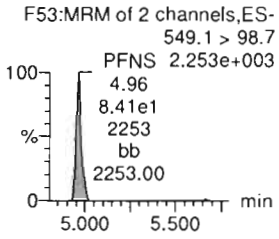
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

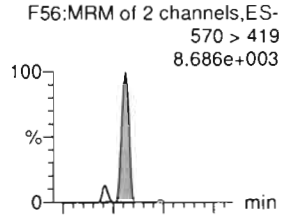
Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

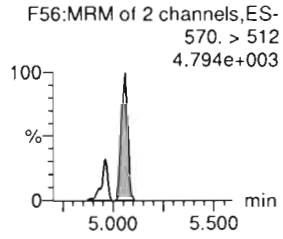
PFNS



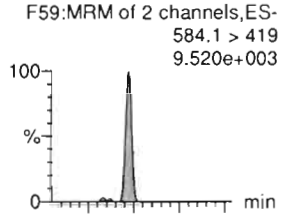


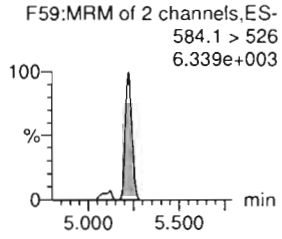
L-MeFOSAA



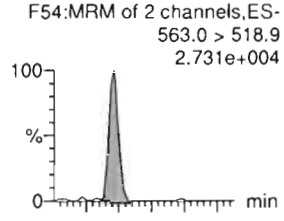


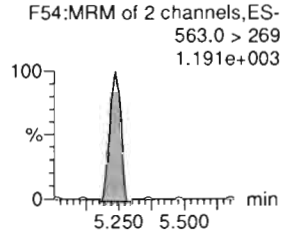
L-EtFOSAA



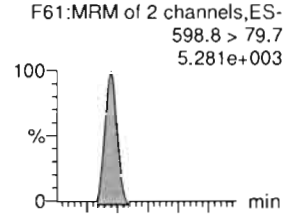


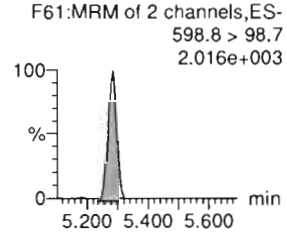
PFUdA



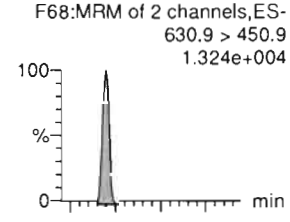


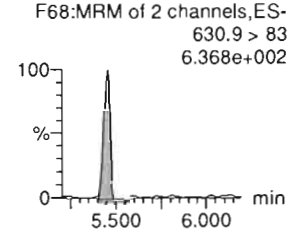
PFDS



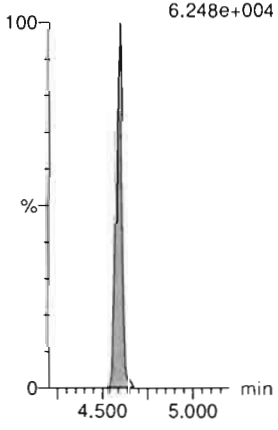


11Cl-PF30UdS

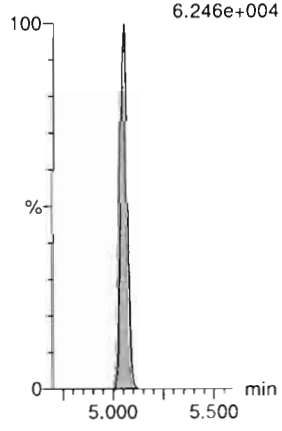




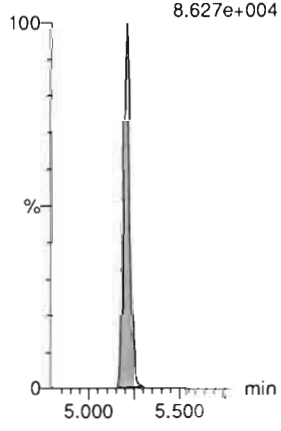
13C8-PFOS-EIS



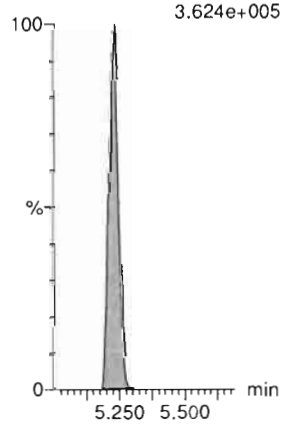
d3-N-MeFOSAA-EIS



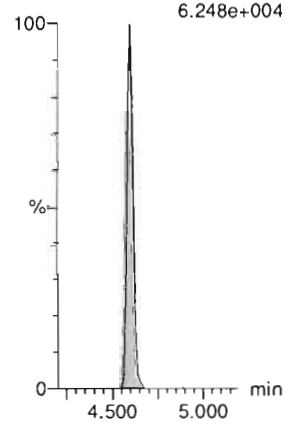
d5-N-EtFOSAA-EIS



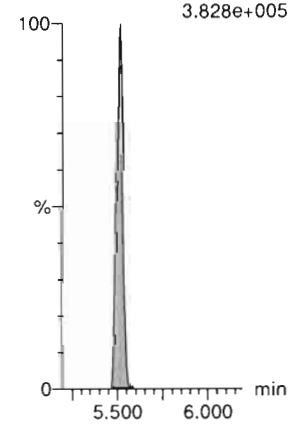
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

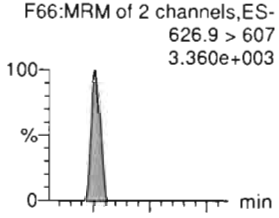


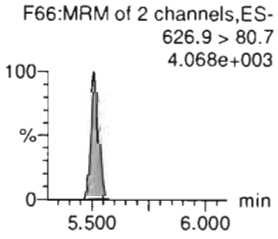
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

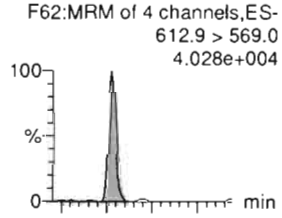
Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

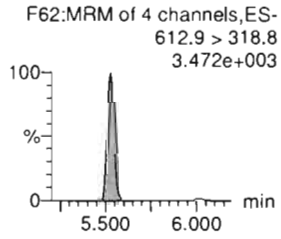
10:2 FTS



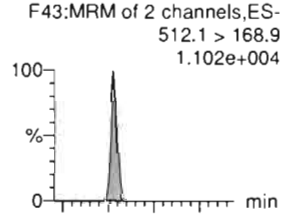


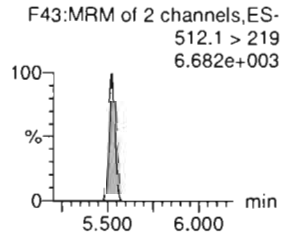
PFDoA



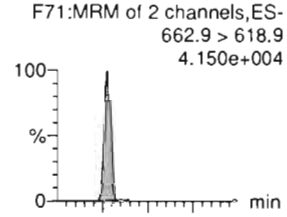


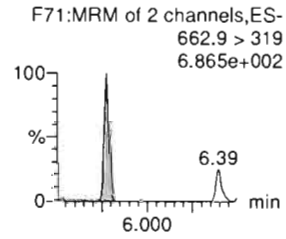
N-MeFOSA



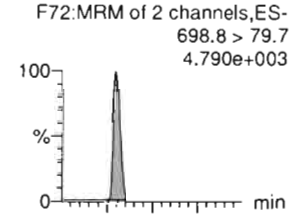


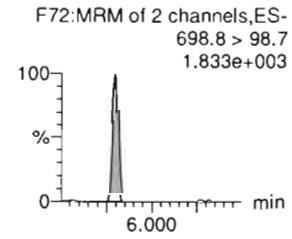
PFTrDA



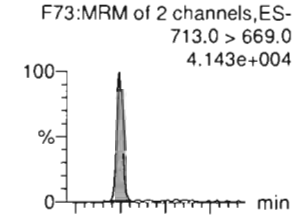


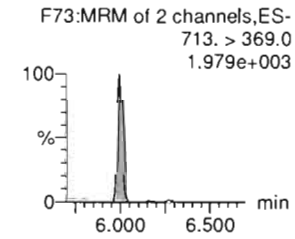
PFDoS



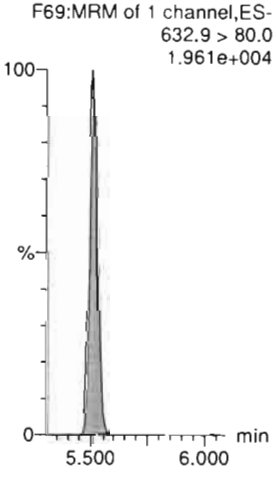


PFTeDA

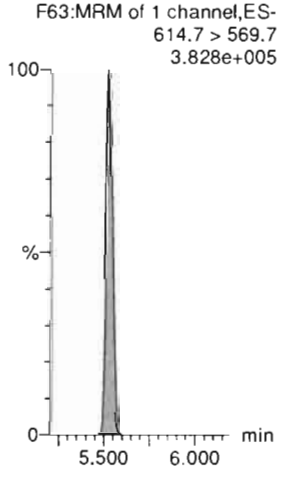




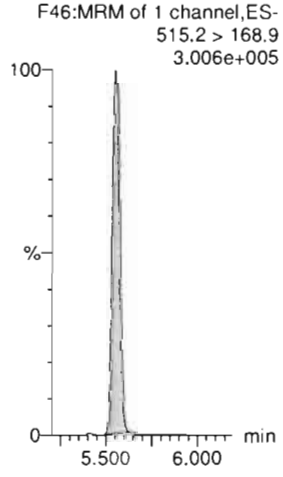
13C2-10:2 FTS-EIS



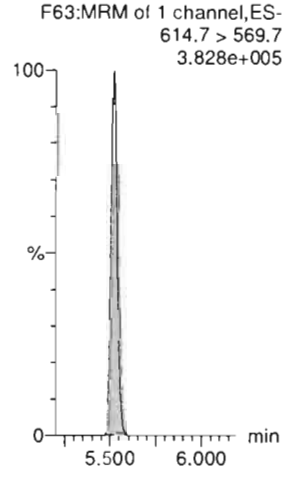
13C2-PFDoA-EIS



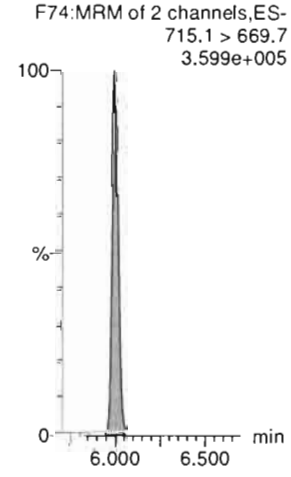
d3-N-MeFOSA-EIS



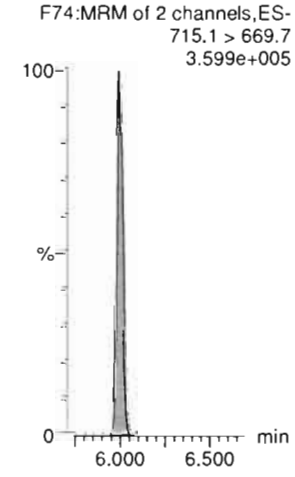
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

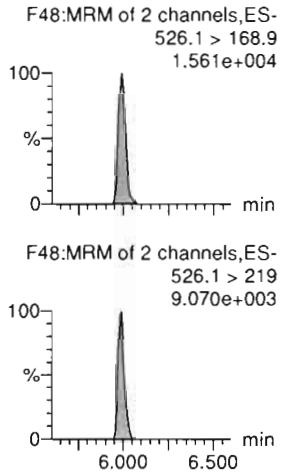


Dataset: Untitled

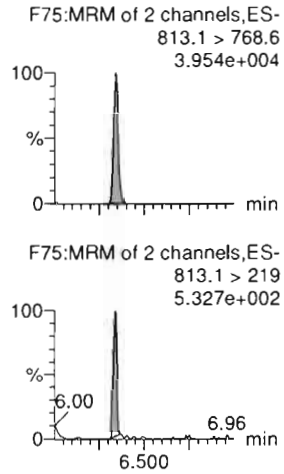
Last Altered: Thursday, March 05, 2020 09:34:37 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:35:09 Pacific Standard Time

Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

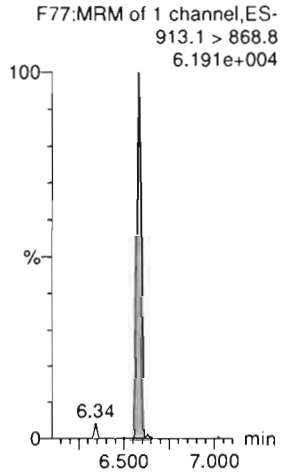
N-EtFOSA



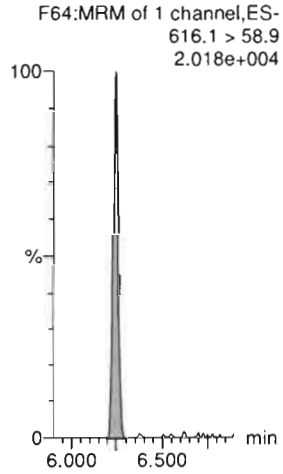
PFHxDA



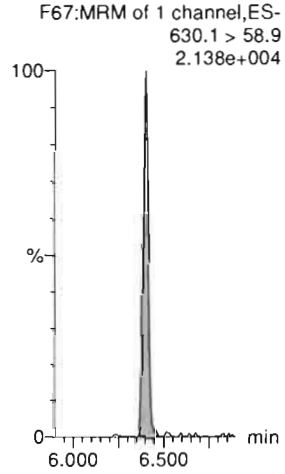
PFODA



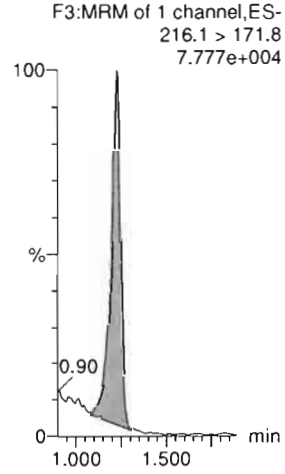
N-MeFOSE



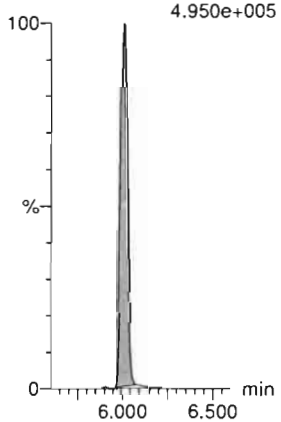
N-EtFOSE



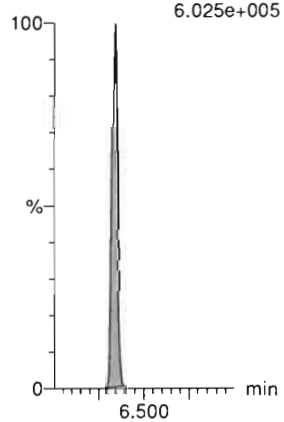
13C3-PFBA-RSD



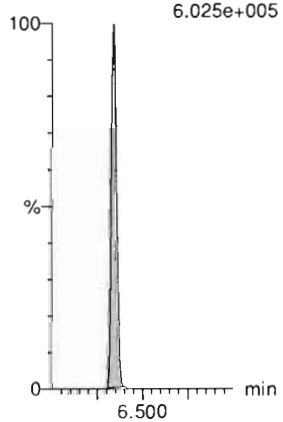
d5-N-ETFOSA-EIS



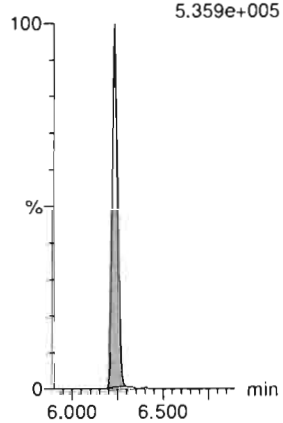
13C2-PFHxDA-EIS



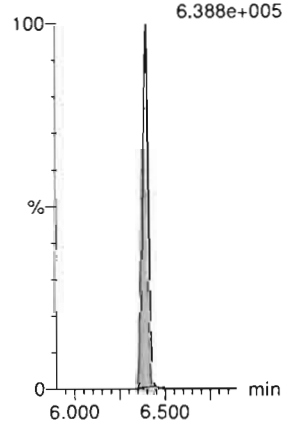
13C2-PFHxDA-EIS



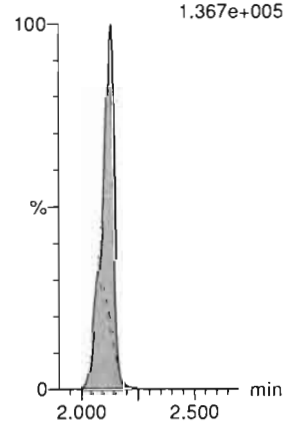
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

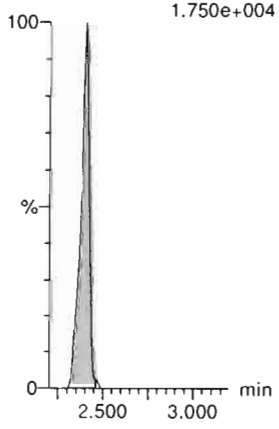


Dataset: Untitled

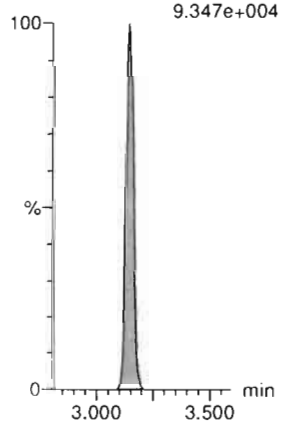
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

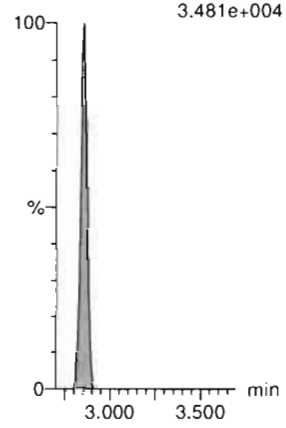
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.750e+004



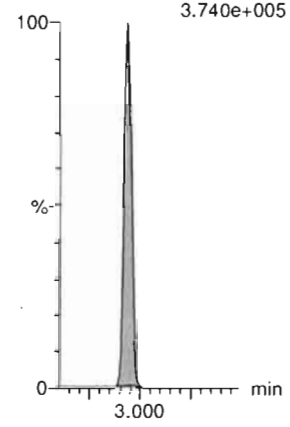
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.347e+004



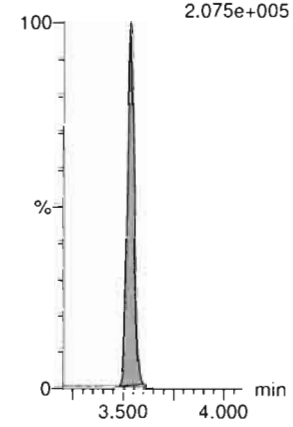
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.481e+004



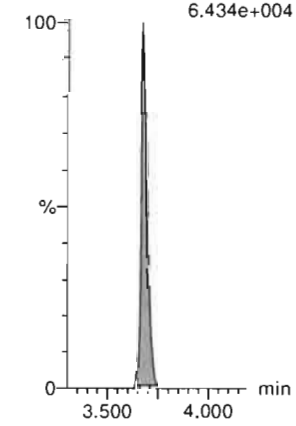
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.740e+005



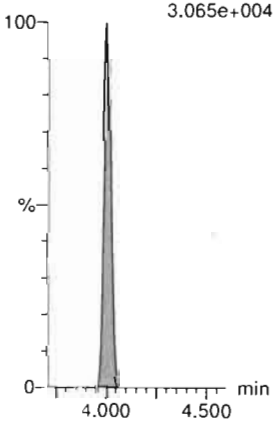
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.075e+005



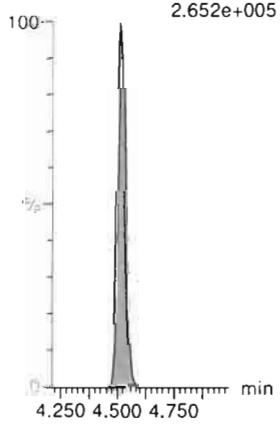
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.434e+004



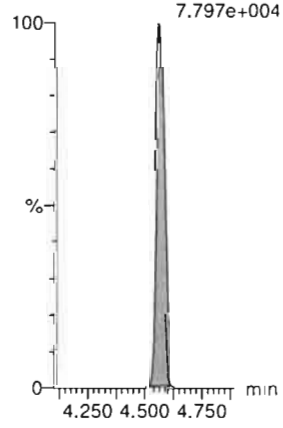
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.065e+004



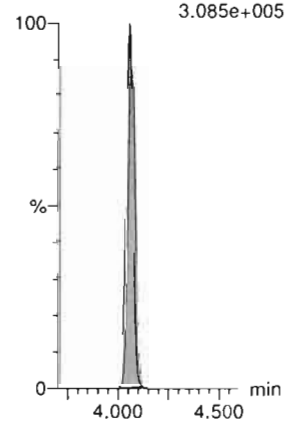
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.652e+005



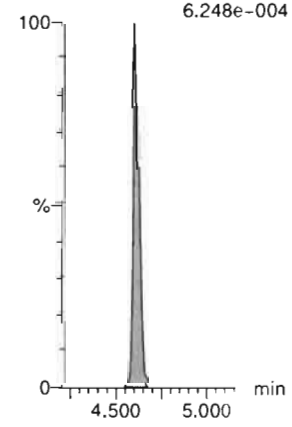
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
7.797e+004



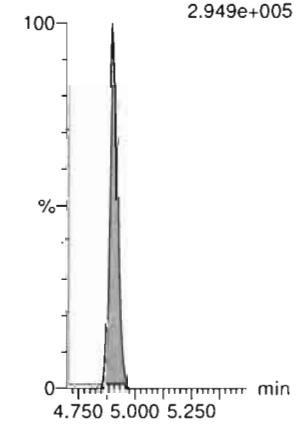
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.085e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.248e-004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.949e+005

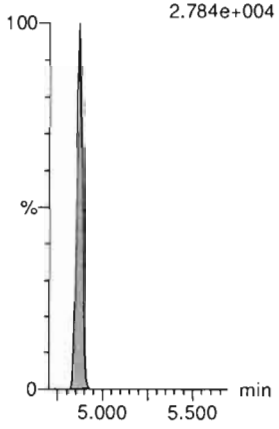


Dataset: Untitled

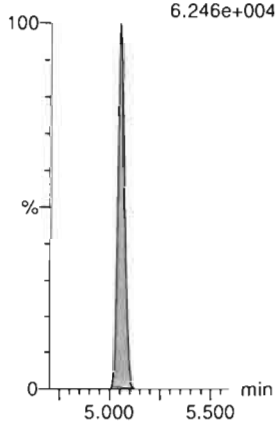
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

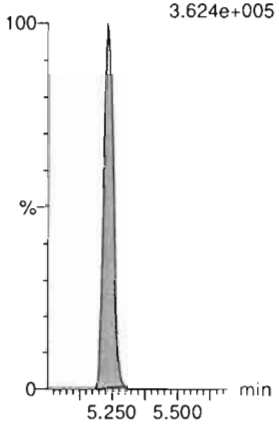
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.784e+004



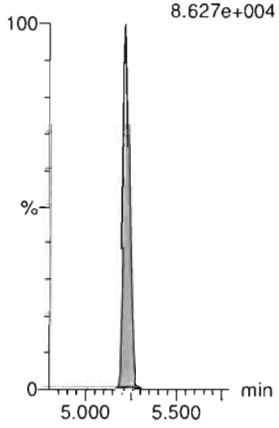
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.246e+004



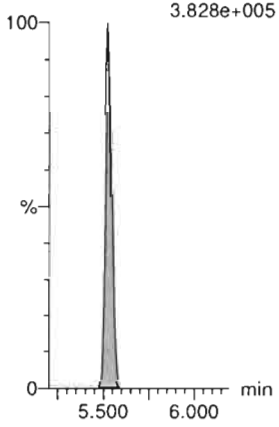
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.624e+005



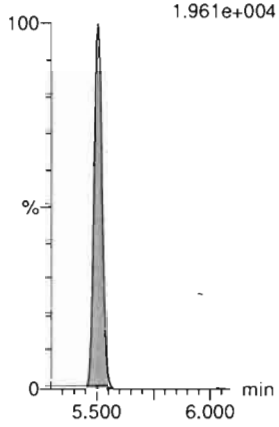
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.627e+004



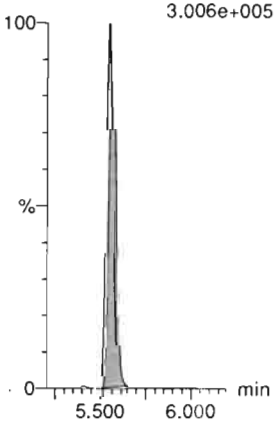
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.828e+005



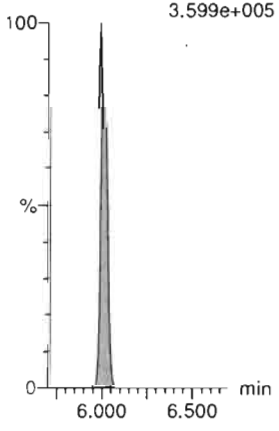
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.961e+004



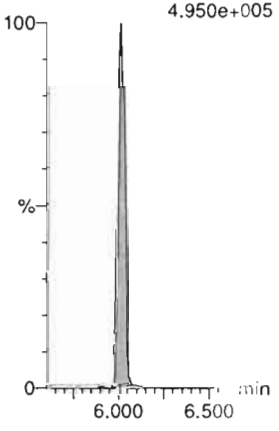
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.006e+005



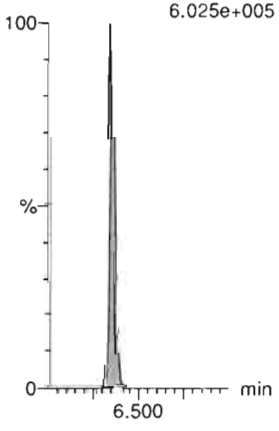
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.599e+005



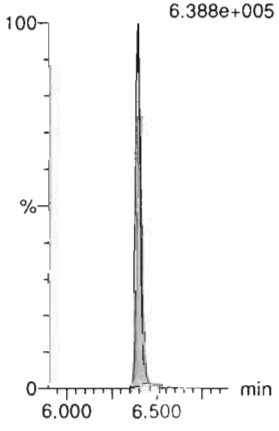
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.950e+005



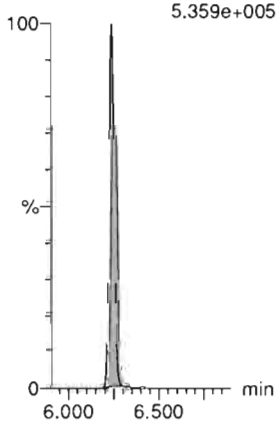
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.025e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.388e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.359e+005

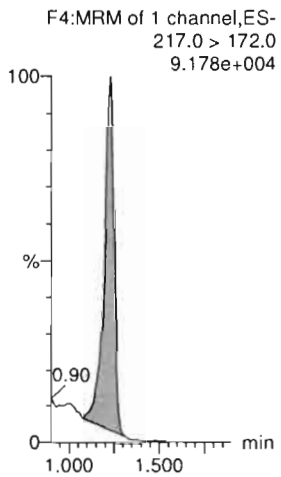


Dataset: Untitled

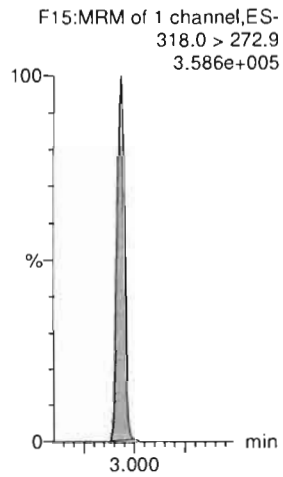
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-5, Date: 04-Mar-2020, Time: 19:52:51, ID: ST200304P2-3 PFC CS0 20C0306, Description: PFC CS0 20C0306

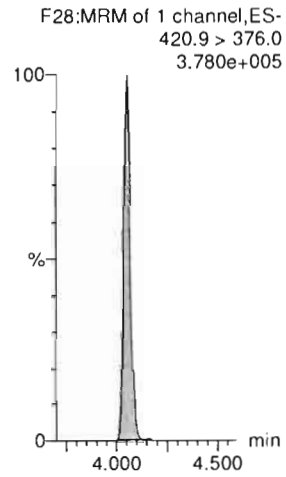
13C4-PFBA



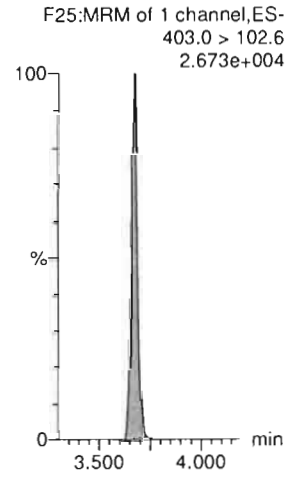
13C5-PFHxA



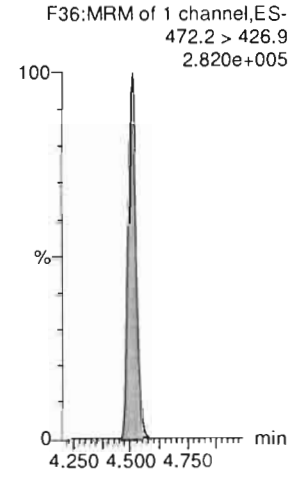
13C8-PFOA



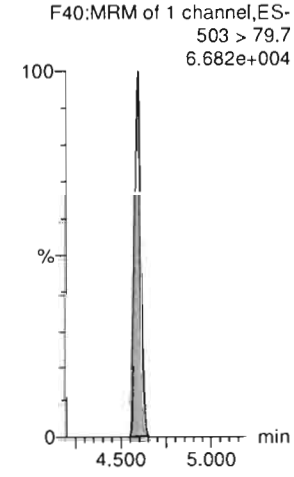
18O2-PFHxS



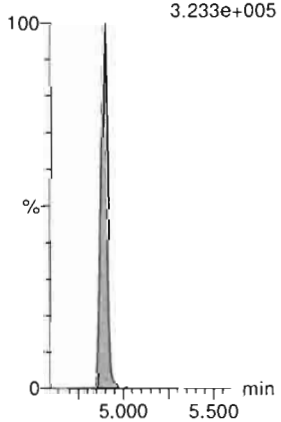
13C9-PFNA



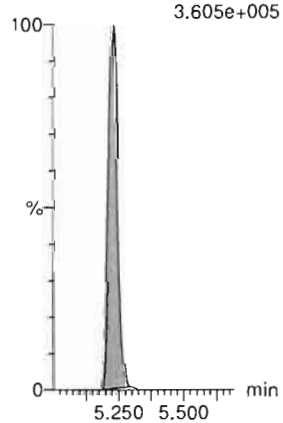
13C4-PFOS



13C6-PFDA



13C7-PFUdA

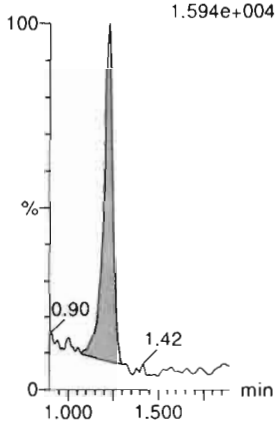


Dataset: Untitled

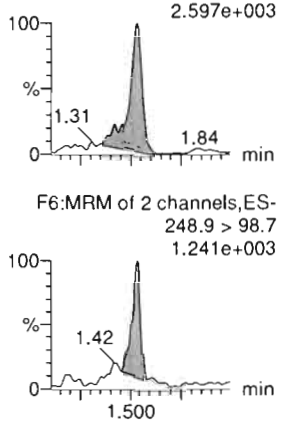
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

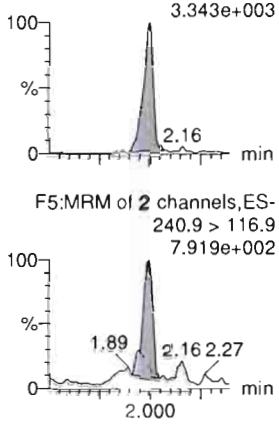
PFBA



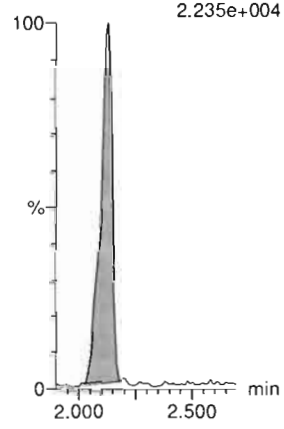
PFPrS



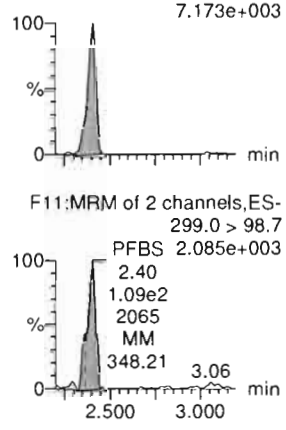
3:3 FTCA



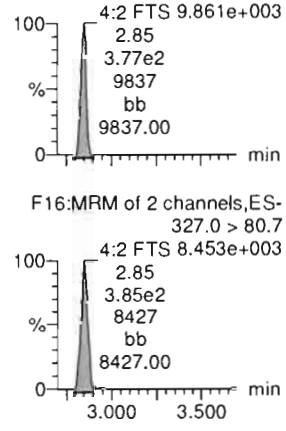
PFPeA



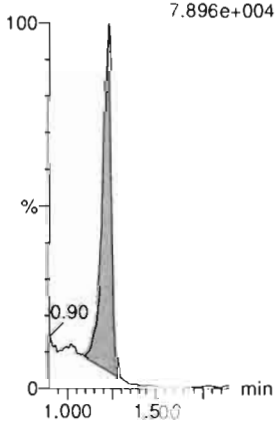
PFBS



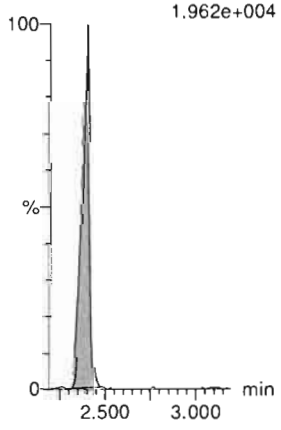
4:2 FTS



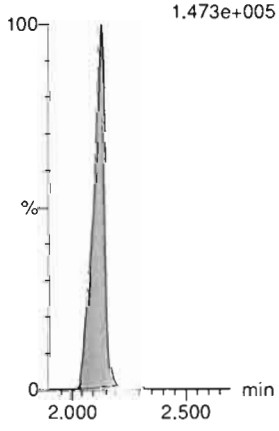
13C3-PFBA-EIS



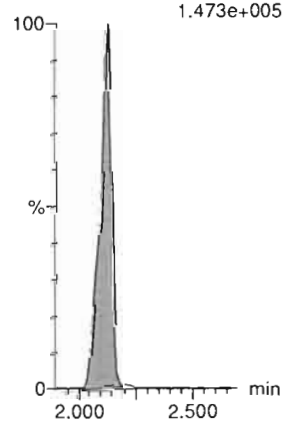
13C3-PFBS-EIS



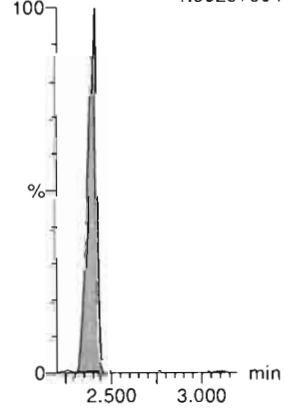
13C3-PFPeA-EIS



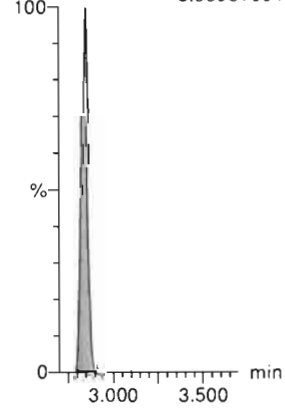
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

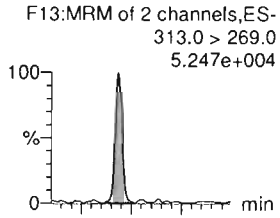


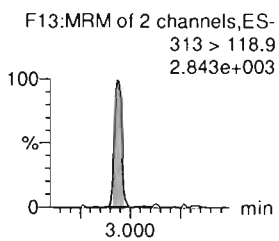
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

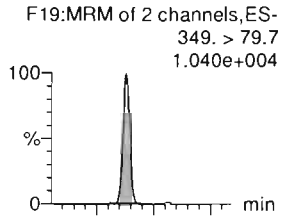
Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

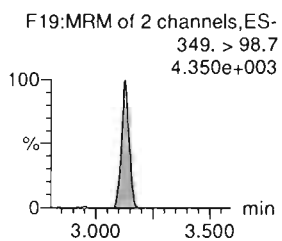
PFHxA



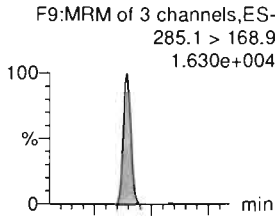


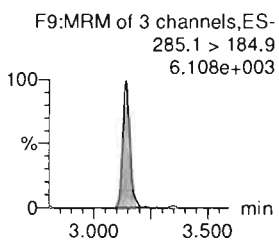
PFPeS



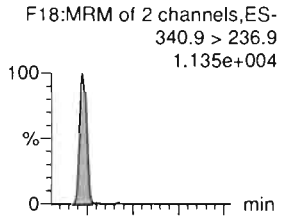


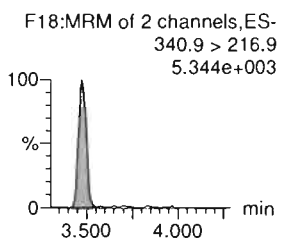
HFPO-DA



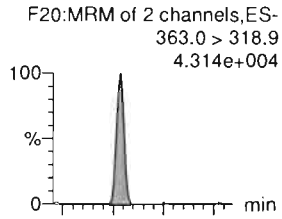


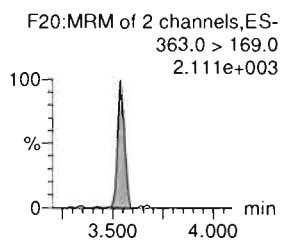
5:3 FTCA



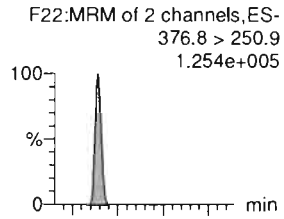


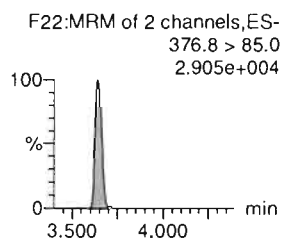
PFHpA



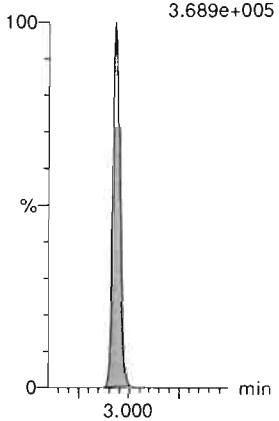


ADONA

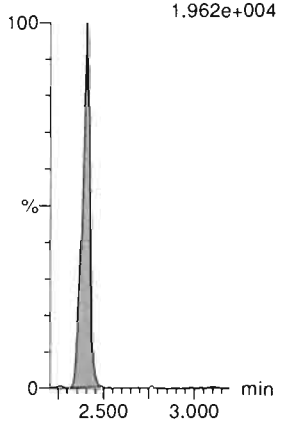




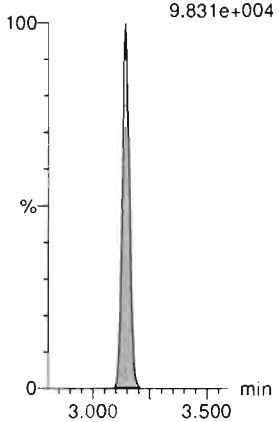
13C2-PFHxA-EIS



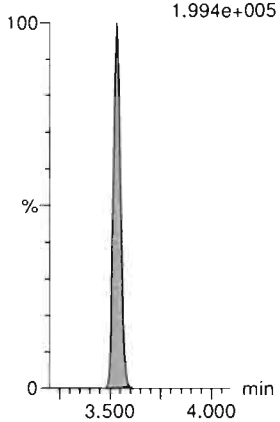
13C3-PFBS-EIS



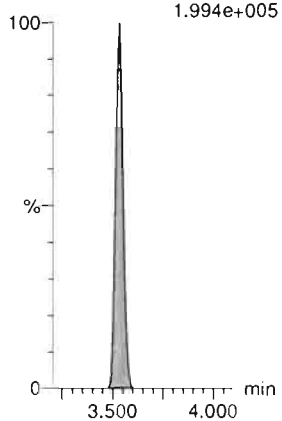
13C3-HFPO-DA-EIS



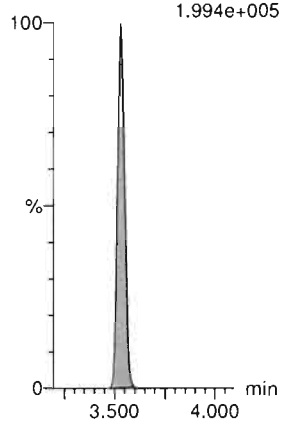
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

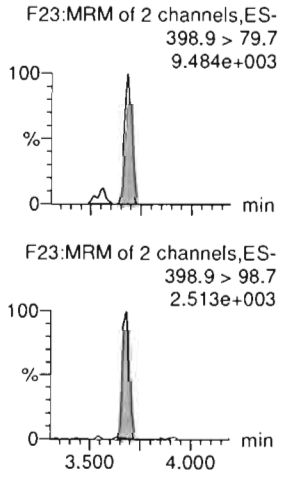


Dataset: Untitled

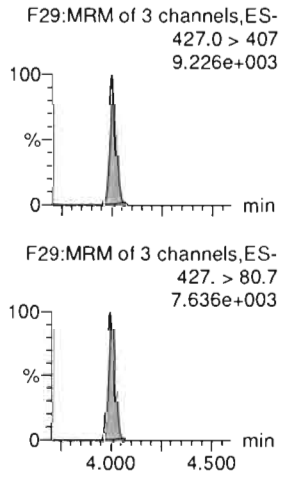
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

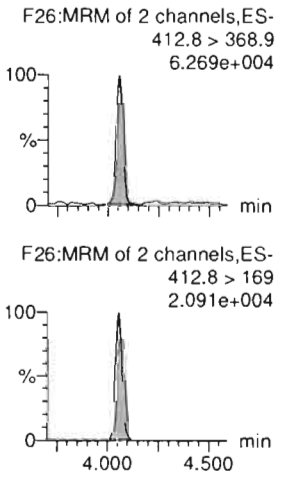
L-PFHxS



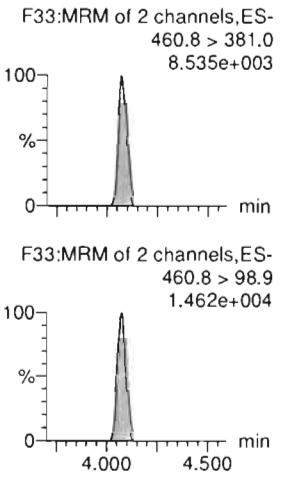
6:2 FTS



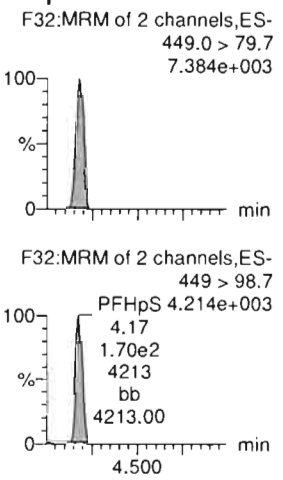
L-PFOA



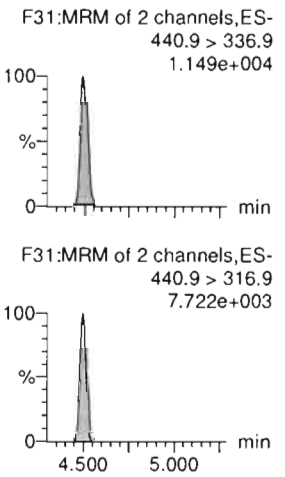
PFEChS



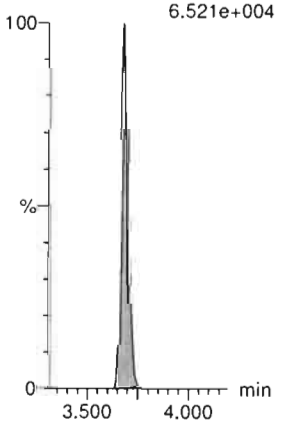
PFHpS



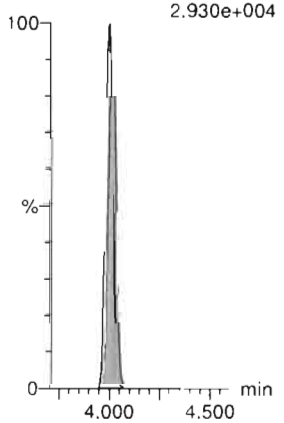
7:3 FTCA



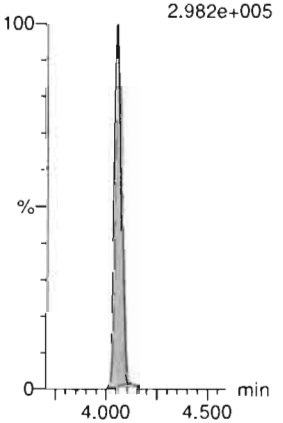
13C3-PFHxS-EIS



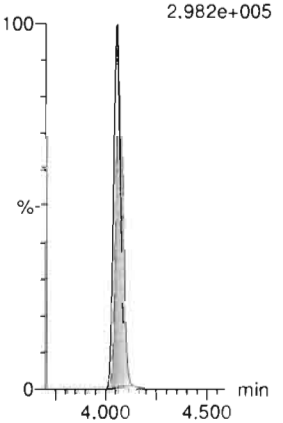
13C2-6:2 FTS-EIS



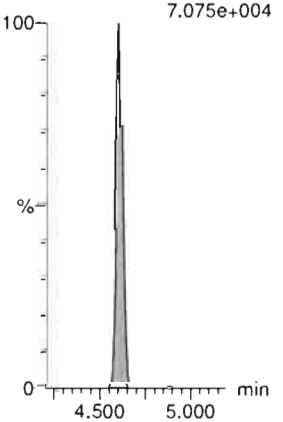
13C2-PFOA-EIS



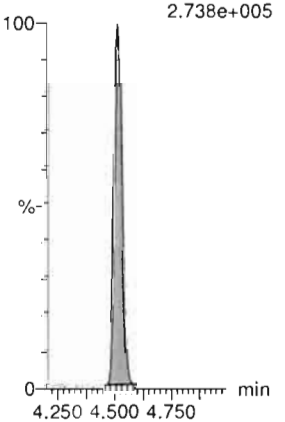
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

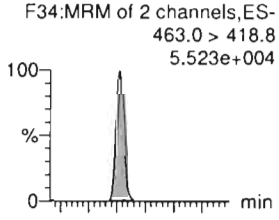


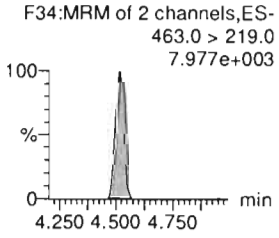
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

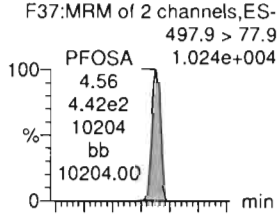
Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

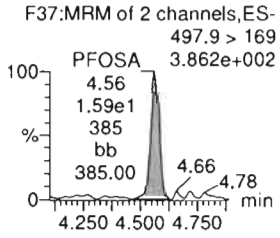
PFNA



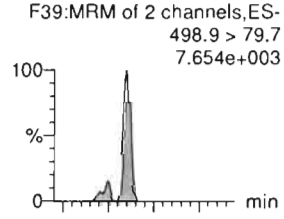


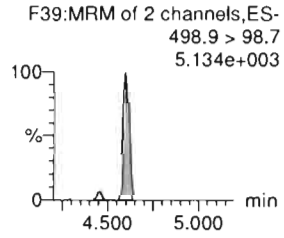
PFOSA



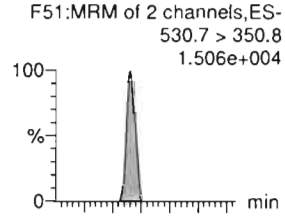


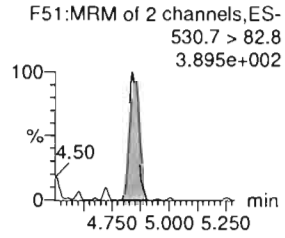
L-PFOS



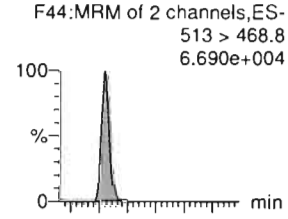


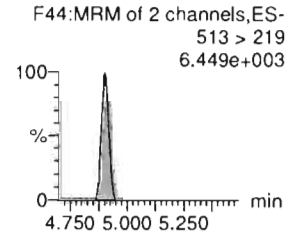
9Cl-PF30NS



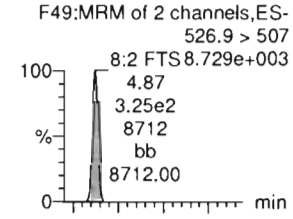


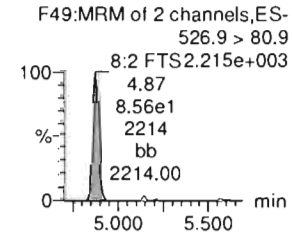
PFDA



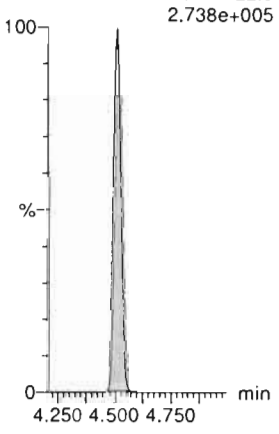


8:2 FTS

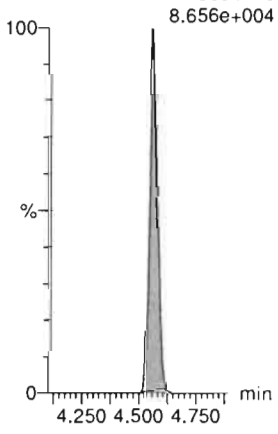




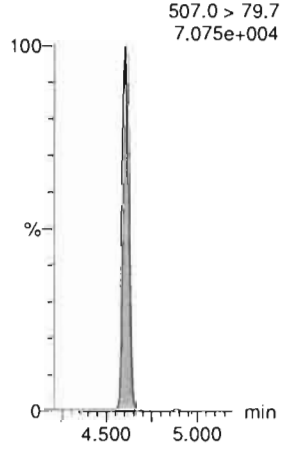
13C5-PFNA-EIS



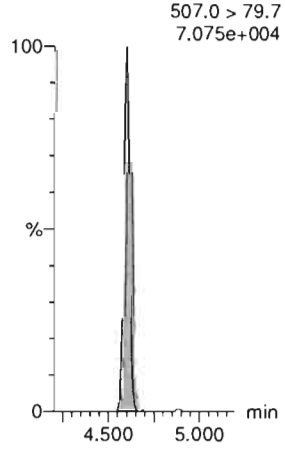
13C8-PFOSA-EIS



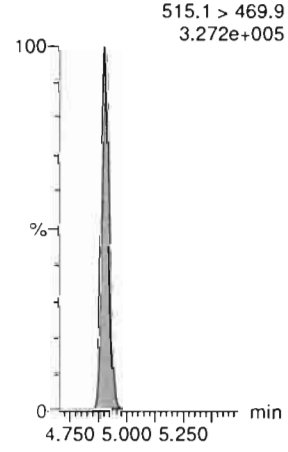
13C8-PFOS-EIS



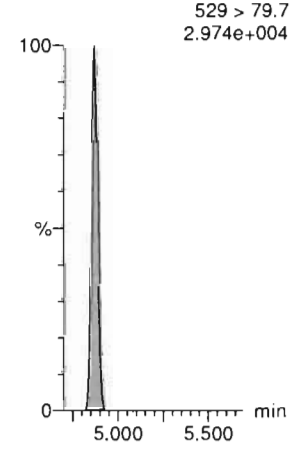
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

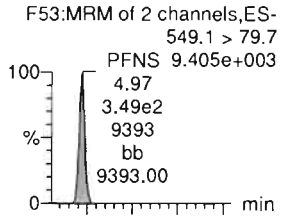


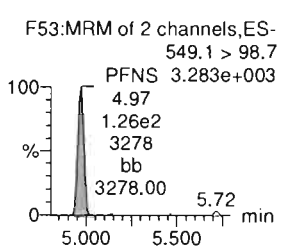
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

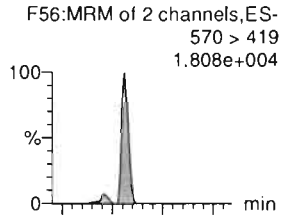
Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

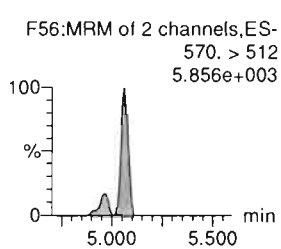
PFNS



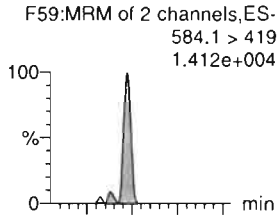


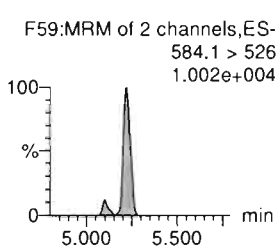
L-MeFOSAA



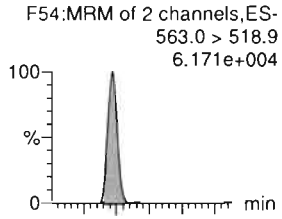


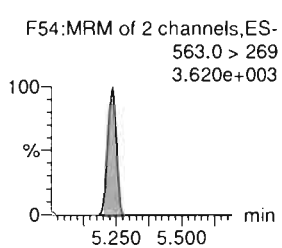
L-EtFOSAA



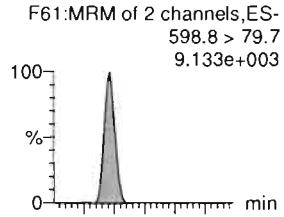


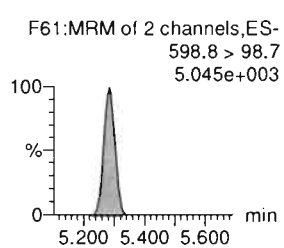
PFUdA



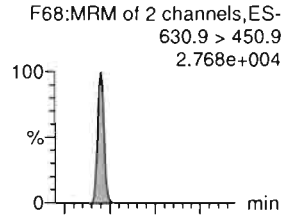


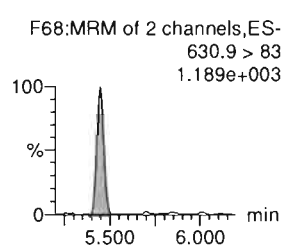
PFDS



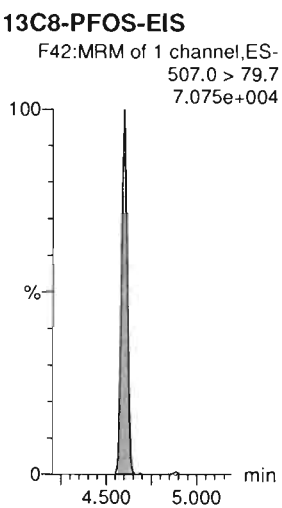


11Cl-PF30UdS

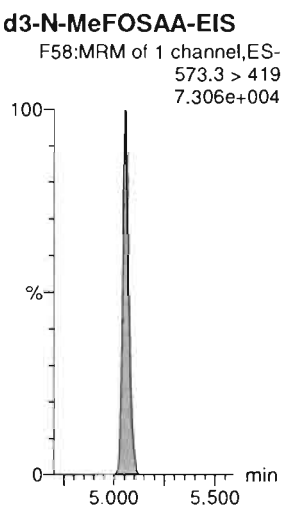




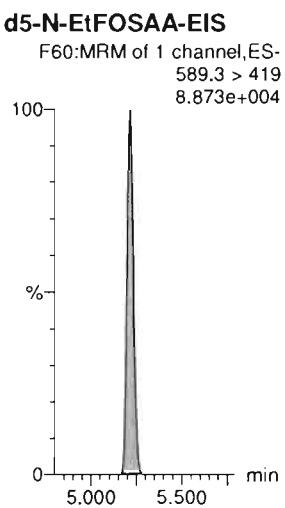
13C8-PFOS-EIS



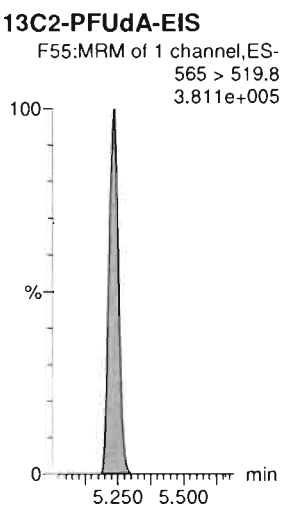
d3-N-MeFOSAA-EIS



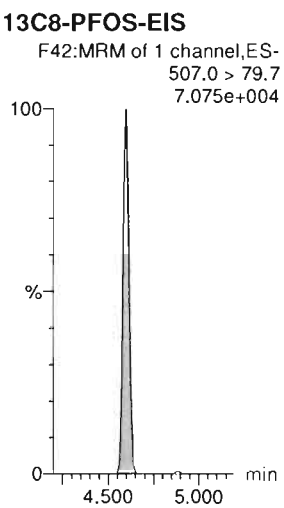
d5-N-EtFOSAA-EIS



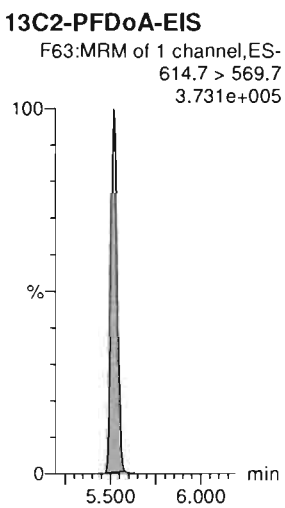
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

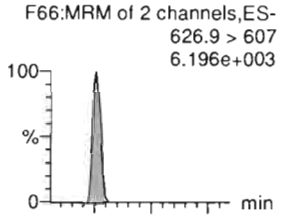


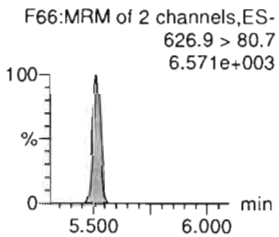
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

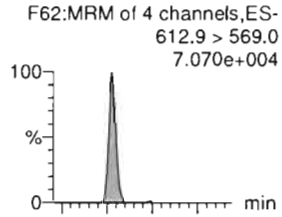
Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

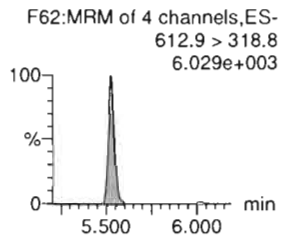
10:2 FTS



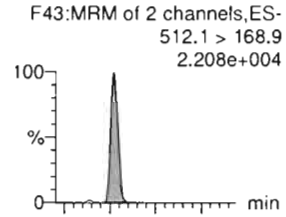


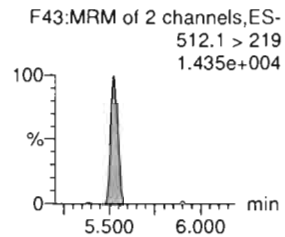
PFDoA



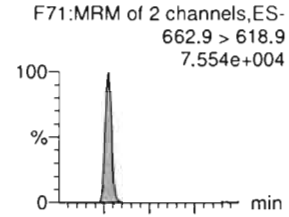


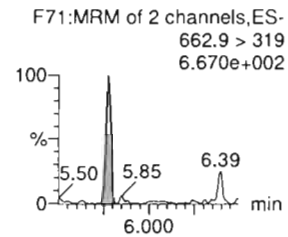
N-MeFOSA



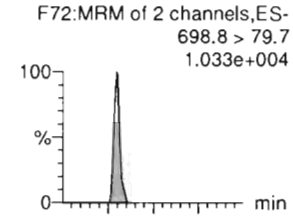


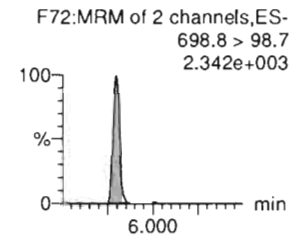
PFTrDA



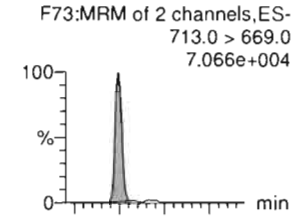


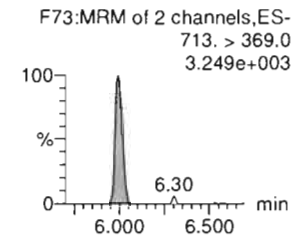
PFDoS



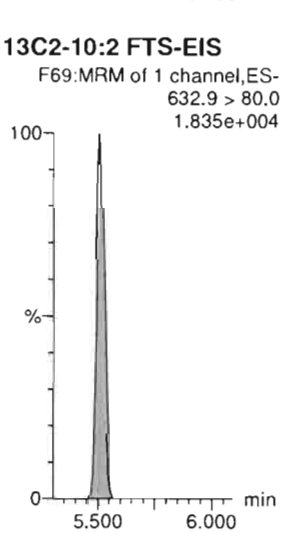


PFTeDA

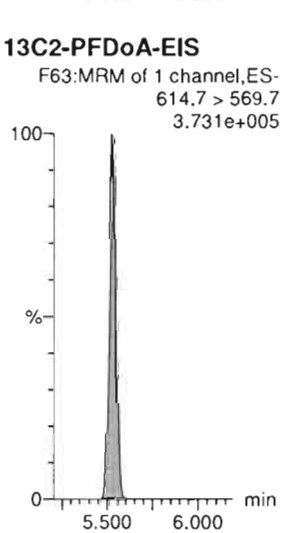




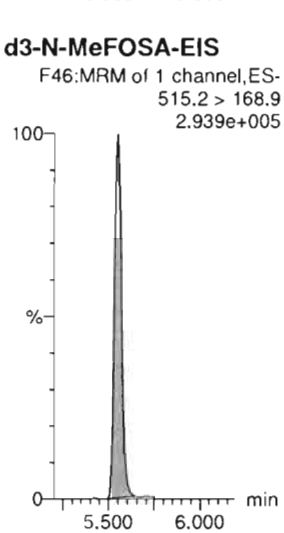
13C2-10:2 FTS-EIS



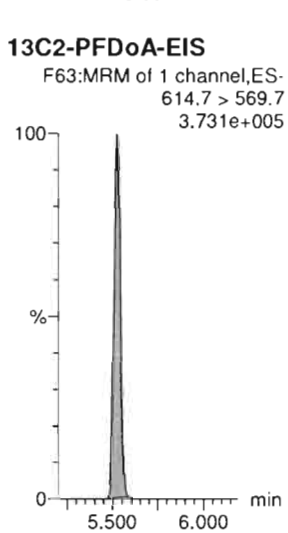
13C2-PFDoA-EIS



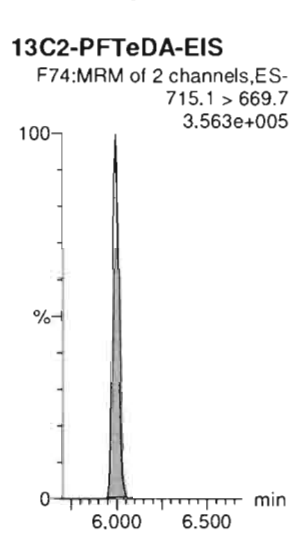
d3-N-MeFOSA-EIS



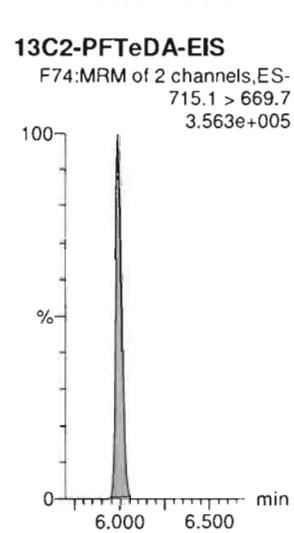
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

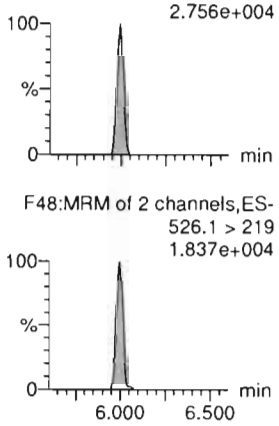


Dataset: Untitled

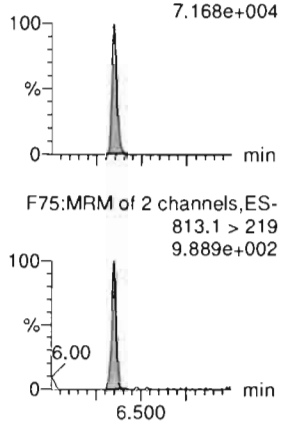
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

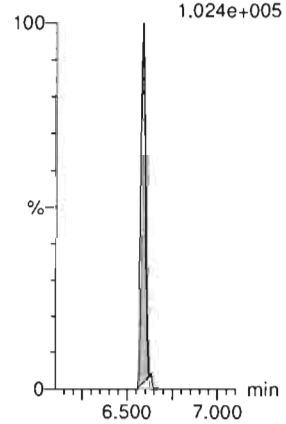
N-EtFOSA



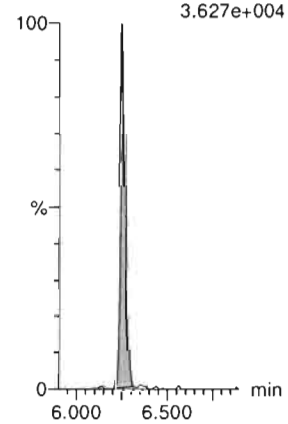
PFHxDA



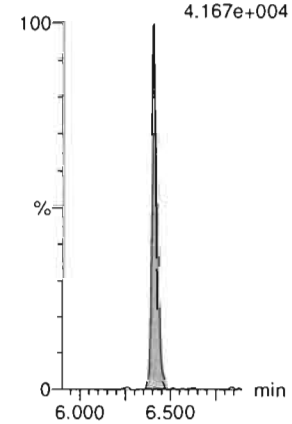
PFODA



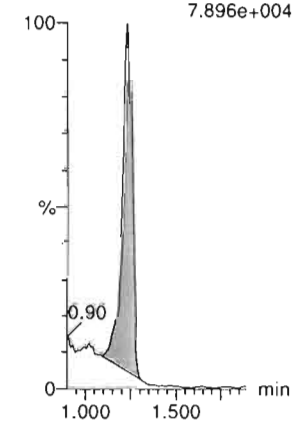
N-MeFOSE



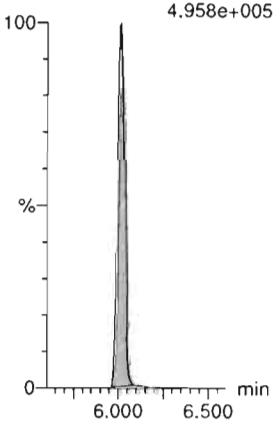
N-EtFOSE



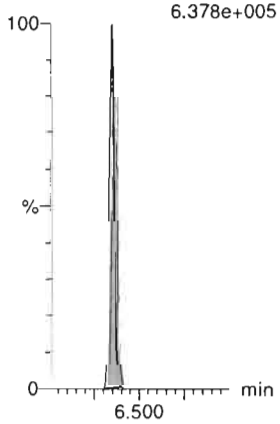
13C3-PFBA-RSD



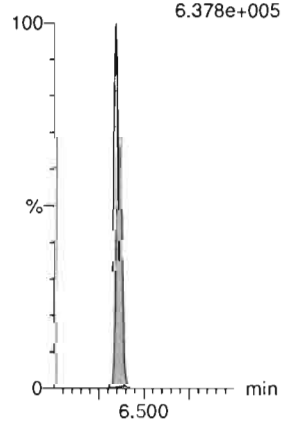
d5-N-ETFOSA-EIS



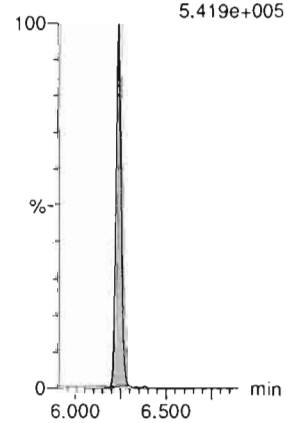
13C2-PFHxDA-EIS



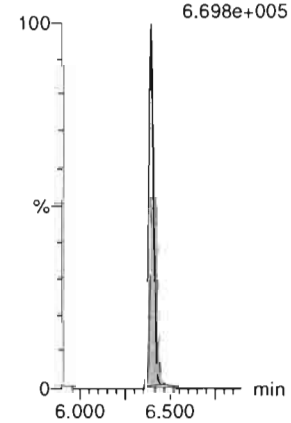
13C2-PFHxDA-EIS



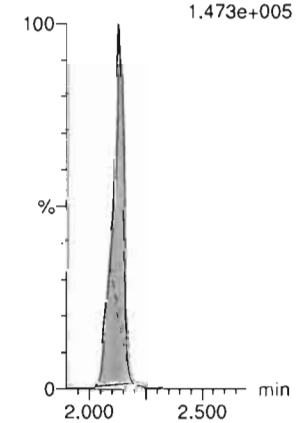
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

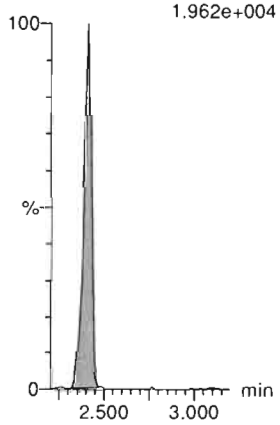


Dataset: Untitled

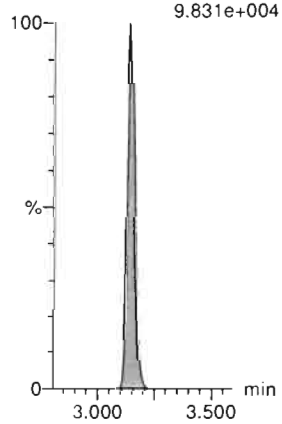
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

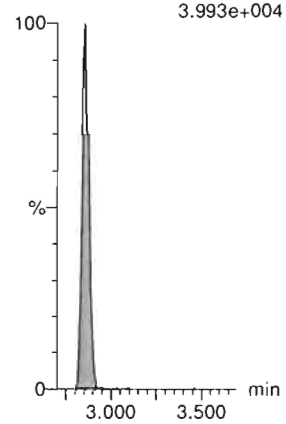
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.962e+004



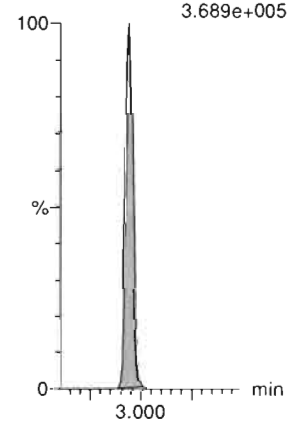
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.831e+004



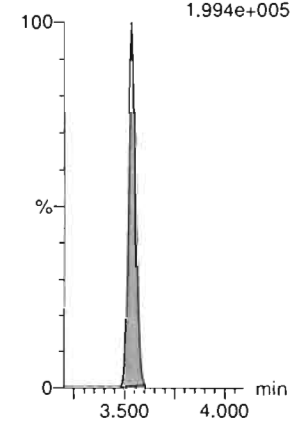
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.993e+004



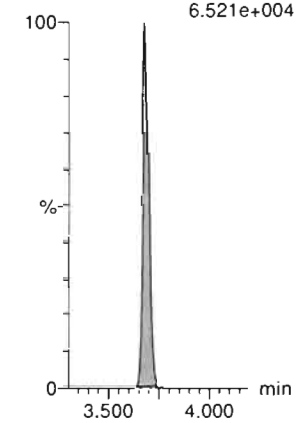
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.689e+005



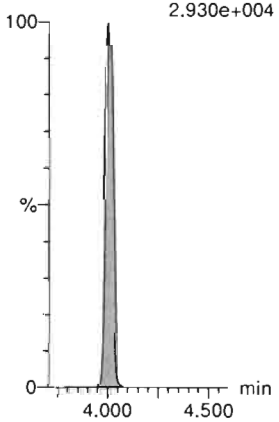
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.994e+005



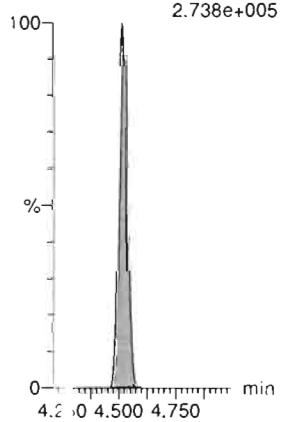
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.521e+004



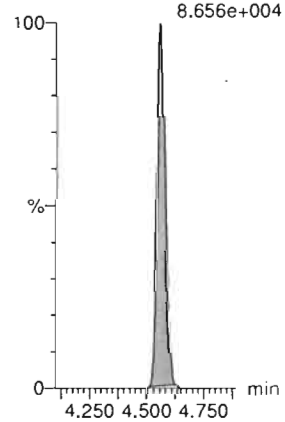
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.930e+004



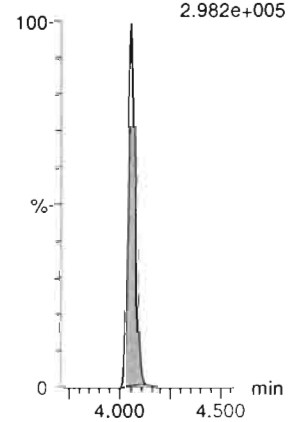
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.738e+005



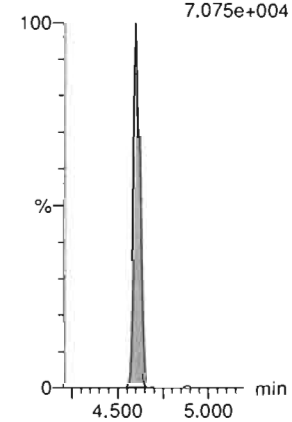
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.656e+004



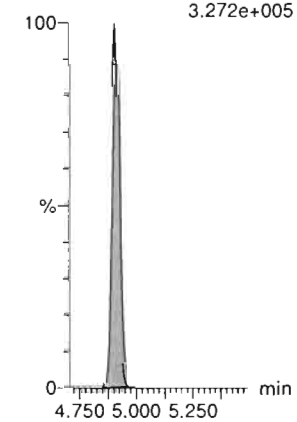
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.982e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
7.075e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.272e+005

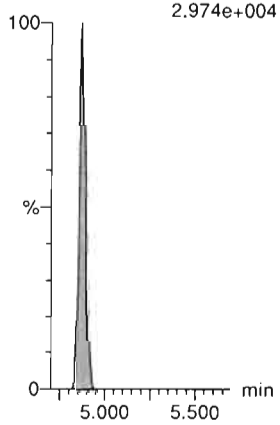


Dataset: Untitled

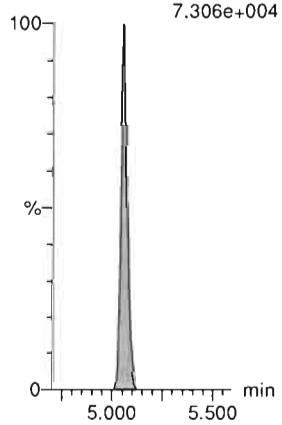
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

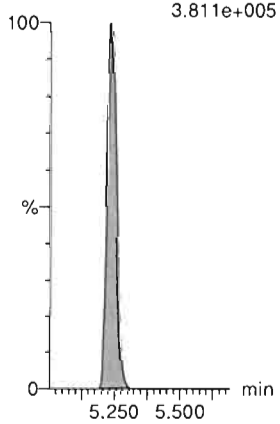
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.974e+004



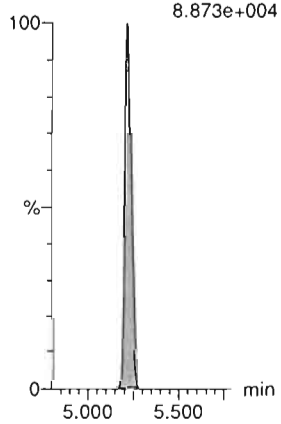
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
7.306e+004



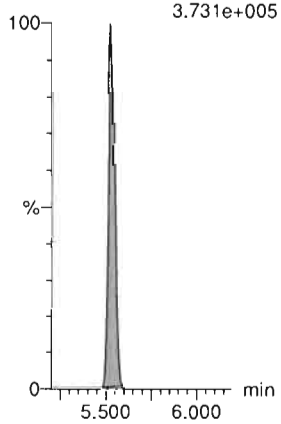
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.811e+005



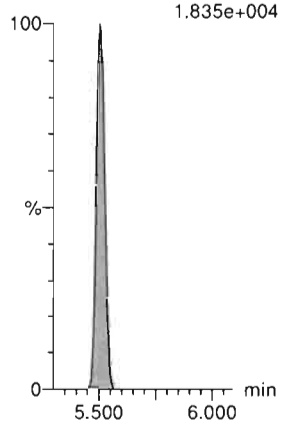
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.873e+004



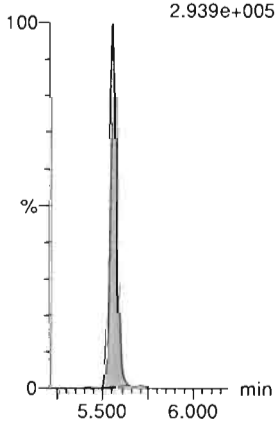
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.731e+005



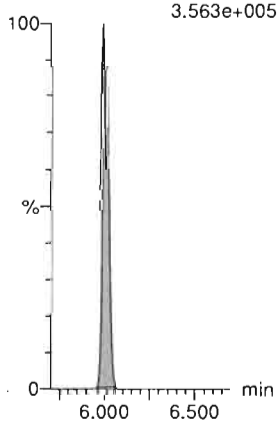
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.835e+004



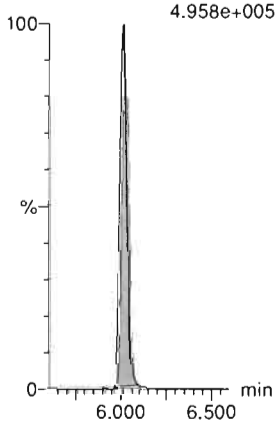
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.939e+005



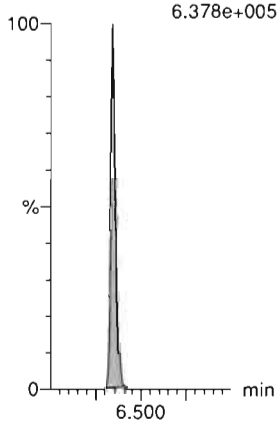
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.563e+005



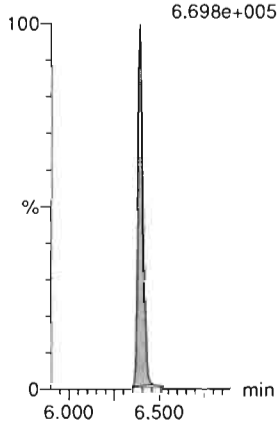
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.958e+005



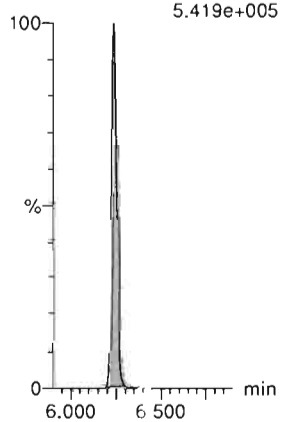
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.378e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.698e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.419e+005

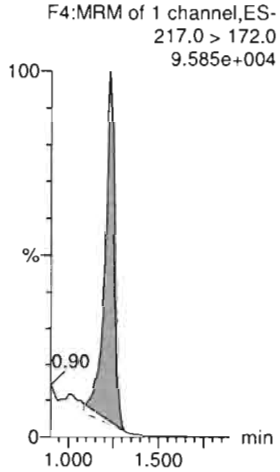


Dataset: Untitled

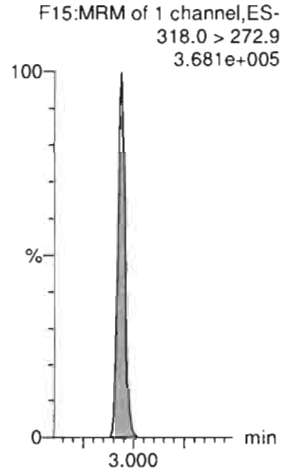
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-6, Date: 04-Mar-2020, Time: 20:03:23, ID: ST200304P2-4 PFC CS1 20C0307, Description: PFC CS1 20C0307

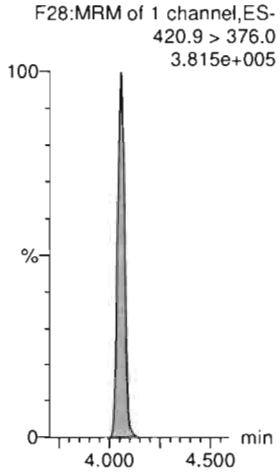
13C4-PFBA



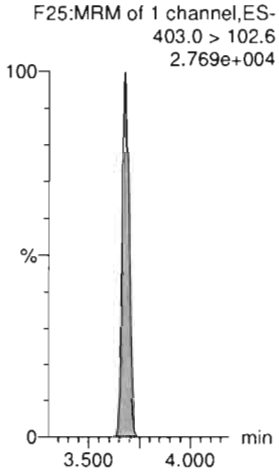
13C5-PFHxA



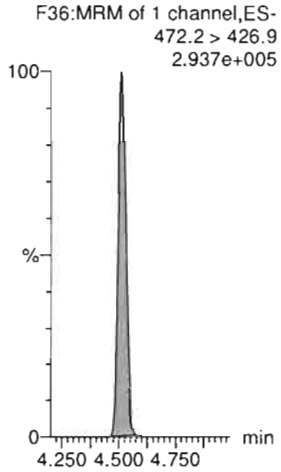
13C8-PFOA



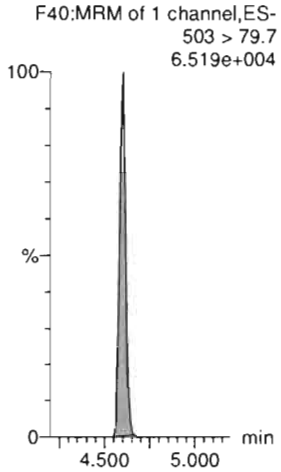
18O2-PFHxS



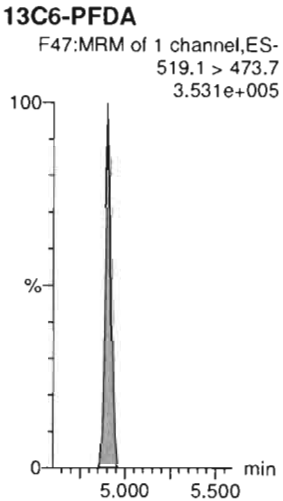
13C9-PFNA



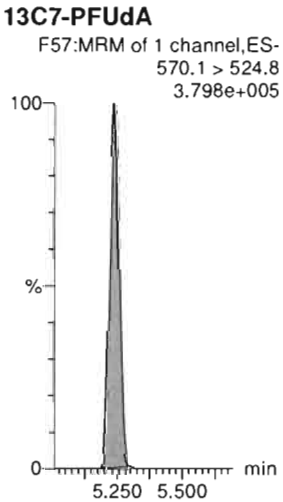
13C4-PFOS



13C6-PFDA



13C7-PFUdA

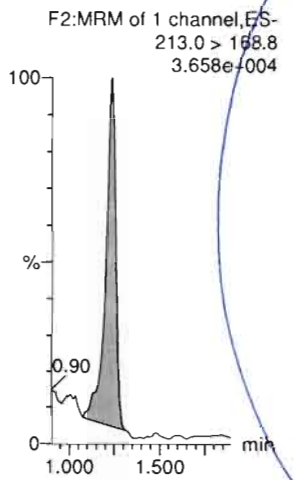


Dataset: Untitled

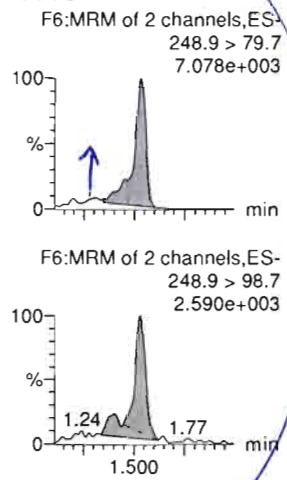
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

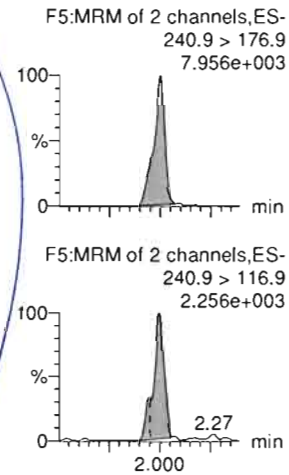
PFBA



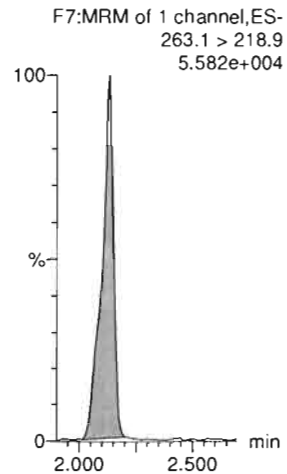
PFPrS



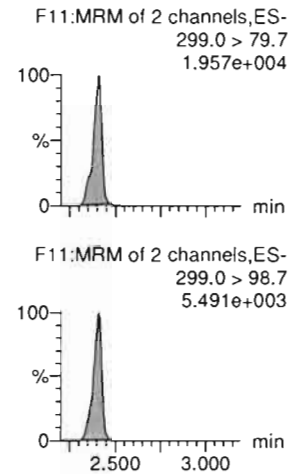
3:3 FTCA



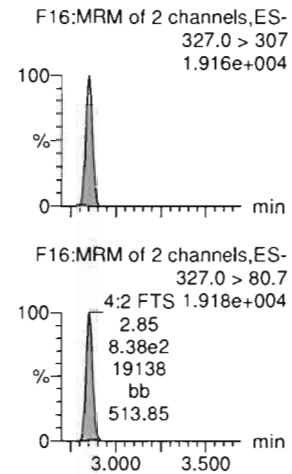
PFPeA



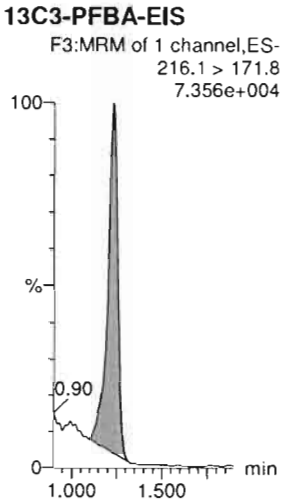
PFBS



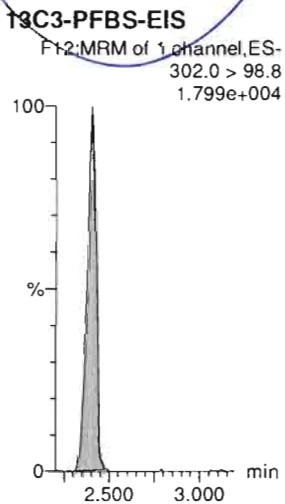
4:2 FTS



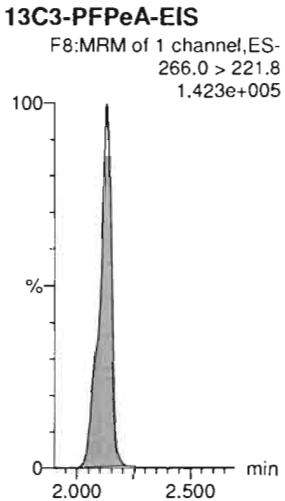
13C3-PFBA-EIS



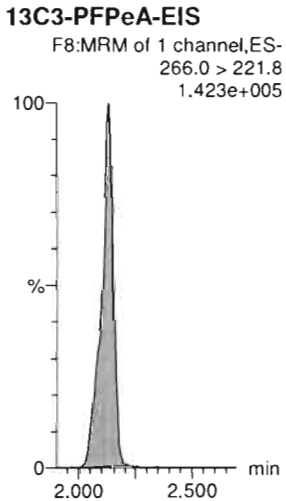
13C3-PFBS-EIS



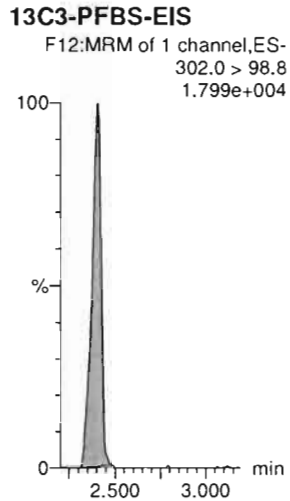
13C3-PFPeA-EIS



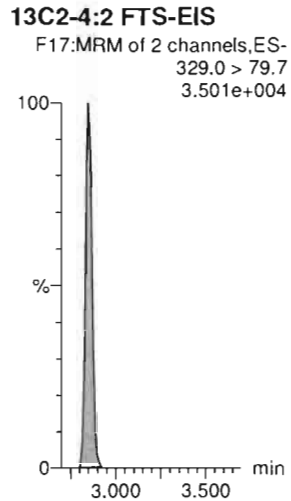
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

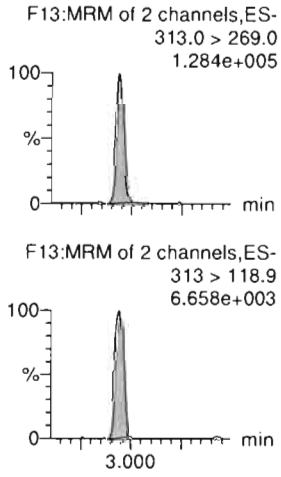


Dataset: Untitled

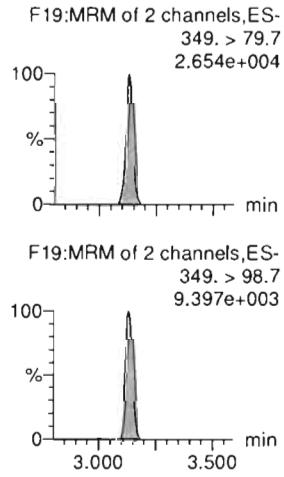
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

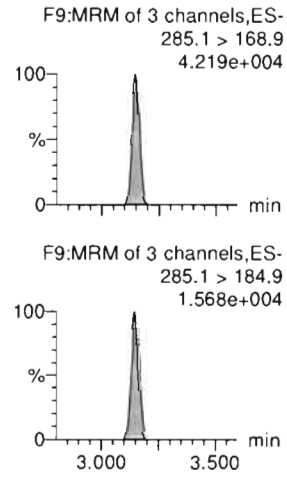
PFHxA



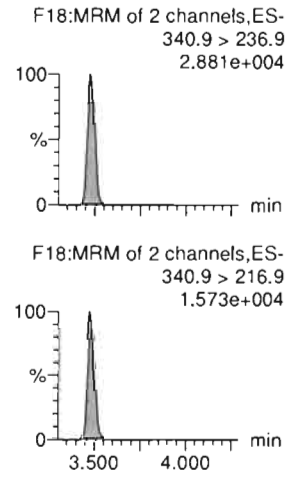
PFPeS



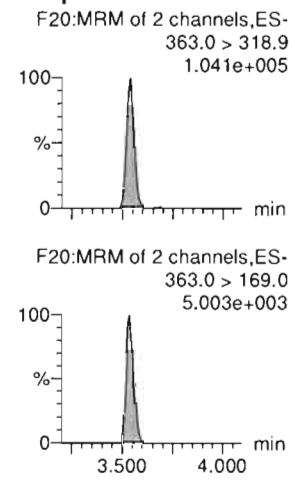
HFPO-DA



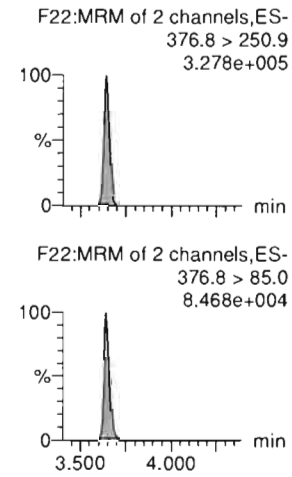
5:3 FTCA



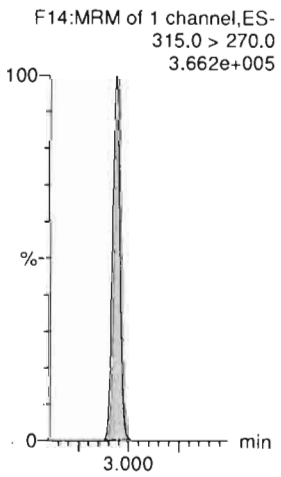
PFHpA



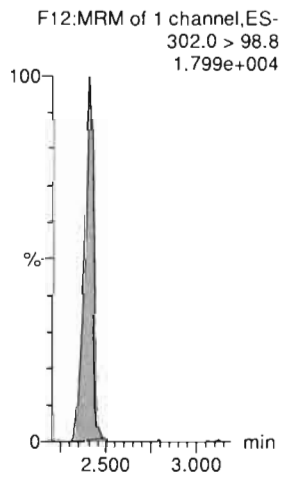
ADONA



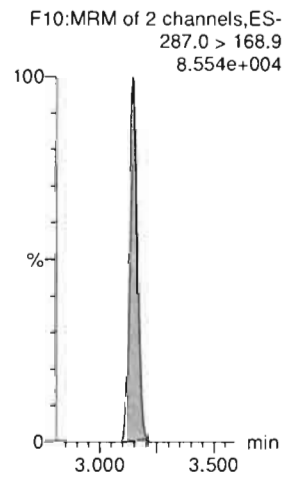
13C2-PFHxA-EIS



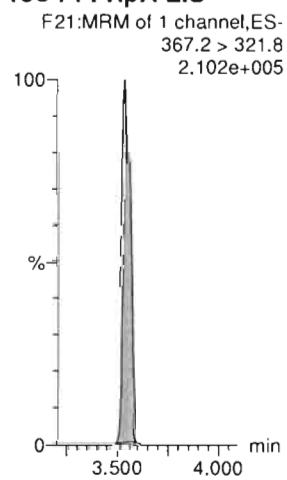
13C3-PFBS-EIS



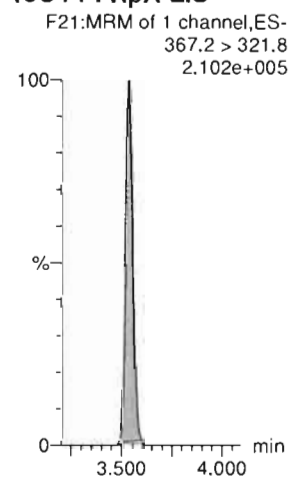
13C3-HFPO-DA-EIS



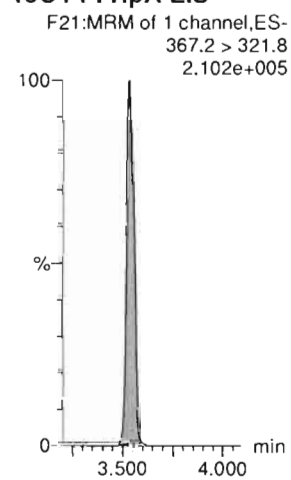
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

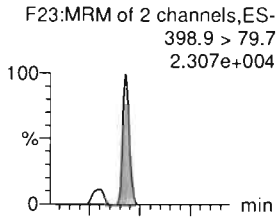


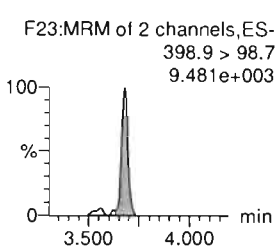
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

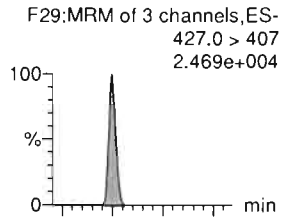
Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

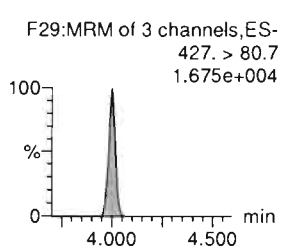
L-PFHxS



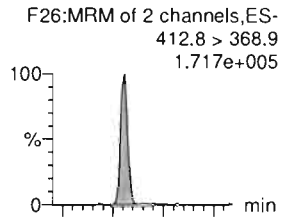


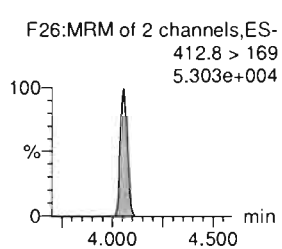
6:2 FTS



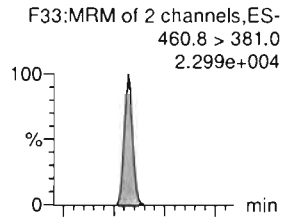


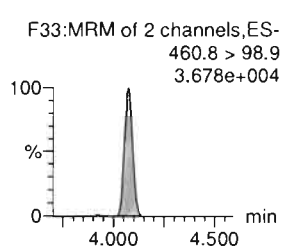
L-PFOA



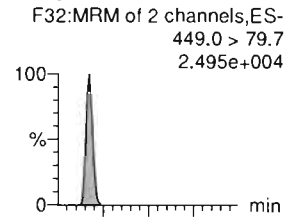


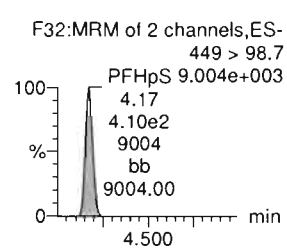
PFECHS



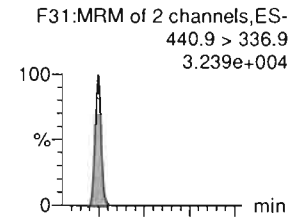


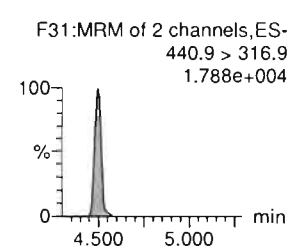
PFHpS



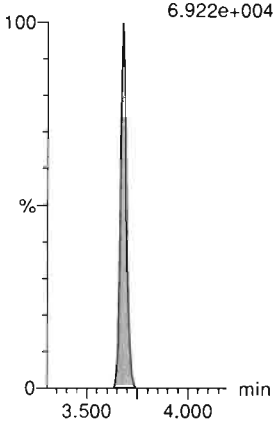


7:3 FTCA

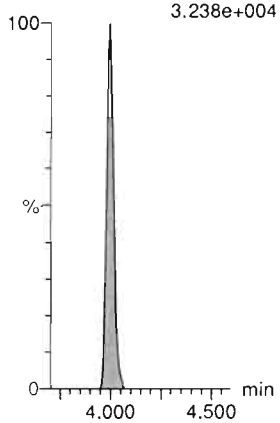




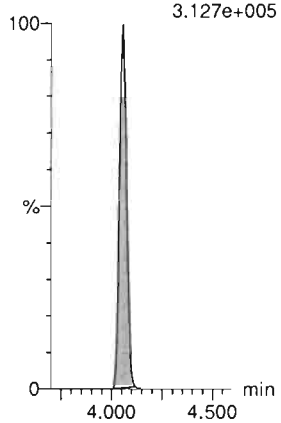
13C3-PFHxS-EIS



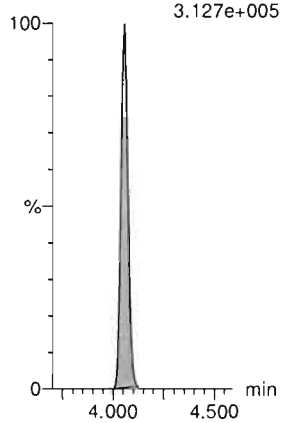
13C2-6:2 FTS-EIS



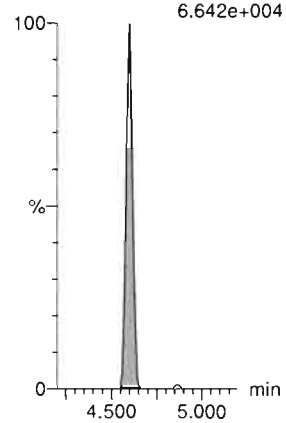
13C2-PFOA-EIS



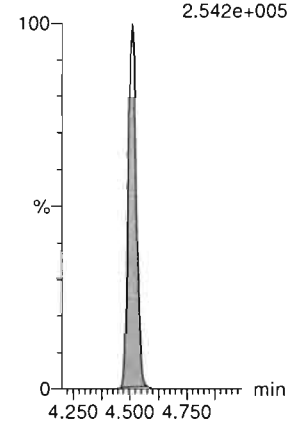
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

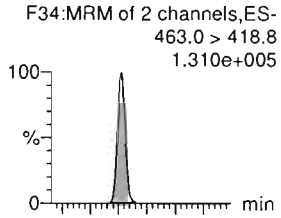


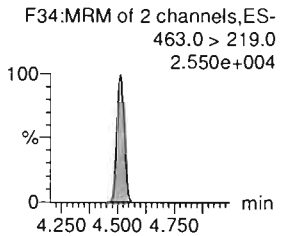
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

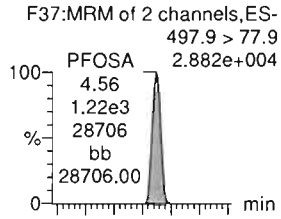
Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

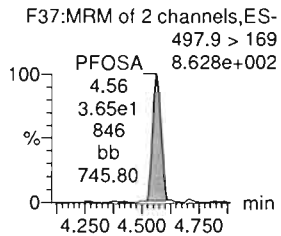
PFNA



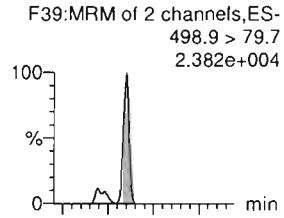


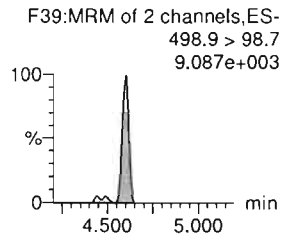
PFOSA



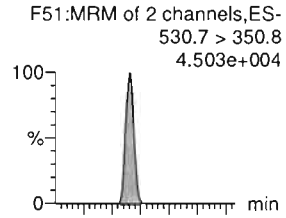


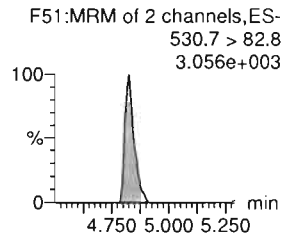
L-PFOS



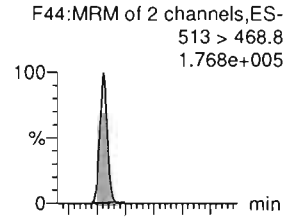


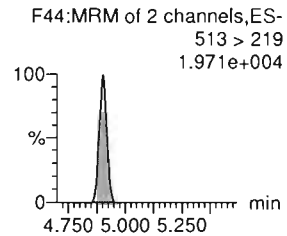
9Cl-PF30NS



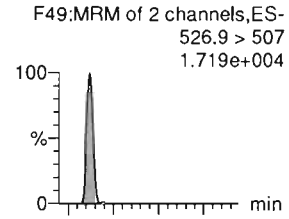


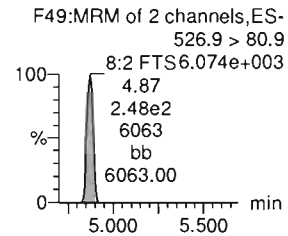
PFDA



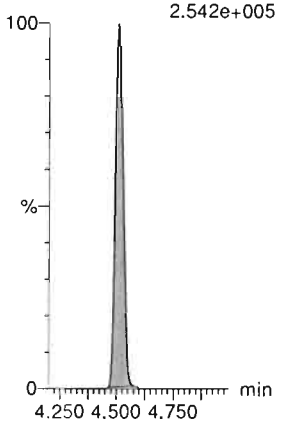


8:2 FTS

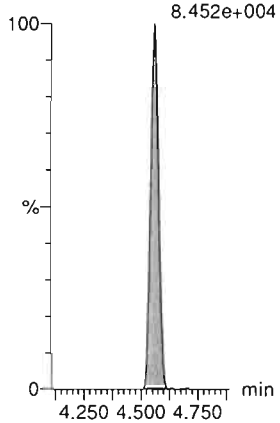




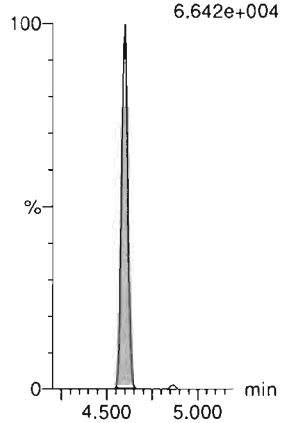
13C5-PFNA-EIS



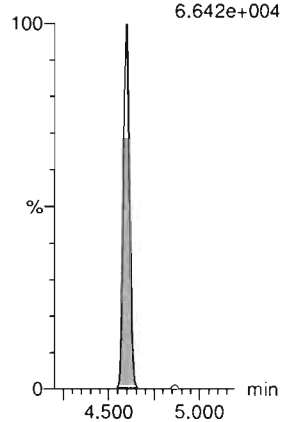
13C8-PFOSA-EIS



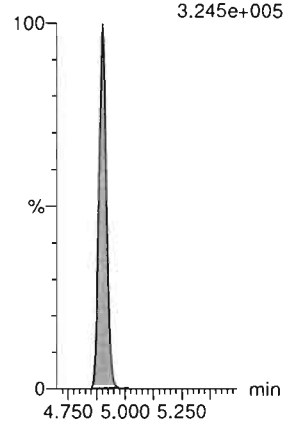
13C8-PFOS-EIS



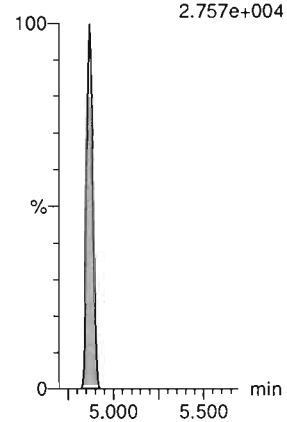
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

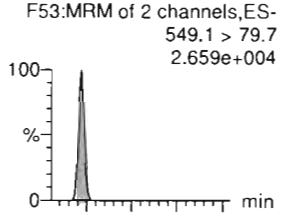


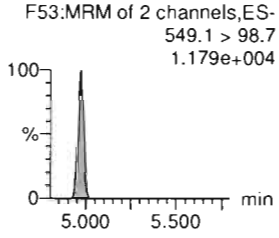
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

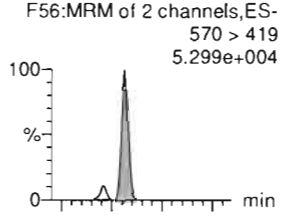
Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

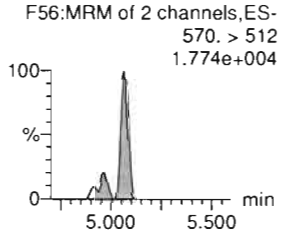
PFNS



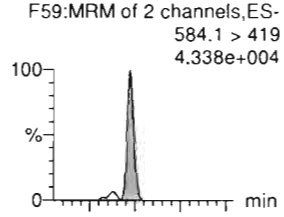


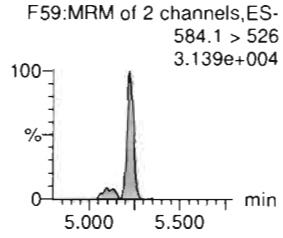
L-MeFOSAA



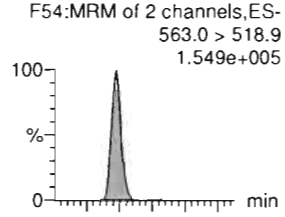


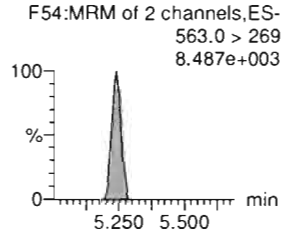
L-EtFOSAA



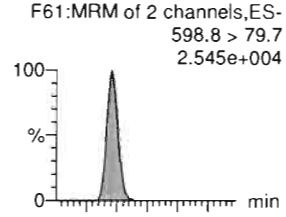


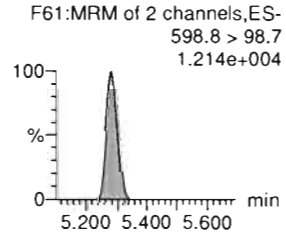
PFUdA



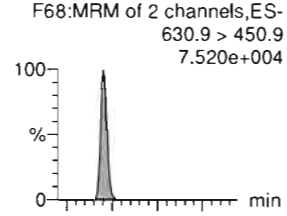


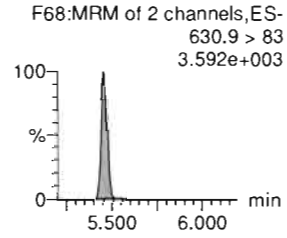
PFDS



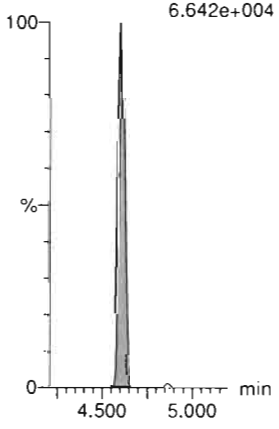


11Cl-PF30UdS

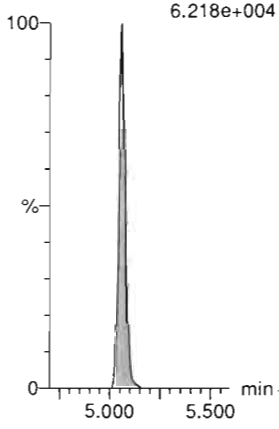




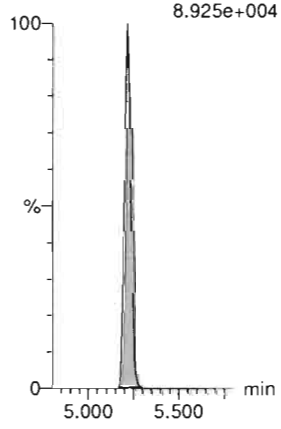
13C8-PFOS-EIS



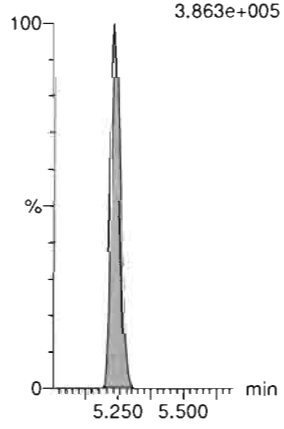
d3-N-MeFOSAA-EIS



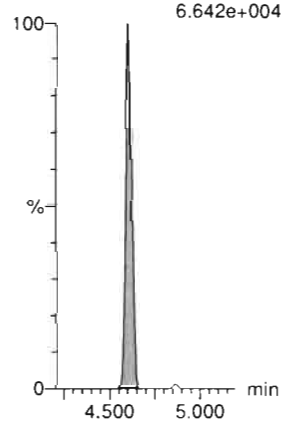
d5-N-EtFOSAA-EIS



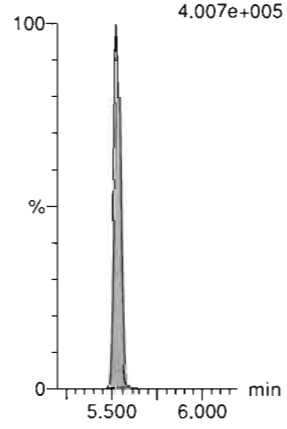
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

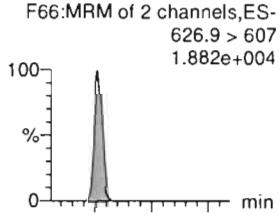


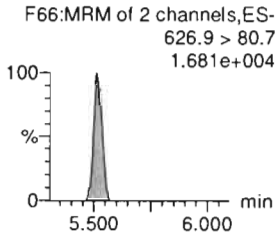
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

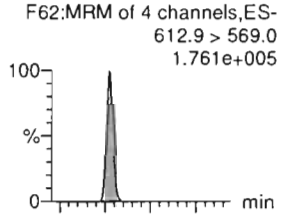
Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

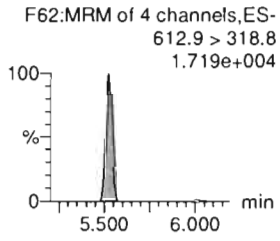
10:2 FTS



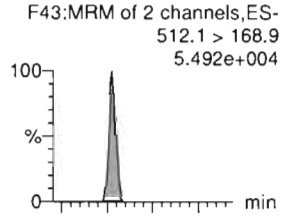


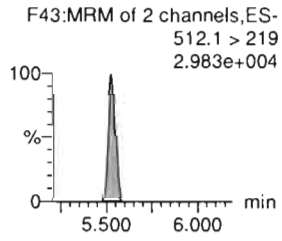
PFDoA



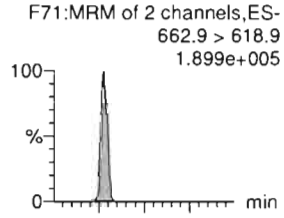


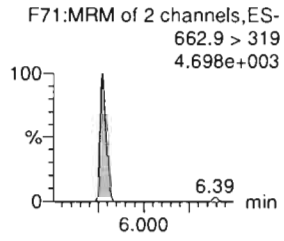
N-MeFOSA



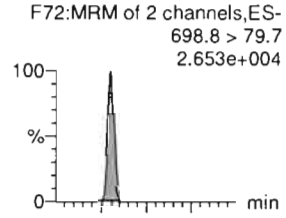


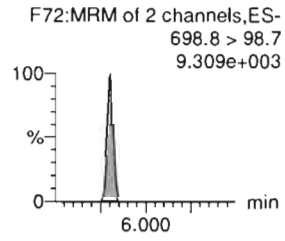
PFTrDA



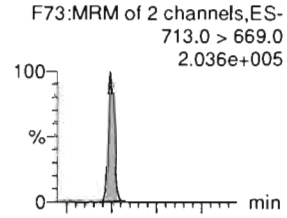


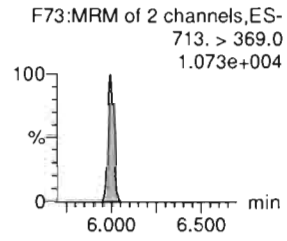
PFDoS



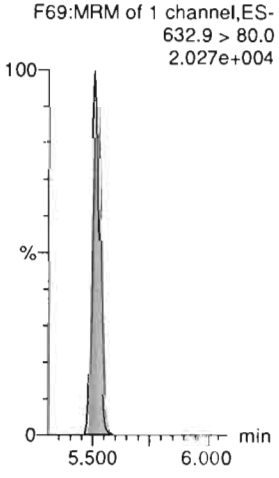


PFTeDA

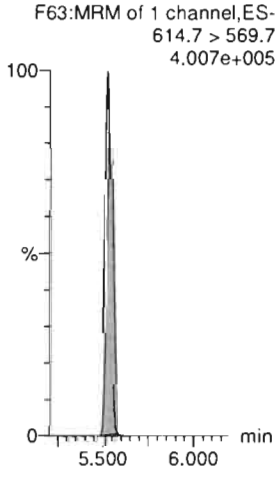




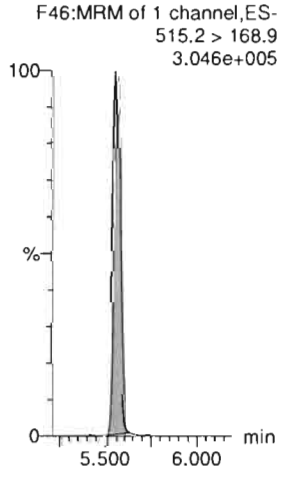
13C2-10:2 FTS-EIS



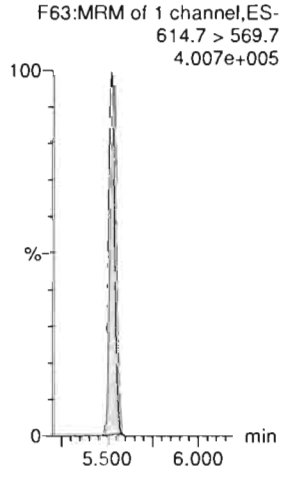
13C2-PFDoA-EIS



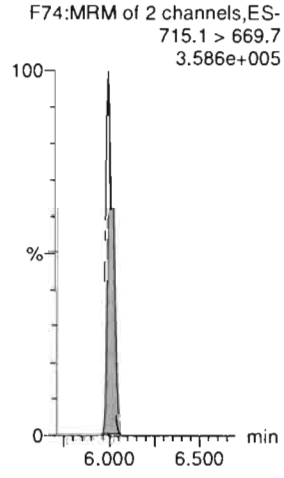
d3-N-MeFOSA-EIS



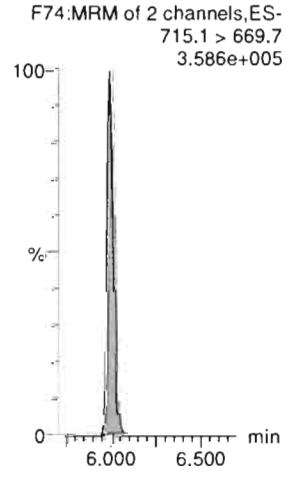
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

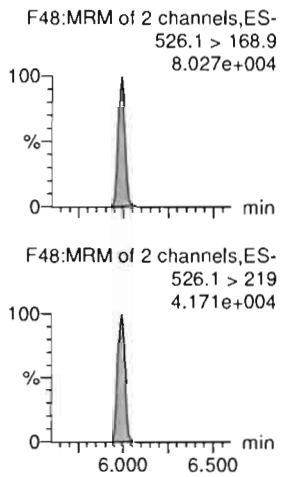


Dataset: Untitled

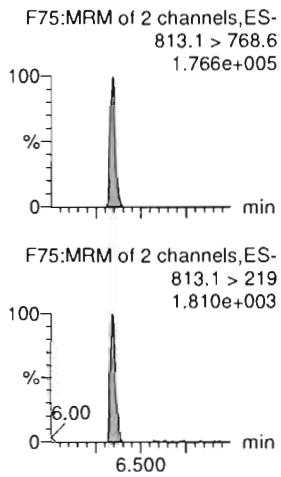
Last Altered: Thursday, March 05, 2020 09:34:37 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:35:09 Pacific Standard Time

Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

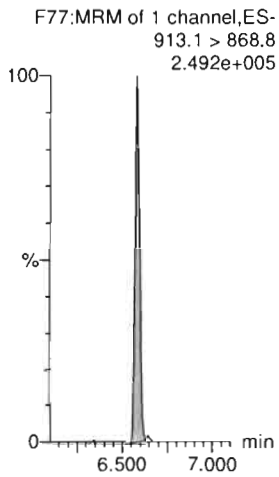
N-EtFOSA



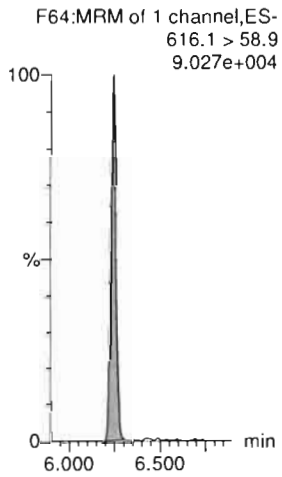
PFHxDA



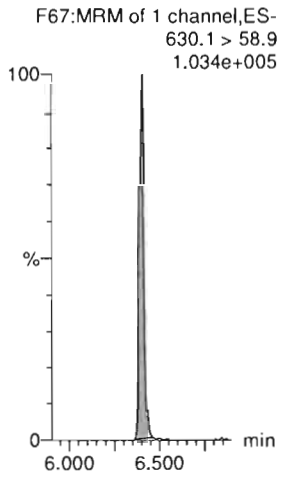
PFODA



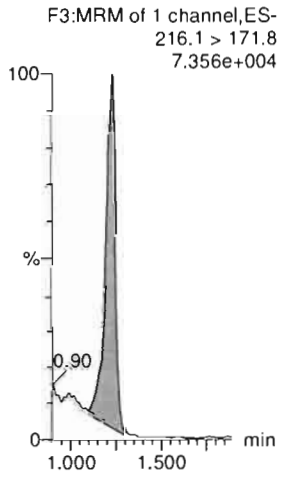
N-MeFOSE



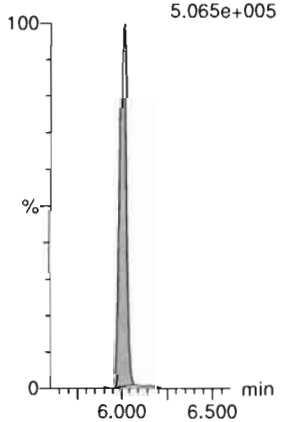
N-EtFOSE



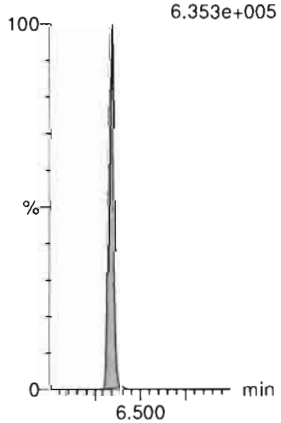
13C3-PFBA-RSD



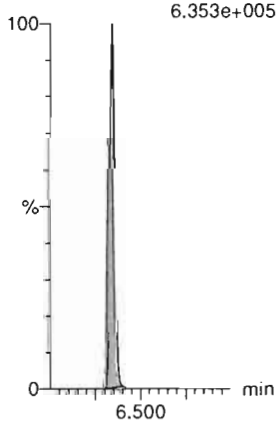
d5-N-ETFOSA-EIS



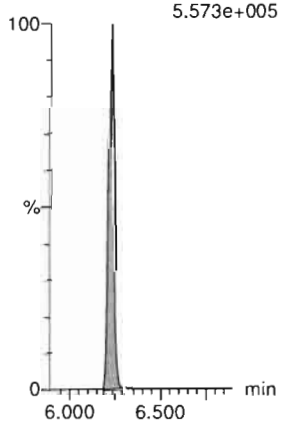
13C2-PFHxDA-EIS



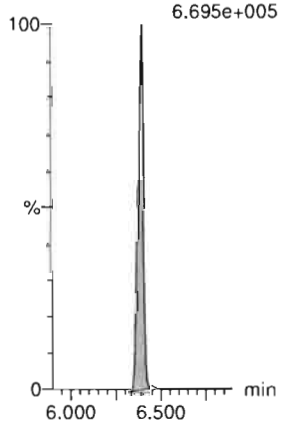
13C2-PFHxDA-EIS



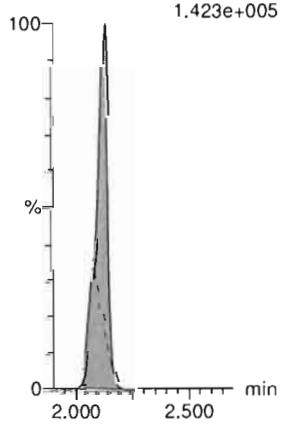
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

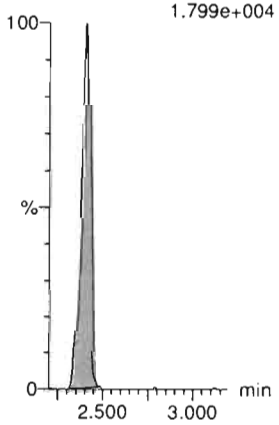


Dataset: Untitled

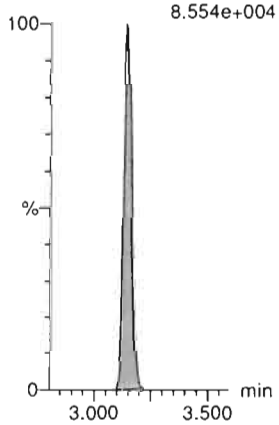
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

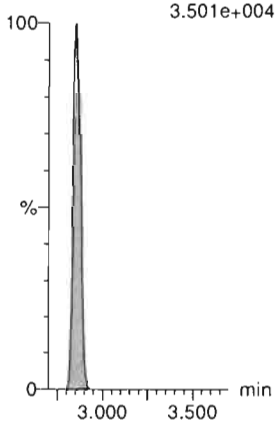
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.799e+004



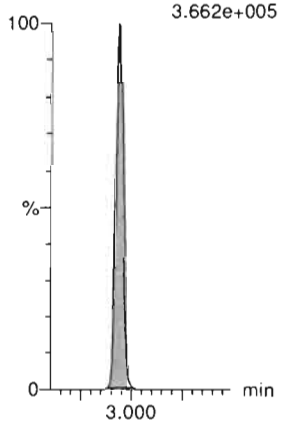
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.554e+004



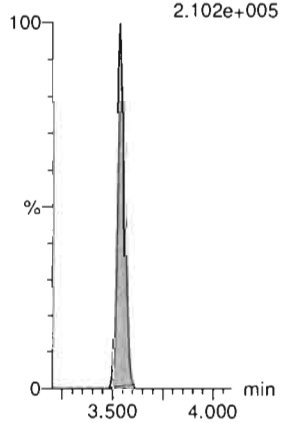
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.501e+004



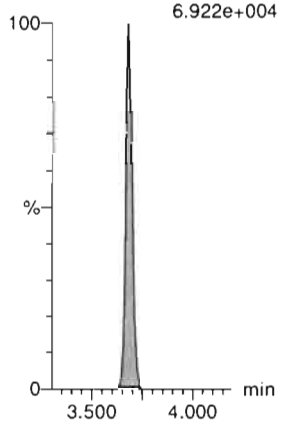
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.662e+005



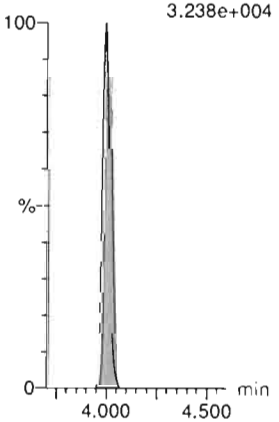
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
2.102e+005



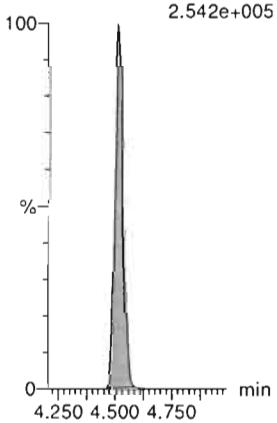
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.922e+004



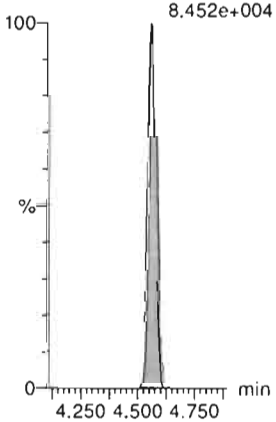
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.238e+004



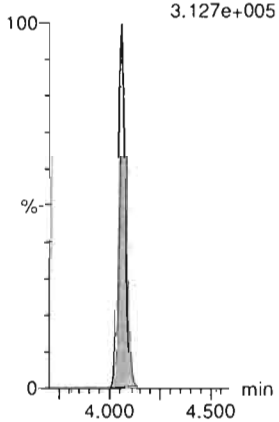
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.542e+005



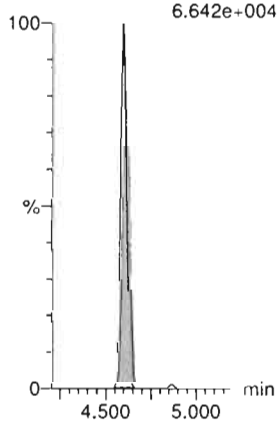
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.452e+004



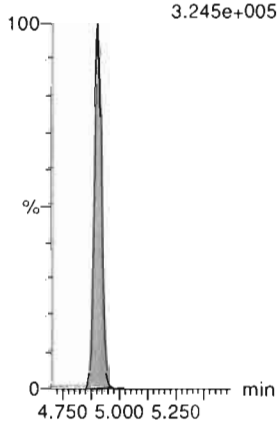
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.127e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.642e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.245e+005

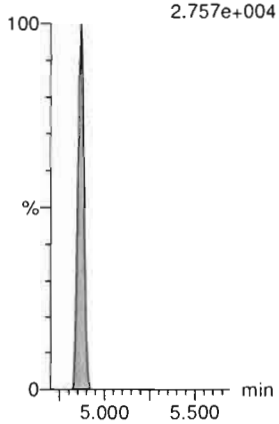


Dataset: Untitled

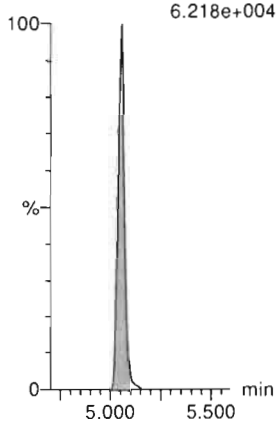
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

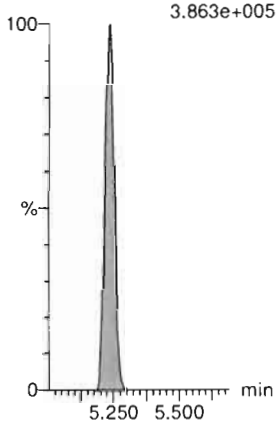
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.757e+004



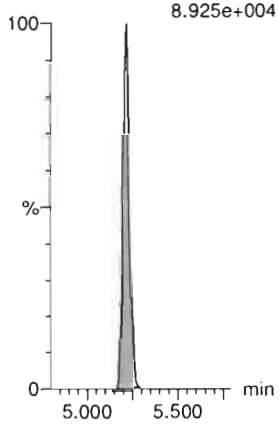
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.218e+004



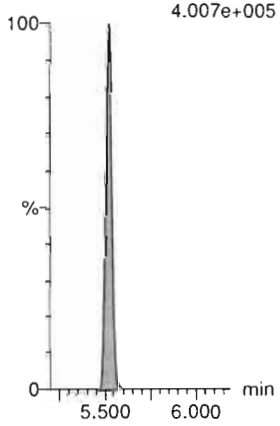
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.863e+005



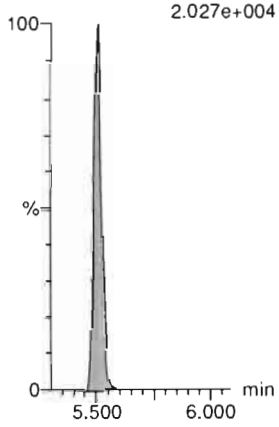
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.925e+004



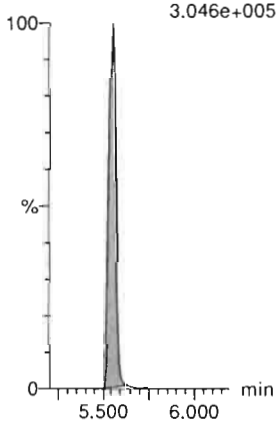
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.007e+005



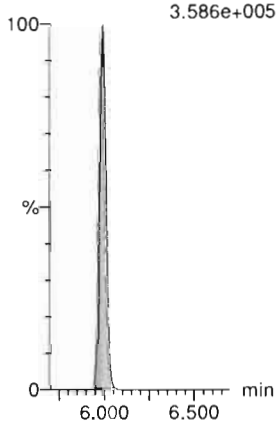
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.027e+004



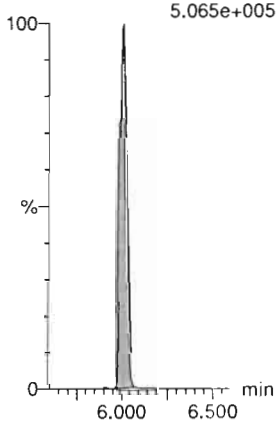
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.046e+005



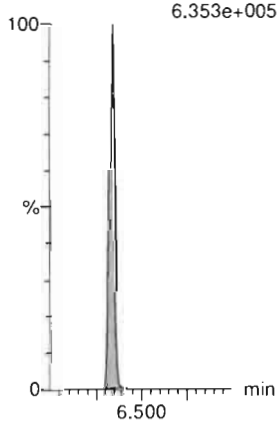
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.586e+005



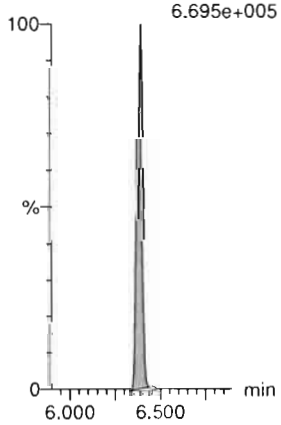
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.065e+005



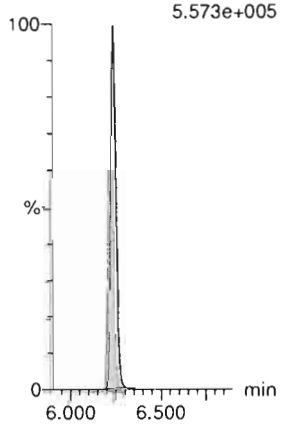
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.353e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.695e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.573e+005

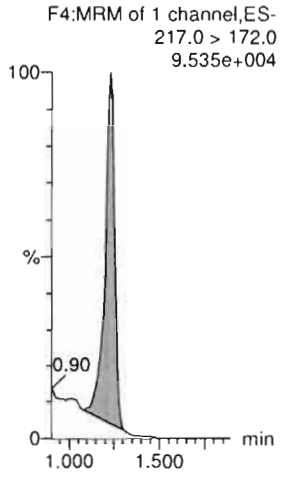


Dataset: Untitled

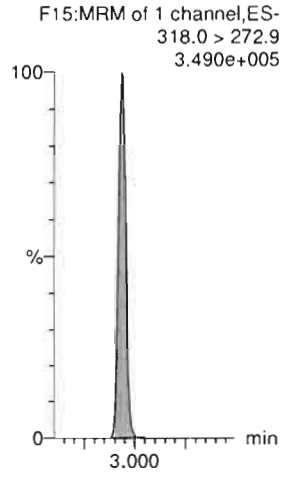
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-7, Date: 04-Mar-2020, Time: 20:13:54, ID: ST200304P2-5 PFC CS2 20C0308, Description: PFC CS2 20C0308

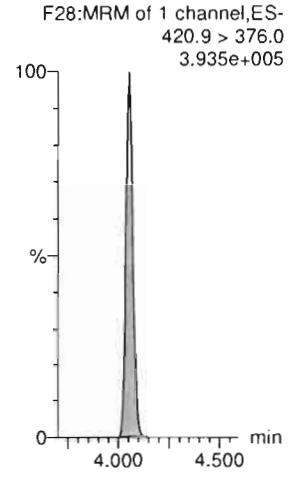
13C4-PFBA



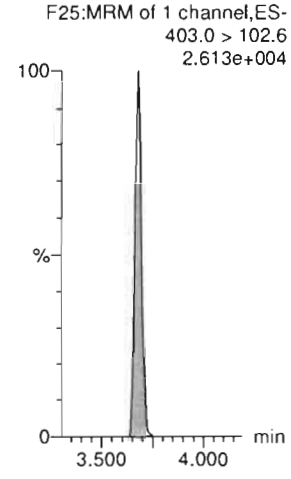
13C5-PFHxA



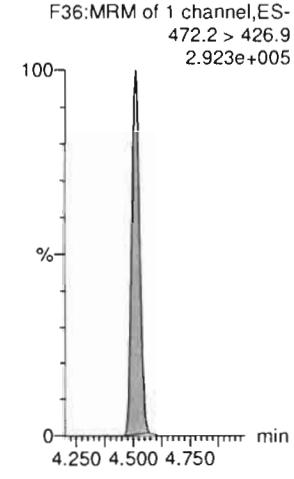
13C8-PFOA



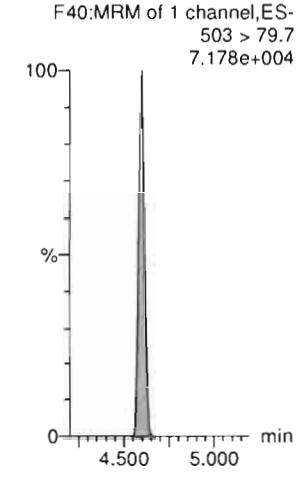
18O2-PFHxS



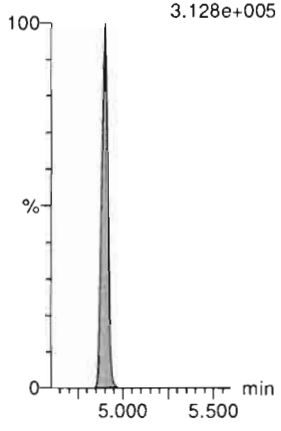
13C9-PFNA



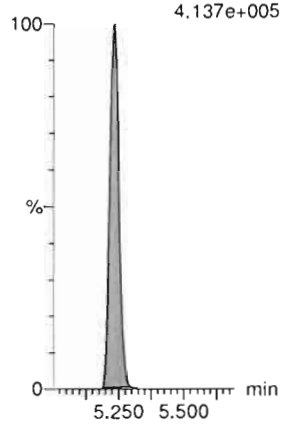
13C4-PFOS



13C6-PFDA



13C7-PFUdA

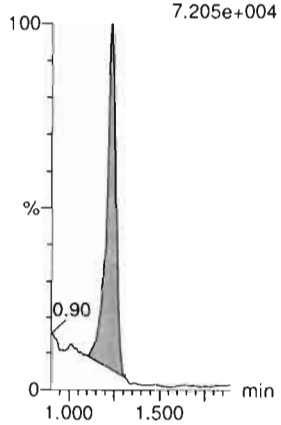


Dataset: Untitled

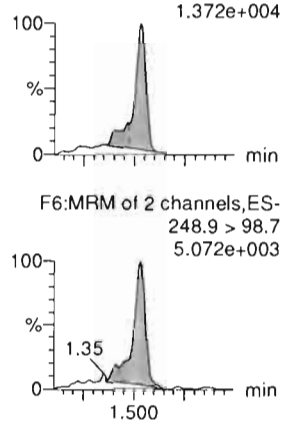
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

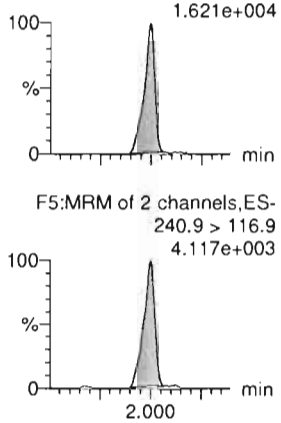
PFBA



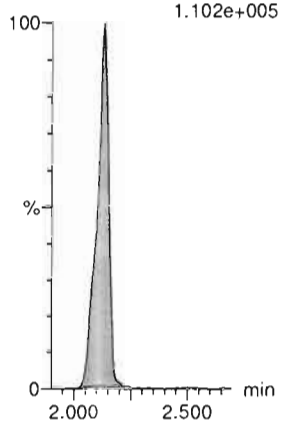
PFPrS



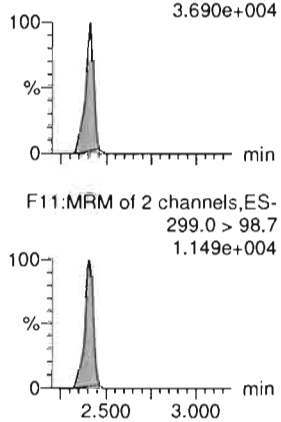
3:3 FTCA



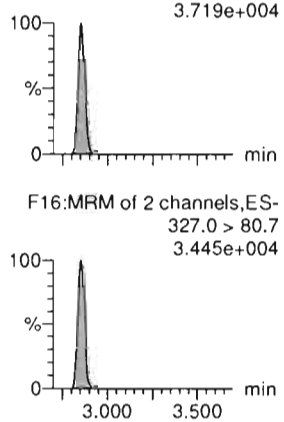
PFPeA



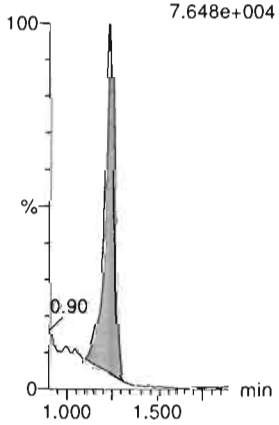
PFBS



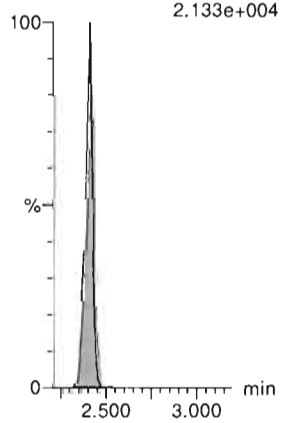
4:2 FTS



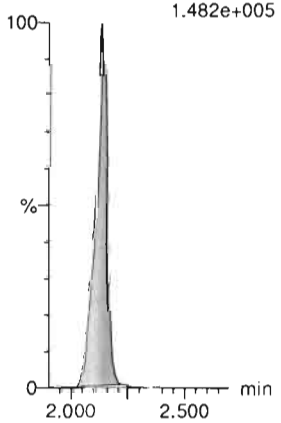
13C3-PFBA-EIS



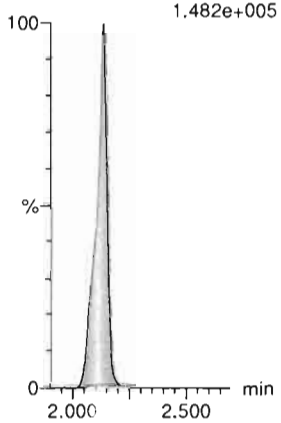
13C3-PFBS-EIS



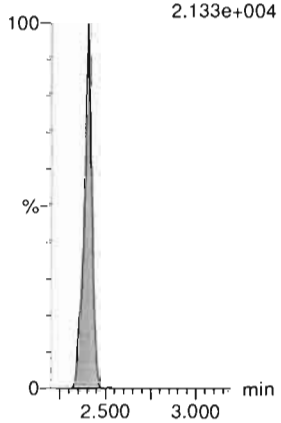
13C3-PFPeA-EIS



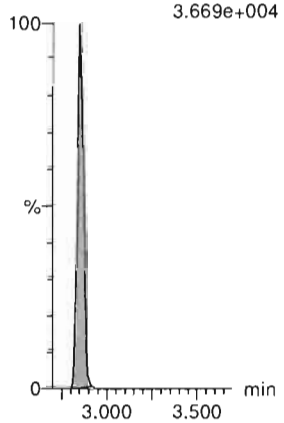
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

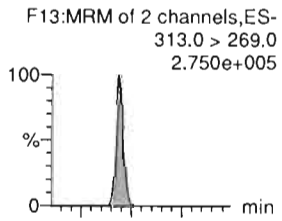


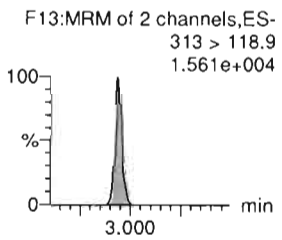
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

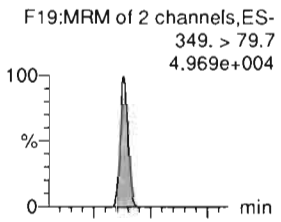
Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

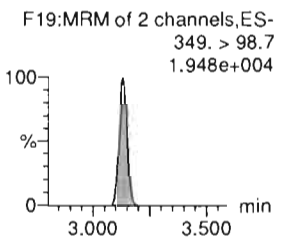
PFHxA



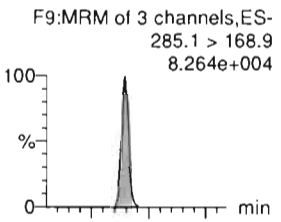


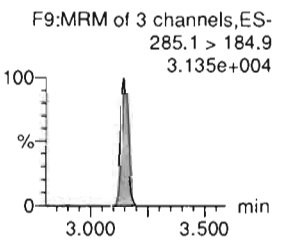
PFPeS



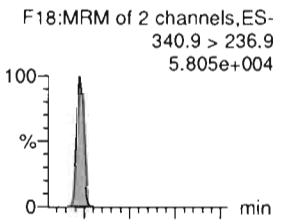


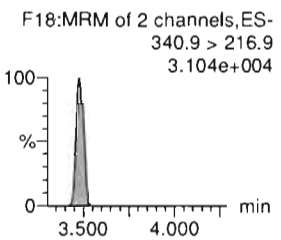
HFPO-DA



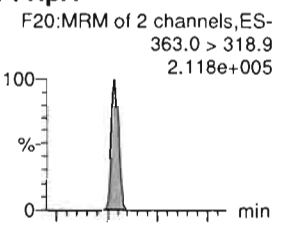


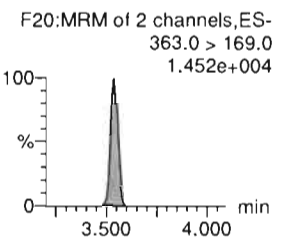
5:3 FTCA



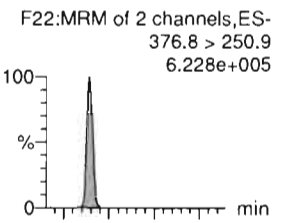


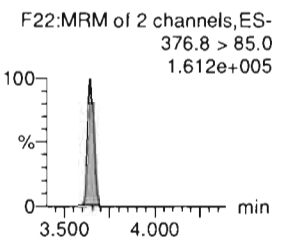
PFHpA



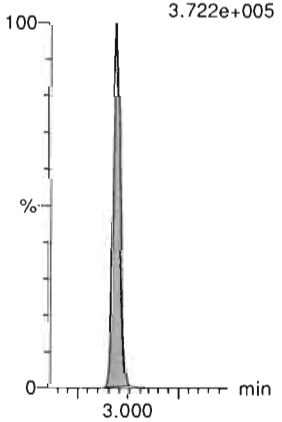


ADONA

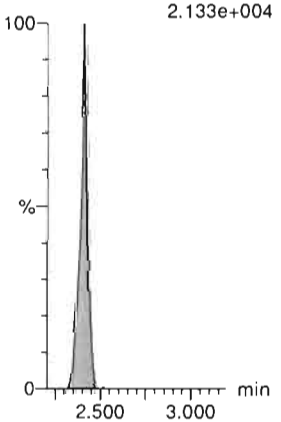




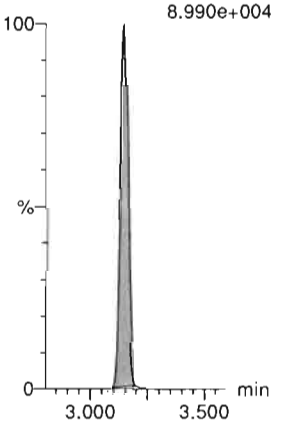
13C2-PFHxA-EIS



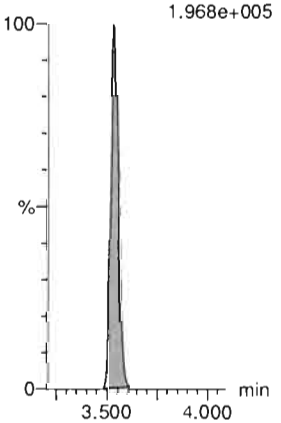
13C3-PFBS-EIS



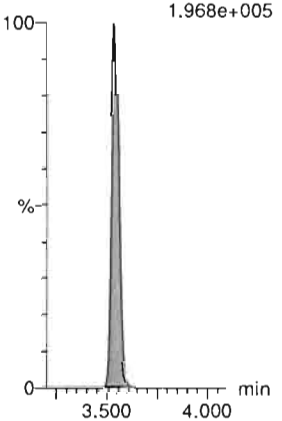
13C3-HFPO-DA-EIS



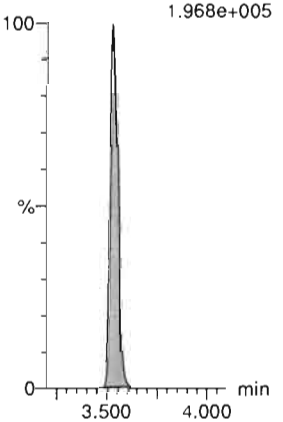
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

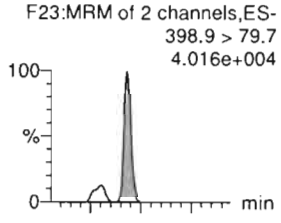


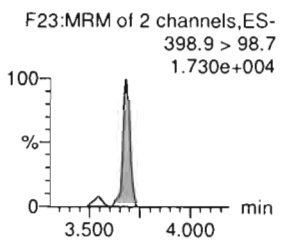
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

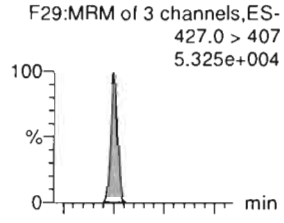
Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

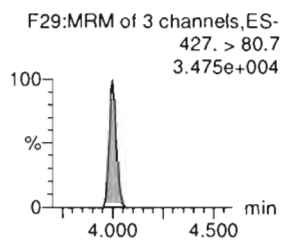
L-PFHxS



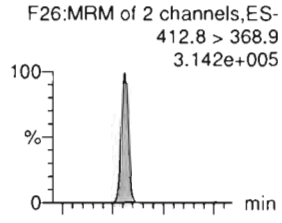


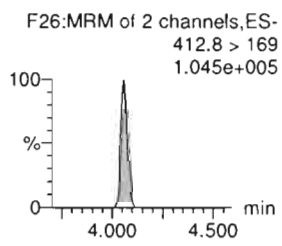
6:2 FTS



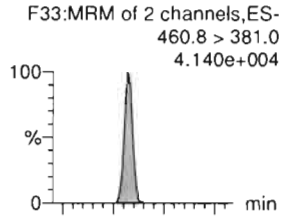


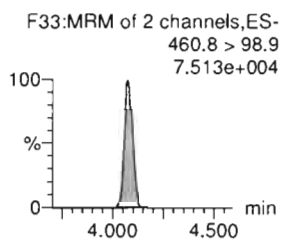
L-PFOA



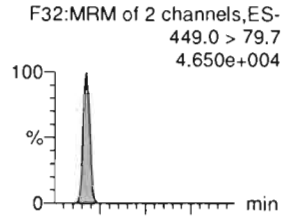


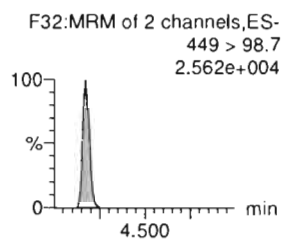
PFEChS



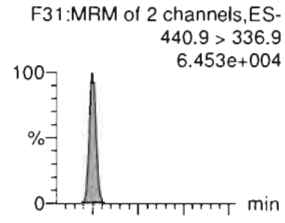


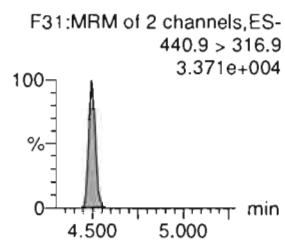
PFHpS



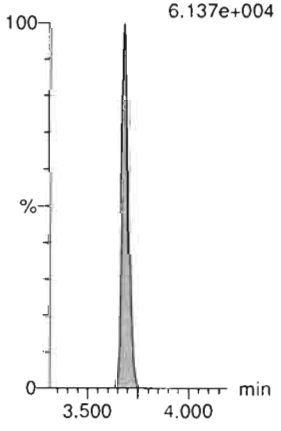


7:3 FTCA

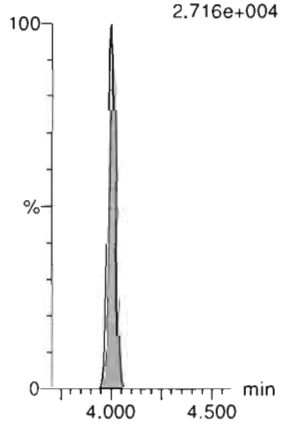




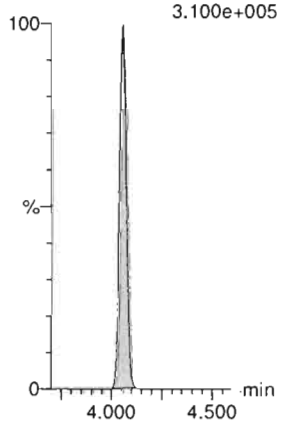
13C3-PFHxS-EIS



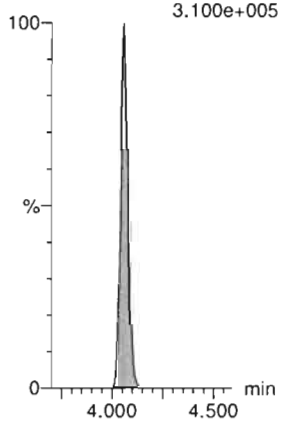
13C2-6:2 FTS-EIS



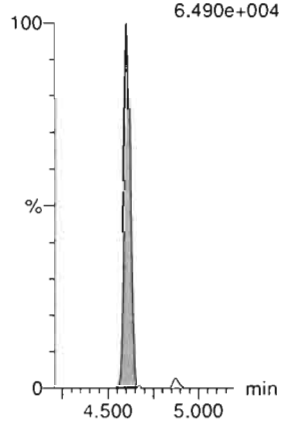
13C2-PFOA-EIS



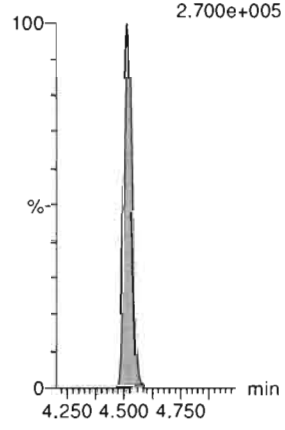
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

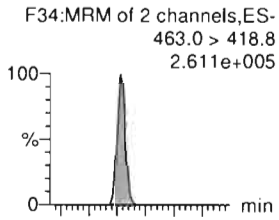


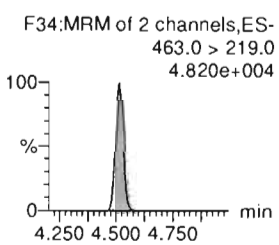
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

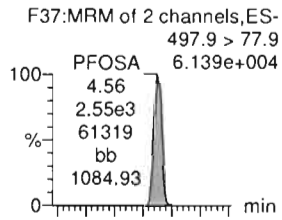
Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

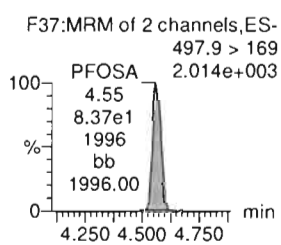
PFNA



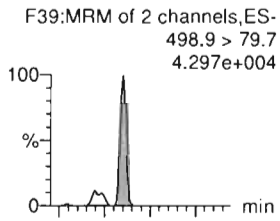


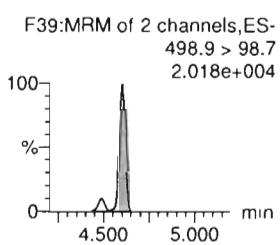
PFOSA



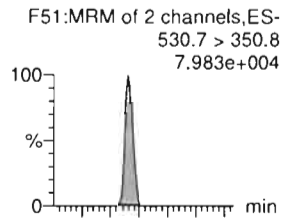


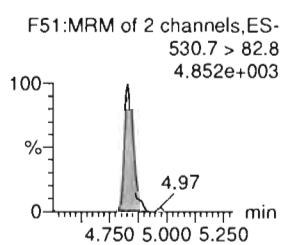
L-PFOS



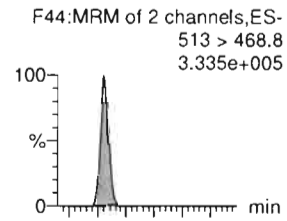


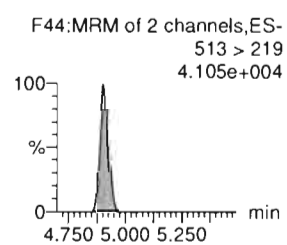
9Cl-PF30NS



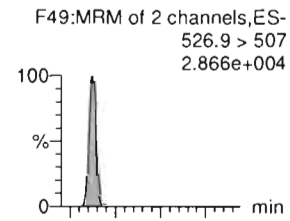


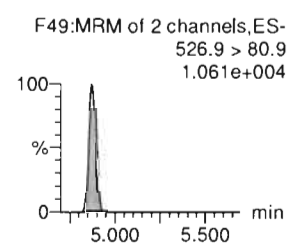
PFDA



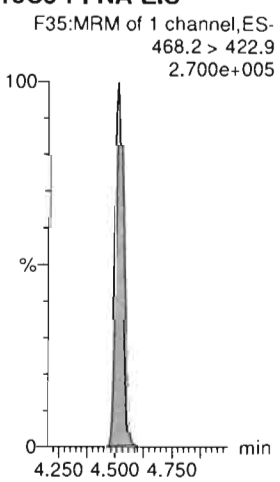


8:2 FTS

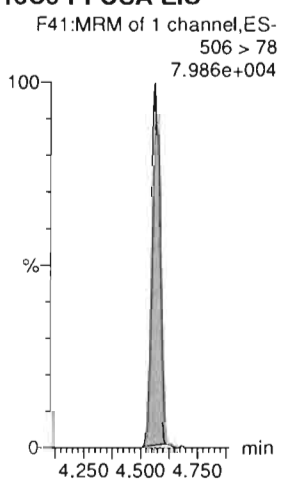




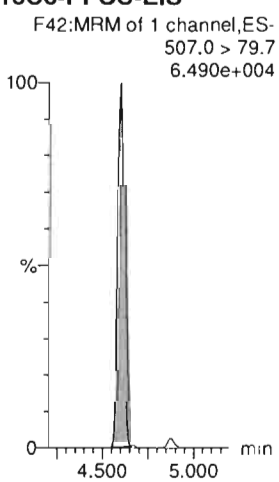
13C5-PFNA-EIS



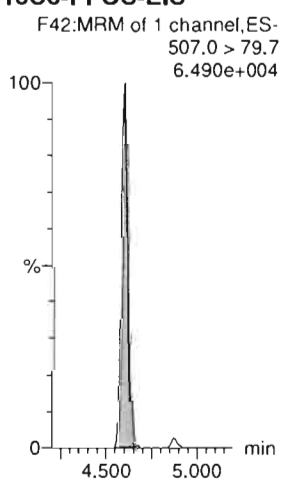
13C8-PFOSA-EIS



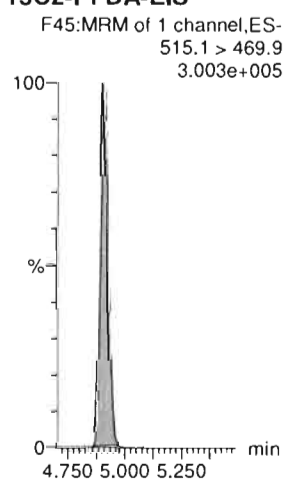
13C8-PFOS-EIS



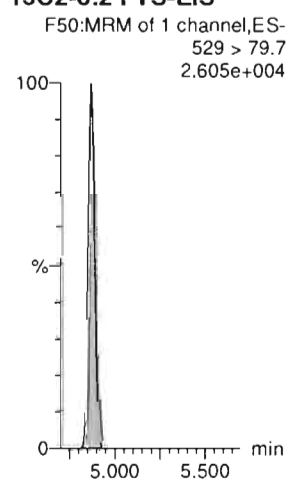
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

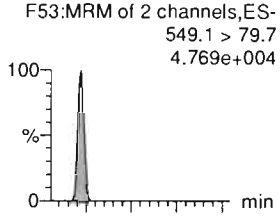


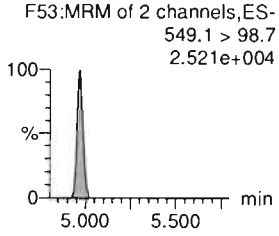
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

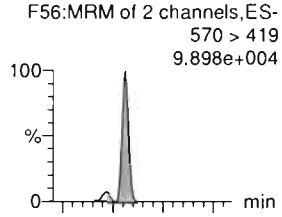
Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

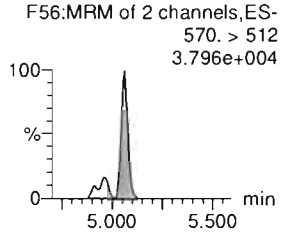
PFNS



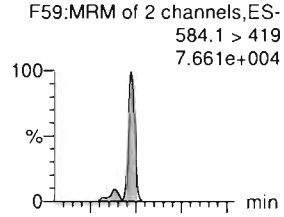


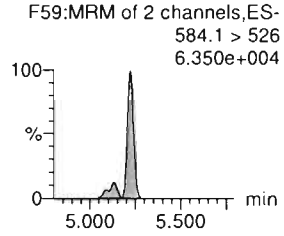
L-MeFOSAA



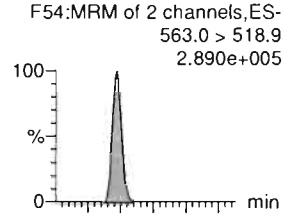


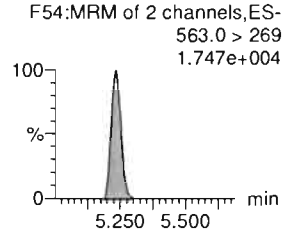
L-EtFOSAA



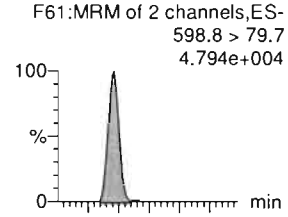


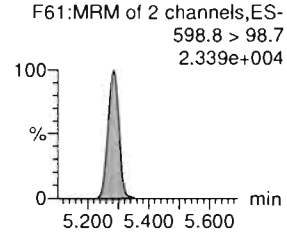
PFUdA



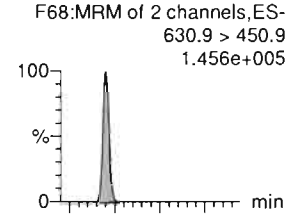


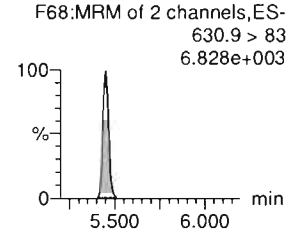
PFDS



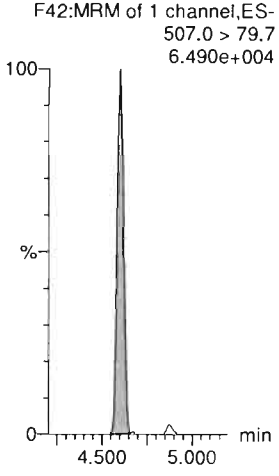


11Cl-PF30UdS

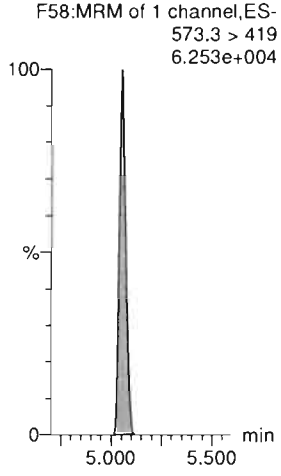




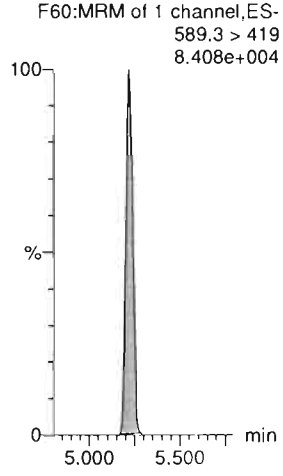
13C8-PFOS-EIS



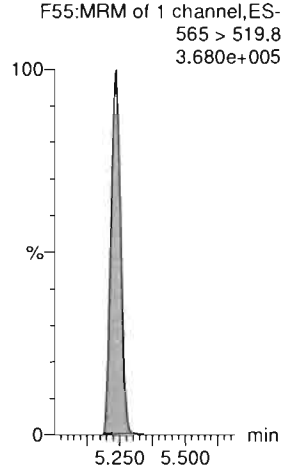
d3-N-MeFOSAA-EIS



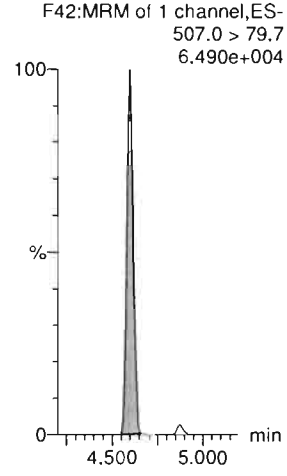
d5-N-EtFOSAA-EIS



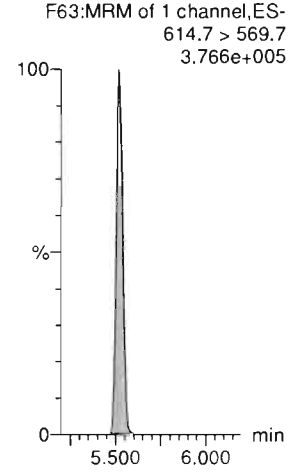
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

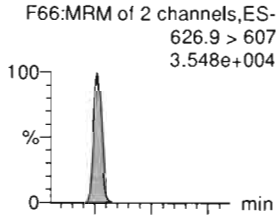


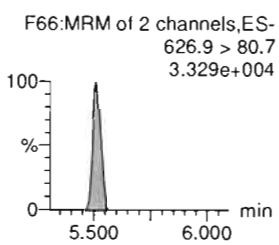
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

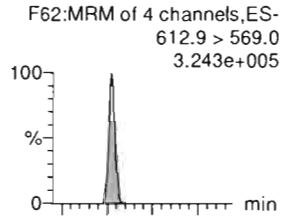
Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

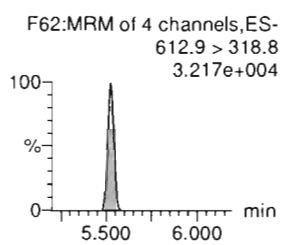
10:2 FTS



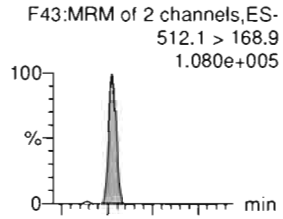


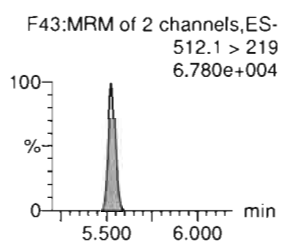
PFDoA



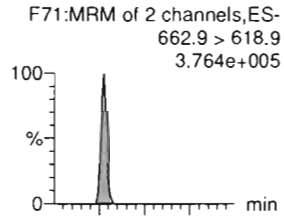


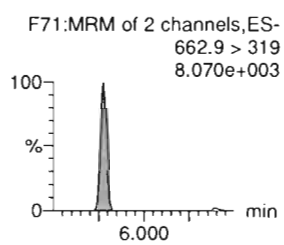
N-MeFOSA



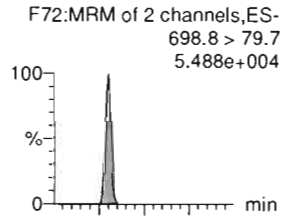


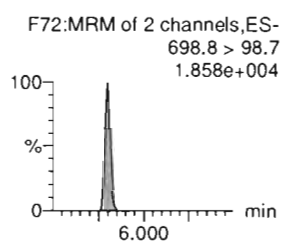
PFTrDA



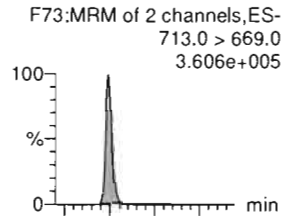


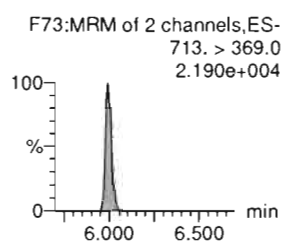
PFDoS



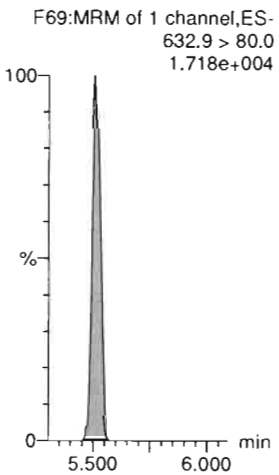


PFTeDA

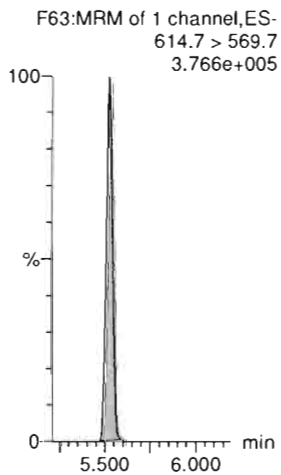




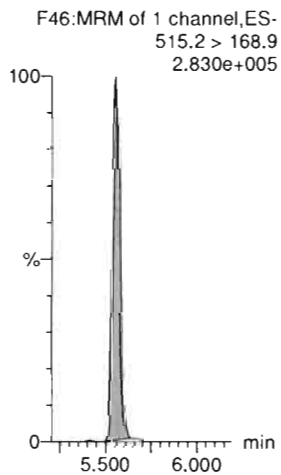
13C2-10:2 FTS-EIS



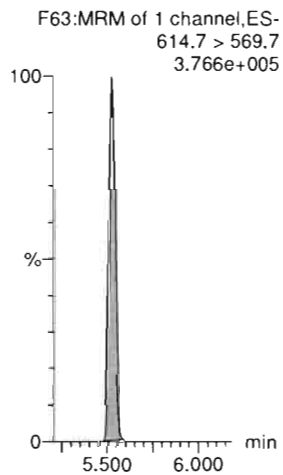
13C2-PFDoA-EIS



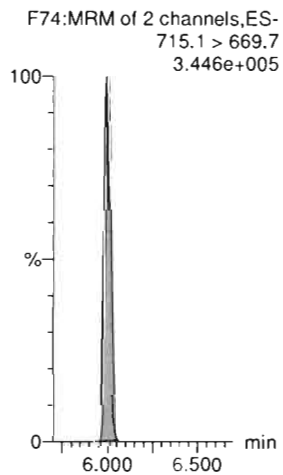
d3-N-MeFOSA-EIS



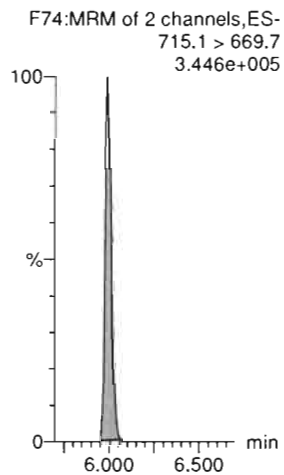
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

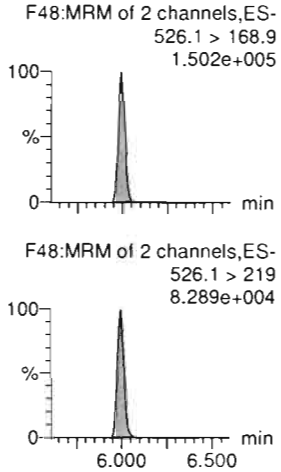


Dataset: Untitled

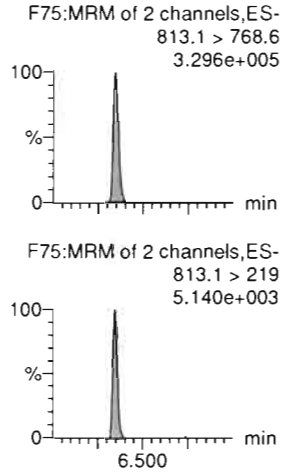
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

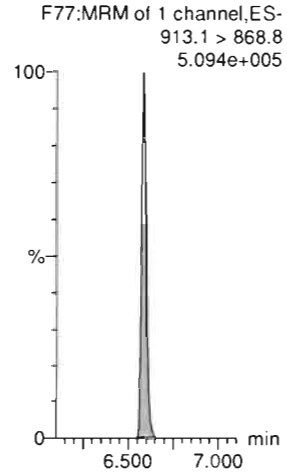
N-EtFOSA



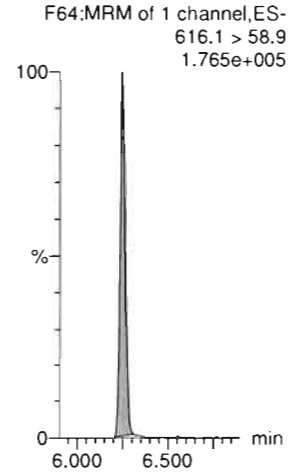
PFHxDA



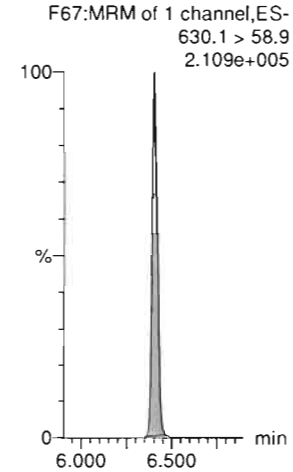
PFODA



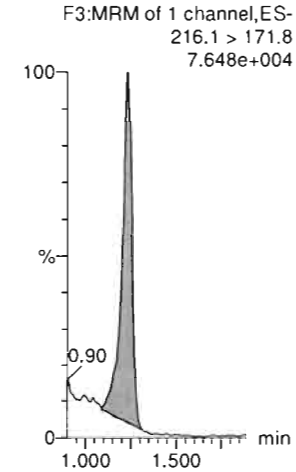
N-MeFOSE



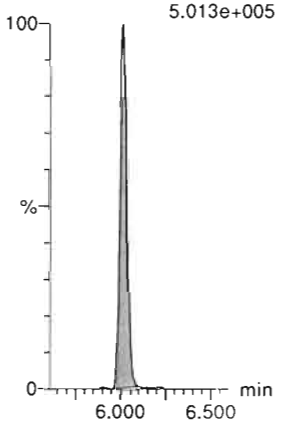
N-EtFOSE



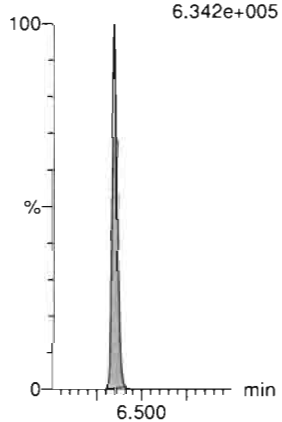
13C3-PFBA-RSD



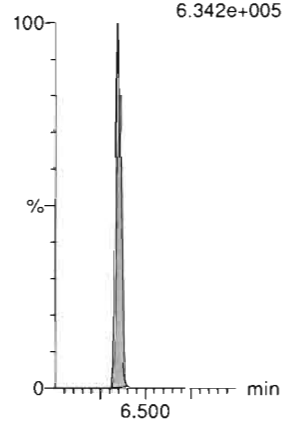
d5-N-ETFOSA-EIS



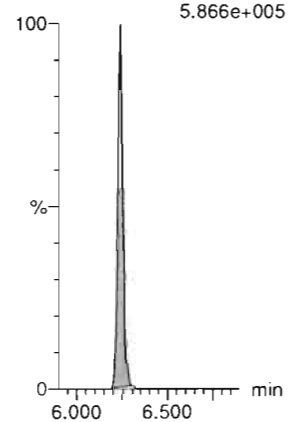
13C2-PFHxDA-EIS



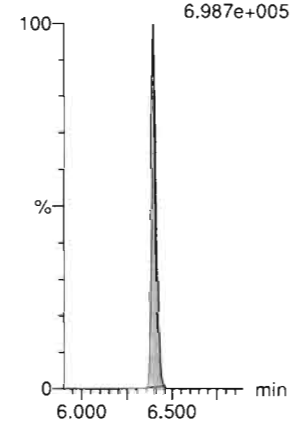
13C2-PFHxDA-EIS



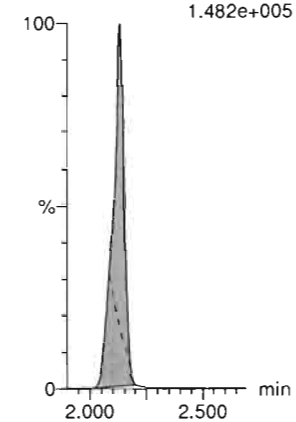
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

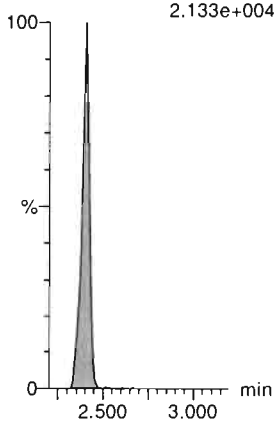


Dataset: Untitled

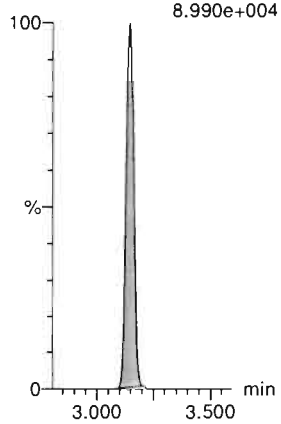
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

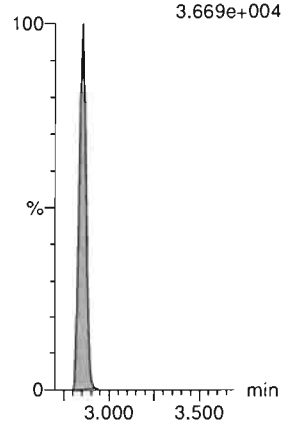
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
2.133e+004



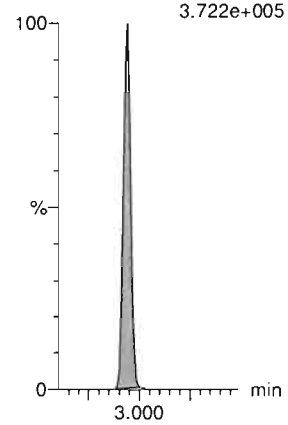
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.990e+004



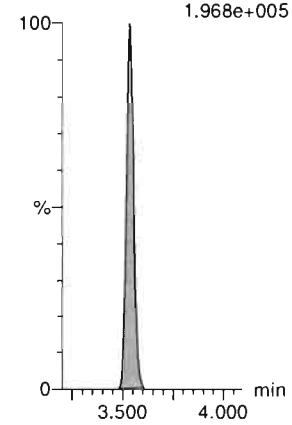
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
3.669e+004



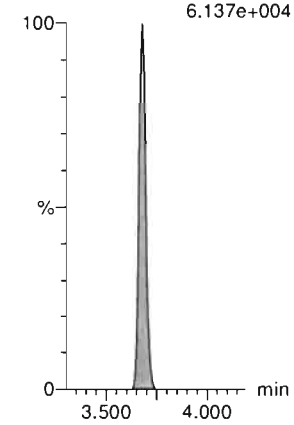
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.722e+005



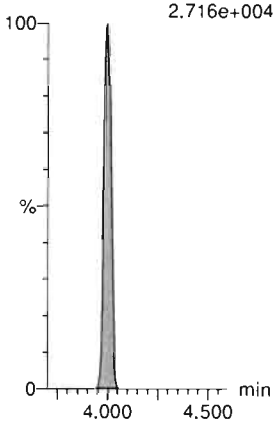
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.968e+005



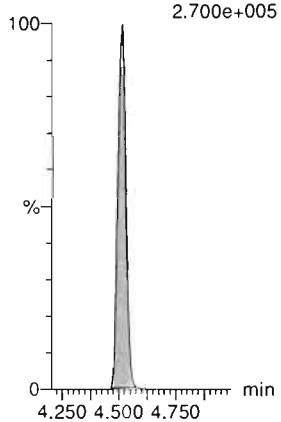
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.137e+004



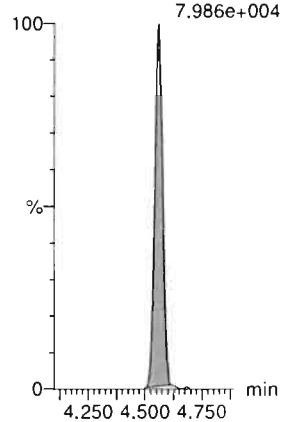
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.716e+004



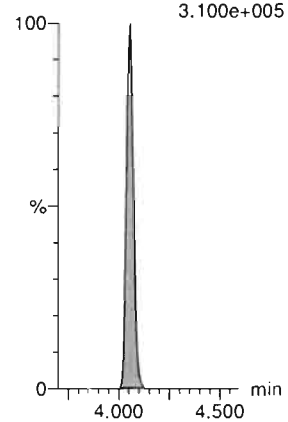
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.700e+005



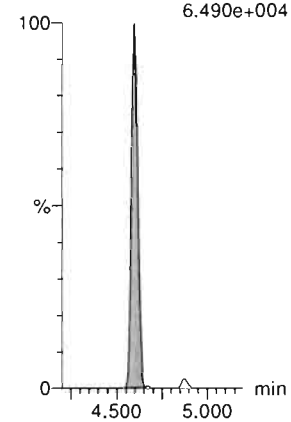
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
7.986e+004



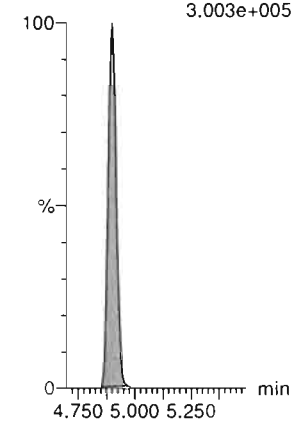
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.100e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.490e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.003e+005

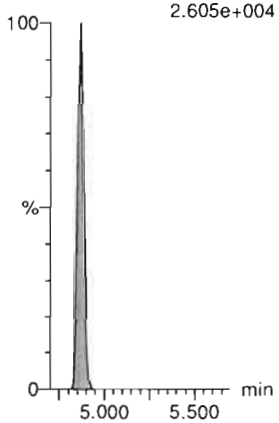


Dataset: Untitled

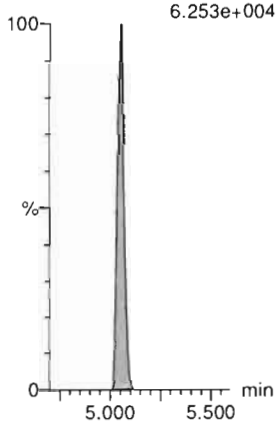
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

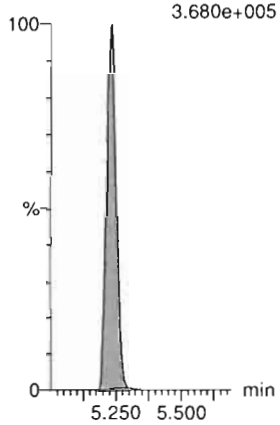
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.605e+004



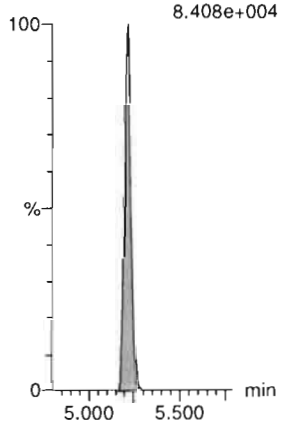
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.253e+004



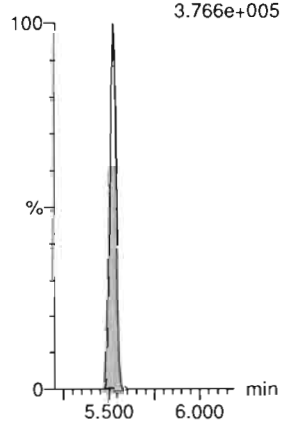
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.680e+005



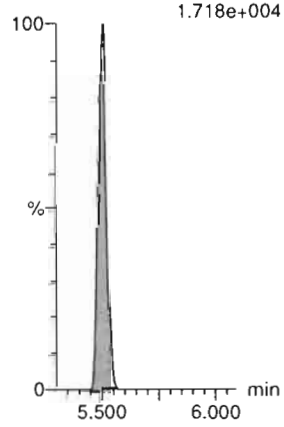
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.408e+004



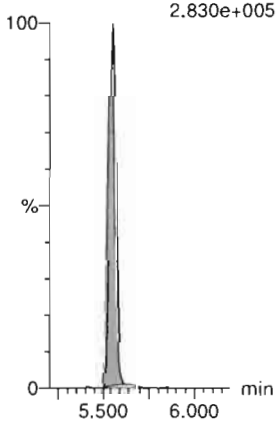
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.766e+005



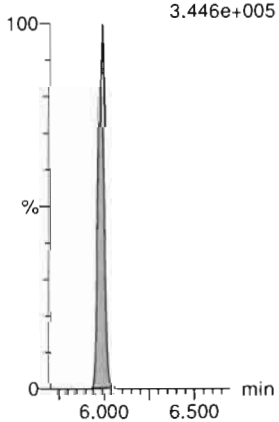
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.718e+004



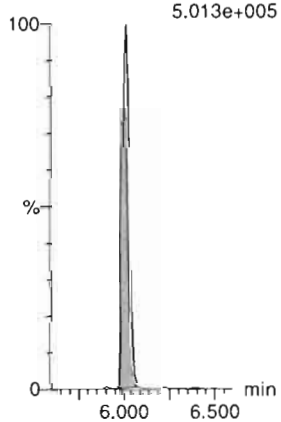
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.830e+005



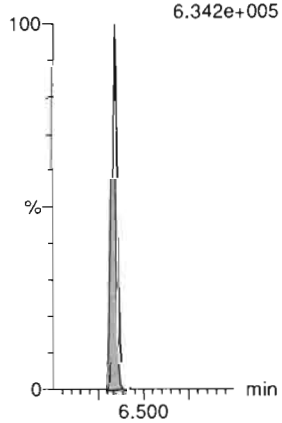
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.446e+005



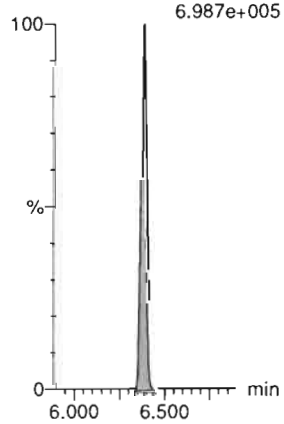
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.013e+005



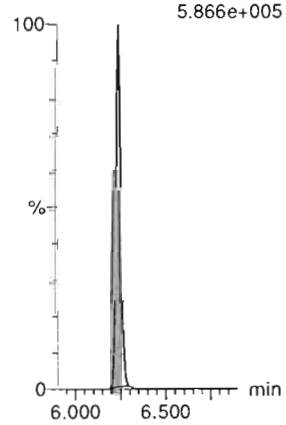
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.342e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.987e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.866e+005

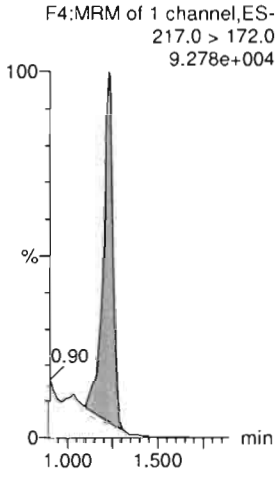


Dataset: Untitled

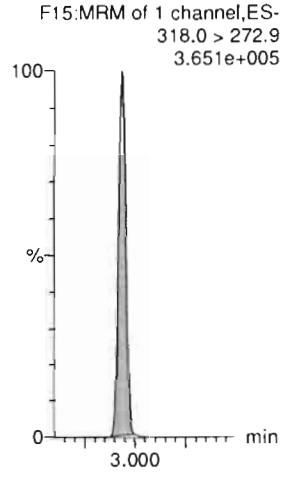
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-8, Date: 04-Mar-2020, Time: 20:24:22, ID: ST200304P2-6 PFC CS3 20C0309, Description: PFC CS3 20C0309

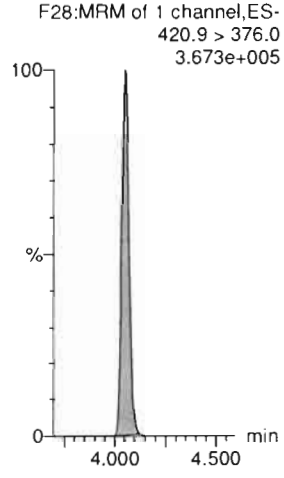
13C4-PFBA



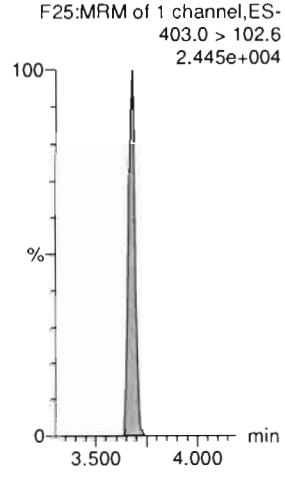
13C5-PFHxA



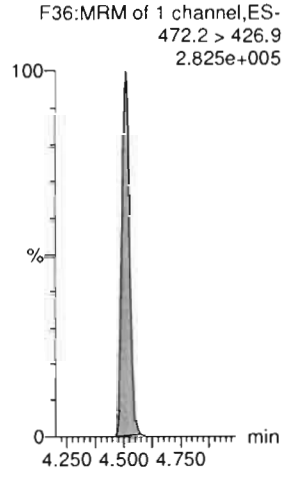
13C8-PFOA



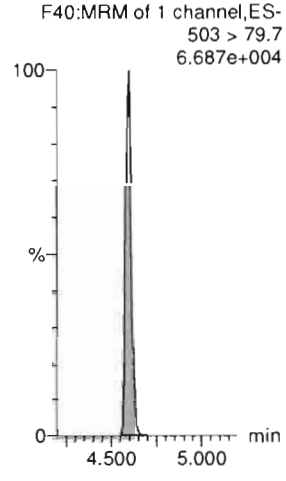
18O2-PFHxS



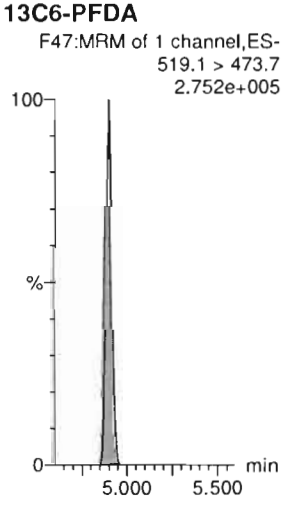
13C9-PFNA



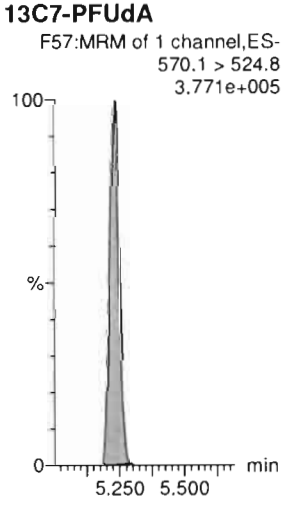
13C4-PFOS



13C6-PFDA



13C7-PFUdA

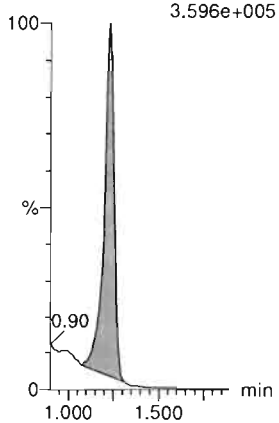


Dataset: Untitled

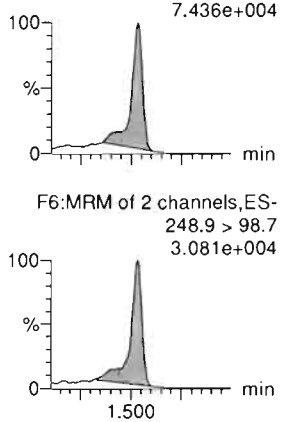
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

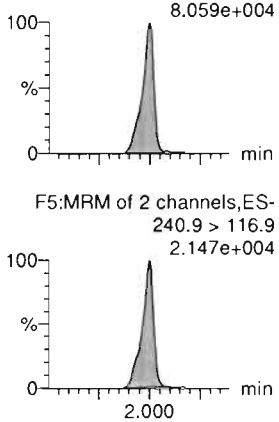
PFBA



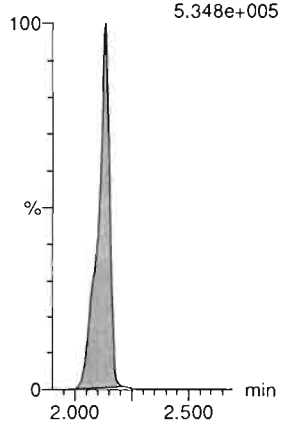
PFPrS



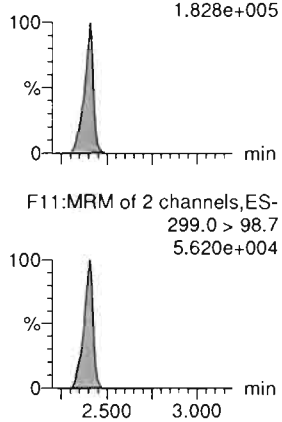
3:3 FTCA



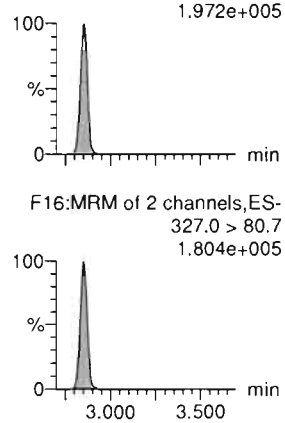
PFPeA



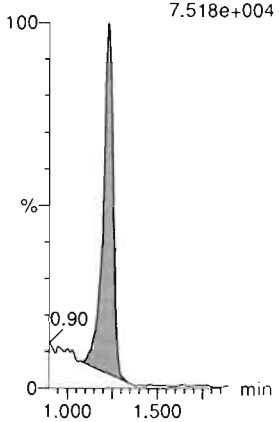
PFBS



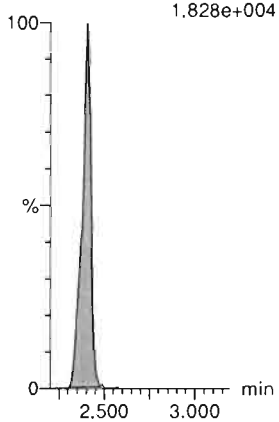
4:2 FTS



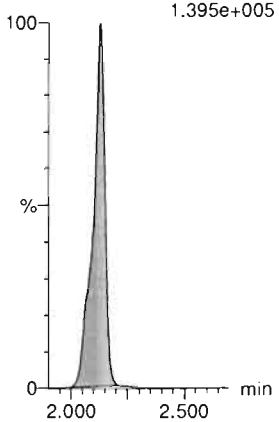
13C3-PFBA-EIS



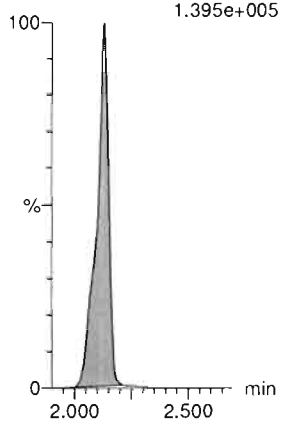
13C3-PFBS-EIS



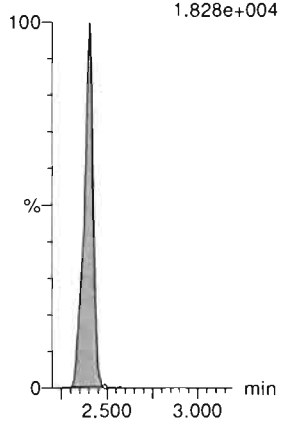
13C3-PFPeA-EIS



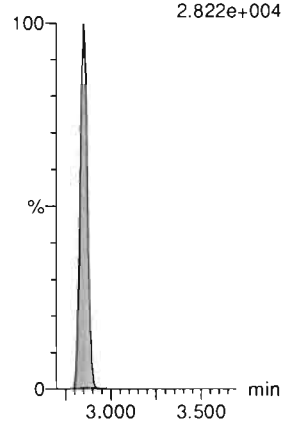
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

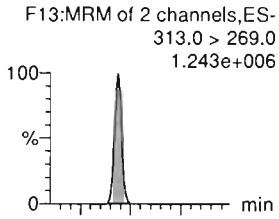


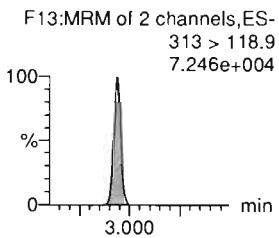
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

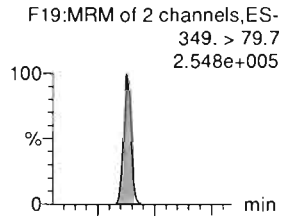
Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

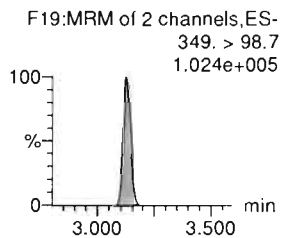
PFHxA



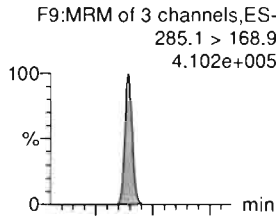


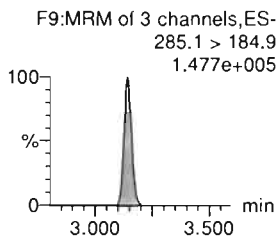
PFPeS



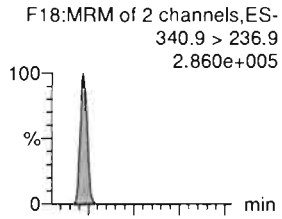


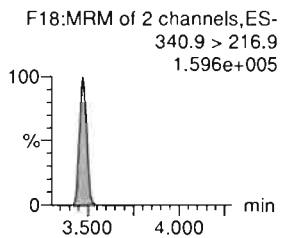
HFPO-DA



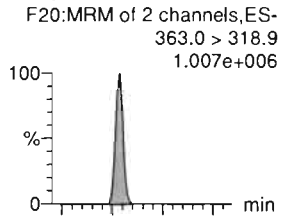


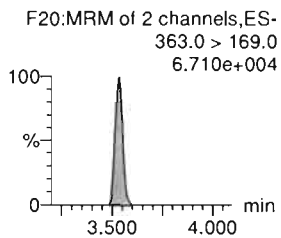
5:3 FTCA



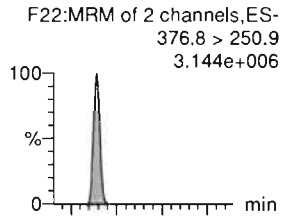


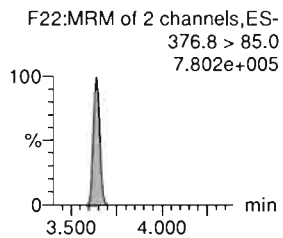
PFHpA



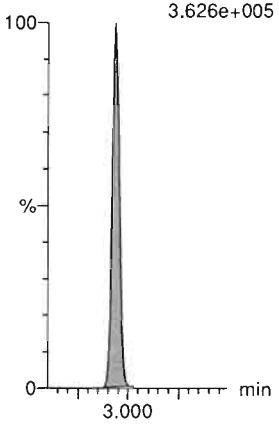


ADONA

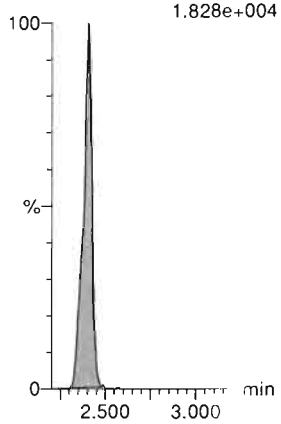




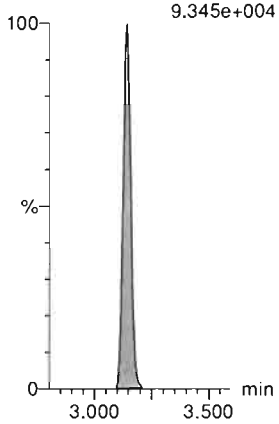
13C2-PFHxA-EIS



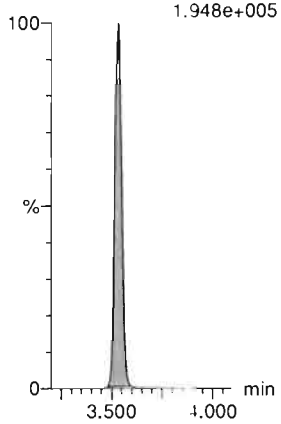
13C3-PFBS-EIS



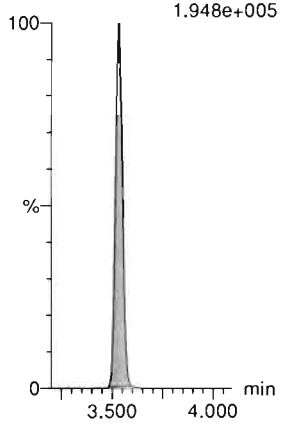
13C3-HFPO-DA-EIS



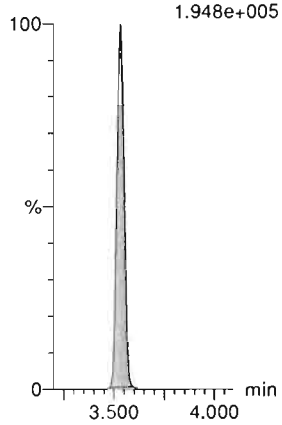
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

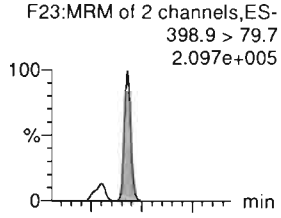


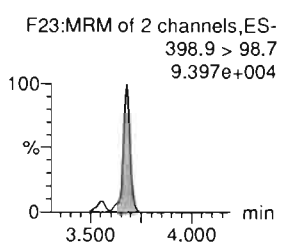
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

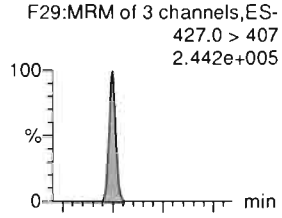
Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

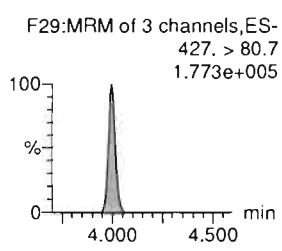
L-PFHxS



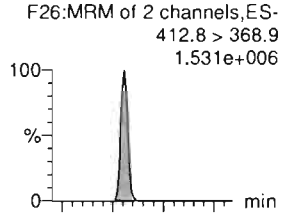


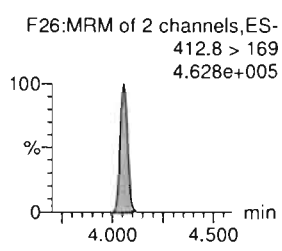
6:2 FTS



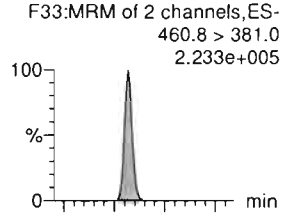


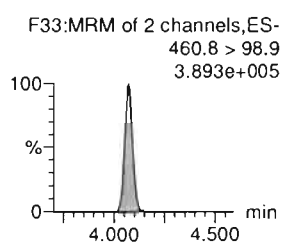
L-PFOA



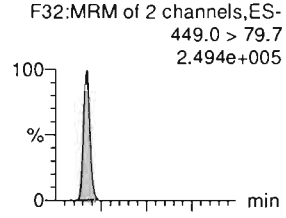


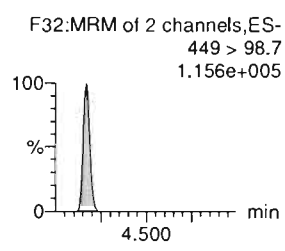
PFEChS



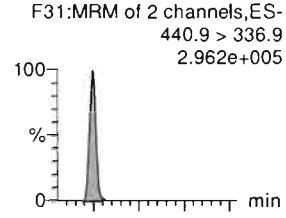


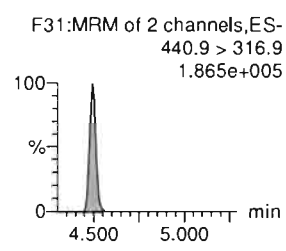
PFHpS



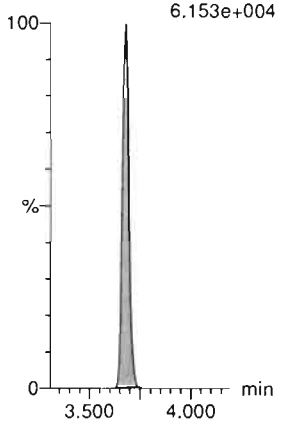


7:3 FTCA

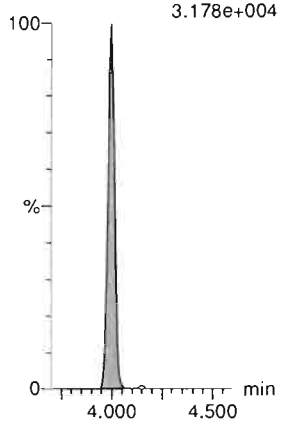




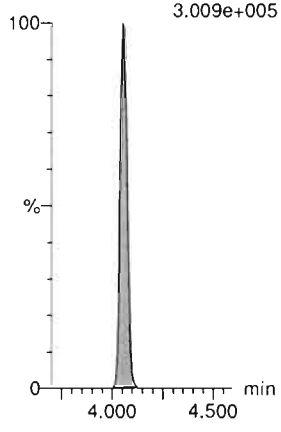
13C3-PFHxS-EIS



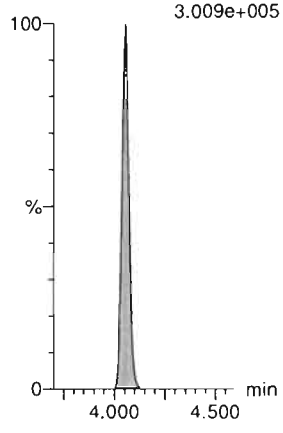
13C2-6:2 FTS-EIS



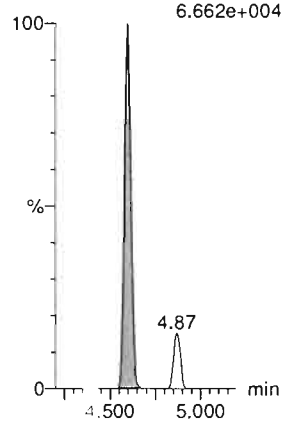
13C2-PFOA-EIS



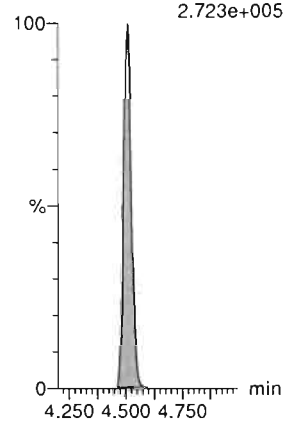
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

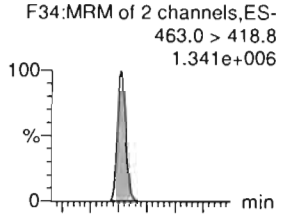


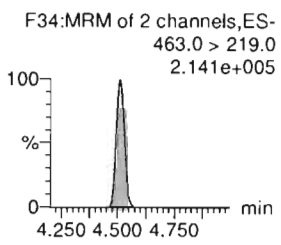
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

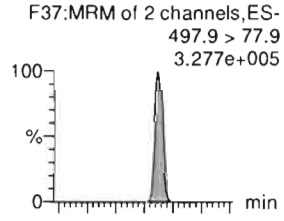
Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

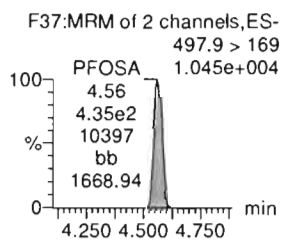
PFNA



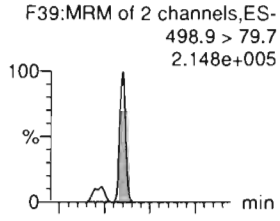


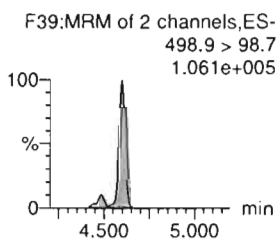
PFOSA



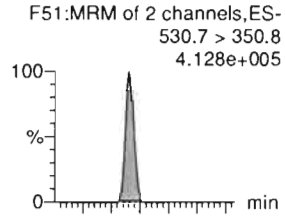


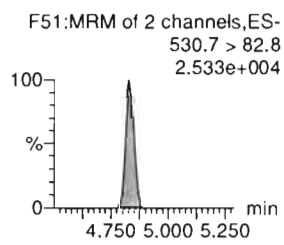
L-PFOS



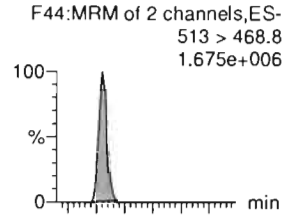


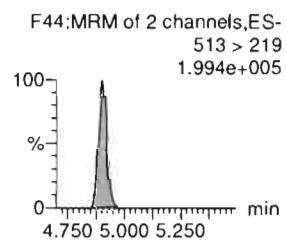
9Cl-PF30NS



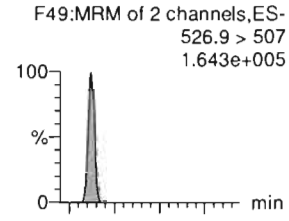


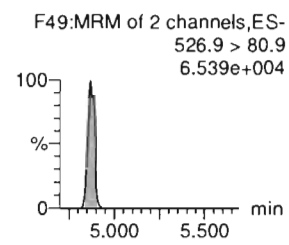
PFDA



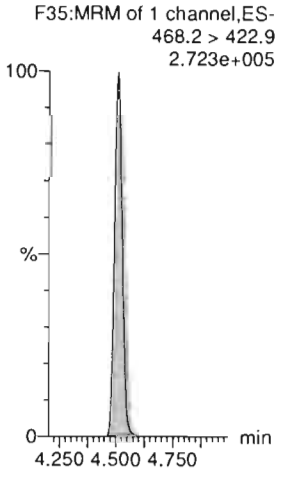


8:2 FTS

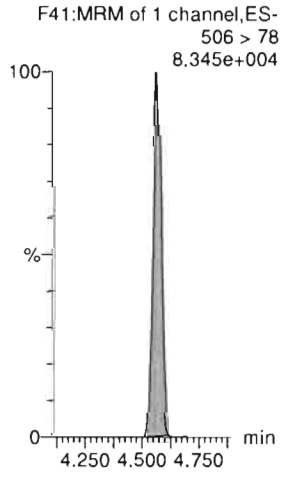




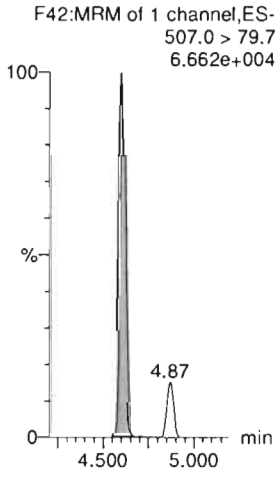
13C5-PFNA-EIS



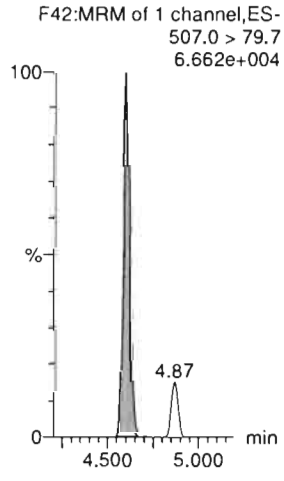
13C8-PFOSA-EIS



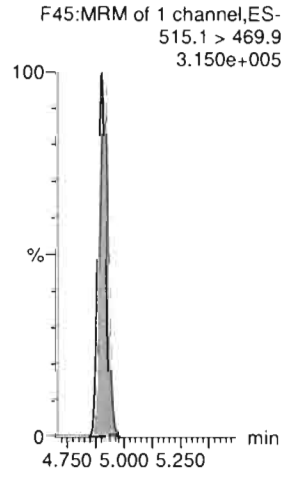
13C8-PFOS-EIS



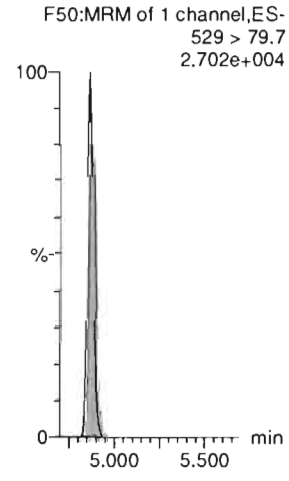
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

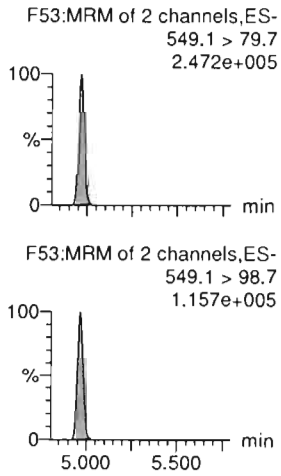


Dataset: Untitled

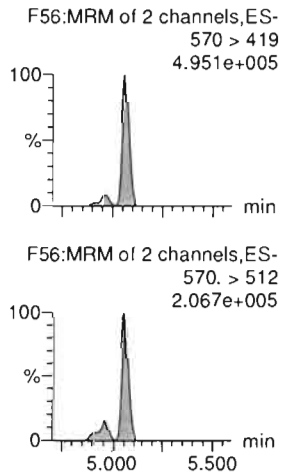
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

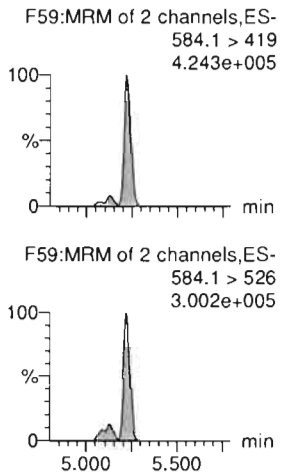
PFNS



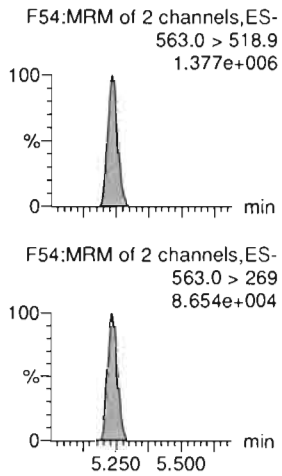
L-MeFOSAA



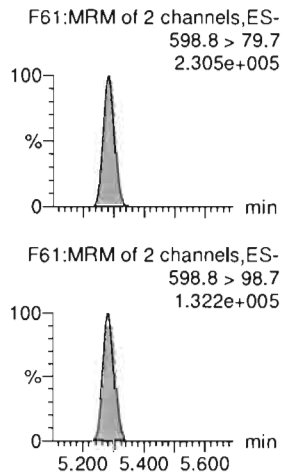
L-EtFOSAA



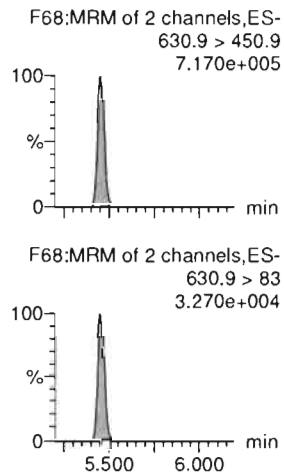
PFUdA



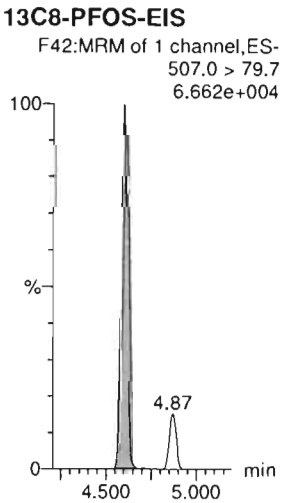
PFDS



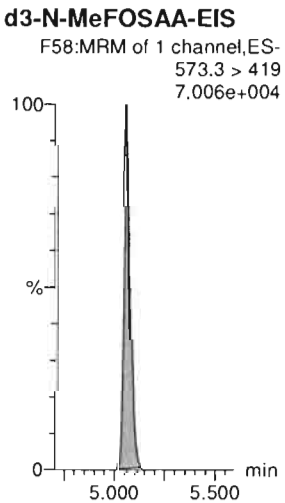
11Cl-PF30UdS



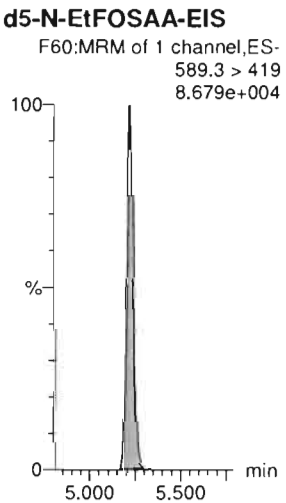
13C8-PFOS-EIS



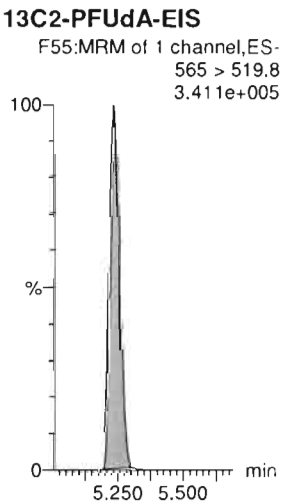
d3-N-MeFOSAA-EIS



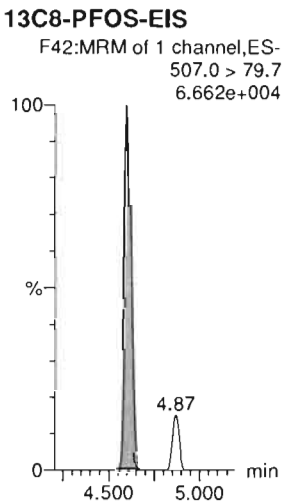
d5-N-EtFOSAA-EIS



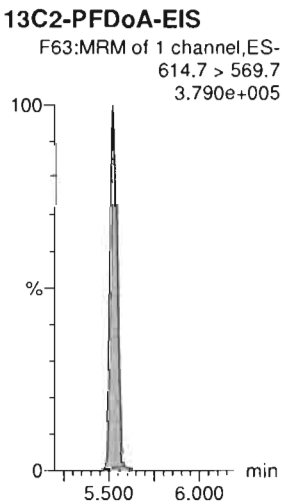
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

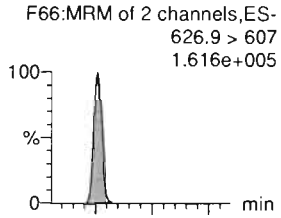


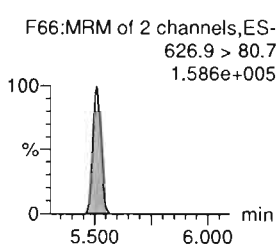
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

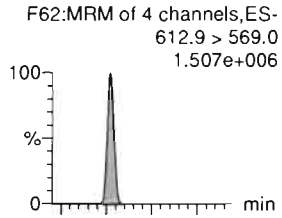
Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

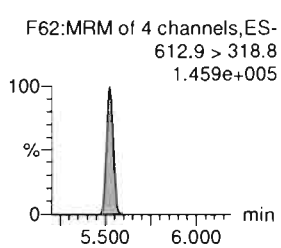
10:2 FTS



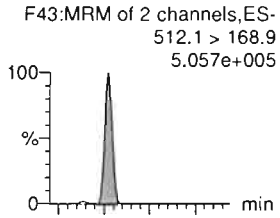


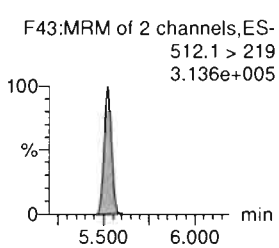
PFDoA



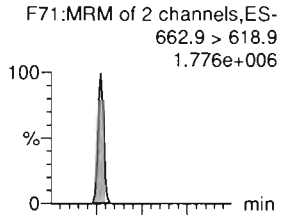


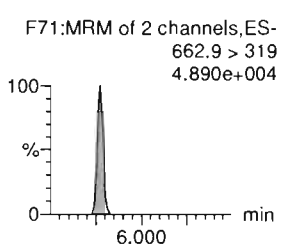
N-MeFOSA



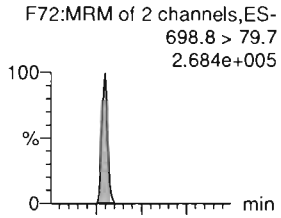


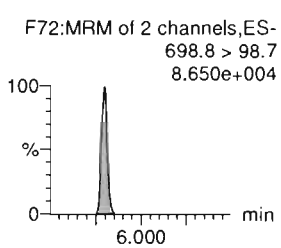
PFTrDA



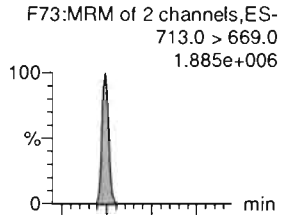


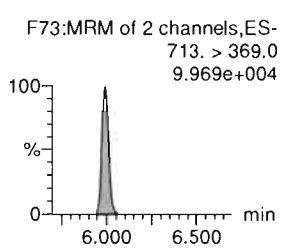
PFDoS



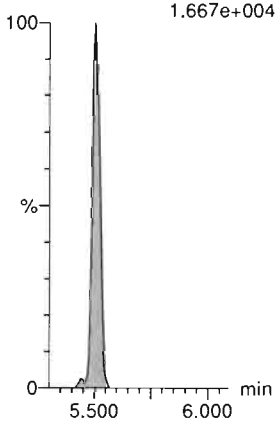


PFTeDA

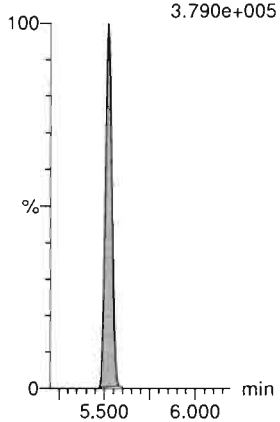




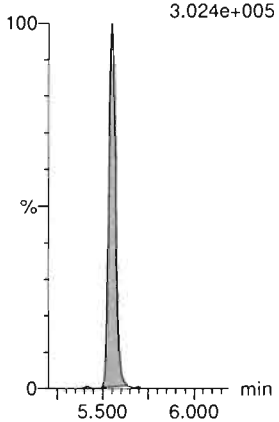
13C2-10:2 FTS-EIS



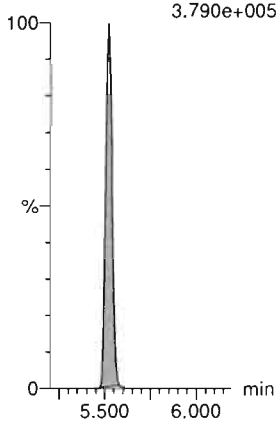
13C2-PFDoA-EIS



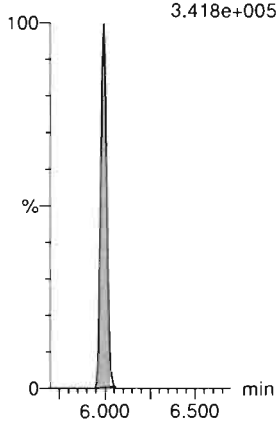
d3-N-MeFOSA-EIS



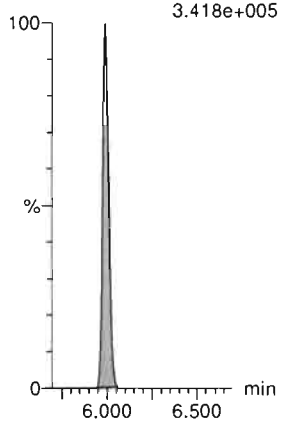
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

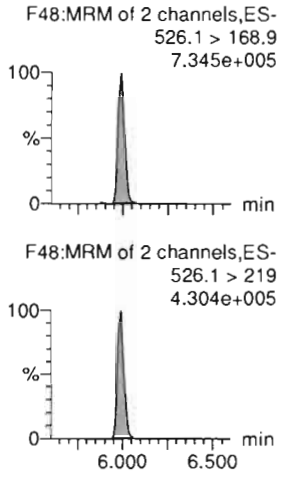


Dataset: Untitled

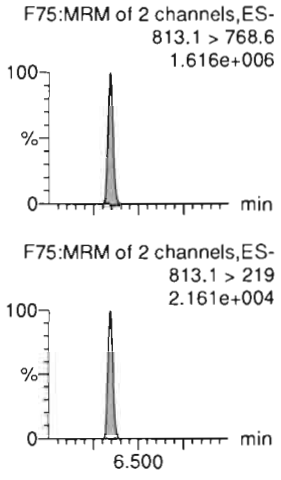
Last Altered: Thursday, March 05, 2020 09:34:37 Pacific Standard Time
Printed: Thursday, March 05, 2020 09:35:09 Pacific Standard Time

Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

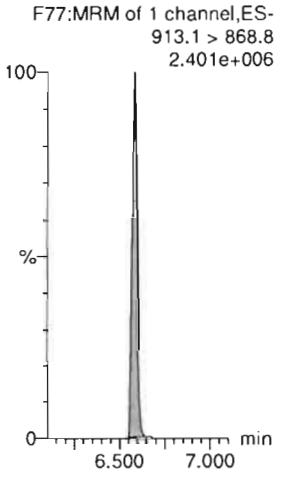
N-EtFOSA



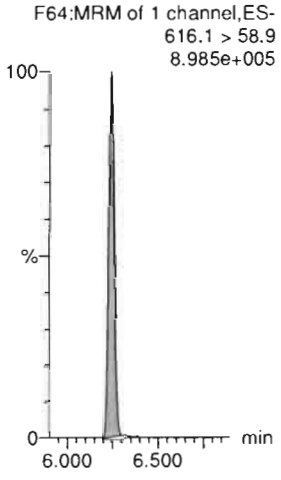
PFHxDA



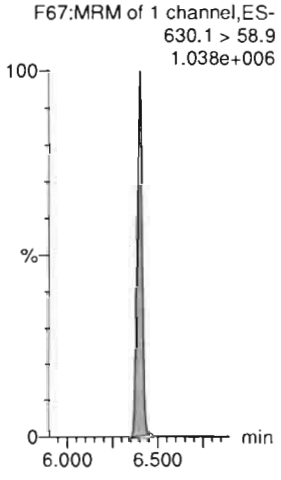
PFODA



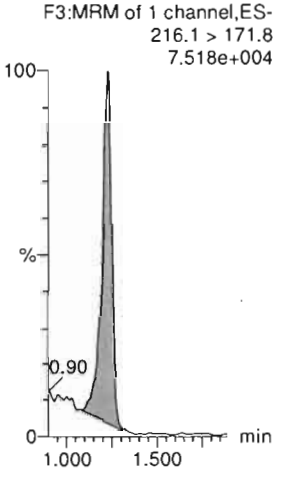
N-MeFOSE



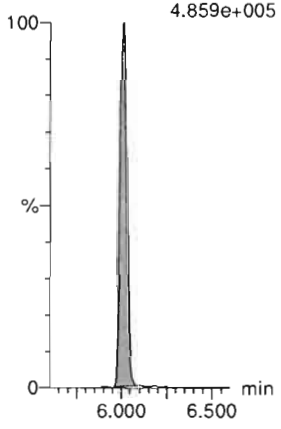
N-EtFOSE



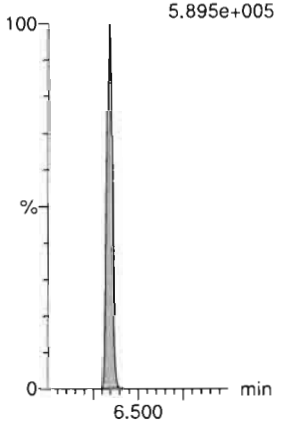
13C3-PFBA-RSD



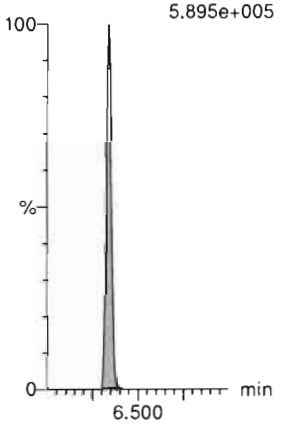
d5-N-ETFOSA-EIS



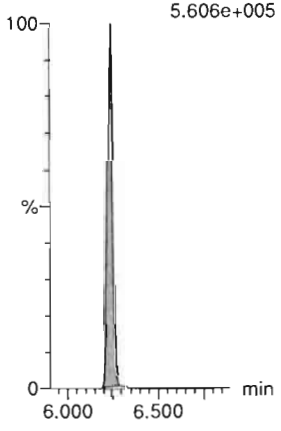
13C2-PFHxDA-EIS



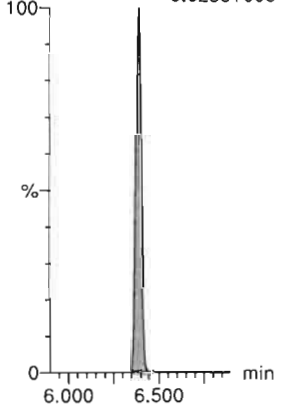
13C2-PFHxDA-EIS



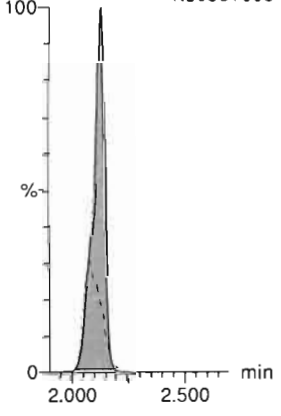
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

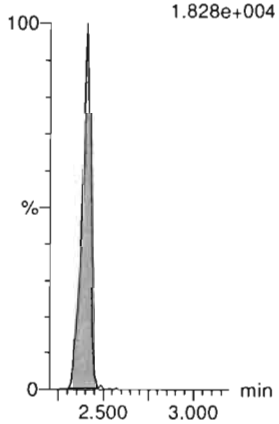


Dataset: Untitled

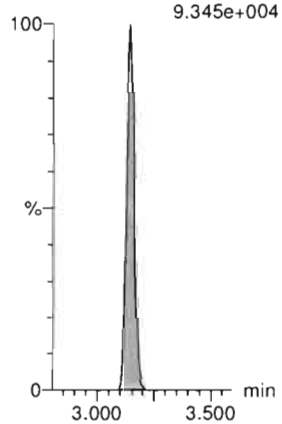
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

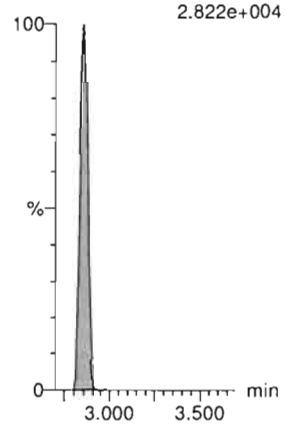
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.828e+004



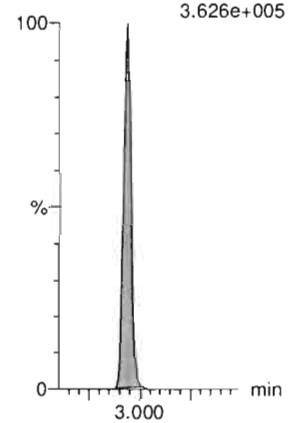
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
9.345e+004



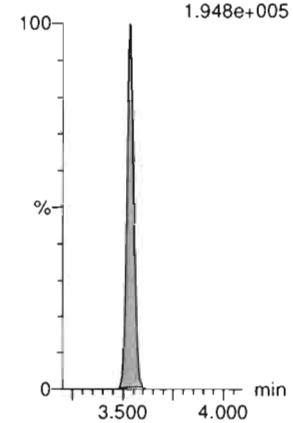
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.822e+004



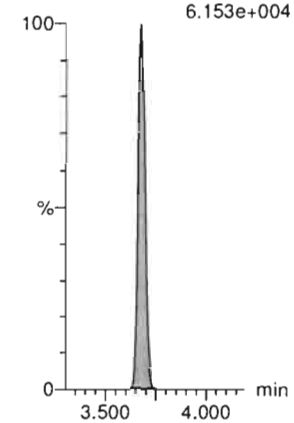
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
3.626e+005



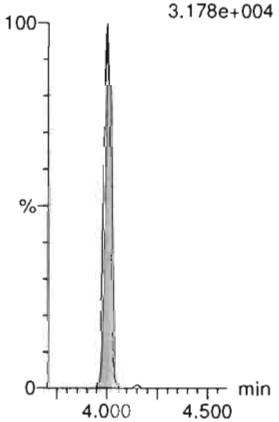
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.948e+005



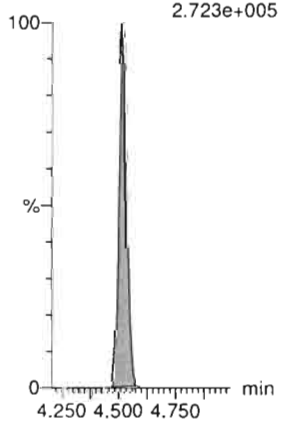
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
6.153e+004



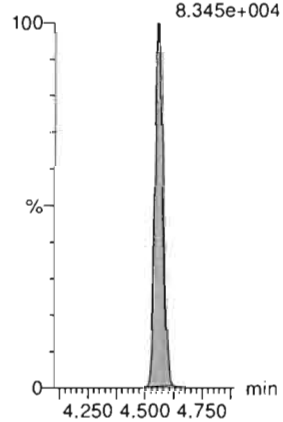
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
3.178e+004



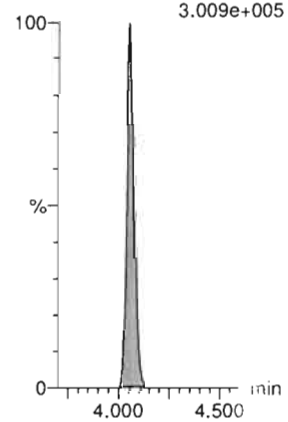
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.723e+005



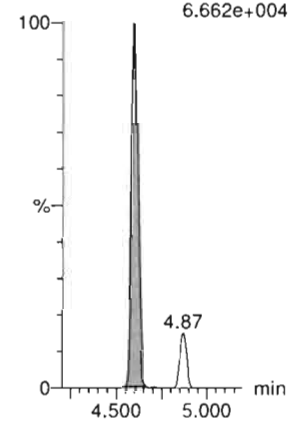
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
8.345e+004



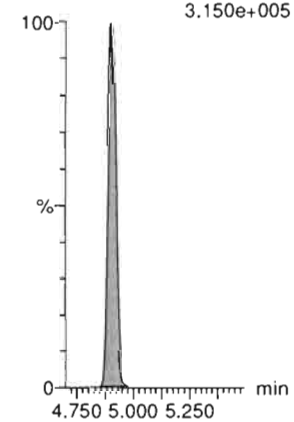
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
3.009e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.662e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.150e+005

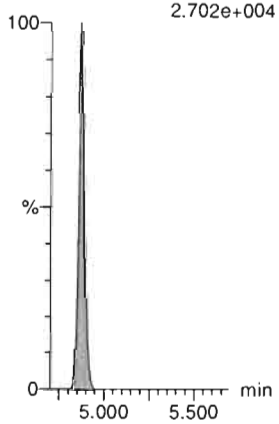


Dataset: Untitled

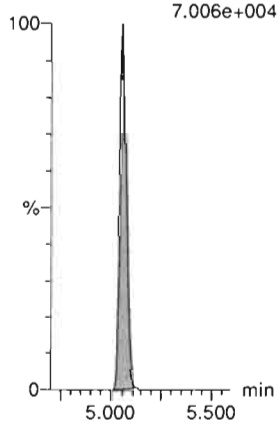
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

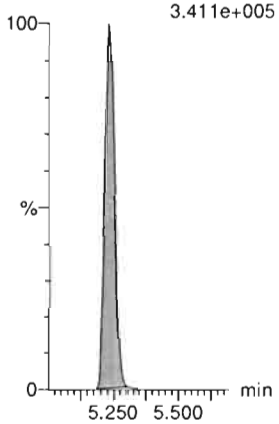
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.702e+004



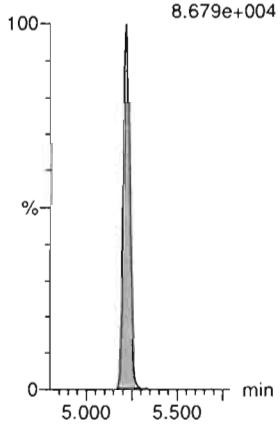
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
7.006e+004



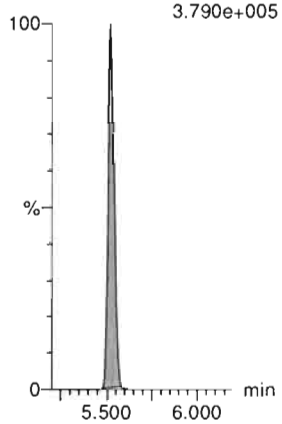
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.411e+005



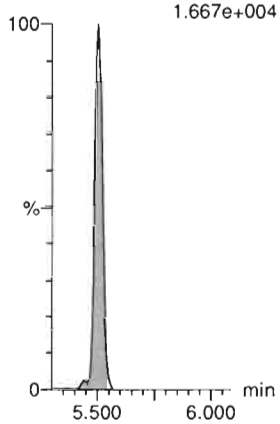
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.679e+004



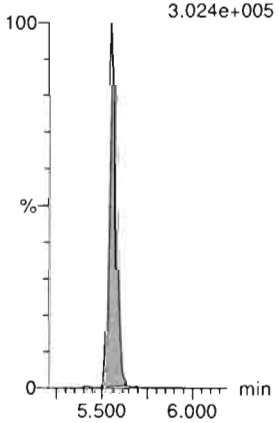
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.790e+005



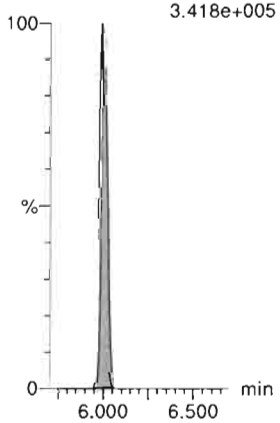
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.667e+004



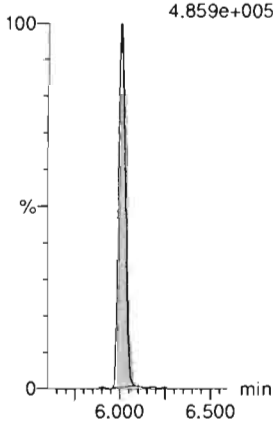
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
3.024e+005



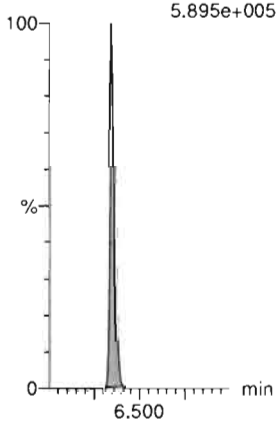
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.418e+005



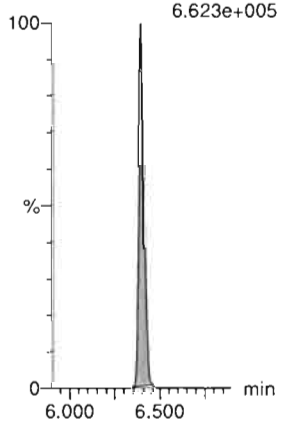
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.859e+005



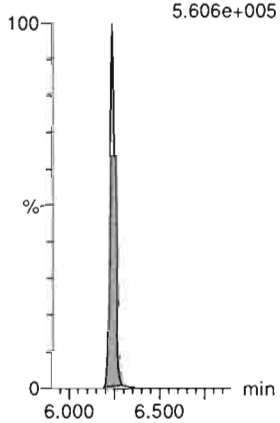
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
5.895e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.623e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.606e+005

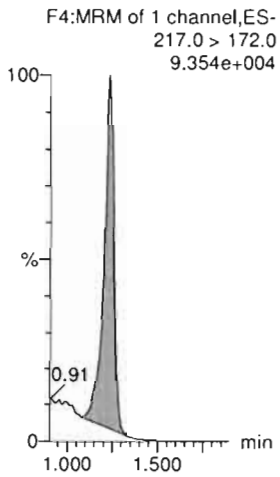


Dataset: Untitled

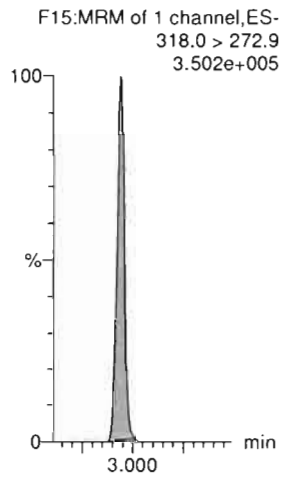
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-9, Date: 04-Mar-2020, Time: 20:34:54, ID: ST200304P2-7 PFC CS4 20C0310, Description: PFC CS4 20C0310

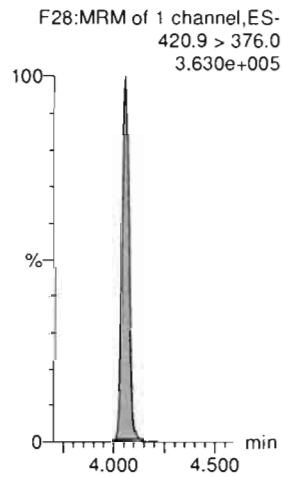
13C4-PFBA



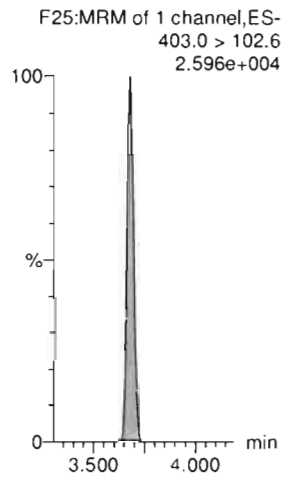
13C5-PFHxA



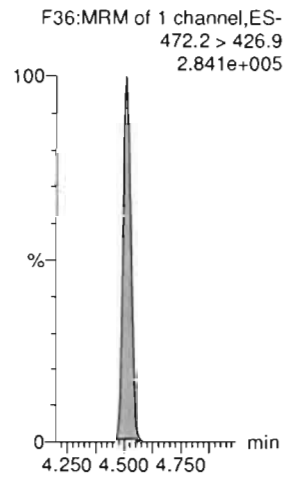
13C8-PFOA



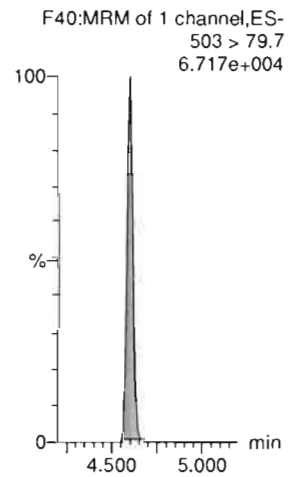
18O2-PFHxS



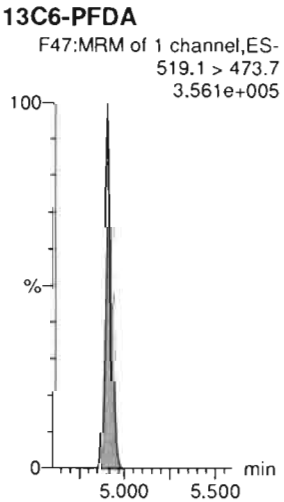
13C9-PFNA



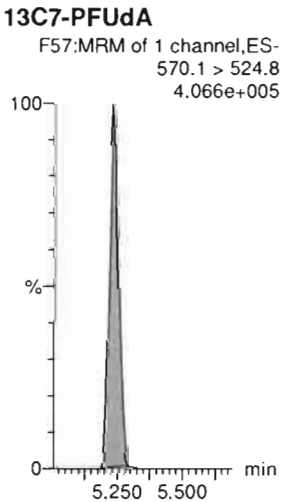
13C4-PFOS



13C6-PFDA



13C7-PFUdA

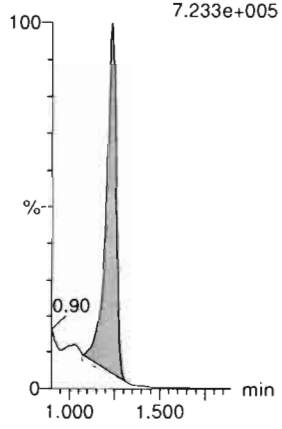


Dataset: Untitled

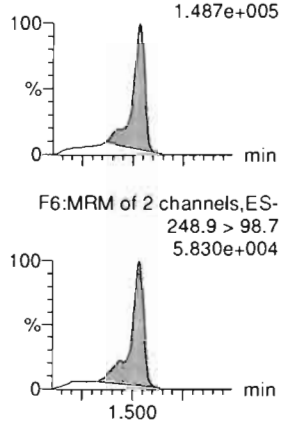
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

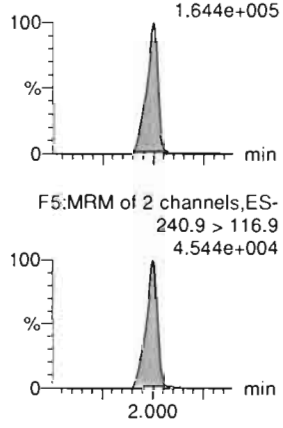
PFBA



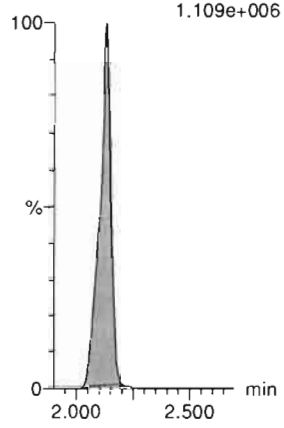
PFPrS



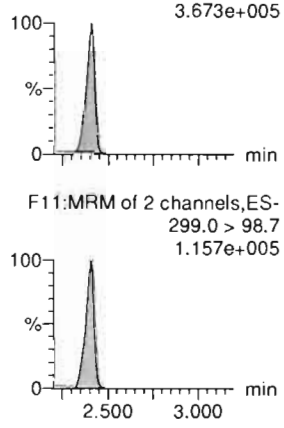
3:3 FTCA



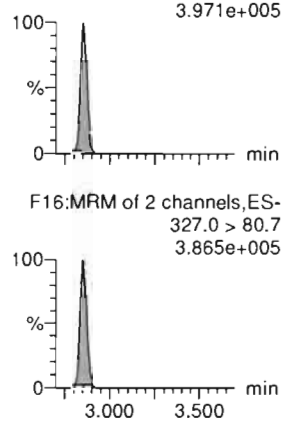
PFPeA



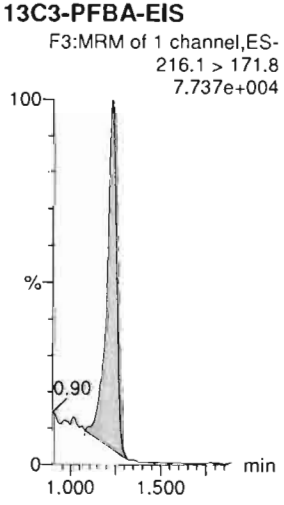
PFBS



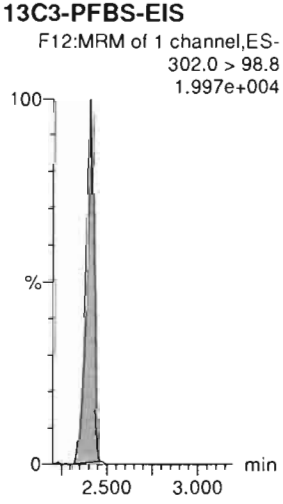
4:2 FTS



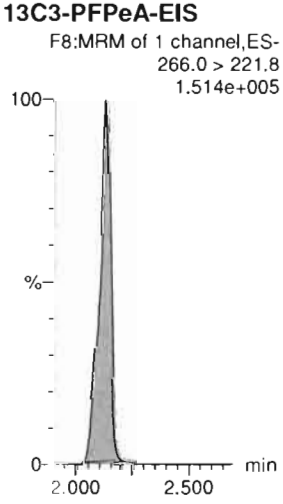
13C3-PFBA-EIS



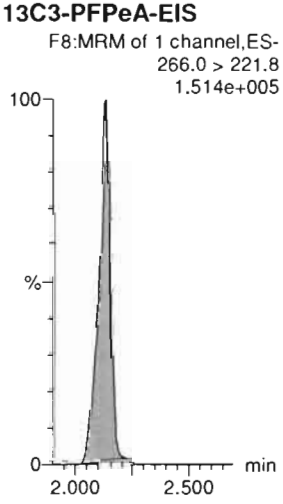
13C3-PFBS-EIS



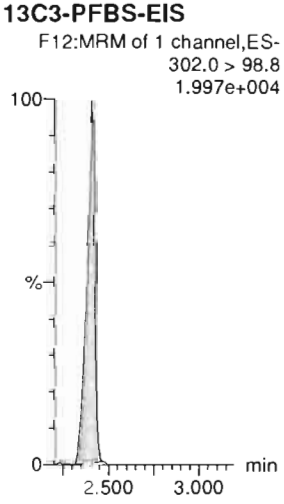
13C3-PFPeA-EIS



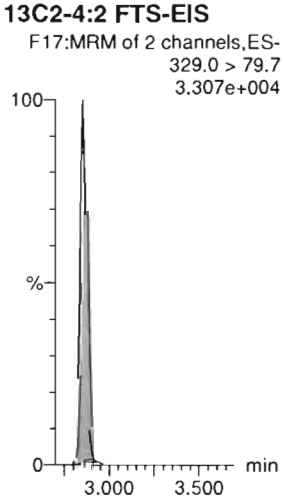
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

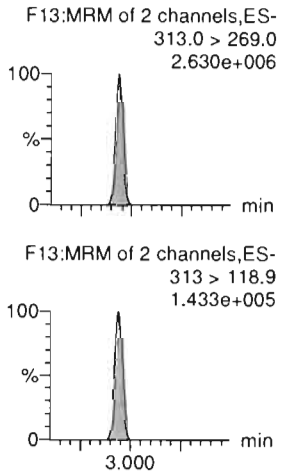


Dataset: Untitled

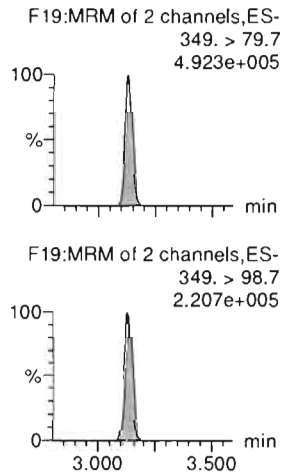
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

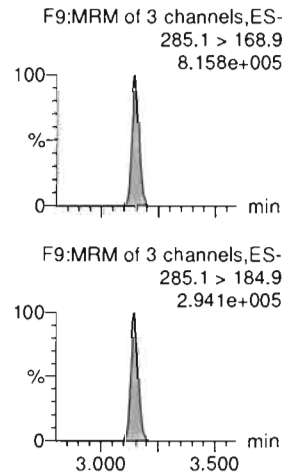
PFHxA



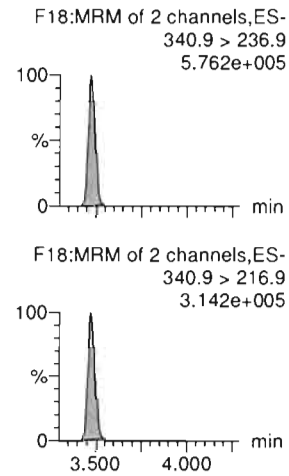
PFPeS



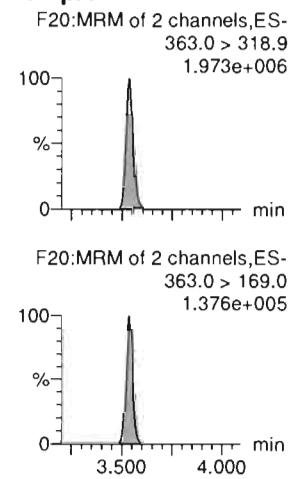
HFPO-DA



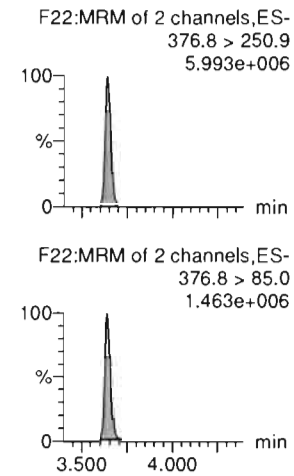
5:3 FTCA



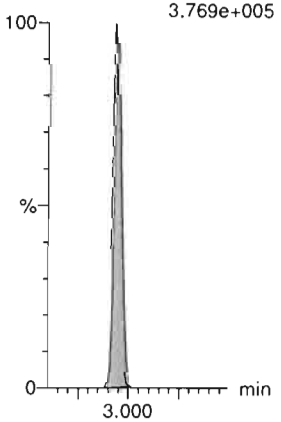
PFHpA



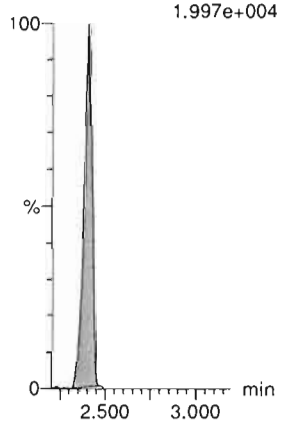
ADONA



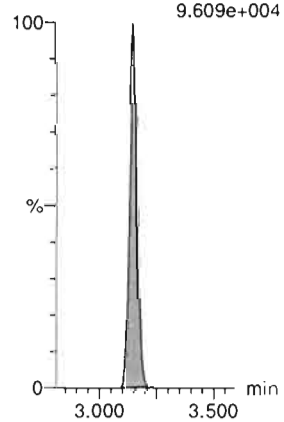
13C2-PFHxA-EIS



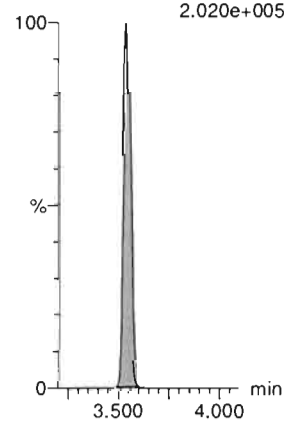
13C3-PFBS-EIS



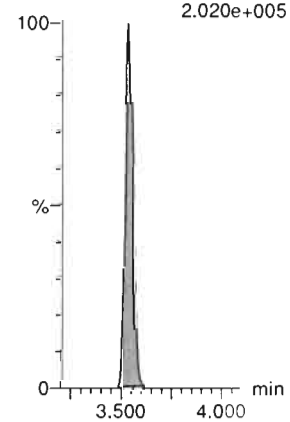
13C3-HFPO-DA-EIS



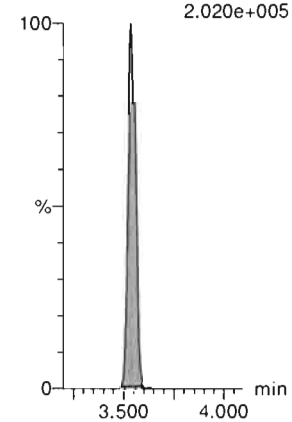
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

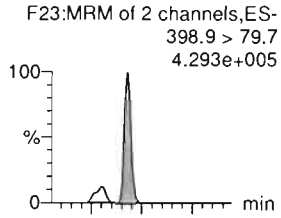


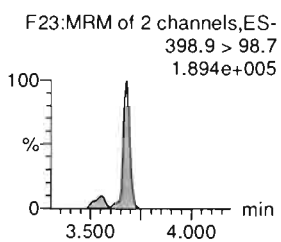
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

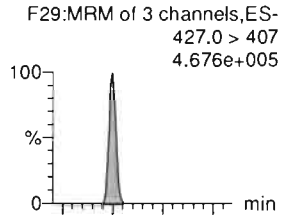
Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

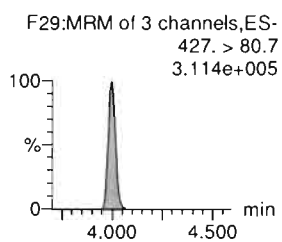
L-PFHxS



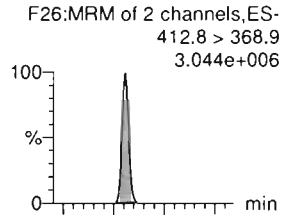


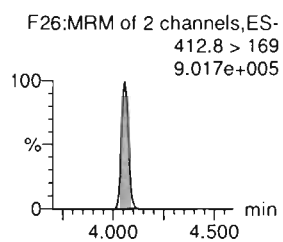
6:2 FTS



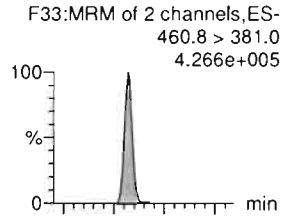


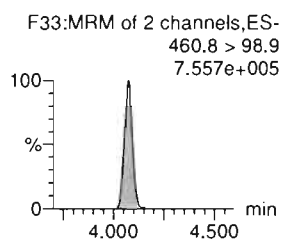
L-PFOA



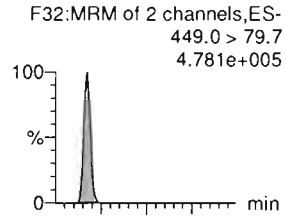


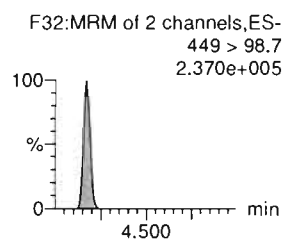
PFEChS



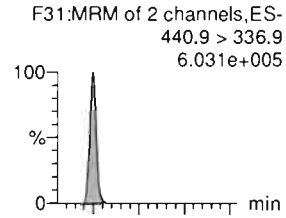


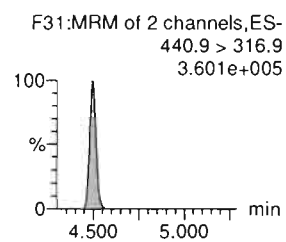
PFHpS



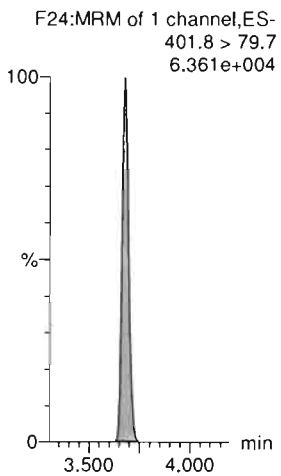


7:3 FTCA

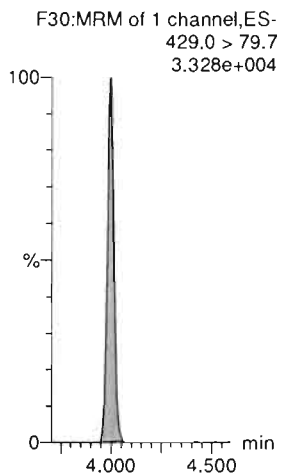




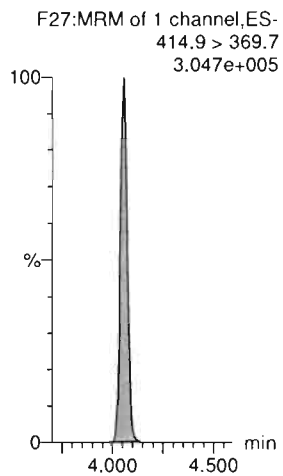
13C3-PFHxS-EIS



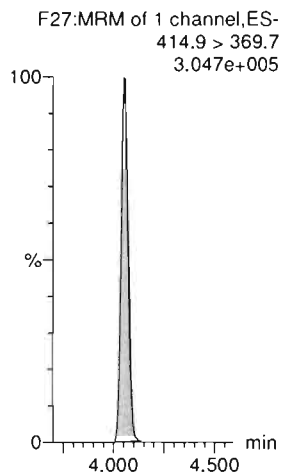
13C2-6:2 FTS-EIS



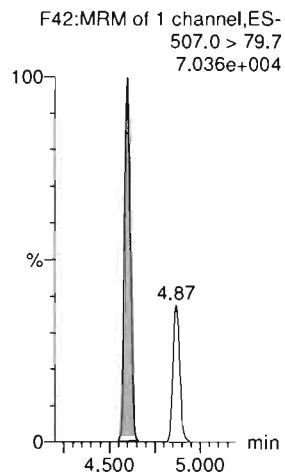
13C2-PFOA-EIS



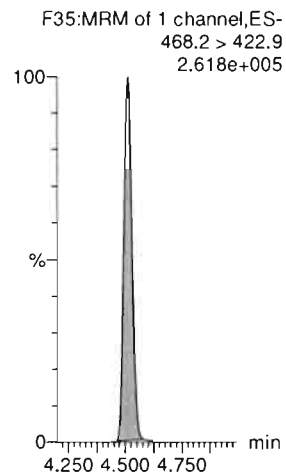
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

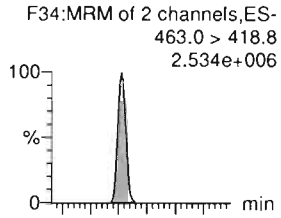


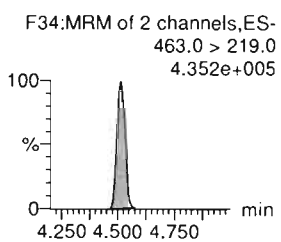
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

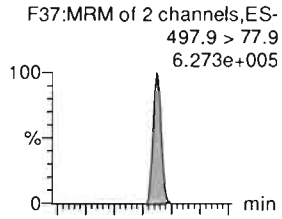
Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

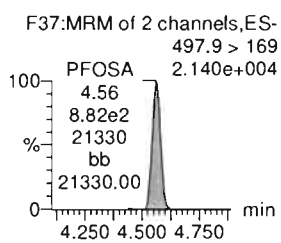
PFNA



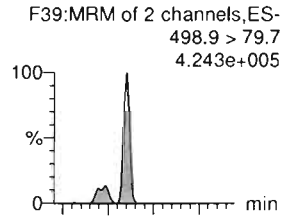


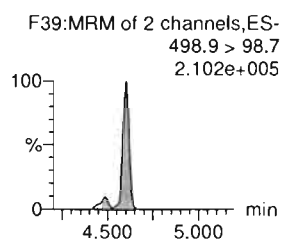
PFOSA



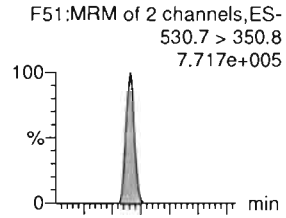


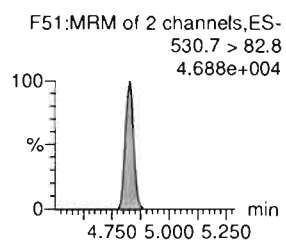
L-PFOS



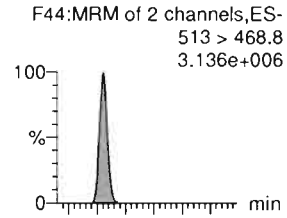


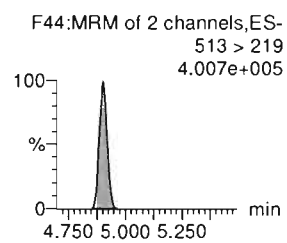
9Cl-PF30NS



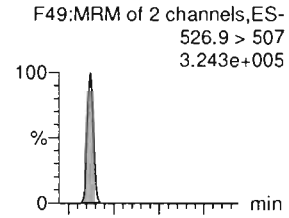


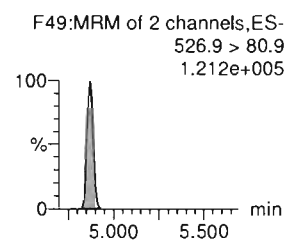
PFDA



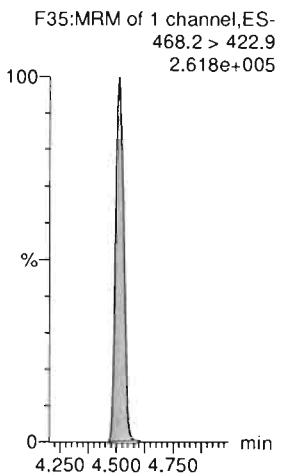


8:2 FTS

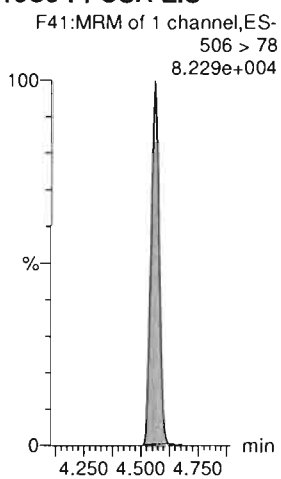




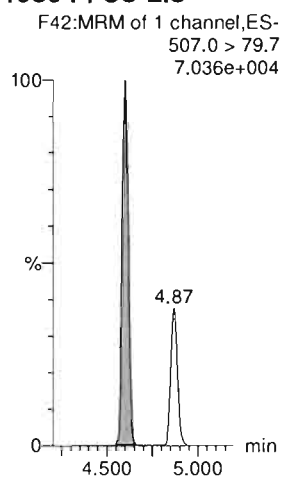
13C5-PFNA-EIS



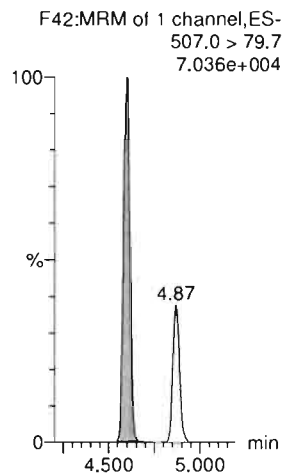
13C8-PFOSA-EIS



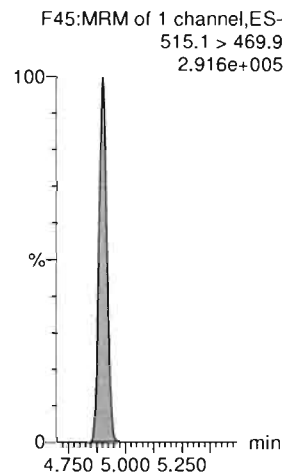
13C8-PFOS-EIS



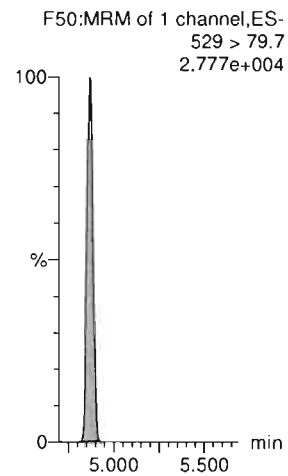
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

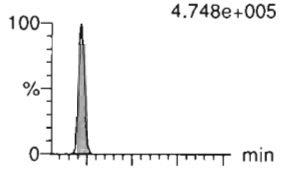


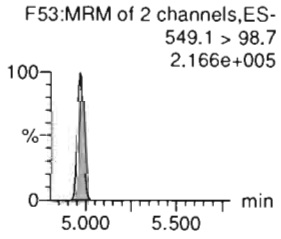
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

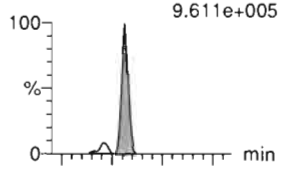
Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

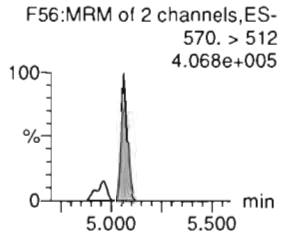
PFNS



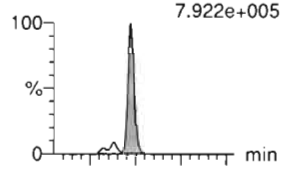


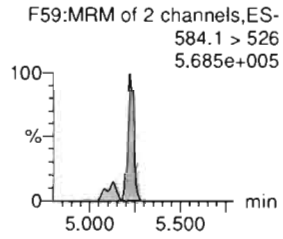
L-MeFOSAA



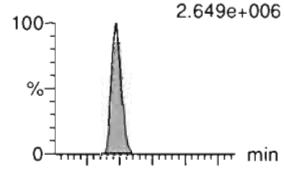


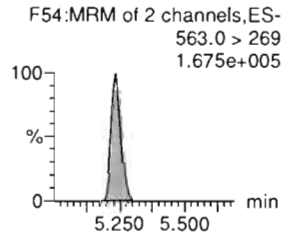
L-EtFOSAA



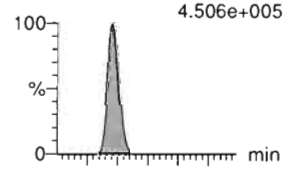


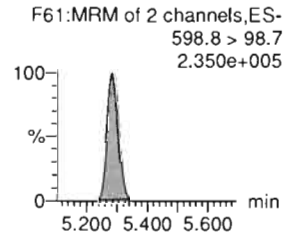
PFUdA



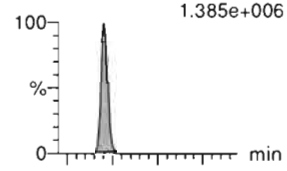


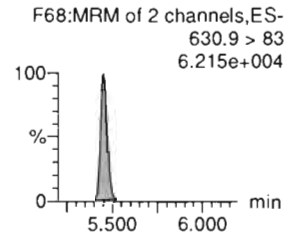
PFDS



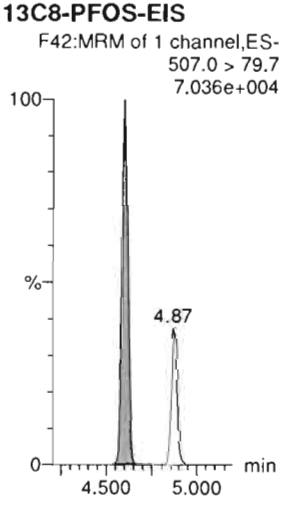


11Cl-PF30UdS

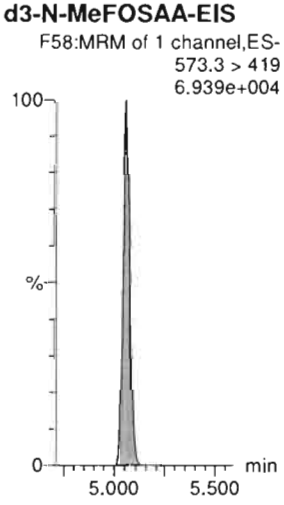




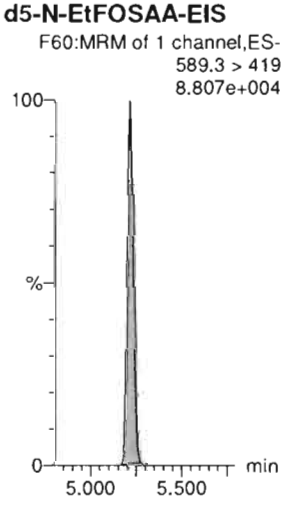
13C8-PFOS-EIS



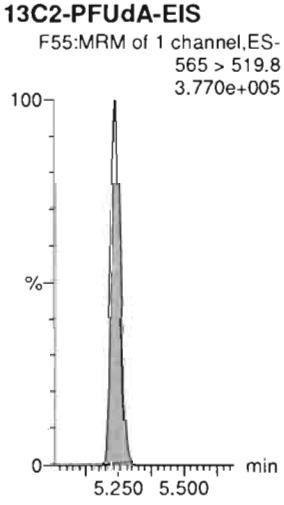
d3-N-MeFOSAA-EIS



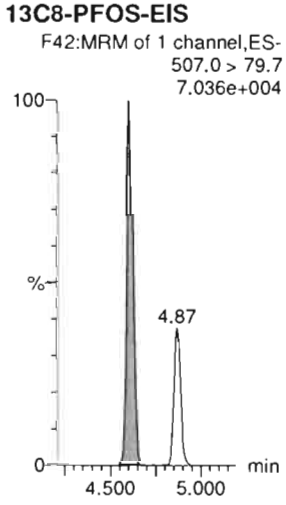
d5-N-EtFOSAA-EIS



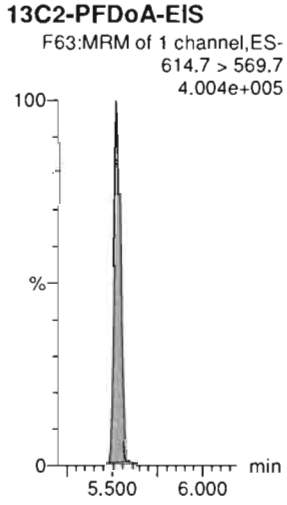
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

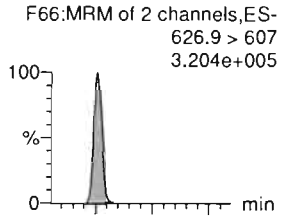


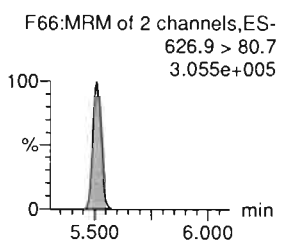
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

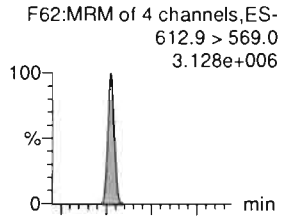
Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

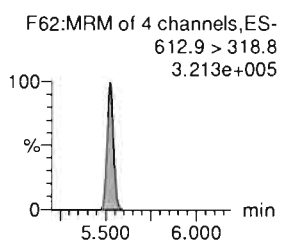
10:2 FTS



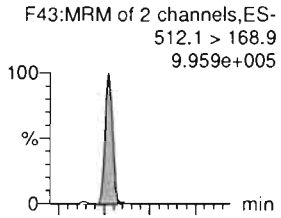


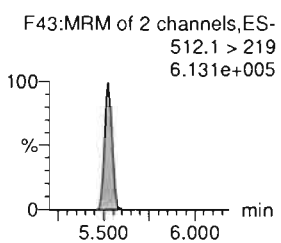
PFDoA



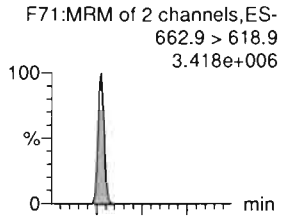


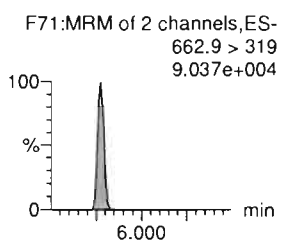
N-MeFOSA



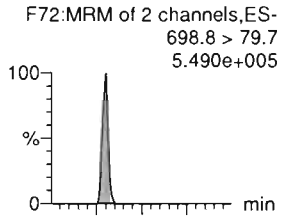


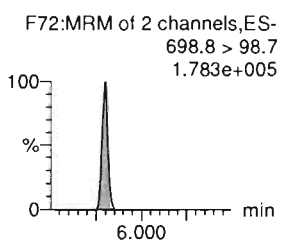
PFTrDA



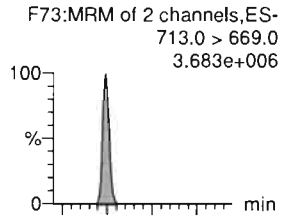


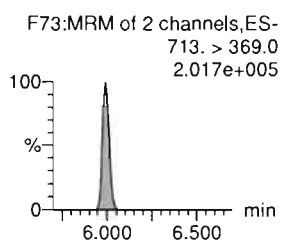
PFDoS



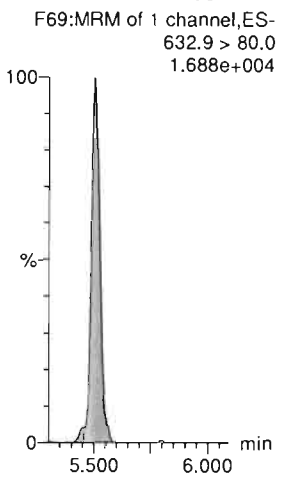


PFTeDA

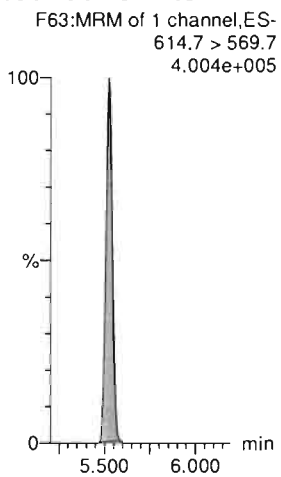




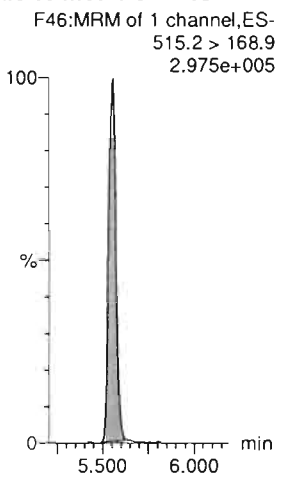
13C2-10:2 FTS-EIS



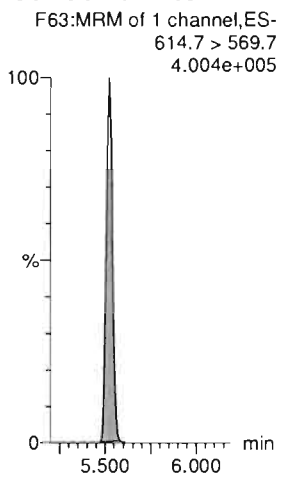
13C2-PFDoA-EIS



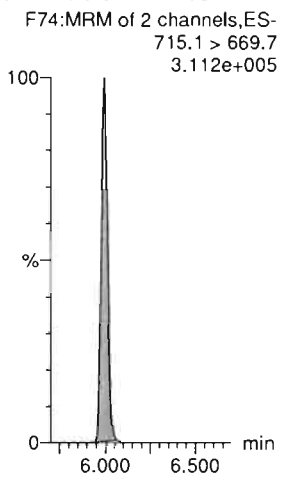
d3-N-MeFOSA-EIS



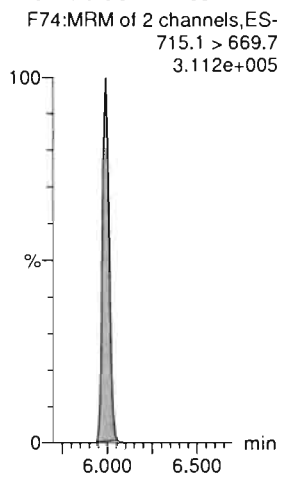
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

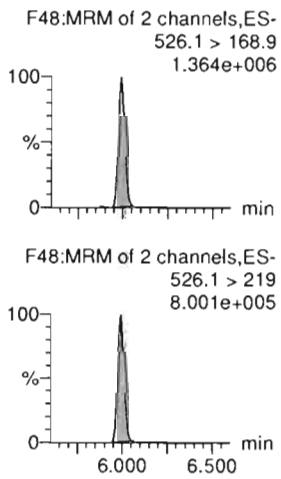


Dataset: Untitled

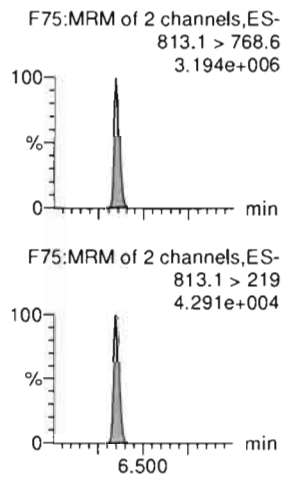
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

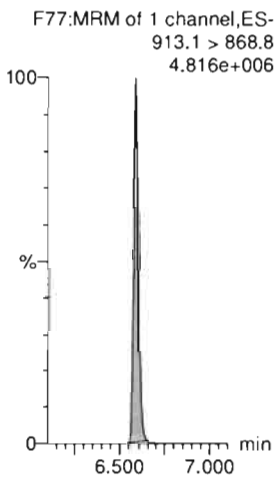
N-EtFOSA



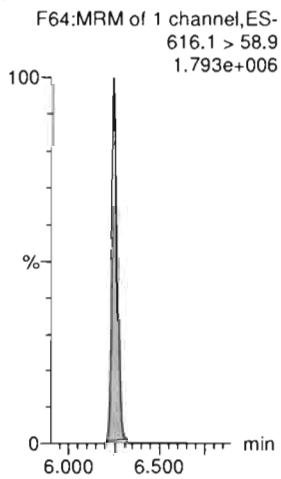
PFHxDA



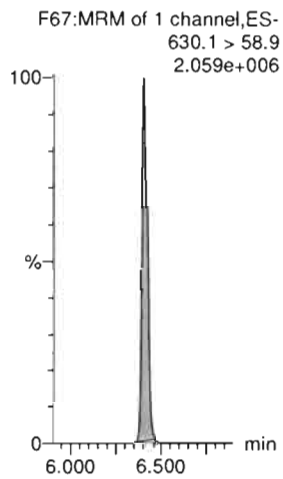
PFODA



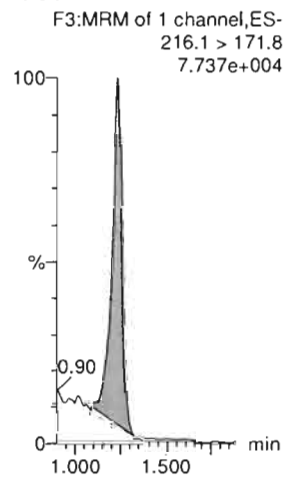
N-MeFOSE



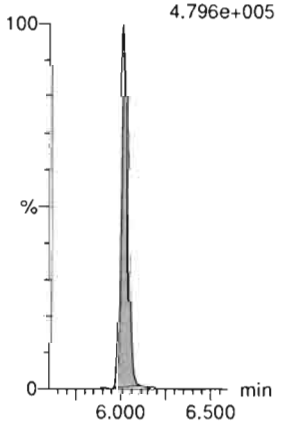
N-EtFOSE



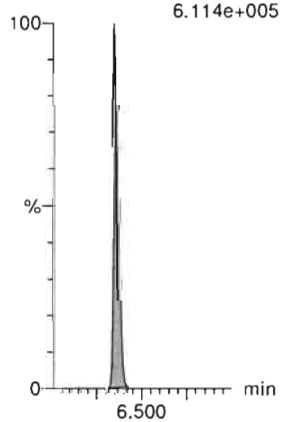
13C3-PFBA-RSD



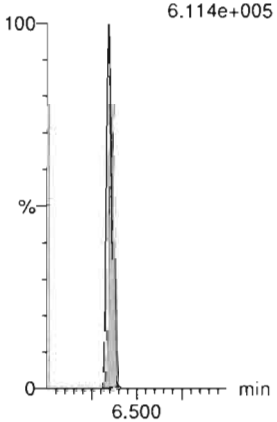
d5-N-ETFOSA-EIS



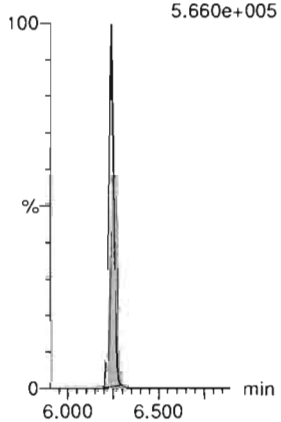
13C2-PFHxDA-EIS



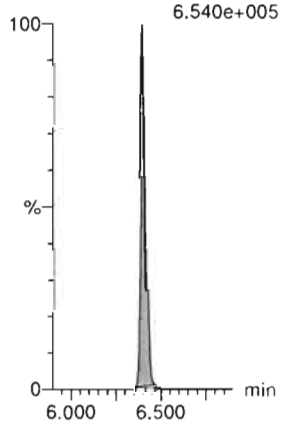
13C2-PFHxDA-EIS



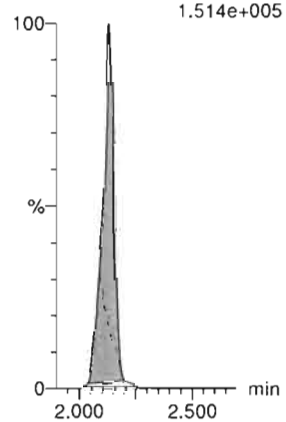
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

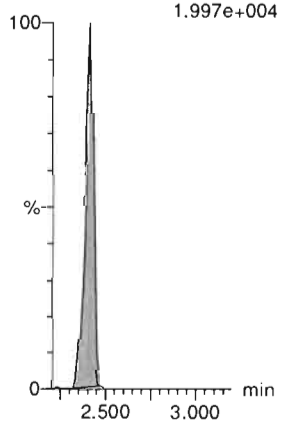


Dataset: Untitled

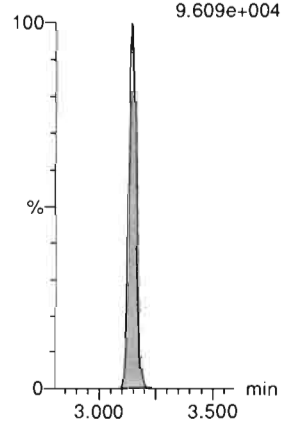
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

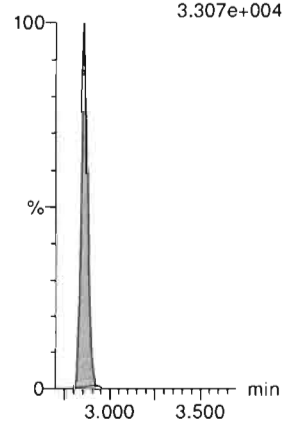
13C3-PFBS-RSD



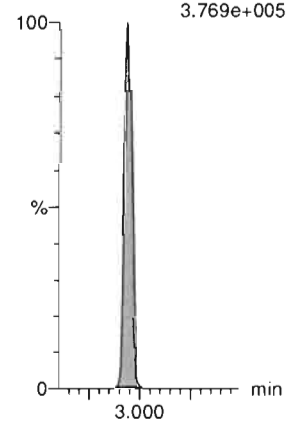
13C3-HFPO-DA-RSD



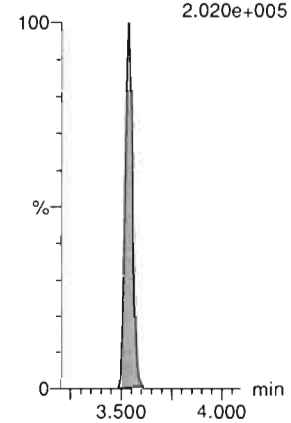
13C2-4:2 FTS-RSD



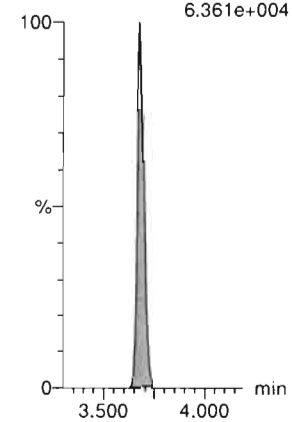
13C2-PFHxA-RSD



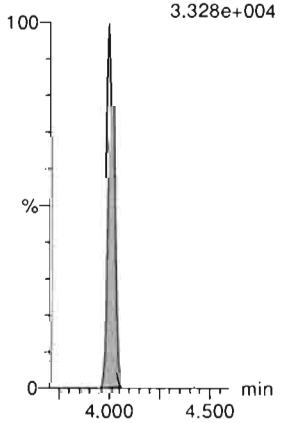
13C4-PFHpA-RSD



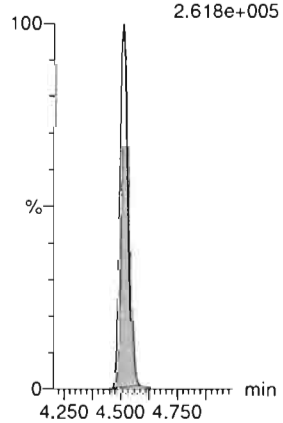
13C3-PFHxS-RSD



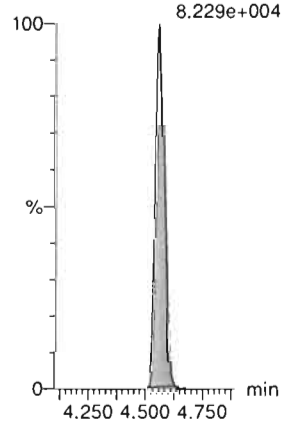
13C2-6:2 FTS-RSD



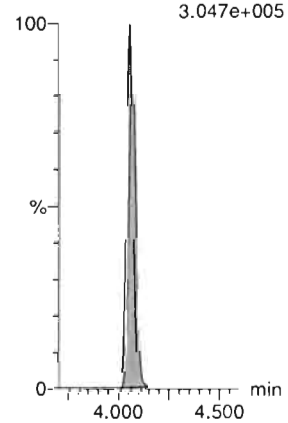
13C5-PFNA-RSD



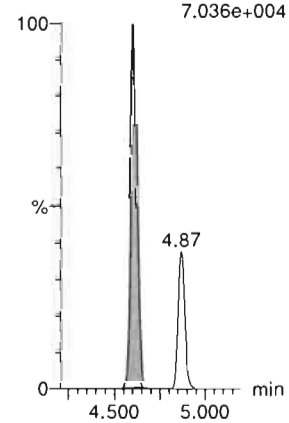
13C8-PFOSA-RSD



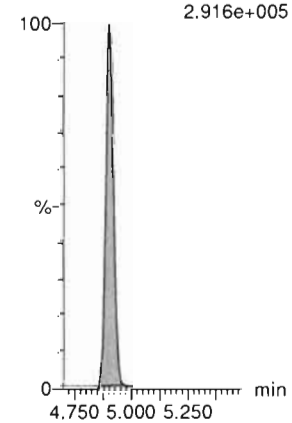
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD

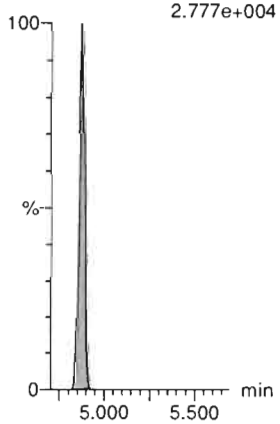


Dataset: Untitled

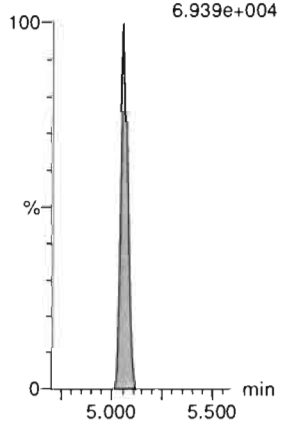
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

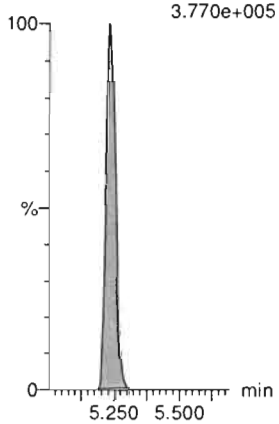
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.777e+004



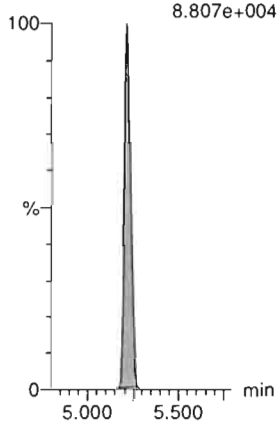
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.939e+004



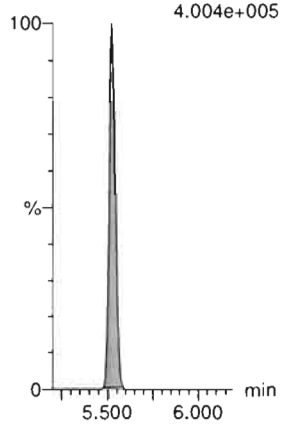
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.770e+005



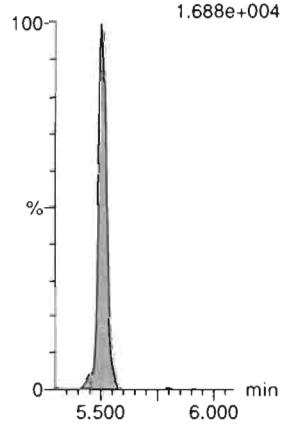
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
8.807e+004



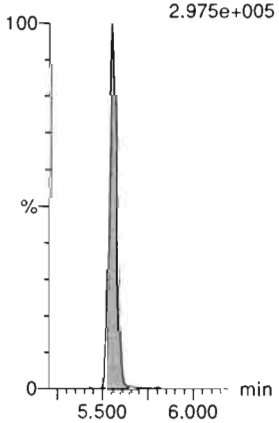
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
4.004e+005



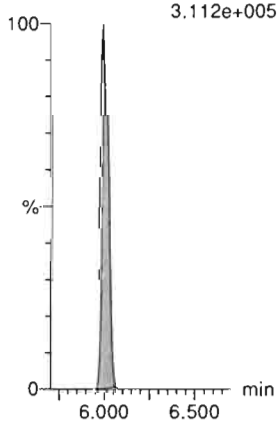
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.688e+004



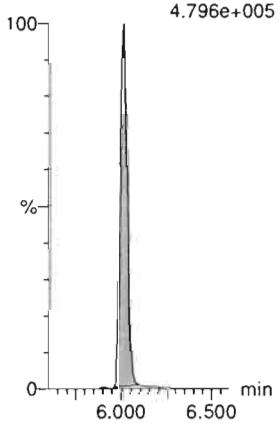
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.975e+005



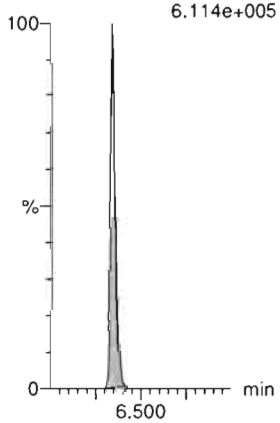
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.112e+005



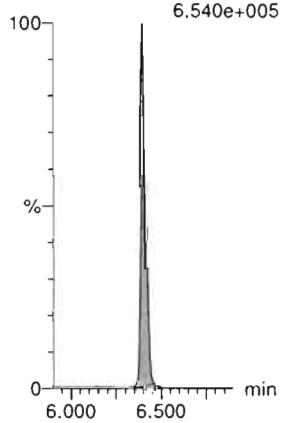
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.796e+005



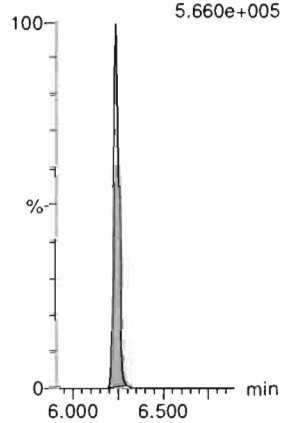
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.114e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
6.540e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
5.660e+005

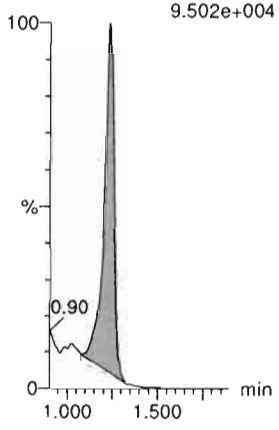


Dataset: Untitled

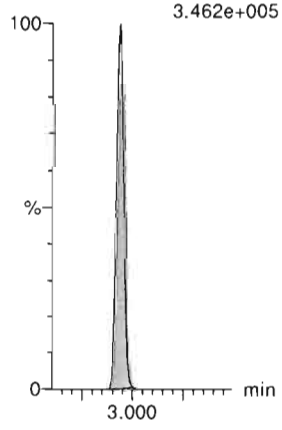
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-10, Date: 04-Mar-2020, Time: 20:45:22, ID: ST200304P2-8 PFC CS5 20C0311, Description: PFC CS5 20C0311

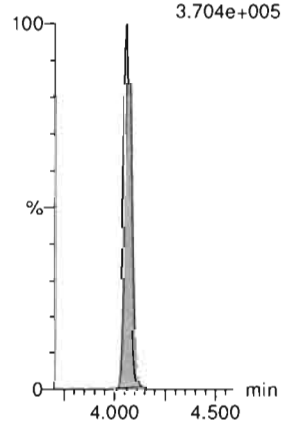
13C4-PFBA



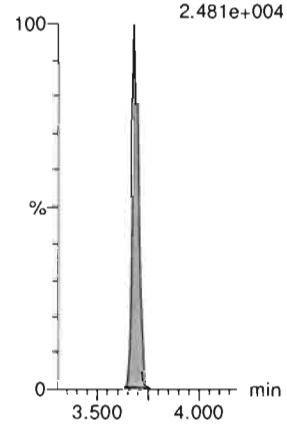
13C5-PFHxA



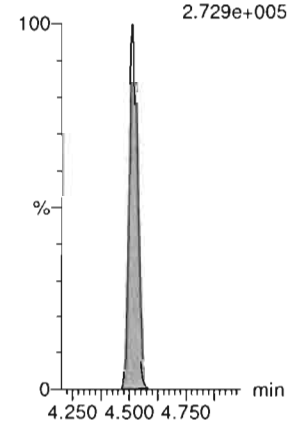
13C8-PFOA



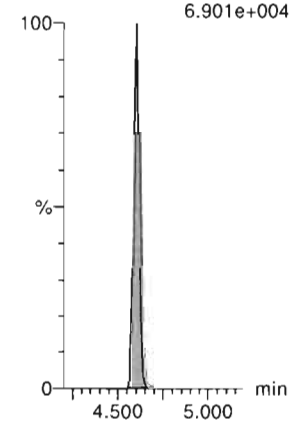
18O2-PFHxS



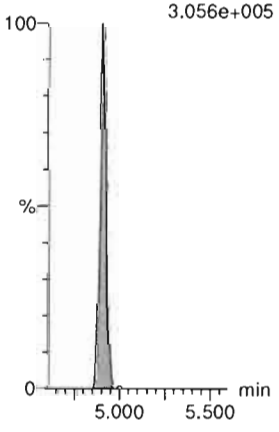
13C9-PFNA



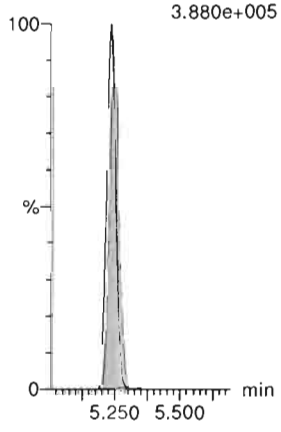
13C4-PFOS



13C6-PFDA



13C7-PFUdA

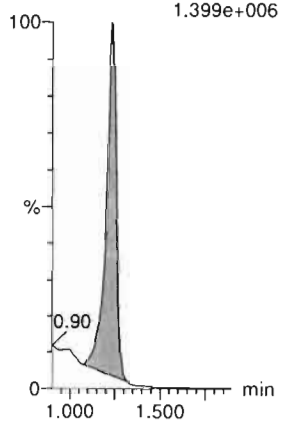


Dataset: Untitled

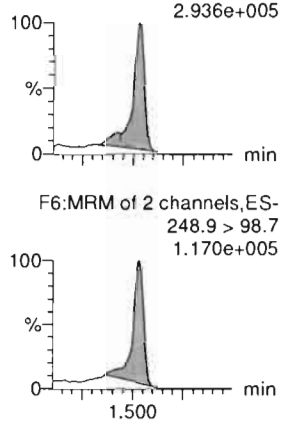
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

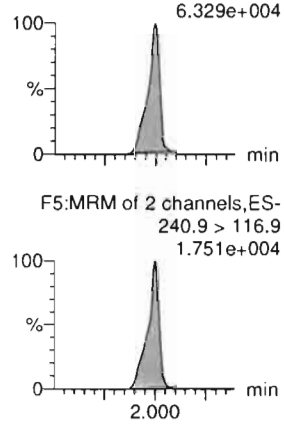
PFBA



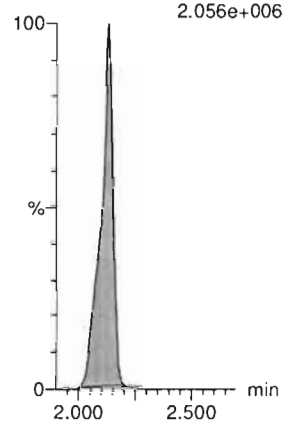
PFPrS



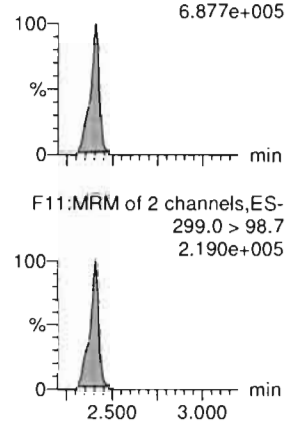
3:3 FTCA



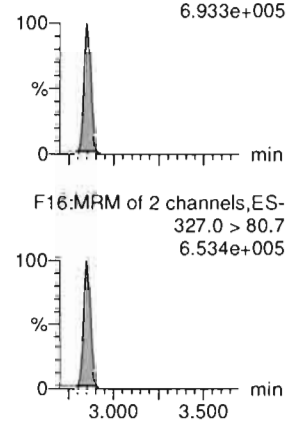
PFPeA



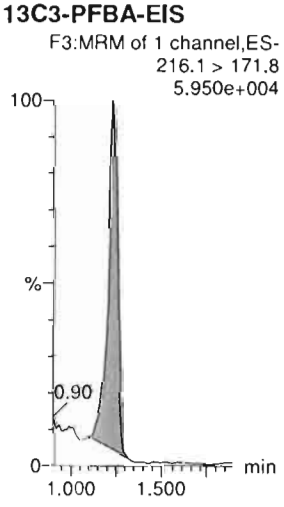
PFBS



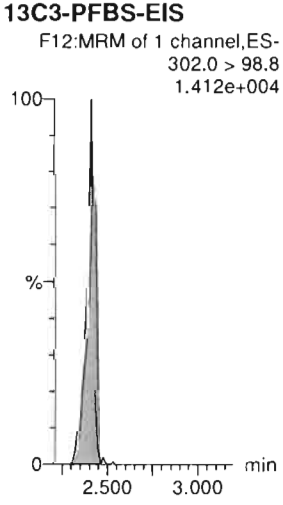
4:2 FTS



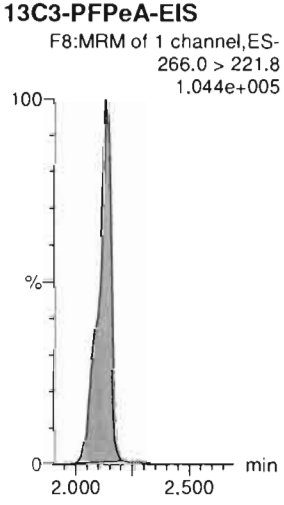
13C3-PFBA-EIS



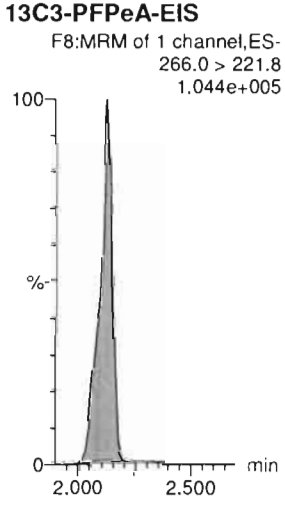
13C3-PFBS-EIS



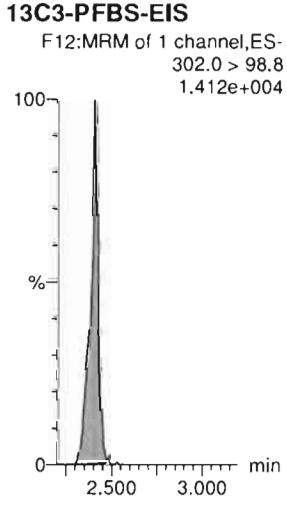
13C3-PFPeA-EIS



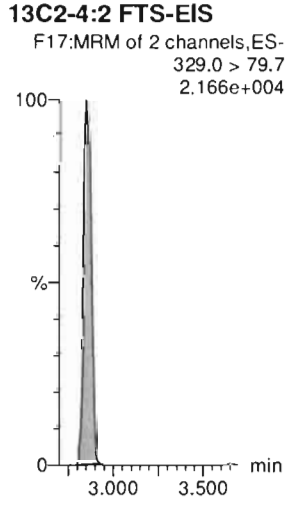
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

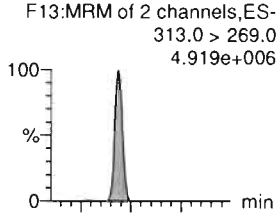


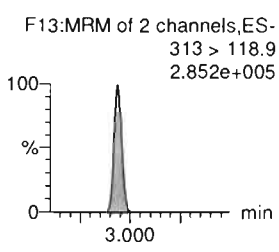
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

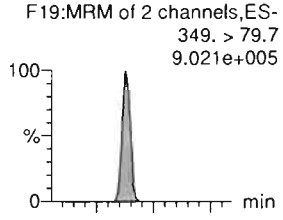
Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

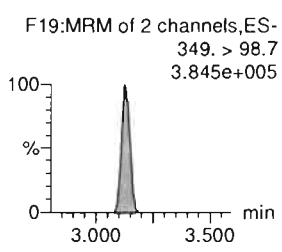
PFHxA



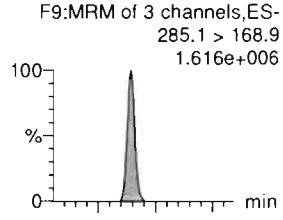


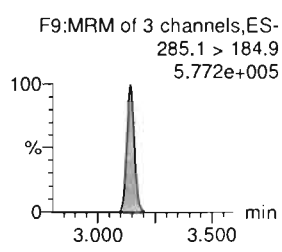
PFPeS



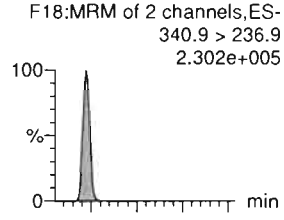


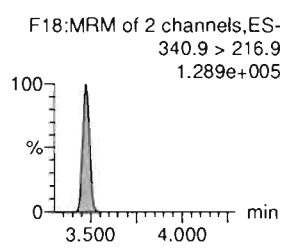
HFPO-DA



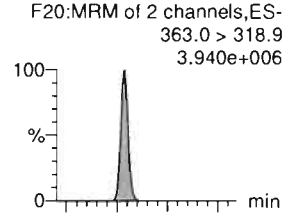


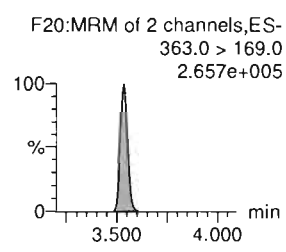
5:3 FTCA



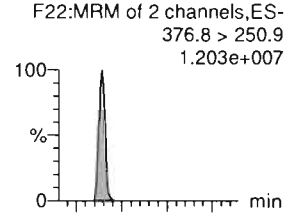


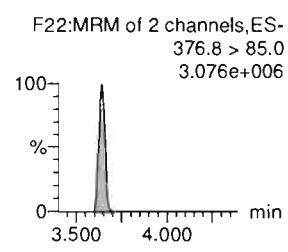
PFHpA



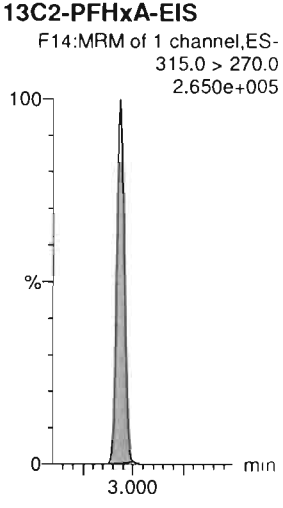


ADONA

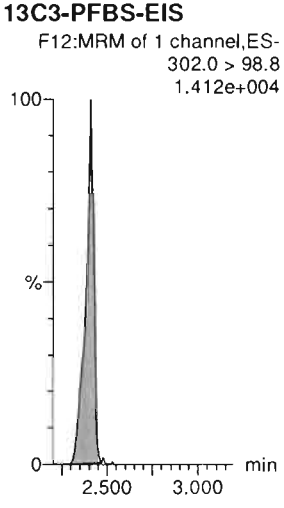




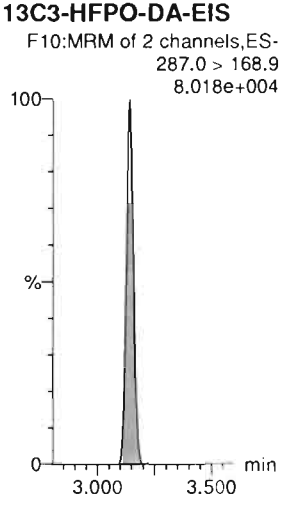
13C2-PFHxA-EIS



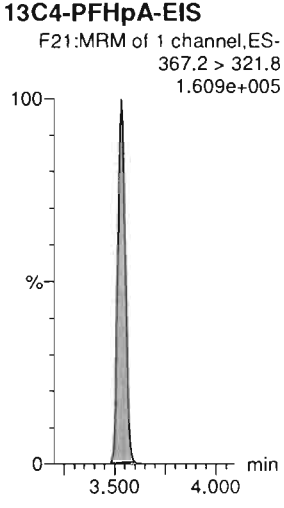
13C3-PFBS-EIS



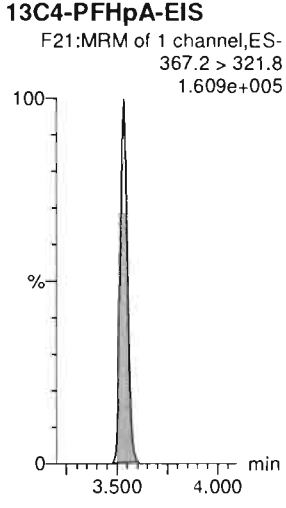
13C3-HFPO-DA-EIS



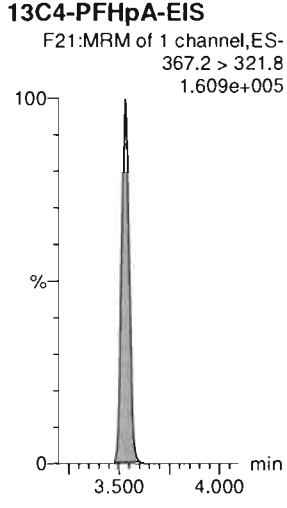
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

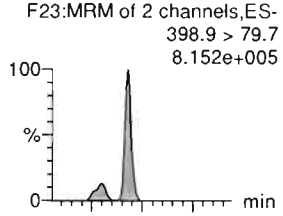


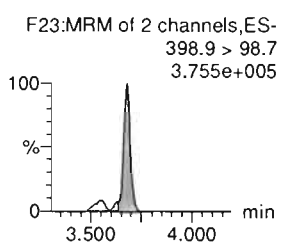
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

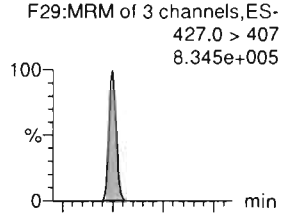
Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

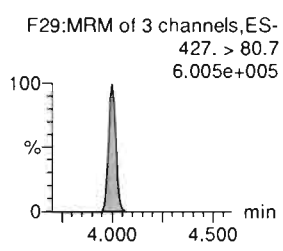
L-PFHxS



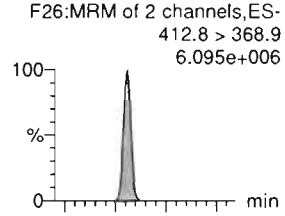


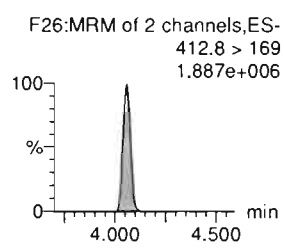
6:2 FTS



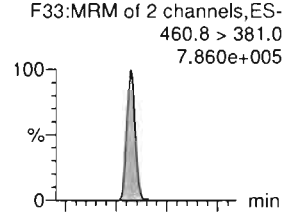


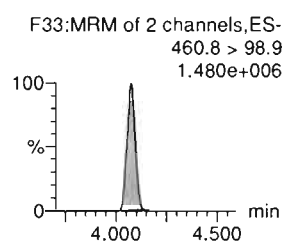
L-PFOA



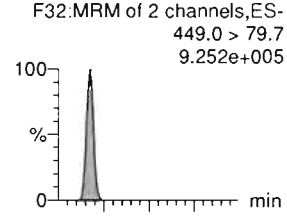


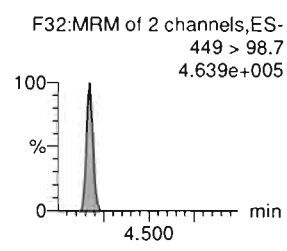
PFECHS



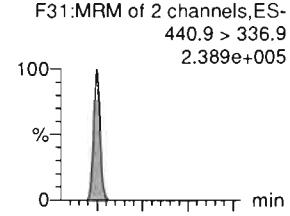


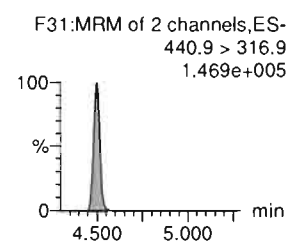
PFHpS



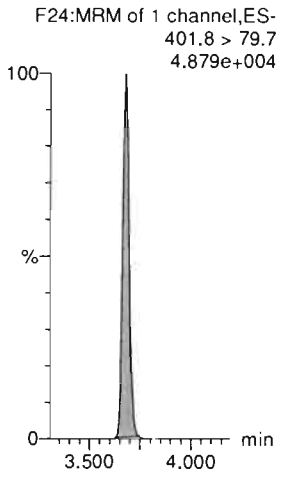


7:3 FTCA

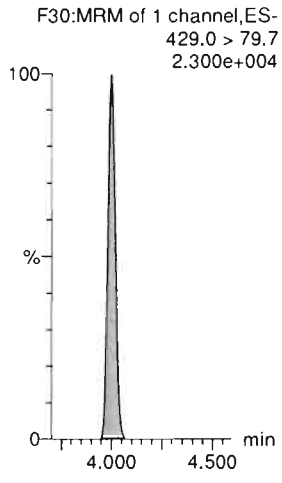




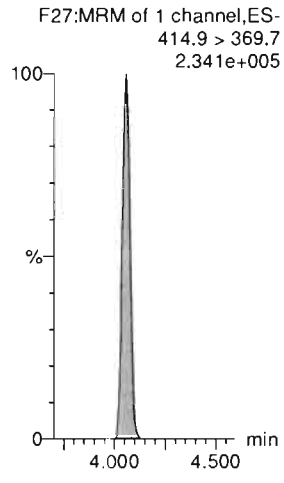
13C3-PFHxS-EIS



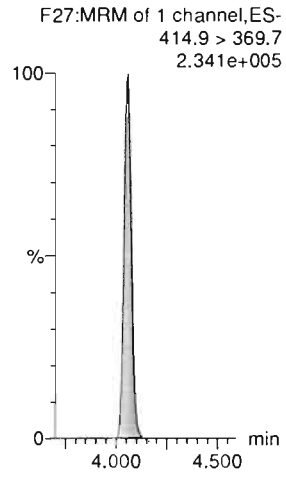
13C2-6:2 FTS-EIS



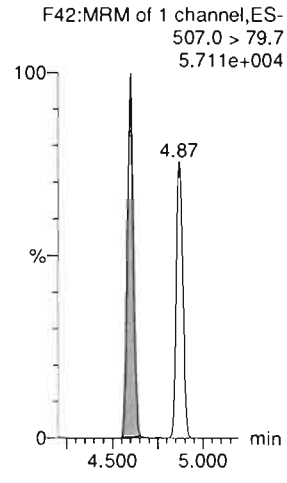
13C2-PFOA-EIS



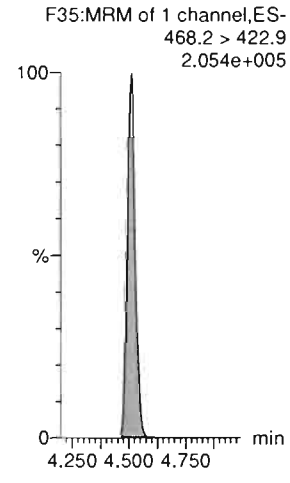
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

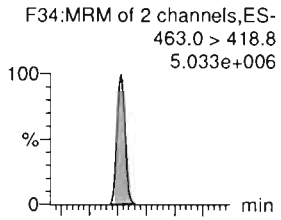


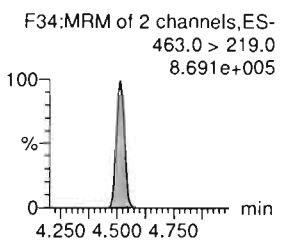
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

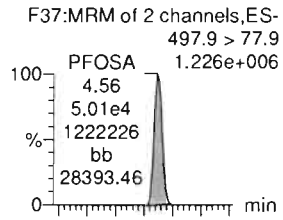
Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

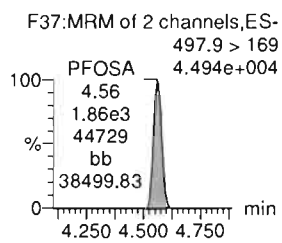
PFNA



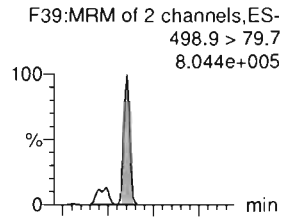


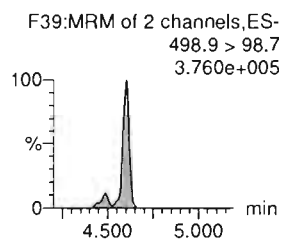
PFOSA



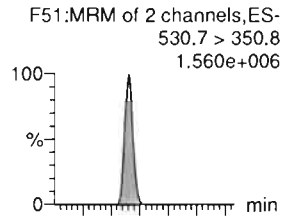


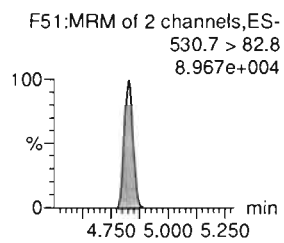
L-PFOS



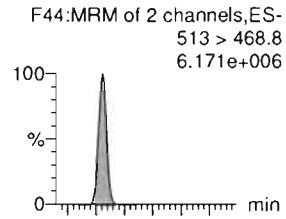


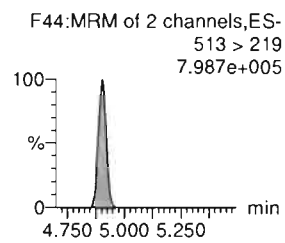
9Cl-PF30NS



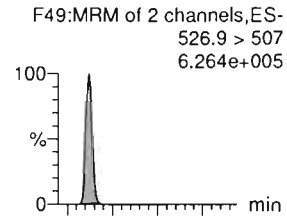


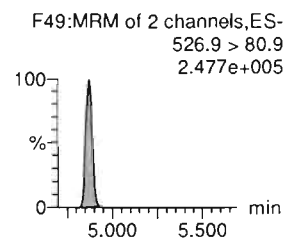
PFDA



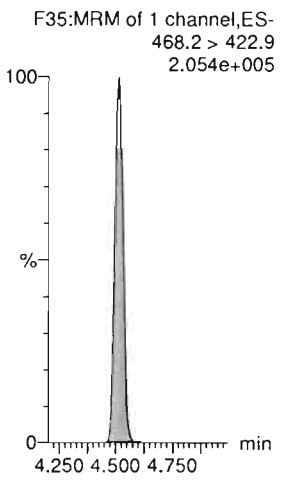


8:2 FTS

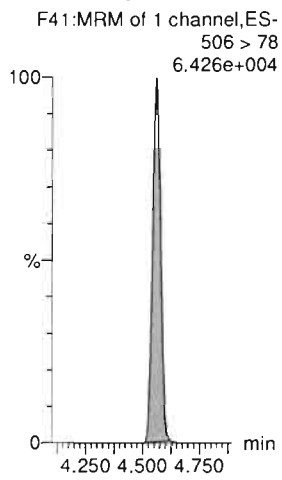




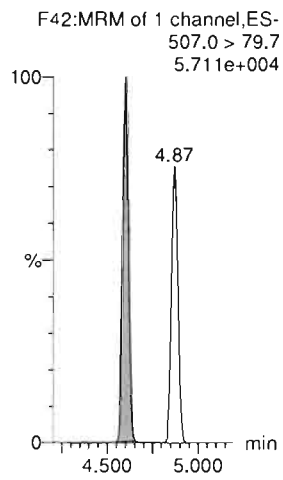
13C5-PFNA-EIS



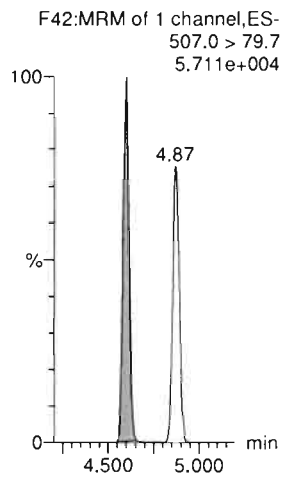
13C8-PFOSA-EIS



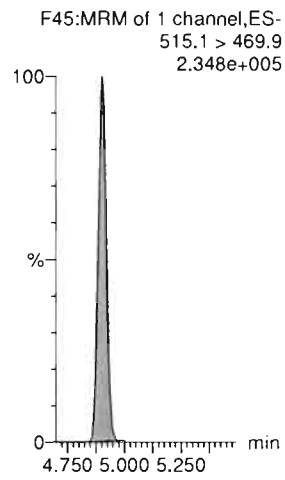
13C8-PFOS-EIS



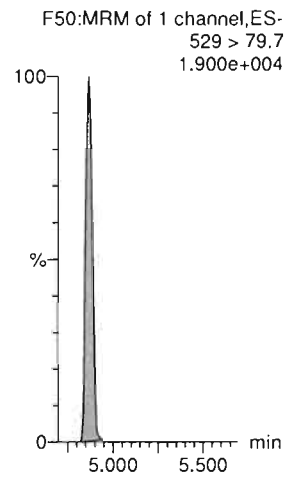
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

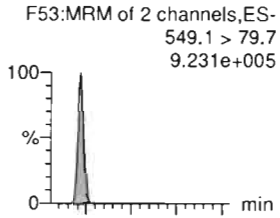


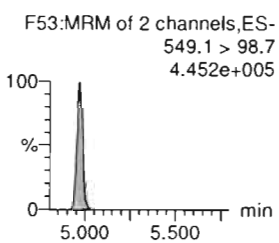
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

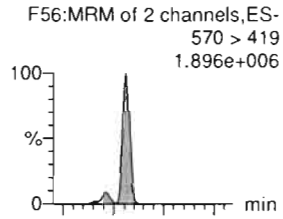
Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

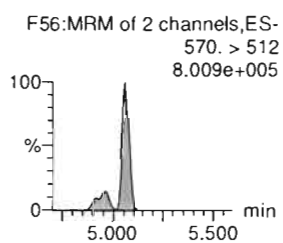
PFNS



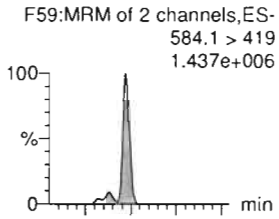


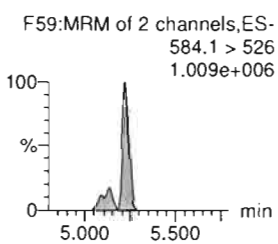
L-MeFOSAA



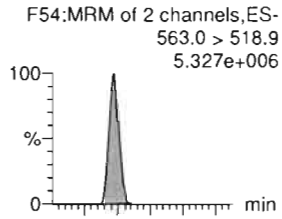


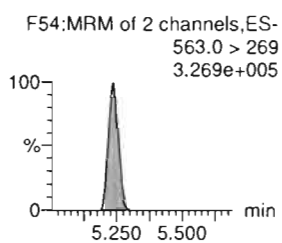
L-EtFOSAA



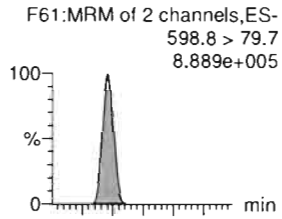


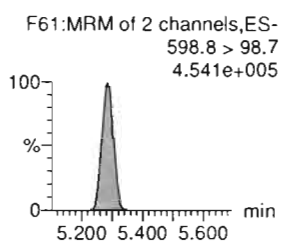
PFUdA



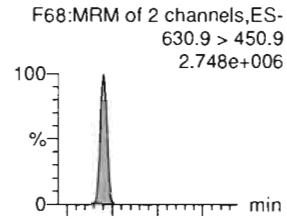


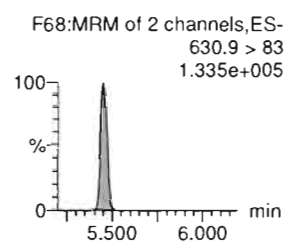
PFDS



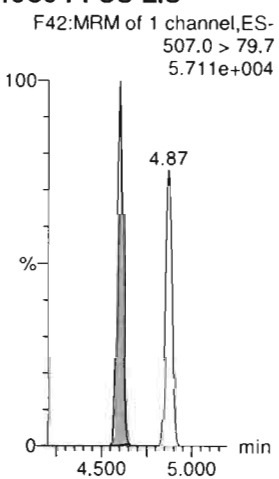


11Cl-PF30UdS

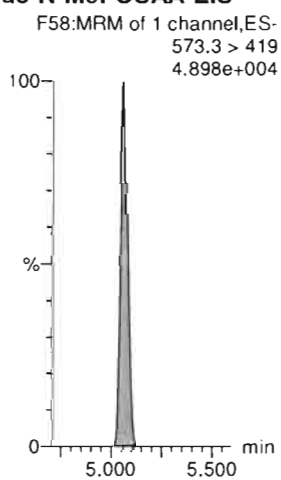




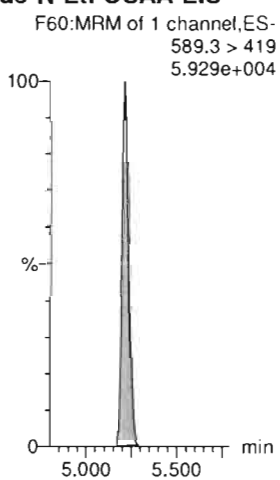
13C8-PFOS-EIS



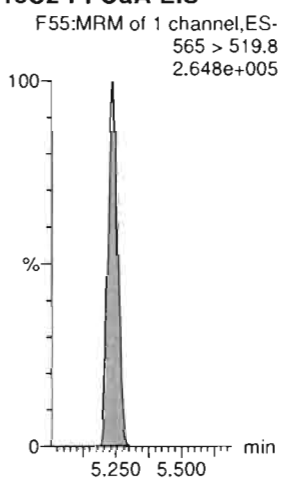
d3-N-MeFOSAA-EIS



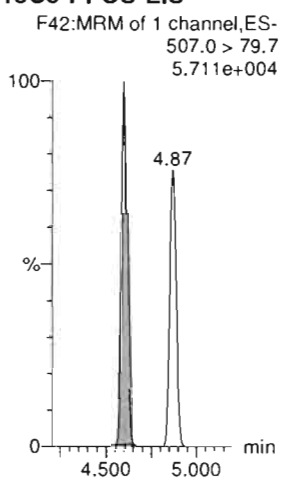
d5-N-EtFOSAA-EIS



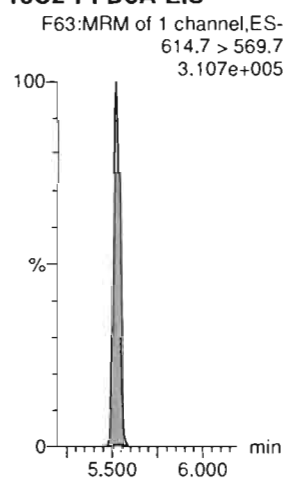
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

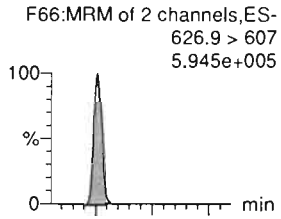


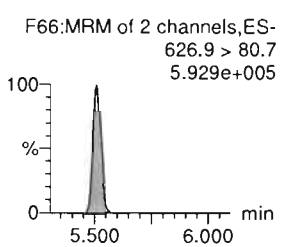
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

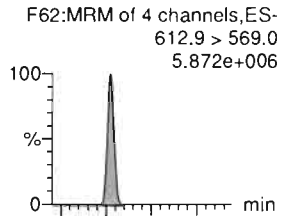
Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

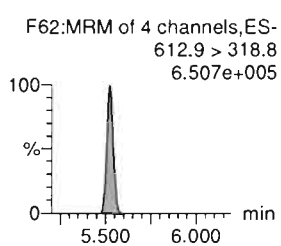
10:2 FTS



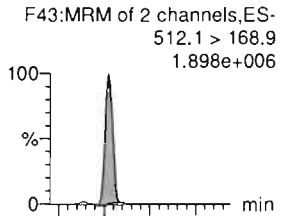


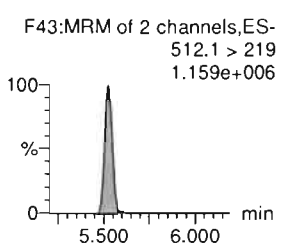
PFDoA



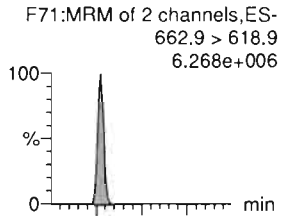


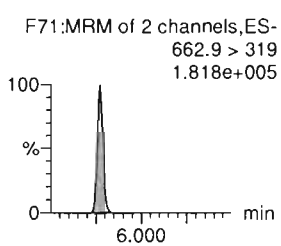
N-MeFOSA



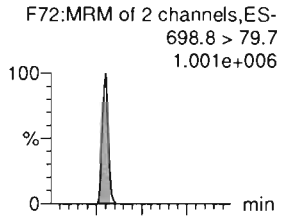


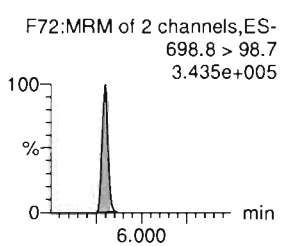
PFTrDA



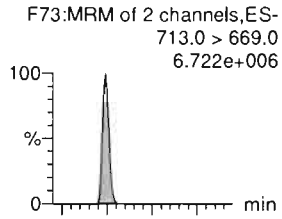


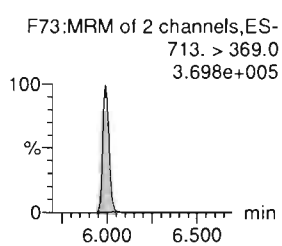
PFDoS



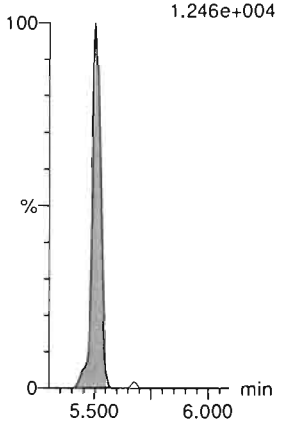


PFTeDA

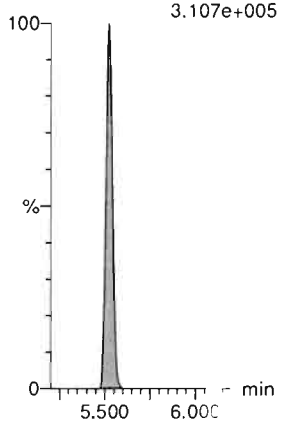




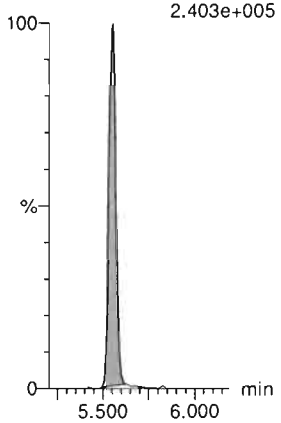
13C2-10:2 FTS-EIS



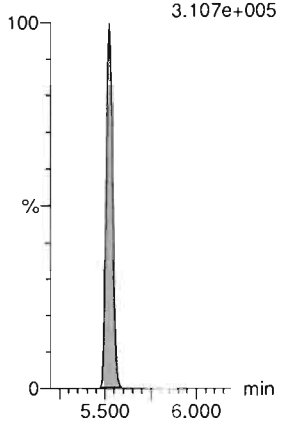
13C2-PFDoA-EIS



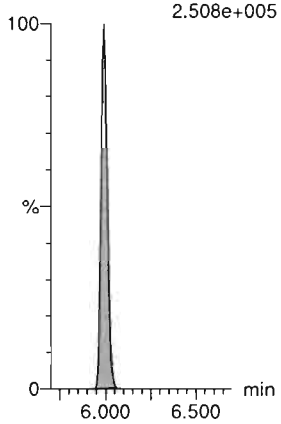
d3-N-MeFOSA-EIS



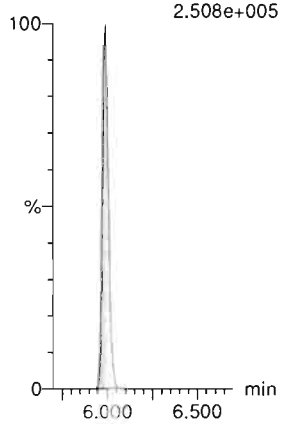
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

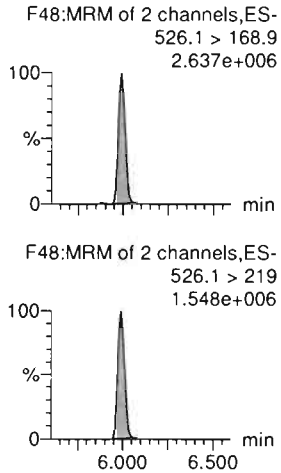


Dataset: Untitled

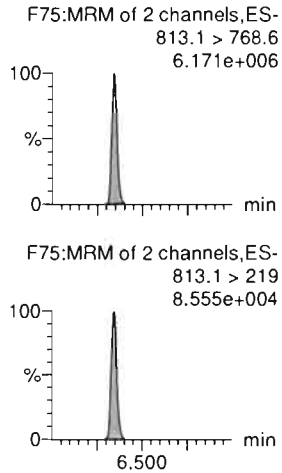
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

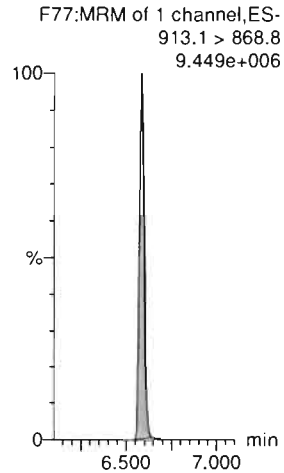
N-EtFOSA



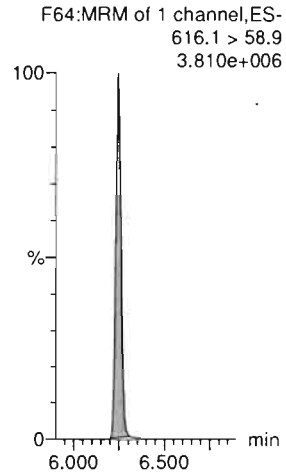
PFHxDA



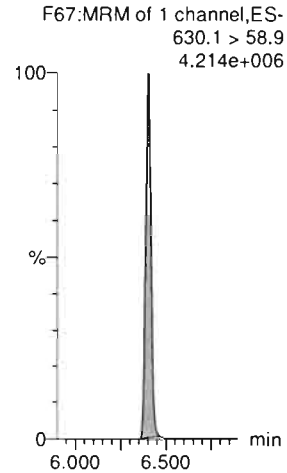
PFODA



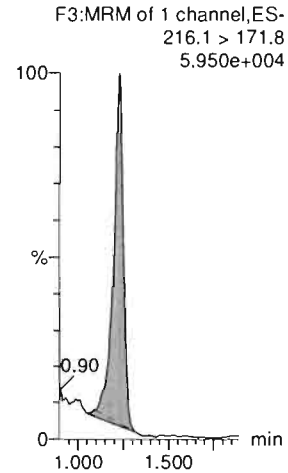
N-MeFOSE



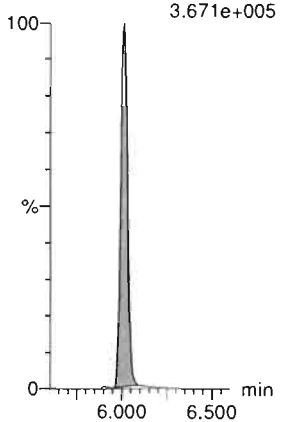
N-EtFOSE



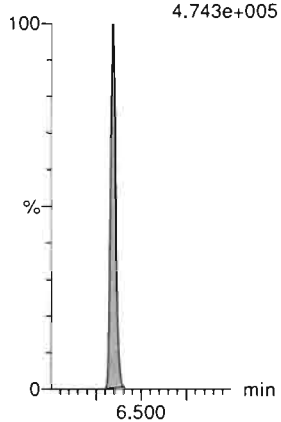
13C3-PFBA-RSD



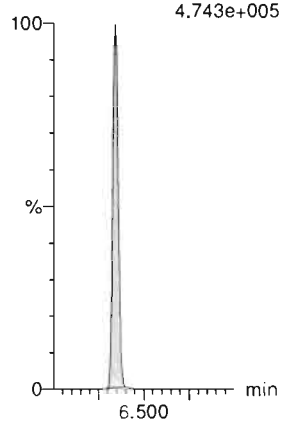
d5-N-ETFOSA-EIS



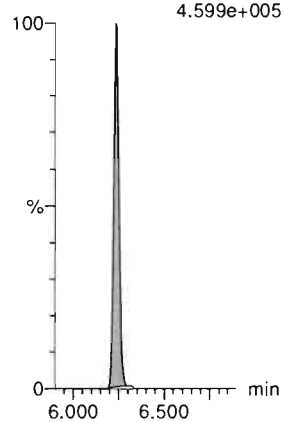
13C2-PFHxDA-EIS



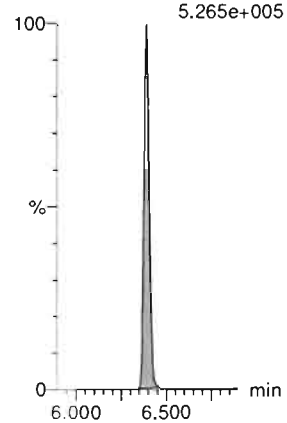
13C2-PFHxDA-EIS



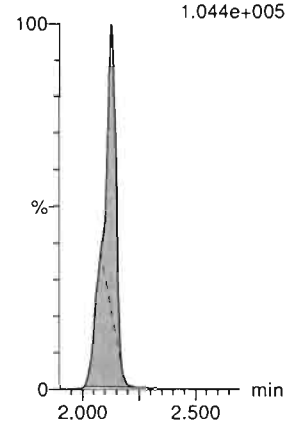
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

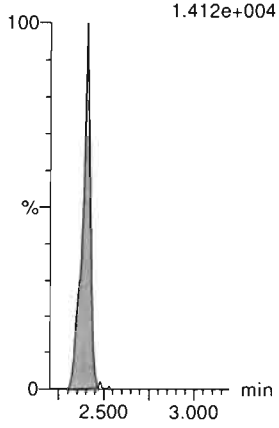


Dataset: Untitled

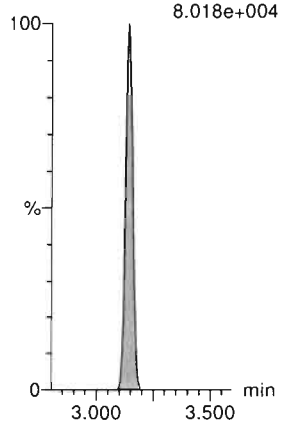
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

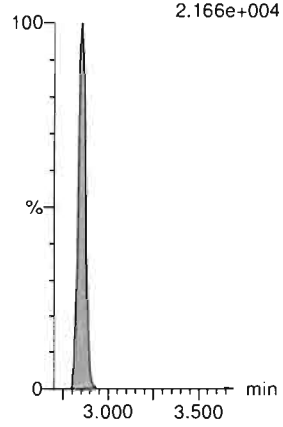
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
1.412e+004



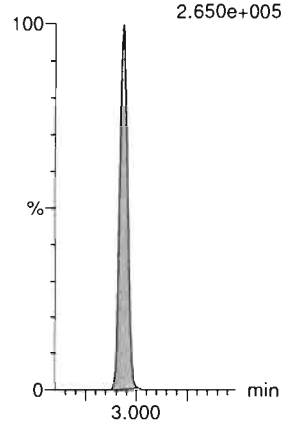
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
8.018e+004



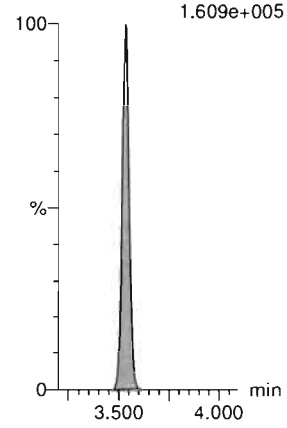
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
2.166e+004



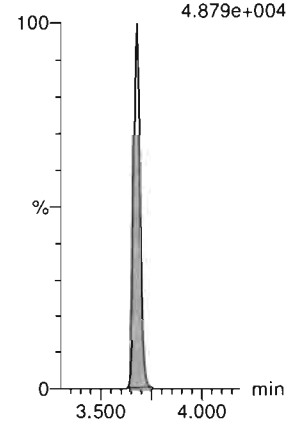
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
2.650e+005



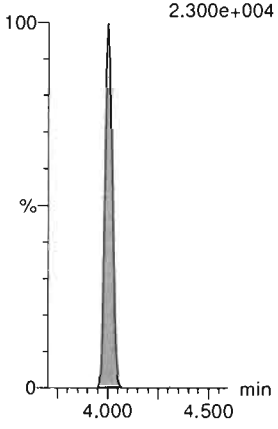
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
1.609e+005



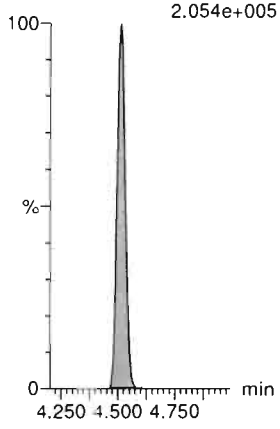
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
4.879e+004



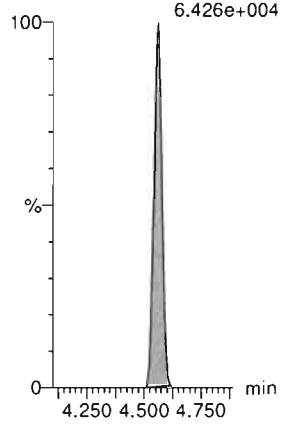
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
2.300e+004



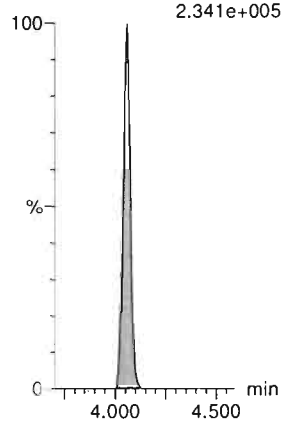
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
2.054e+005



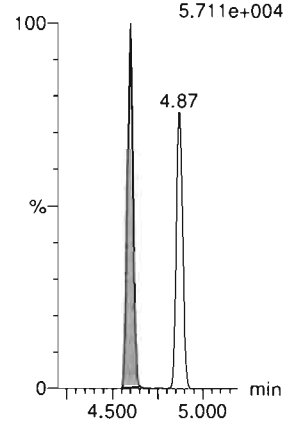
13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
6.426e+004



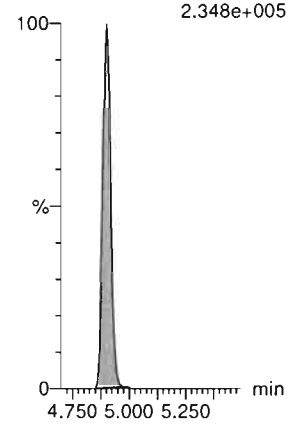
13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
2.341e+005



13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
5.711e+004



13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
2.348e+005

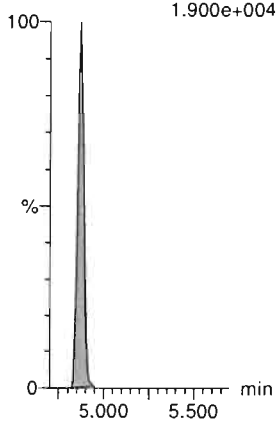


Dataset: Untitled

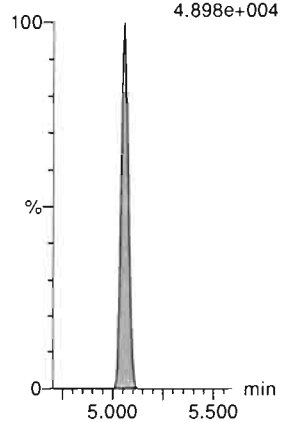
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

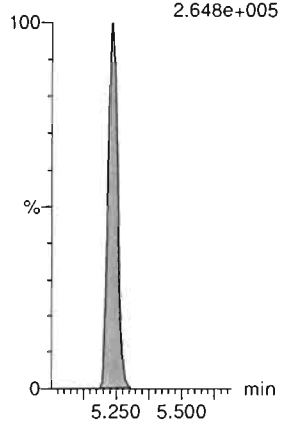
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
1.900e+004



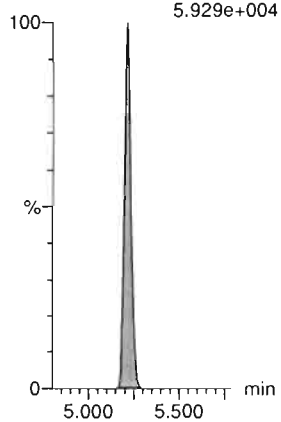
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.898e+004



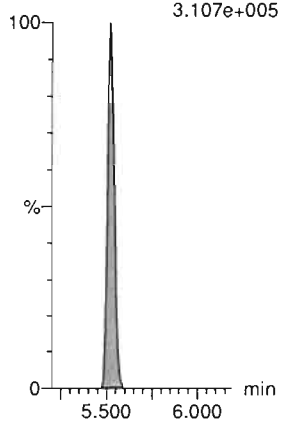
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
2.648e+005



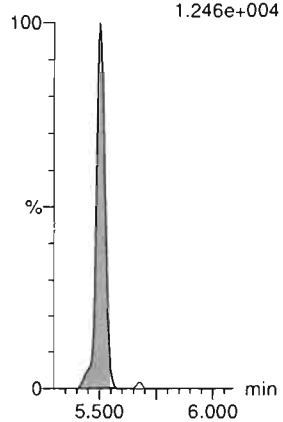
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
5.929e+004



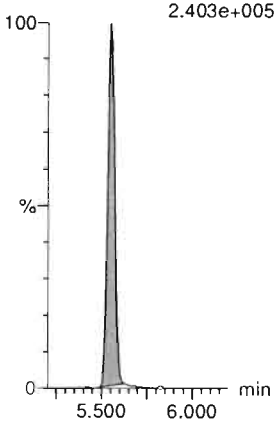
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.107e+005



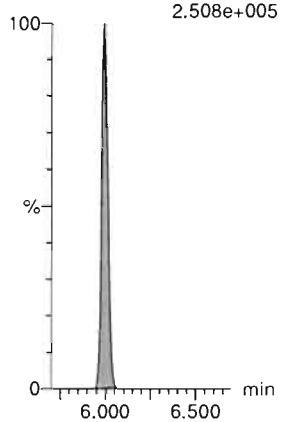
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
1.246e+004



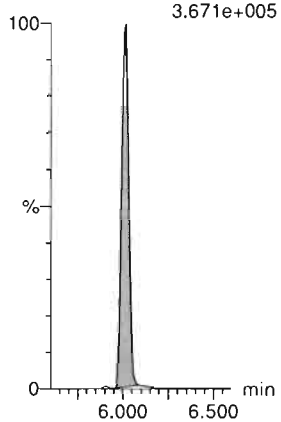
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.403e+005



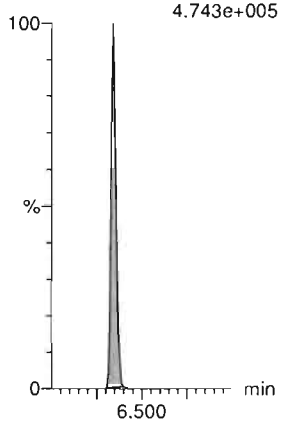
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
2.508e+005



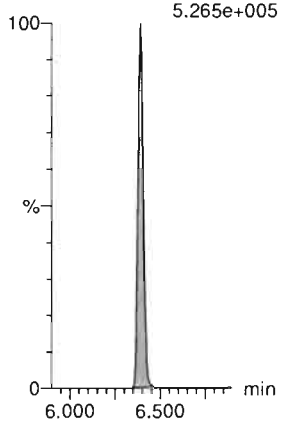
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
3.671e+005



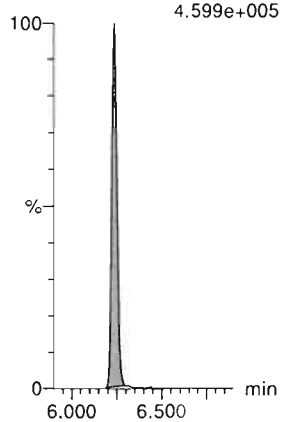
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
4.743e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
5.265e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
4.599e+005

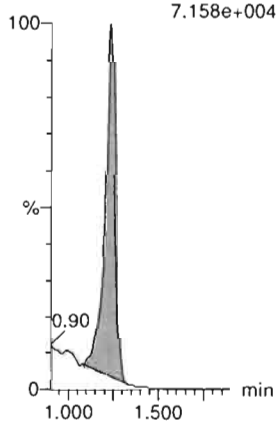


Dataset: Untitled

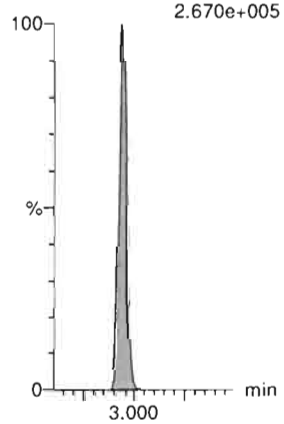
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-11, Date: 04-Mar-2020, Time: 20:55:55, ID: ST200304P2-9 PFC CS6 20C0312, Description: PFC CS6 20C0312

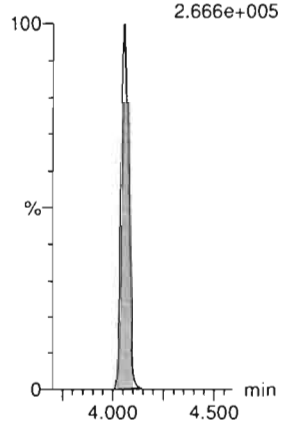
13C4-PFBA



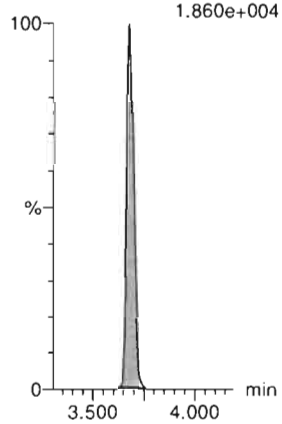
13C5-PFHxA



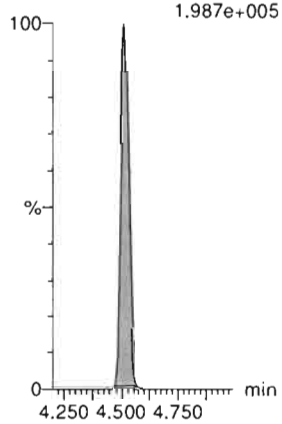
13C8-PFOA



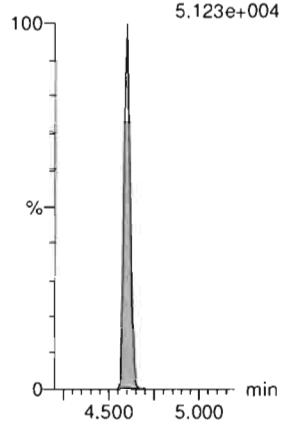
18O2-PFHxS



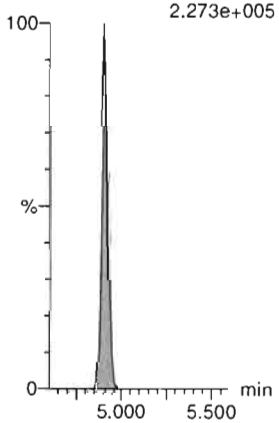
13C9-PFNA



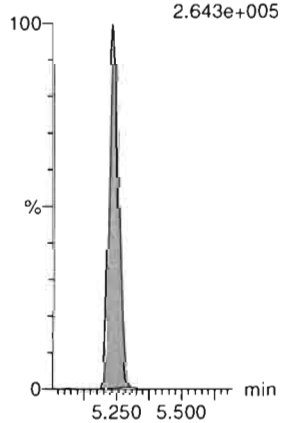
13C4-PFOS



13C6-PFDA



13C7-PFUdA

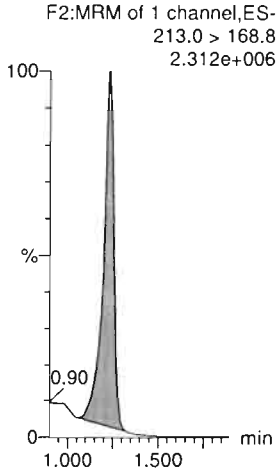


Dataset: Untitled

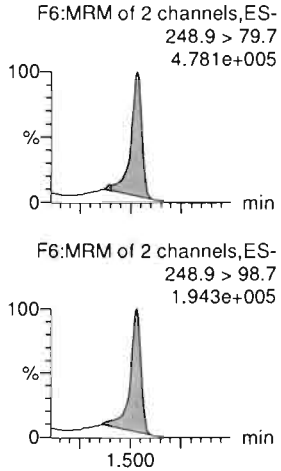
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

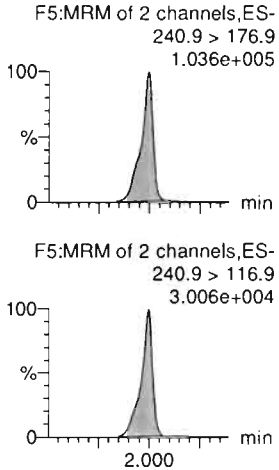
PFBA



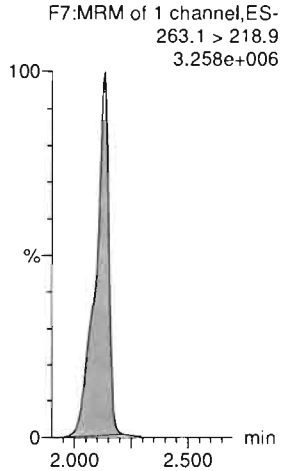
PFPrS



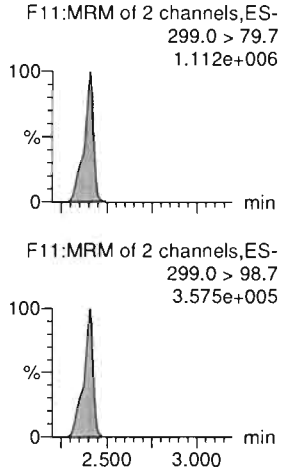
3:3 FTCA



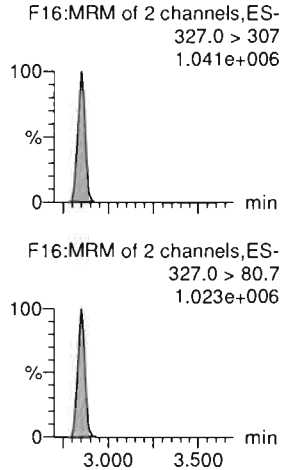
PFPeA



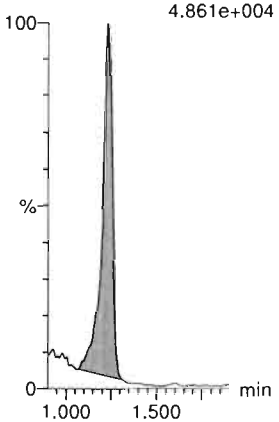
PFBS



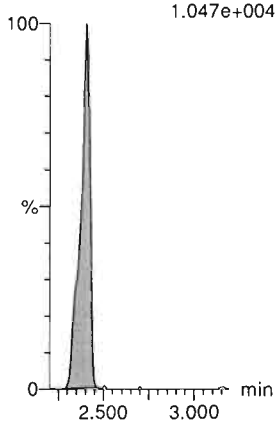
4:2 FTS



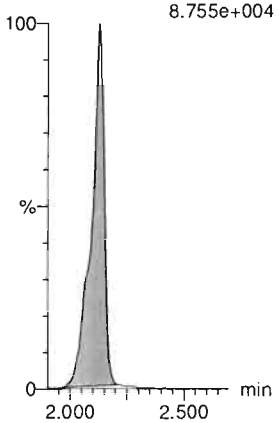
13C3-PFBA-EIS



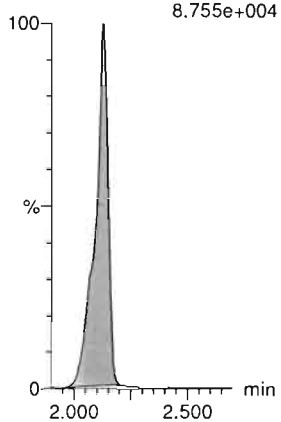
13C3-PFBS-EIS



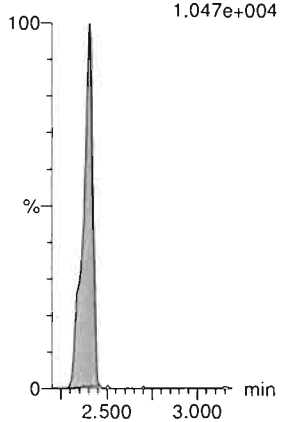
13C3-PFPeA-EIS



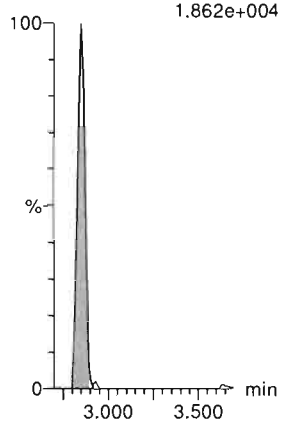
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

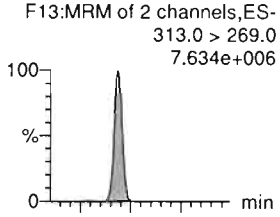


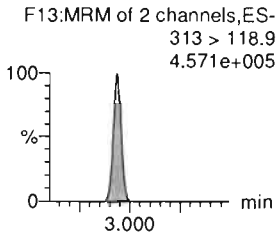
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

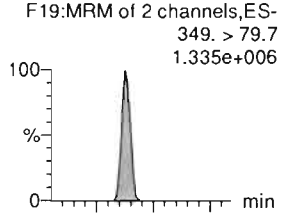
Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

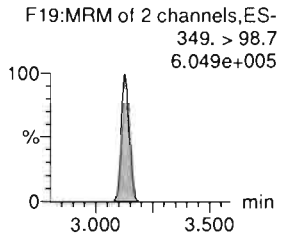
PFHxA



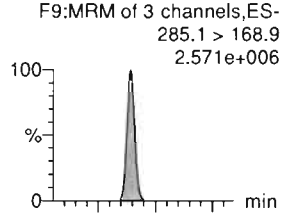


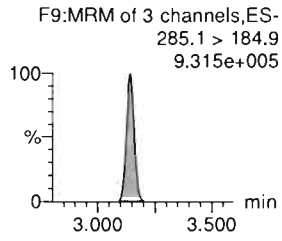
PFPeS



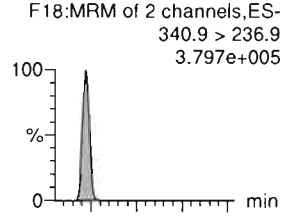


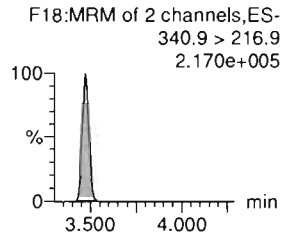
HFPO-DA



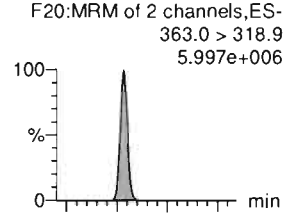


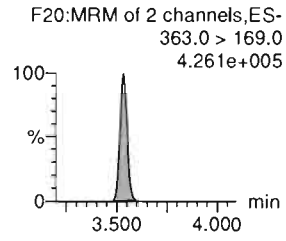
5:3 FTCA



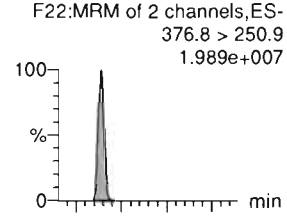


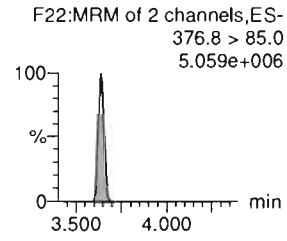
PFHpA



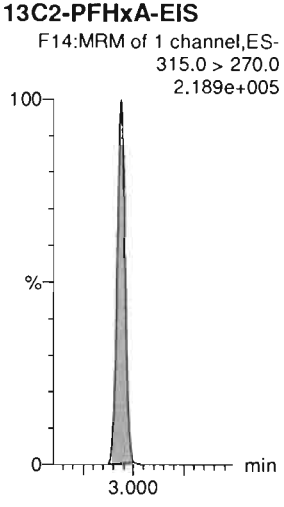


ADONA

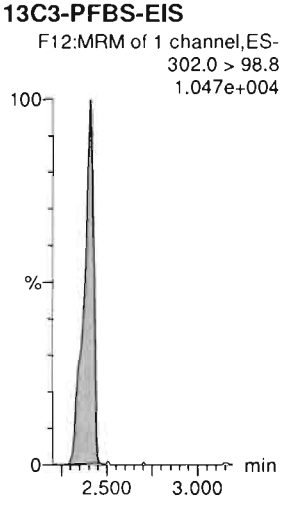




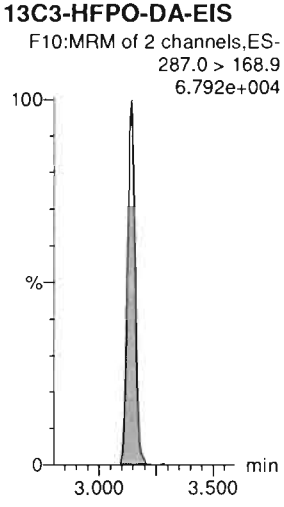
13C2-PFHxA-EIS



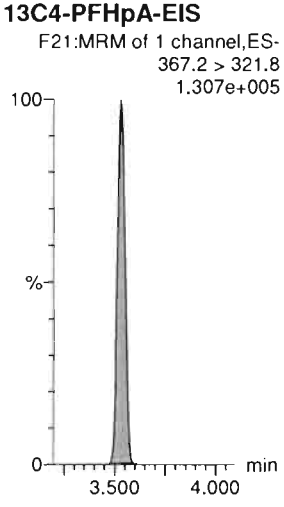
13C3-PFBS-EIS



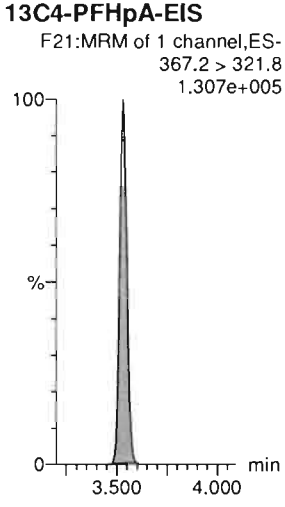
13C3-HFPO-DA-EIS



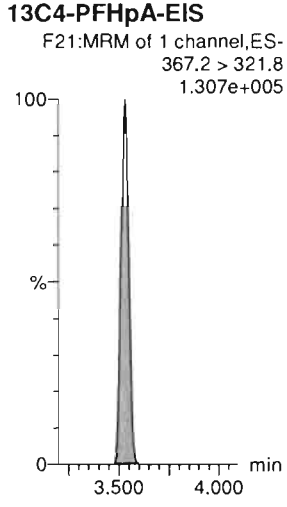
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

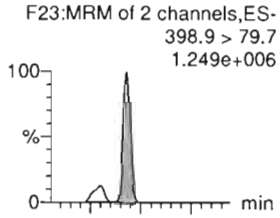


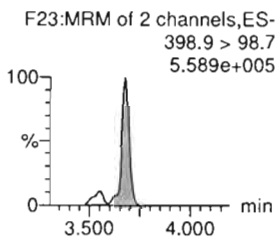
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

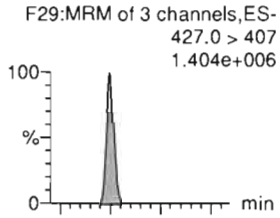
Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

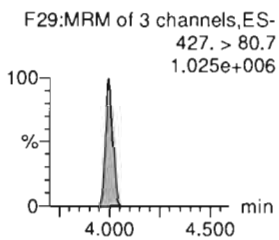
L-PFHxS



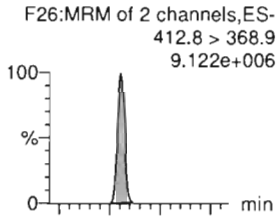


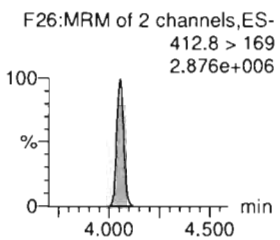
6:2 FTS



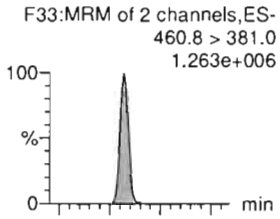


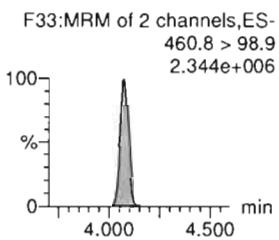
L-PFOA



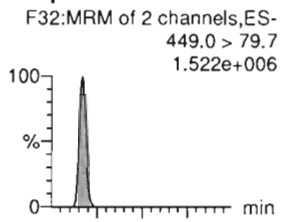


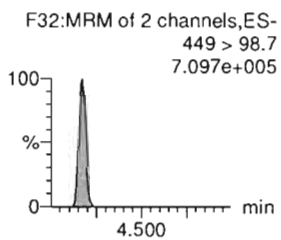
PFEChS



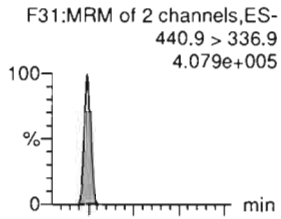


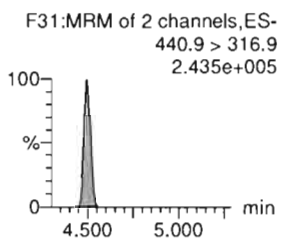
PFHpS



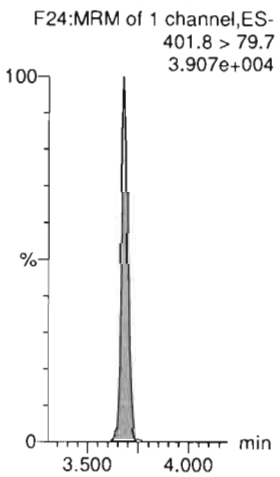


7:3 FTCA

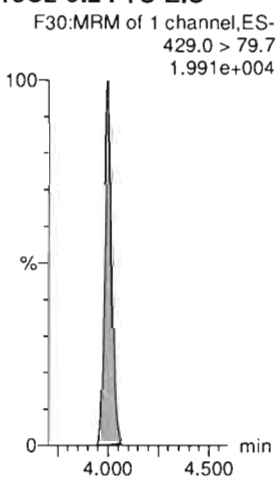




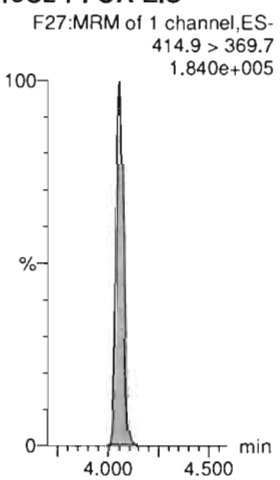
13C3-PFHxS-EIS



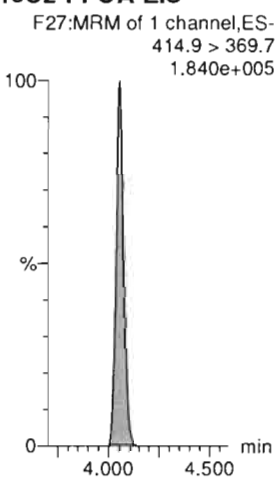
13C2-6:2 FTS-EIS



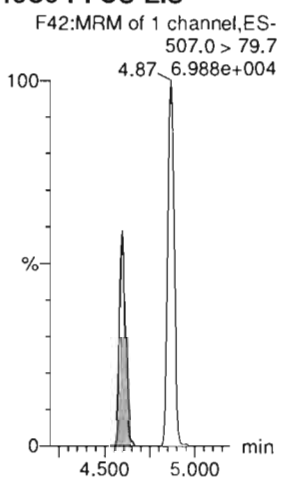
13C2-PFOA-EIS



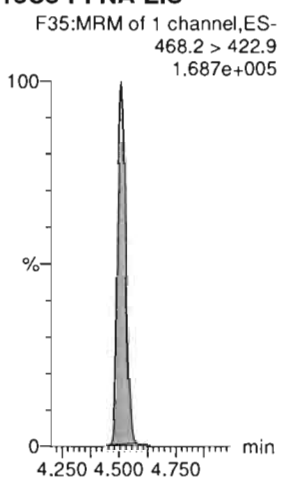
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

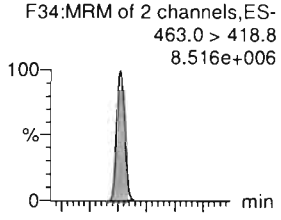


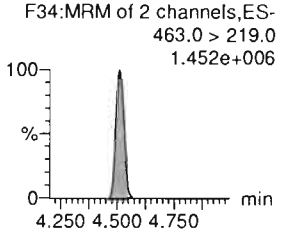
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

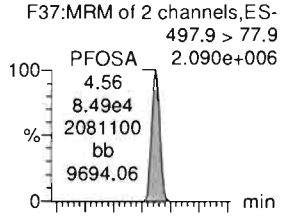
Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

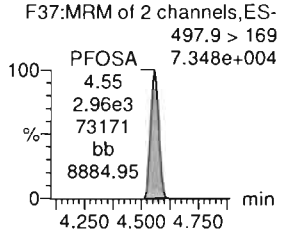
PFNA



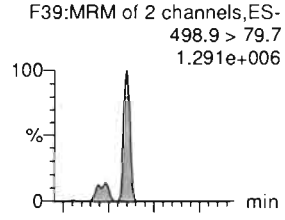


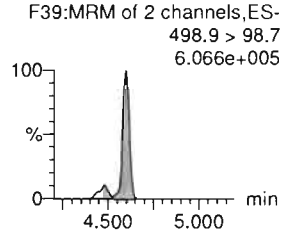
PFOSA



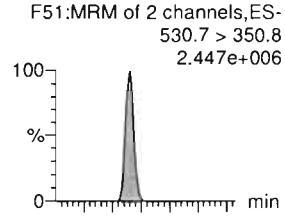


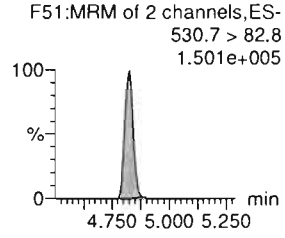
L-PFOS



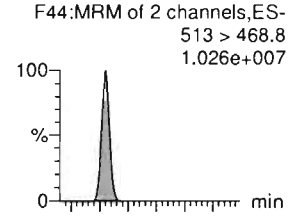


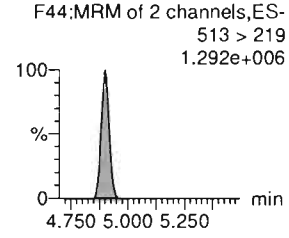
9Cl-PF30NS



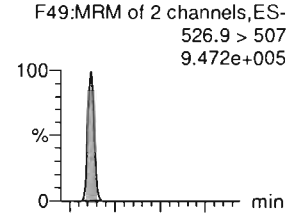


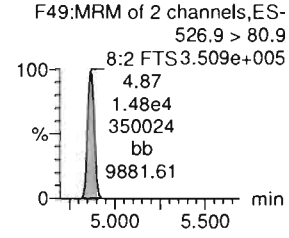
PFDA



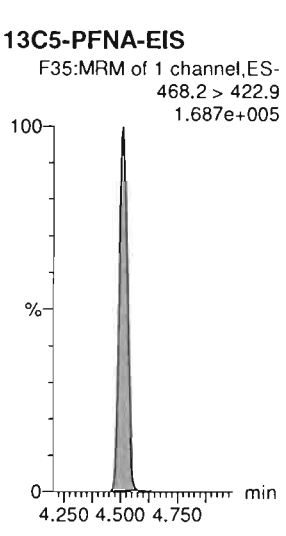


8:2 FTS

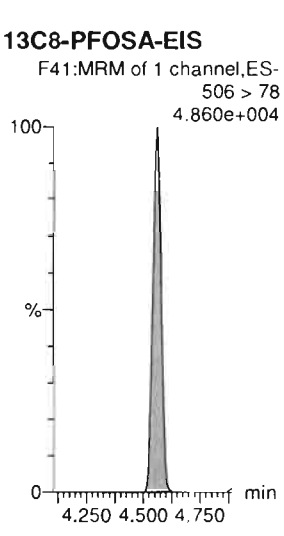




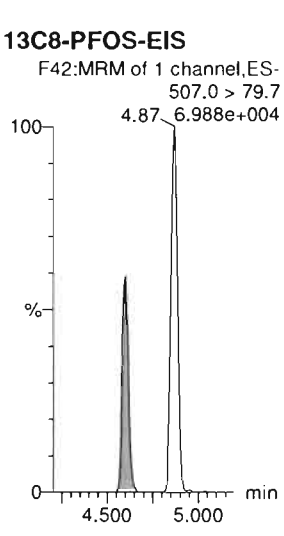
13C5-PFNA-EIS



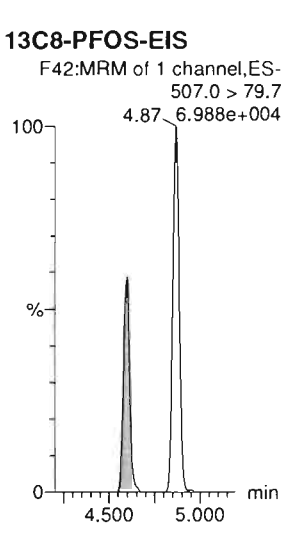
13C8-PFOSA-EIS



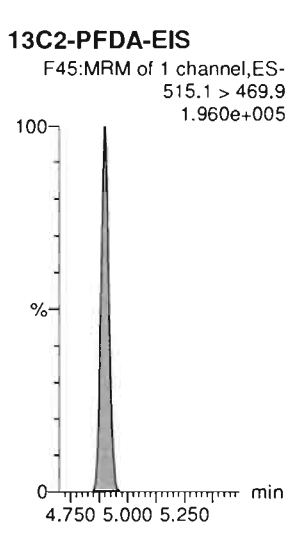
13C8-PFOS-EIS



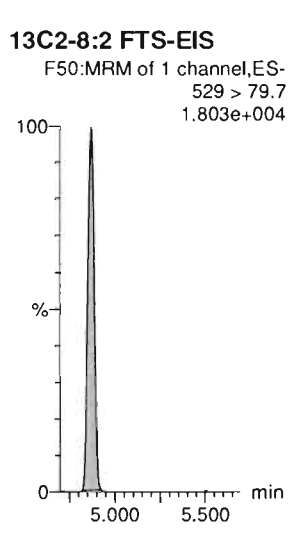
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

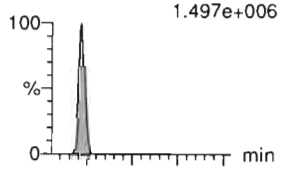


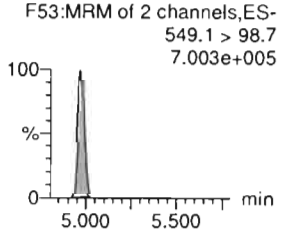
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

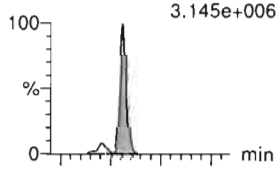
Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

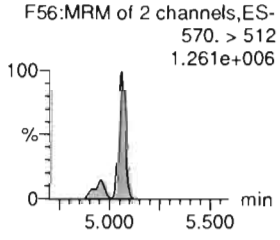
PFNS



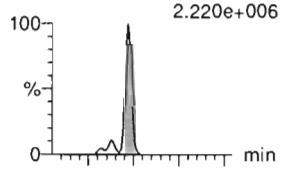


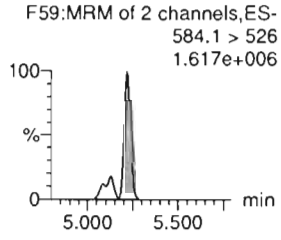
L-MeFOSAA



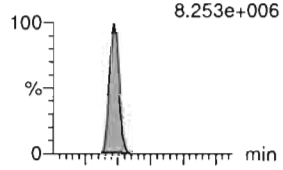


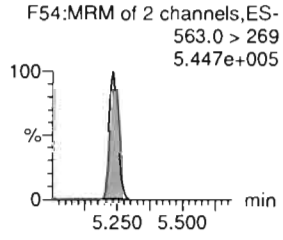
L-EtFOSAA



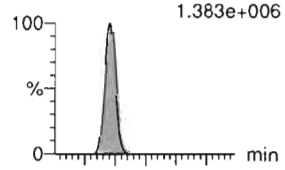


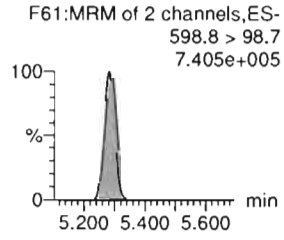
PFUdA



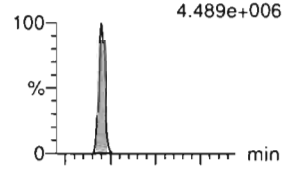


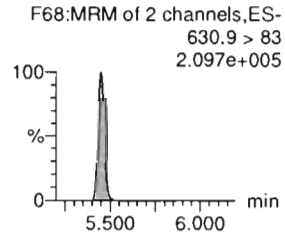
PFDS



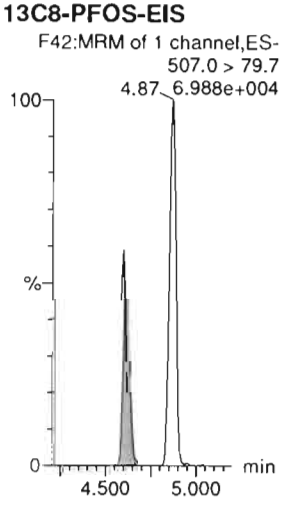


11Cl-PF30UdS

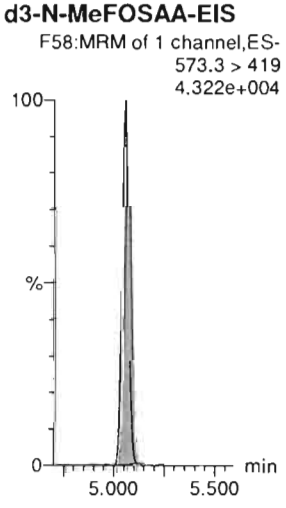




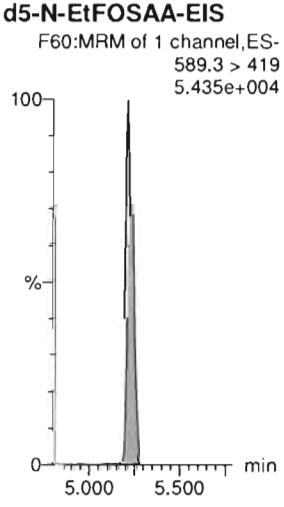
13C8-PFOS-EIS



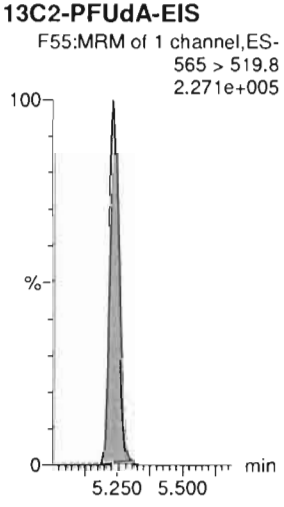
d3-N-MeFOSAA-EIS



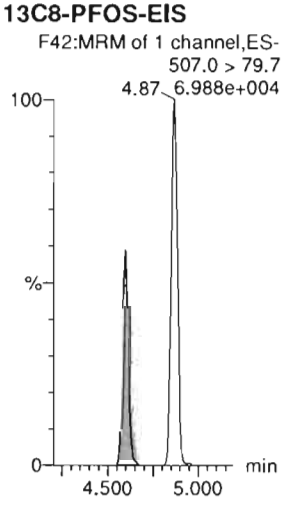
d5-N-EtFOSAA-EIS



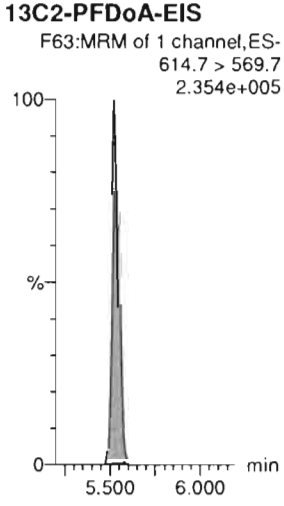
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

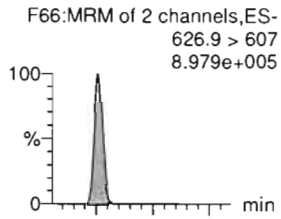


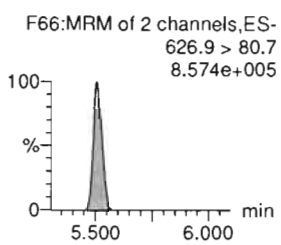
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

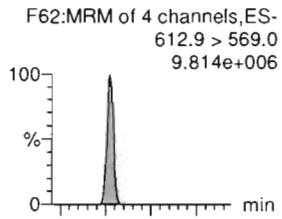
Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

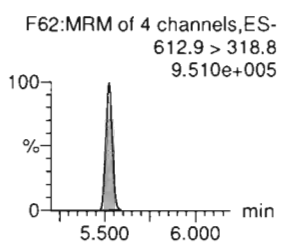
10:2 FTS



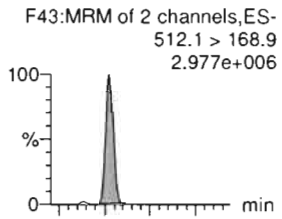


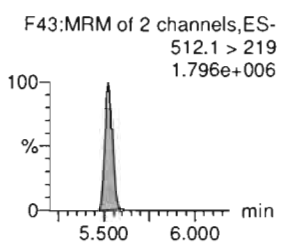
PFDoA



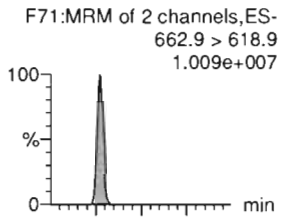


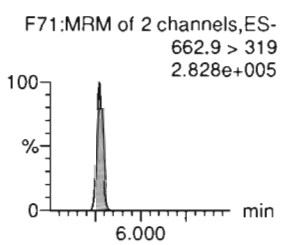
N-MeFOSA



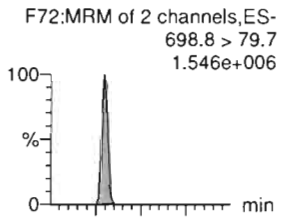


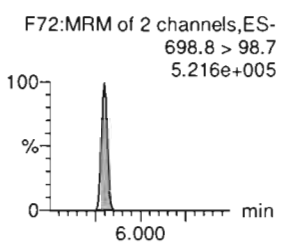
PFTrDA



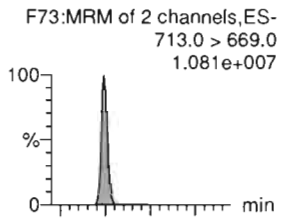


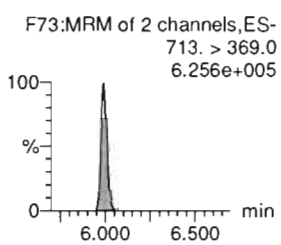
PFDoS



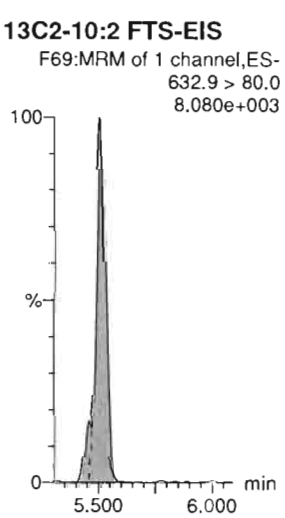


PFTeDA

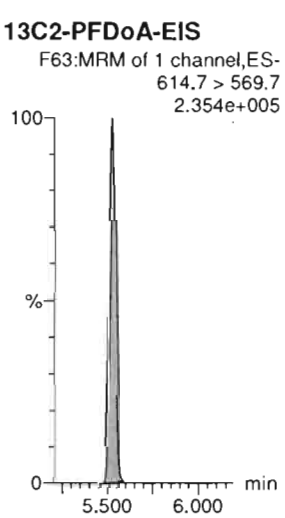




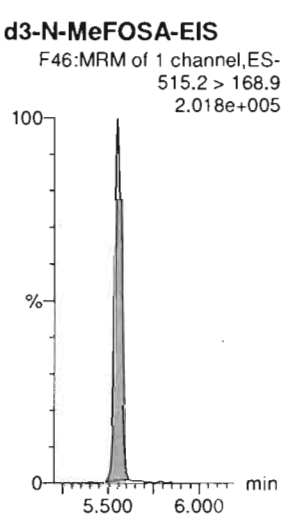
13C2-10:2 FTS-EIS



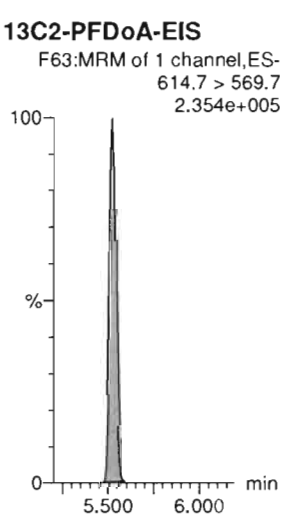
13C2-PFDoA-EIS



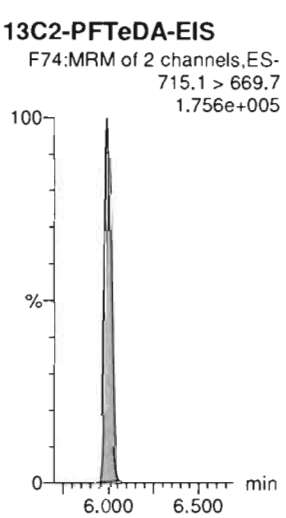
d3-N-MeFOSA-EIS



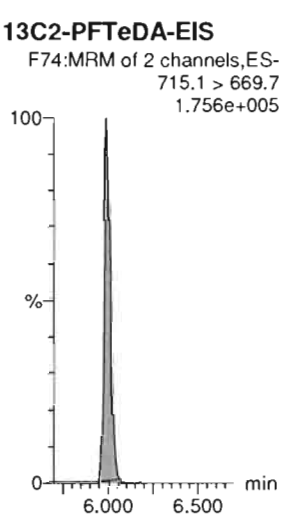
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

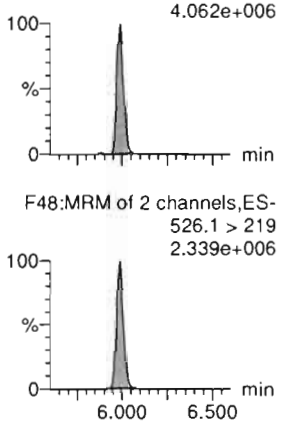


Dataset: Untitled

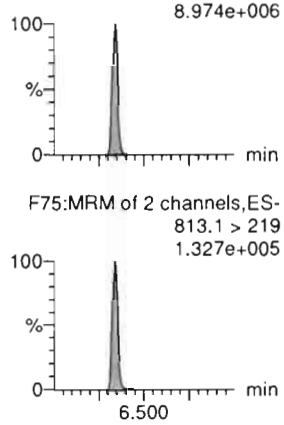
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

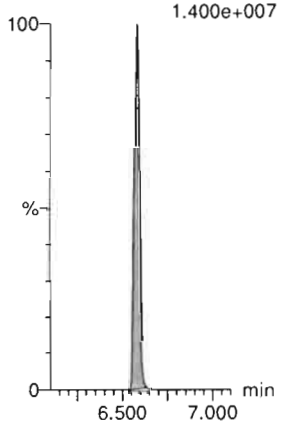
N-EtFOSA



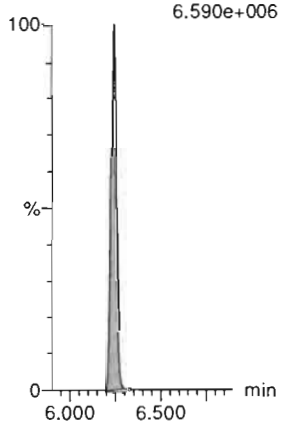
PFHxDA



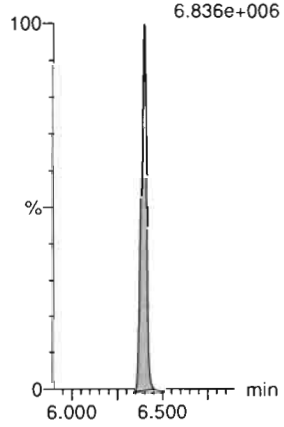
PFODA



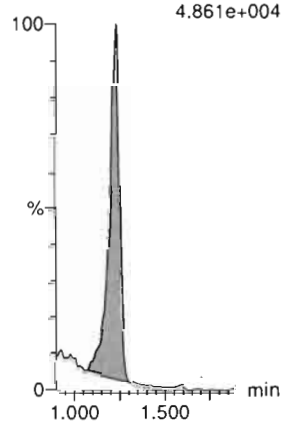
N-MeFOSE



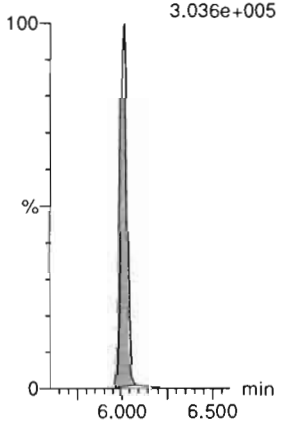
N-EtFOSE



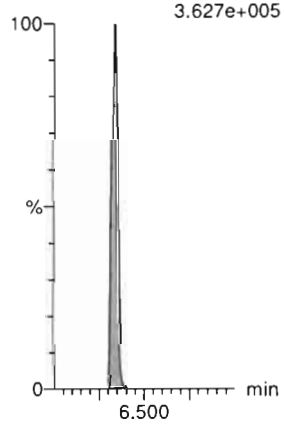
13C3-PFBA-RSD



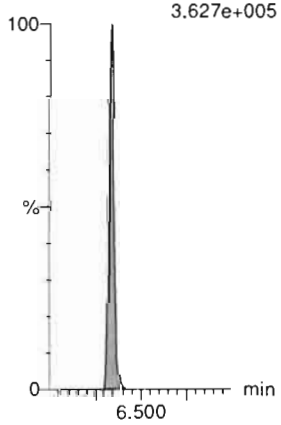
d5-N-ETFOSA-EIS



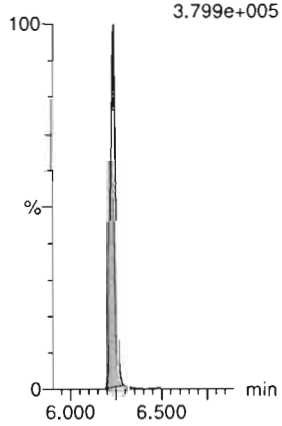
13C2-PFHxDA-EIS



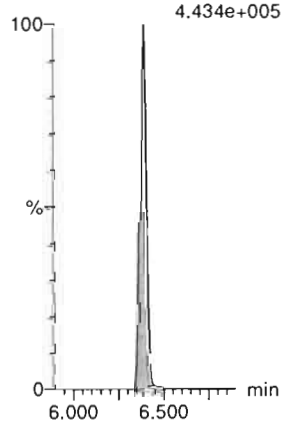
13C2-PFHxDA-EIS



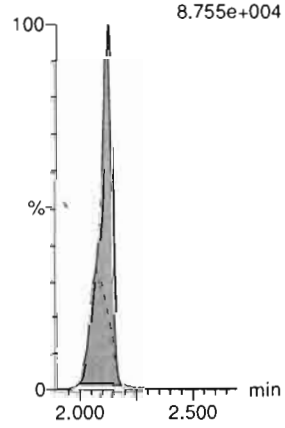
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C3-PFPeA-RSD

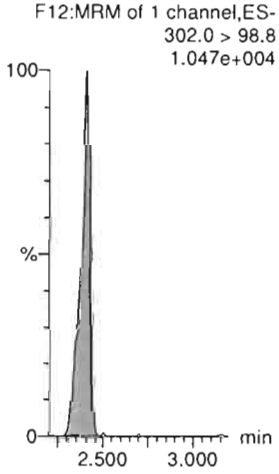


Dataset: Untitled

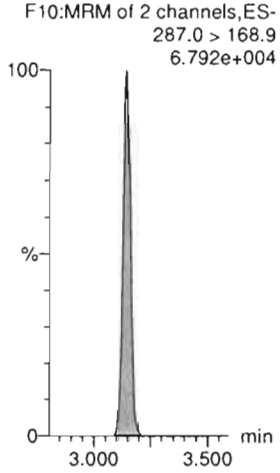
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

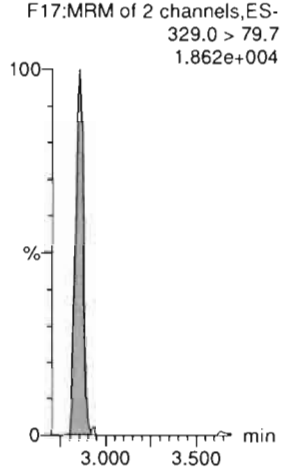
13C3-PFBS-RSD



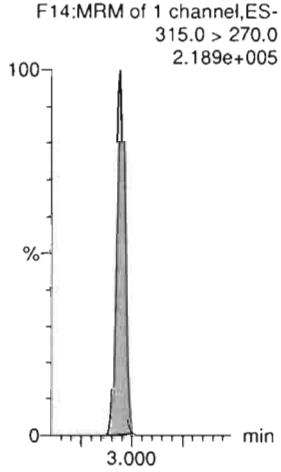
13C3-HFPO-DA-RSD



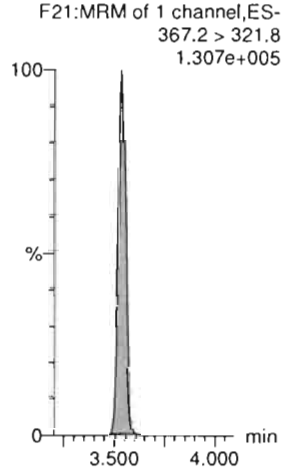
13C2-4:2 FTS-RSD



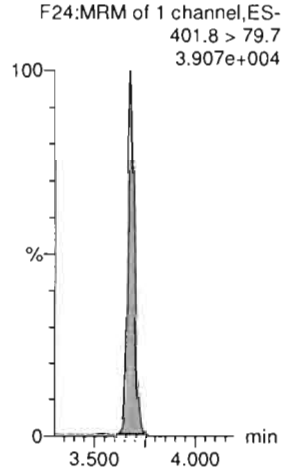
13C2-PFHxA-RSD



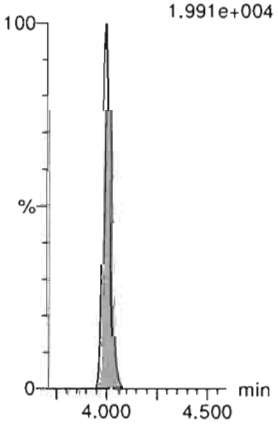
13C4-PFHpA-RSD



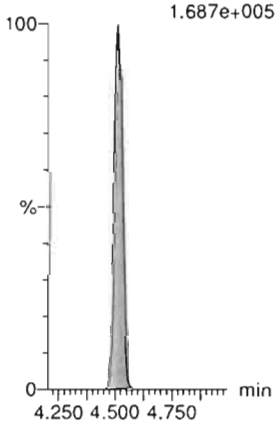
13C3-PFHxS-RSD



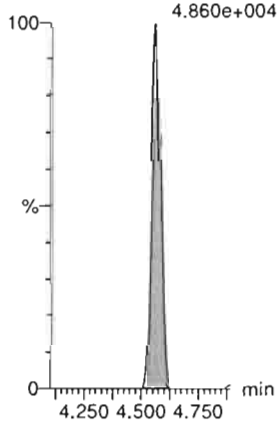
13C2-6:2 FTS-RSD



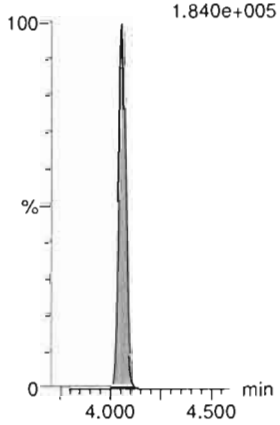
13C5-PFNA-RSD



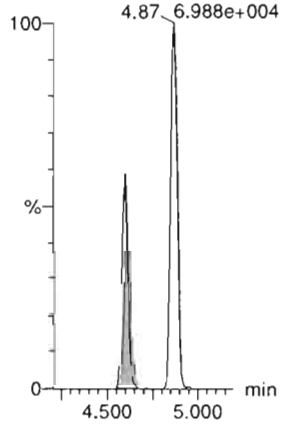
13C8-PFOSA-RSD



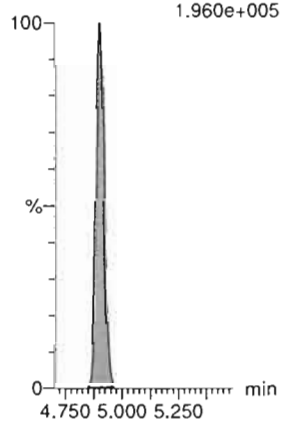
13C2-PFOA-RSD



13C8-PFOS-RSD



13C2-PFDA-RSD

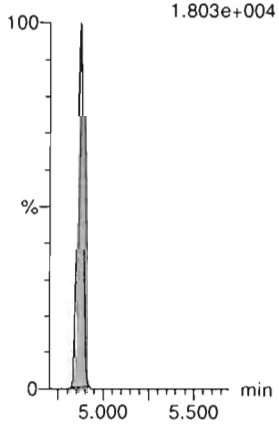


Dataset: Untitled

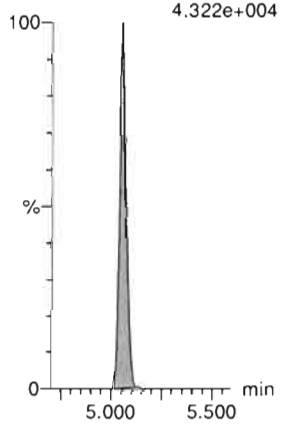
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

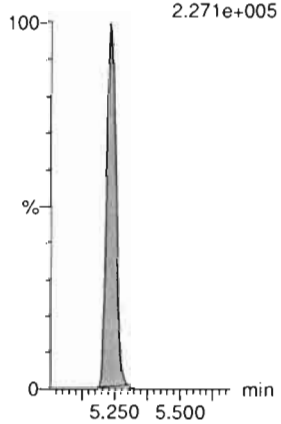
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
1.803e+004



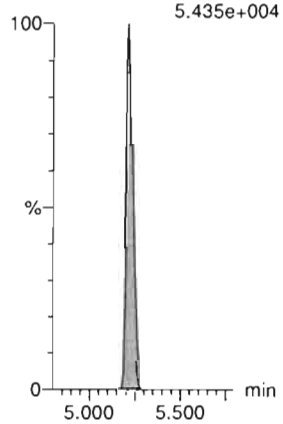
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
4.322e+004



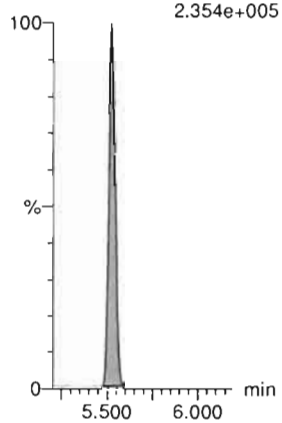
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
2.271e+005



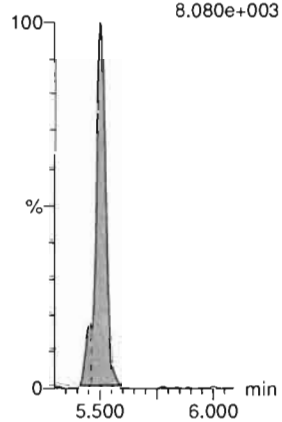
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
5.435e+004



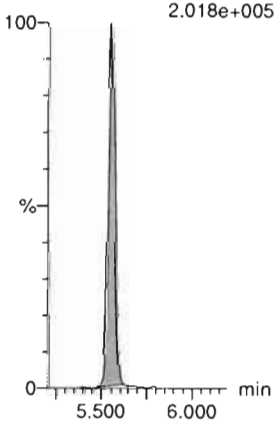
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
2.354e+005



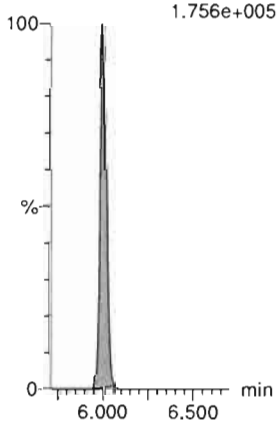
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
8.080e+003



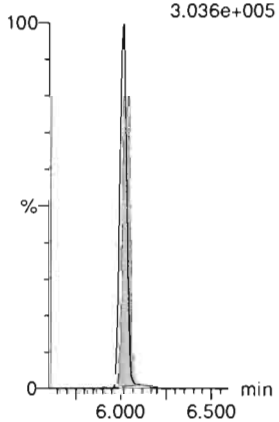
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.018e+005



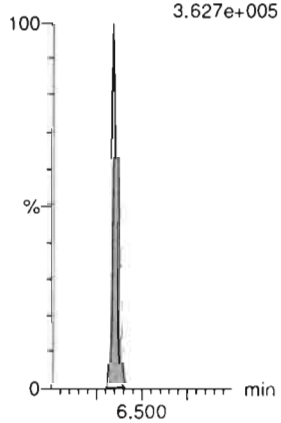
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
1.756e+005



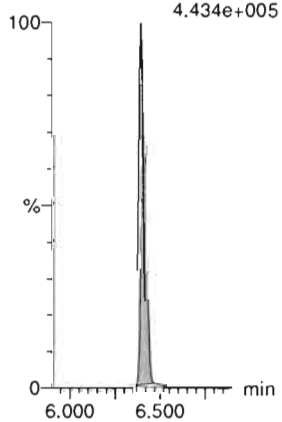
d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
3.036e+005



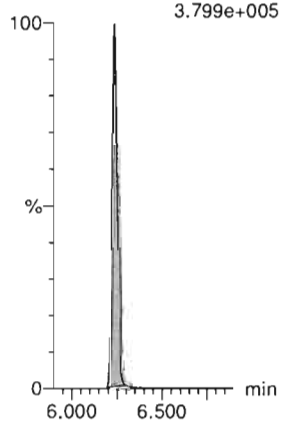
13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
3.627e+005



d9-N-EtFOSE-RSD
F70:MRM of 1 channel,ES-
639.2 > 58.8
4.434e+005



d7-N-MeFOSE-RSD
F65:MRM of 1 channel,ES-
623.1 > 58.9
3.799e+005

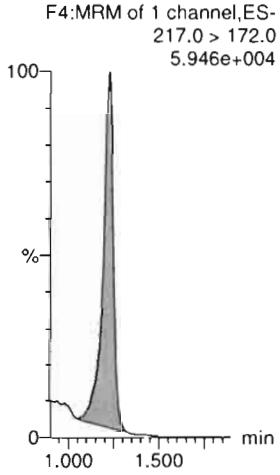


Dataset: Untitled

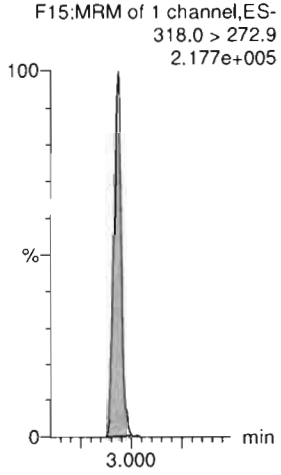
Last Altered: Thursday, March 05, 2020 08:40:10 Pacific Standard Time
Printed: Thursday, March 05, 2020 08:44:24 Pacific Standard Time

Name: 200304P2-12, Date: 04-Mar-2020, Time: 21:06:25, ID: ST200304P2-10 PFC CS7 20C0313, Description: PFC CS7 20C0313

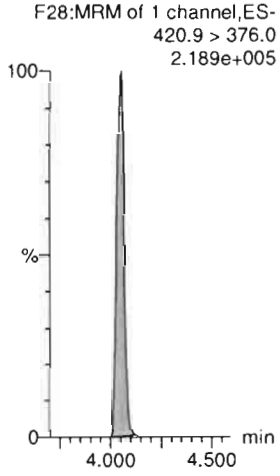
13C4-PFBA



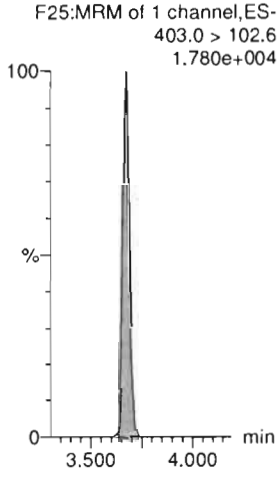
13C5-PFHxA



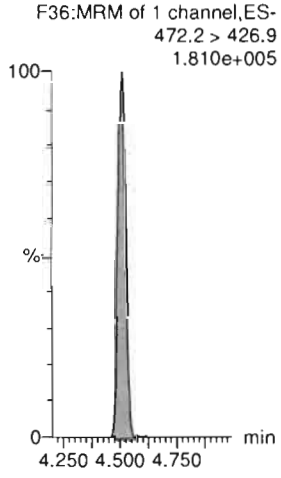
13C8-PFOA



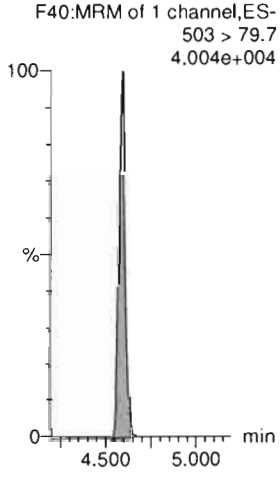
18O2-PFHxS



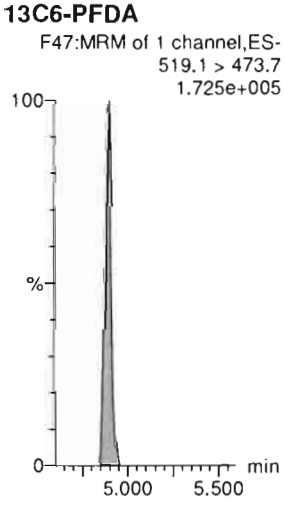
13C9-PFNA



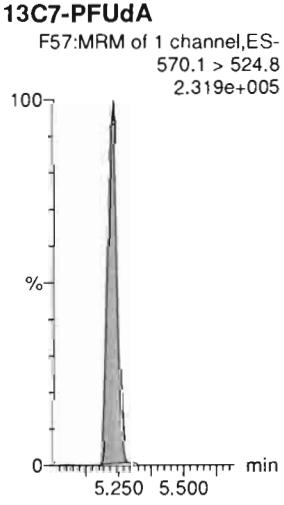
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

(A) not in ICV

VQPV 03/05/20

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	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	4846.730	8843.477	1.00	1.23	13.701	10.000	11.2	111.9	NO		
2	2	PFPrS	248.9 > 79.7		1993.945	1.00			10.000		(A)	NO		YES
3	3	3:3 FTCA	240.9 > 176.9		16274.889	1.00			10.000		↓	NO		YES
4	4	PFPeA	263.1 > 218.9	7013.480	16274.889	1.00	2.13	10.773	10.000	11.4	113.6	NO		
5	5	PFBS	299.0 > 79.7	1796.328	1993.945	1.00	2.41	22.522	8.840	8.74	98.9	NO	3.345	NO
6	6	4:2 FTS	327.0 > 307	1785.622	2861.121	1.00	2.85	15.602	9.360	10.0	107.4	NO	1.061	NO
7	47	13C3-PFBA-EIS	216.1 > 171.8	8843.477		1.00	1.23	8843.477	25.000	23.8	95.2	NO		
8	51	13C3-PFBS-EIS	302.0 > 98.8	1993.945		1.00	2.41	1993.945	25.000	24.1	96.5	NO		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	16274.889		1.00	2.13	16274.889	25.000	23.9	95.6	NO		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	16274.889		1.00	2.13	16274.889	25.000	23.9	95.6	NO		
11	51	13C3-PFBS-EIS	302.0 > 98.8	1993.945		1.00	2.41	1993.945	25.000	24.1	96.5	NO		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	2861.121		1.00	2.85	2861.121	25.000	23.7	94.7	NO		
13	-1													
14	7	PFHxA	313.0 > 269.0	11567.250	28789.484	1.00	2.94	10.045	10.000	11.4	113.8	NO	16.676	NO
15	8	PFPeS	349.>79.7	1835.387	1993.945	1.00	3.13	23.012	9.360	9.92	105.9	NO	2.395	NO
16	9	HFPO-DA	285.1 > 168.9	3271.699	6886.888	1.00	3.14	11.877	10.000	10.7	107.2	NO	2.709	NO
17	10	5:3 FTCA	340.9 > 236.9		15876.997	1.00			10.000		(A)	NO		YES
18	11	PFHpA	363.0 > 318.9	8709.093	15876.997	1.00	3.54	13.713	10.000	11.4	113.7	NO	18.393	NO
19	12	ADONA	376.8 > 250.9	23915.359	15876.997	1.00	3.64	37.657	10.000	11.0	110.3	NO	4.022	NO
20	57	13C2-PFHxA-EIS	315.0 > 270.0	28789.484		1.00	2.94	28789.484	25.000	23.7	94.9	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	1993.945		1.00	2.41	1993.945	25.000	24.1	96.5	NO		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	6886.888		1.00	3.14	6886.888	25.000	24.6	98.3	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	15876.997		1.00	3.53	15876.997	25.000	23.5	93.9	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	15876.997		1.00	3.53	15876.997	25.000	23.5	93.9	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	15876.997		1.00	3.53	15876.997	25.000	23.5	93.9	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	2049.885	4471.988	1.00	3.68	11.460	9.120	11.2	123.0	NO	2.612	NO
28	15	6:2 FTS	427.0 > 407	2072.394	2247.370	1.00	3.99	23.054	9.480	12.1	127.3	NO	1.387	NO
29	16	L-PFOA	412.8 > 368.9	13899.606	23227.346	1.00	4.06	14.960	10.000	11.7	117.0	NO	3.284	NO
30	18	PFecHS	460.8 > 381.0		23227.346	1.00			10.000		(A)	NO		YES
31	19	PFHpS	449.0 > 79.7	2061.009	5226.666	1.00	4.17	9.858	9.480	10.8	114.2	NO	1.911	NO
32	20	7:3 FTCA	440.9 > 336.9		21351.789	1.00			10.000		(A)	NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	4471.988		1.00	3.68	4471.988	25.000	23.5	94.1	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	2247.370		1.00	4.00	2247.370	25.000	24.9	99.7	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	23227.346		1.00	4.06	23227.346	25.000	22.8	91.4	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	23227.346		1.00	4.06	23227.346	25.000	22.8	91.4	NO		

VY 03/05/20

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
37	71	13C8-PFOS-EIS	507.0 > 79.7	5226.666		1.00	4.60	5226.666	25.000	25.1	100.5	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	21351.789		1.00	4.51	21351.789	25.000	24.6	98.5	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	11804.804	21351.789	1.00	4.51	13.822	10.000	11.1	110.5	NO	5.590	NO
41	22	PFOSA	497.9 > 77.9	2929.788	6494.078	1.00	4.56	11.279	10.000	12.0	119.7	NO	27.040	NO
42	23	L-PFOS	498.9 > 79.7	1966.829	5226.666	1.00	4.60	9.408	9.280	10.1	108.6	NO	2.085	NO
43	25	9Cl-PF30NS	530.7 > 350.8	3203.077	5226.666	1.00	4.82	15.321	9.280	9.80	105.6	NO	23.492	YES
44	26	PFDA	513 > 468.8	14485.595	24027.895	1.00	4.90	15.072	10.000	11.2	112.4	NO	8.366	NO
45	27	8:2 FTS	526.9 > 507	1292.757	2132.564	1.00	4.87	15.155	9.600	9.28	96.6	NO	2.675	YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	21351.789		1.00	4.51	21351.789	25.000	24.6	98.5	NO		
47	67	13C8-PFOSA-EIS	506 > 78	6494.078		1.00	4.56	6494.078	25.000	25.4	101.7	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	5226.666		1.00	4.60	5226.666	25.000	25.1	100.5	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	5226.666		1.00	4.60	5226.666	25.000	25.1	100.5	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	24027.895		1.00	4.90	24027.895	25.000	25.4	101.7	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	2132.564		1.00	4.87	2132.564	25.000	24.4	97.8	NO		
52	-1													
53	28	PFNS	549.1 > 79.7	1886.766	5226.666	1.00	4.96	9.025	9.600	10.2	106.6	NO	2.017	NO
54	29	L-MeFOSAA	570 > 419	4301.010	4946.553	1.00	5.06	21.737	10.000	10.4	104.2	NO	2.182	NO
55	31	L-EtFOSAA	584.1 > 419	4117.972	6847.058	1.00	5.22	15.036	10.000	11.4	114.1	NO	1.255	NO
56	33	PFUdA	563.0 > 518.9	12461.508	28279.691	1.00	5.23	11.016	10.000	11.7	117.2	NO	19.600	NO
57	34	PFDS	598.8 > 79.7	2036.403	5226.666	1.00	5.28	9.740	9.600	11.0	114.2	NO	2.231	NO
58	35	11Cl-PF30UdS	630.9 > 450.9	5703.446	28596.172	1.00	5.45	4.986	9.440	11.0	116.9	NO	21.081	NO
59	71	13C8-PFOS-EIS	507.0 > 79.7	5226.666		1.00	4.60	5226.666	25.000	25.1	100.5	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	4946.553		1.00	5.06	4946.553	25.000	25.4	101.4	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	6847.058		1.00	5.21	6847.058	25.000	23.8	95.1	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	28279.691		1.00	5.23	28279.691	25.000	23.1	92.2	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	5226.666		1.00	4.60	5226.666	25.000	25.1	100.5	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	28596.172		1.00	5.52	28596.172	25.000	23.6	94.4	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		1508.487	1.00			10.000		(A)	NO		YES
67	37	PFDoA	612.9 > 569.0	13264.363	28596.172	1.00	5.52	11.596	10.000	11.6	115.9	NO	9.457	NO
68	38	N-MeFOSA	512.1 > 168.9		12513.086	1.00			9.600		(A)	NO		YES
69	39	PFTrDA	662.9 > 618.9	15035.329	28596.172	1.00	5.77	13.145	10.000	12.5	125.3	NO	39.742	NO
70	40	PFDoS	698.8 > 79.7		25665.590	1.00			10.000		(A)	NO		YES
71	41	PFTeDA	713.0 > 669.0	16597.982	25665.590	1.00	5.99	16.168	10.000	11.3	113.4	NO	18.604	NO
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	1508.487		1.00	5.50	1508.487	25.000	26.4	105.5	NO		

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
73	83	13C2-PFDoA-EIS	614.7 > 569.7	28596.172		1.00	5.52	28596.172	25.000	23.6	94.4	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	12513.086		1.00	5.55	12513.086	149.200	149	99.8	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	28596.172		1.00	5.52	28596.172	25.000	23.6	94.4	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	25665.590		1.00	5.99	25665.590	25.000	24.0	96.0	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	25665.590		1.00	5.99	25665.590	25.000	24.0	96.0	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9		19972.426	1.00			9.600			NO		YES
80	43	PFHxDA	813.1 > 768.6		37662.957	1.00			10.000			NO		YES
81	44	PFODA	913.1 > 868.8		37662.957	1.00			10.000			NO		
82	45	N-MeFOSE	616.1 > 58.9		17645.016	1.00			9.600			NO		
83	46	N-EtFOSE	630.1 > 58.9		20209.619	1.00			9.600			NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	19972.426		1.00	6.01	19972.426	149.200	137	92.1	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	37662.957		1.00	6.34	37662.957	25.000	22.4	89.5	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	37662.957		1.00	6.34	37662.957	25.000	22.4	89.5	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	17645.016		1.00	6.24	17645.016	149.200	132	88.2	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	20209.619		1.00	6.39	20209.619	149.200	133	89.3	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	5226.666		1.00	4.60	5226.666	25.000	25.1	100.5	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	8843.477	5700.873	1.00	1.23	19.391	25.000	24.3	97.3	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	15986.589	14223.045	1.00	2.13	14.050	25.000	24.7	98.8	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	1993.945	921.679	1.00	2.41	27.042	25.000	26.9	107.5	NO		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	6886.888	14223.045	1.00	3.14	6.053	25.000	24.7	98.7	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	2861.121	921.679	1.00	2.85	38.803	25.000	25.6	102.2	NO		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	28789.484	14223.045	1.00	2.94	25.302	25.000	24.6	98.3	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	15876.997	14223.045	1.00	3.53	13.954	25.000	24.7	98.7	NO		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	4471.988	921.679	1.00	3.68	60.650	25.000	25.3	101.3	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	2247.370	2639.062	1.00	4.00	10.645	25.000	22.2	88.7	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	21351.789	11092.197	1.00	4.51	24.062	25.000	25.8	103.0	NO		
101	68	13C8-PFOSA-RSD	506 > 78	6494.078	15913.266	1.00	4.56	5.101	25.000	24.2	96.8	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	23227.346	15304.393	1.00	4.06	18.971	25.000	23.1	92.4	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	5226.666	2639.062	1.00	4.60	24.756	25.000	25.0	100.1	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	24027.895	11202.074	1.00	4.90	26.812	25.000	27.3	109.2	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	2132.564	2639.062	1.00	4.87	10.101	25.000	24.7	98.8	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	4946.553	15913.266	1.00	5.06	3.886	25.000	24.1	96.3	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	28279.691	15913.266	1.00	5.23	22.214	25.000	23.0	92.1	NO		

Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	6847.058	15913.266	1.00	5.21	5.378	25.000	23.6	94.4	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	28596.172	11202.074	1.00	5.52	31.909	25.000	25.6	102.2	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	1508.487	2639.062	1.00	5.50	7.145	25.000	25.0	100.1	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	12513.086	15913.266	1.00	5.55	9.829	149.200	138	92.5	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	25665.590	15913.266	1.00	5.99	20.161	25.000	24.0	96.0	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	19972.426	15913.266	1.00	6.01	15.689	149.200	137	92.0	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	37662.957	15913.266	1.00	6.34	29.585	25.000	22.4	89.7	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	17645.016	15913.266	1.00	6.24	13.860	149.200	133	89.0	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	20209.619	15913.266	1.00	6.39	15.875	149.200	133	89.0	NO		
119	99	13C4-PFBA	217.0 > 172.0	5700.873	5700.873	1.00	1.23	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	14223.045	14223.045	1.00	2.94	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	15304.393	15304.393	1.00	4.05	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	921.679	921.679	1.00	3.68	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	11092.197	11092.197	1.00	4.51	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2639.062	2639.062	1.00	4.60	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	11202.074	11202.074	1.00	4.90	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	15913.266	15913.266	1.00	5.23	12.500	12.500	12.5	100.0	NO		

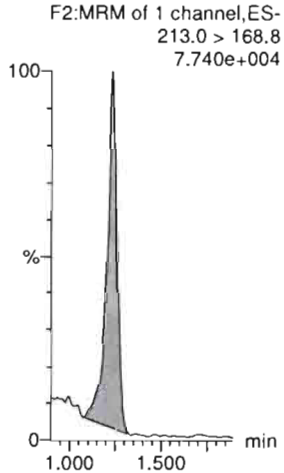
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

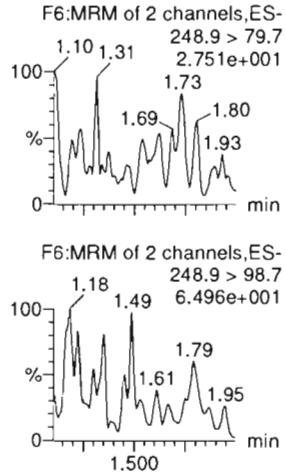
Method: D:\PFAS5.PRO\MethDB\PFAS_FULL_80C_030320_NEW_ICV.mdb 04 Mar 2020 10:29:05
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

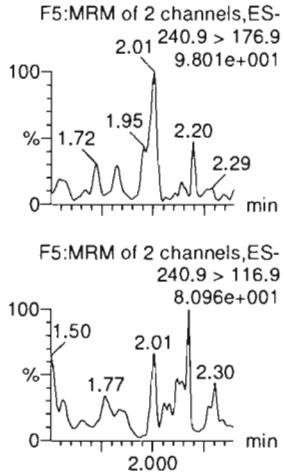
PFBA



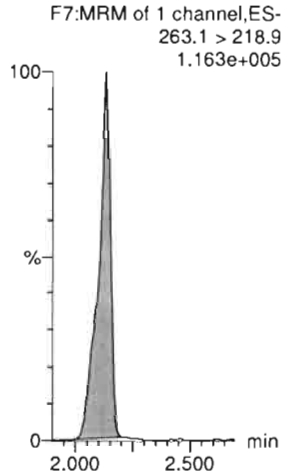
PFPrS



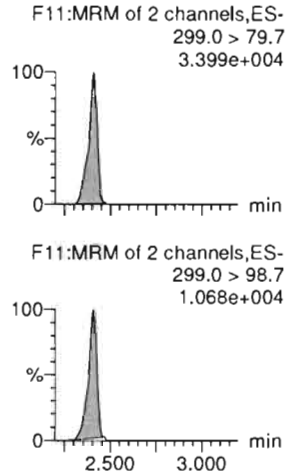
3:3 FTCA



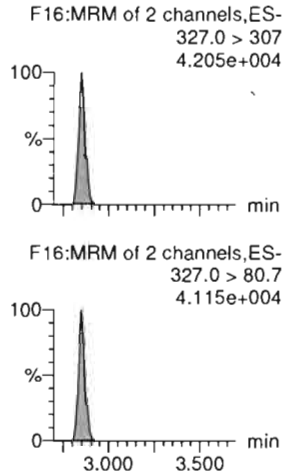
PFPeA



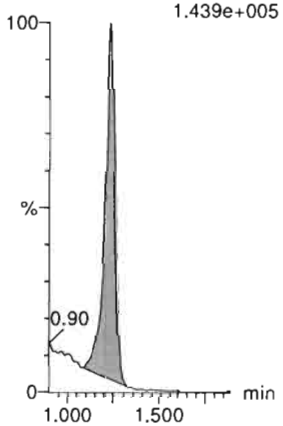
PFBS



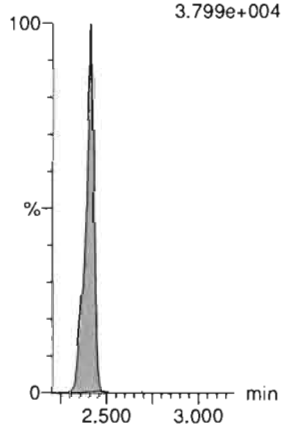
4:2 FTS



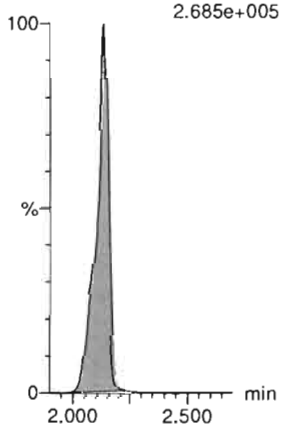
13C3-PFBA-EIS



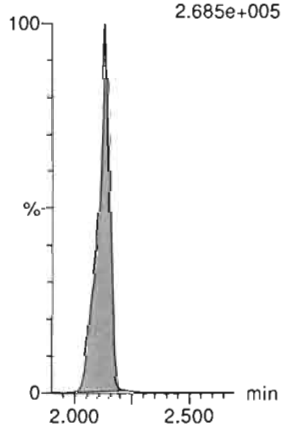
13C3-PFBS-EIS



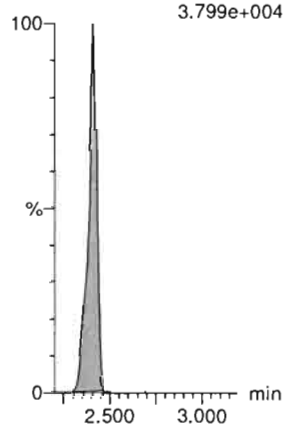
13C3-PFPeA-EIS



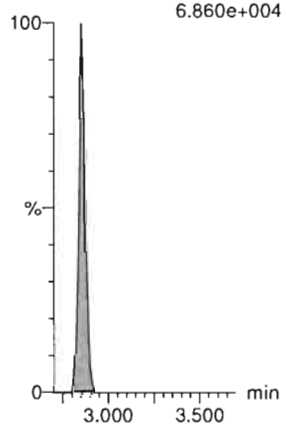
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

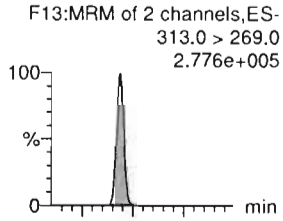


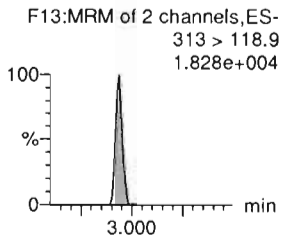
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

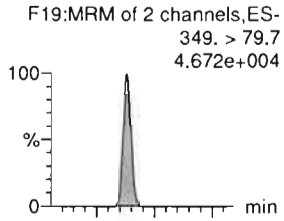
Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

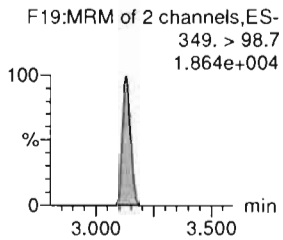
PFHxA



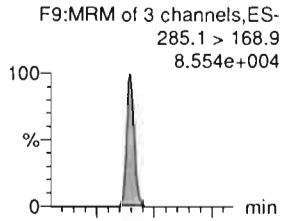


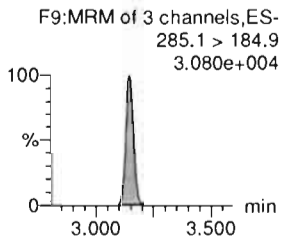
PFPeS



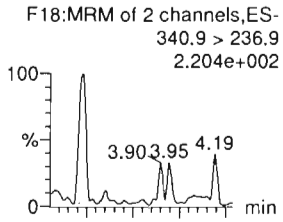


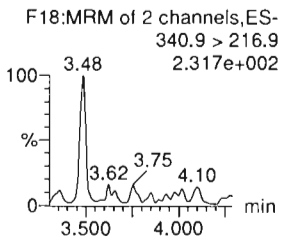
HFPO-DA



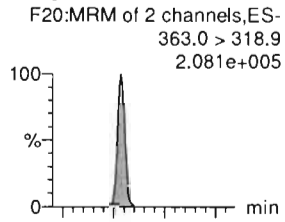


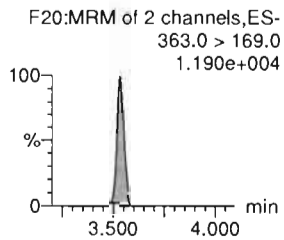
5:3 FTCA



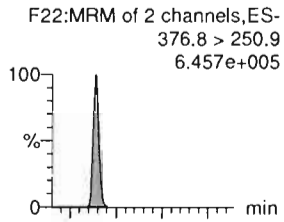


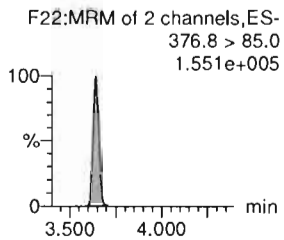
PFHpA



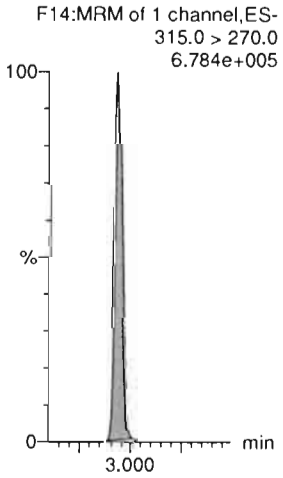


ADONA

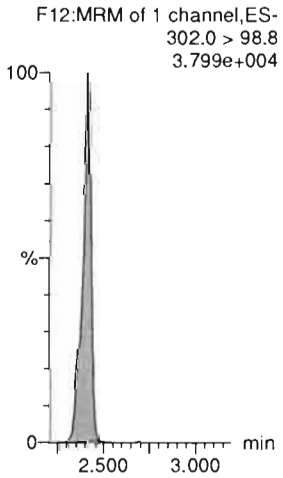




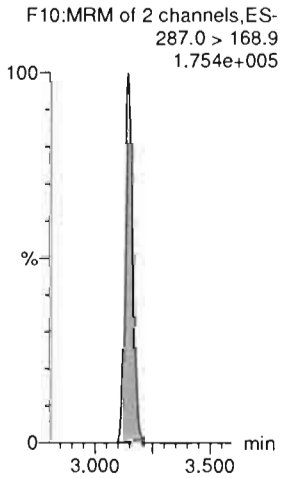
13C2-PFHxA-EIS



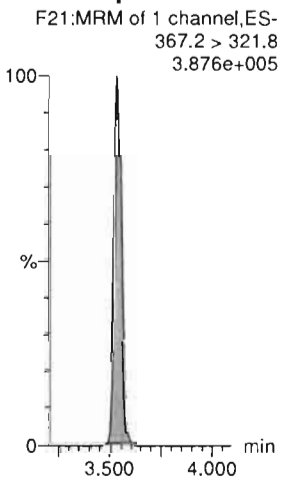
13C3-PFBS-EIS



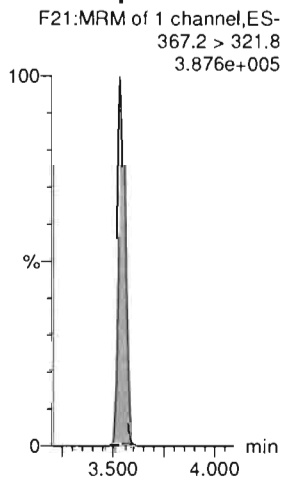
13C3-HFPO-DA-EIS



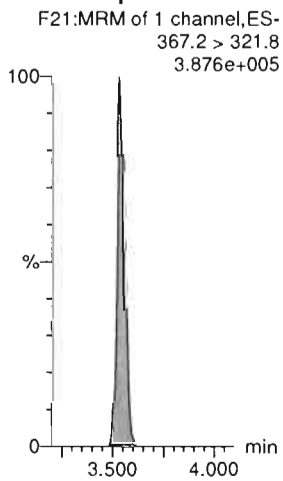
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

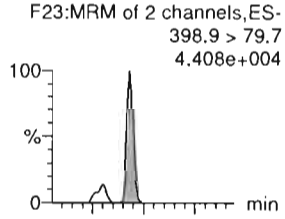


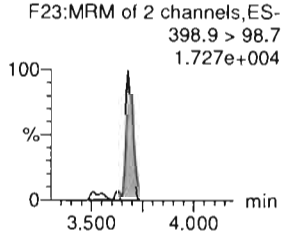
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

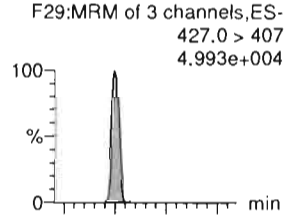
Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

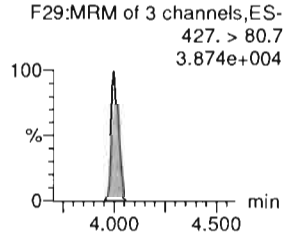
L-PFHxS



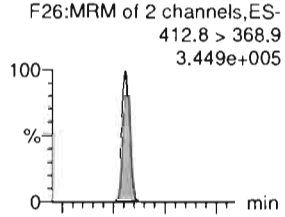


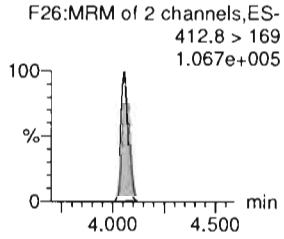
6:2 FTS



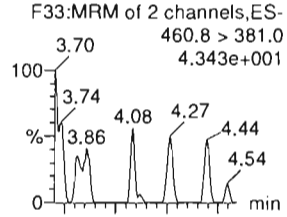


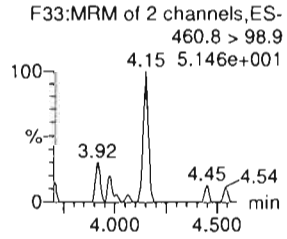
L-PFOA



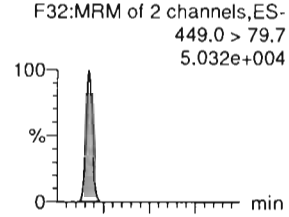


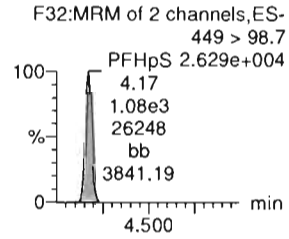
PFEChS



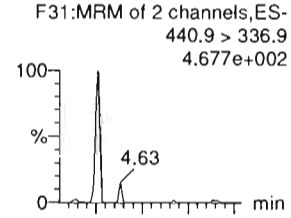


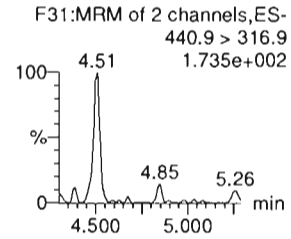
PFHpS



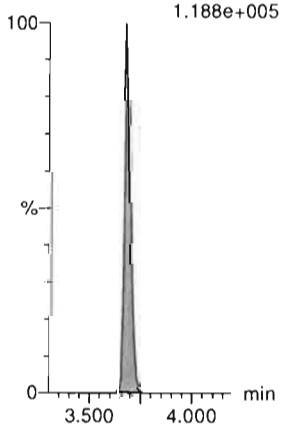


7:3 FTCA

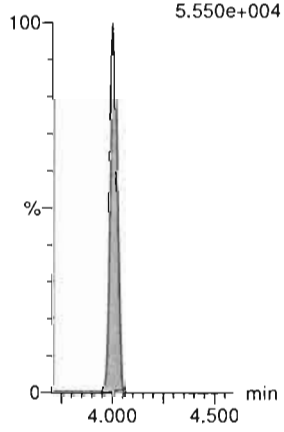




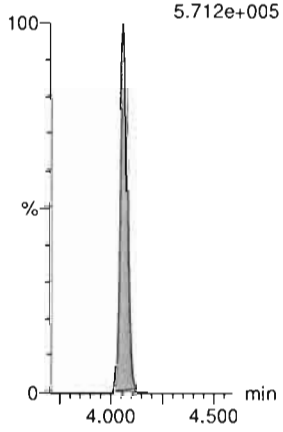
13C3-PFHxS-EIS



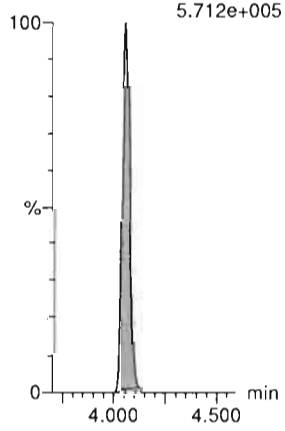
13C2-6:2 FTS-EIS



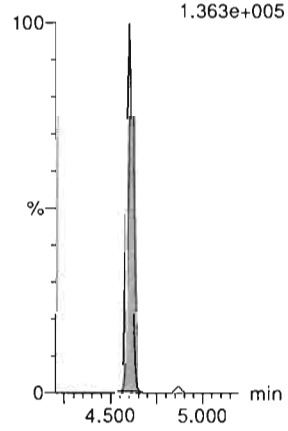
13C2-PFOA-EIS



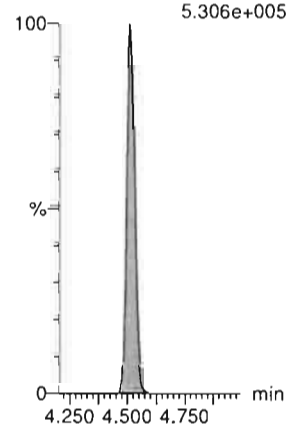
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

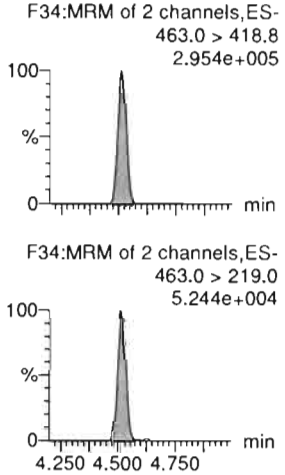


Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

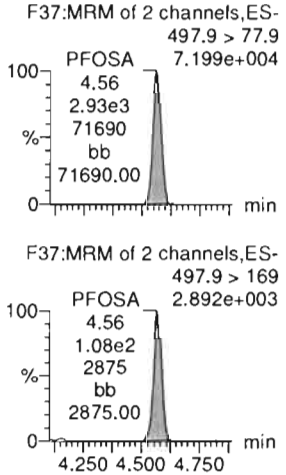
Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

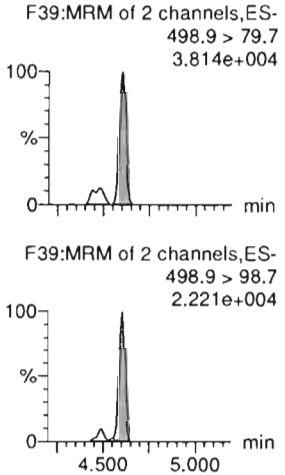
PFNA



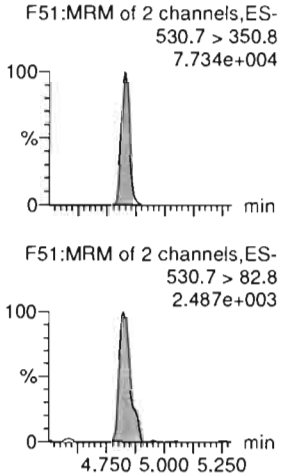
PFOSA



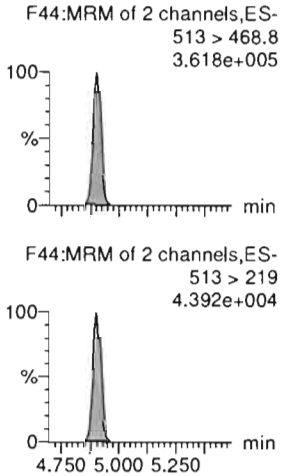
L-PFOS



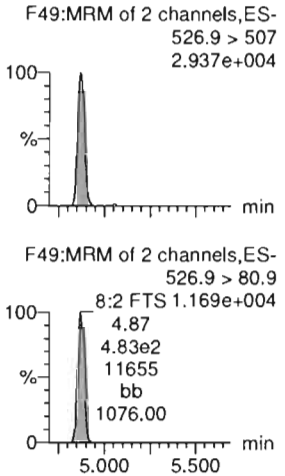
9Cl-PF30NS



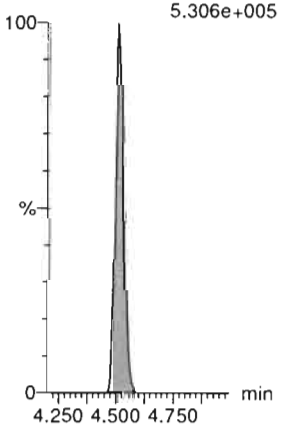
PFDA



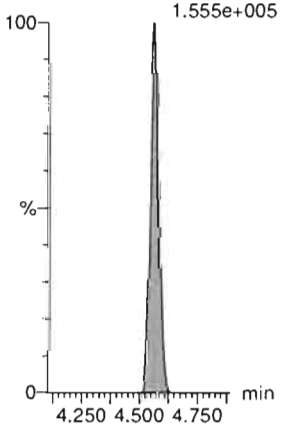
8:2 FTS



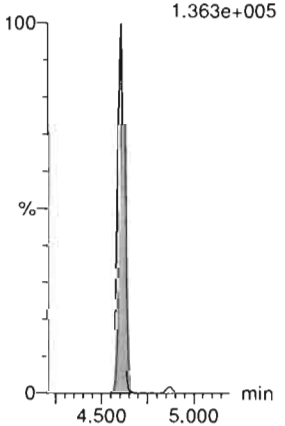
13C5-PFNA-EIS



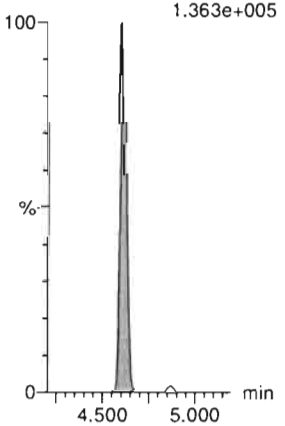
13C8-PFOSA-EIS



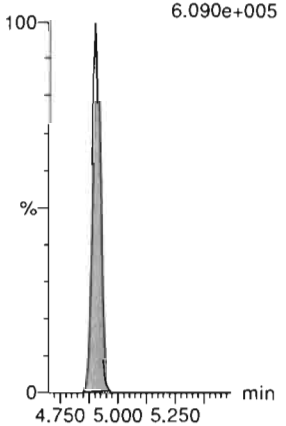
13C8-PFOS-EIS



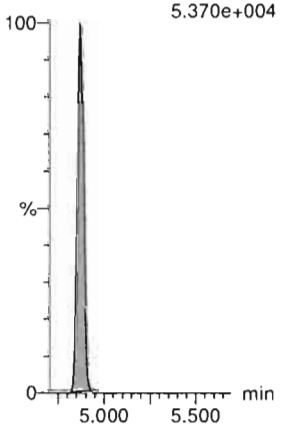
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

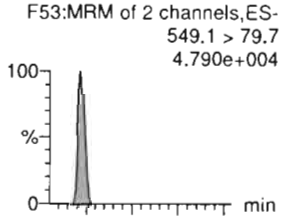


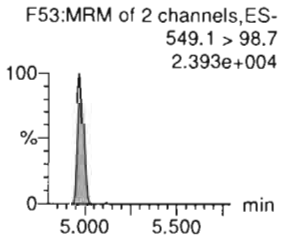
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

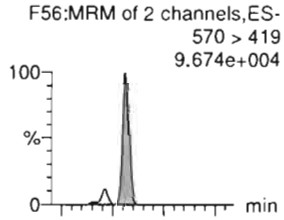
Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

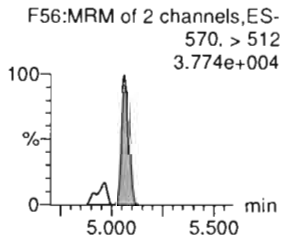
PFNS



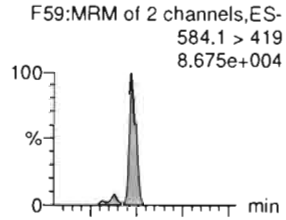


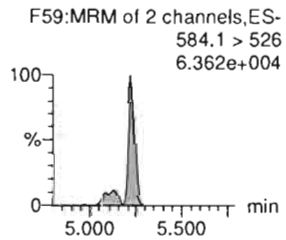
L-MeFOSAA



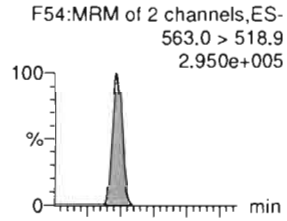


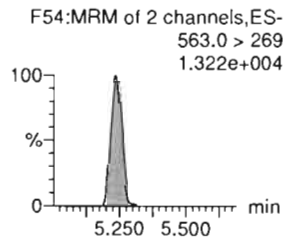
L-EtFOSAA



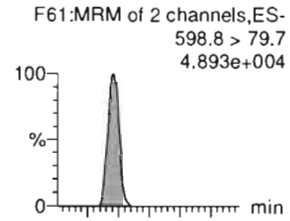


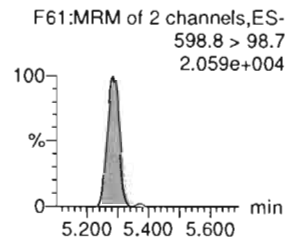
PFUdA



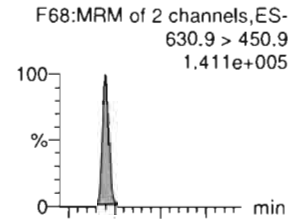


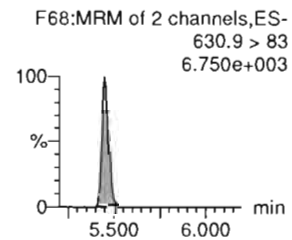
PFDS



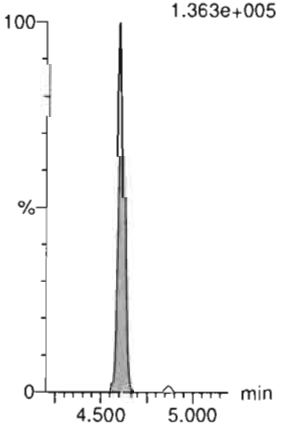


11Cl-PF30UdS

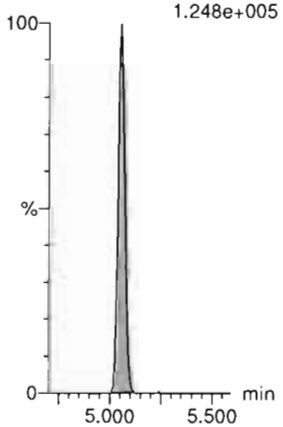




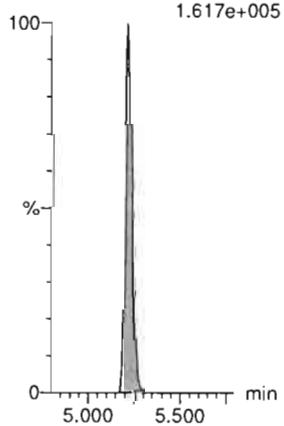
13C8-PFOS-EIS



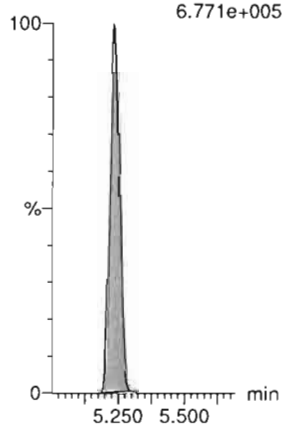
d3-N-MeFOSAA-EIS



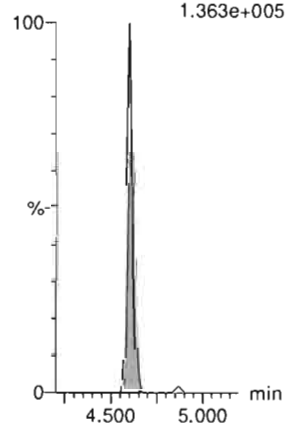
d5-N-EtFOSAA-EIS



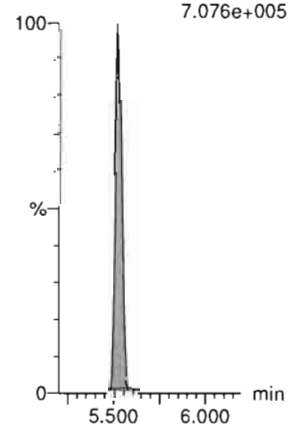
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

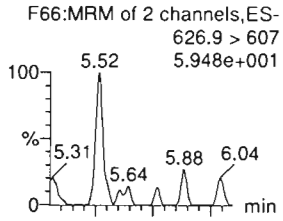


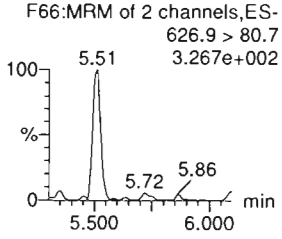
Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

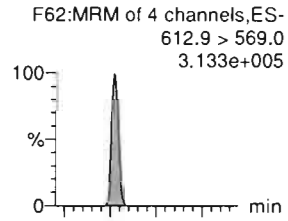
Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

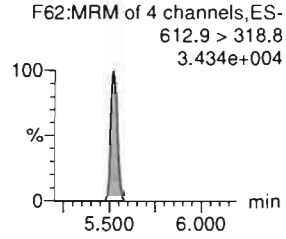
10:2 FTS



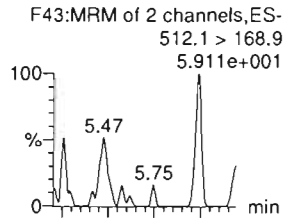


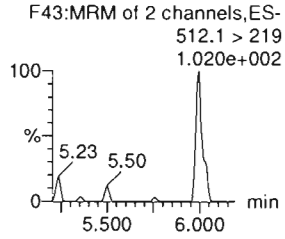
PFDoA



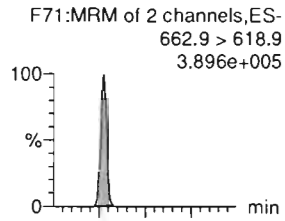


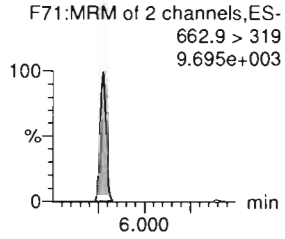
N-MeFOSA



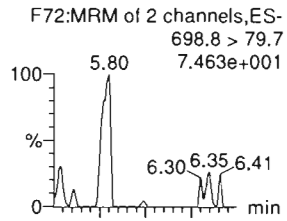


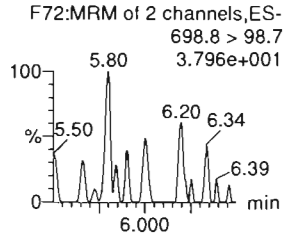
PFTrDA



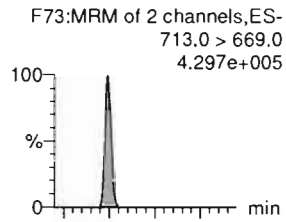


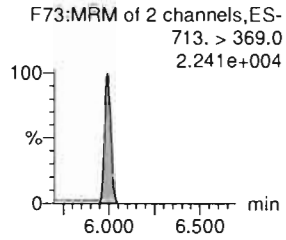
PFDoS



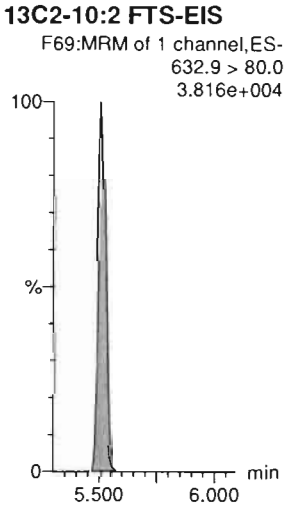


PFTeDA

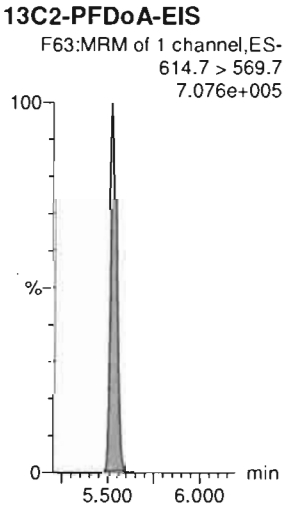




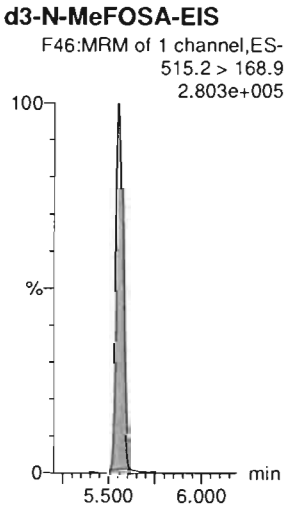
13C2-10:2 FTS-EIS



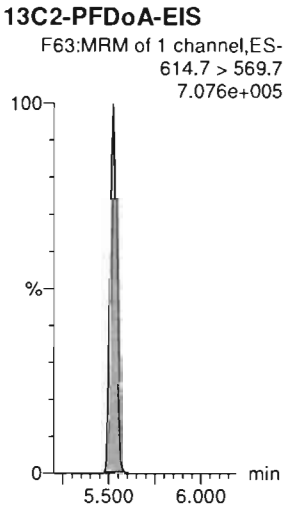
13C2-PFDoA-EIS



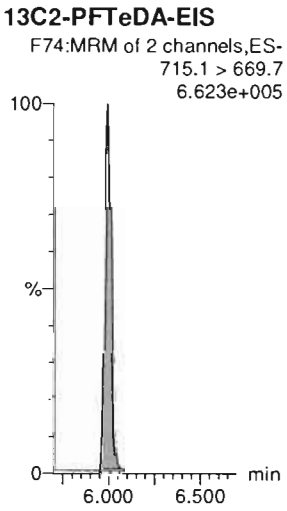
d3-N-MeFOSA-EIS



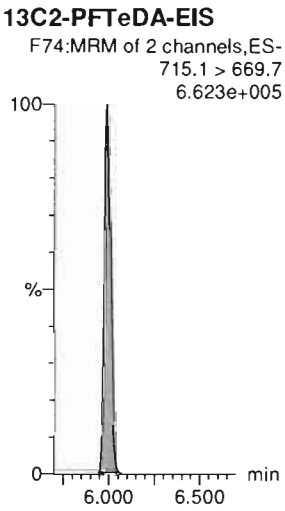
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

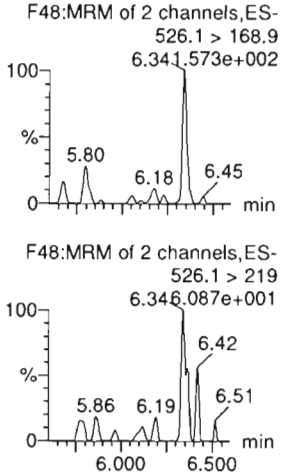


Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

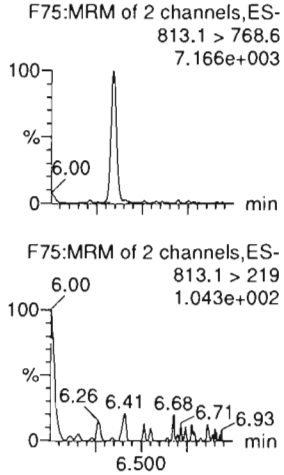
Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

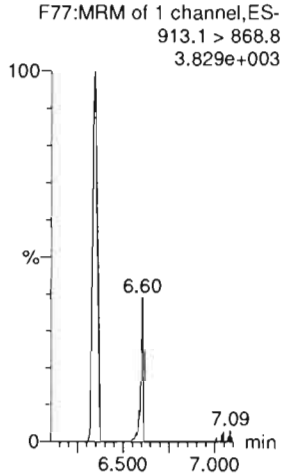
N-EtFOSA



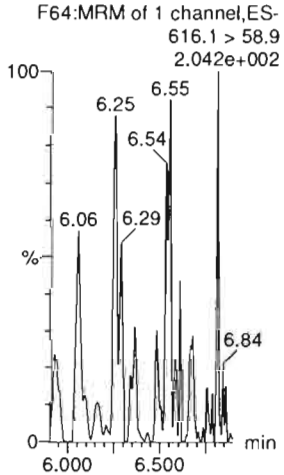
PFHxDA



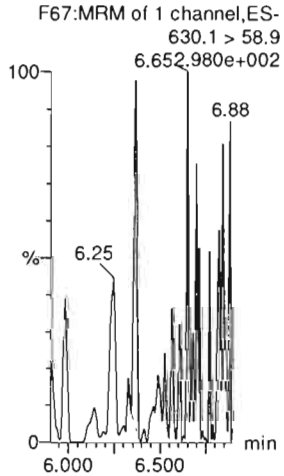
PFODA



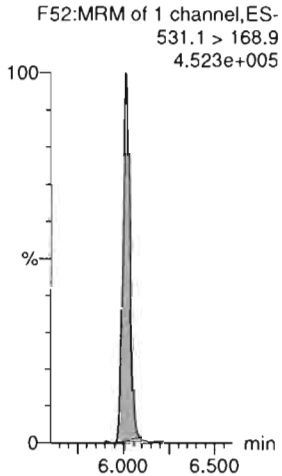
N-MeFOSE



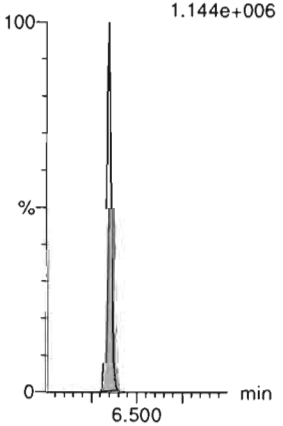
N-EtFOSE



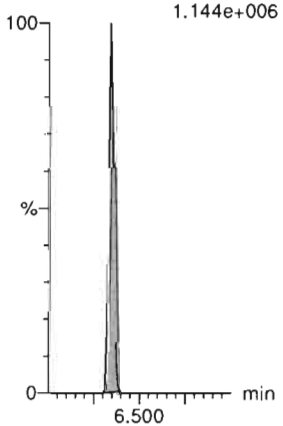
d5-N-ETFOSA-EIS



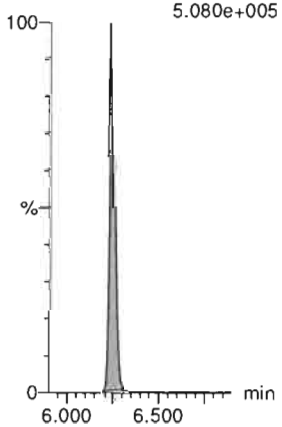
13C2-PFHxDA-EIS



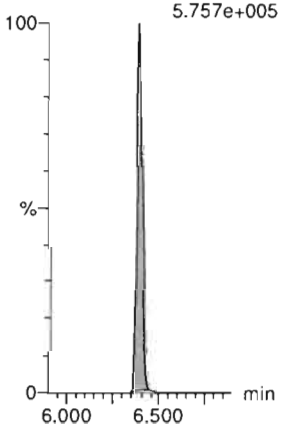
13C2-PFHxDA-EIS



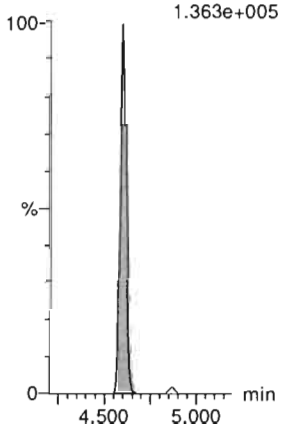
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS

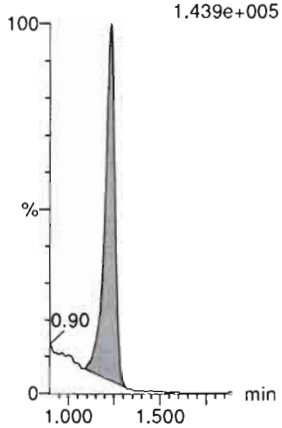


Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

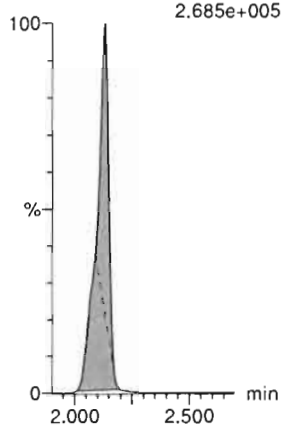
Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

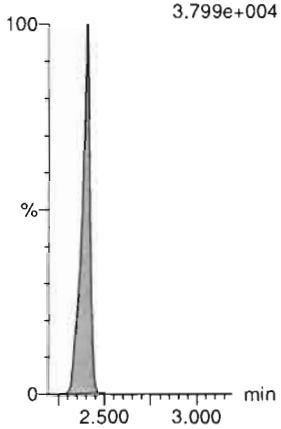
13C3-PFBA-RSD
F3:MRM of 1 channel,ES-
216.1 > 171.8
1.439e+005



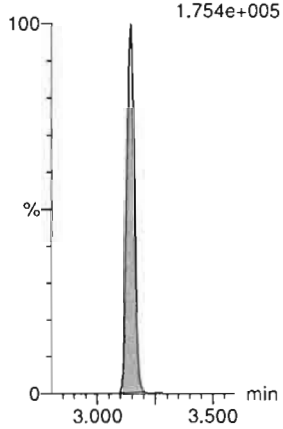
13C3-PFPeA-RSD
F8:MRM of 1 channel,ES-
266.0 > 221.8
2.685e+005



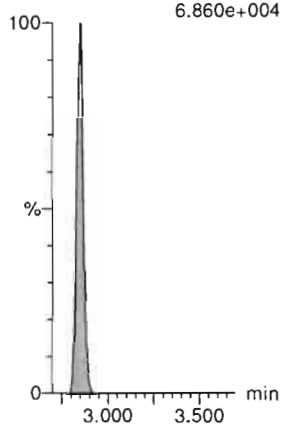
13C3-PFBS-RSD
F12:MRM of 1 channel,ES-
302.0 > 98.8
3.799e+004



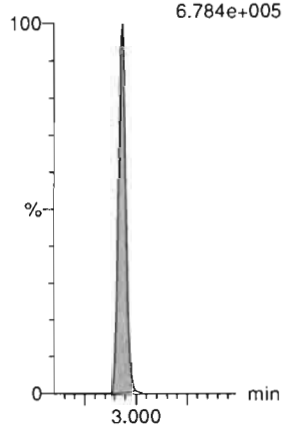
13C3-HFPO-DA-RSD
F10:MRM of 2 channels,ES-
287.0 > 168.9
1.754e+005



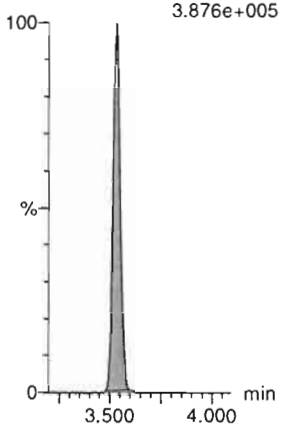
13C2-4:2 FTS-RSD
F17:MRM of 2 channels,ES-
329.0 > 79.7
6.860e+004



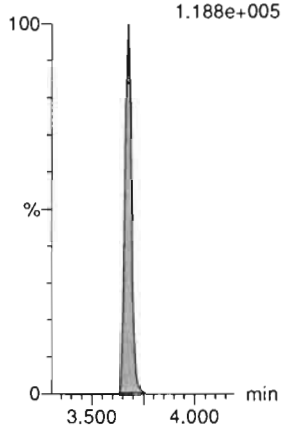
13C2-PFHxA-RSD
F14:MRM of 1 channel,ES-
315.0 > 270.0
6.784e+005



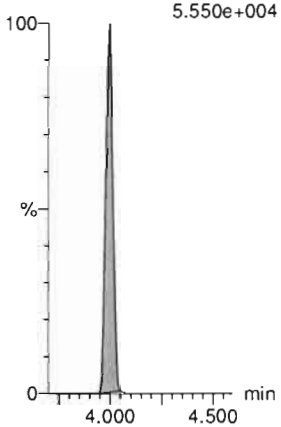
13C4-PFHpA-RSD
F21:MRM of 1 channel,ES-
367.2 > 321.8
3.876e+005



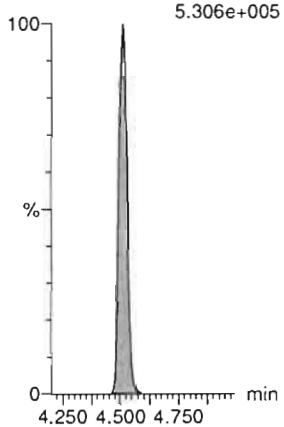
13C3-PFHxS-RSD
F24:MRM of 1 channel,ES-
401.8 > 79.7
1.188e+005



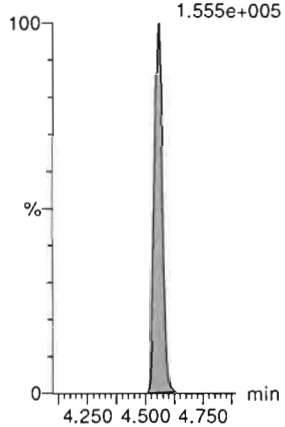
13C2-6:2 FTS-RSD
F30:MRM of 1 channel,ES-
429.0 > 79.7
5.550e+004



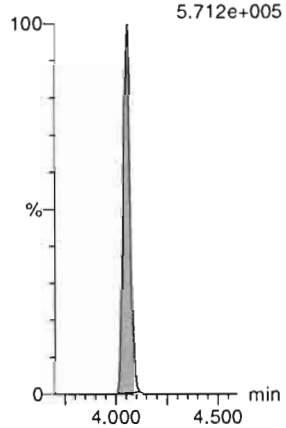
13C5-PFNA-RSD
F35:MRM of 1 channel,ES-
468.2 > 422.9
5.306e+005



13C8-PFOSA-RSD
F41:MRM of 1 channel,ES-
506 > 78
1.555e+005



13C2-PFOA-RSD
F27:MRM of 1 channel,ES-
414.9 > 369.7
5.712e+005

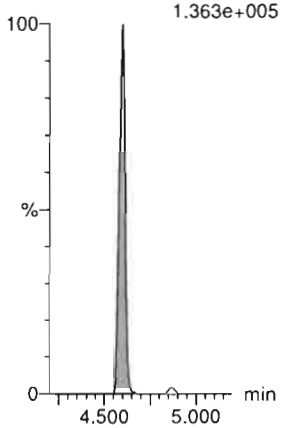


Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

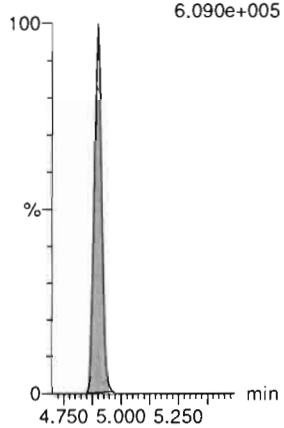
Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

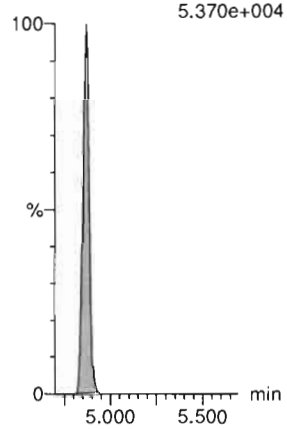
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
1.363e+005



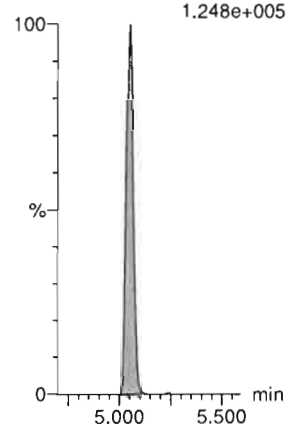
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
6.090e+005



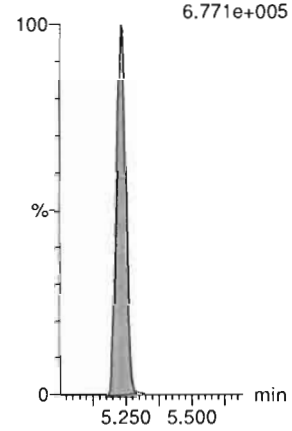
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
5.370e+004



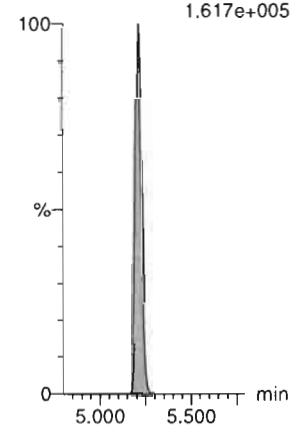
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
1.248e+005



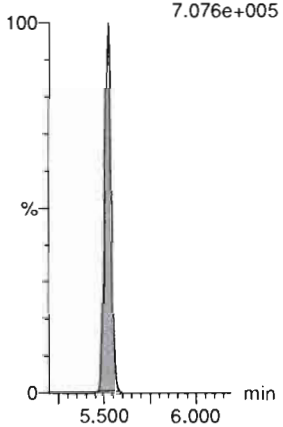
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
6.771e+005



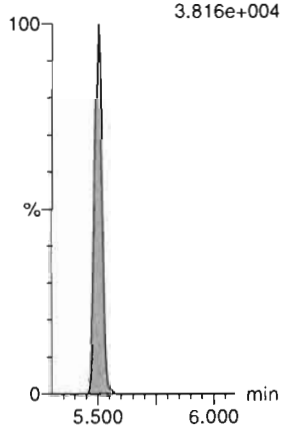
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
1.617e+005



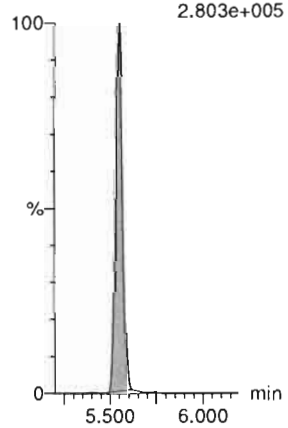
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
7.076e+005



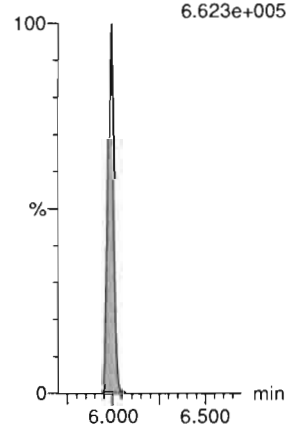
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
3.816e+004



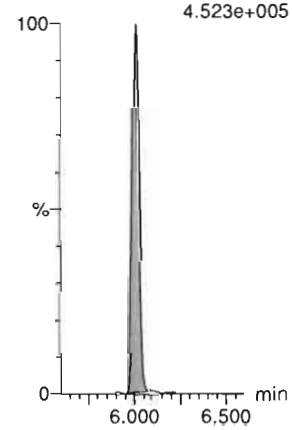
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.803e+005



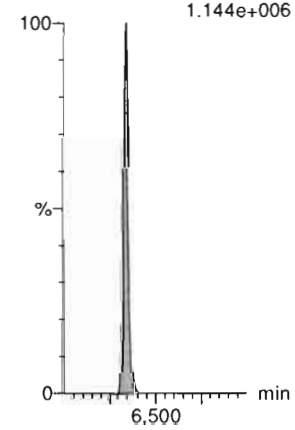
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
6.623e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
4.523e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
1.144e+006

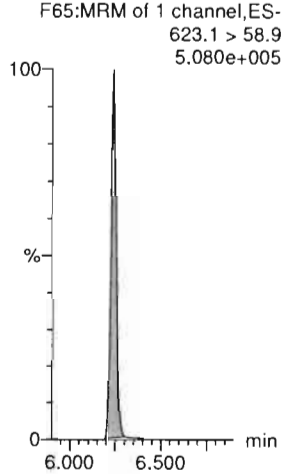


Dataset: D:\PFAS5.PRO\RESULTS\200304P2\200304P2-ICV.qld

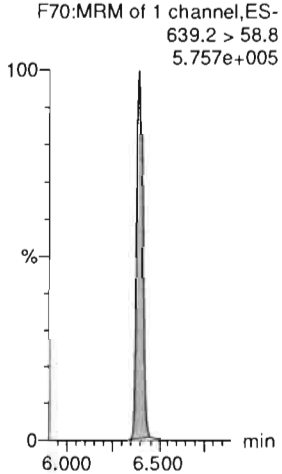
Last Altered: Thursday, March 05, 2020 10:28:13 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:28:44 Pacific Standard Time

Name: 200304P2-14, Date: 04-Mar-2020, Time: 21:27:24, ID: ICV200304P2-1 PFC ICV 20C0314, Description: PFC ICV 20B1112

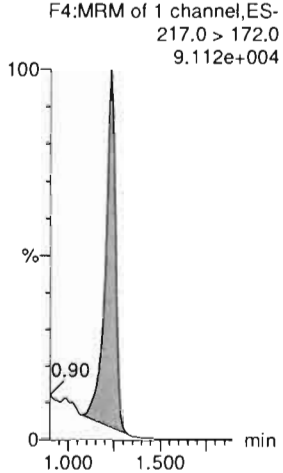
d7-N-MeFOSE-RSD



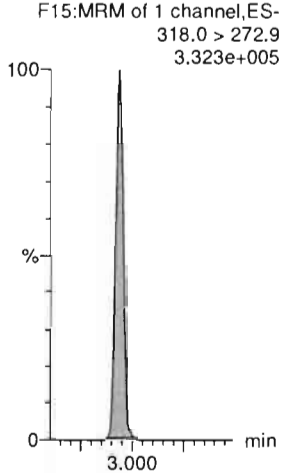
d9-N-EtFOSE-RSD



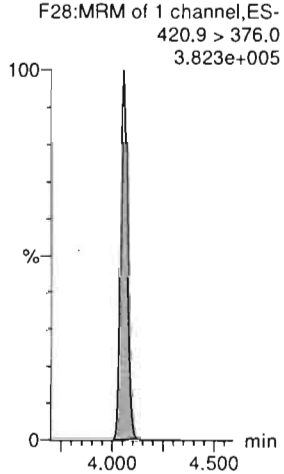
13C4-PFBA



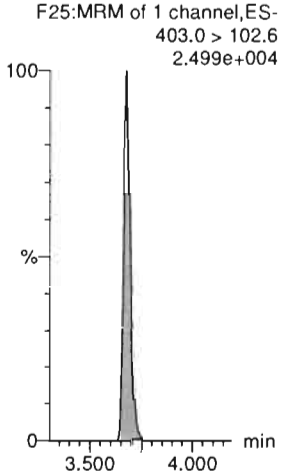
13C5-PFHxA



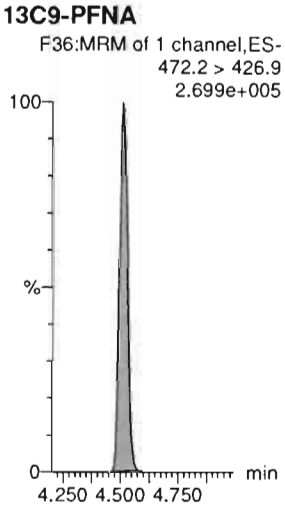
13C8-PFOA



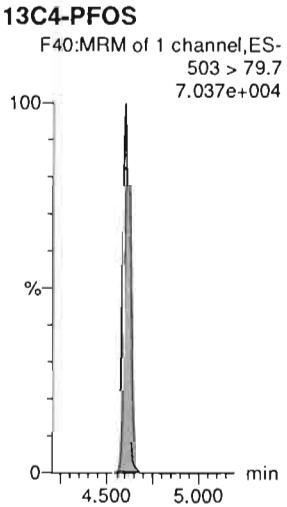
18O2-PFHxS



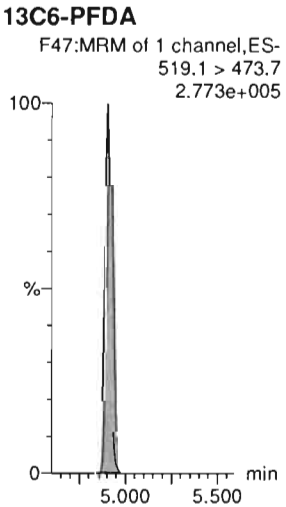
13C9-PFNA



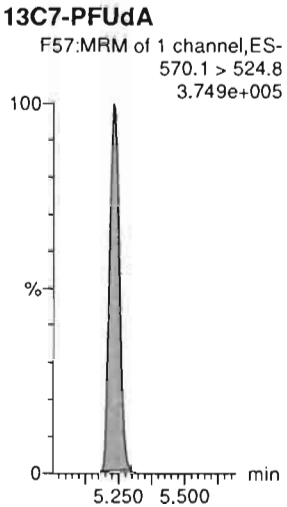
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Vista Analytical Laboratory

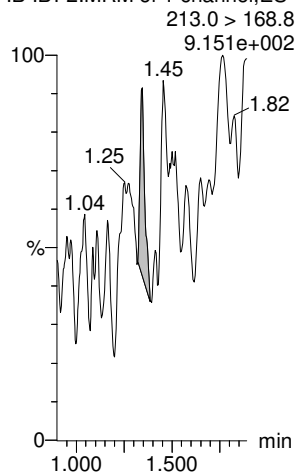
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

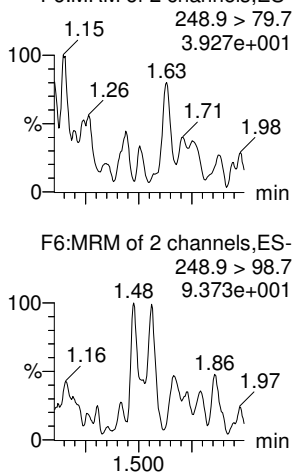
Method: D:\PFAS5.PRO\MethDB\NEW_PFAS_80C_030420.mdb 05 Mar 2020 09:51:06
Calibration: D:\PFAS5.PRO\CurveDB\C18_VAL-PFAS_Q5_03-04-20.cdb 05 Mar 2020 10:00:36

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

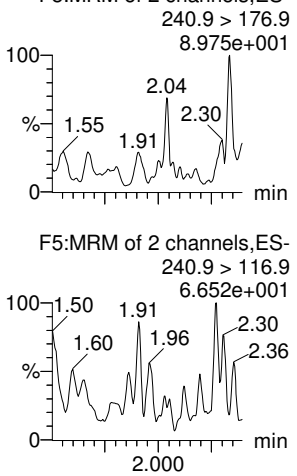
PFBA



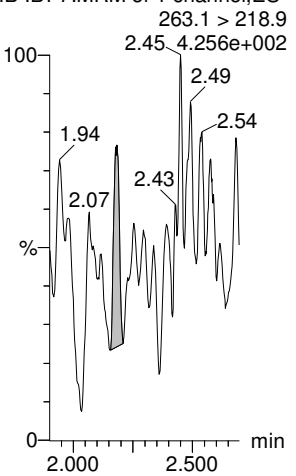
PFPrS



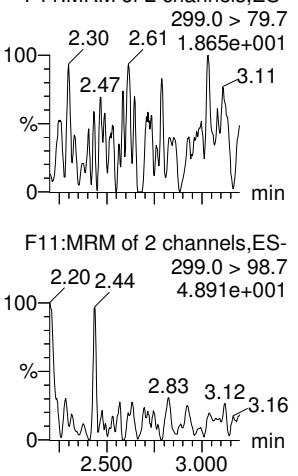
3:3 FTCA



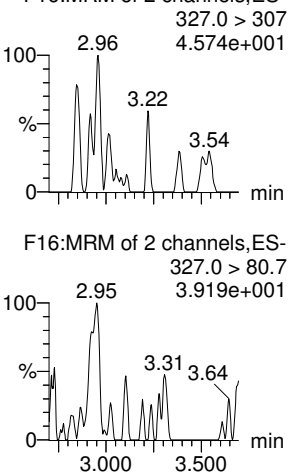
PFPeA



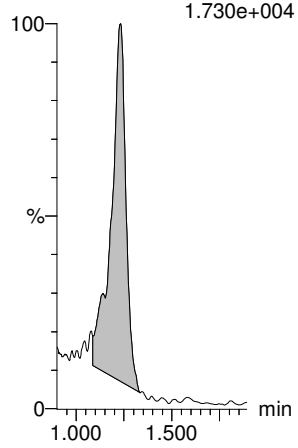
PFBS



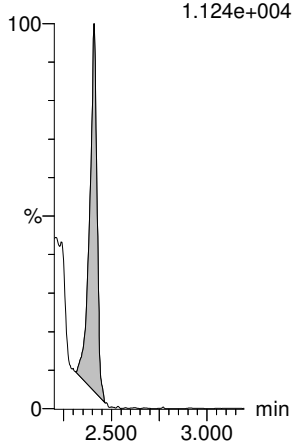
4:2 FTS



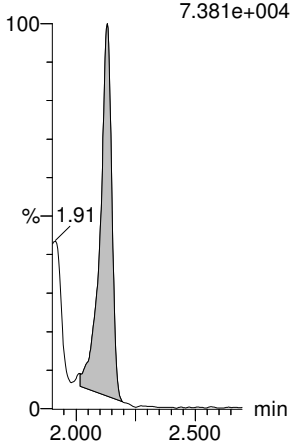
13C3-PFBA-EIS



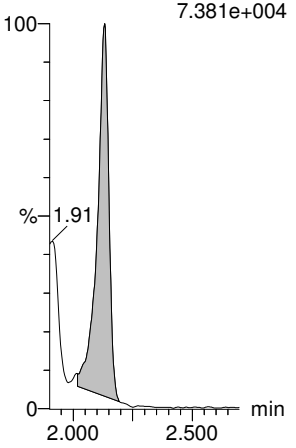
13C3-PFBS-EIS



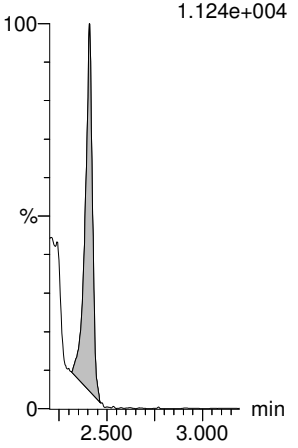
13C3-PFPeA-EIS



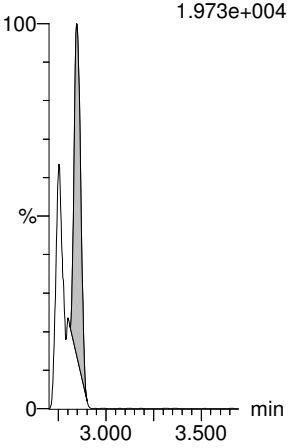
13C3-PFPeA-EIS



13C3-PFBS-EIS



13C2-4:2 FTS-EIS

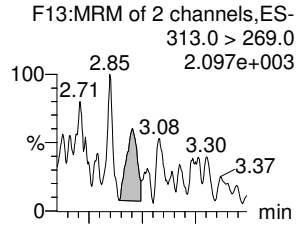


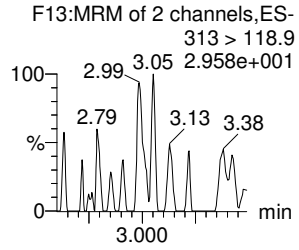
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

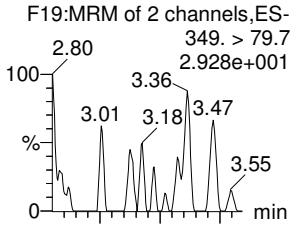
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

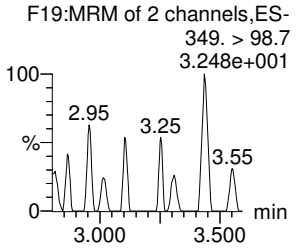
PFHxA



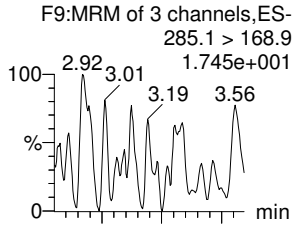


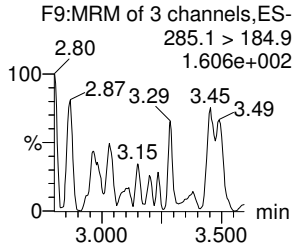
PFPeS



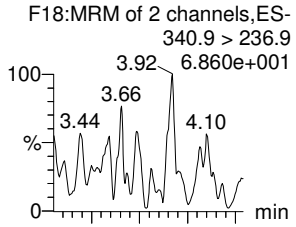


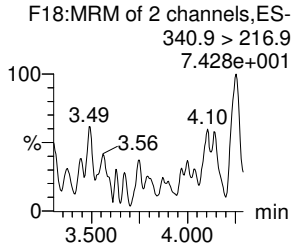
HFPO-DA



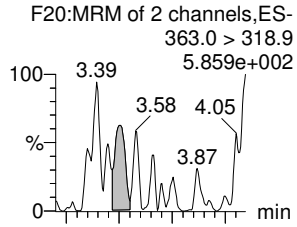


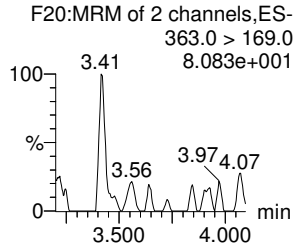
5:3 FTCA



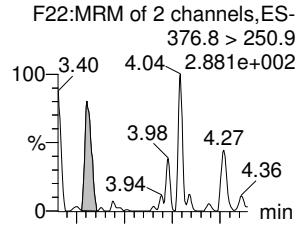


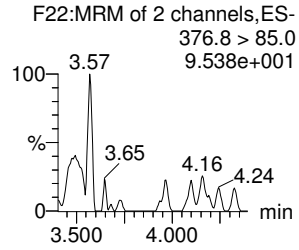
PFHpA



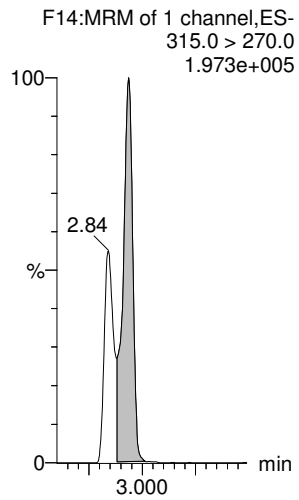


ADONA

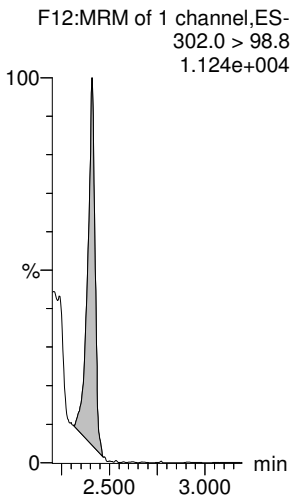




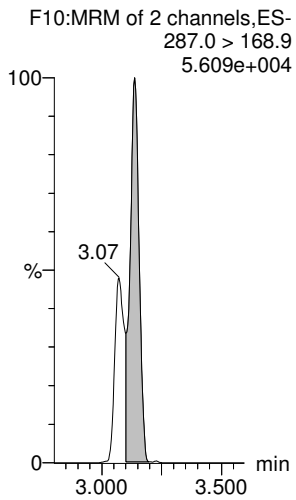
13C2-PFHxA-EIS



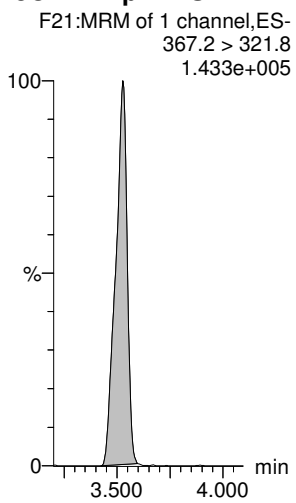
13C3-PFBS-EIS



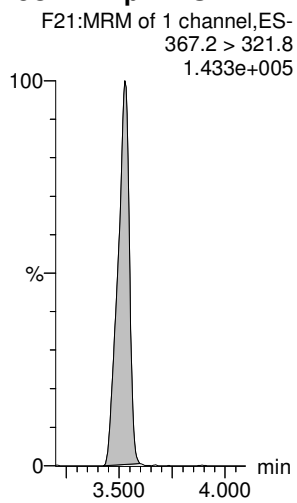
13C3-HFPO-DA-EIS



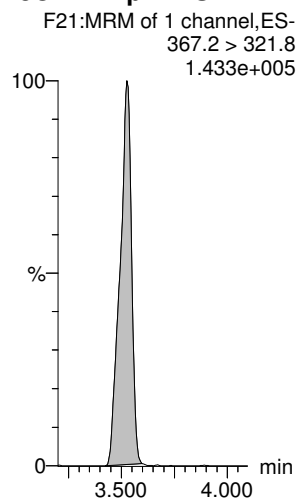
13C4-PFHpA-EIS



13C4-PFHpA-EIS



13C4-PFHpA-EIS

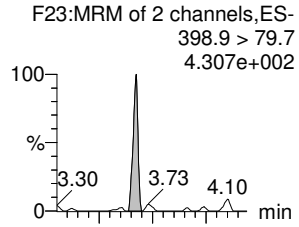


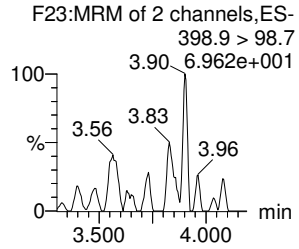
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

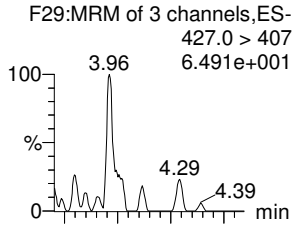
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

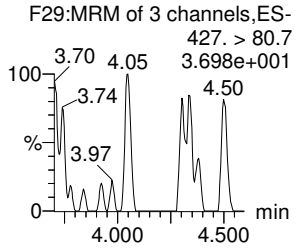
L-PFHxS



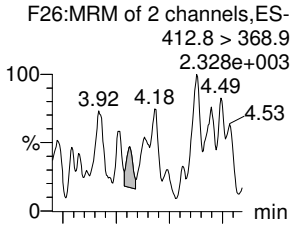


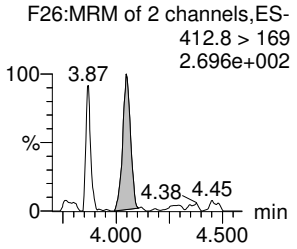
6:2 FTS



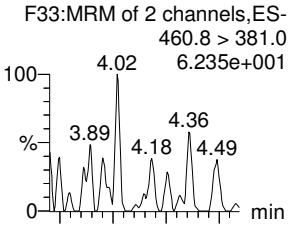


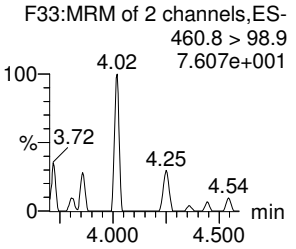
L-PFOA



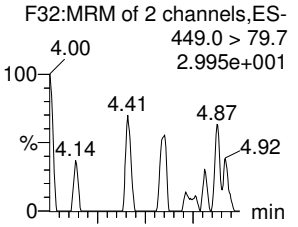


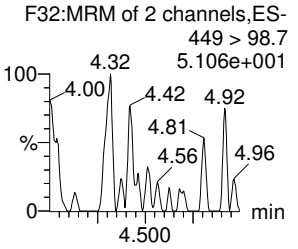
PFEChS



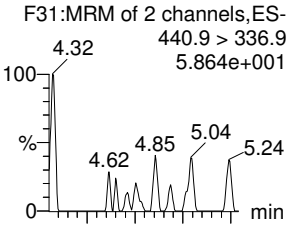


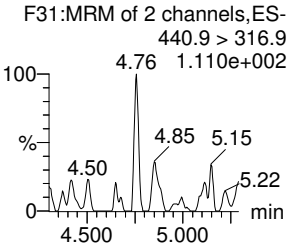
PFHpS



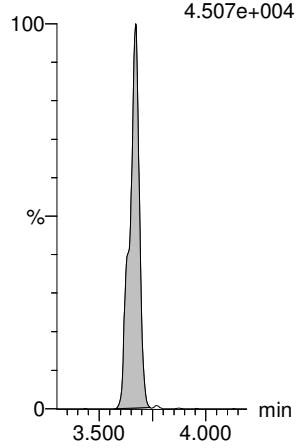


7:3 FTCA

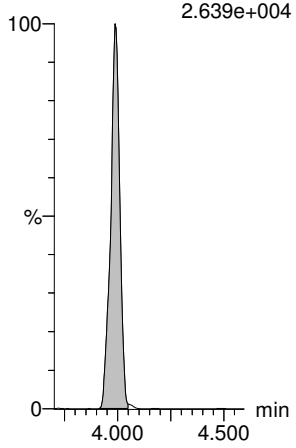




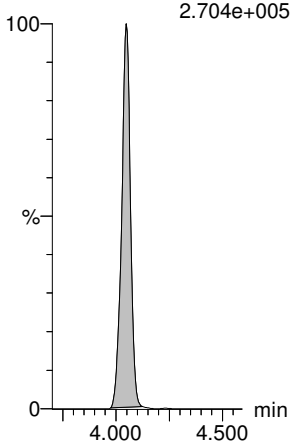
13C3-PFHxS-EIS



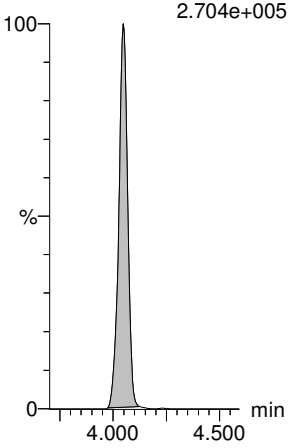
13C2-6:2 FTS-EIS



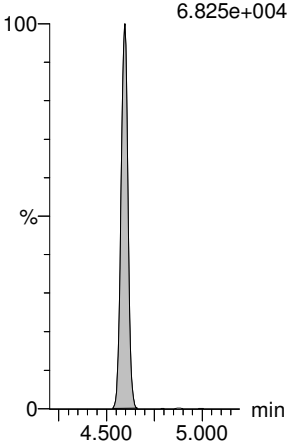
13C2-PFOA-EIS



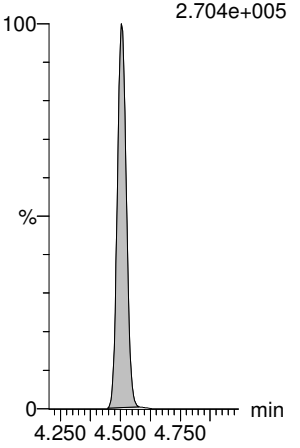
13C2-PFOA-EIS



13C8-PFOS-EIS



13C5-PFNA-EIS

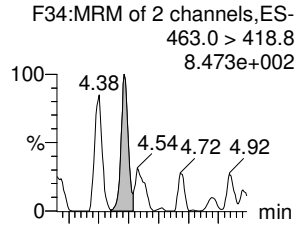


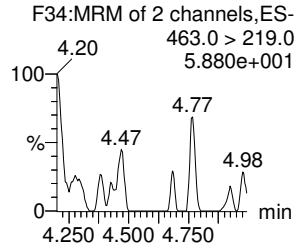
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

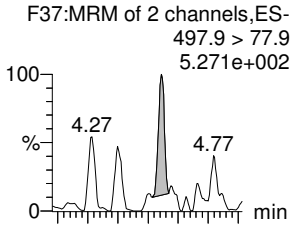
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

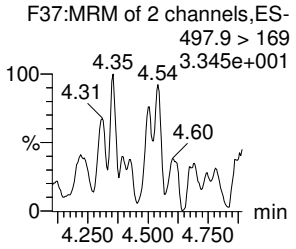
PFNA



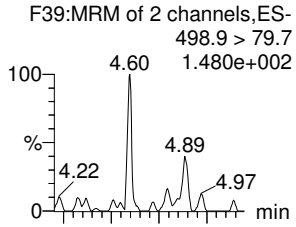


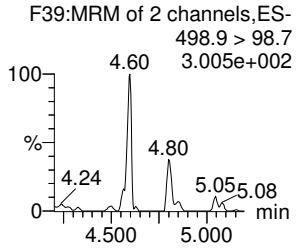
PFOSA



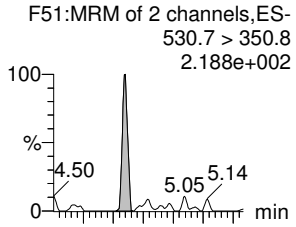


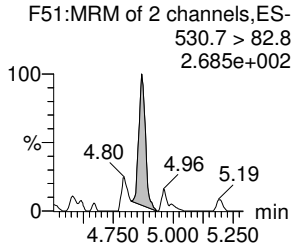
L-PFOS



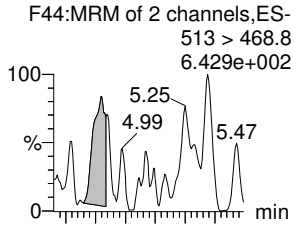


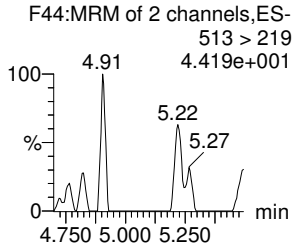
9Cl-PF30NS



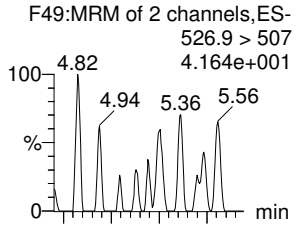


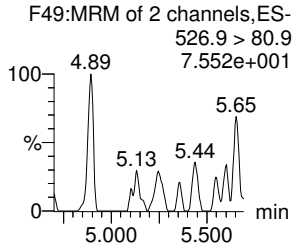
PFDA



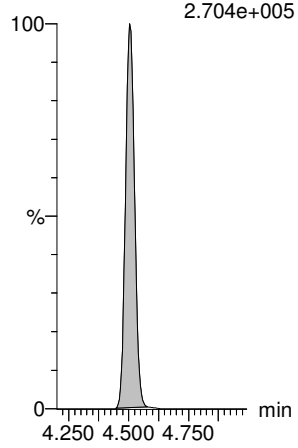


8:2 FTS

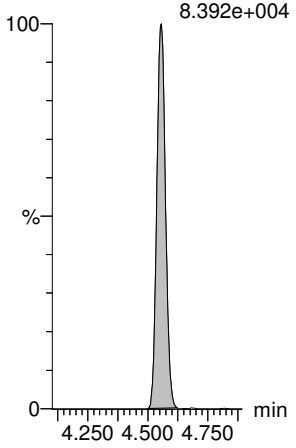




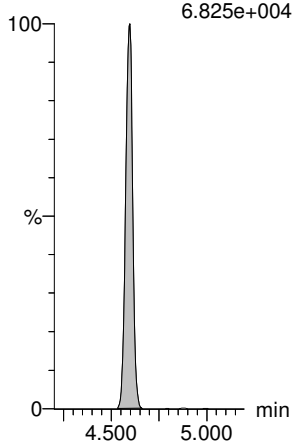
13C5-PFNA-EIS



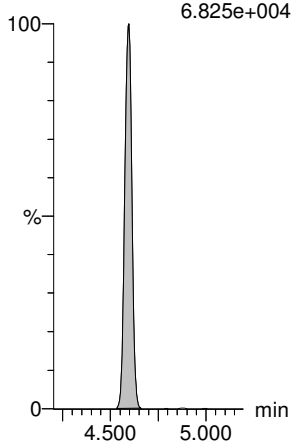
13C8-PFOSA-EIS



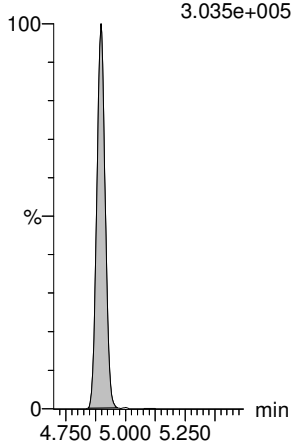
13C8-PFOS-EIS



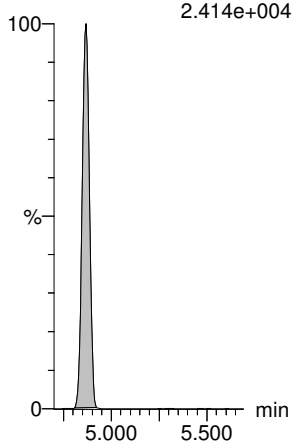
13C8-PFOS-EIS



13C2-PFDA-EIS



13C2-8:2 FTS-EIS

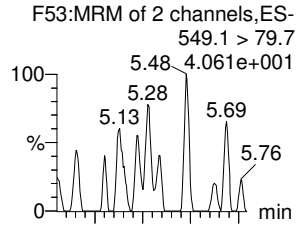


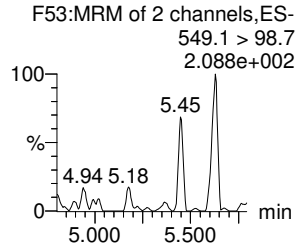
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

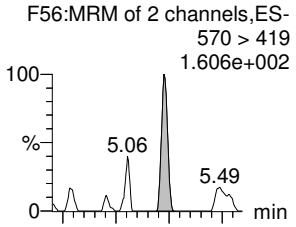
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

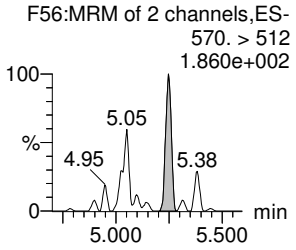
PFNS



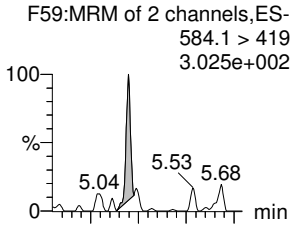


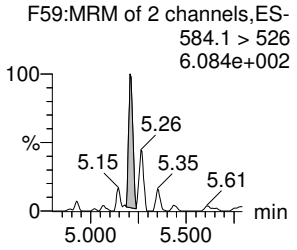
L-MeFOSAA



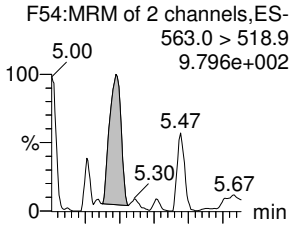


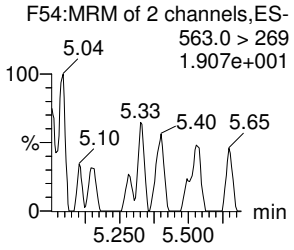
L-EtFOSAA



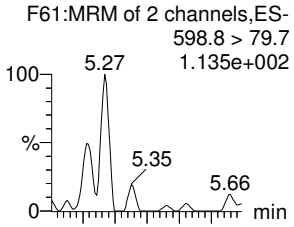


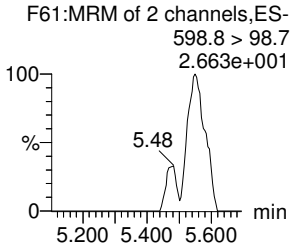
PFUdA



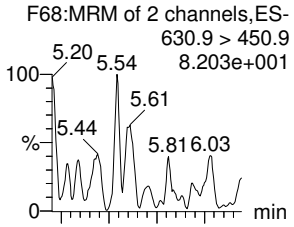


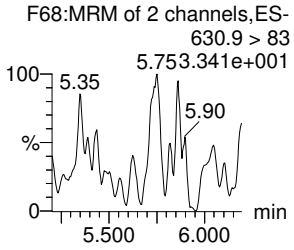
PFDS



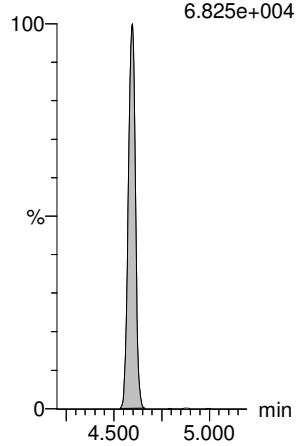


11Cl-PF30UdS

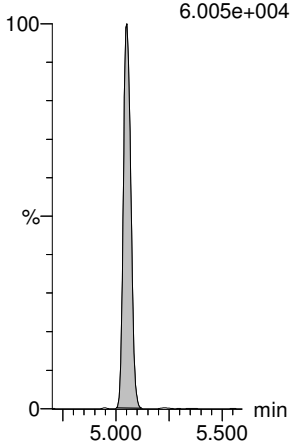




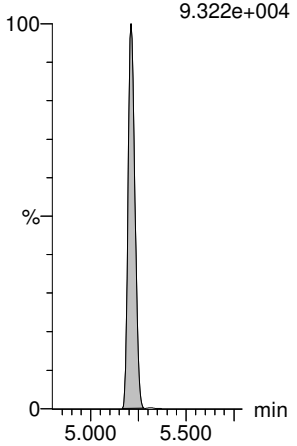
13C8-PFOS-EIS



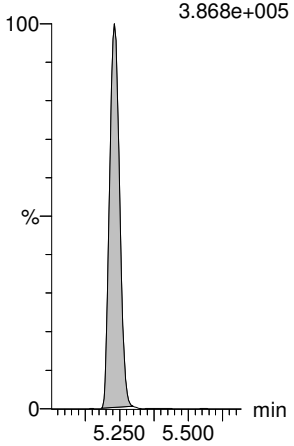
d3-N-MeFOSAA-EIS



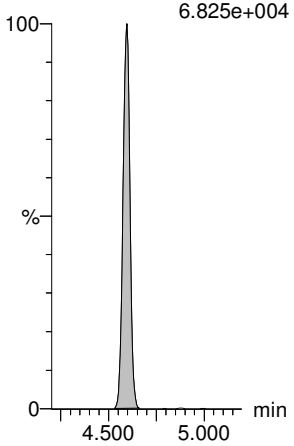
d5-N-EtFOSAA-EIS



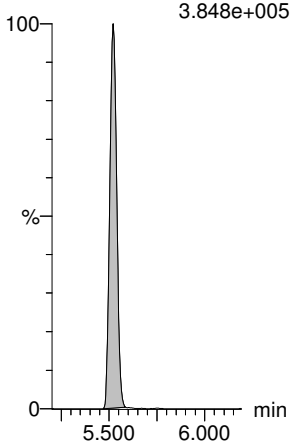
13C2-PFUdA-EIS



13C8-PFOS-EIS



13C2-PFDoA-EIS

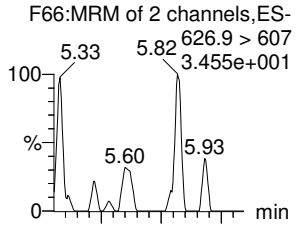


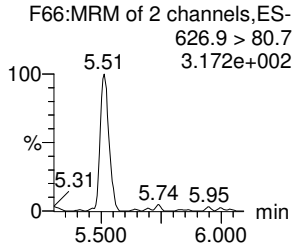
Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

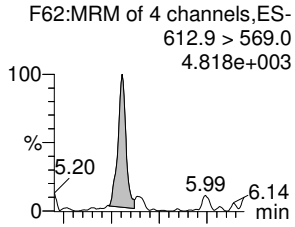
Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

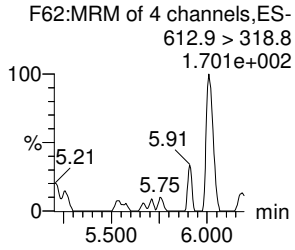
10:2 FTS



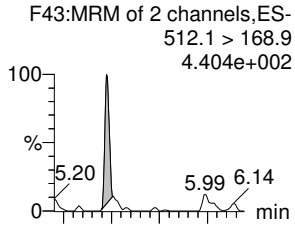


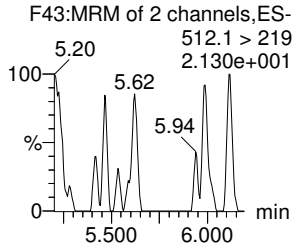
PFDoA



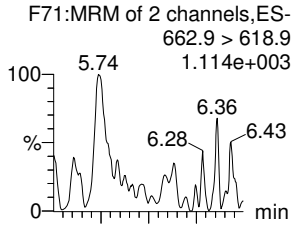


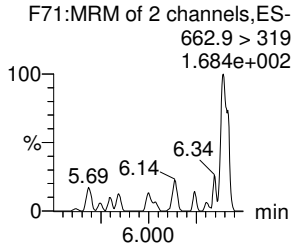
N-MeFOSA



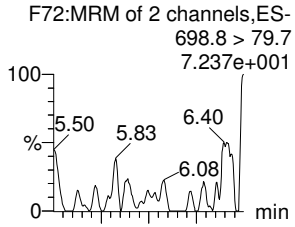


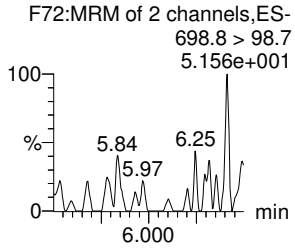
PFTrDA



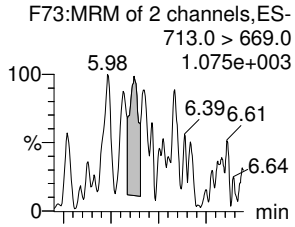


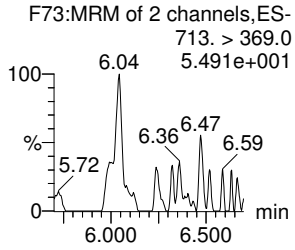
PFDoS



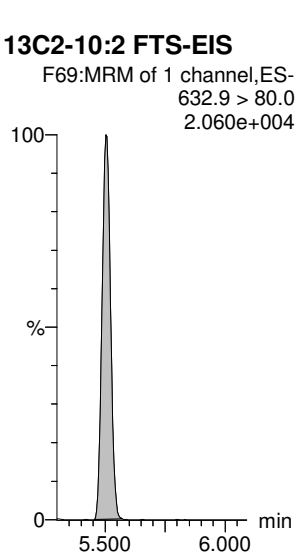


PFTeDA

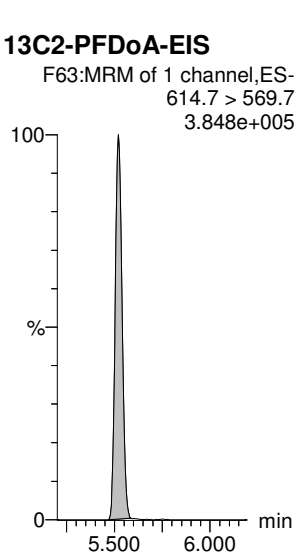




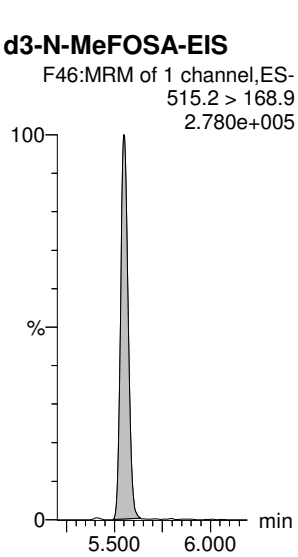
13C2-10:2 FTS-EIS



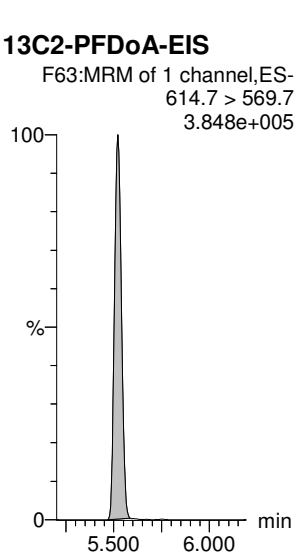
13C2-PFDoA-EIS



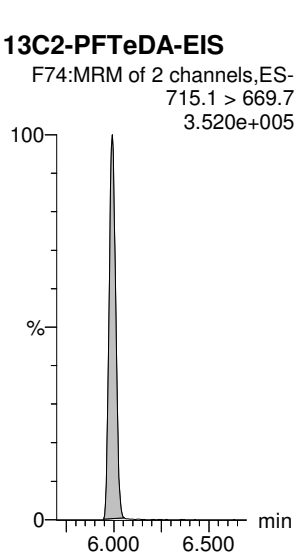
d3-N-MeFOSA-EIS



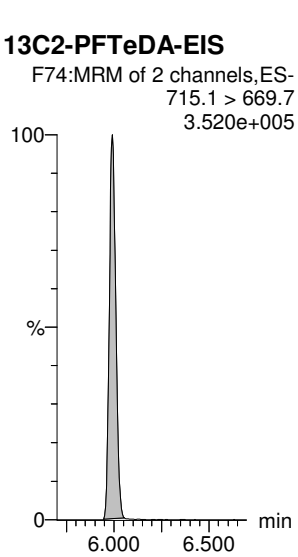
13C2-PFDoA-EIS



13C2-PFTeDA-EIS



13C2-PFTeDA-EIS

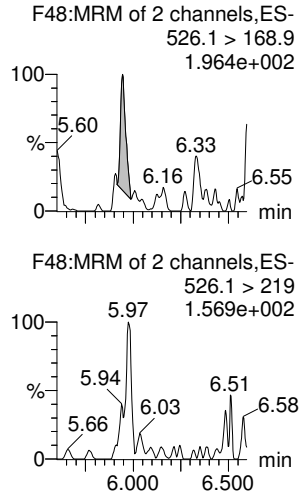


Dataset: Untitled

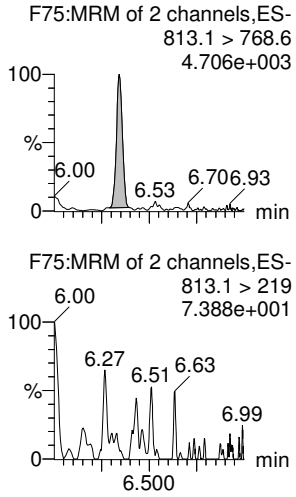
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

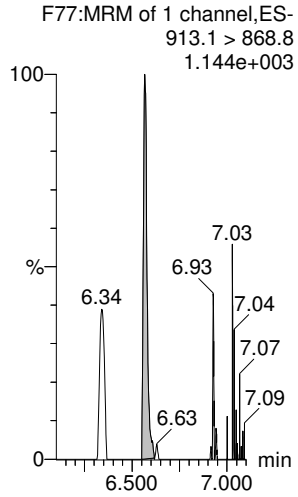
N-EtFOSA



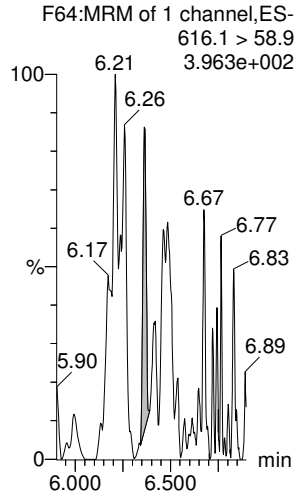
PFHxDA



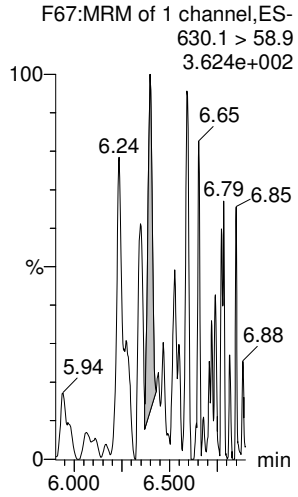
PFODA



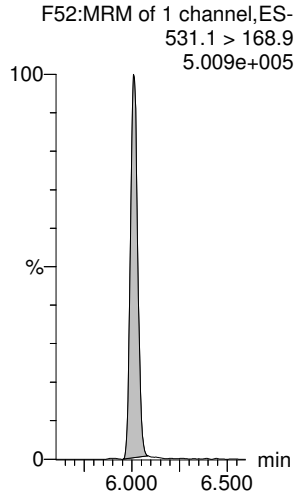
N-MeFOSE



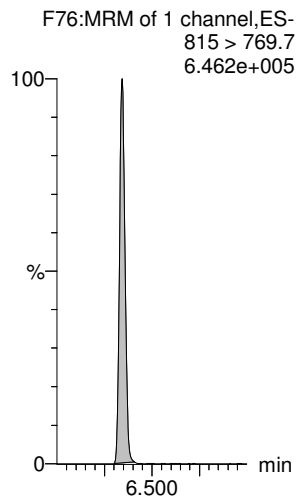
N-EtFOSE



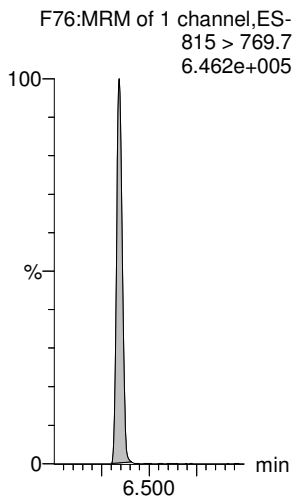
d5-N-ETFOSA-EIS



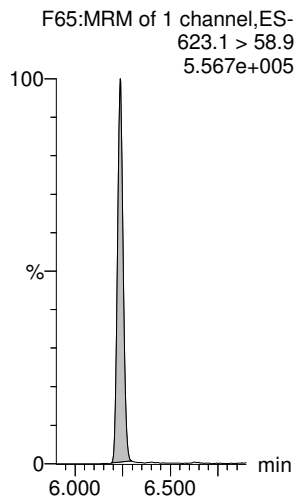
13C2-PFHxDA-EIS



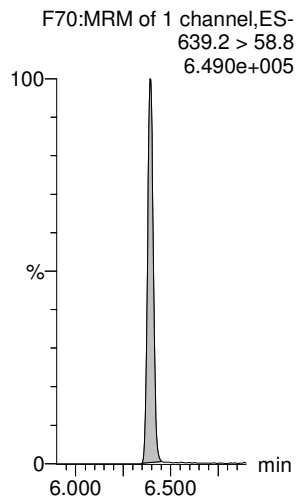
13C2-PFHxDA-EIS



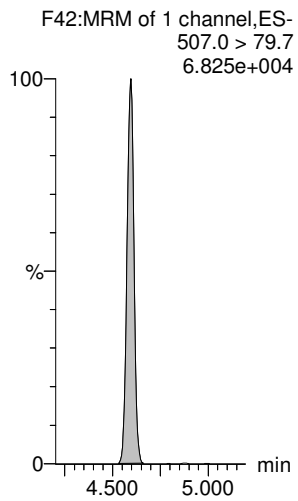
d7-N-MeFOSE-EIS



d9-N-EtFOSE-EIS



13C8-PFOS-EIS

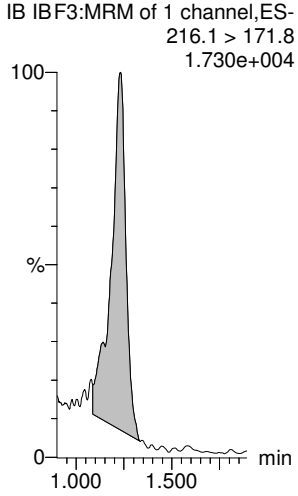


Dataset: Untitled

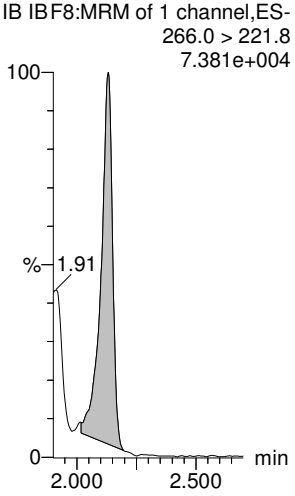
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

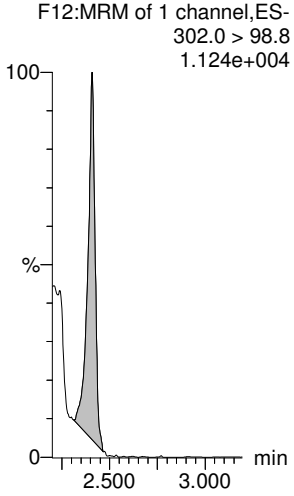
13C3-PFBA-RSD



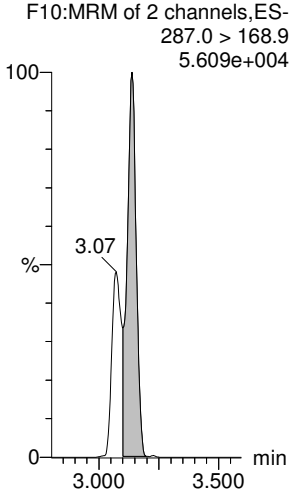
13C3-PFPeA-RSD



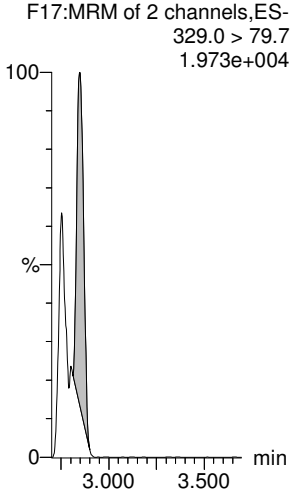
13C3-PFBS-RSD



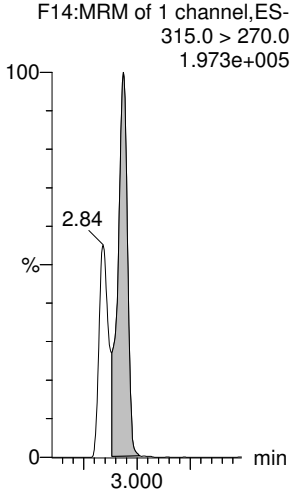
13C3-HFPO-DA-RSD



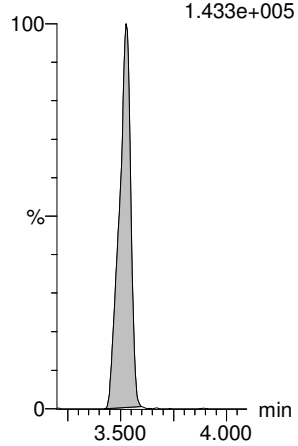
13C2-4:2 FTS-RSD



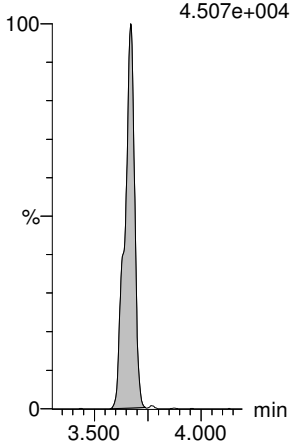
13C2-PFHxA-RSD



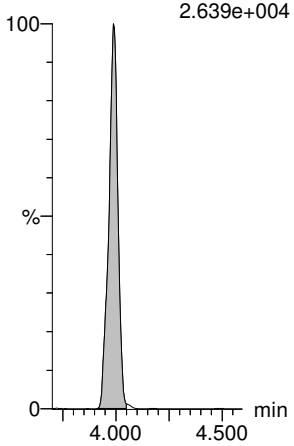
13C4-PFHpA-RSD



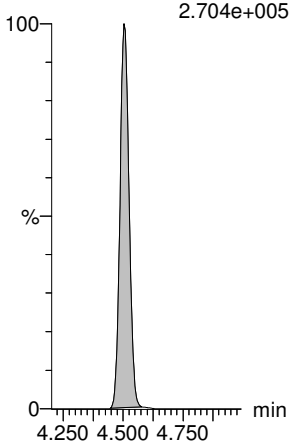
13C3-PFHxS-RSD



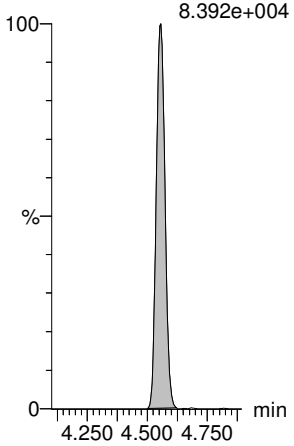
13C2-6:2 FTS-RSD



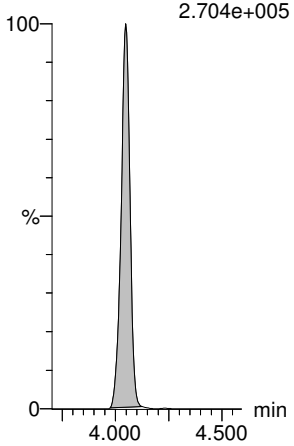
13C5-PFNA-RSD



13C8-PFOSA-RSD



13C2-PFOA-RSD

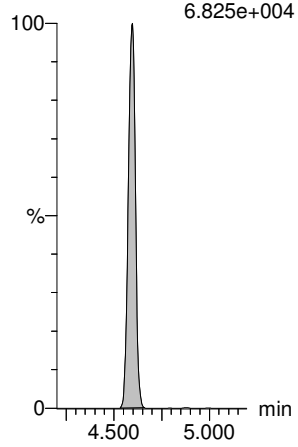


Dataset: Untitled

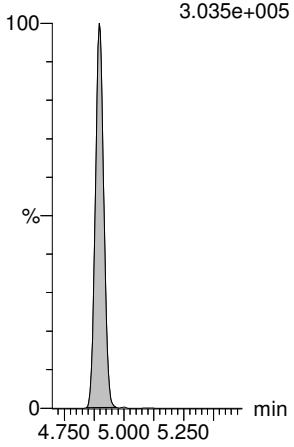
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

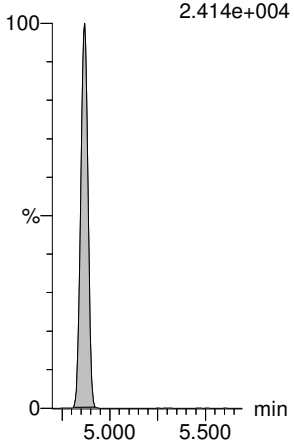
13C8-PFOS-RSD
F42:MRM of 1 channel,ES-
507.0 > 79.7
6.825e+004



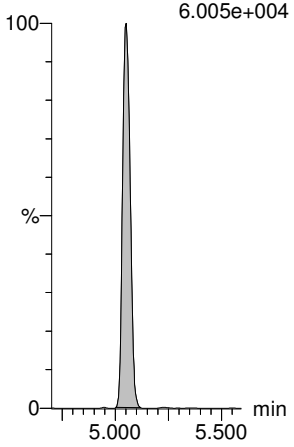
13C2-PFDA-RSD
F45:MRM of 1 channel,ES-
515.1 > 469.9
3.035e+005



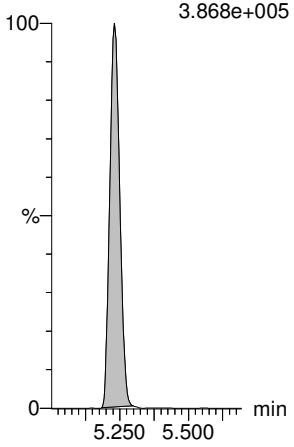
13C2-8:2 FTS-RSD
F50:MRM of 1 channel,ES-
529 > 79.7
2.414e+004



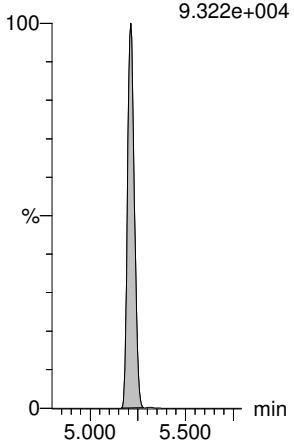
d3-N-MeFOSAA-RSD
F58:MRM of 1 channel,ES-
573.3 > 419
6.005e+004



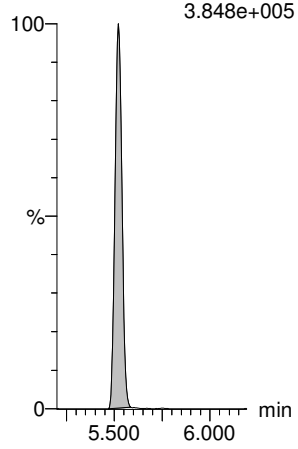
13C2-PFUdA-RSD
F55:MRM of 1 channel,ES-
565 > 519.8
3.868e+005



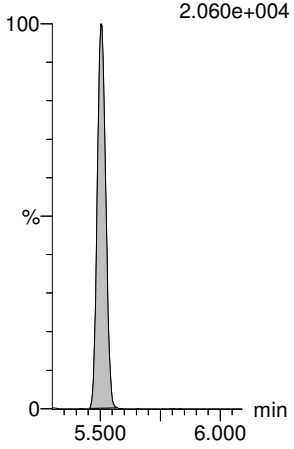
d5-N-EtFOSAA-RSD
F60:MRM of 1 channel,ES-
589.3 > 419
9.322e+004



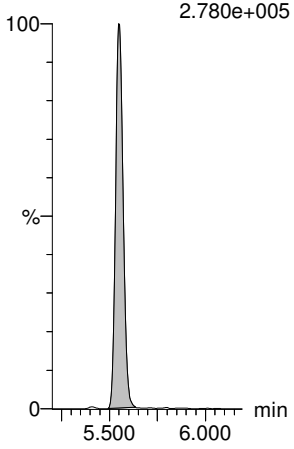
13C2-PFDoA-RSD
F63:MRM of 1 channel,ES-
614.7 > 569.7
3.848e+005



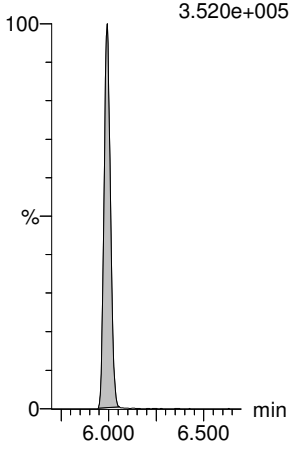
13C2-10:2 FTS-RSD
F69:MRM of 1 channel,ES-
632.9 > 80.0
2.060e+004



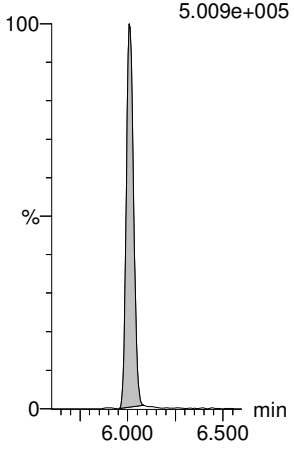
d3-N-MeFOSA-RSD
F46:MRM of 1 channel,ES-
515.2 > 168.9
2.780e+005



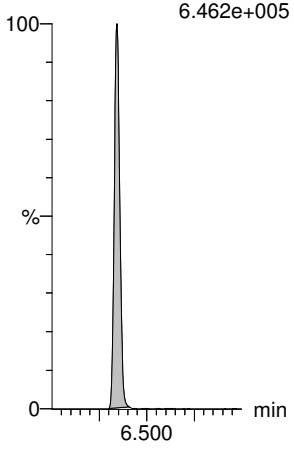
13C2-PFTeDA-RSD
F74:MRM of 2 channels,ES-
715.1 > 669.7
3.520e+005



d5-N-ETFOSA-RSD
F52:MRM of 1 channel,ES-
531.1 > 168.9
5.009e+005



13C2-PFHxDA-RSD
F76:MRM of 1 channel,ES-
815 > 769.7
6.462e+005

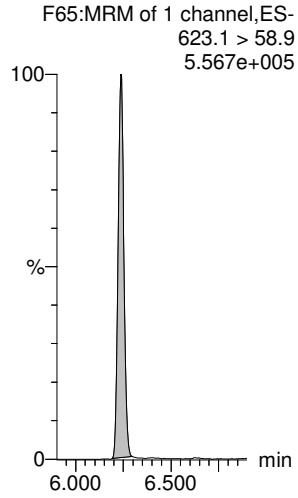


Dataset: Untitled

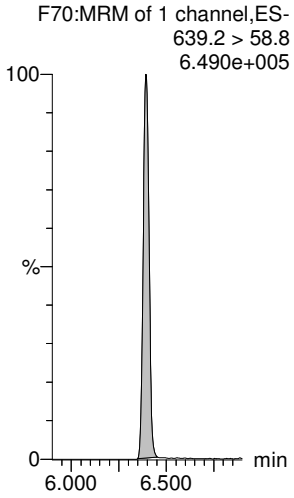
Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

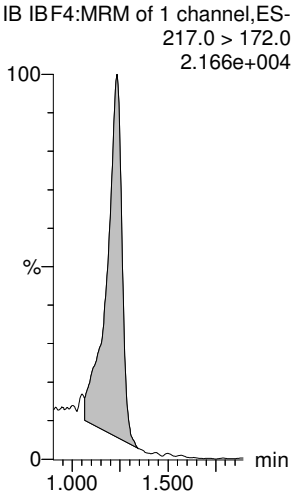
d7-N-MeFOSE-RSD



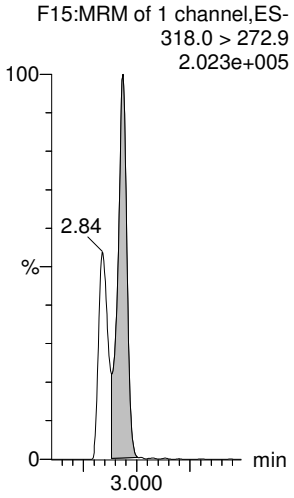
d9-N-EtFOSE-RSD



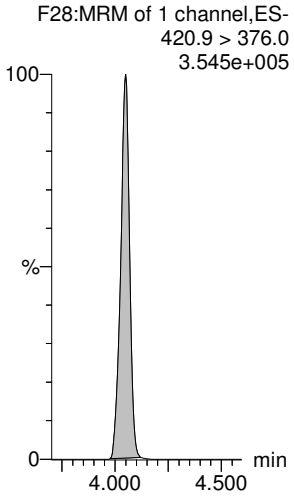
13C4-PFBA



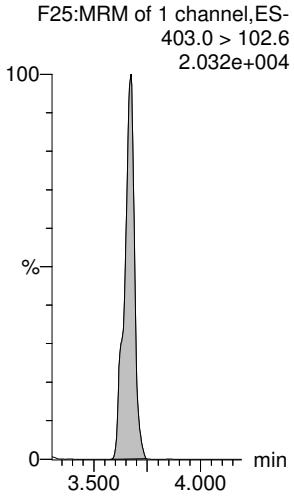
13C5-PFHxA



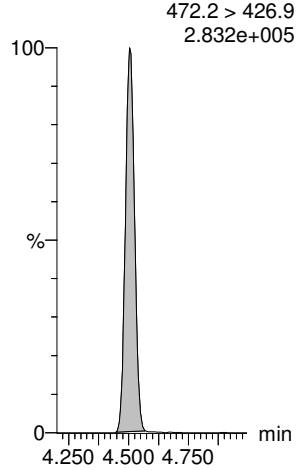
13C8-PFOA



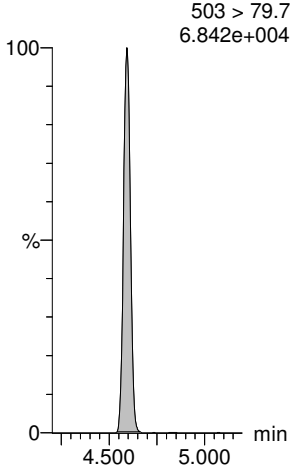
18O2-PFHxS



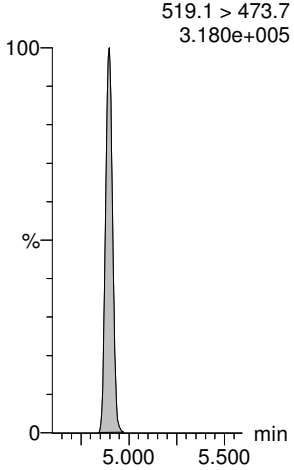
13C9-PFNA



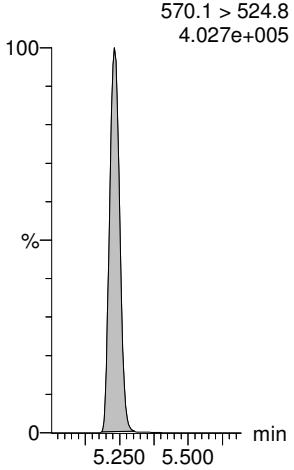
13C4-PFOS



13C6-PFDA



13C7-PFUdA



Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, 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	12.159	1425.392	1.00	1.34	0.107		0.126		NO		
2	2	PFPrS	248.9 > 79.7		468.345	1.00						NO		YES
3	3	3:3 FTCA	240.9 > 176.9		4005.253	1.00						NO		YES
4	4	PFPeA	263.1 > 218.9	6.192	4005.253	1.00	2.18	0.019		0.0144		NO		
5	5	PFBS	299.0 > 79.7		468.345	1.00						NO		YES
6	6	4:2 FTS	327.0 > 307		687.112	1.00						NO		YES
7	47	13C3-PFBA-EIS	216.1 > 171.8	1425.392		1.00	1.23	1425.392	12.500	3.84	30.7	YES		
8	51	13C3-PFBS-EIS	302.0 > 98.8	468.345		1.00	2.41	468.345	12.500	5.67	45.3	YES		
9	49	13C3-PFPeA-EIS	266.0 > 221.8	4005.253		1.00	2.13	4005.253	12.500	5.88	47.0	YES		
10	49	13C3-PFPeA-EIS	266.0 > 221.8	4005.253		1.00	2.13	4005.253	12.500	5.88	47.0	YES		
11	51	13C3-PFBS-EIS	302.0 > 98.8	468.345		1.00	2.41	468.345	12.500	5.67	45.3	YES		
12	55	13C2-4:2 FTS-EIS	329.0 >79.7	687.112		1.00	2.85	687.112	12.500	5.69	45.5	YES		
13	-1													
14	7	PFHxA	313.0 > 269.0	64.647	10086.920	1.00	2.95	0.080		0.0245		NO		YES
15	8	PFPeS	349.>79.7		468.345	1.00						NO		YES
16	9	HFPO-DA	285.1 > 168.9		2419.228	1.00						NO		YES
17	10	5:3 FTCA	340.9 > 236.9		8859.708	1.00						NO		YES
18	11	PFHpA	363.0 > 318.9	20.703	8859.708	1.00	3.50	0.029				NO		YES
19	12	ADONA	376.8 > 250.9	9.118	8859.708	1.00	3.56	0.013				NO		YES
20	57	13C2-PFHxA-EIS	315.0 > 270.0	10086.920		1.00	2.94	10086.920	12.500	8.32	66.5	NO		
21	51	13C3-PFBS-EIS	302.0 > 98.8	468.345		1.00	2.41	468.345	12.500	5.67	45.3	YES		
22	53	13C3-HFPO-DA-EIS	287.0 > 168.9	2419.228		1.00	3.14	2419.228	12.500	8.63	69.1	NO		
23	59	13C4-PFHpA-EIS	367.2 > 321.8	8859.708		1.00	3.53	8859.708	12.500	13.1	104.8	NO		
24	59	13C4-PFHpA-EIS	367.2 > 321.8	8859.708		1.00	3.53	8859.708	12.500	13.1	104.8	NO		
25	59	13C4-PFHpA-EIS	367.2 > 321.8	8859.708		1.00	3.53	8859.708	12.500	13.1	104.8	NO		
26	-1													
27	13	L-PFHxS	398.9 > 79.7	11.526	2366.117	1.00	3.67	0.061		0.130		NO		YES
28	15	6:2 FTS	427.0 > 407		1286.210	1.00						NO		YES
29	16	L-PFOA	412.8 > 368.9	24.111	12880.134	1.00	4.07	0.023				NO	2.116	NO
30	18	PFecHS	460.8 > 381.0		12880.134	1.00						NO		YES
31	19	PFHpS	449.0 > 79.7		2877.657	1.00						NO		YES
32	20	7:3 FTCA	440.9 > 336.9		11555.749	1.00						NO		YES
33	61	13C3-PFHxS-EIS	401.8 > 79.7	2366.117		1.00	3.67	2366.117	12.500	12.4	99.6	NO		
34	63	13C2-6:2 FTS-EIS	429.0 >79.7	1286.210		1.00	3.99	1286.210	12.500	14.3	114.2	NO		
35	69	13C2-PFOA-EIS	414.9 > 369.7	12880.134		1.00	4.05	12880.134	12.500	12.7	101.4	NO		
36	69	13C2-PFOA-EIS	414.9 > 369.7	12880.134		1.00	4.05	12880.134	12.500	12.7	101.4	NO		

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, 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	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
38	65	13C5-PFNA-EIS	468.2 > 422.9	11555.749		1.00	4.50	11555.749	12.500	13.3	106.6	NO		
39	-1													
40	21	PFNA	463.0 > 418.8	28.700	11555.749	1.00	4.48	0.031				NO		YES
41	22	PFOSA	497.9 > 77.9	13.301	3483.541	1.00	4.55	0.048				NO		YES
42	23	L-PFOS	498.9 > 79.7		2877.657	1.00						NO		YES
43	25	9Cl-PF30NS	530.7 > 350.8	5.586	2877.657	1.00	4.80	0.024		0.00565		NO	0.706	YES
44	26	PFDA	513 > 468.8	28.565	12344.313	1.00	4.90	0.029				NO		YES
45	27	8:2 FTS	526.9 > 507		1030.673	1.00						NO		YES
46	65	13C5-PFNA-EIS	468.2 > 422.9	11555.749		1.00	4.50	11555.749	12.500	13.3	106.6	NO		
47	67	13C8-PFOSA-EIS	506 > 78	3483.541		1.00	4.56	3483.541	12.500	13.6	109.2	NO		
48	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
49	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
50	73	13C2-PFDA-EIS	515.1 > 469.9	12344.313		1.00	4.90	12344.313	12.500	13.1	104.5	NO		
51	75	13C2-8:2 FTS-EIS	529 > 79.7	1030.673		1.00	4.87	1030.673	12.500	11.8	94.5	NO		
52	-1													
53	28	PFNS	549.1 > 79.7		2877.657	1.00						NO		YES
54	29	L-MeFOSAA	570 > 419	5.340	2439.694	1.00	5.23	0.027		0.0476		NO	0.951	YES
55	31	L-EtFOSAA	584.1 > 419	7.322	3890.859	1.00	5.20	0.024		0.0711		NO	0.466	YES
56	33	PFUdA	563.0 > 518.9	44.895	16051.350	1.00	5.24	0.035				NO		YES
57	34	PFDS	598.8 > 79.7		2877.657	1.00						NO		YES
58	35	11Cl-PF30UdS	630.9 > 450.9		15742.117	1.00						NO		YES
59	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
60	77	d3-N-MeFOSAA-EIS	573.3 > 419	2439.694		1.00	5.05	2439.694	12.500	12.5	100.1	NO		
61	81	d5-N-EtFOSAA-EIS	589.3 > 419	3890.859		1.00	5.21	3890.859	12.500	13.5	108.1	NO		
62	79	13C2-PFUdA-EIS	565 > 519.8	16051.350		1.00	5.23	16051.350	12.500	13.1	104.7	NO		
63	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
64	83	13C2-PFDoA-EIS	614.7 > 569.7	15742.117		1.00	5.52	15742.117	12.500	13.0	103.9	NO		
65	-1													
66	36	10:2 FTS	626.9 > 607		831.490	1.00						NO		YES
67	37	PFDoA	612.9 > 569.0	223.817	15742.117	1.00	5.56	0.178				NO		YES
68	38	N-MeFOSA	512.1 > 168.9	10.727	12577.316	1.00	5.47	0.127				NO		YES
69	39	PFTrDA	662.9 > 618.9		15742.117	1.00						NO		YES
70	40	PFDoS	698.8 > 79.7		13690.438	1.00						NO		YES
71	41	PFTeDA	713.0 > 669.0	51.518	13690.438	1.00	6.12	0.047		0.0555		NO		YES
72	85	13C2-10:2 FTS-EIS	632.9 > 80.0	831.490		1.00	5.50	831.490	12.500	14.5	116.3	NO		

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, 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	614.7 > 569.7	15742.117		1.00	5.52	15742.117	12.500	13.0	103.9	NO		
74	87	d3-N-MeFOSA-EIS	515.2 > 168.9	12577.316		1.00	5.55	12577.316	149.200	150	100.3	NO		
75	83	13C2-PFDoA-EIS	614.7 > 569.7	15742.117		1.00	5.52	15742.117	12.500	13.0	103.9	NO		
76	89	13C2-PFTeDA-EIS	715.1 > 669.7	13690.438		1.00	5.99	13690.438	12.500	12.8	102.4	NO		
77	89	13C2-PFTeDA-EIS	715.1 > 669.7	13690.438		1.00	5.99	13690.438	12.500	12.8	102.4	NO		
78	-1													
79	42	N-EtFOSA	526.1 > 168.9	5.406	21915.990	1.00	5.94	0.037				NO		YES
80	43	PFHxDA	813.1 > 768.6	160.668	21672.244	1.00	6.34	0.093		0.0102		NO		YES
81	44	PFODA	913.1 > 868.8	25.492	21672.244	1.00	6.57	0.015		0.0394		NO		
82	45	N-MeFOSE	616.1 > 58.9	5.858	19399.535	1.00	6.36	0.045		0.114		NO		
83	46	N-EtFOSE	630.1 > 58.9	8.164	22549.330	1.00	6.40	0.054		0.106		NO		
84	91	d5-N-ETFOSA-EIS	531.1 > 168.9	21915.990		1.00	6.01	21915.990	149.200	151	101.0	NO		
85	93	13C2-PFHxDA-EIS	815 > 769.7	21672.244		1.00	6.34	21672.244	12.500	12.9	103.0	NO		
86	93	13C2-PFHxDA-EIS	815 > 769.7	21672.244		1.00	6.34	21672.244	12.500	12.9	103.0	NO		
87	95	d7-N-MeFOSE-EIS	623.1 > 58.9	19399.535		1.00	6.24	19399.535	149.200	145	96.9	NO		
88	97	d9-N-EtFOSE-EIS	639.2 > 58.8	22549.330		1.00	6.39	22549.330	149.200	149	99.6	NO		
89	71	13C8-PFOS-EIS	507.0 > 79.7	2877.657		1.00	4.60	2877.657	12.500	13.8	110.7	NO		
90	-1													
91	48	13C3-PFBA-RSD	216.1 > 171.8	1425.392	1862.473	1.00	1.23	9.567	12.500	12.0	96.0	NO		
92	50	13C3-PFPeA-RSD	266.0 > 221.8	3983.000	9902.850	1.00	2.13	5.028	12.500	8.84	70.7	NO		
93	52	13C3-PFBS-RSD	302.0 > 98.8	468.345	1086.782	1.00	2.41	5.387	12.500	5.36	42.8	YES		
94	54	13C3-HFPO-DA-RSD	287.0 > 168.9	2419.228	9902.850	1.00	3.14	3.054	12.500	12.5	99.6	NO		
95	56	13C2-4:2 FTS-RSD	329.0 >79.7	687.112	1086.782	1.00	2.85	7.903	12.500	5.21	41.6	YES		
96	58	13C2-PFHxA-RSD	315.0 > 270.0	10086.920	9902.850	1.00	2.94	12.732	12.500	12.4	98.9	NO		
97	60	13C4-PFHpA-RSD	367.2 > 321.8	8859.708	9902.850	1.00	3.53	11.183	12.500	19.8	158.3	YES		
98	62	13C3-PFHxS-RSD	401.8 > 79.7	2366.117	1086.782	1.00	3.67	27.215	12.500	11.4	90.9	NO		
99	64	13C2-6:2 FTS-RSD	429.0 >79.7	1286.210	2801.486	1.00	3.99	5.739	12.500	12.0	95.6	NO		
100	66	13C5-PFNA-RSD	468.2 > 422.9	11555.749	12146.396	1.00	4.50	11.892	12.500	12.7	101.8	NO		
101	68	13C8-PFOSA-RSD	506 > 78	3483.541	16926.570	1.00	4.56	2.573	12.500	12.2	97.6	NO		
102	70	13C2-PFOA-RSD	414.9 > 369.7	12880.134	17218.184	1.00	4.05	9.351	12.500	11.4	91.0	NO		
103	-1													
104	72	13C8-PFOS-RSD	507.0 > 79.7	2877.657	2801.486	1.00	4.60	12.840	12.500	13.0	103.8	NO		
105	74	13C2-PFDA-RSD	515.1 > 469.9	12344.313	13326.403	1.00	4.90	11.579	12.500	11.8	94.3	NO		
106	76	13C2-8:2 FTS-RSD	529 > 79.7	1030.673	2801.486	1.00	4.87	4.599	12.500	11.2	89.9	NO		
107	78	d3-N-MeFOSAA-RSD	573.3 > 419	2439.694	16926.570	1.00	5.05	1.802	12.500	11.2	89.3	NO		
108	80	13C2-PFUdA-RSD	565 > 519.8	16051.350	16926.570	1.00	5.23	11.854	12.500	12.3	98.3	NO		

Dataset: Untitled

Last Altered: Thursday, March 05, 2020 10:34:45 Pacific Standard Time
Printed: Thursday, March 05, 2020 10:35:03 Pacific Standard Time

Name: 200304P2-13, Date: 04-Mar-2020, Time: 21:16:56, ID: IB, Description: IB

	#	Name	Trace	Area	IS Area	wt/vol	RT	Response	Std. Conc	Conc.	%Rec	Recovery ...	Ion Ratio	Ratio Out?
109	82	d5-N-EtFOSAA-RSD	589.3 > 419	3890.859	16926.570	1.00	5.21	2.873	12.500	12.6	100.8	NO		
110	84	13C2-PFDoA-RSD	614.7 > 569.7	15742.117	13326.403	1.00	5.52	14.766	12.500	11.8	94.6	NO		
111	86	13C2-10:2 FTS-RSD	632.9 > 80.0	831.490	2801.486	1.00	5.50	3.710	12.500	13.0	103.9	NO		
112	88	d3-N-MeFOSA-RSD	515.2 > 168.9	12577.316	16926.570	1.00	5.55	9.288	149.200	130	87.4	NO		
113	90	13C2-PFTeDA-RSD	715.1 > 669.7	13690.438	16926.570	1.00	5.99	10.110	12.500	12.0	96.2	NO		
114	92	d5-N-ETFOSA-RSD	531.1 > 168.9	21915.990	16926.570	1.00	6.01	16.185	149.200	142	94.9	NO		
115	94	13C2-PFHxDA-RSD	815 > 769.7	21672.244	16926.570	1.00	6.34	16.005	12.500	12.1	97.1	NO		
116	-1													
117	96	d7-N-MeFOSE-RSD	623.1 > 58.9	19399.535	16926.570	1.00	6.24	14.326	149.200	137	92.0	NO		
118	98	d9-N-EtFOSE-RSD	639.2 > 58.8	22549.330	16926.570	1.00	6.39	16.652	149.200	139	93.3	NO		
119	99	13C4-PFBA	217.0 > 172.0	1862.473	1862.473	1.00	1.23	12.500	12.500	12.5	100.0	NO		
120	1...	13C5-PFHxA	318.0 > 272.9	9902.850	9902.850	1.00	2.94	12.500	12.500	12.5	100.0	NO		
121	1...	13C8-PFOA	420.9 > 376.0	17218.184	17218.184	1.00	4.05	12.500	12.500	12.5	100.0	NO		
122	1...	18O2-PFHxS	403.0 > 102.6	1086.782	1086.782	1.00	3.67	12.500	12.500	12.5	100.0	NO		
123	1...	13C9-PFNA	472.2 > 426.9	12146.396	12146.396	1.00	4.50	12.500	12.500	12.5	100.0	NO		
124	1...	13C4-PFOS	503 > 79.7	2801.486	2801.486	1.00	4.59	12.500	12.500	12.5	100.0	NO		
125	1...	13C6-PFDA	519.1 > 473.7	13326.403	13326.403	1.00	4.90	12.500	12.500	12.5	100.0	NO		
126	1...	13C7-PFUdA	570.1 > 524.8	16926.570	16926.570	1.00	5.23	12.500	12.500	12.5	100.0	NO		

TUNE CHECKS

VJ 03/03/20

Q5 Q5(P)

Tune check

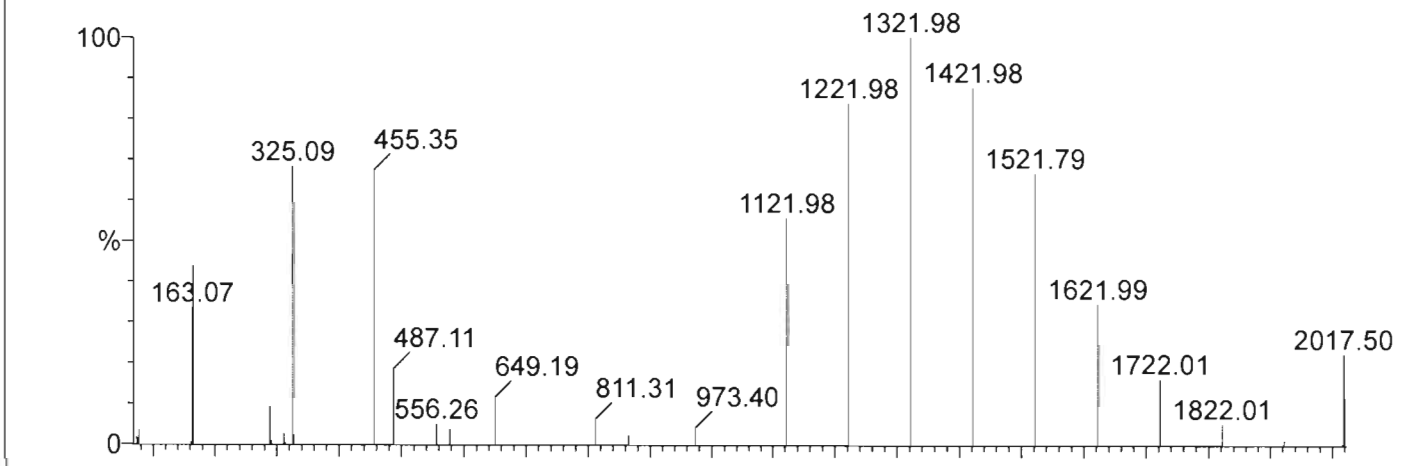
Calibration Report - MS1 Static

Printed: **Tue Mar 03 08:57:48 2020**

20200303

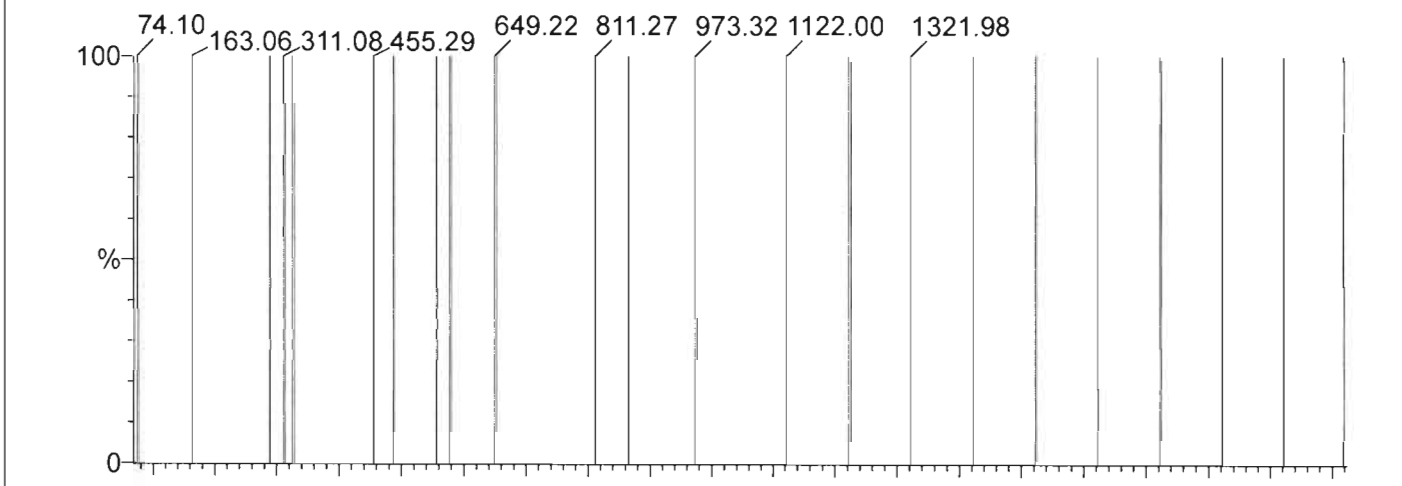
Data file: STATMS1 - Calibrated

23 matches of 23 tested references



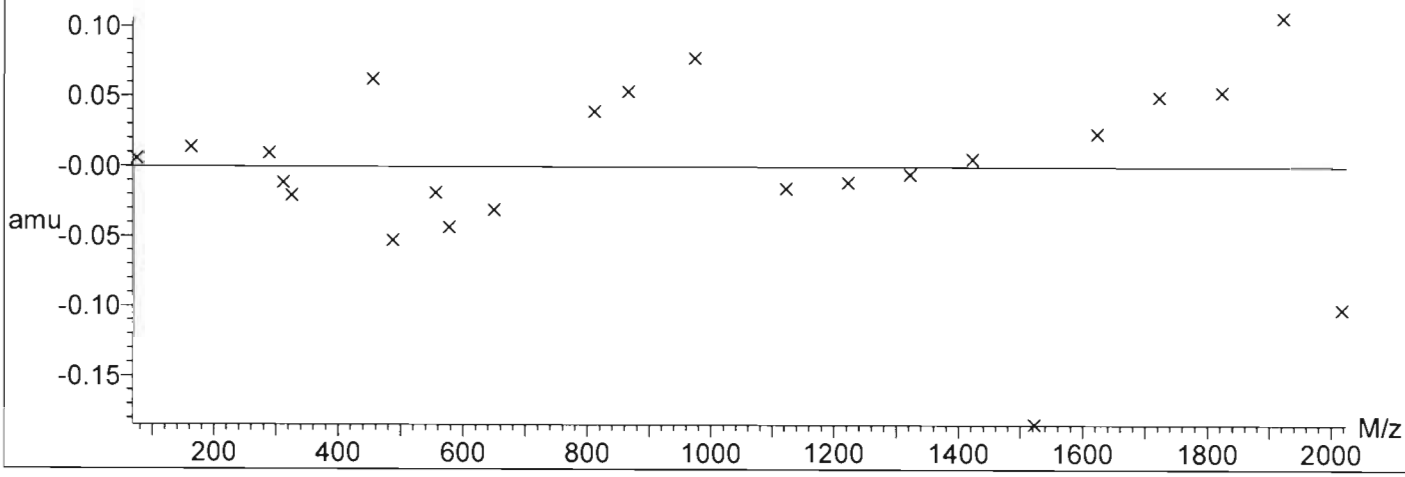
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref

Mean residual = 0.0432 amu

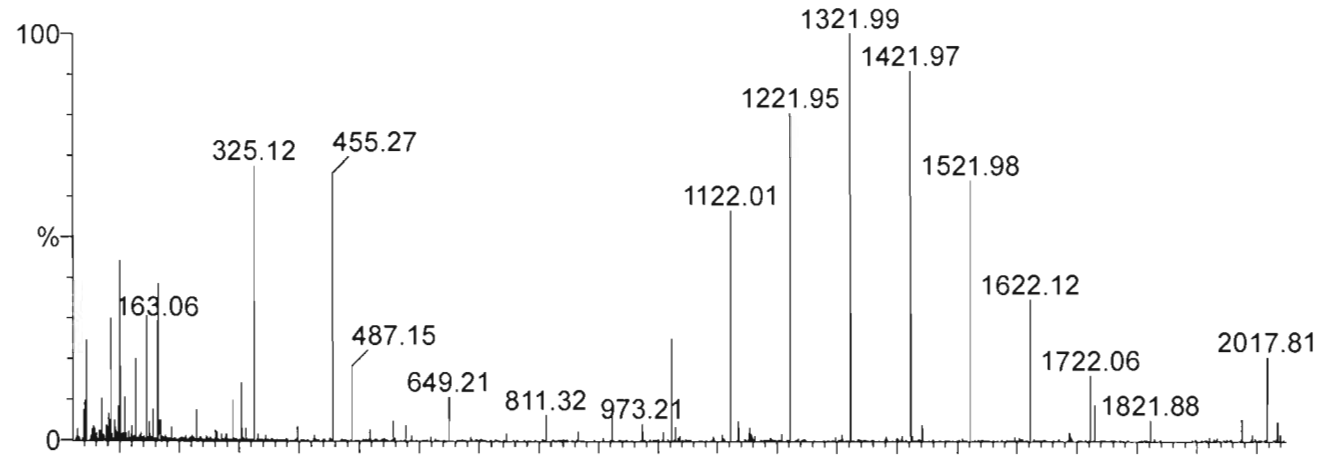


Residual Polynomial order = 4

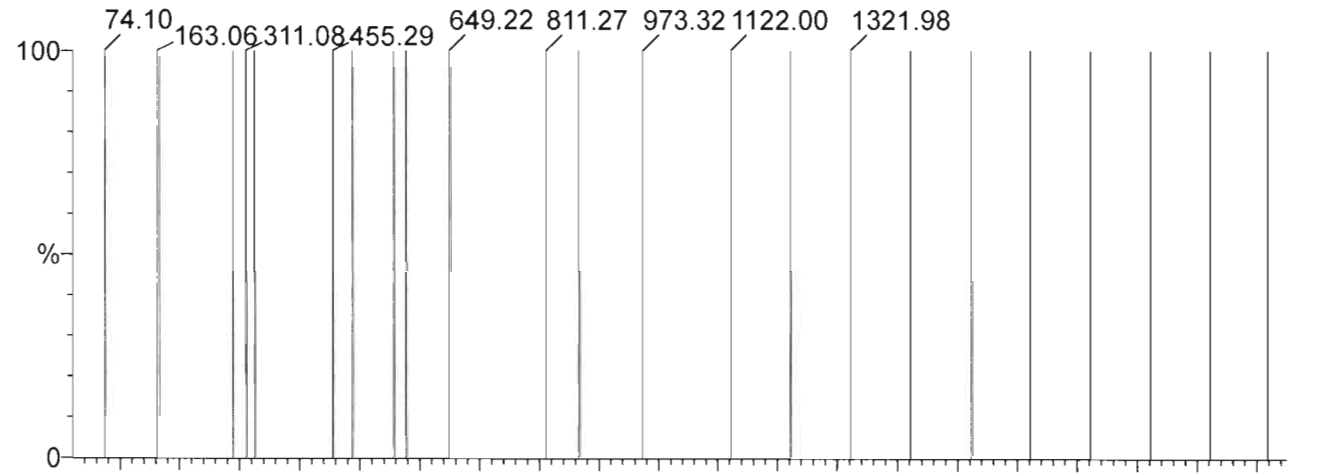
RMS residual = 0.06 amu



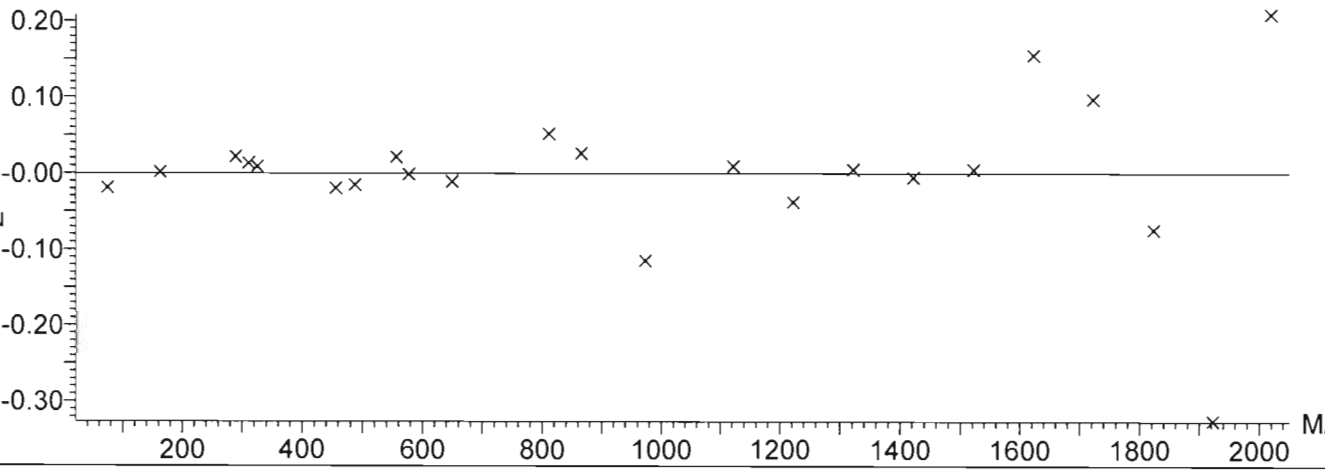
Data file: SCNMS1 - Calibrated 23 matches of 23 tested references



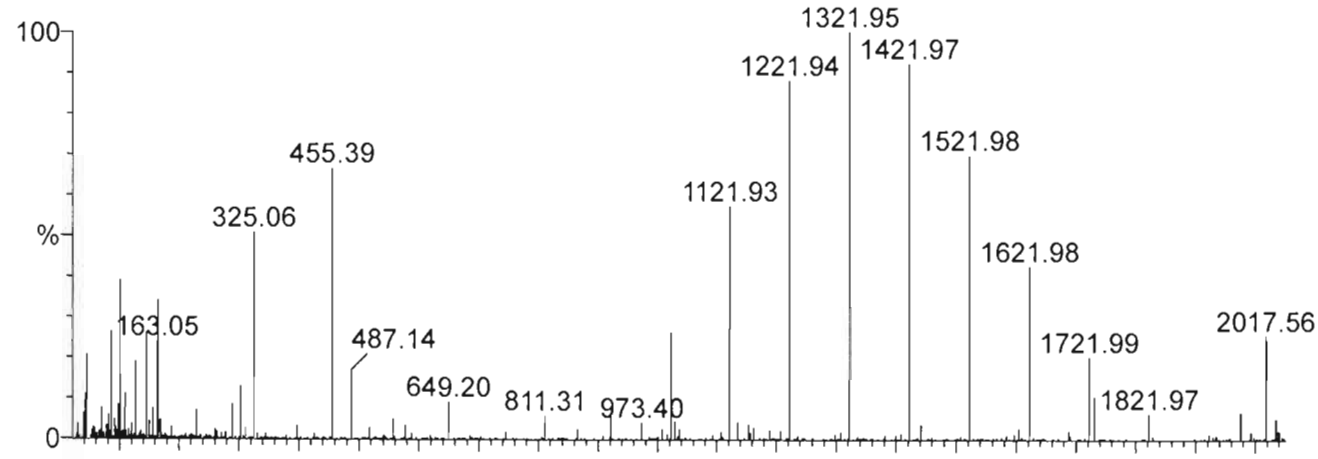
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0541 amu



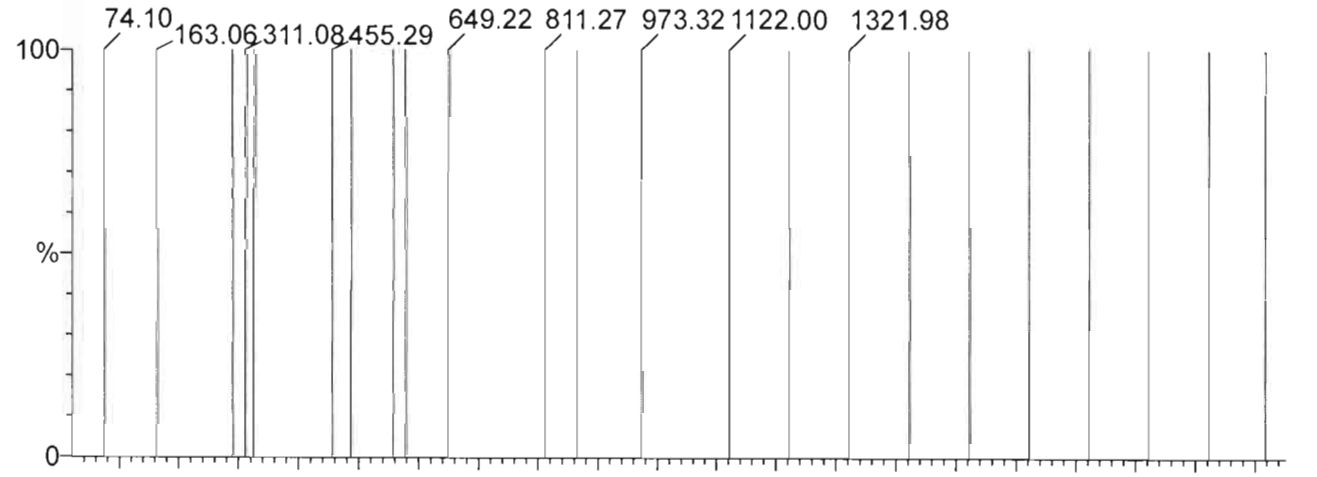
Residual Polynomial order = 4 RMS residual = 0.0952 amu



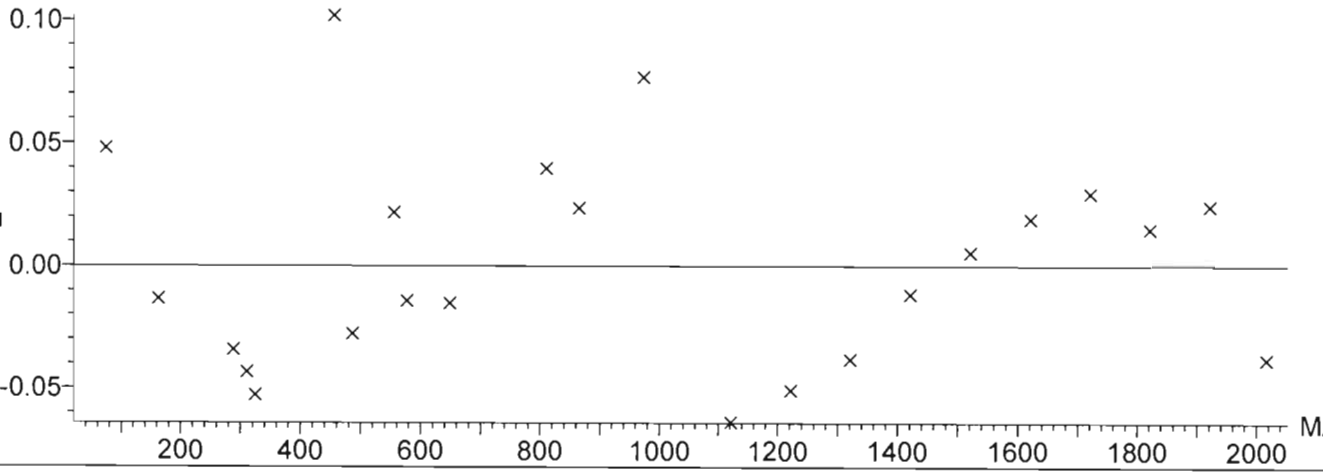
Data file: FASTMS1 - Calibrated 23 matches of 23 tested references



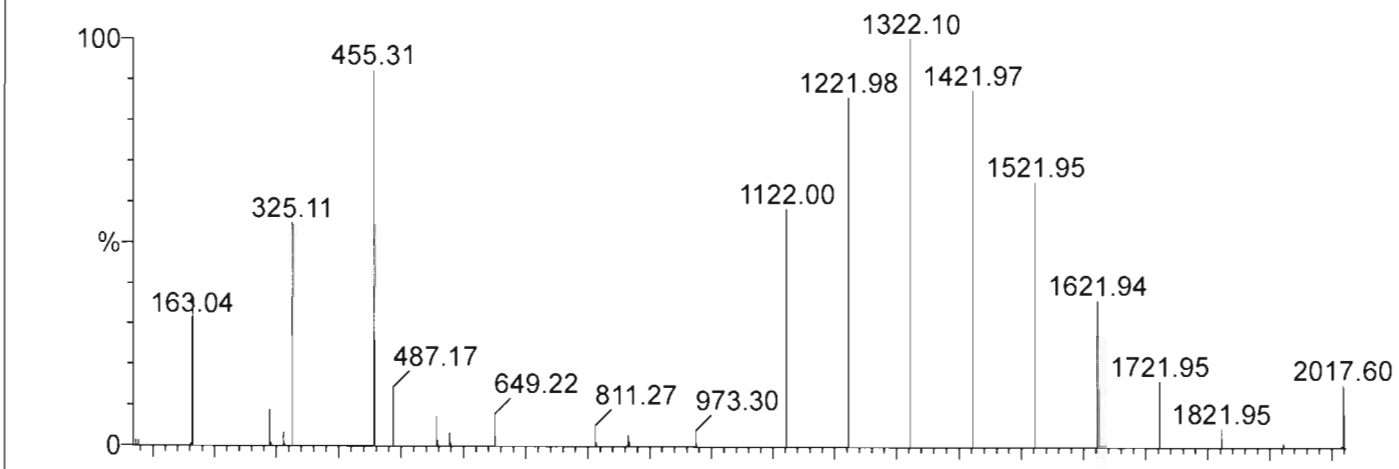
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0352 amu



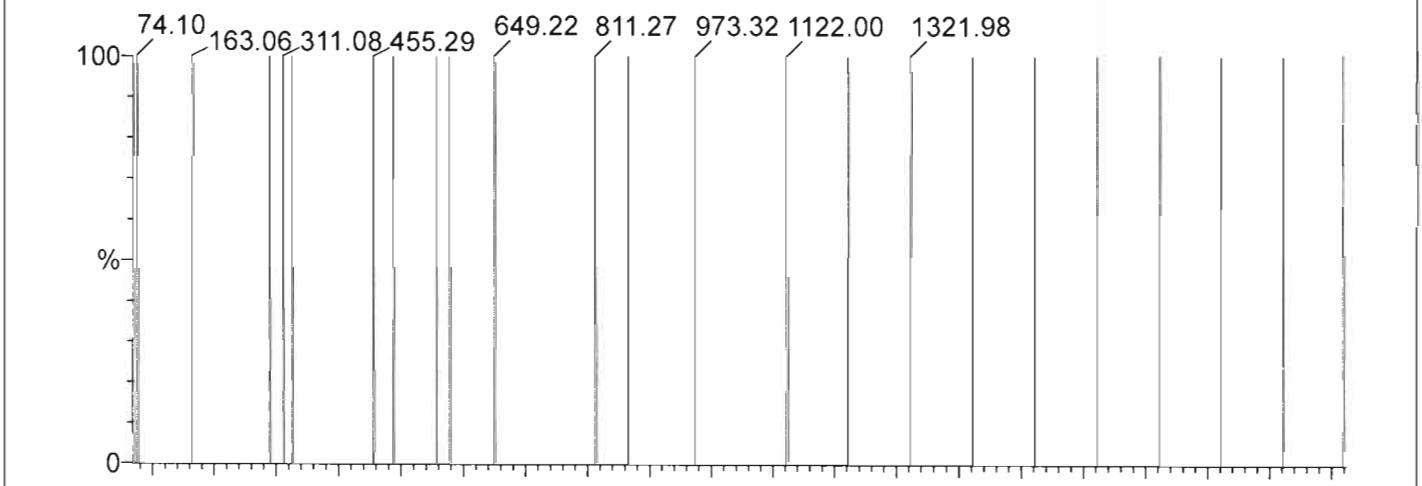
Residual Polynomial order = 4 RMS residual = 0.0418 amu



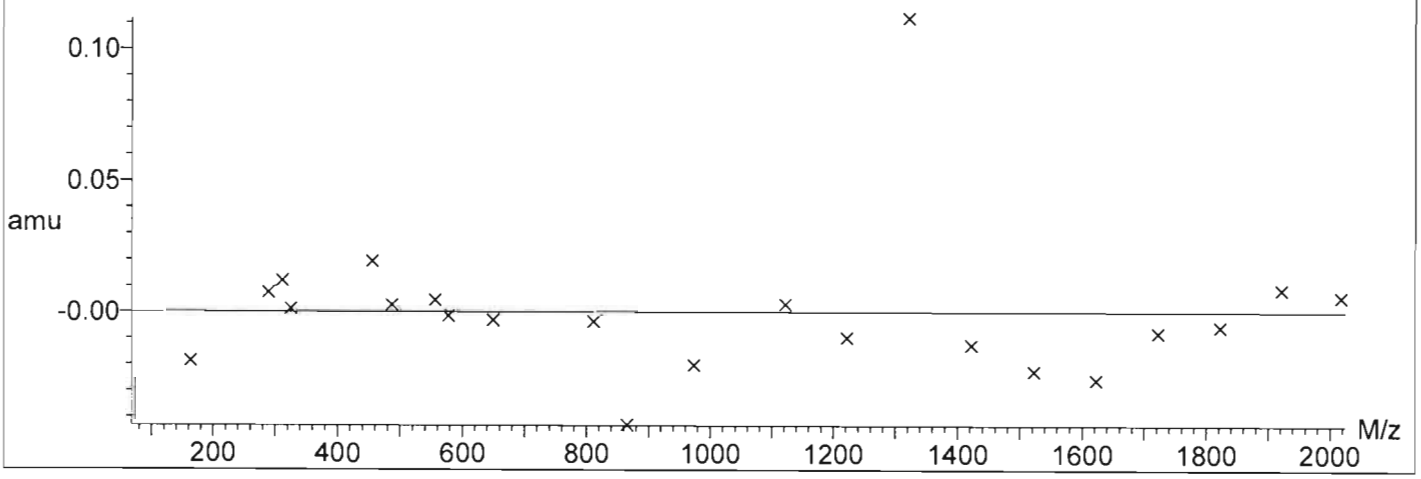
Data file: STATMS2 - Calibrated 22 matches of 23 tested references



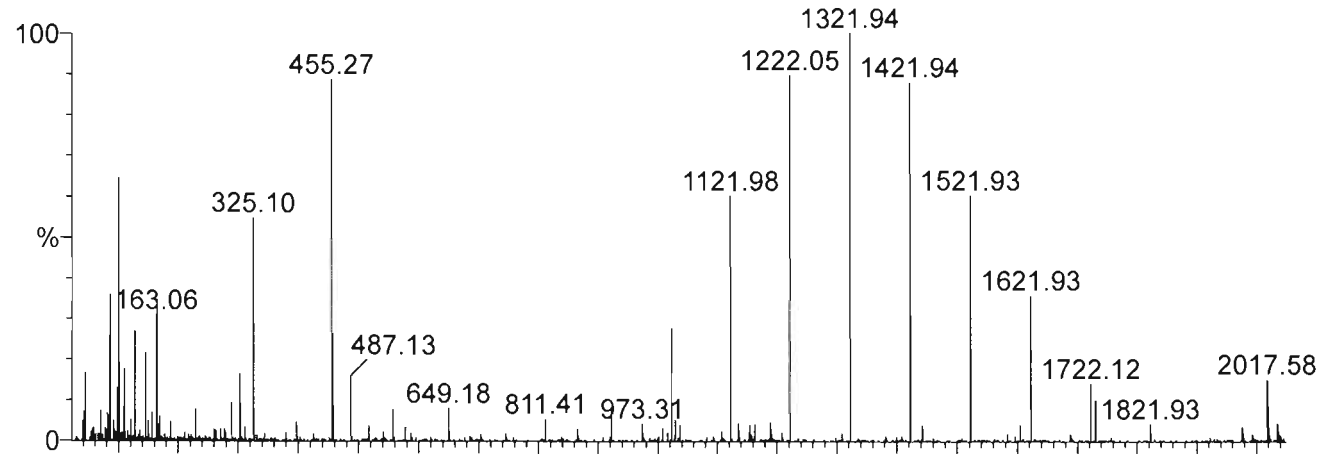
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.016 amu



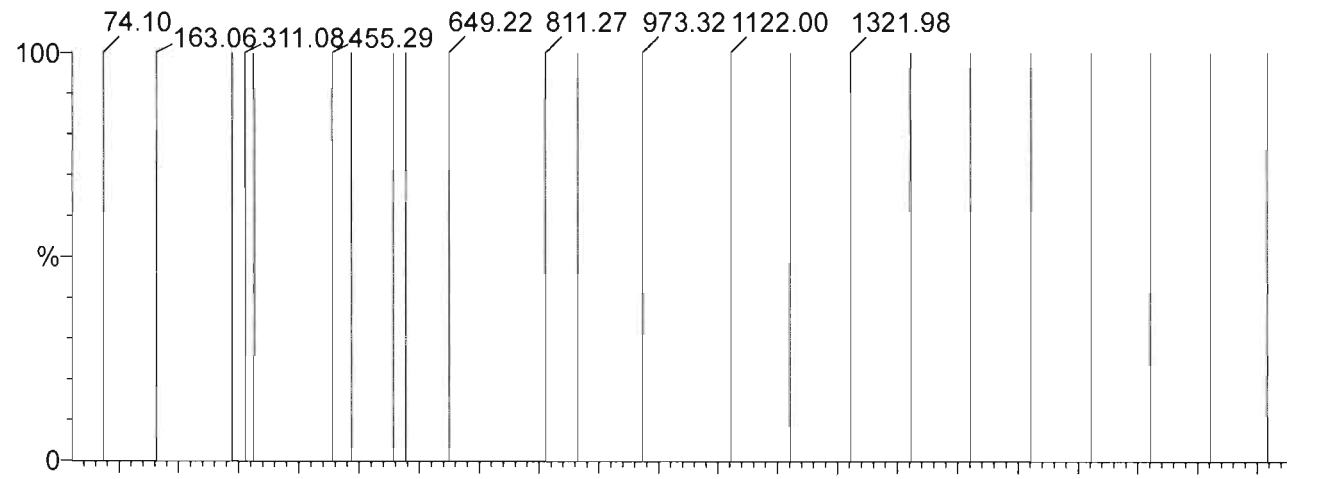
Residual Polynomial order = 4 RMS residual = 0.0281 amu



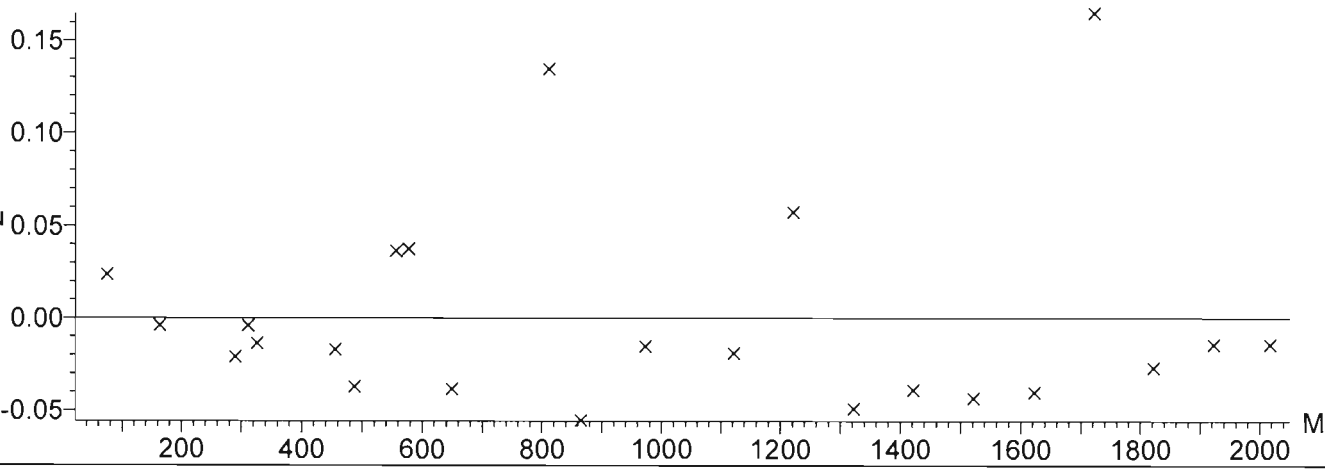
Data file: SCNMS2 - Calibrated 23 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0395 amu

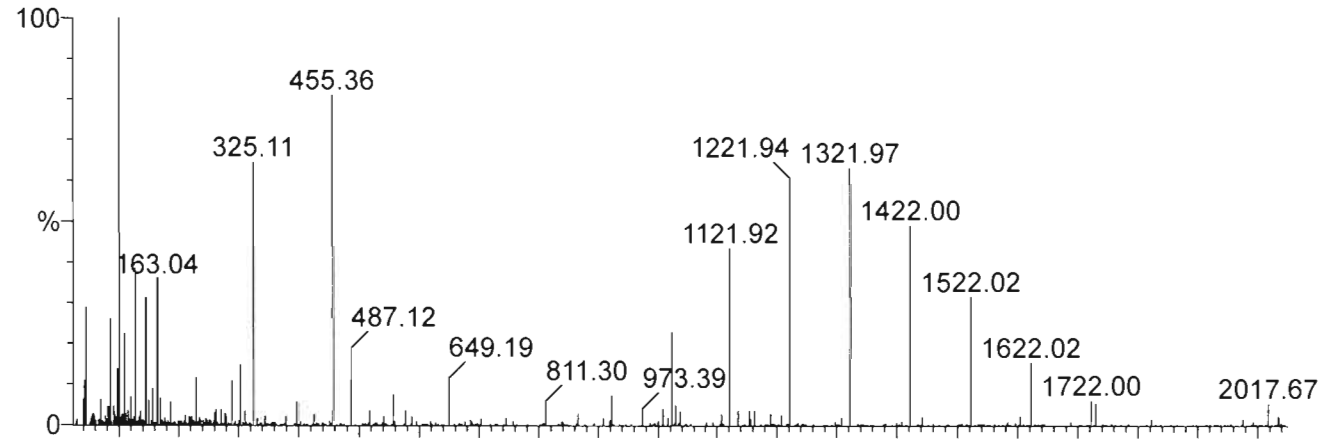


Residual Polynomial order = 4 RMS residual = 0.0544 amu

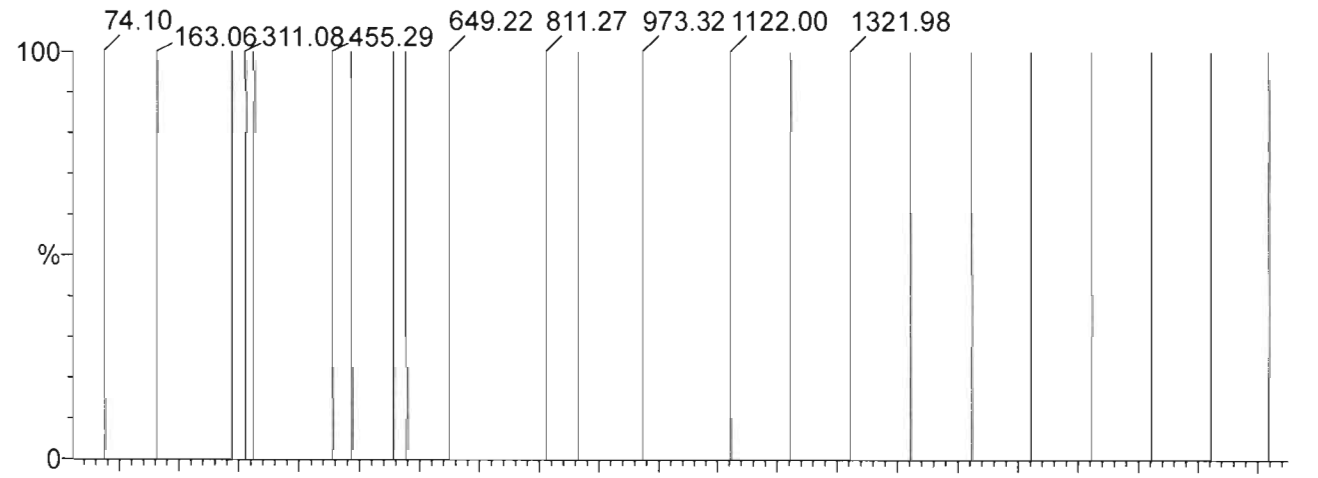


Printed: **Tue Mar 03 09:03:51 2020**

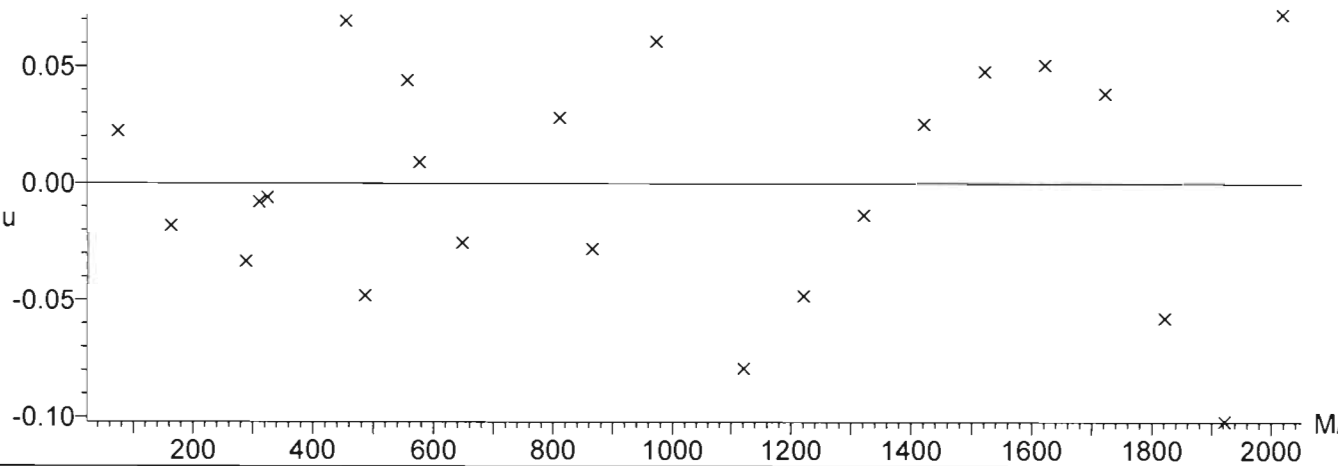
Data file: FASTMS2 - Calibrated 23 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0407 amu



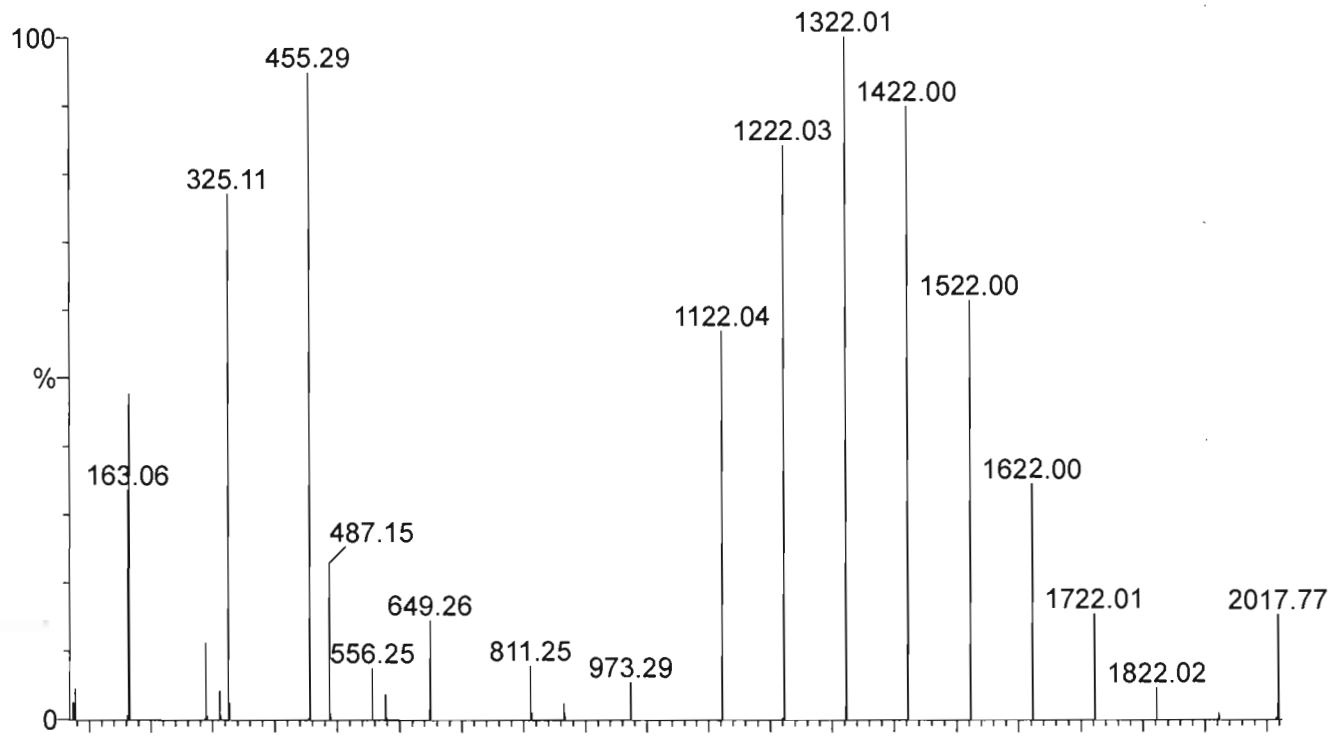
Residual Polynomial order = 4 RMS residual = 0.0475 amu



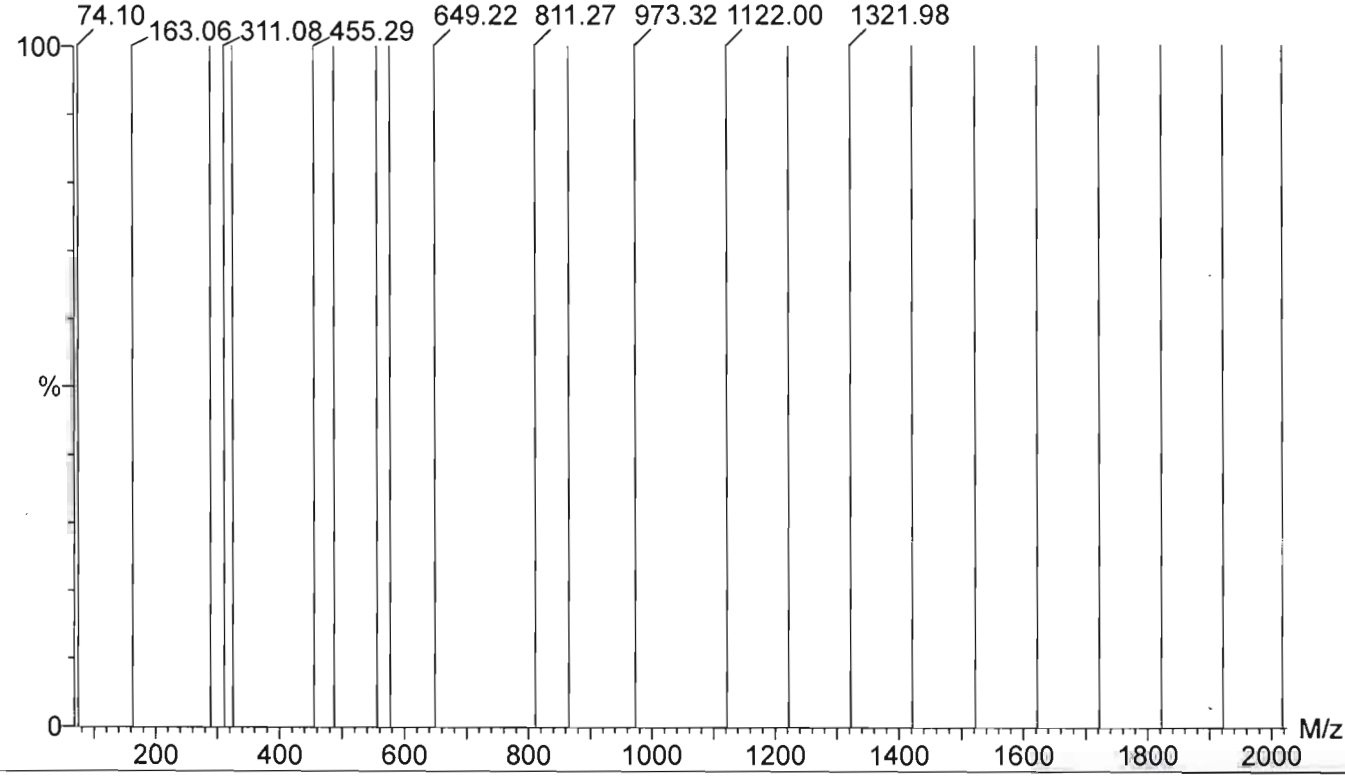
Calibration Verification Report - MS1 Static 20200303 **Page 1 of 6**

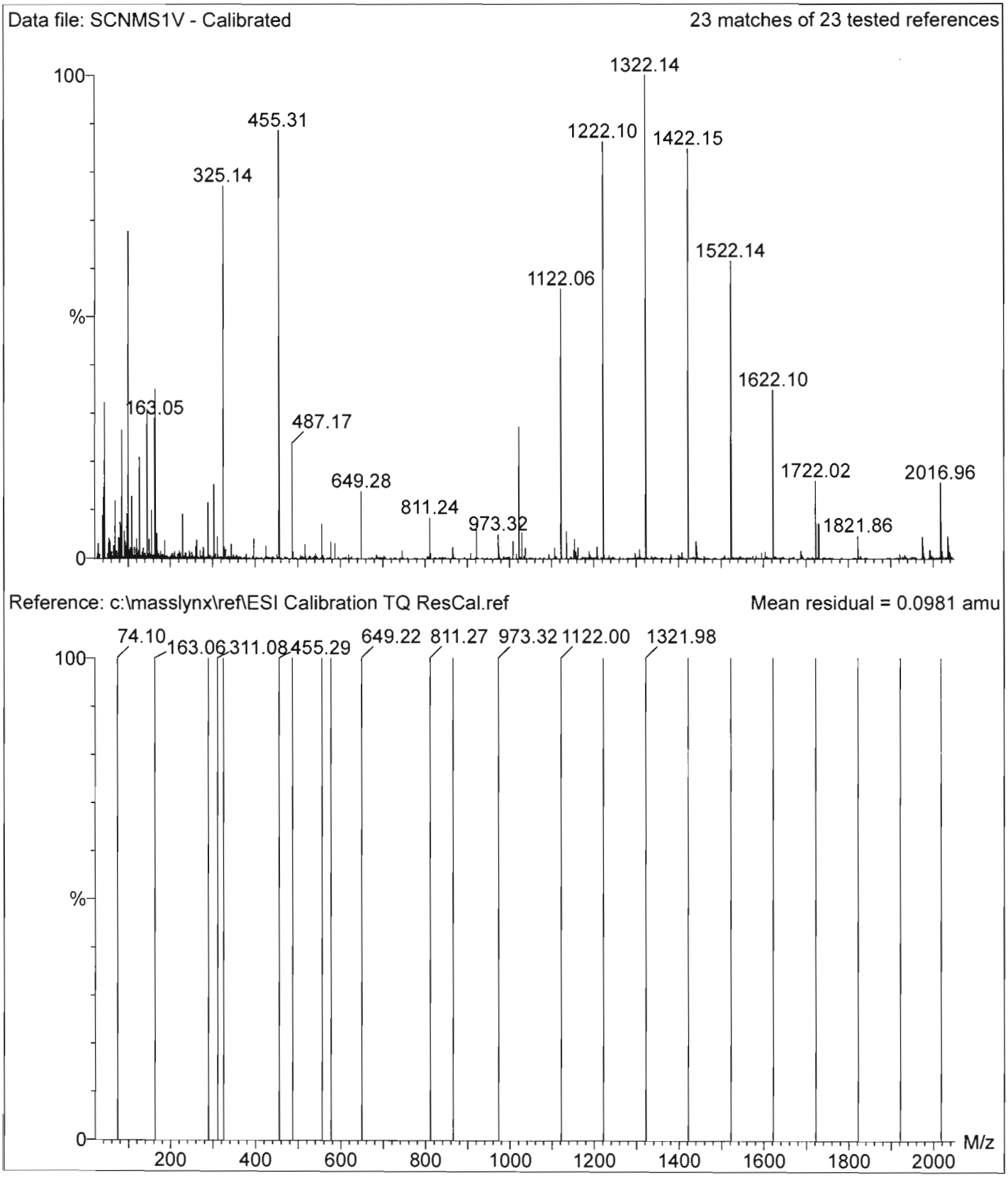
Printed: **Wed Mar 04 14:00:38 2020**

Data file: STATMS1V - Calibrated 23 matches of 23 tested references

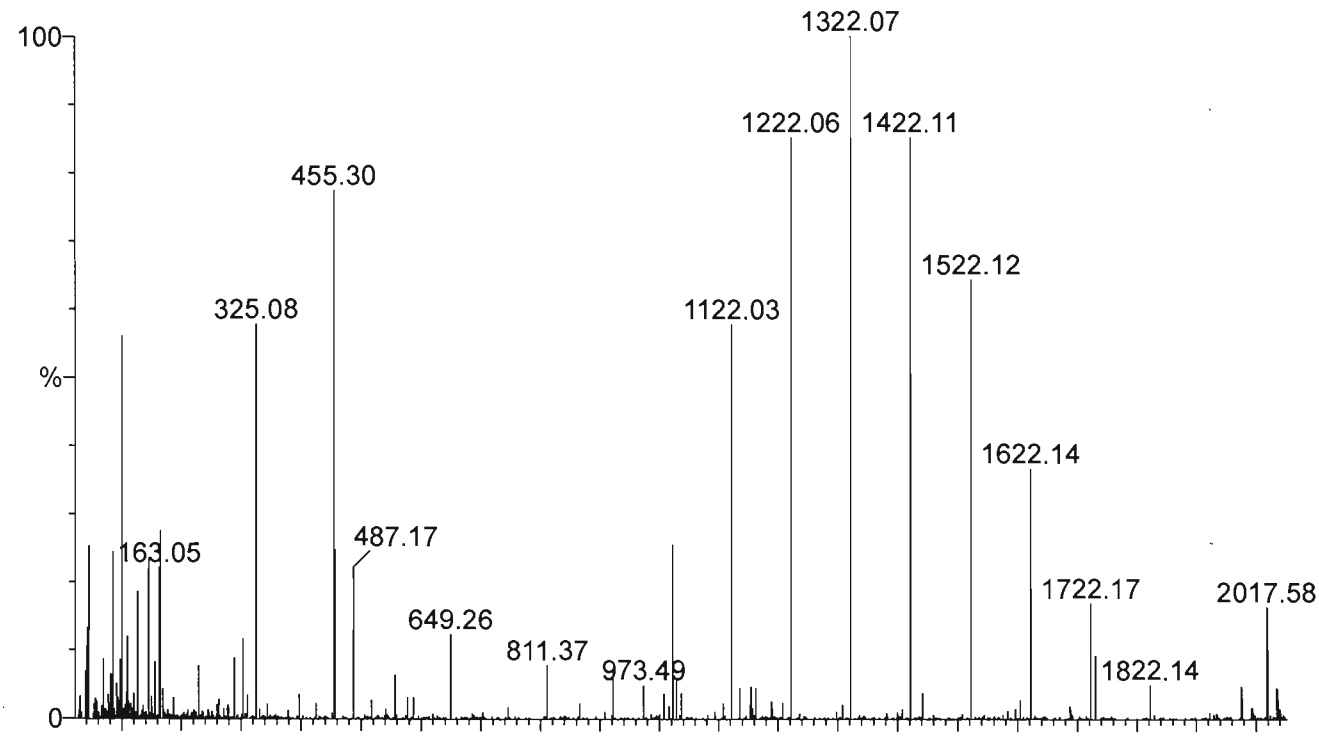


Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0375 amu

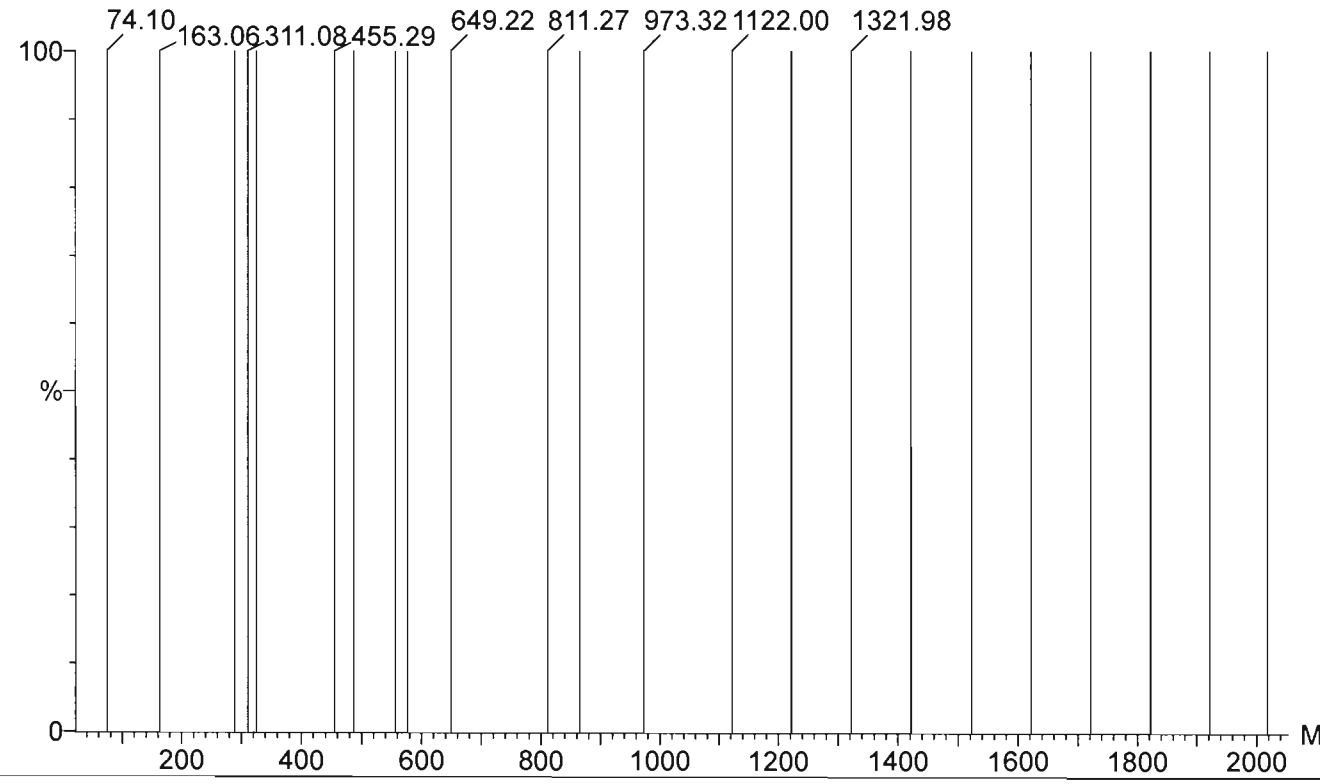



Data file: SCNMS1V - Calibrated
23 matches of 23 tested references
100
%
0
1322.14
455.31
1222.10
1422.15
325.14
1522.14
1122.06
1622.10
163.05
487.17
1722.02
2016.96
649.28
811.24
973.32
1821.86
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref
Mean residual = 0.0981 amu
74.10
163.06
311.08
455.29
649.22
811.27
973.32
1122.00
1321.98
200
400
600
800
1000
1200
1400
1600
1800
2000
M/z

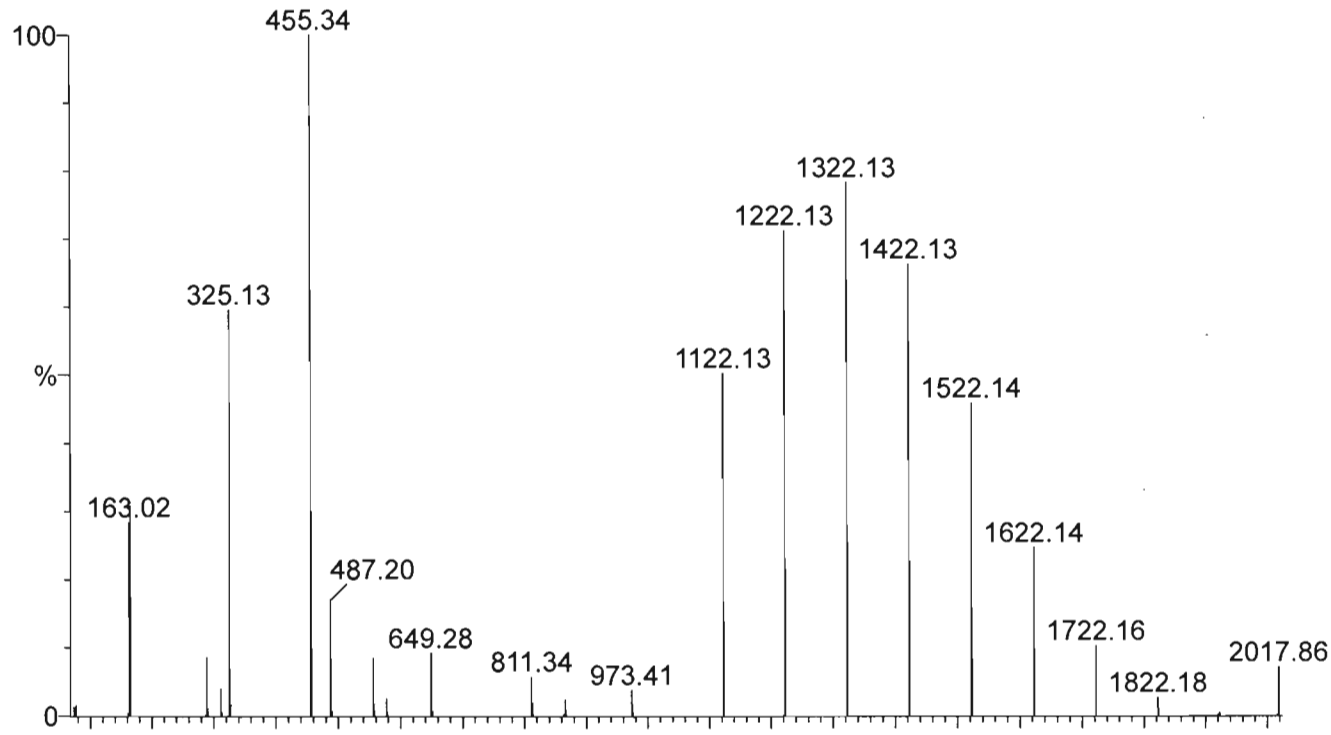
Data file: FASTMS1V - Calibrated 23 matches of 23 tested references



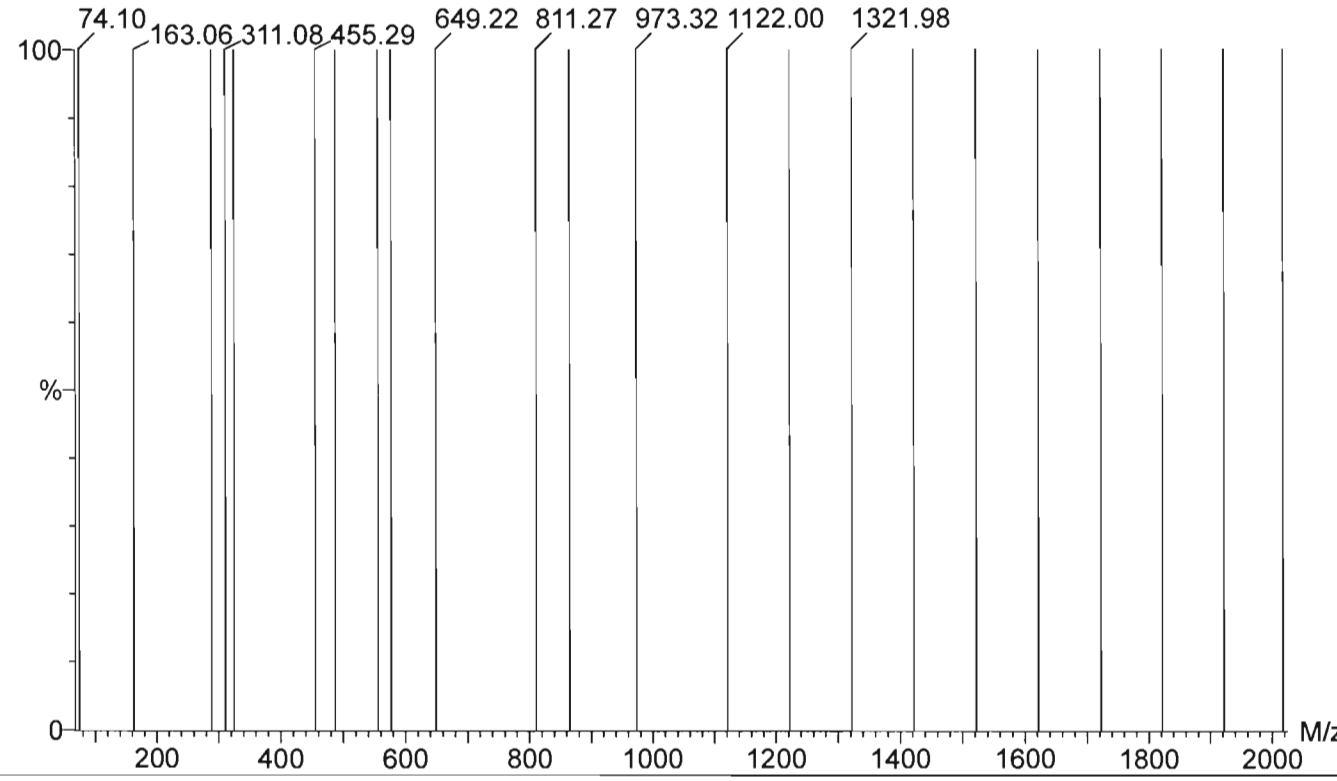
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.0846 amu

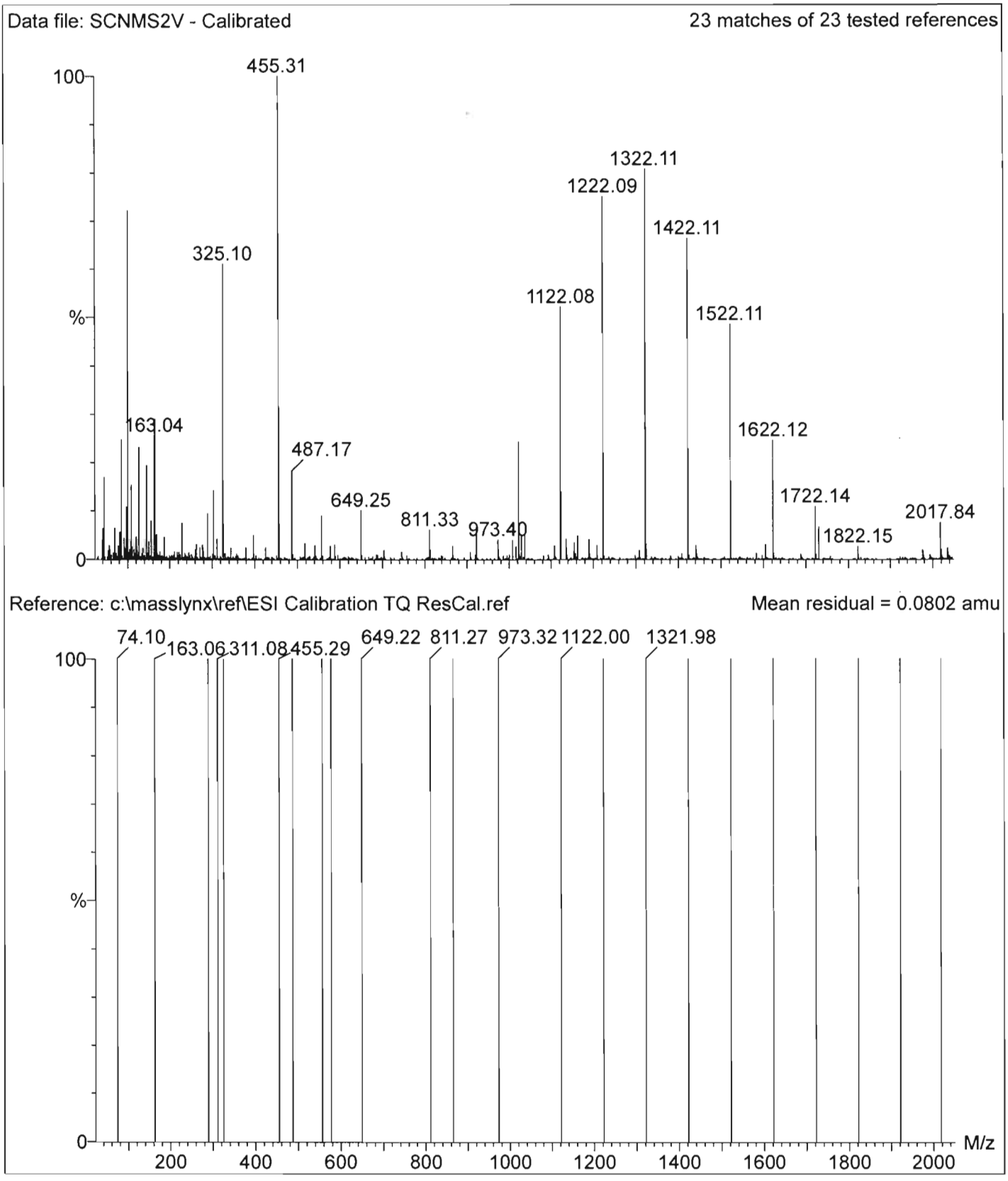


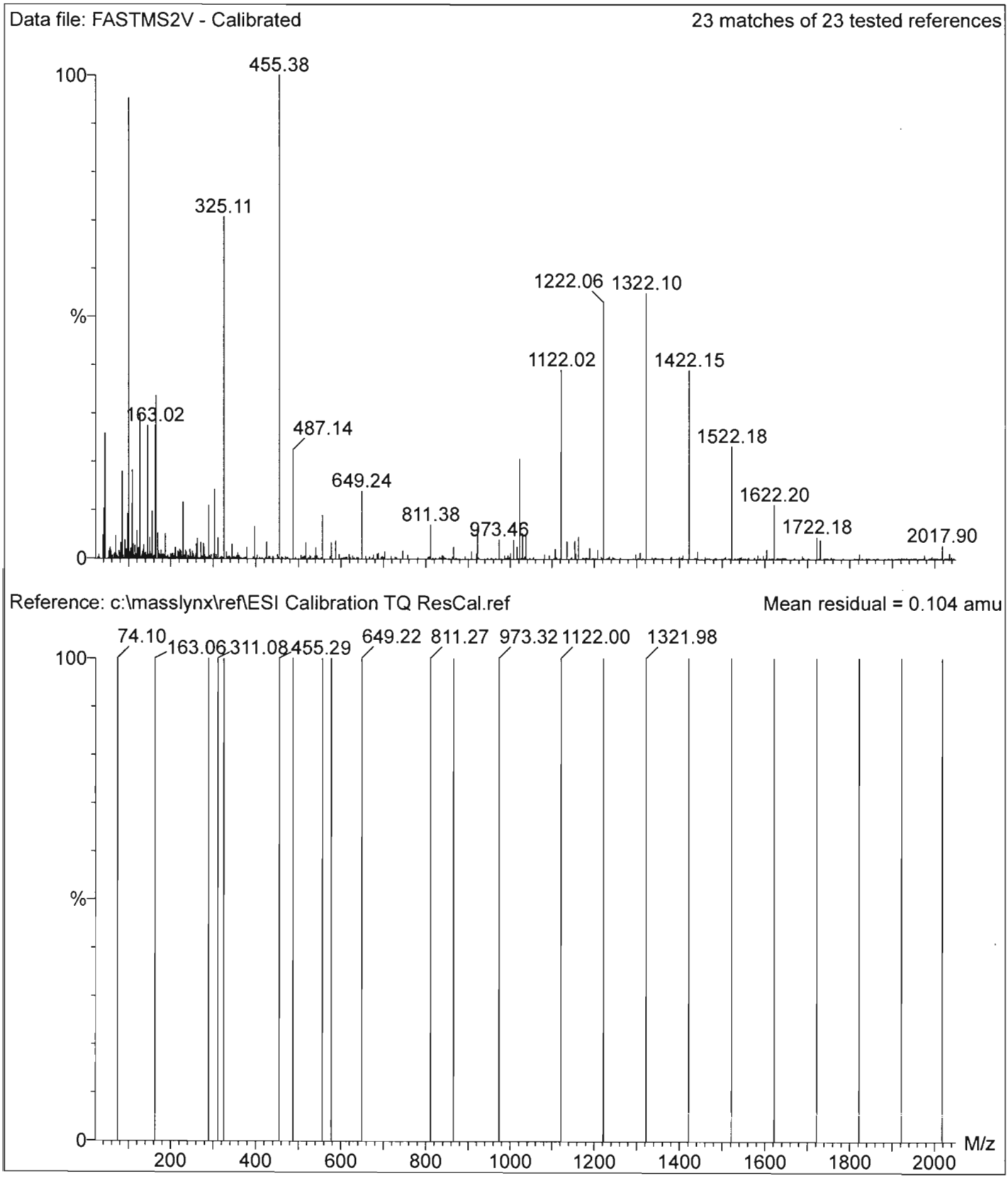
Data file: STATMS2V - Calibrated 22 matches of 23 tested references



Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref Mean residual = 0.108 amu




Data file: SCNMS2V - Calibrated
23 matches of 23 tested references
100
%
0
455.31
1322.11
1222.09
1422.11
325.10
1122.08
1522.11
163.04
1622.12
487.17
649.25
1722.14
811.33
973.40
2017.84
1822.15
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref
Mean residual = 0.0802 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


Data file: FASTMS2V - Calibrated
23 matches of 23 tested references
100
%
0
455.38
325.11
1222.06
1322.10
1122.02
1422.15
163.02
487.14
1522.18
649.24
1622.20
811.38
973.46
1722.18
2017.90
Reference: c:\masslynx\ref\ESI Calibration TQ ResCal.ref
Mean residual = 0.104 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

STANDARDS

Analytical Standard Record

Vista Analytical Laboratory

20A0801

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:	07-Jan-21
Standard Type:	Reagent	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	23-Jan-20 14:53 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

20A0801

Description:	PFC - IS	Expires:	07-Jan-21
Standard Type:	Reagent	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	23-Jan-20 14:53 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

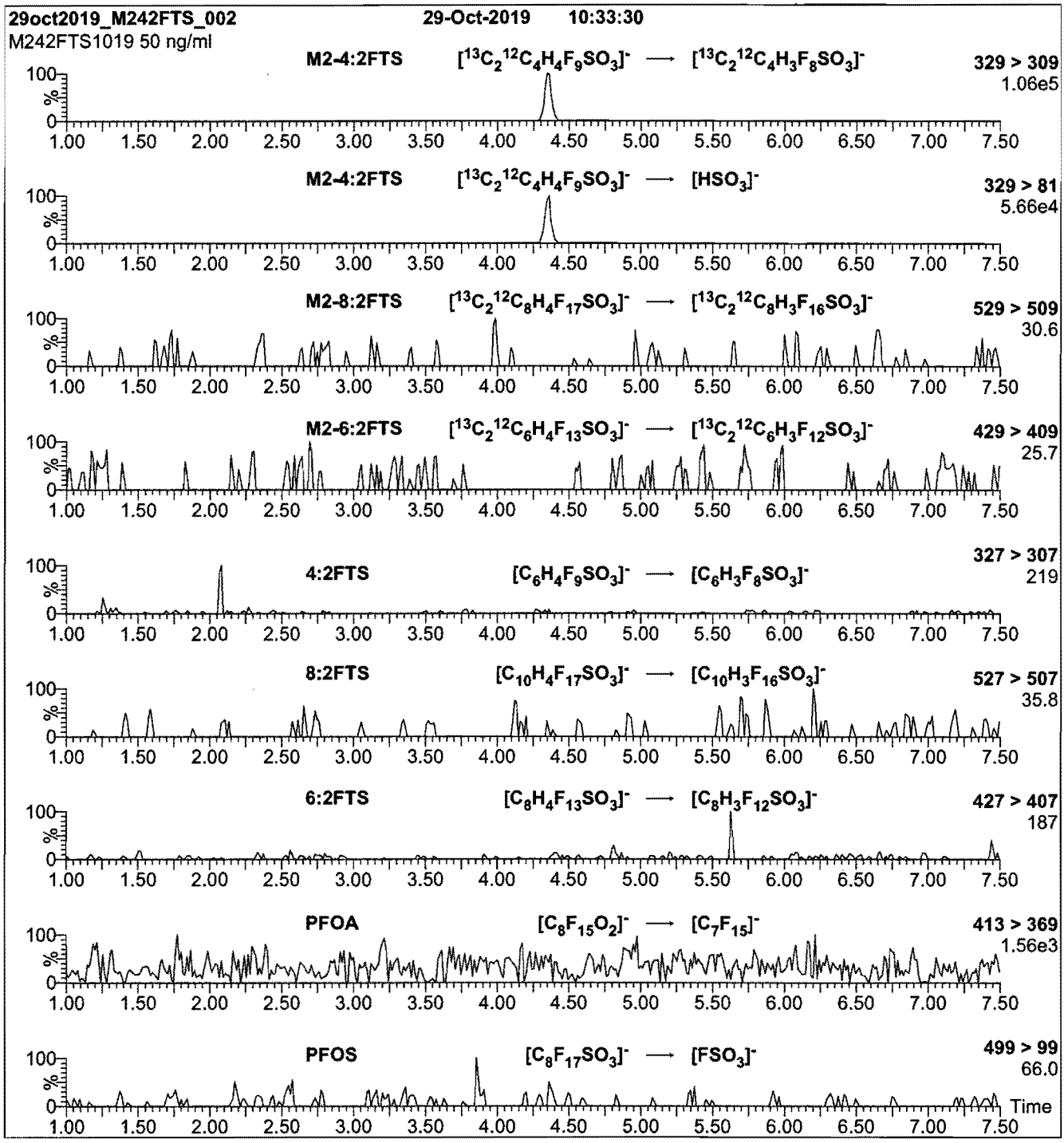
Sashi Sivendran-Basak, Ph.D., Quality Review

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

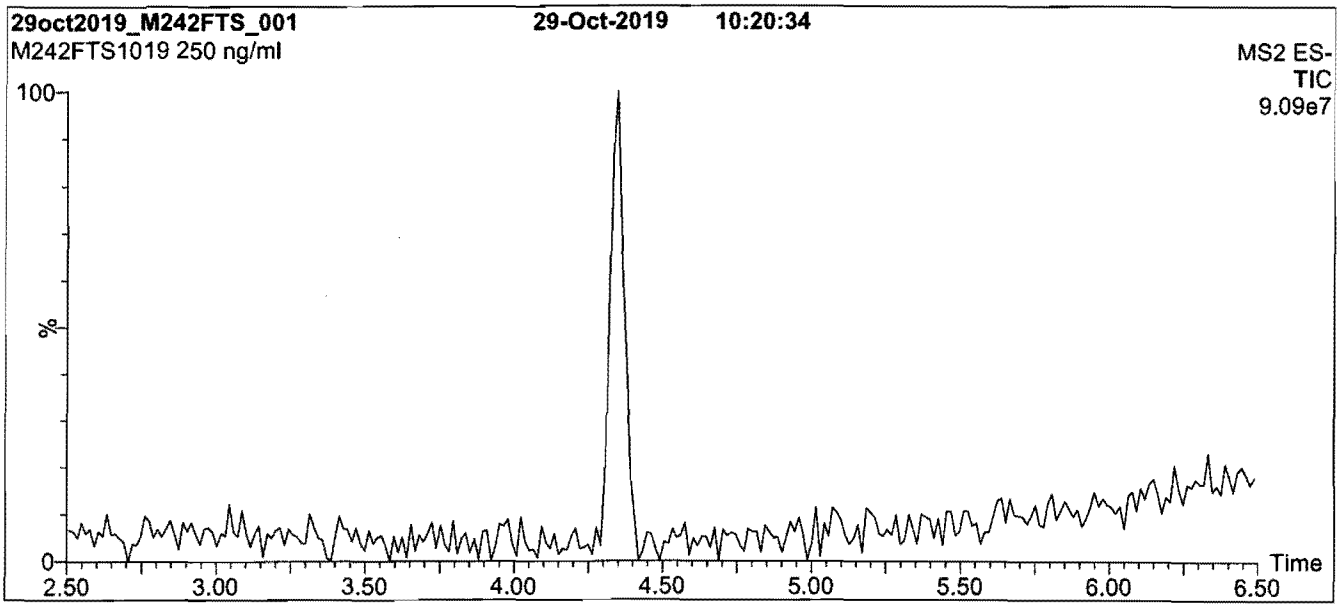
Flow: 300 µl/min

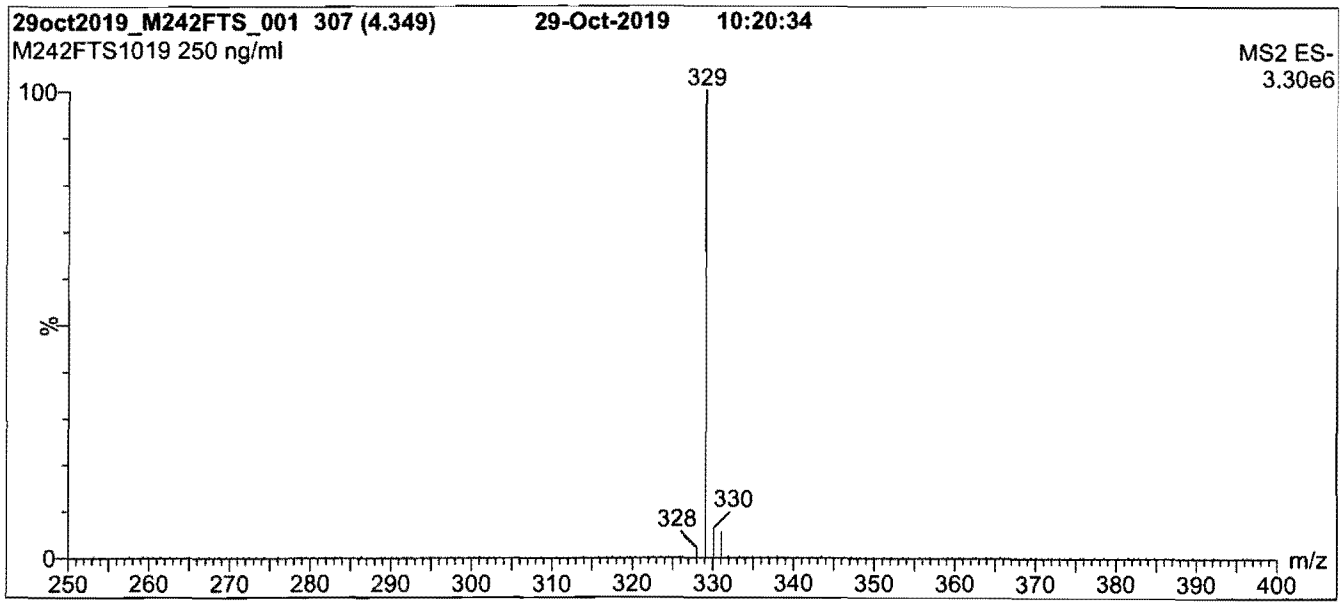
MS Parameters

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

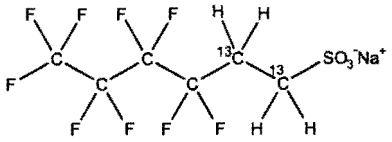
WELLINGTON LABORATORIES

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).

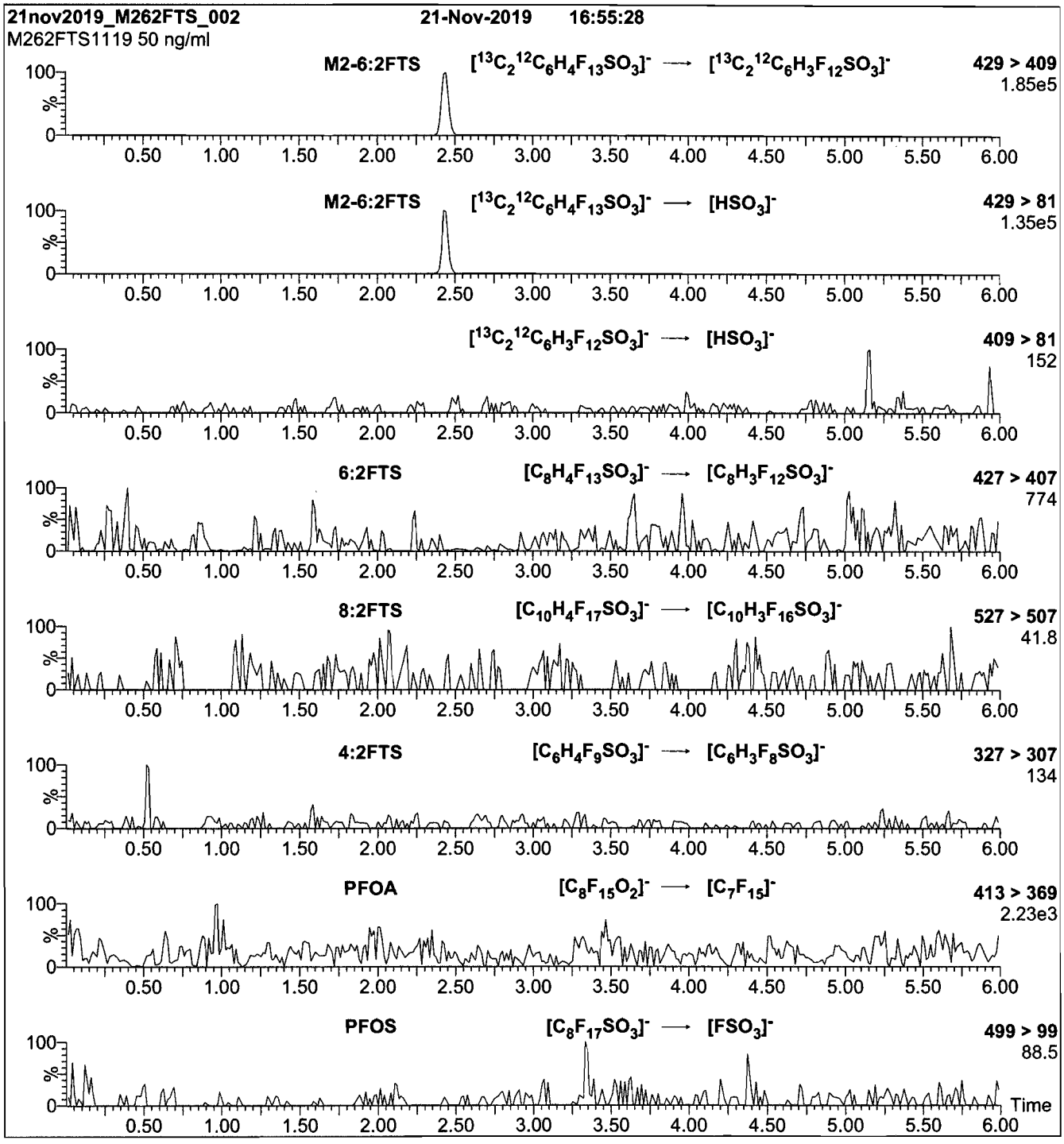
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

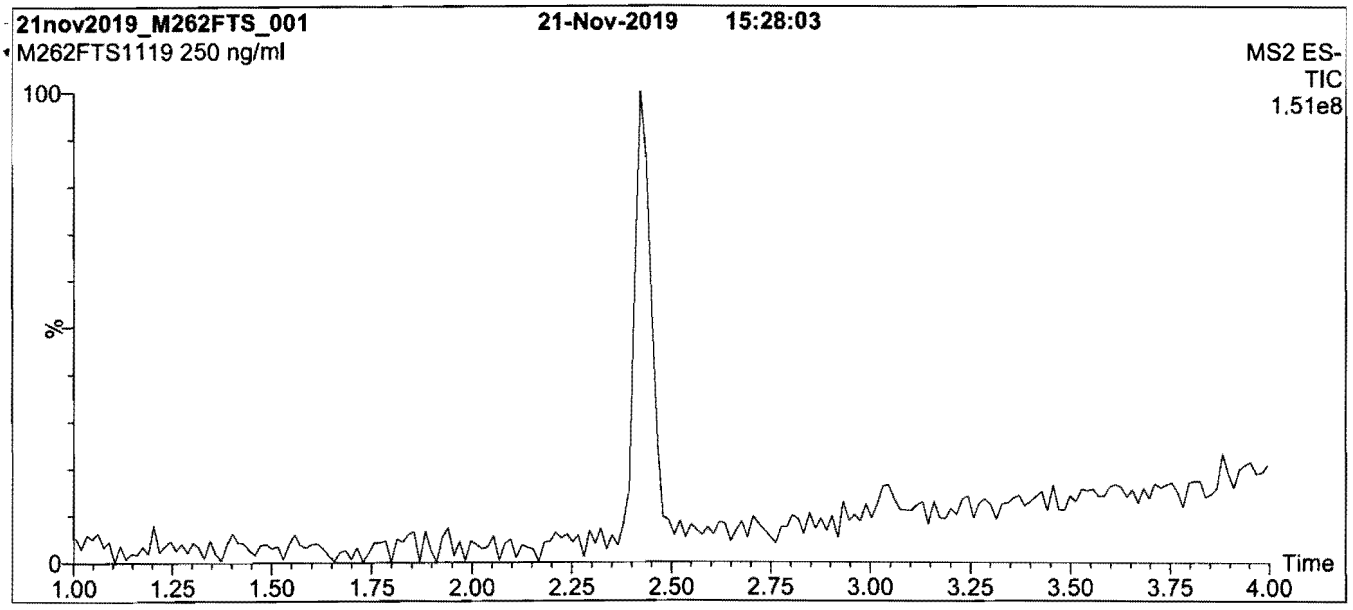
Mobile phase: Same as Figure 1

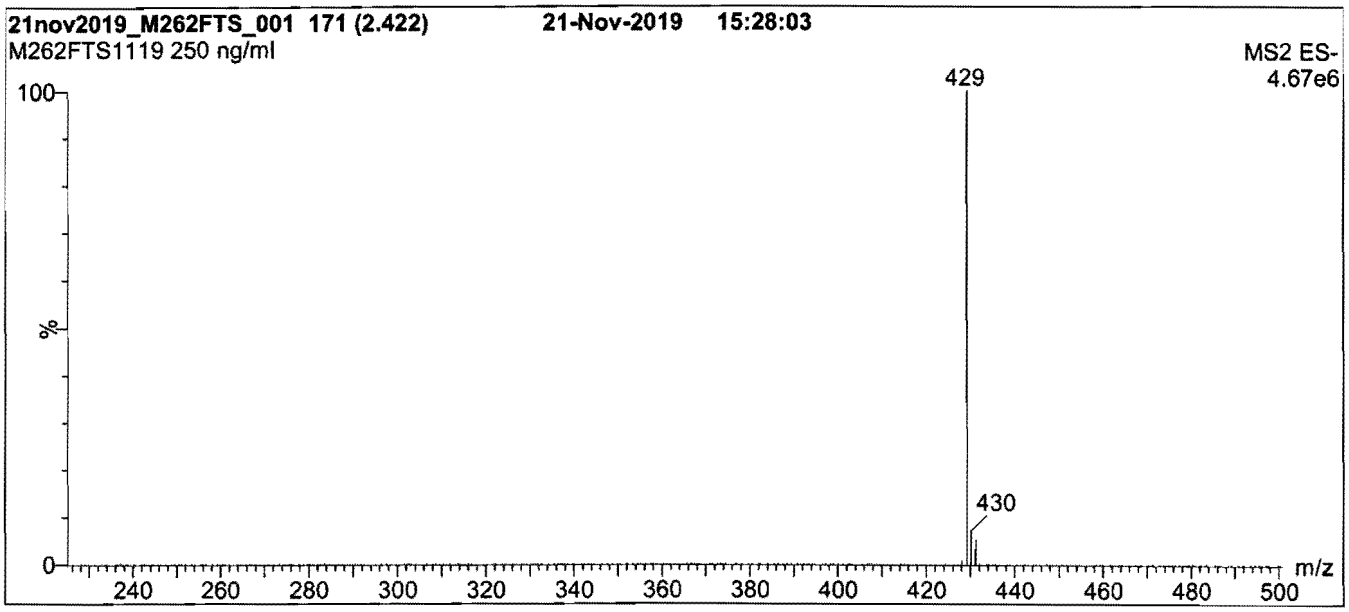
Flow: 300 µl/min

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

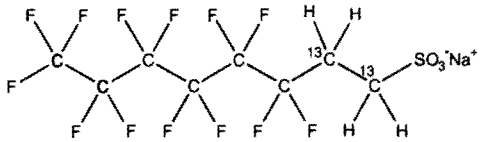
WELLINGTON LABORATORIES

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:

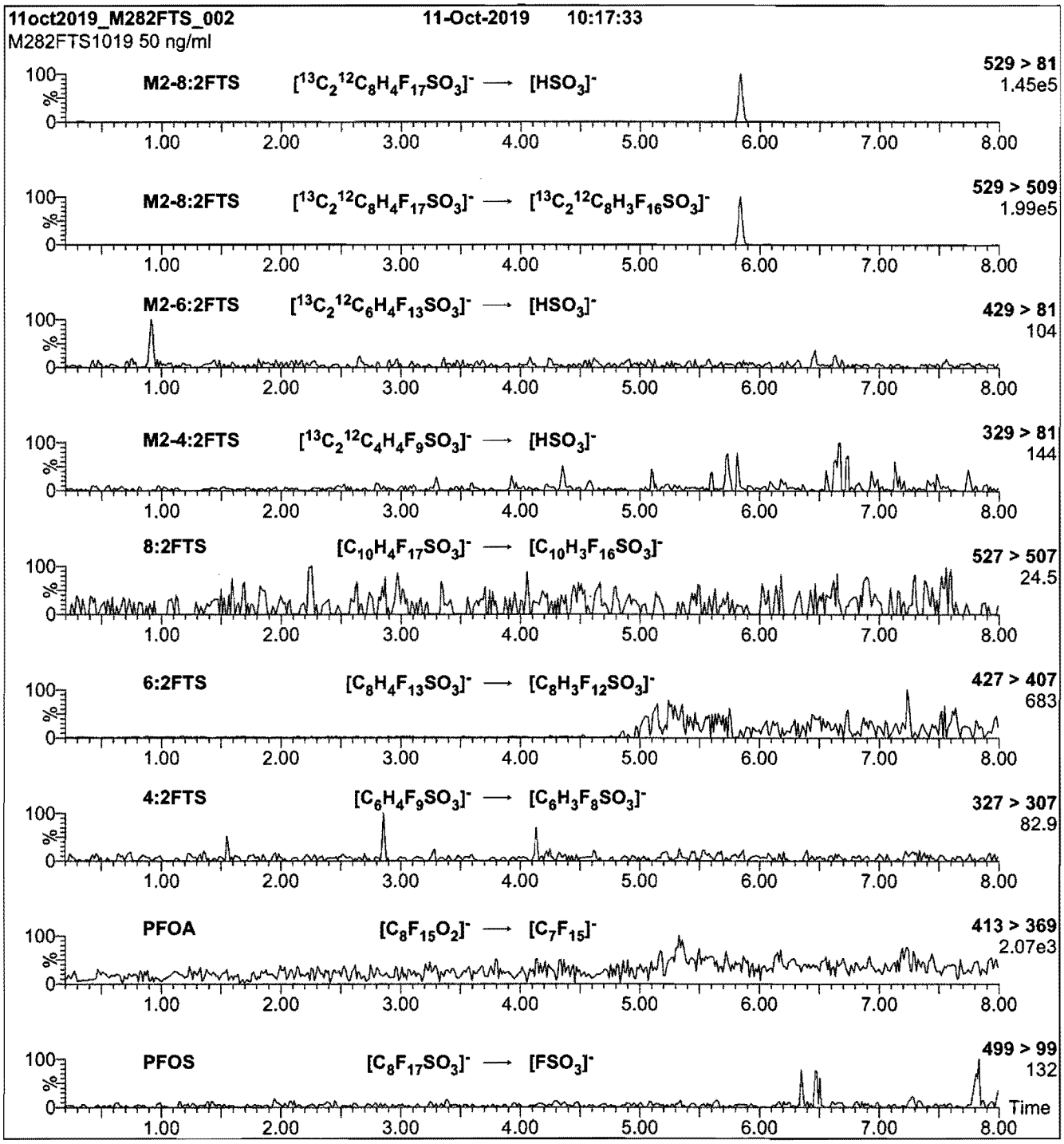
- See page 2 for further details.
- The native 6:2FTS contains 4.22% of ^{34}S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for 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)

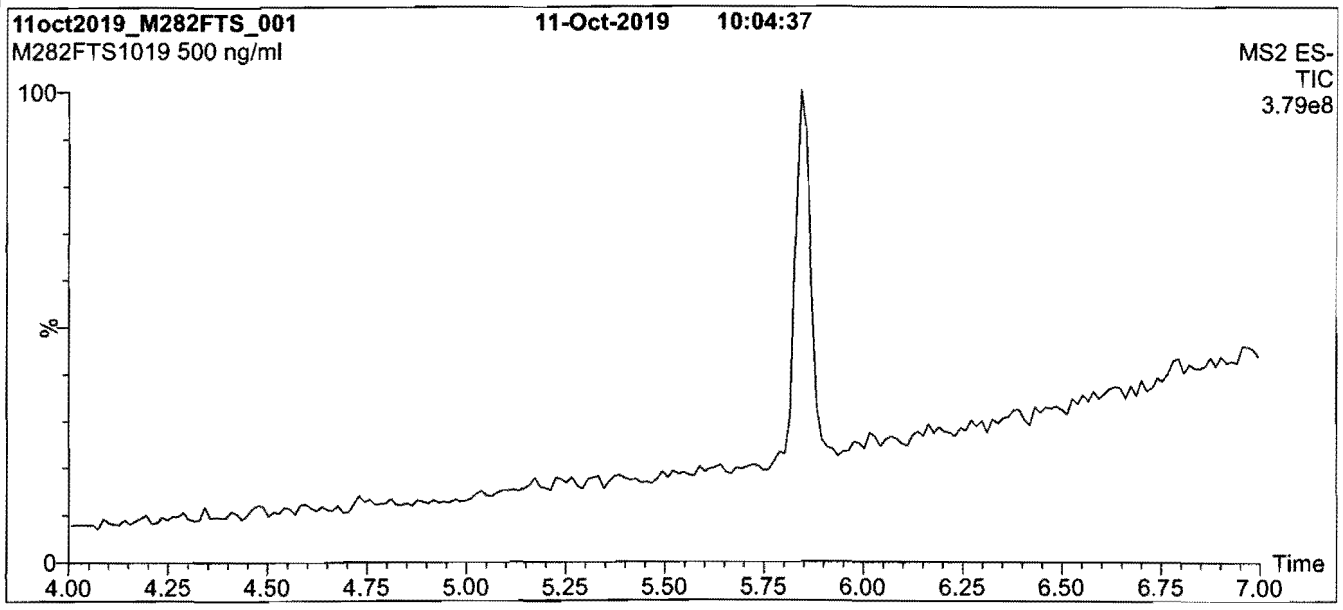
Mobile phase: Same as Figure 1

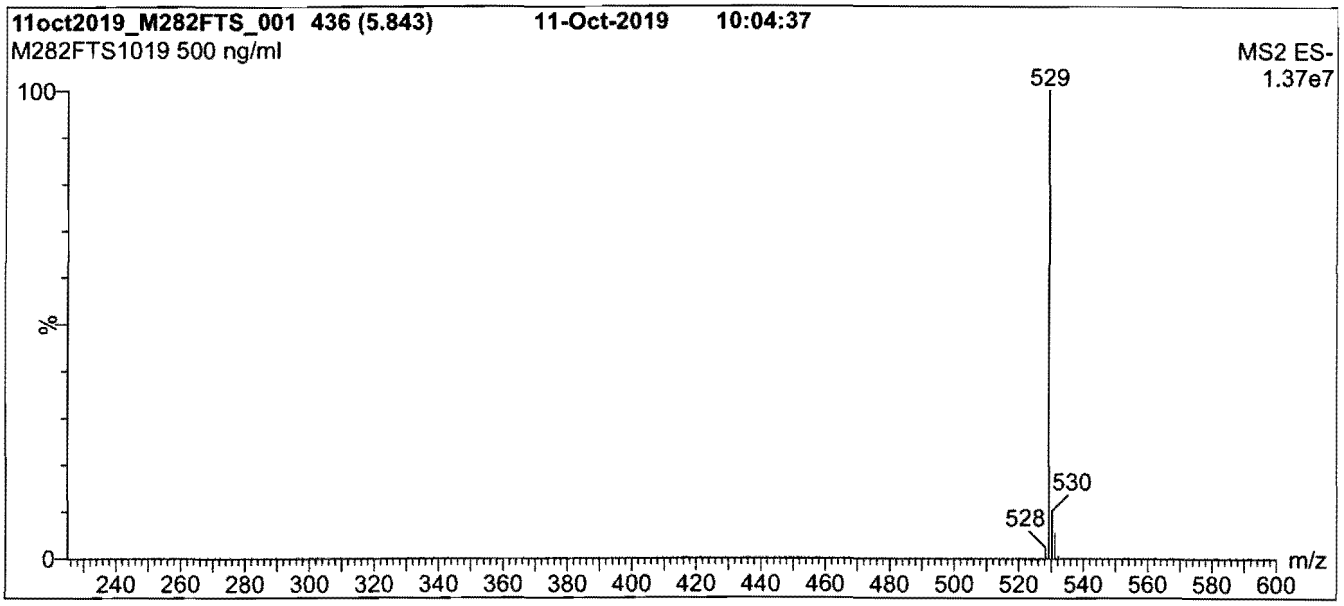
Flow: 300 µl/min

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

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

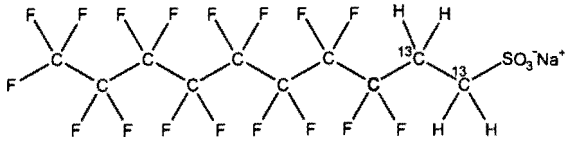
WELLINGTON LABORATORIES

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).

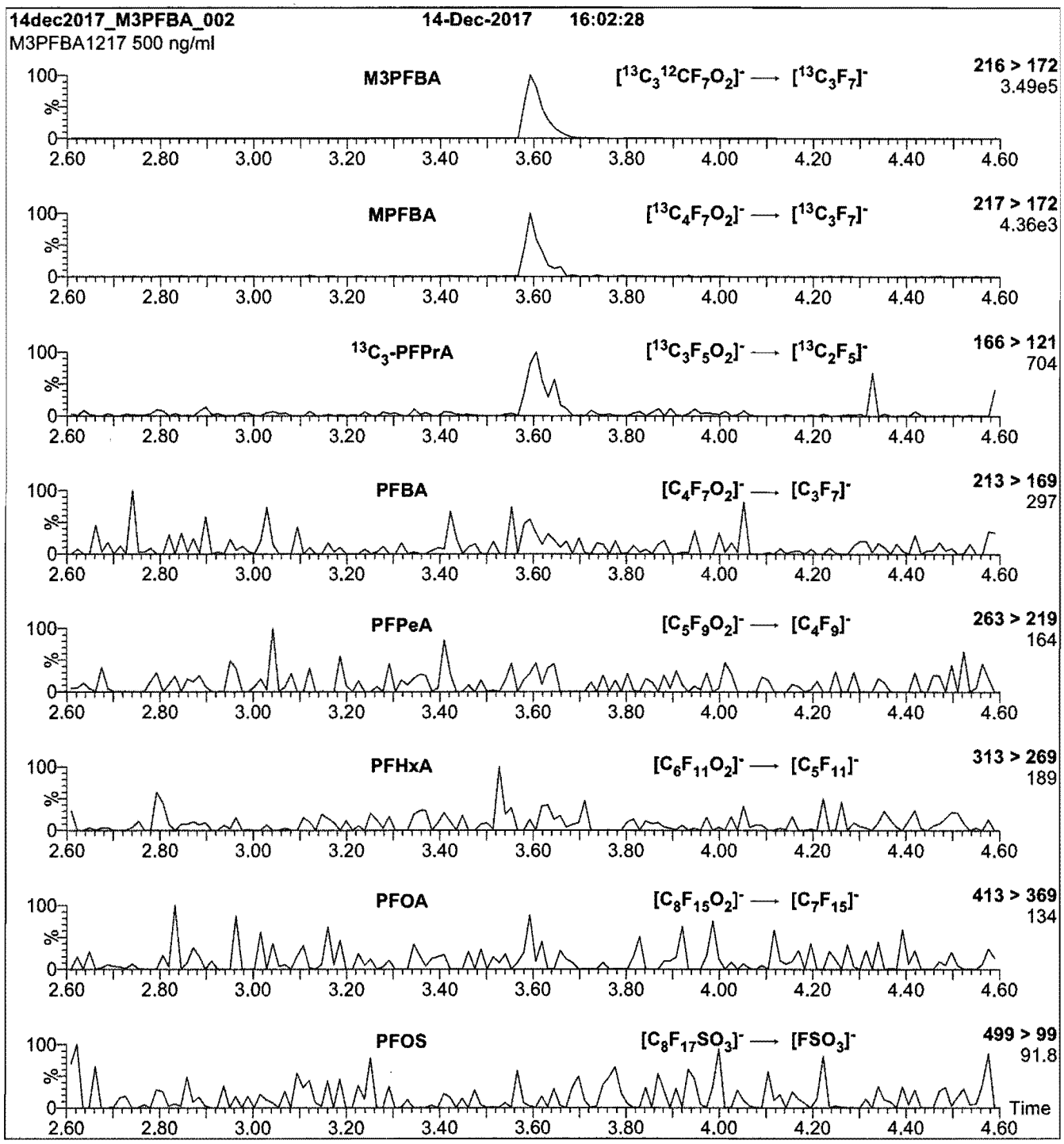
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

1920604

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)

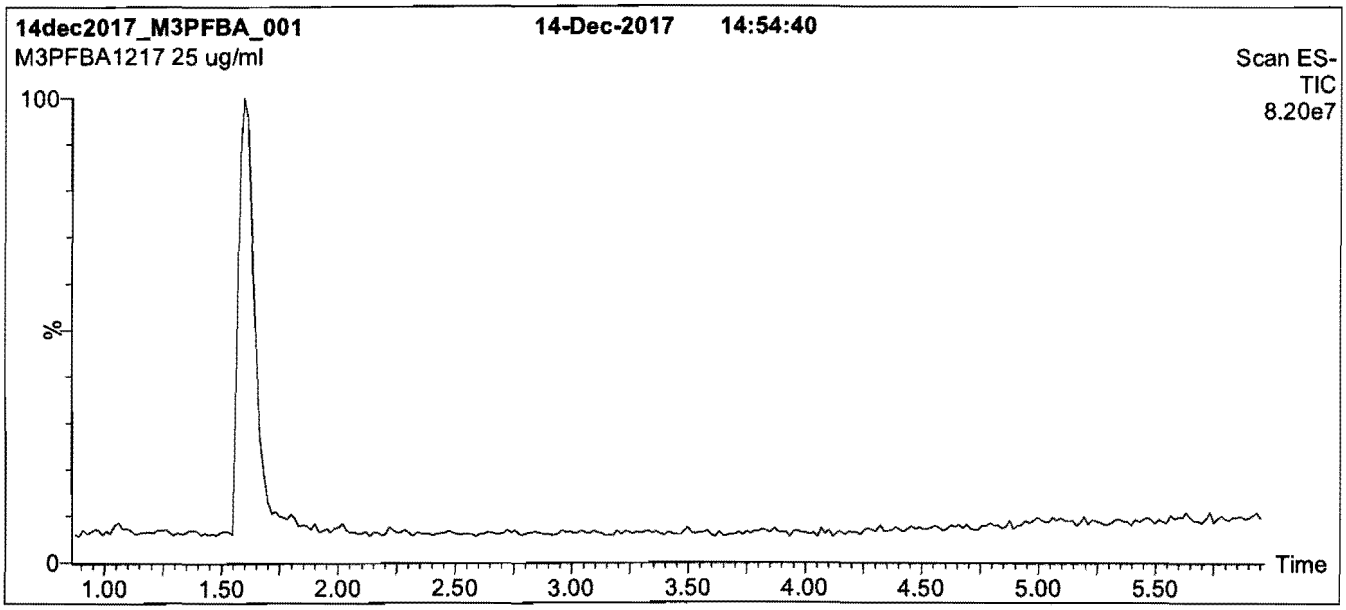
Flow: 300 µl/min

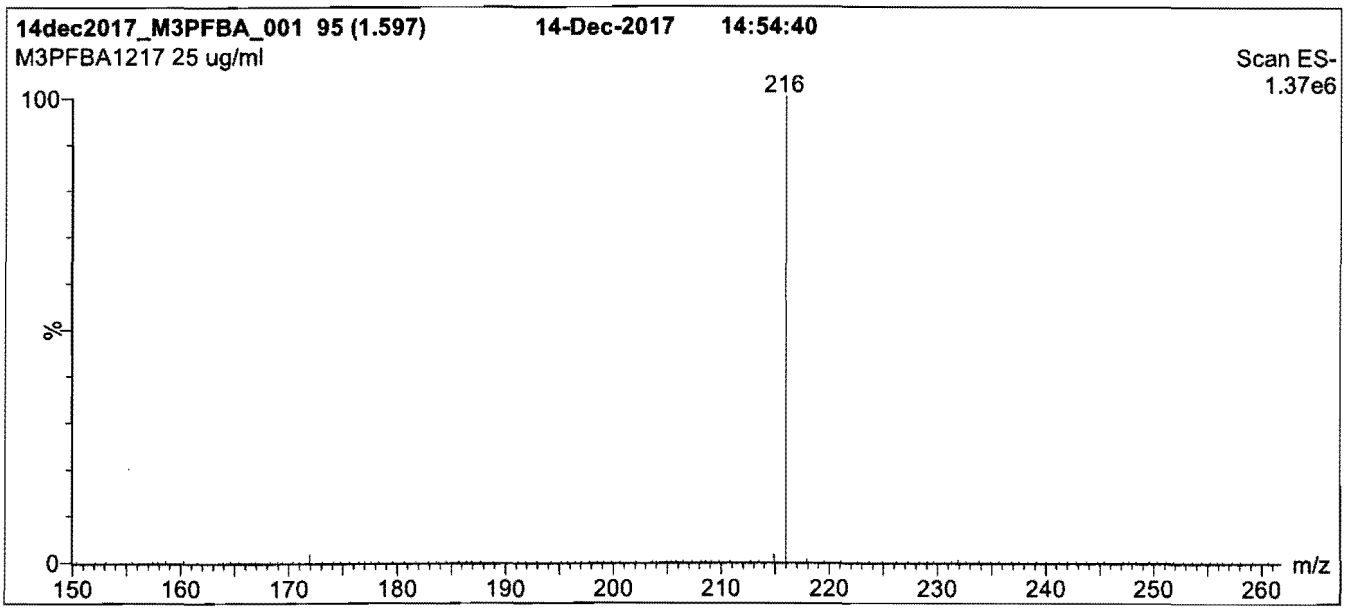
MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 10

19L0604

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. A1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

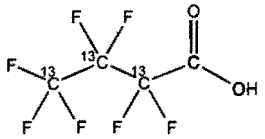
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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:

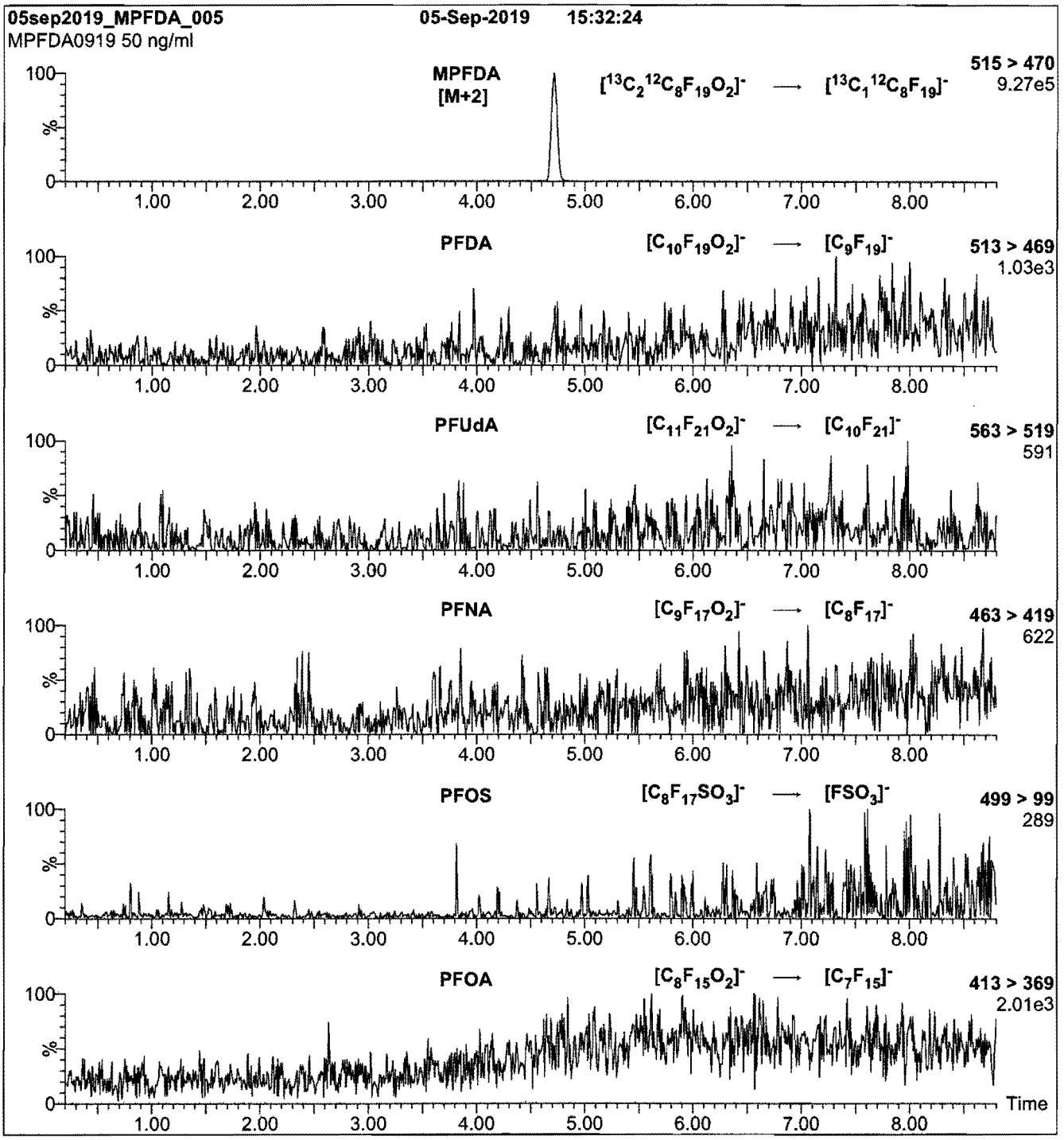
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of perfluoro-n-[$^{13}C_3$]propanoic acid and also contains ~ 1.0% of perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid due to the naturally occurring isotopic 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)

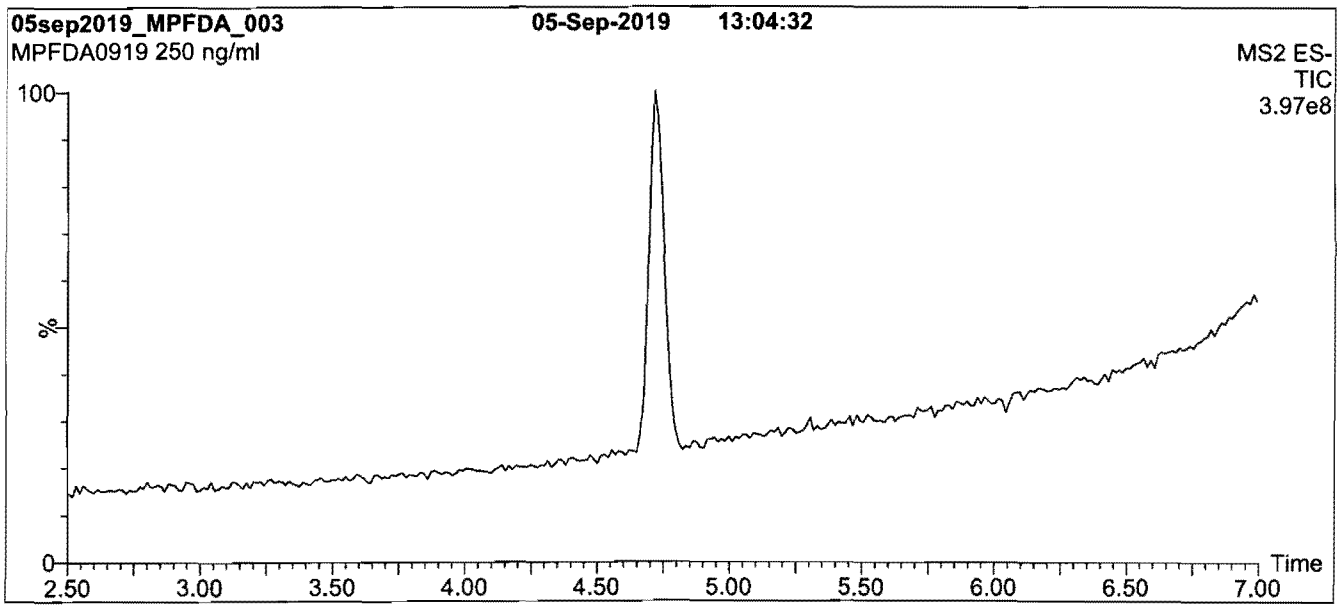
Mobile phase: Same as Figure 1

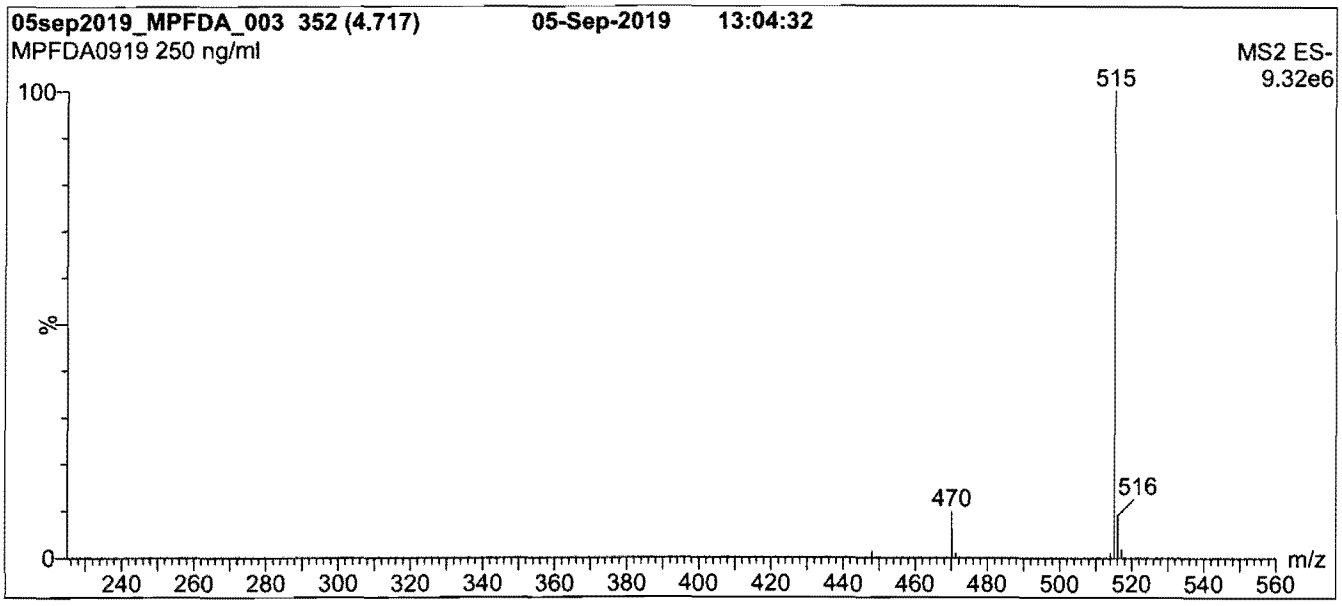
Flow: 300 µl/min

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

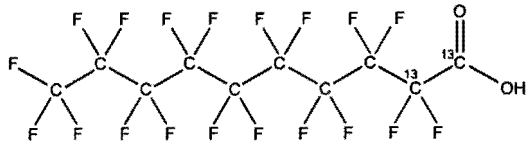
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

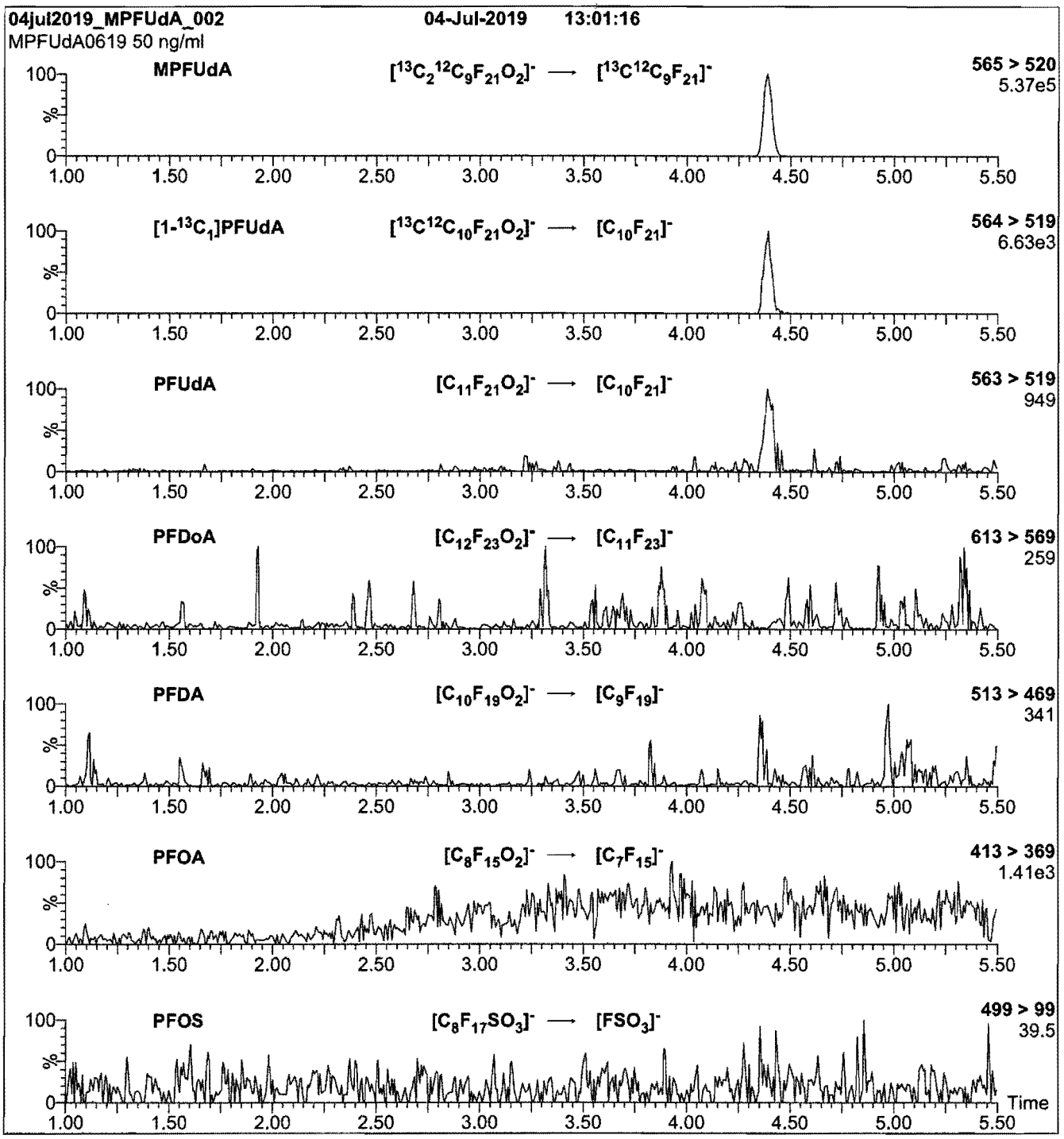
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

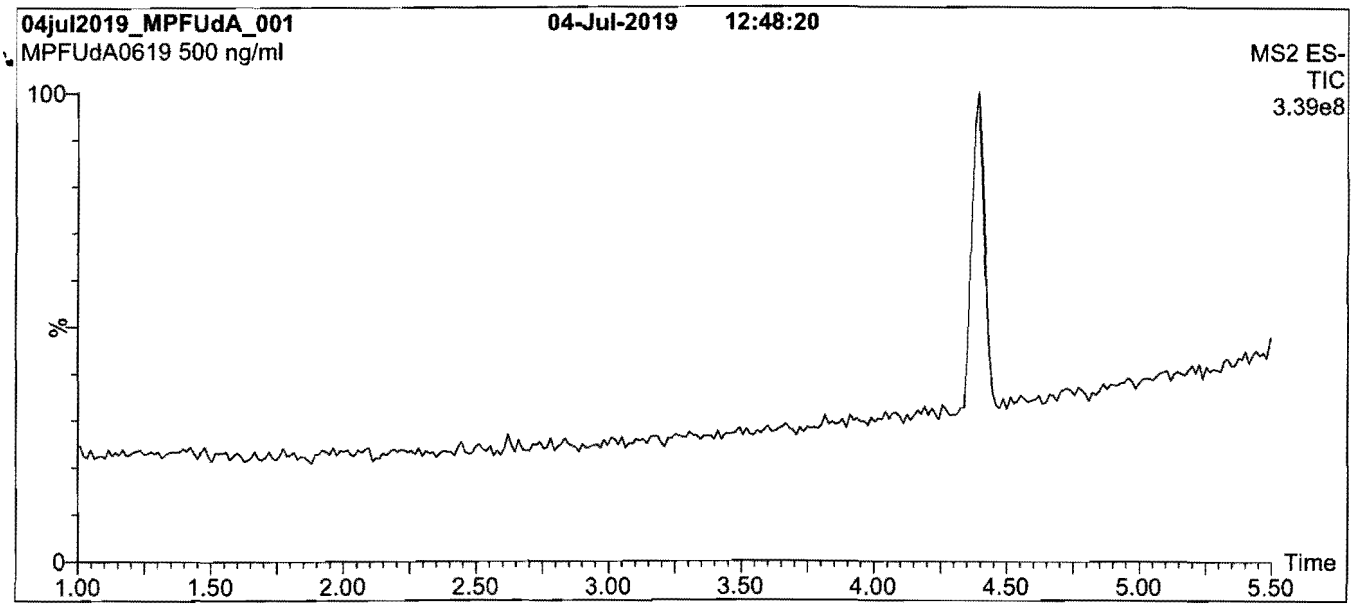
Mobile phase: Same as Figure 1

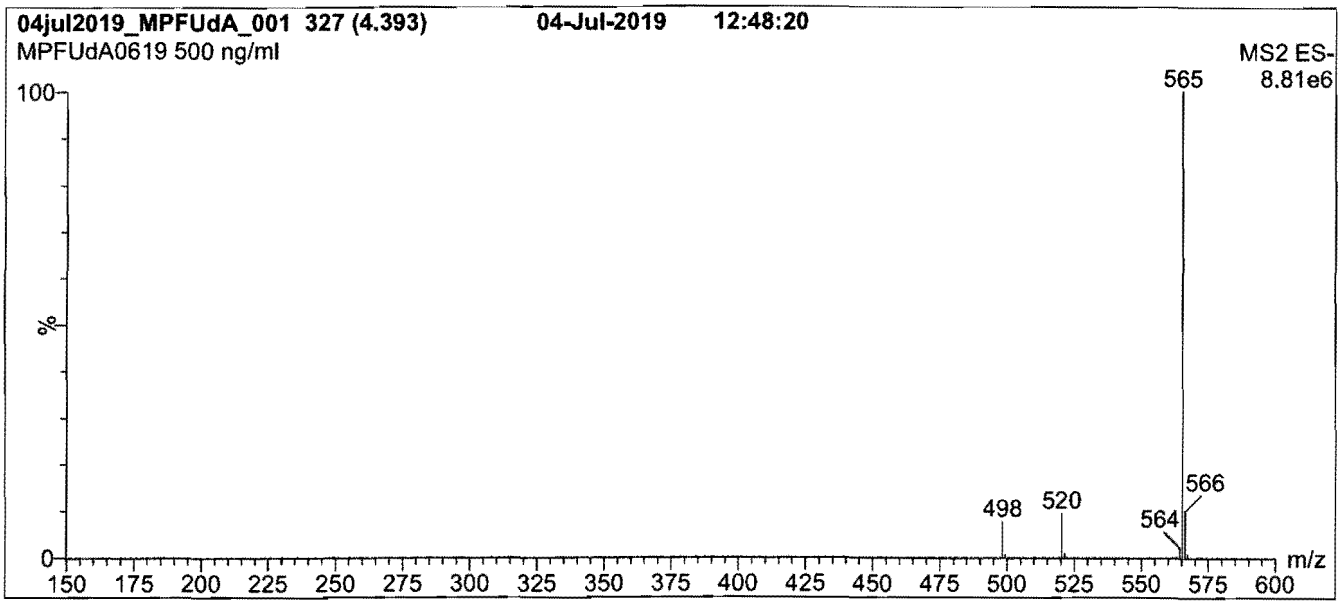
Flow: 300 µl/min

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:

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 REFERENCE MATERIAL PRODUCER

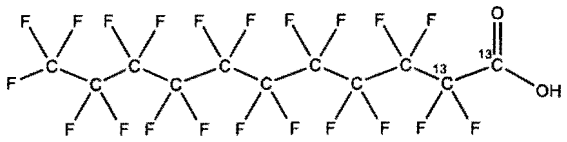
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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:

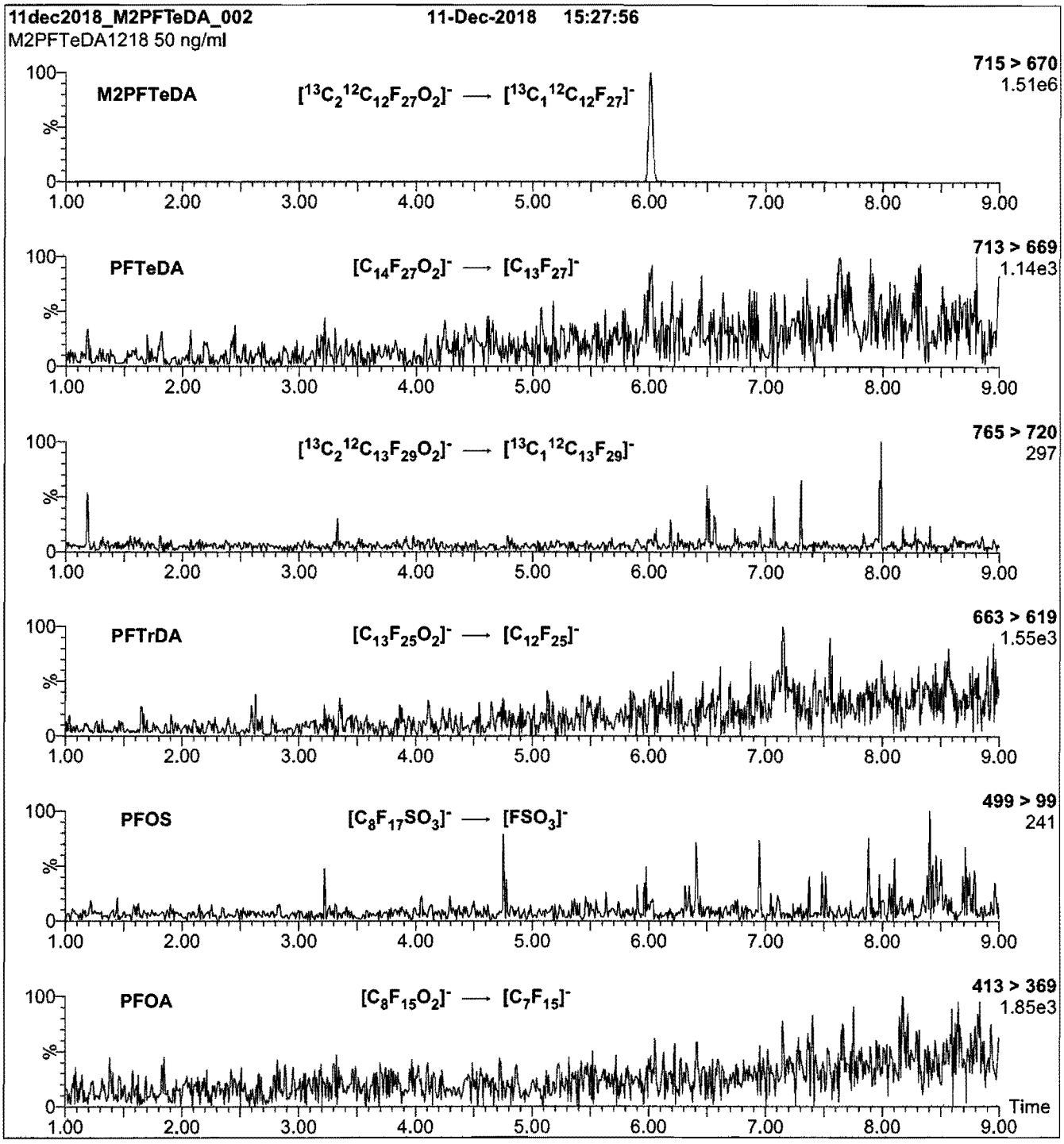
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Presence of 1-$^{13}C_1$-PFUdA (~1%; see Figure 2), 2-$^{13}C_1$-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the ^{13}C-precursor.

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)

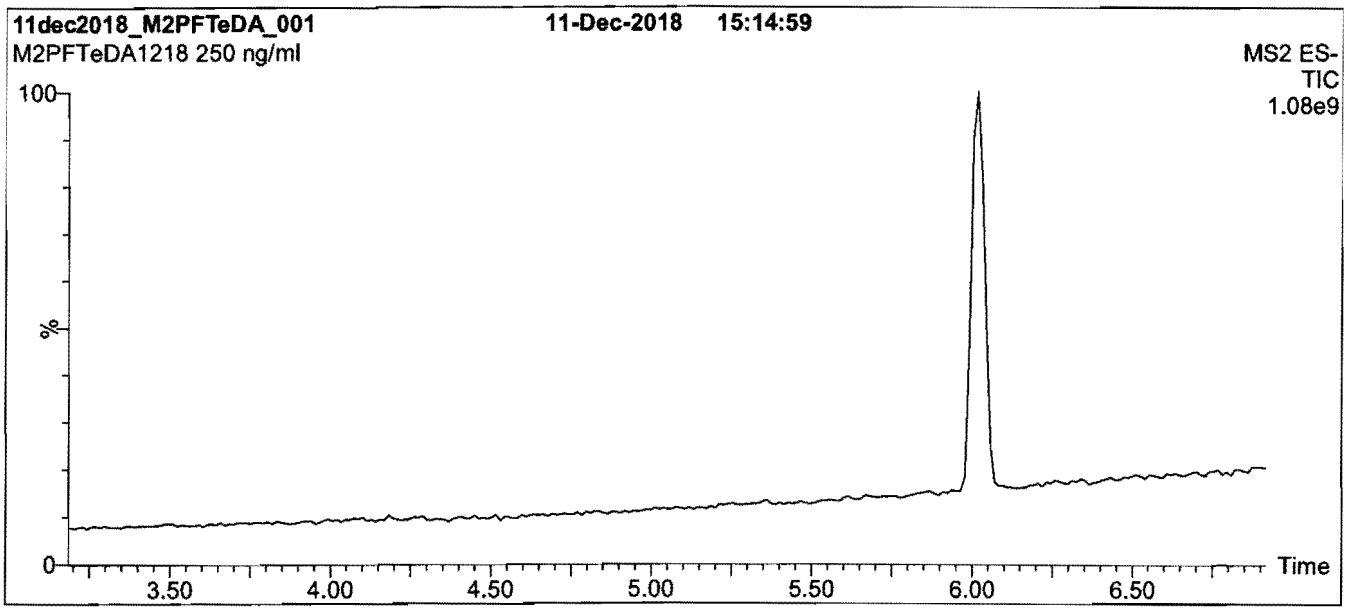
Mobile phase: Same as Figure 1

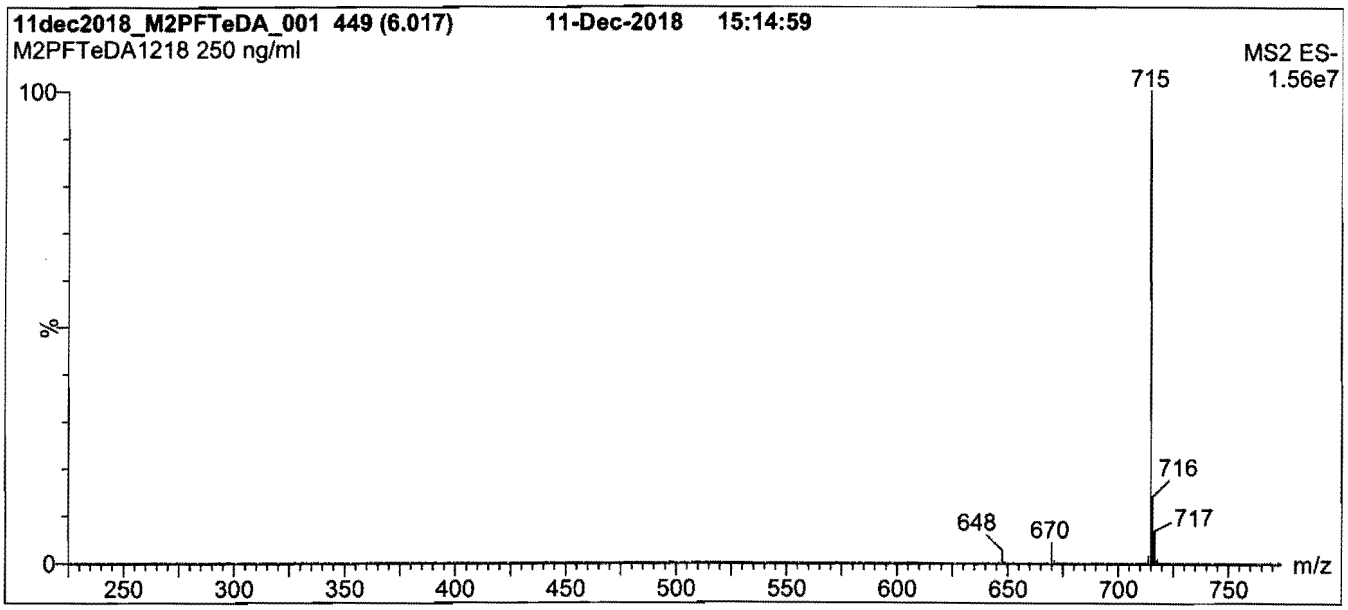
Flow: 300 µl/min

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

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

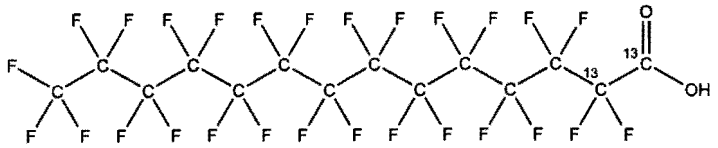
19L0607

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.

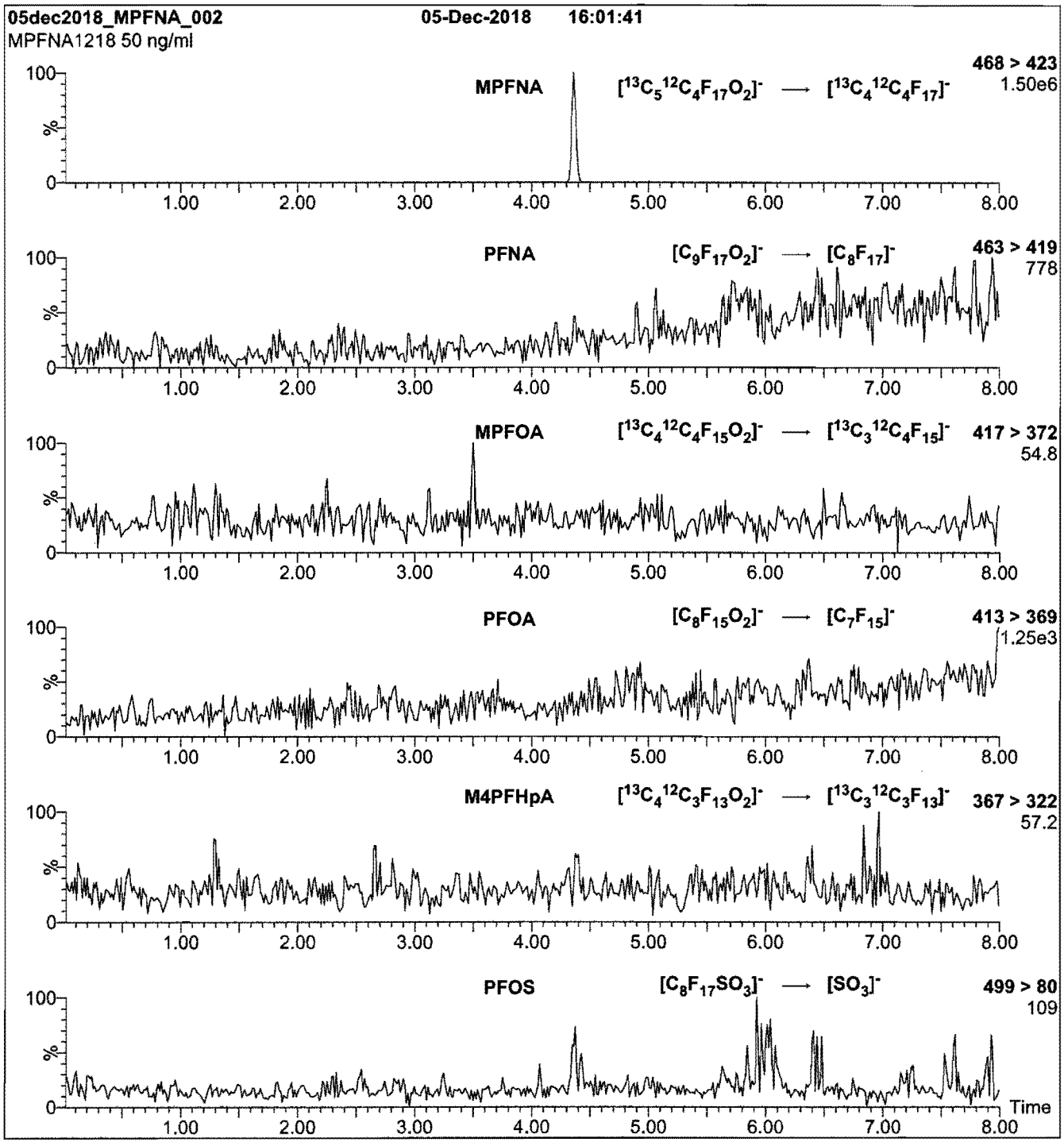
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

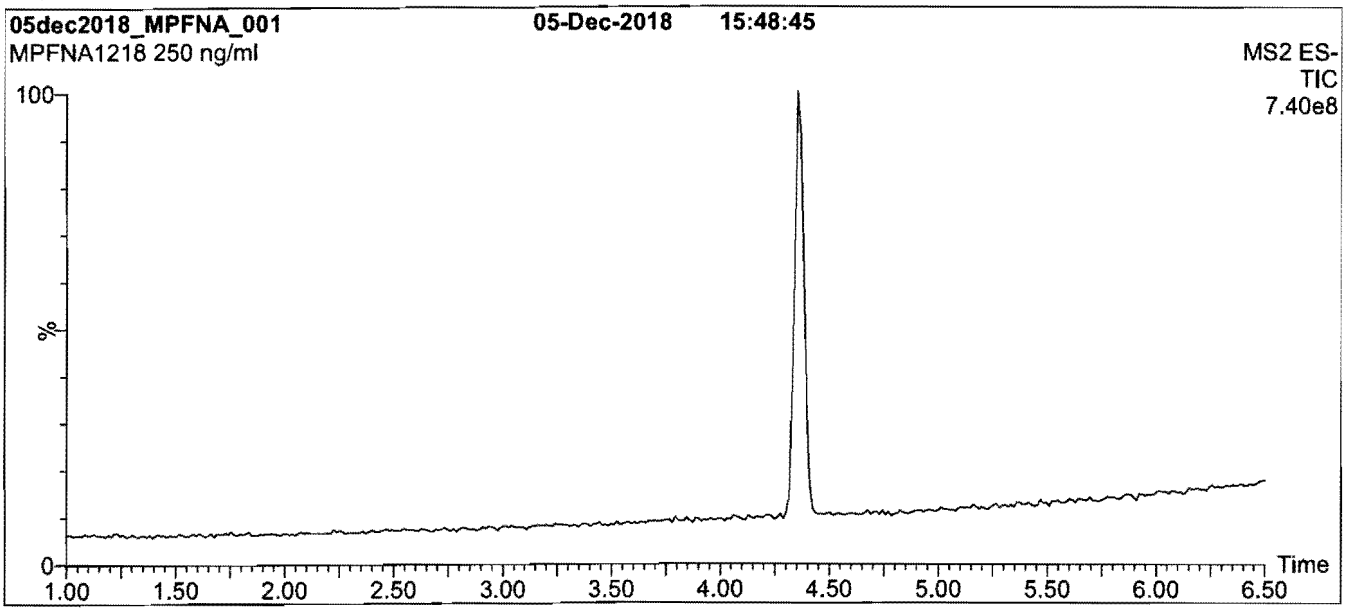
Flow: 300 µl/min

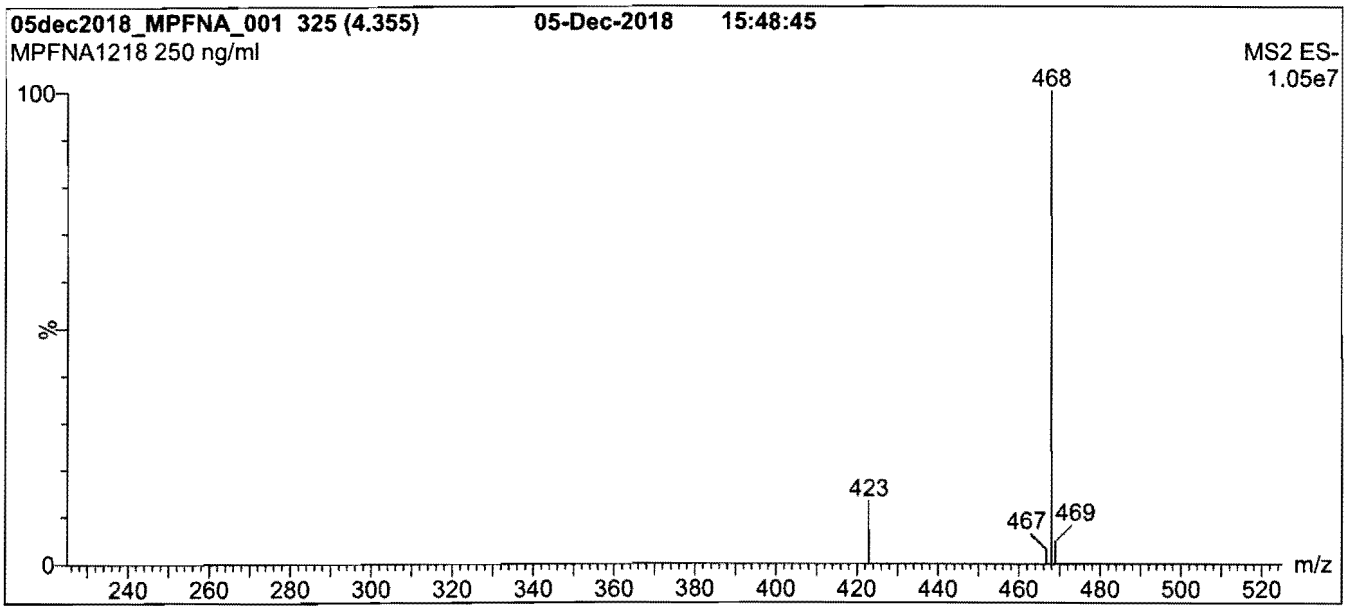
MS Parameters

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

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

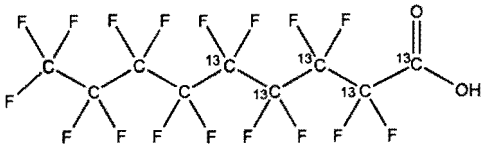
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

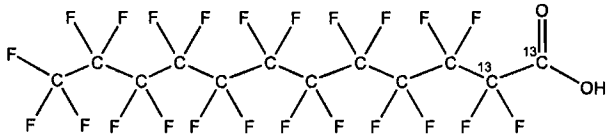
CERTIFICATE OF ANALYSIS
DOCUMENTATION

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.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 12/18/2018 (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

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:

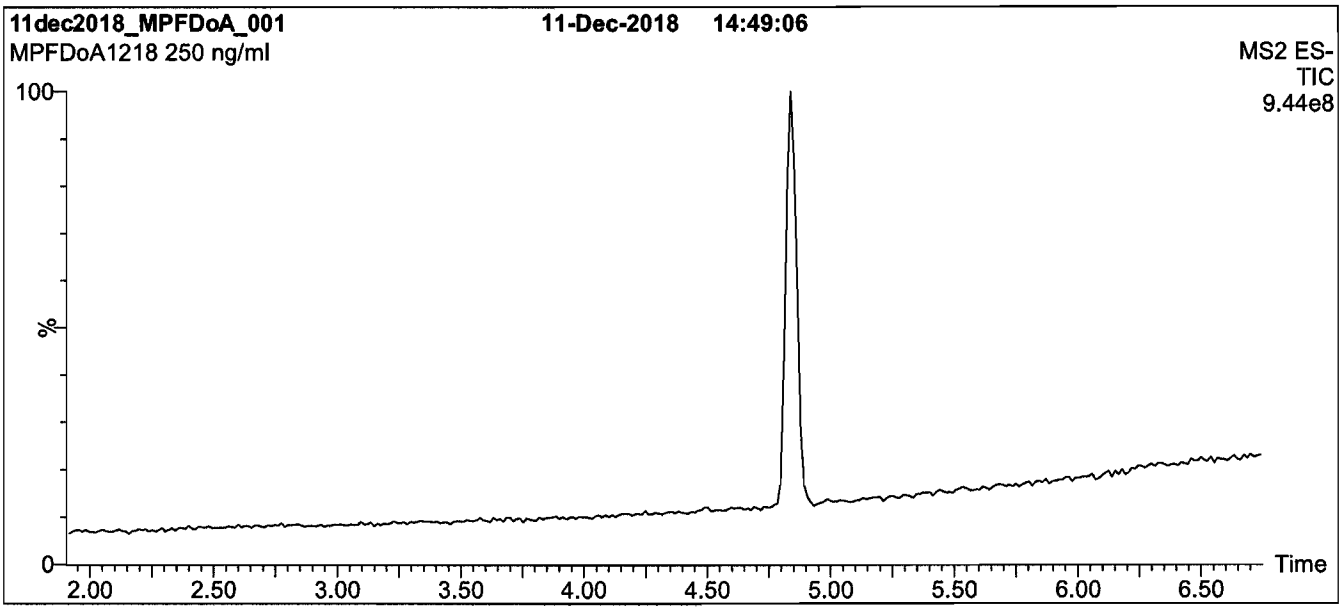
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO 17034 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).

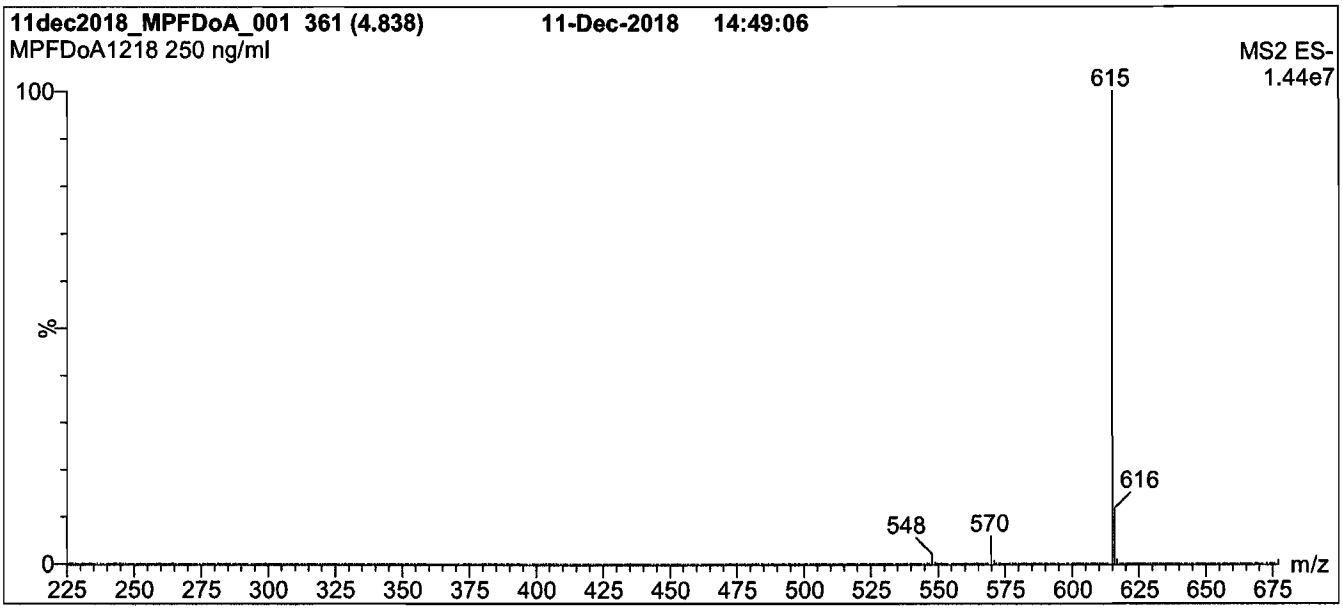
CALA Testing Accreditation No. A1226

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

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

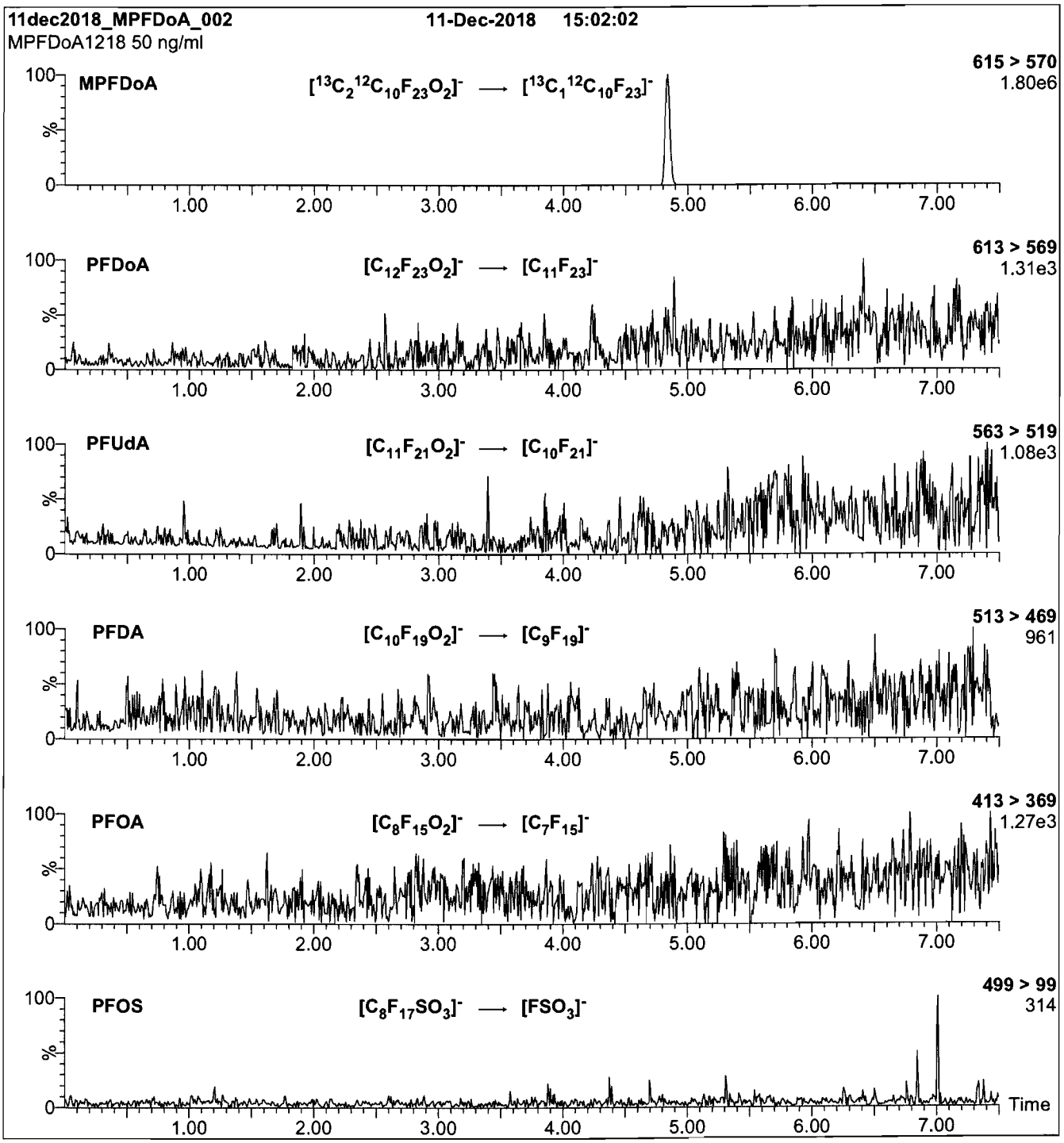
Flow: 300 µl/min

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)

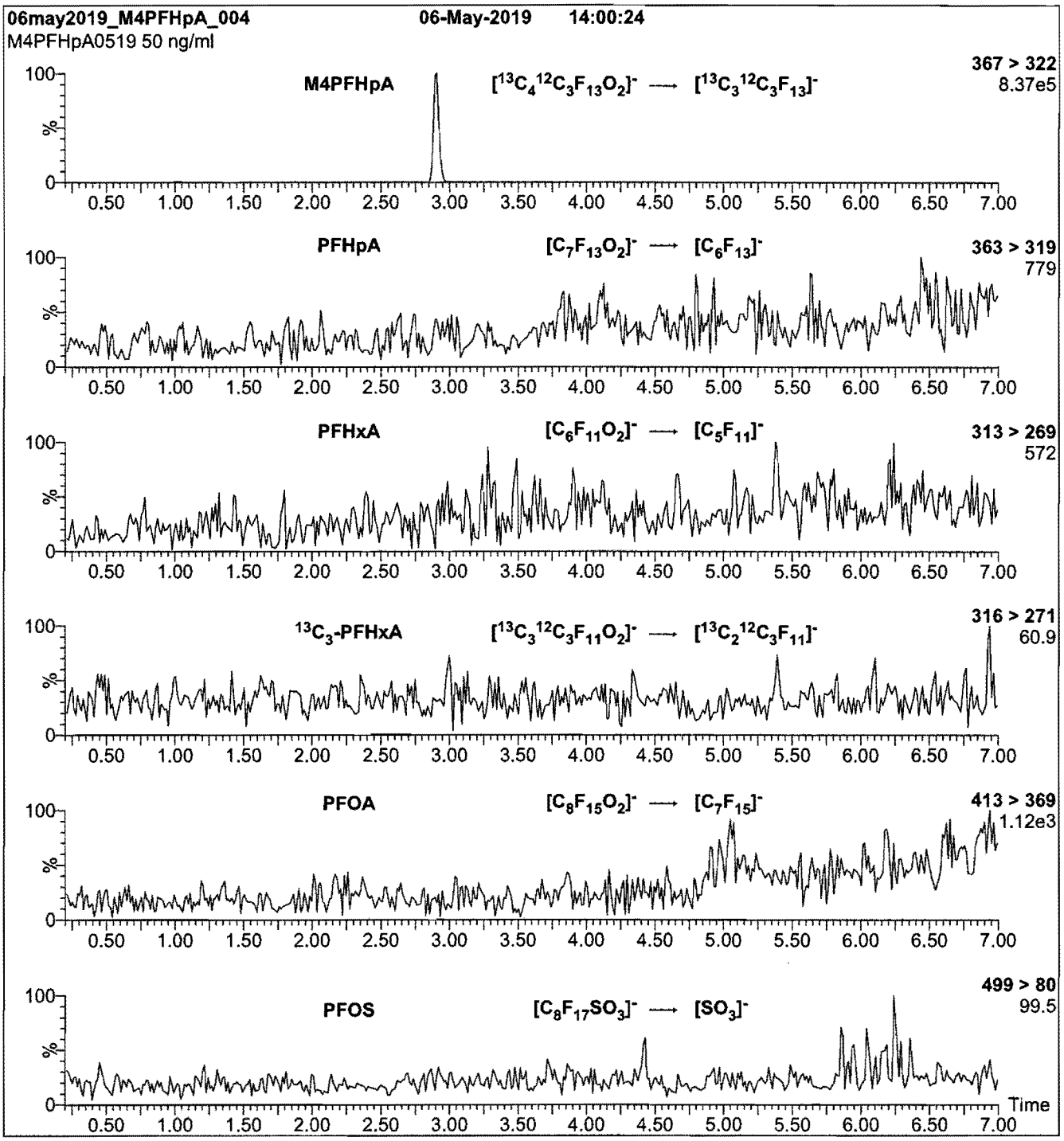
Mobile phase: Same as Figure 1

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

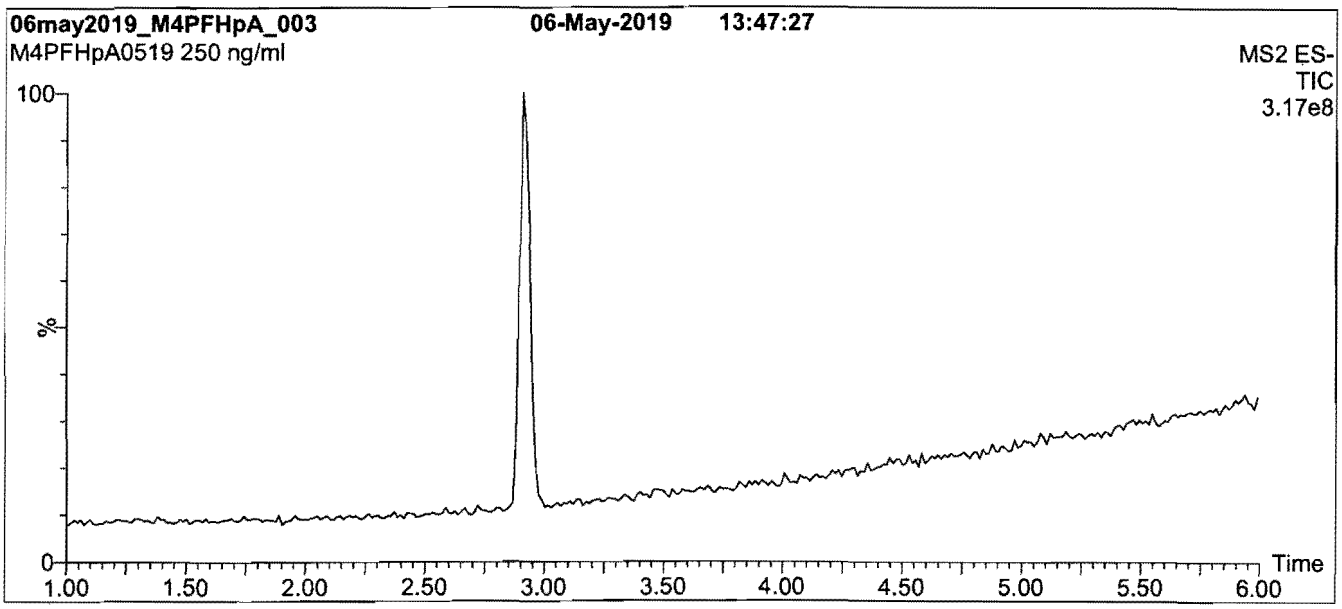
Flow: 300 µl/min

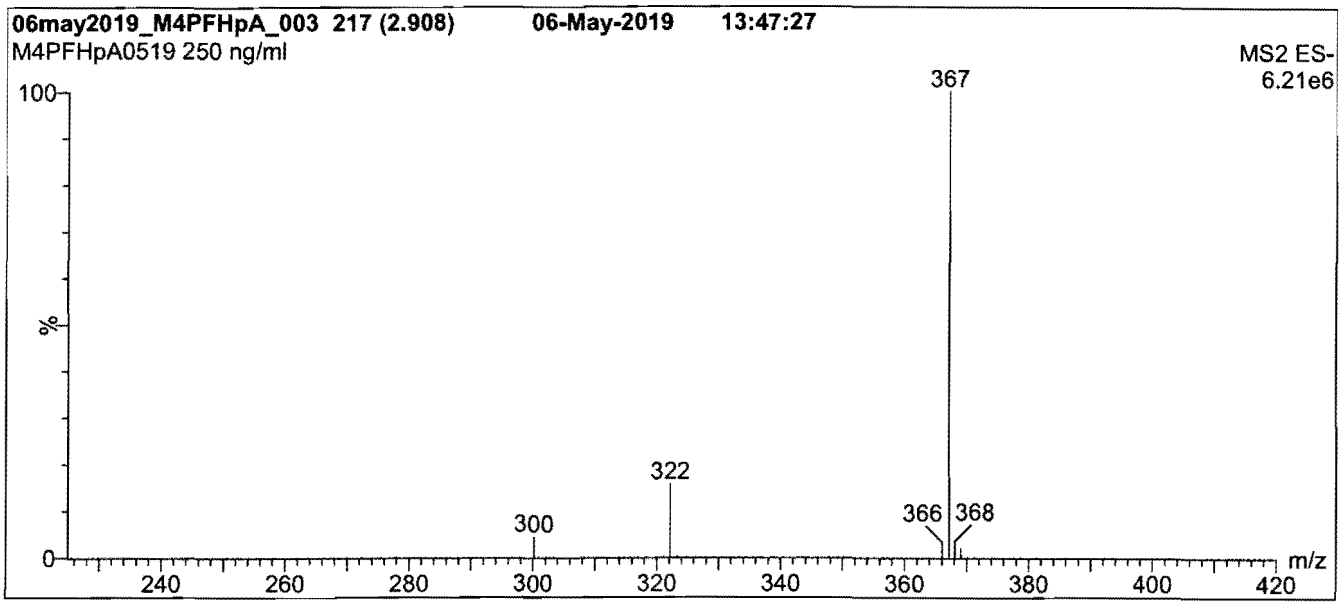
MS Parameters

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:

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

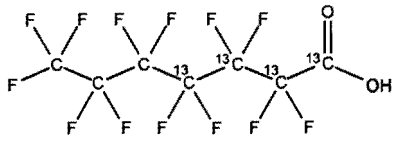
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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-$^{13}C_4$)
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.

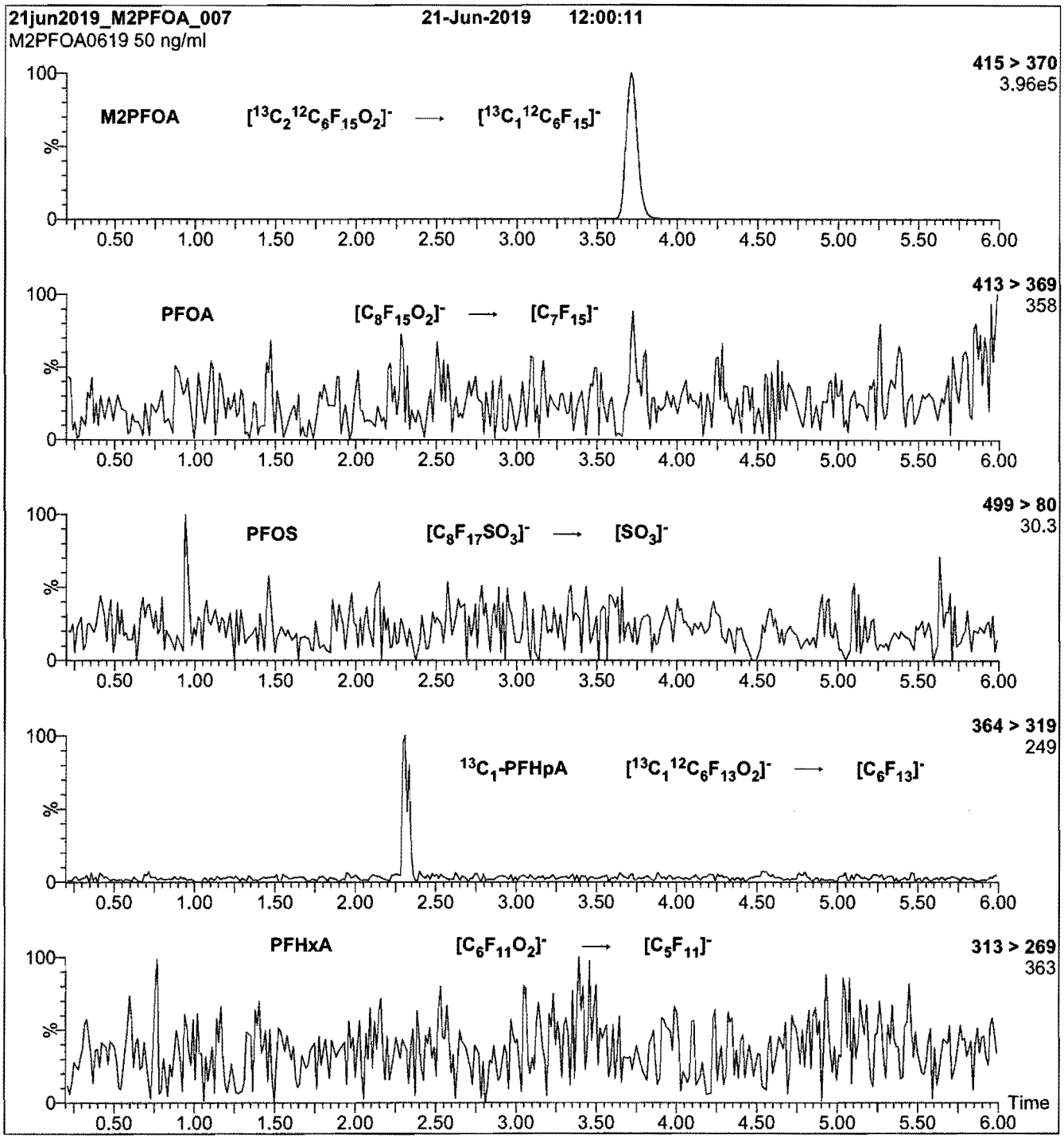
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

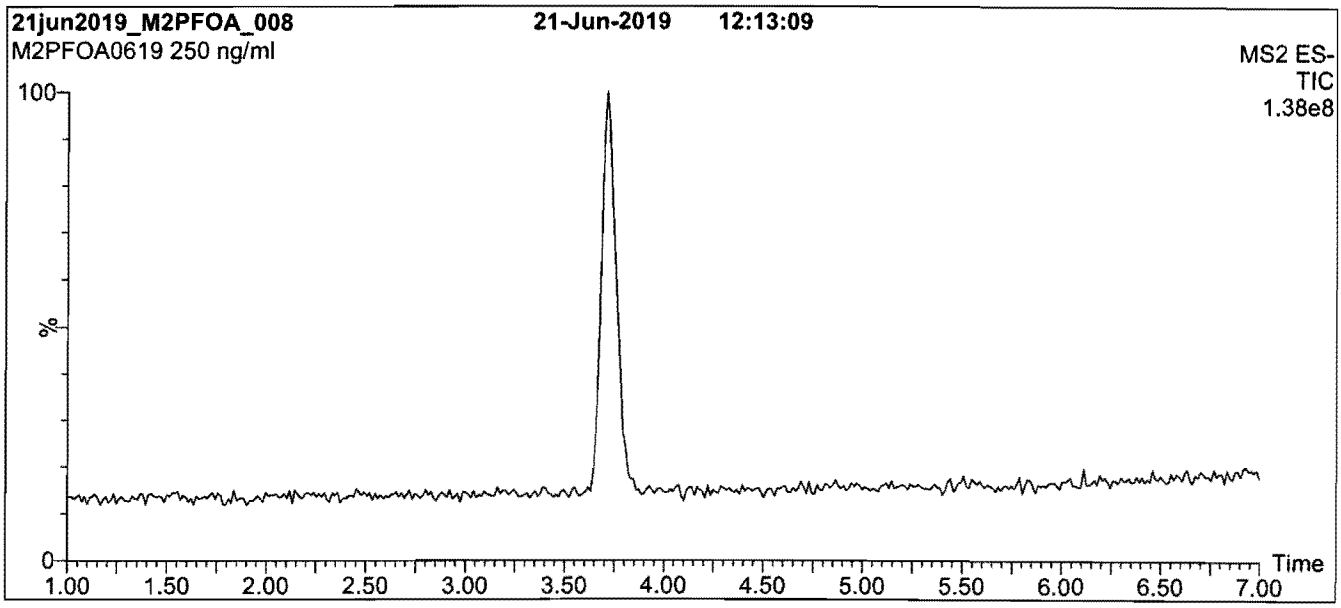
Flow: 300 µl/min

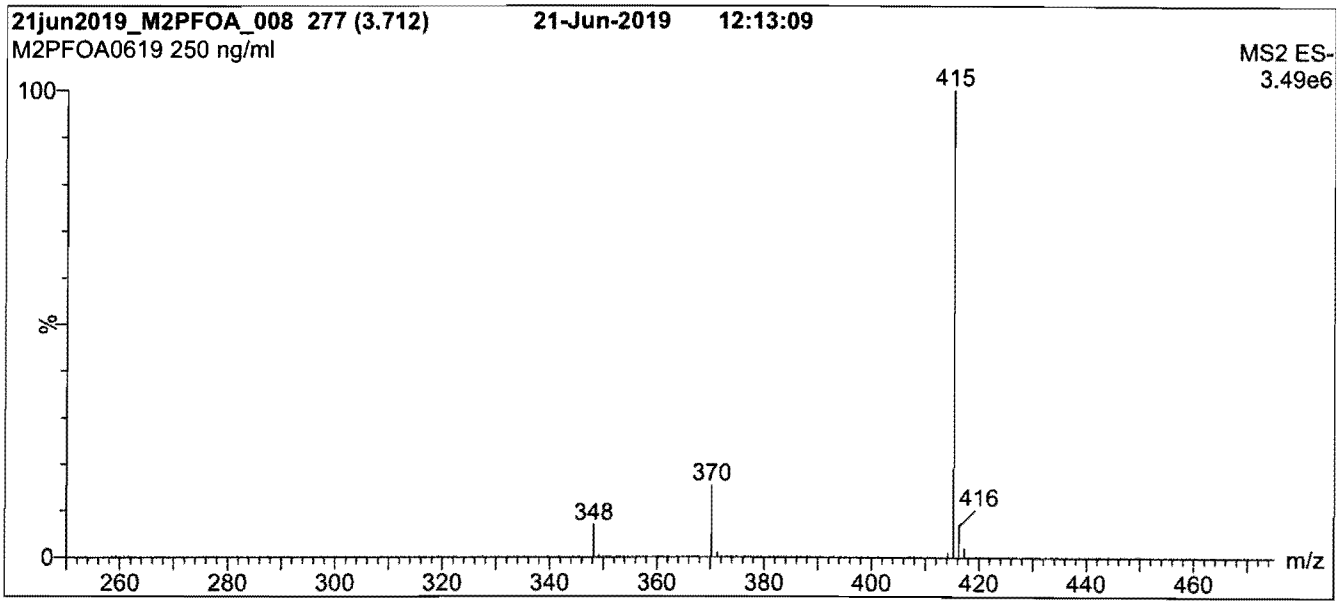
MS Parameters

Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 8

19L0611

Figure 1: **M2PFOA; LC/MS Data (TIC and Mass Spectrum)**





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 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)
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. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

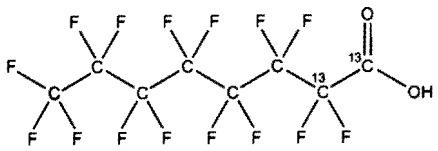
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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 ($1,2\text{-}^{13}C_2$)
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).

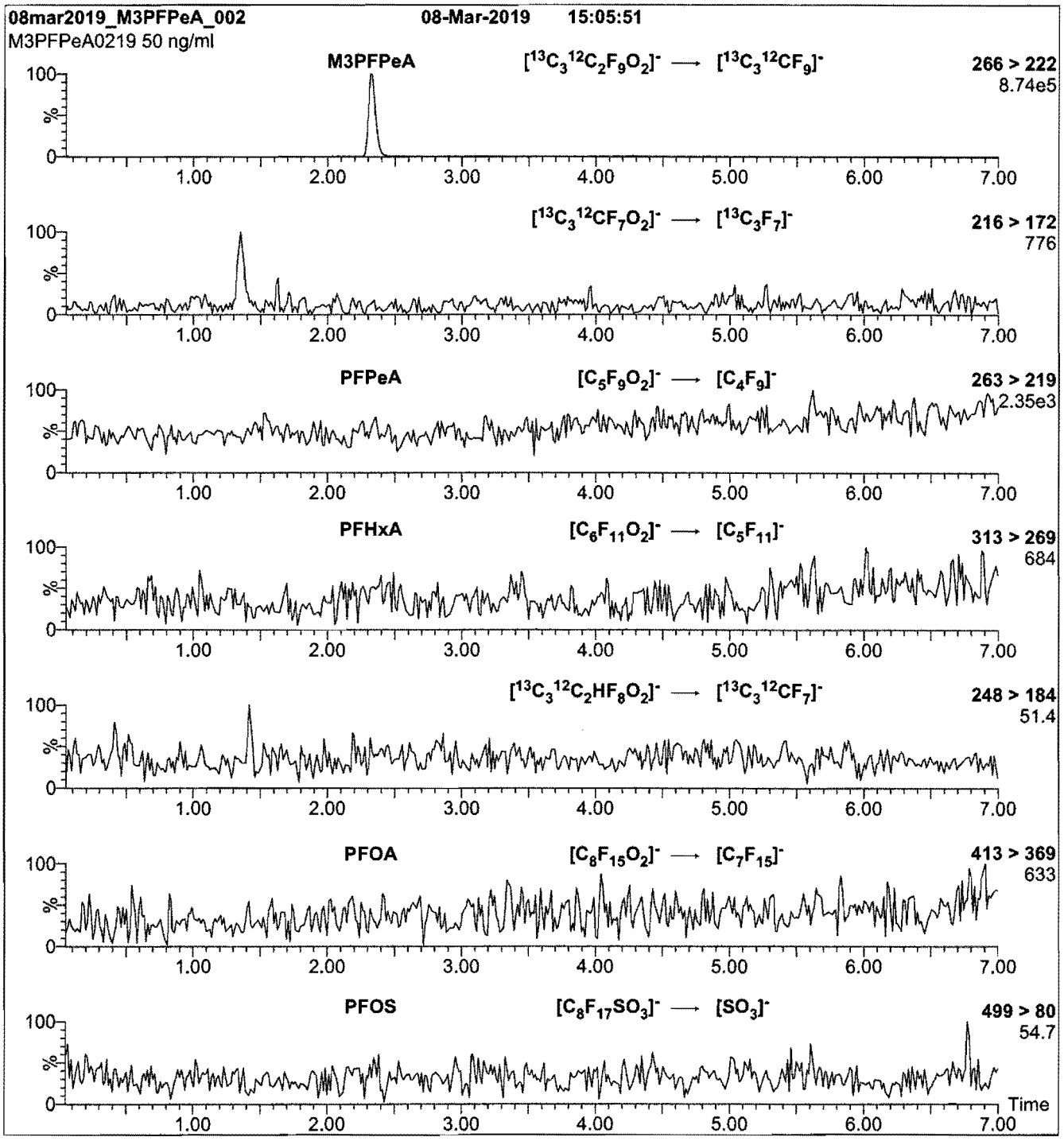
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

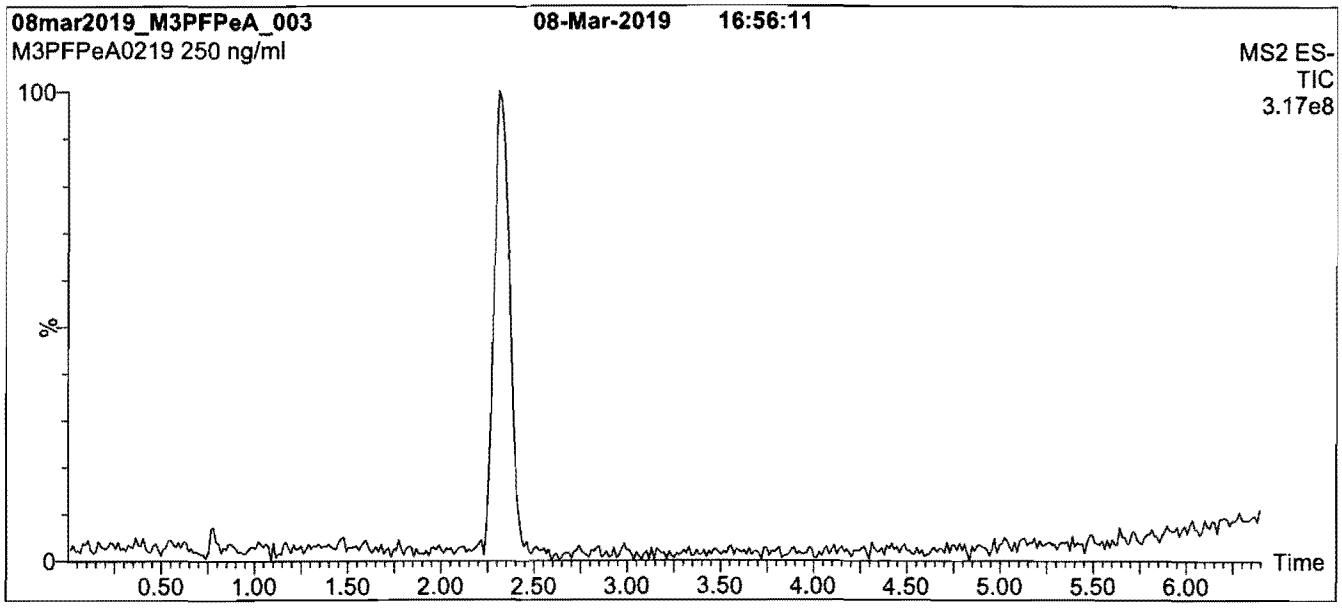
Flow: 300 µl/min

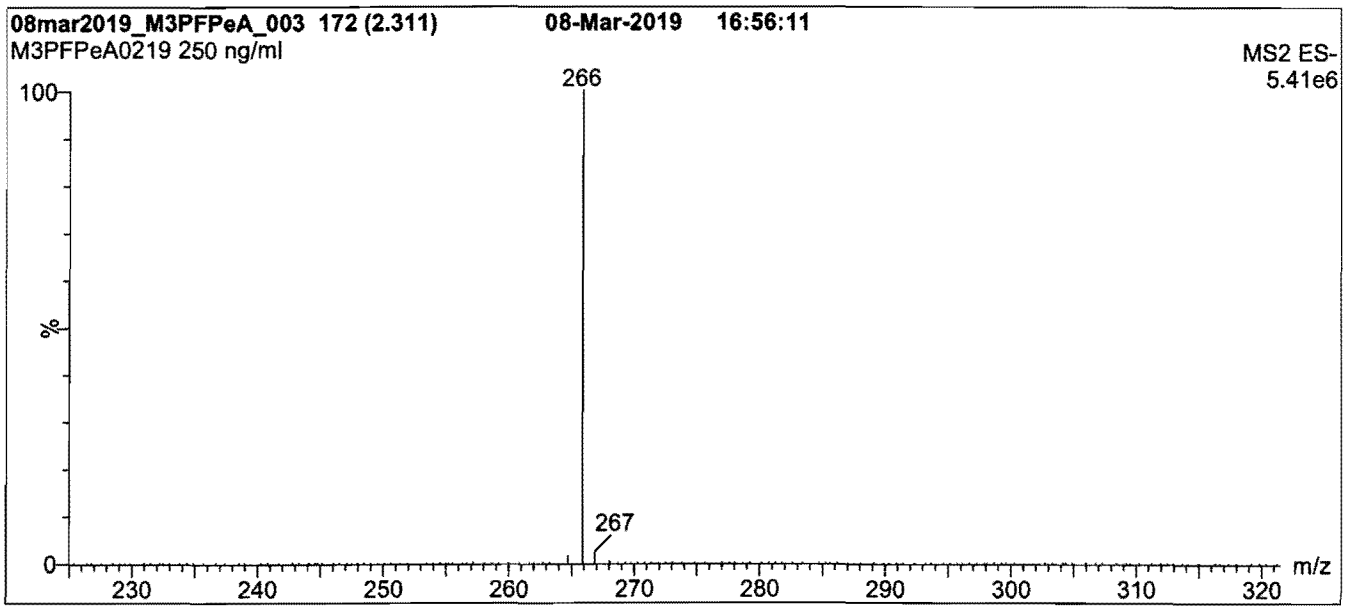
MS Parameters

Collision Gas (mbar) = 2.84e-3
Collision Energy (eV) = 8

19L0612

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 $x_1, x_2, \ldots x_n$ 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

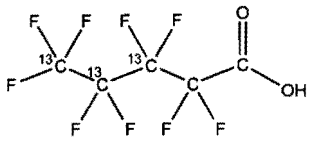
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

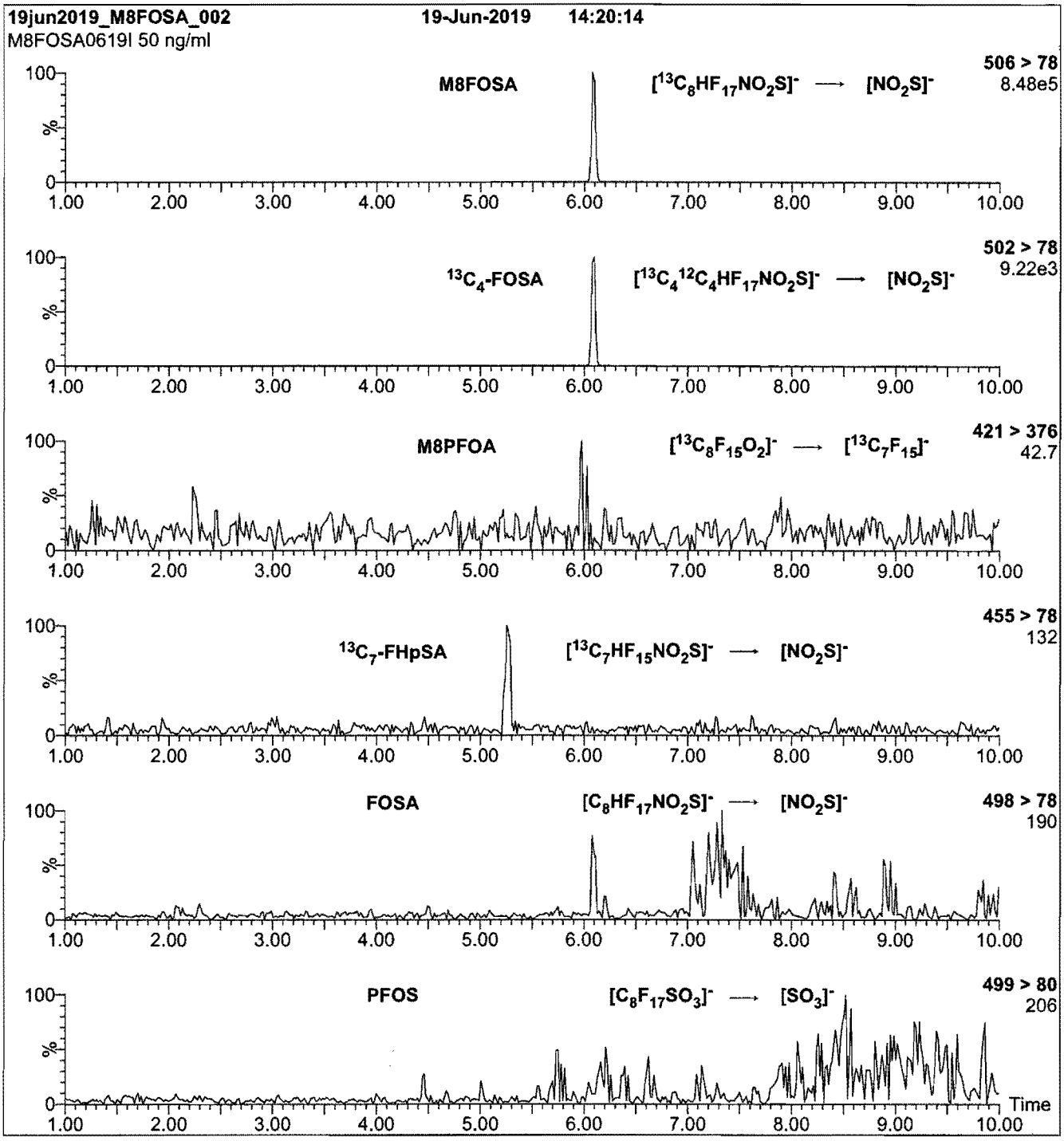
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

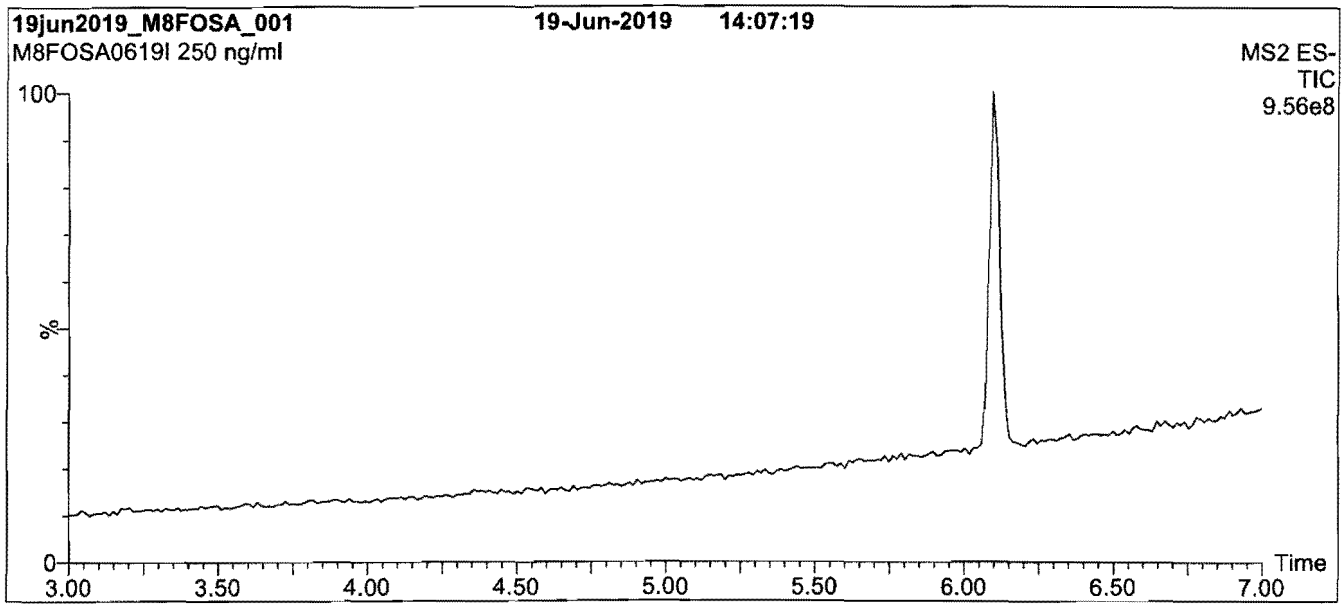
Mobile phase: Same as Figure 1

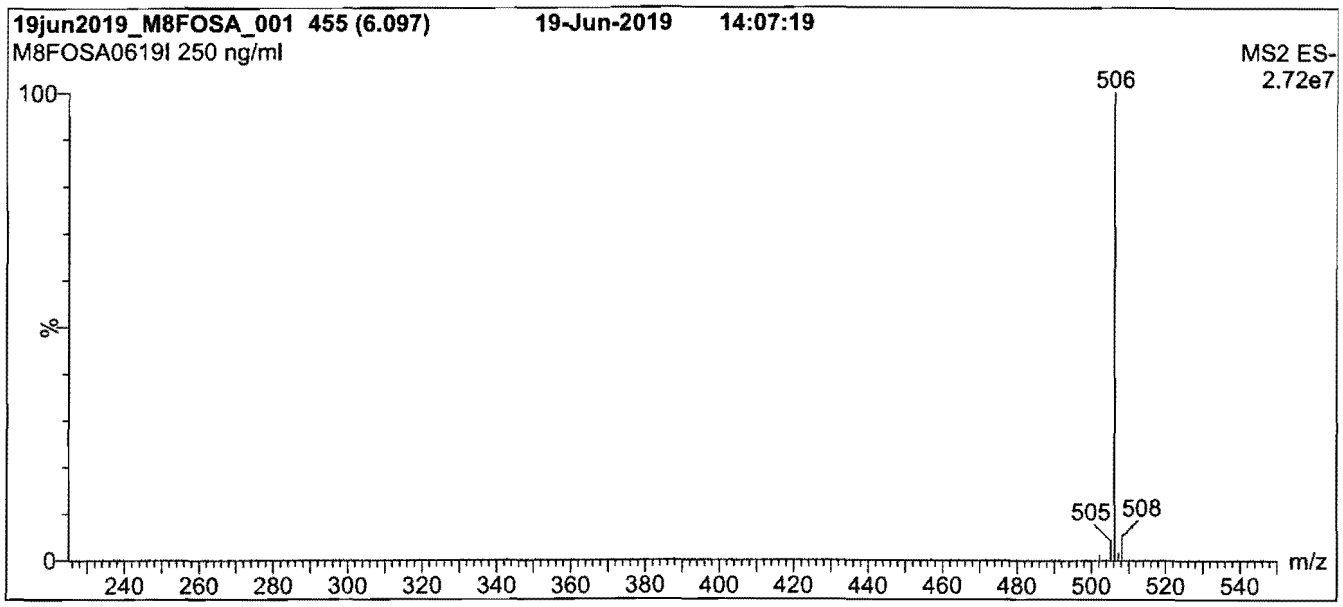
Flow: 300 µl/min

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:

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

19L0613

WELLINGTON LABORATORIES

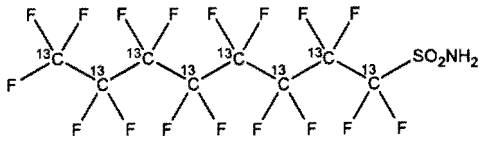
CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE: M8FOSA-I
COMPOUND: Perfluoro-1-[$^{13}C_8$]octanesulfonamide

LOT NUMBER: M8FOSA0619I

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

19L0614

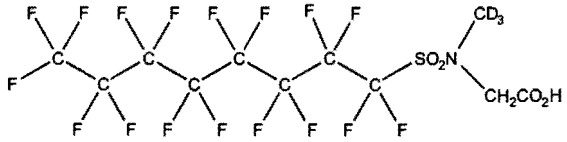
WELLINGTON LABORATORIES

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

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).

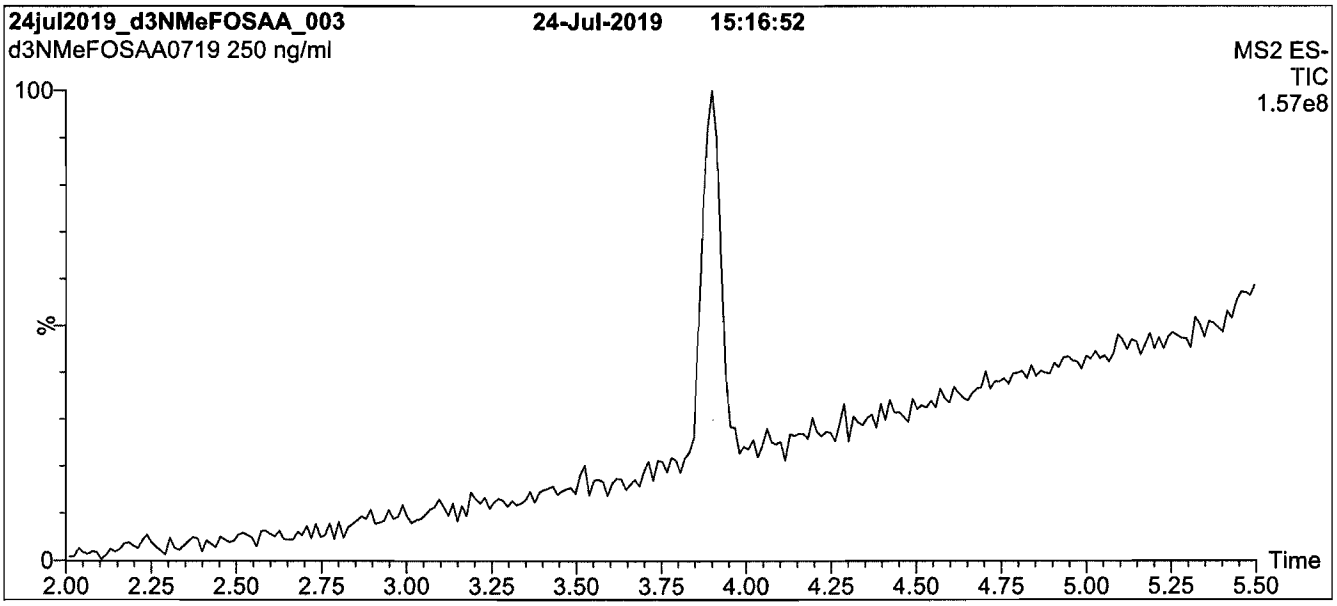
CALA Testing Accreditation No. A1226

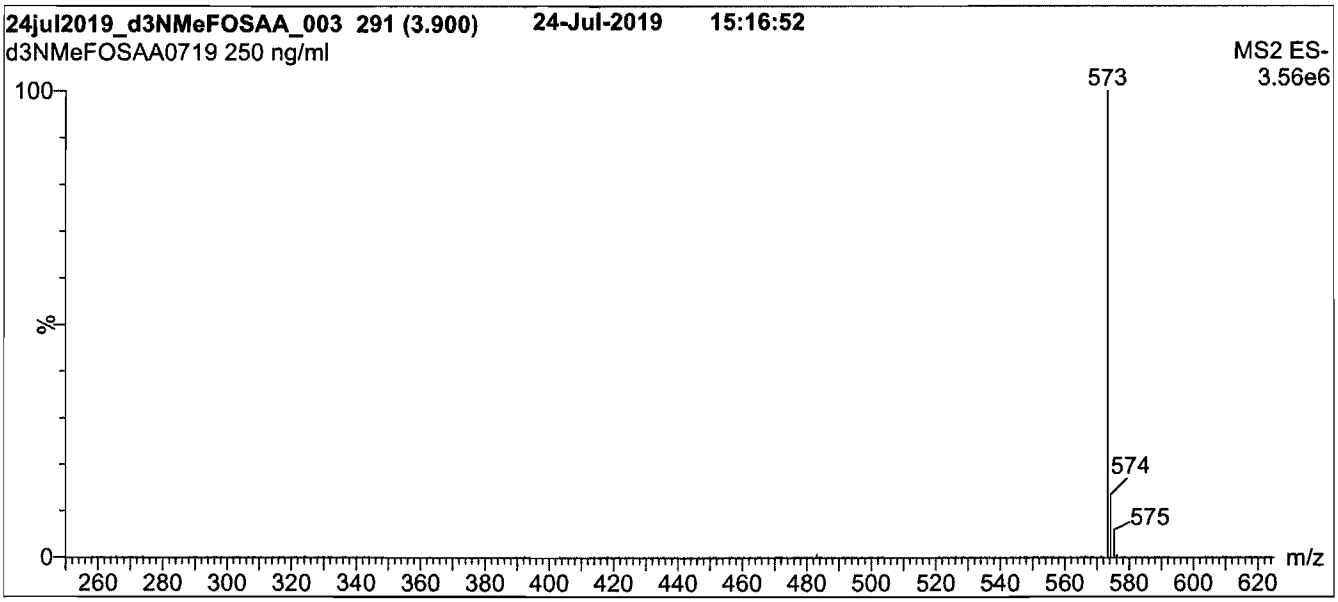
ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

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

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

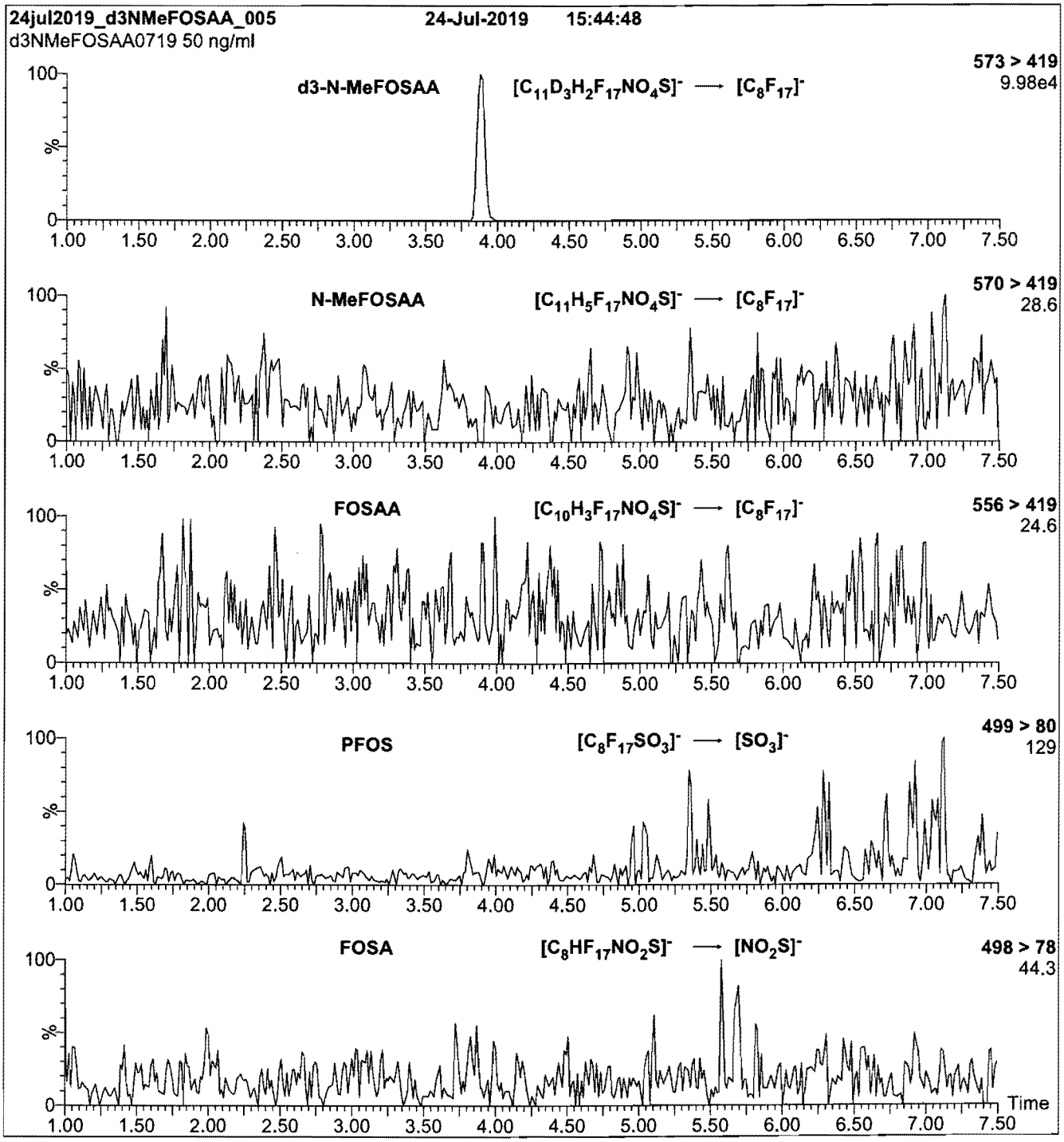
Flow: 300 µl/min

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

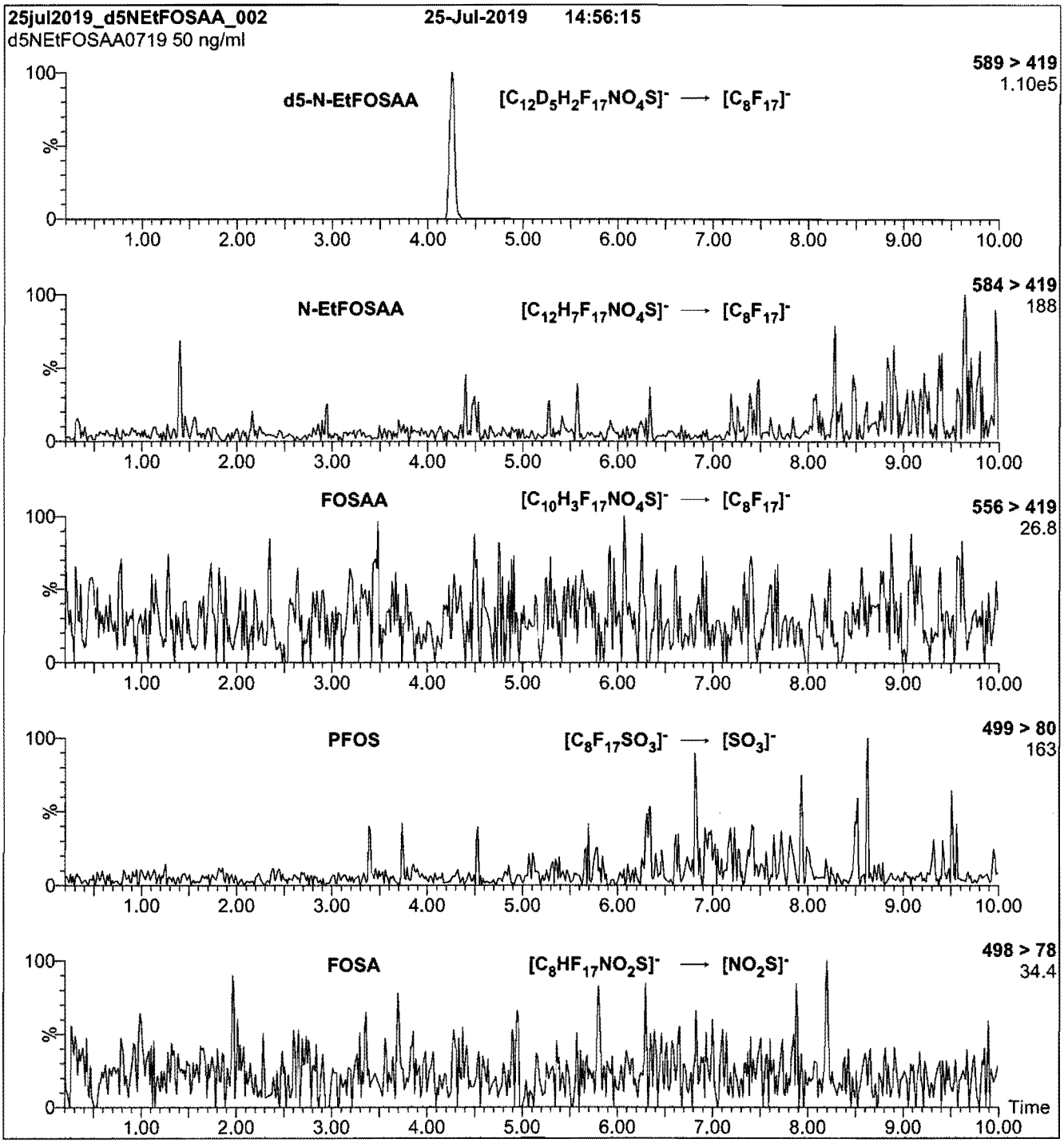
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 18

19L0615

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

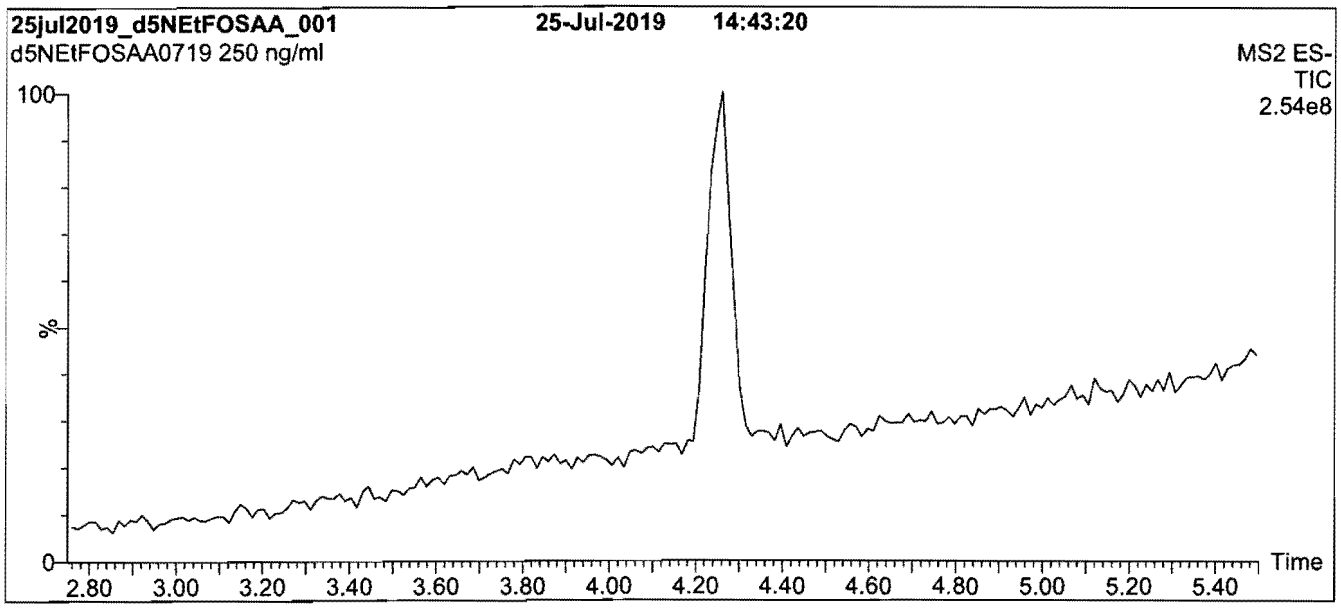
Flow: 300 µl/min

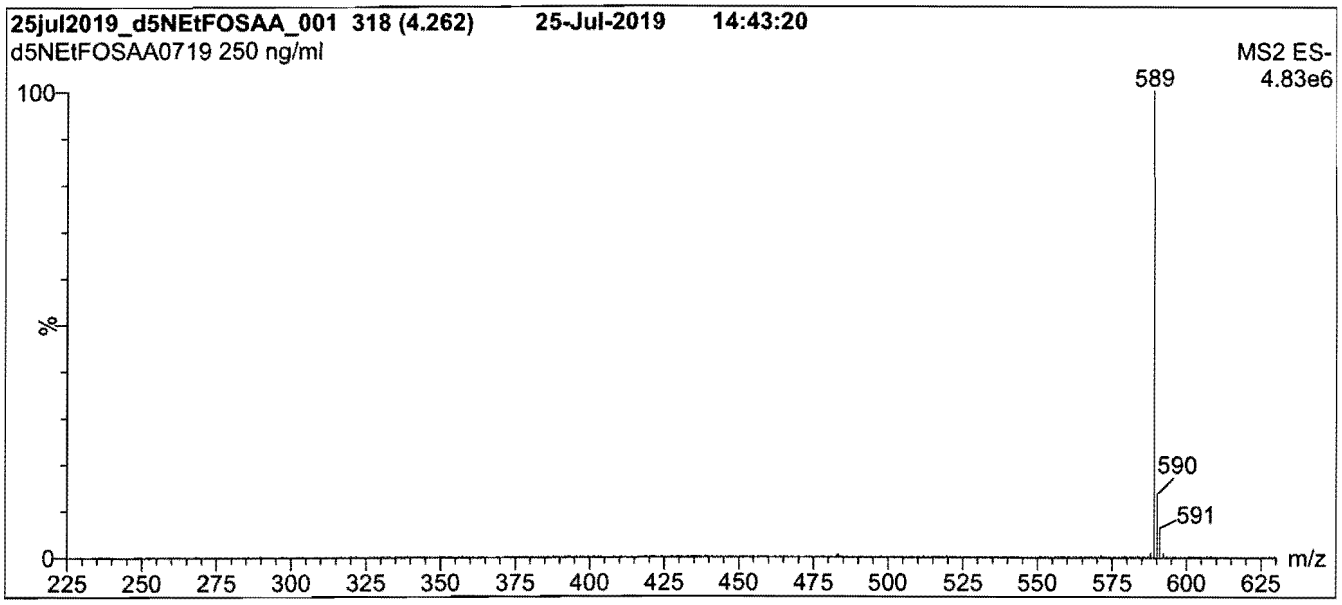
MS Parameters

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

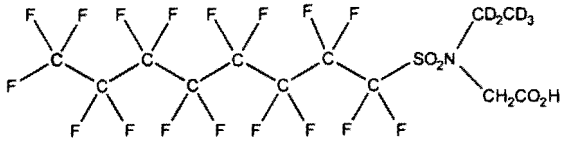
WELLINGTON LABORATORIES

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:

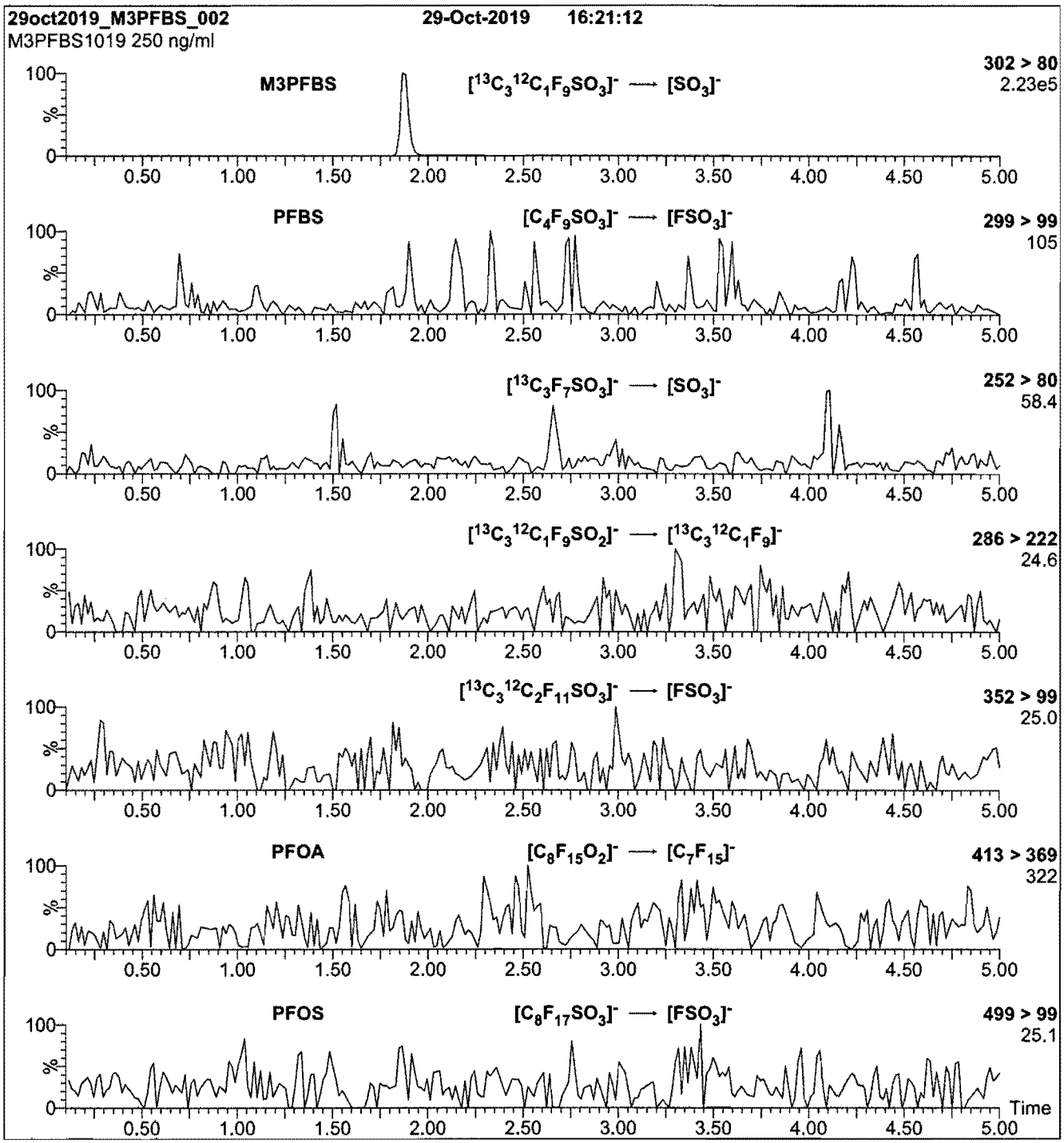
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

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

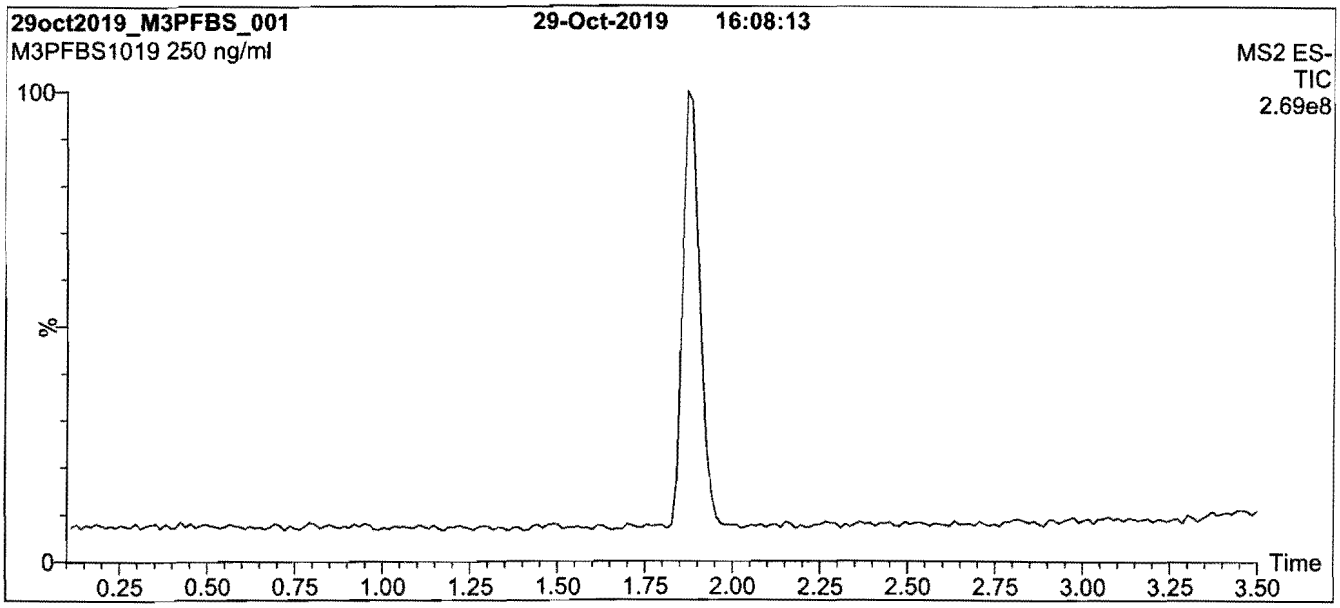
Flow: 300 µl/min

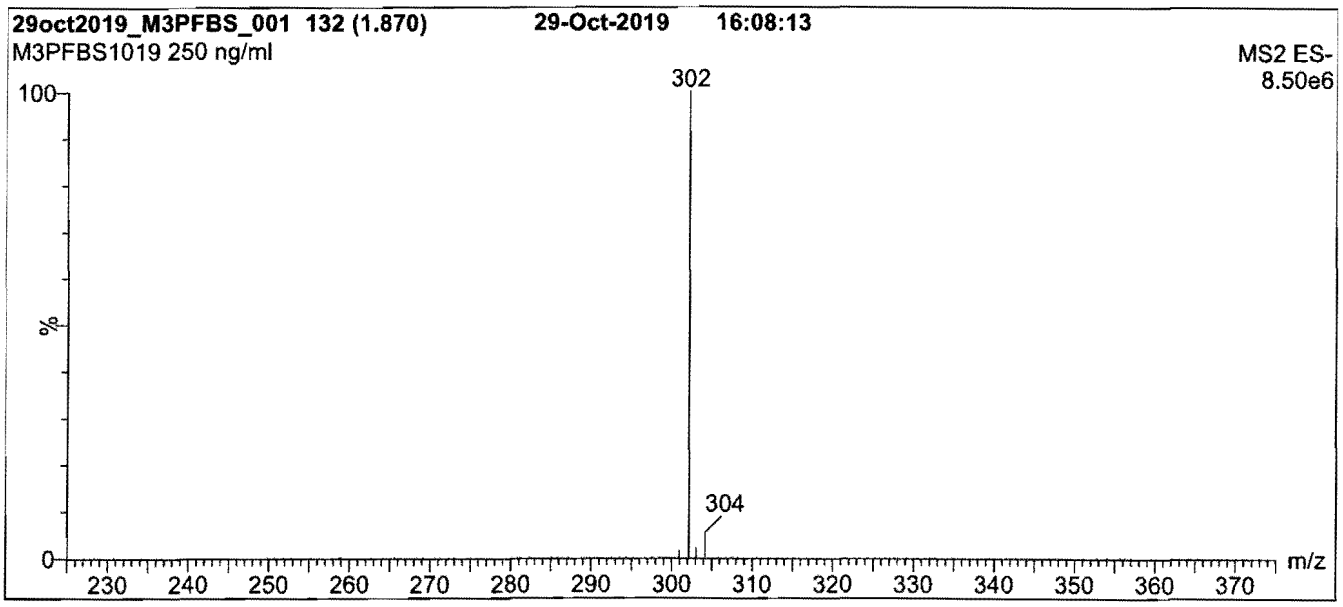
MS Parameters

Collision Gas (mbar) = 3.57e-3
Collision Energy (eV) = 30

19L0616

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

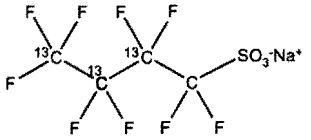
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

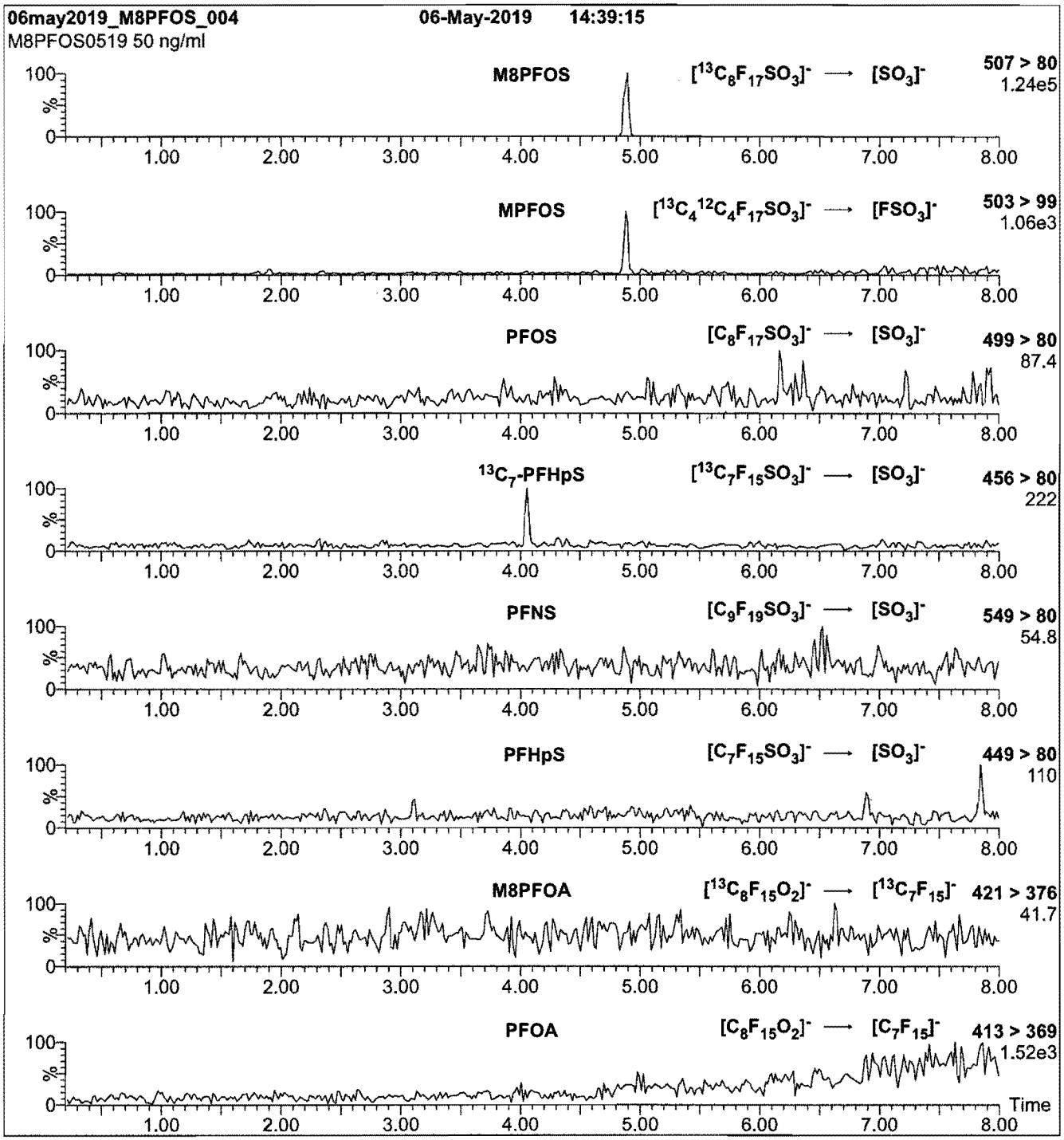
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

19L0617

Figure 2: **M8PFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8PFOS)

Mobile phase: Same as Figure 1

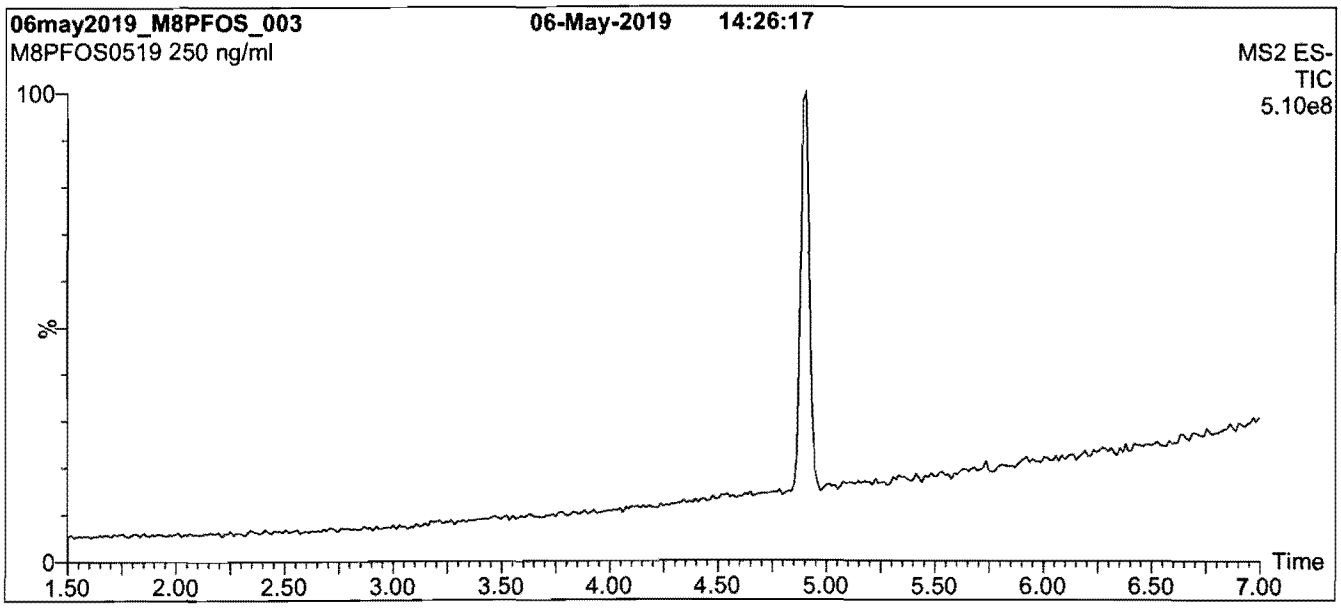
Flow: 300 µl/min

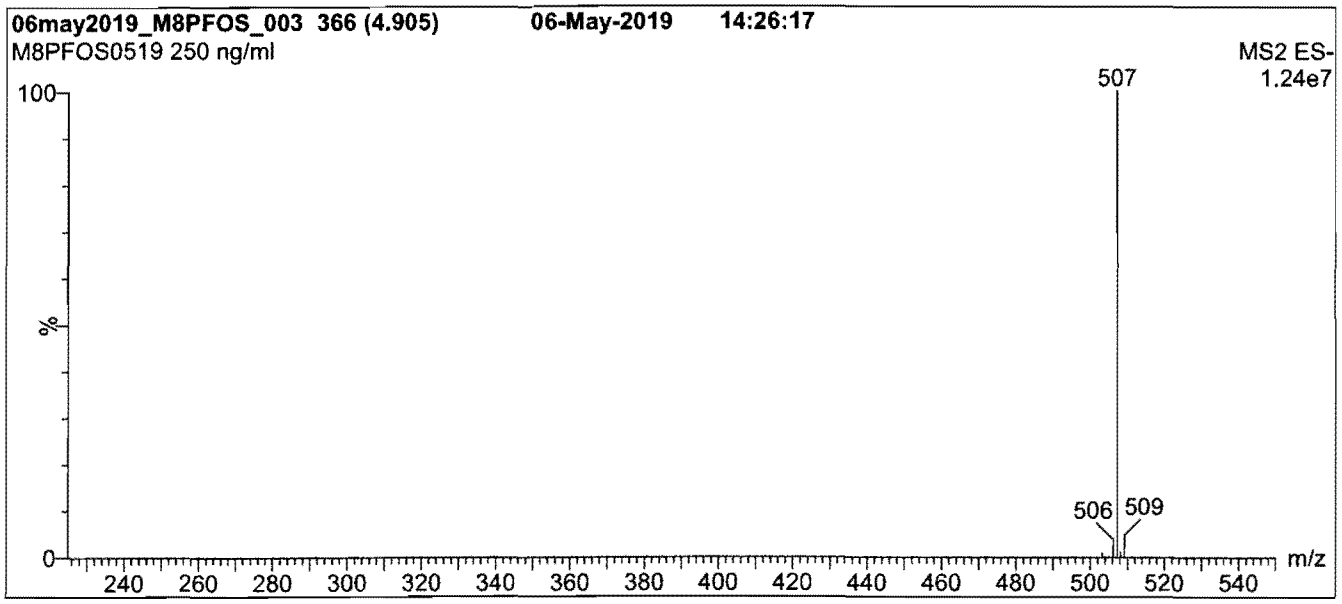
MS Parameters

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:

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

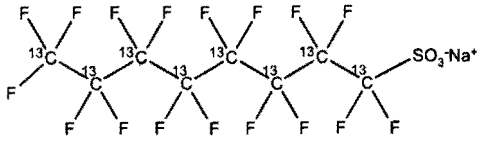
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0617

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:

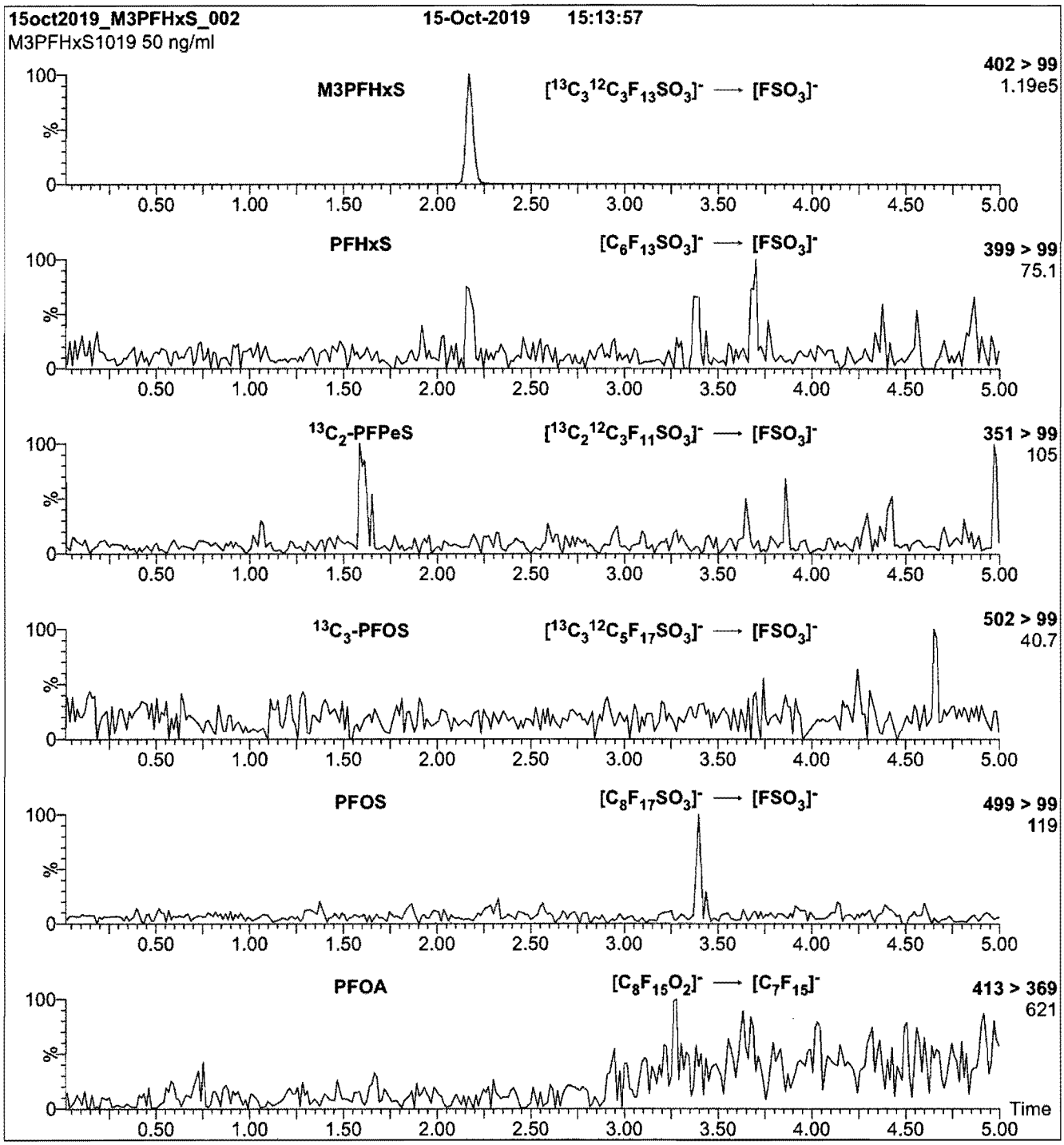
- See page 2 for further details.
- Contains ~ 0.2% of sodium perfluoro-1-[$^{13}C_7$]heptanesulfonate ($^{13}C_7$-PFHpS) and ~ 1.0% of sodium perfluoro-1-[$^{13}C_4$]octanesulfonate (MPFOS).

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

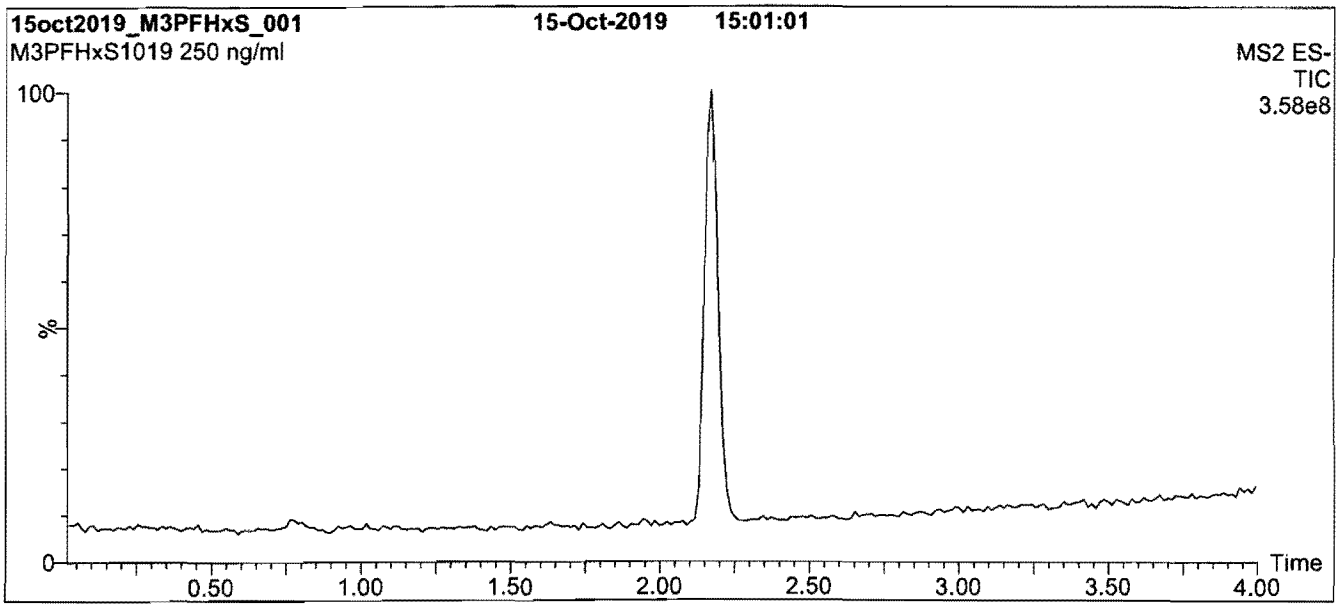
Flow: 300 µl/min

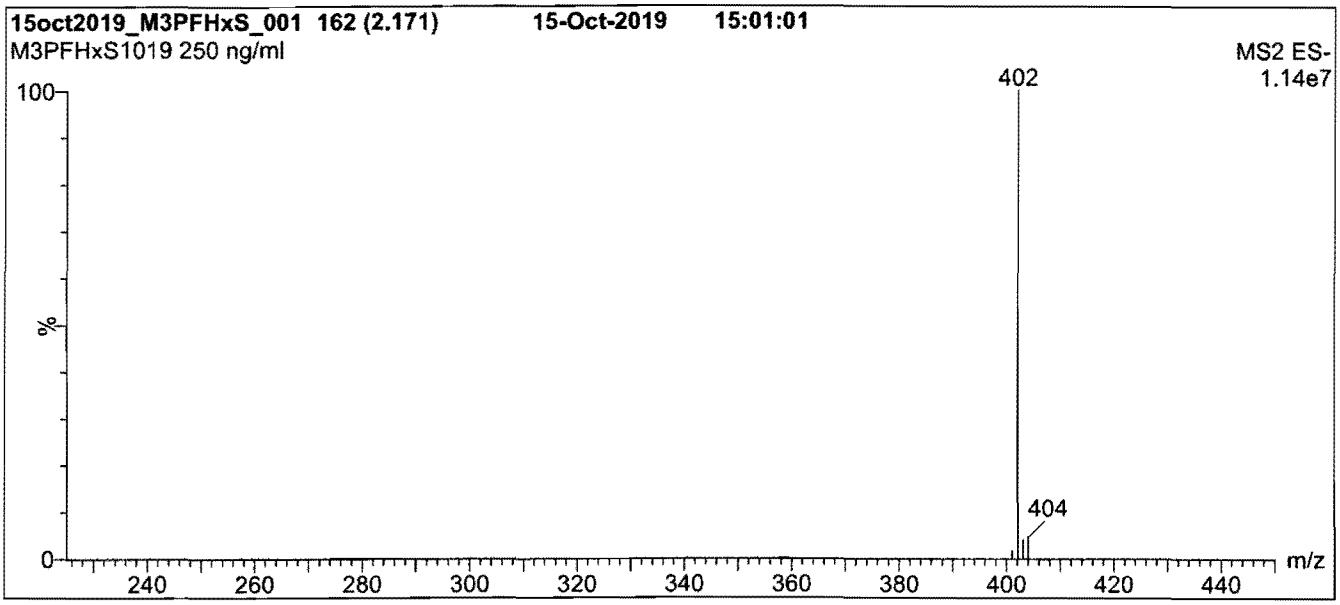
MS Parameters

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

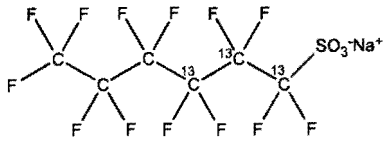
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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 ($1,2,3\text{-}^{13}C_3$)
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.

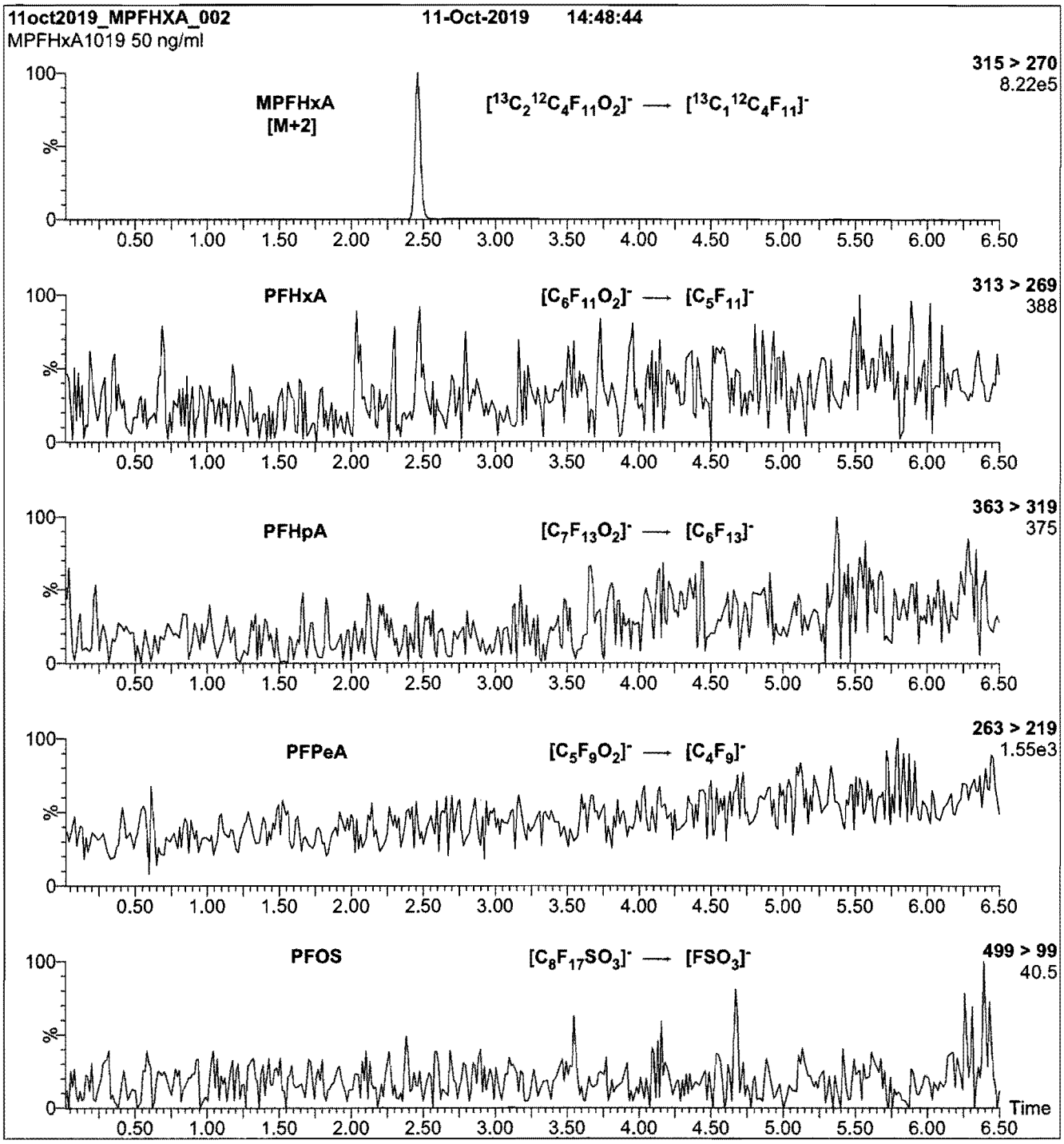
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

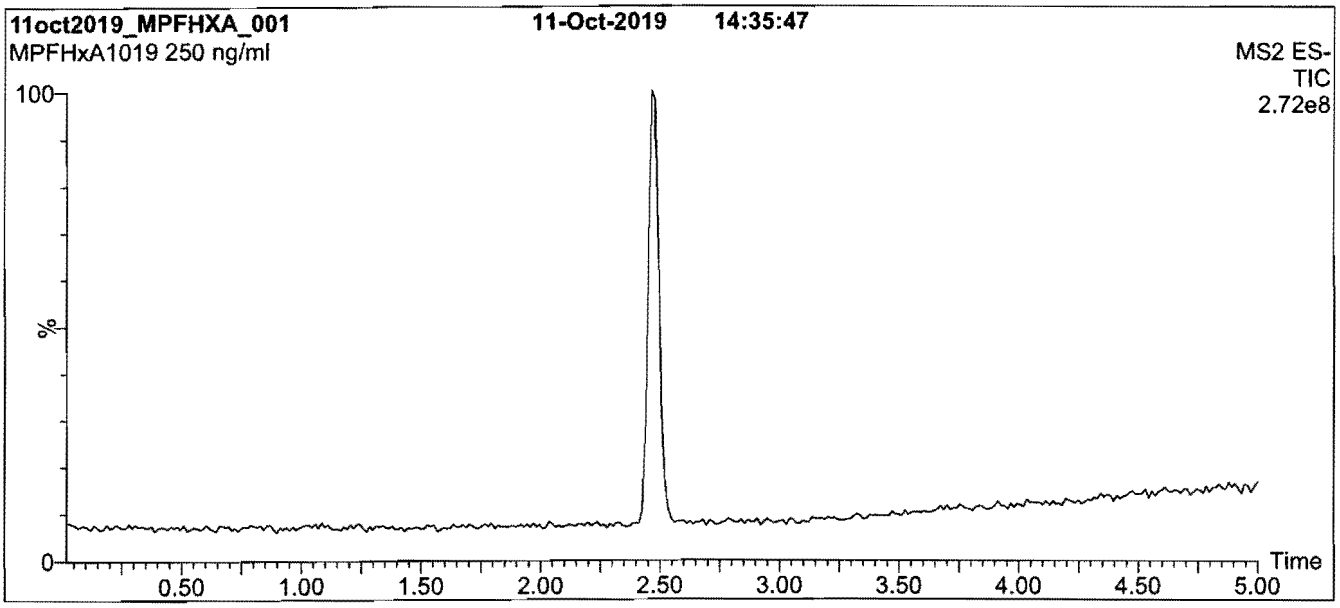
Flow: 300 µl/min

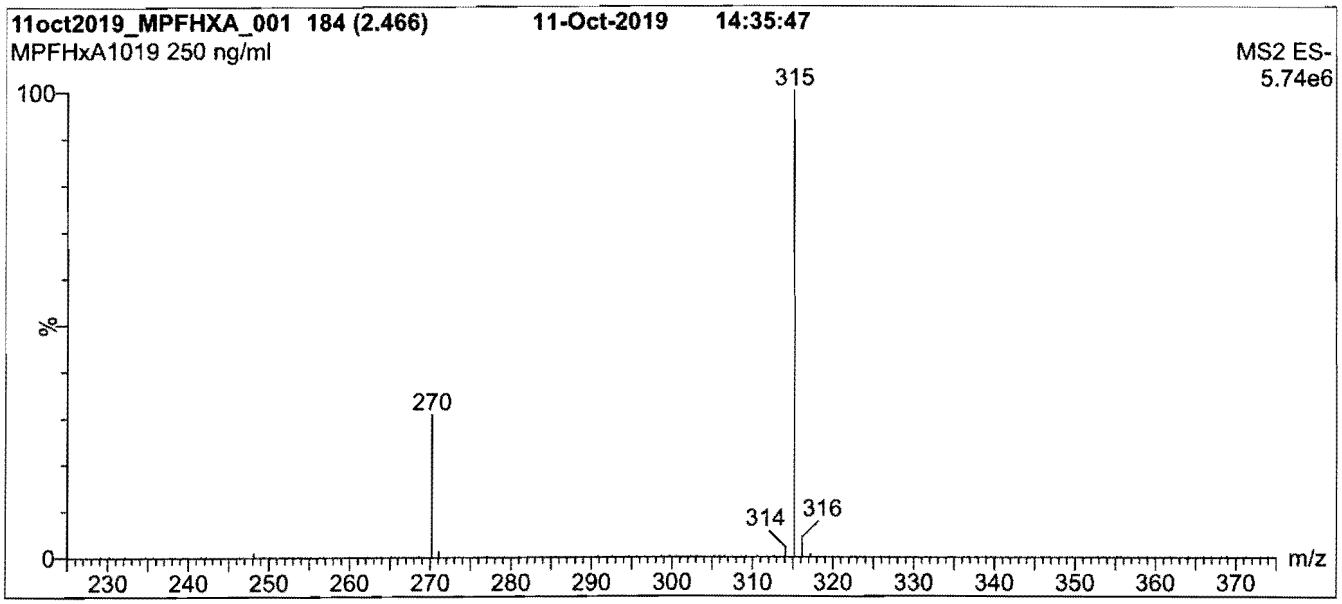
MS Parameters

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:

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

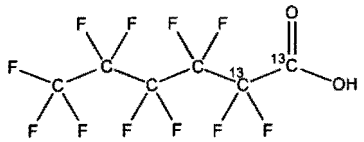
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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-$^{13}C_2$)
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.

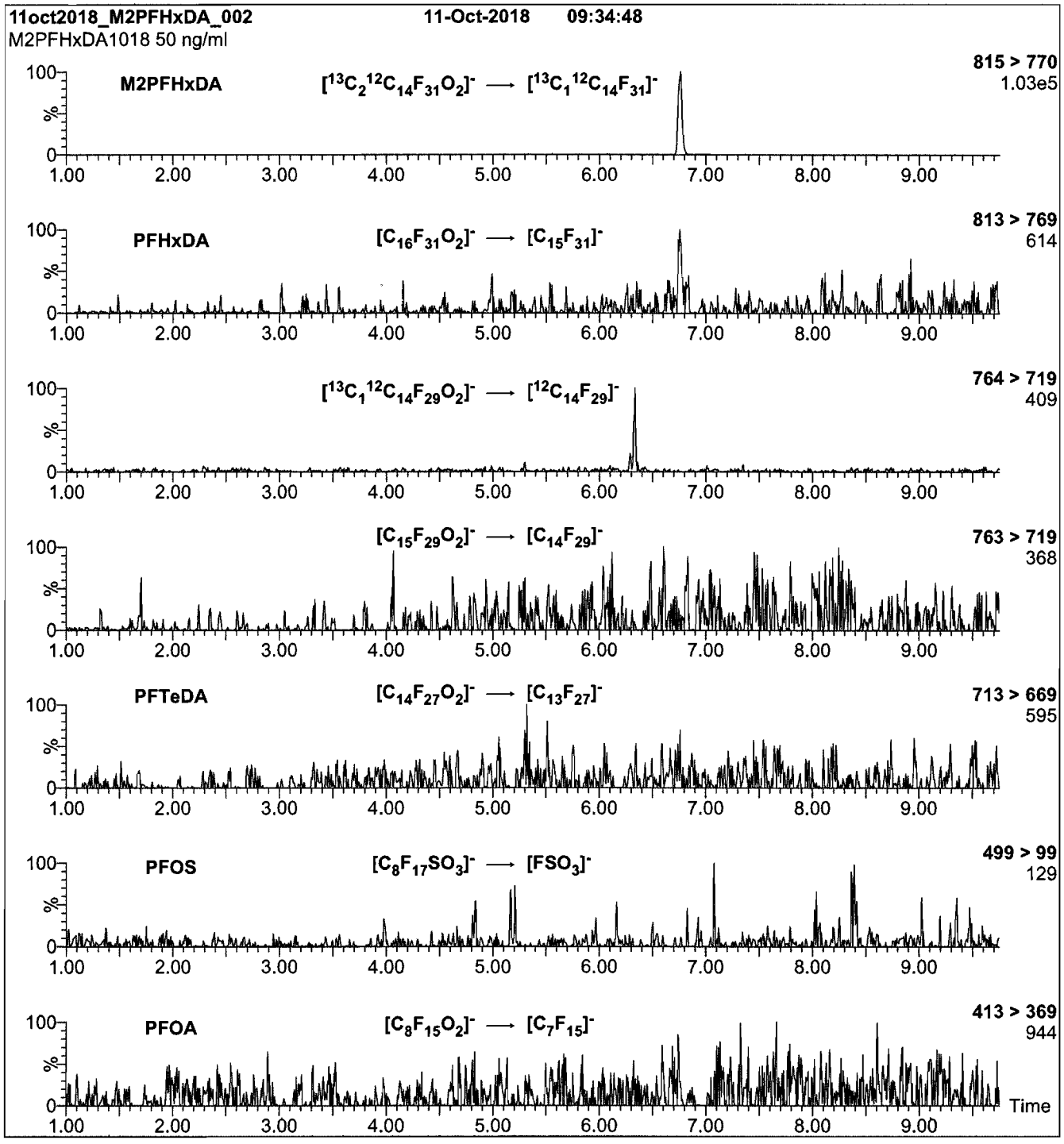
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

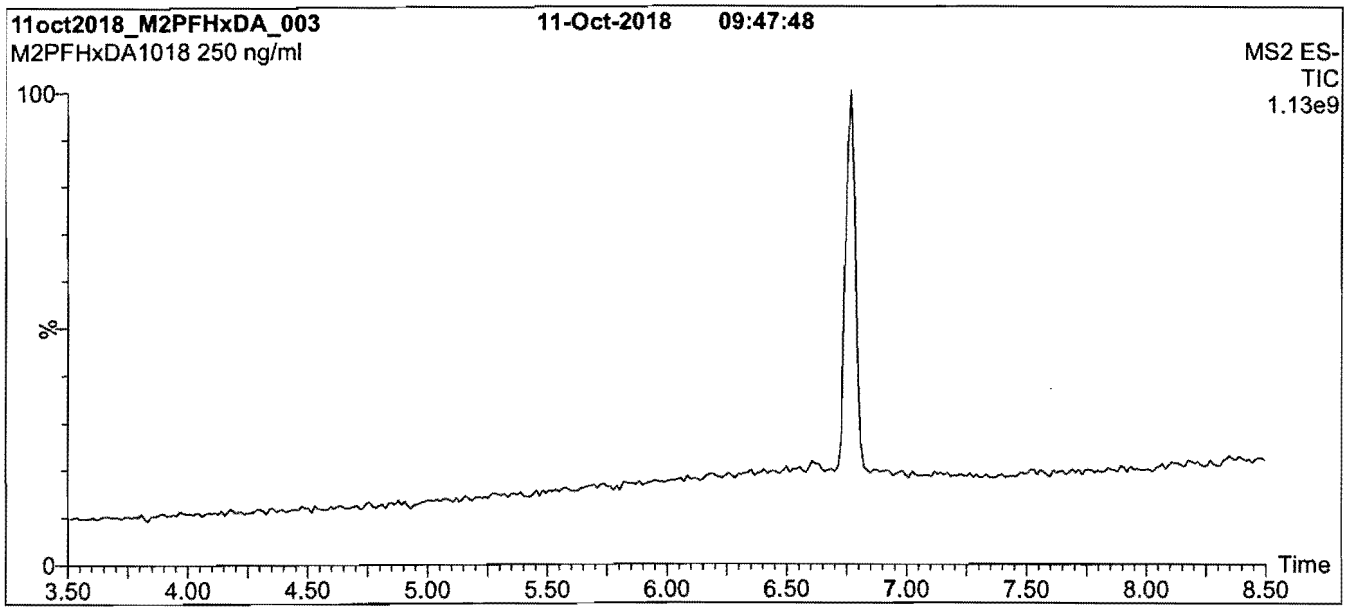
Flow: 300 µl/min

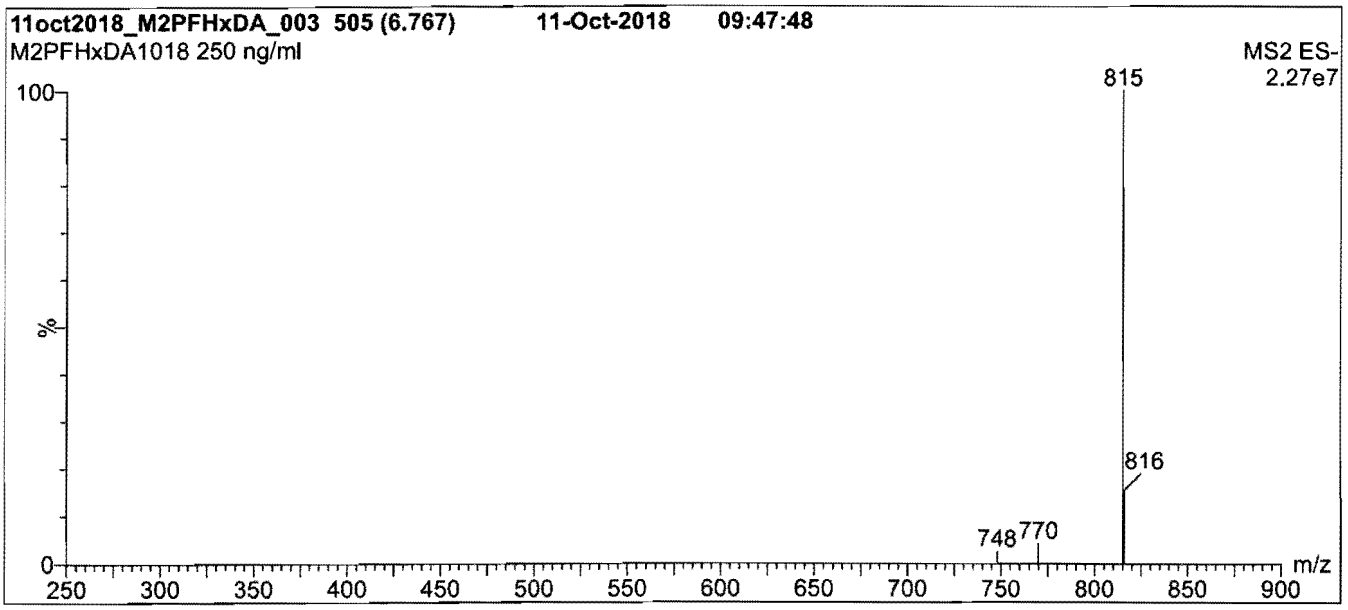
MS Parameters

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

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. A 1226

ANAB ACCREDITED REFERENCE MATERIAL PRODUCER

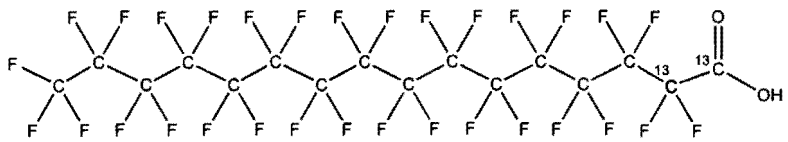
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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 ($1,2\text{-}^{13}C_2$)
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:

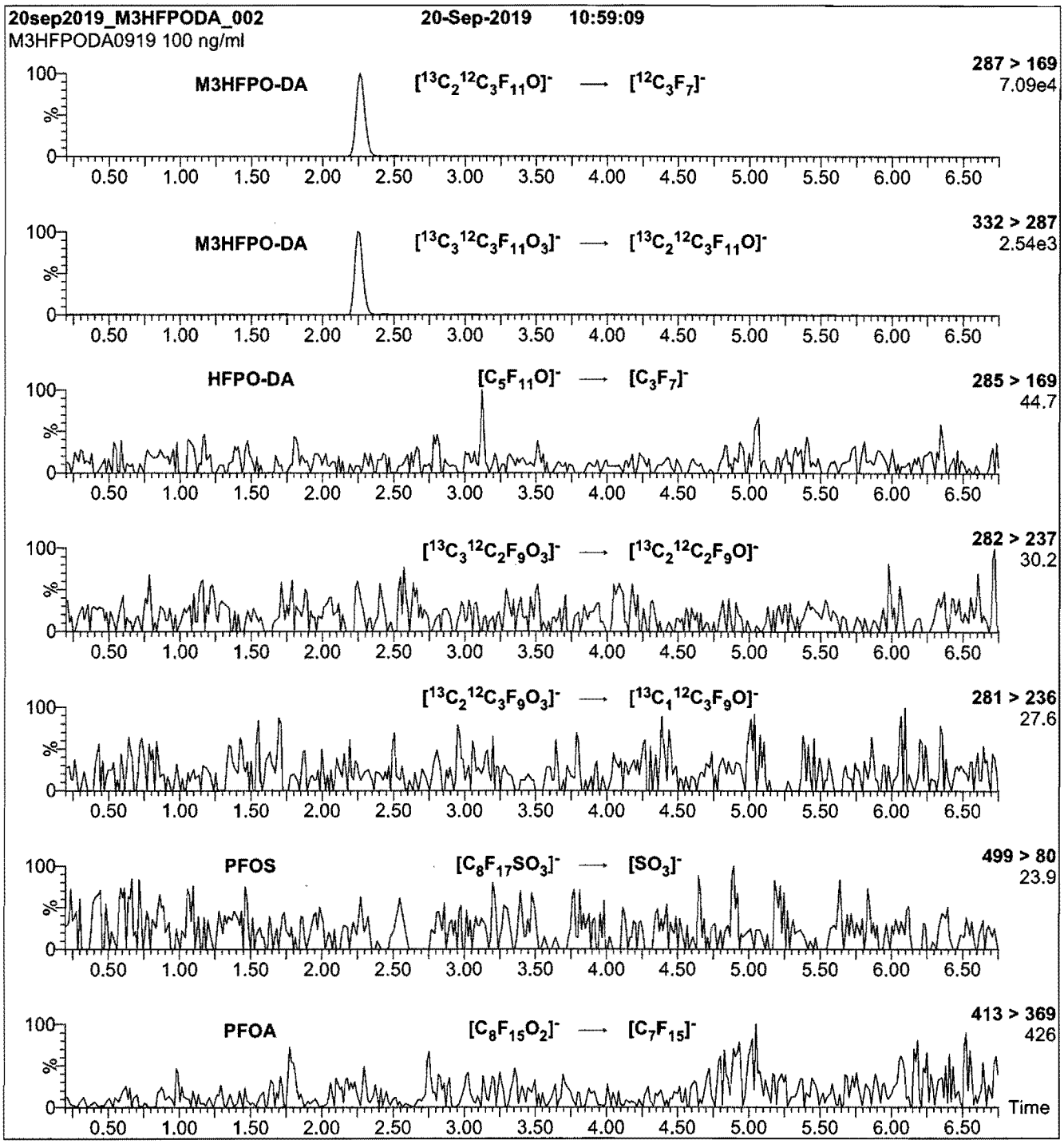
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of native perfluoro-n-hexadecanoic acid and ~ 0.2% of perfluoro-n-[$^{13}C_1$]pentadecanoic acid.

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

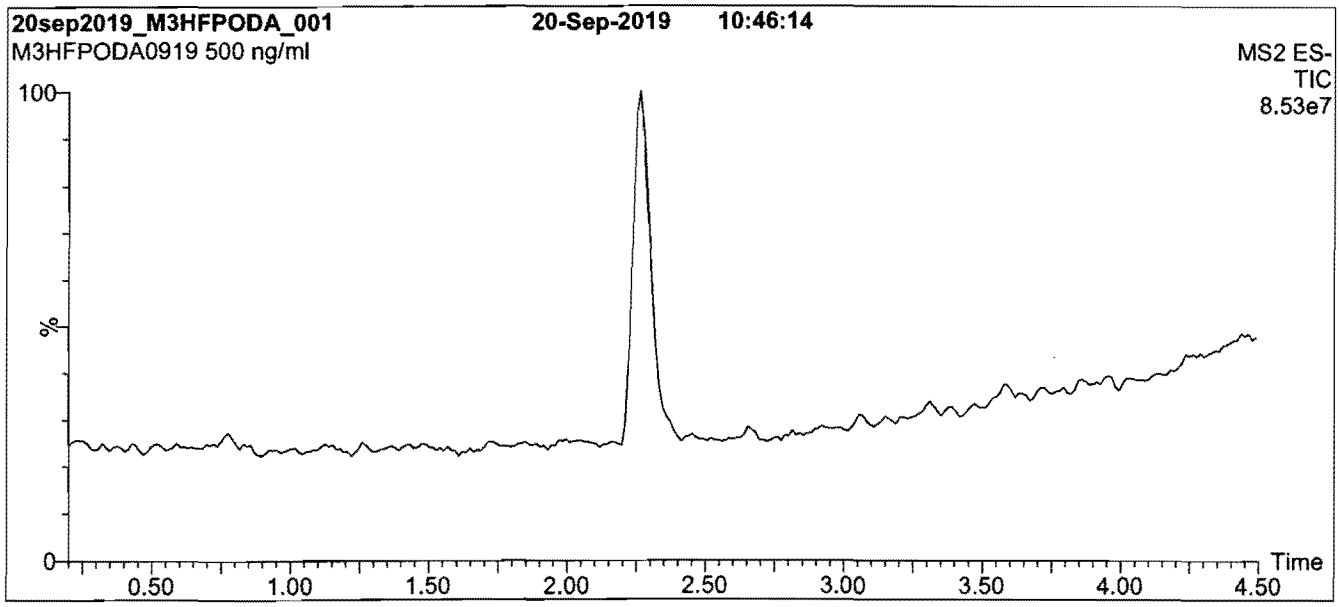
Flow: 300 µl/min

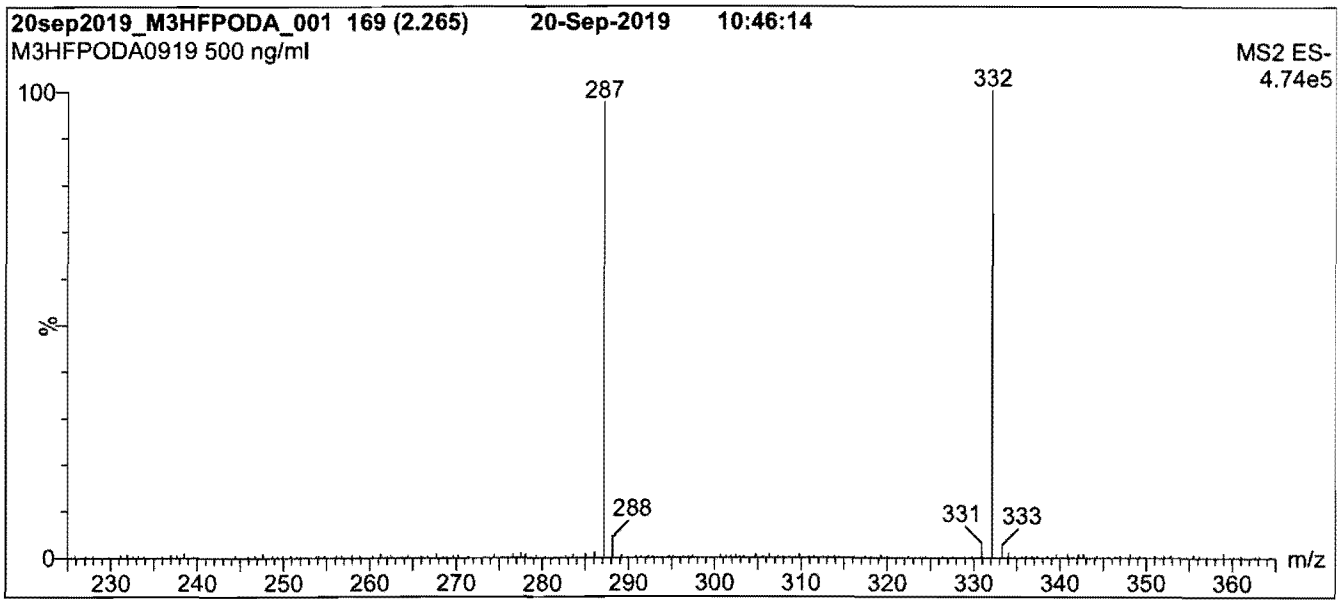
MS Parameters

Collision Gas (mbar) = 3.60e-3
Collision Energy (eV) = 8

19L0621

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:

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

19L0621

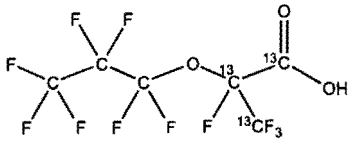
WELLINGTON LABORATORIES

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

20A0803

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

20A0803

Description:	PFC NS Stock	Expires:	07-Jan-21
Standard Type:	Analyte Spike	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 14:18 by BML

Analyte	CAS Number	Concentration	Units
L-PFHpA		1	ug/mL
L-PFOS		0.789	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
10:2 FTS	120226-60-0	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-PFOSA		1	ug/mL
EtFOSA	4151-50-2	5	ug/mL

Analytical Standard Record

Vista Analytical Laboratory

20A0803

Description:	PFC NS Stock	Expires:	07-Jan-21
Standard Type:	Analyte Spike	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 14:18 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
L-PFODA		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
PFNS	68259-12-1	1	ug/mL
PFUnA	2058-94-8	1	ug/mL
PFNA	375-95-1	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
L-PFPeA		1	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

20A0803

Description:	PFC NS Stock	Expires:	07-Jan-21
Standard Type:	Analyte Spike	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	20	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 14:18 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
PFOA	335-67-1	1	ug/mL
PFBS	375-73-5	1	ug/mL
trans-PFECHS		0.335	ug/mL
PFDoA	307-55-1	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
PFHxS	355-46-4	1	ug/mL
PFBA	375-22-4	1	ug/mL

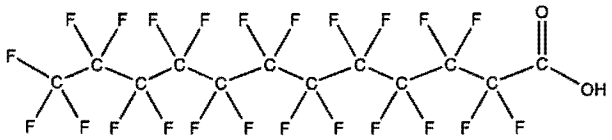
19L0635

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).

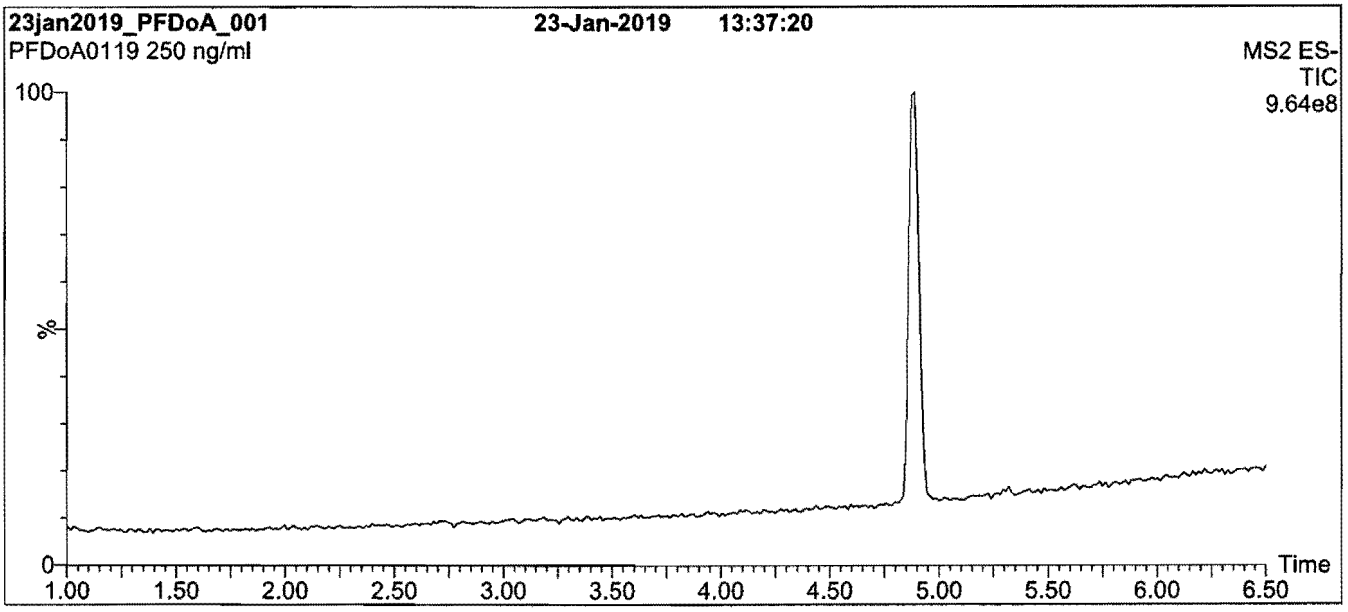
CALA Testing Accreditation No. A 1226

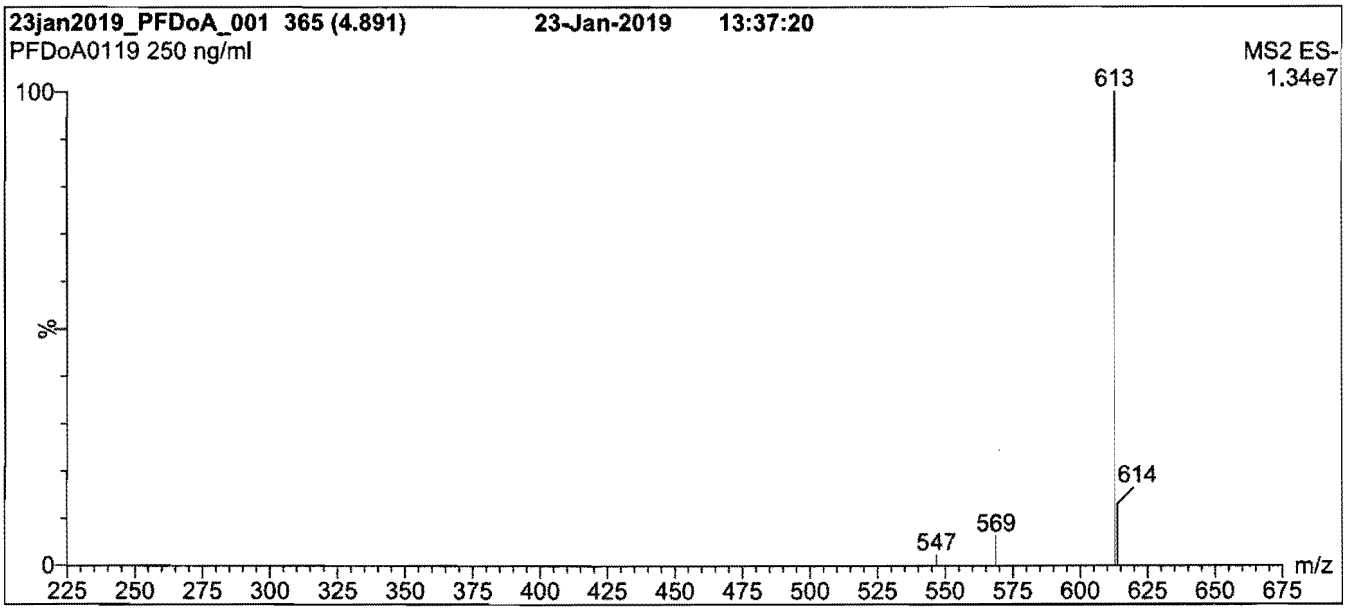
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

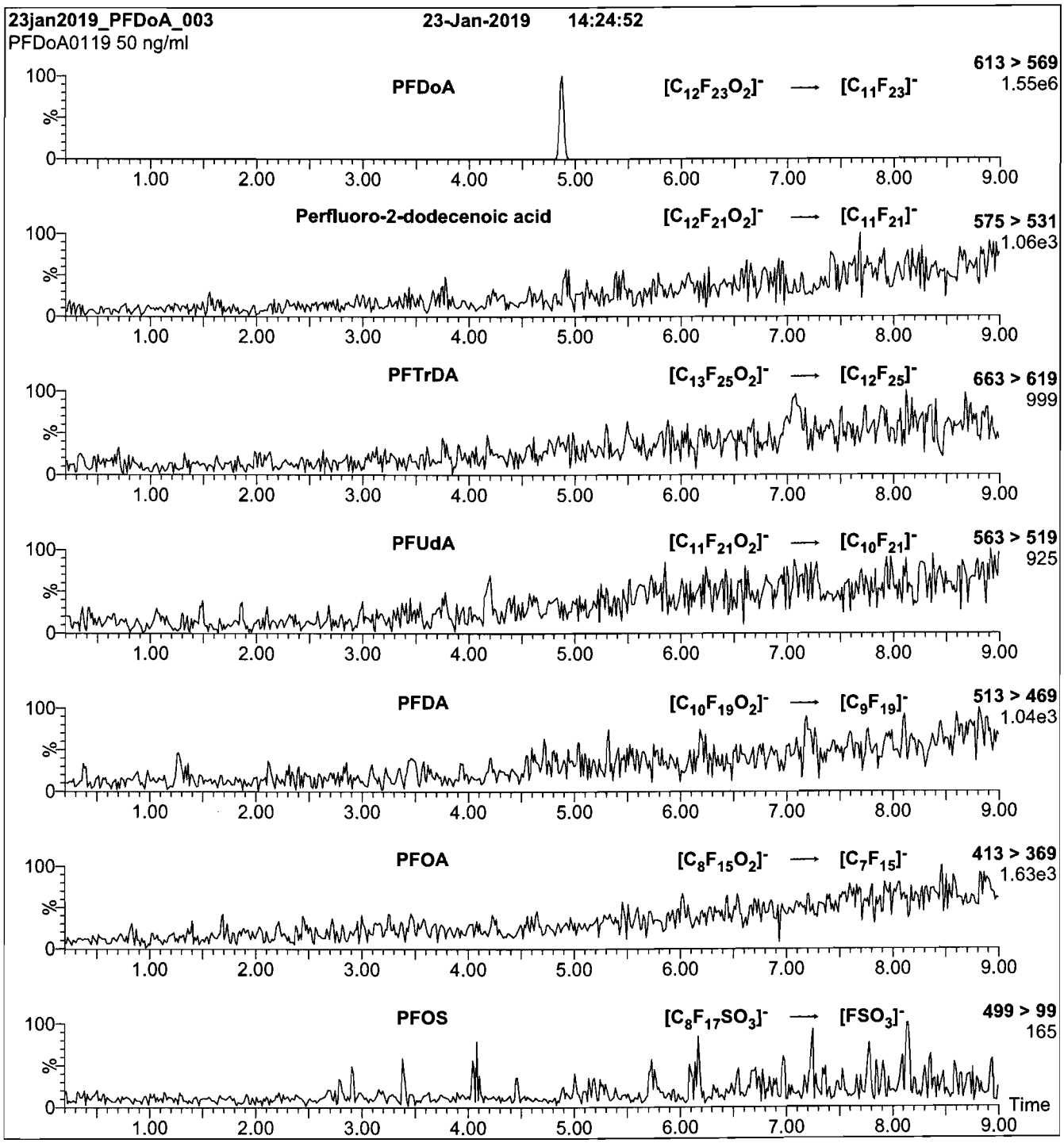
MS Parameters

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

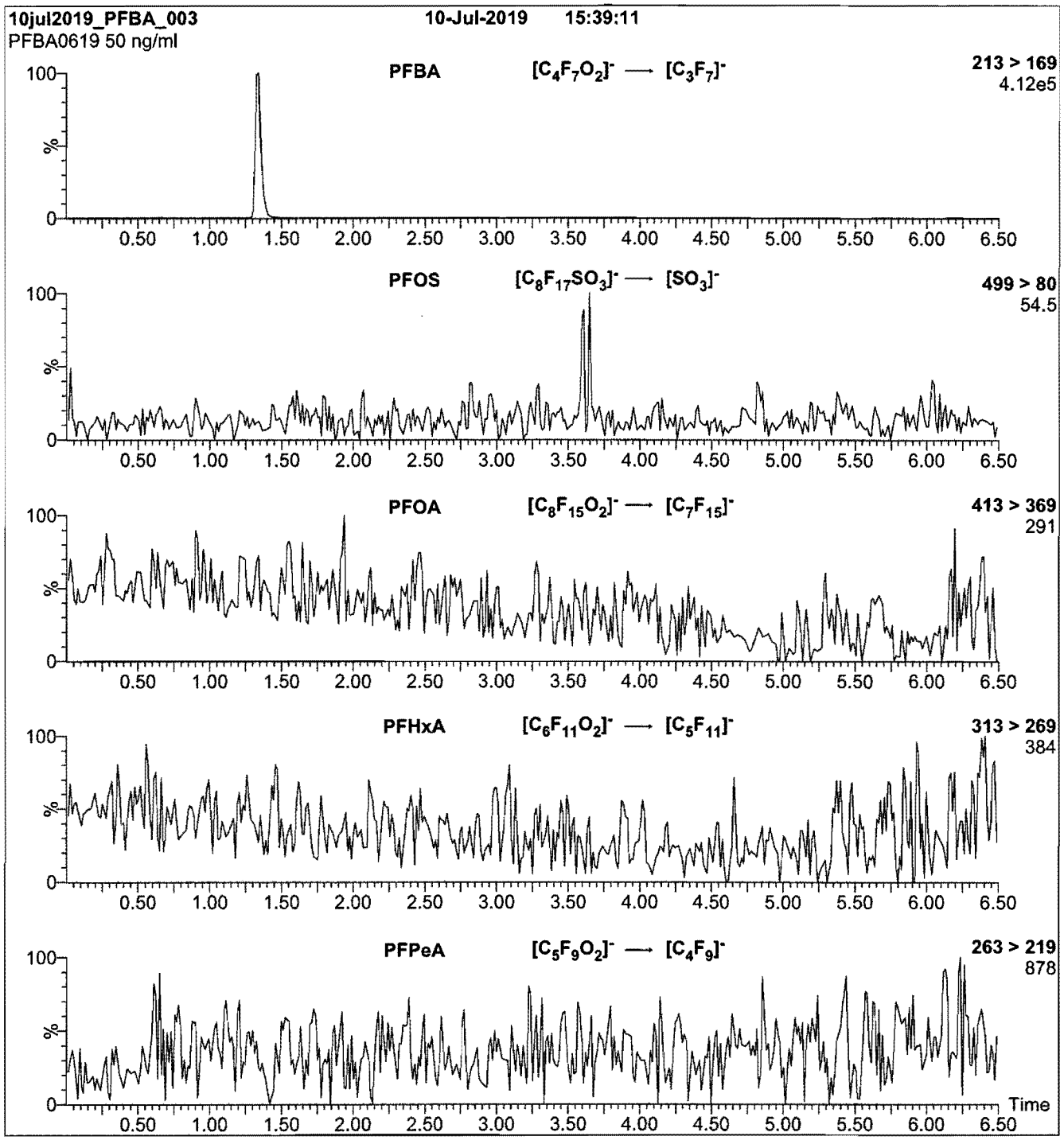
Flow: 300 µl/min

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

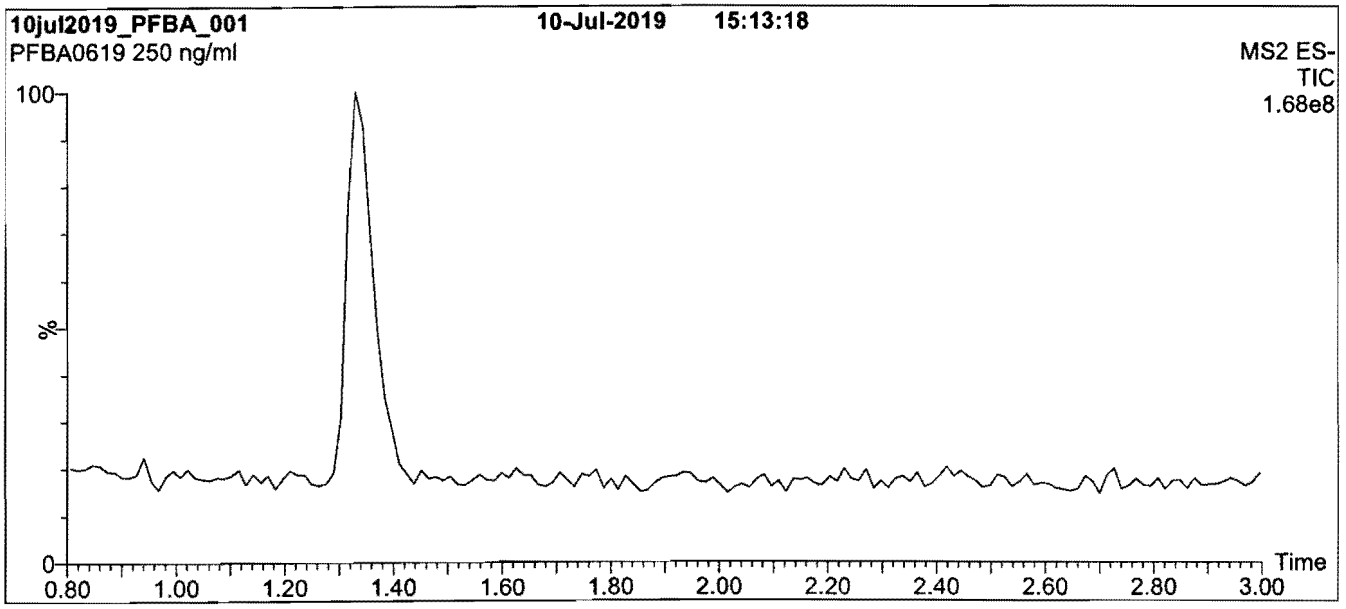
Flow: 300 µl/min

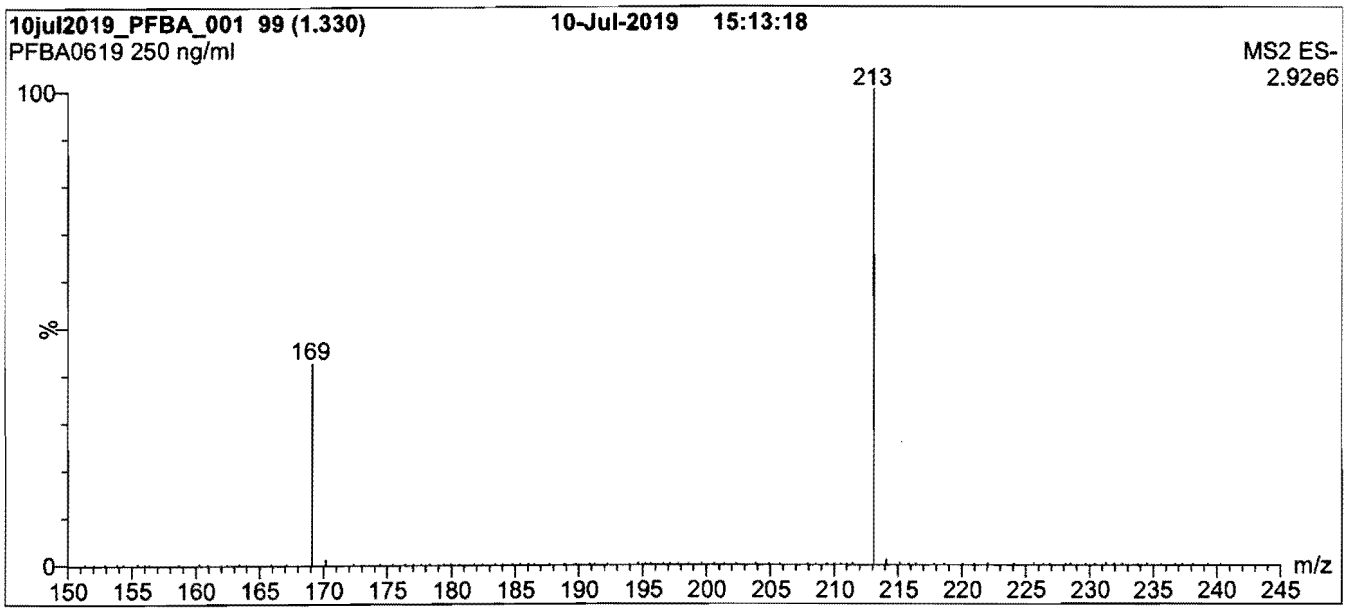
MS Parameters

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 ISO 17034 REFERENCE MATERIAL PRODUCER

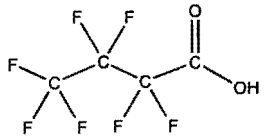
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

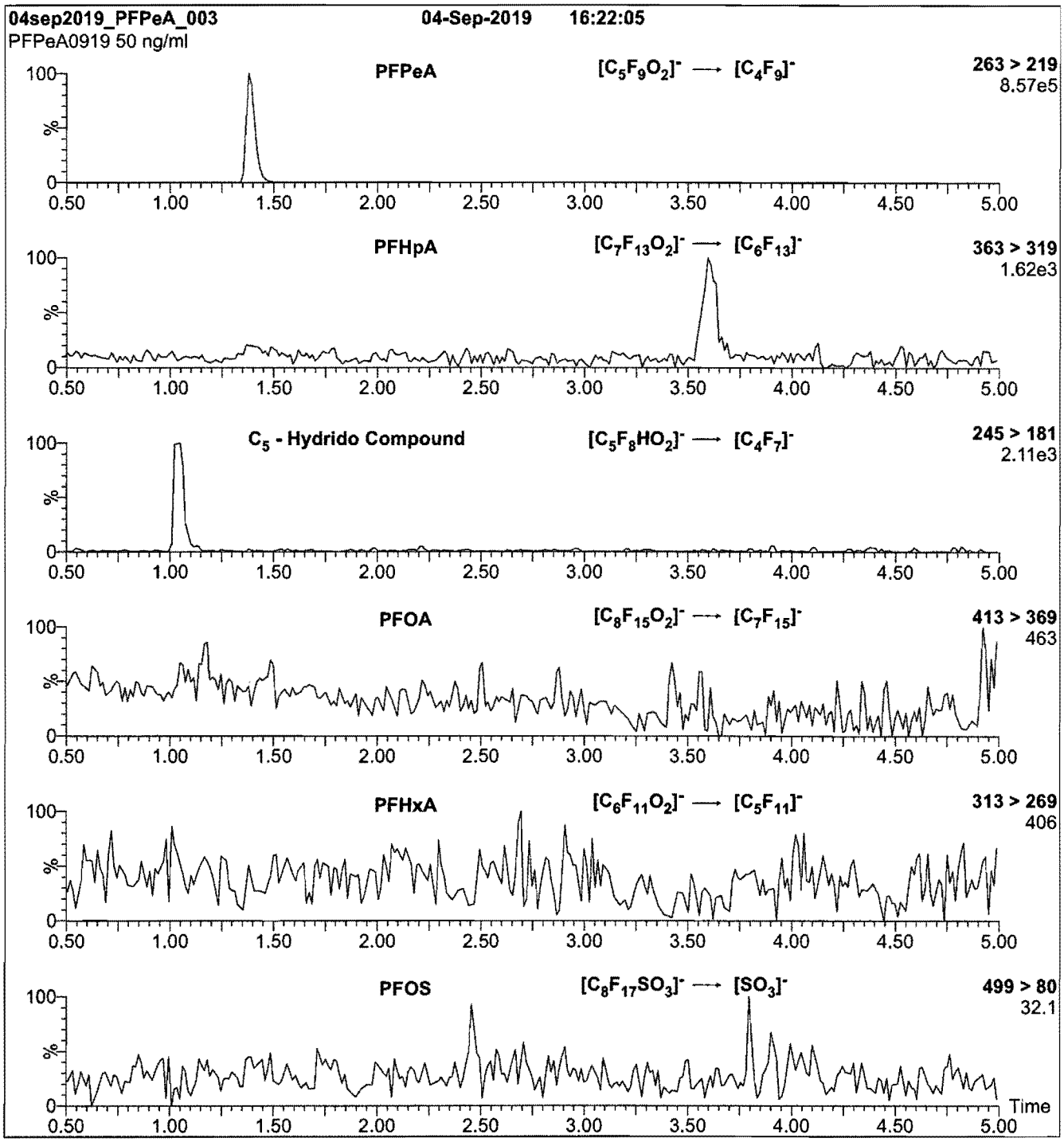
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

1920637

Figure 2: **PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFPeA)

Mobile phase: Same as Figure 1

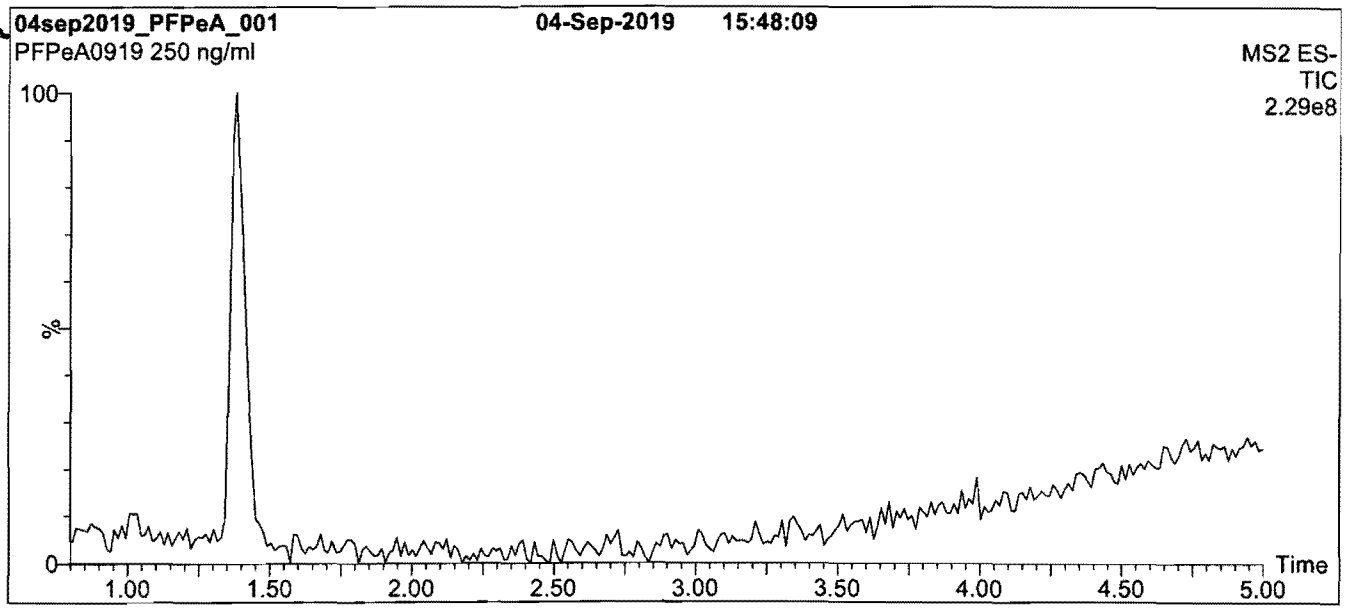
Flow: 300 µl/min

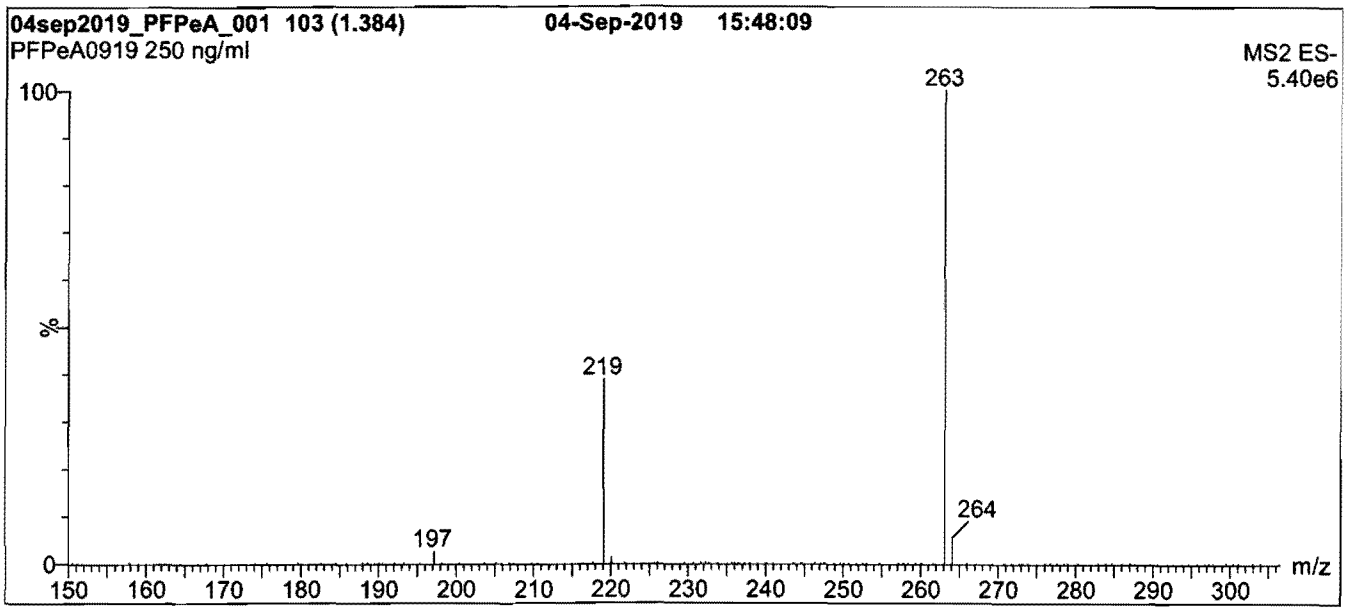
MS Parameters

Collision Gas (mbar) = 3.51e-3
Collision Energy (eV) = 8

1920637

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

1926637

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. A 1226

ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

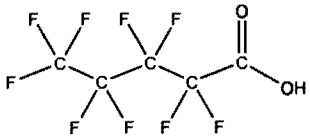
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

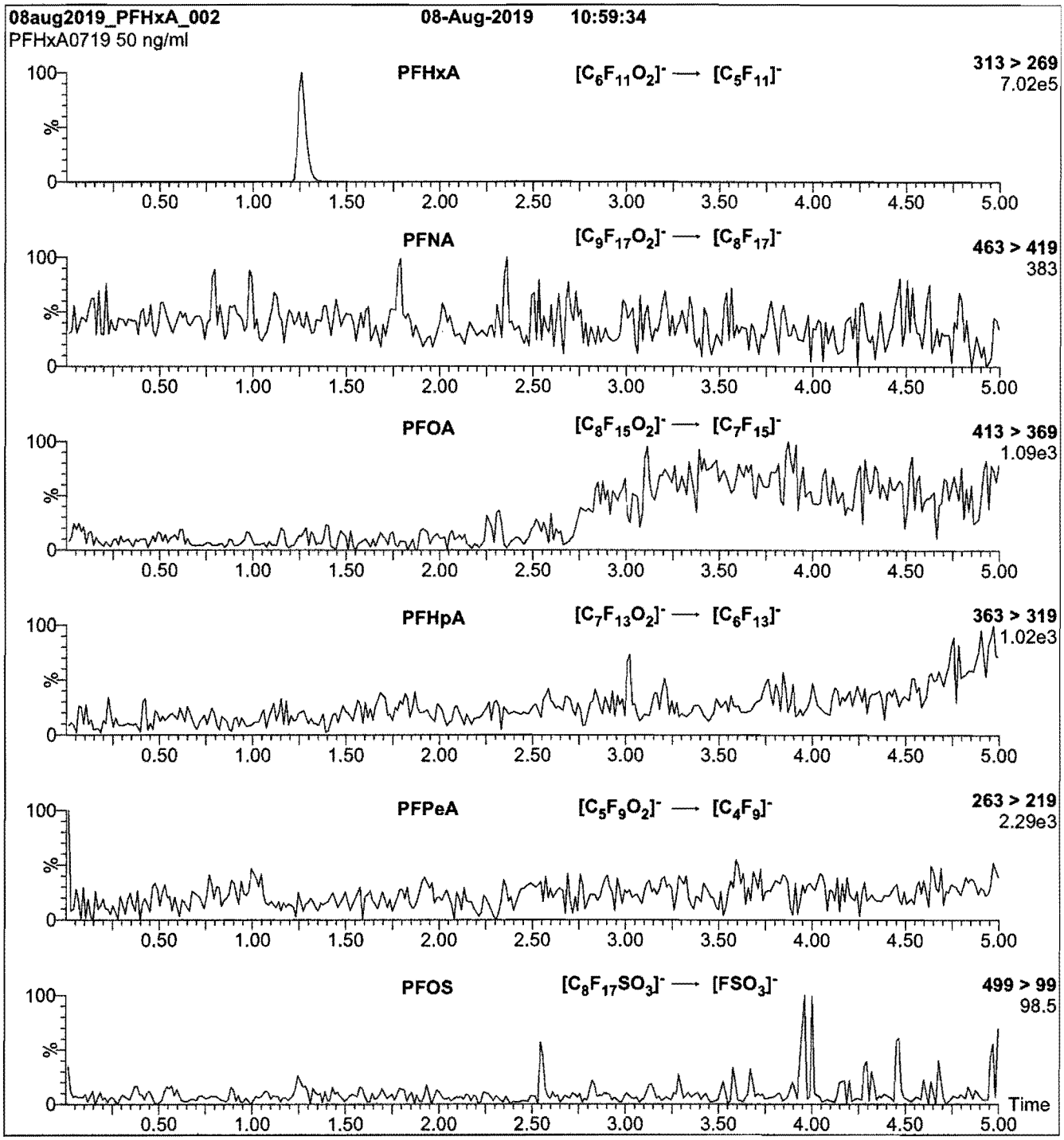
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

19L0638

Figure 2: **PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFHxA)

Mobile phase: Same as Figure 1

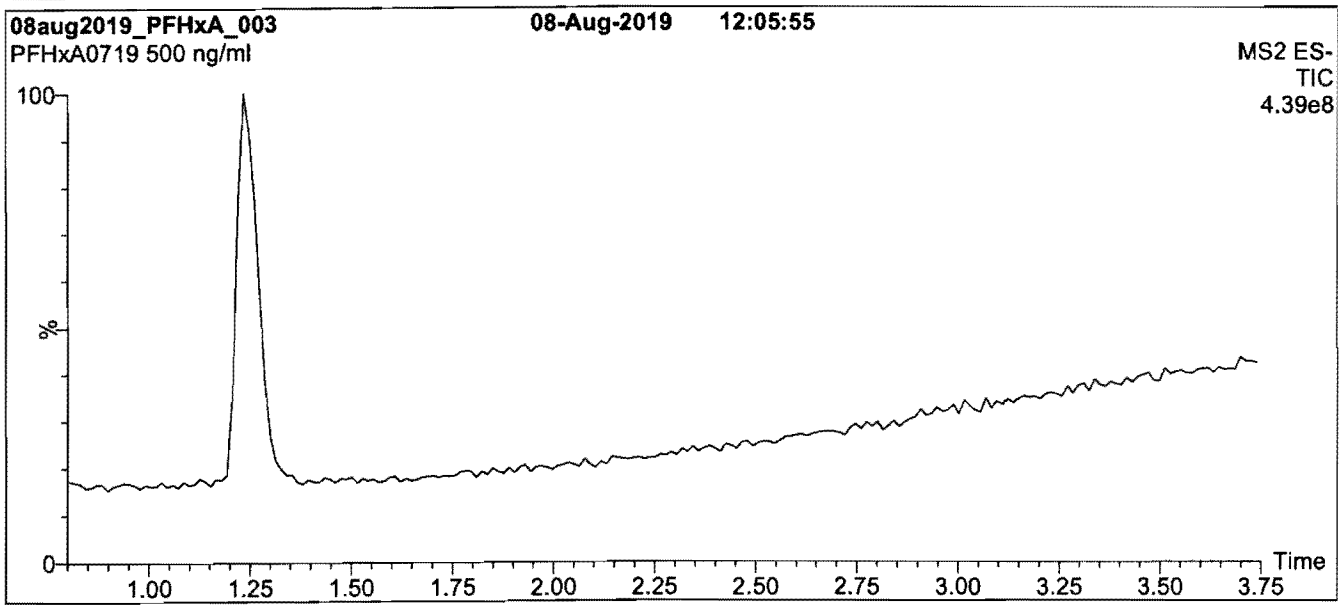
Flow: 300 µl/min

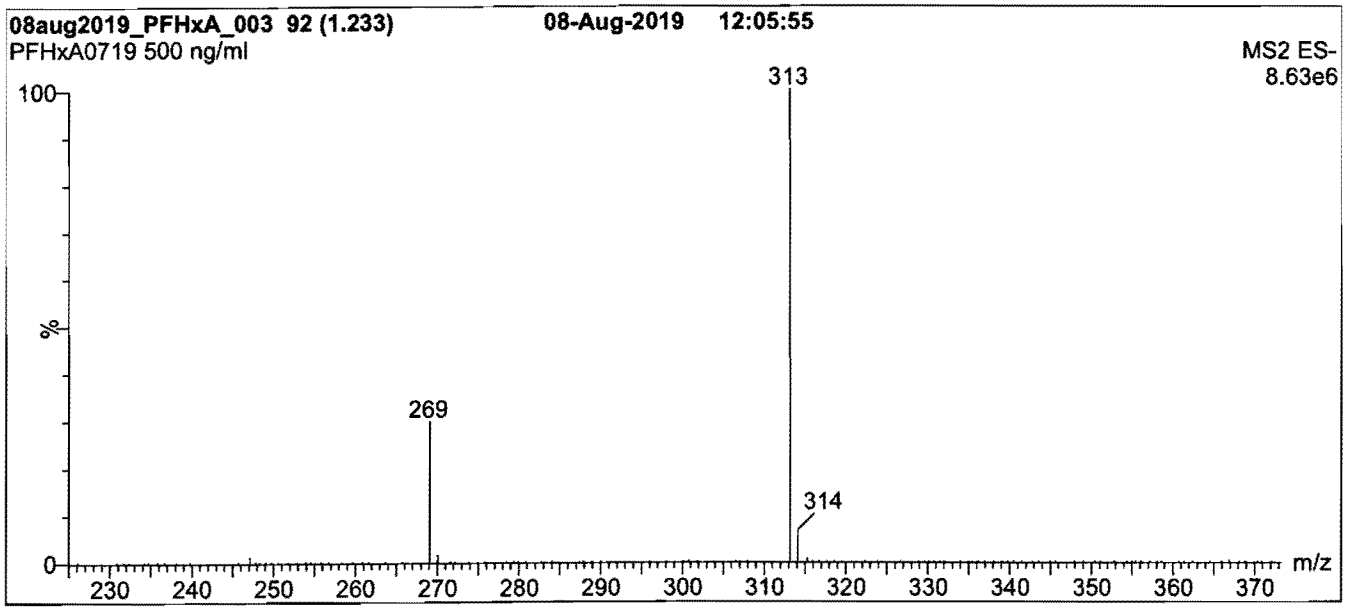
MS Parameters

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

1910638

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

19L0638

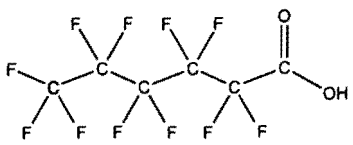
WELLINGTON LABORATORIES

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

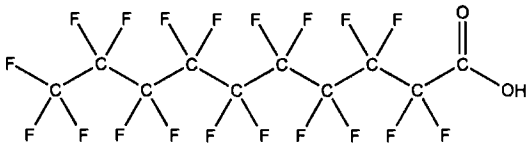
19L0639

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

19L0639

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).

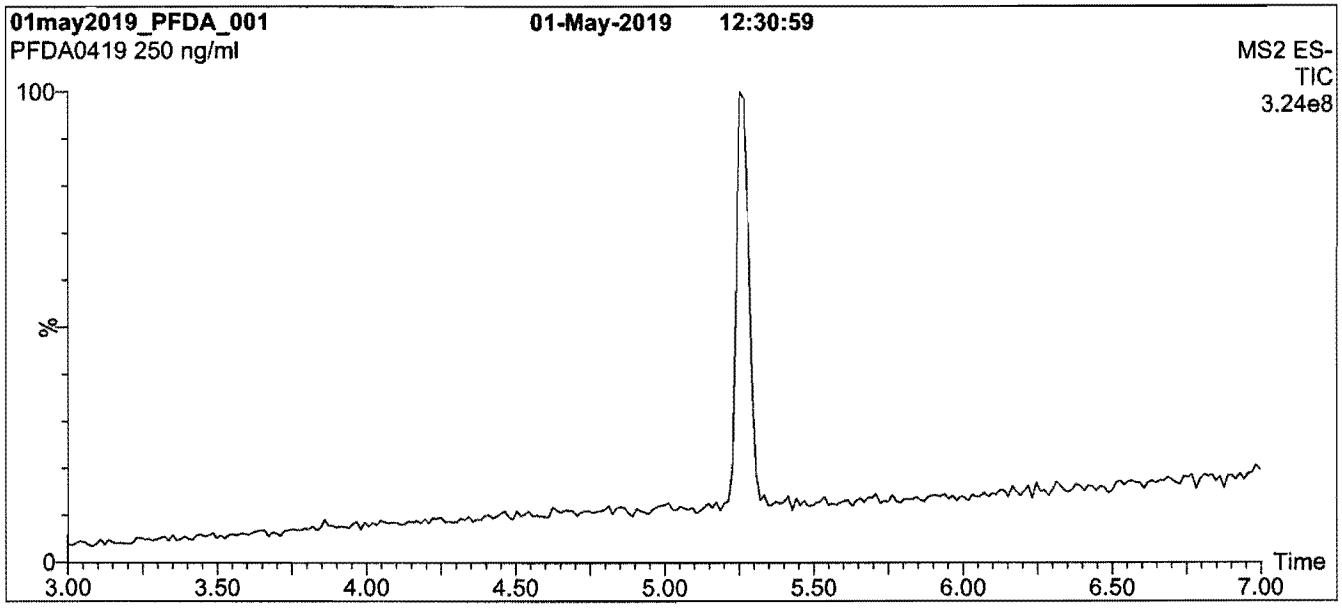
CALA Testing Accreditation No. A 1226

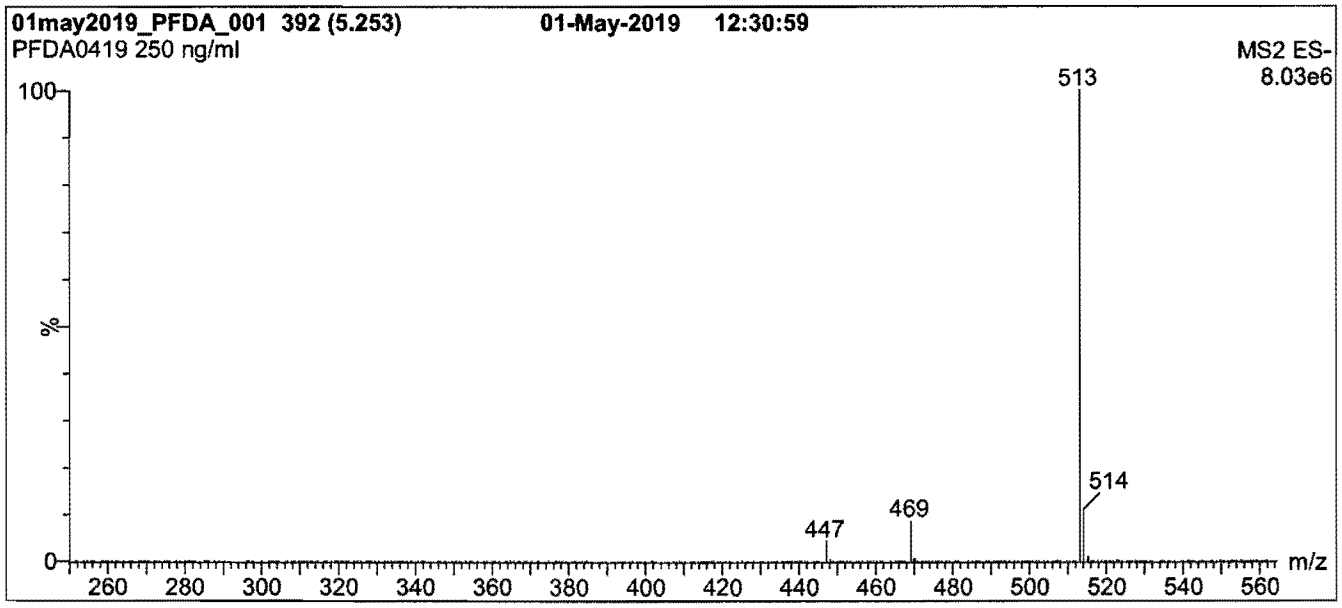
ANAB ACCREDITED 17034 REFERENCE MATERIAL PRODUCER

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

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

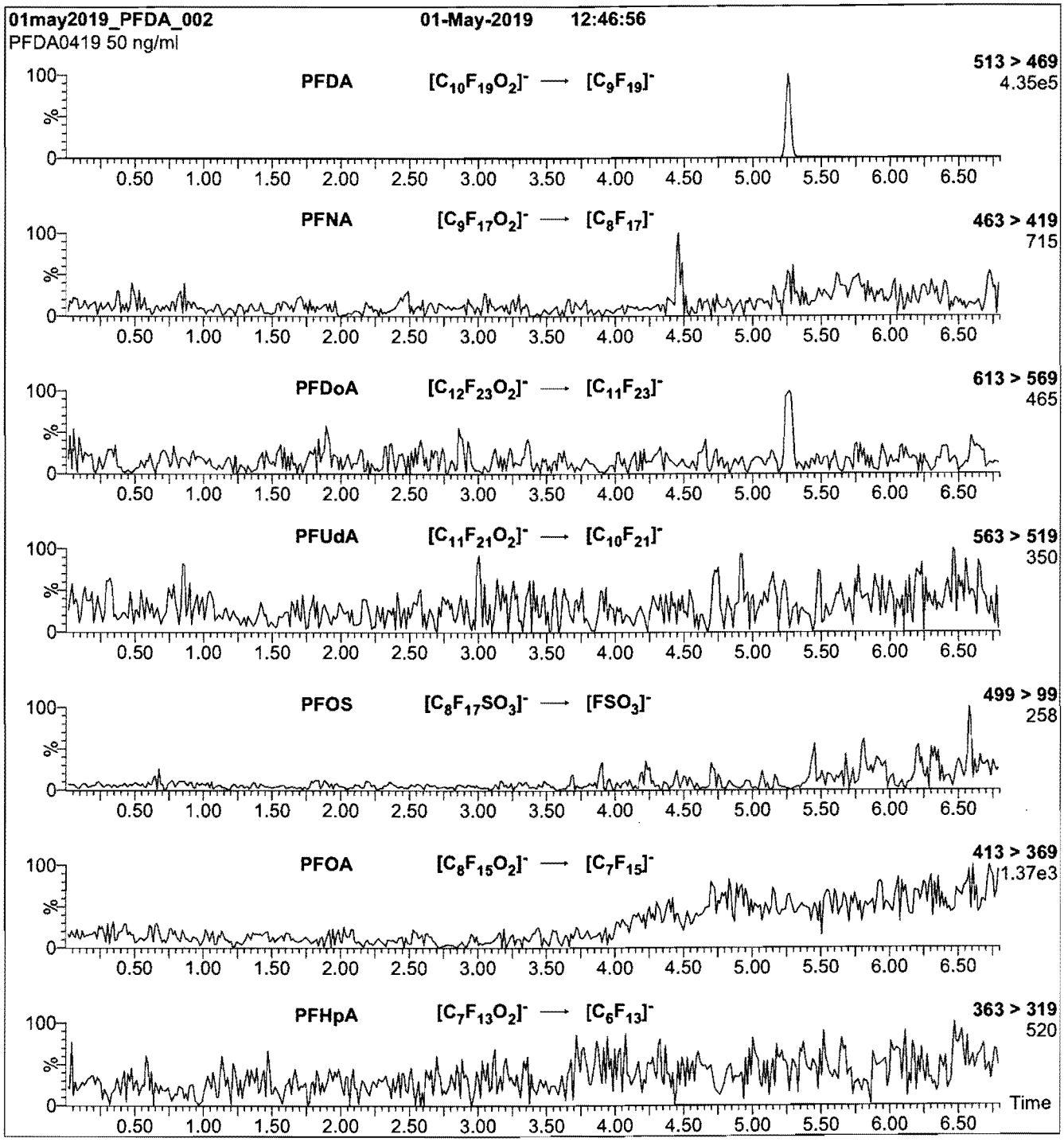
MS Parameters

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)

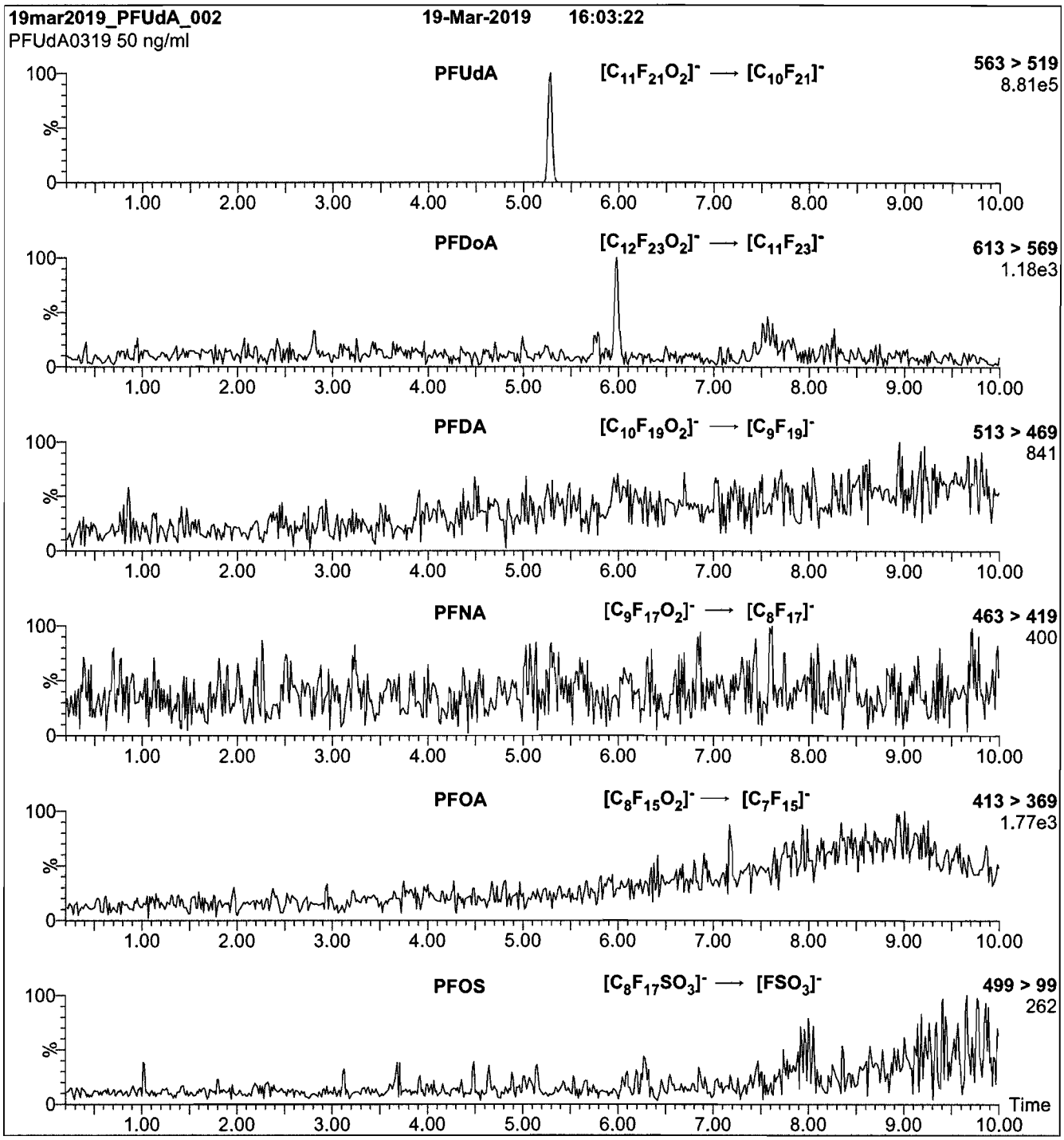
Mobile phase: Same as Figure 1

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

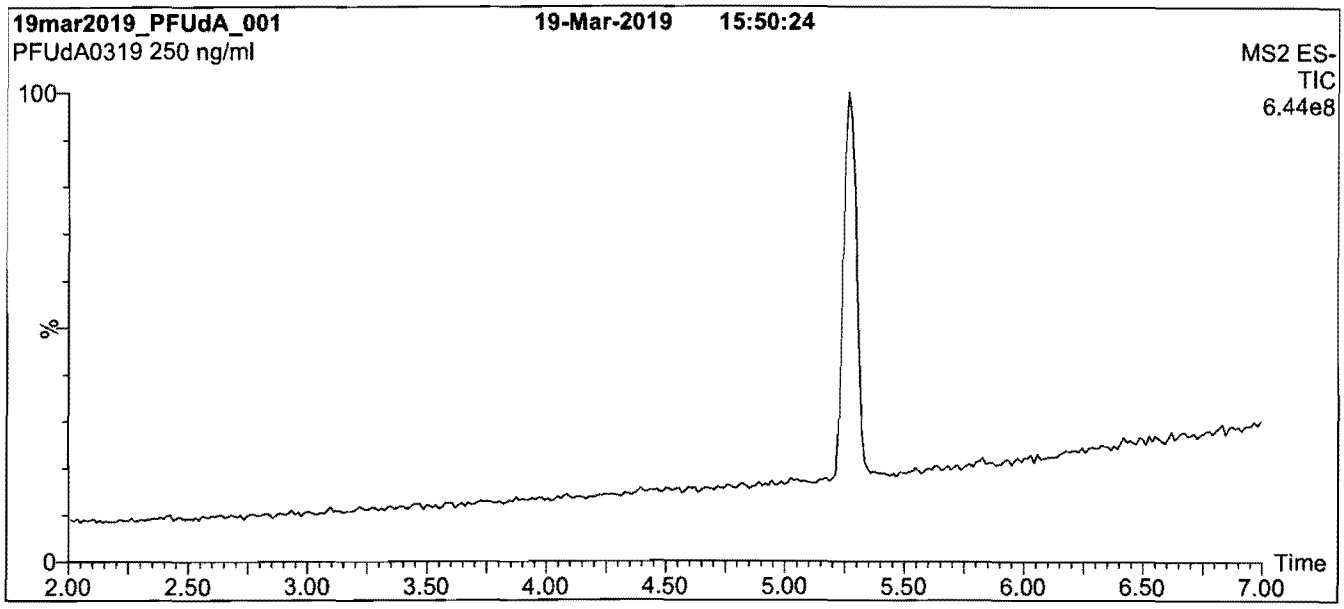
Flow: 300 µl/min

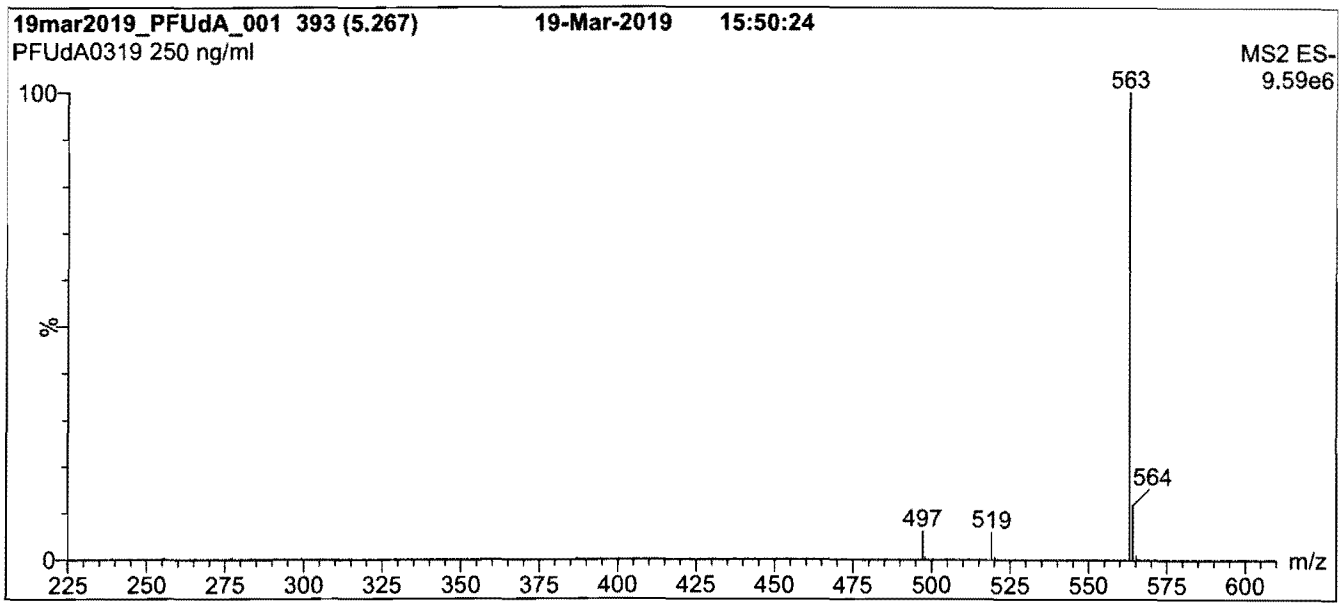
MS Parameters

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

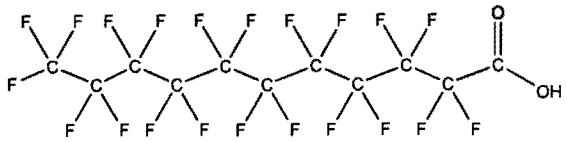
19L0640

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).

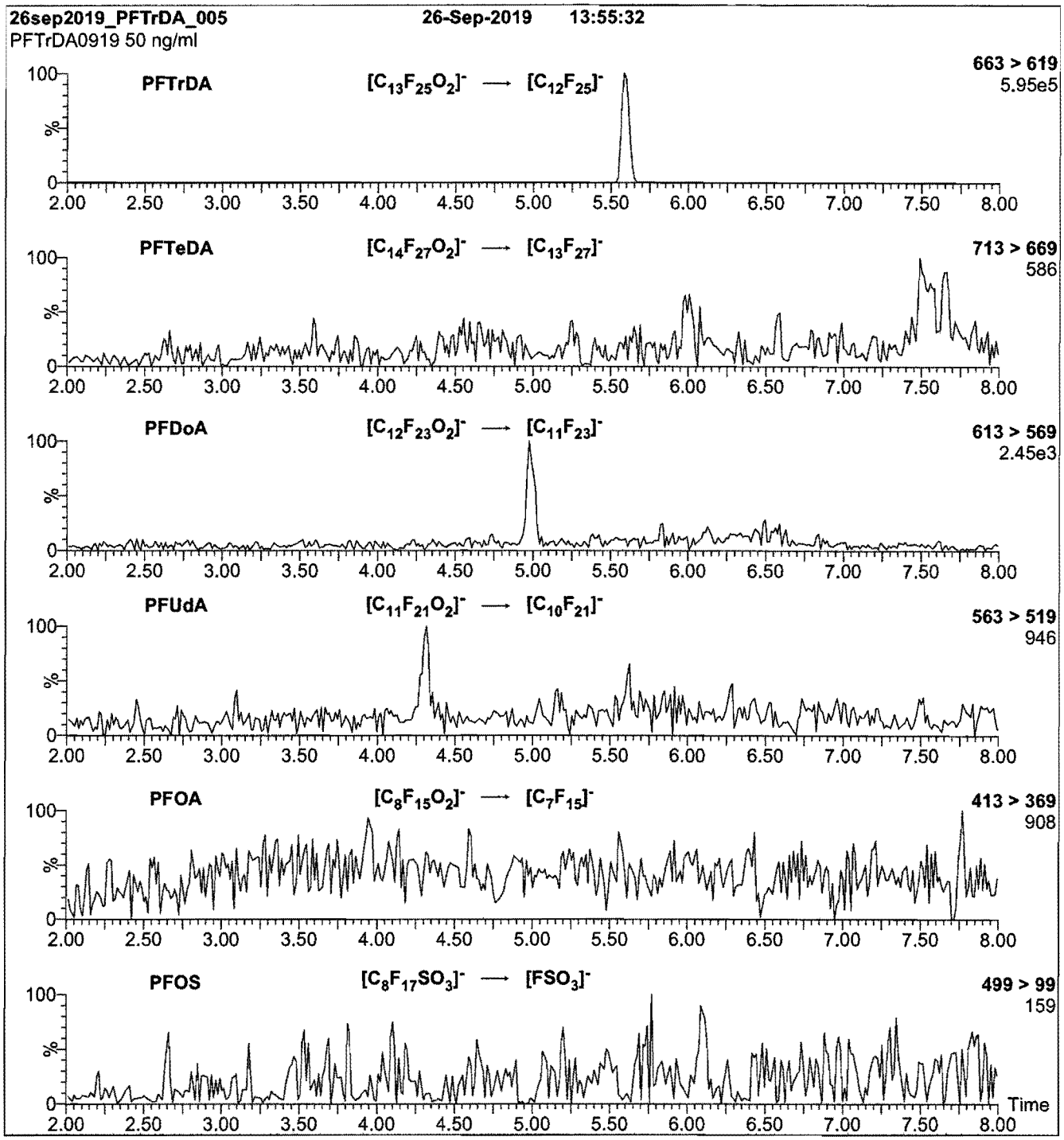
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

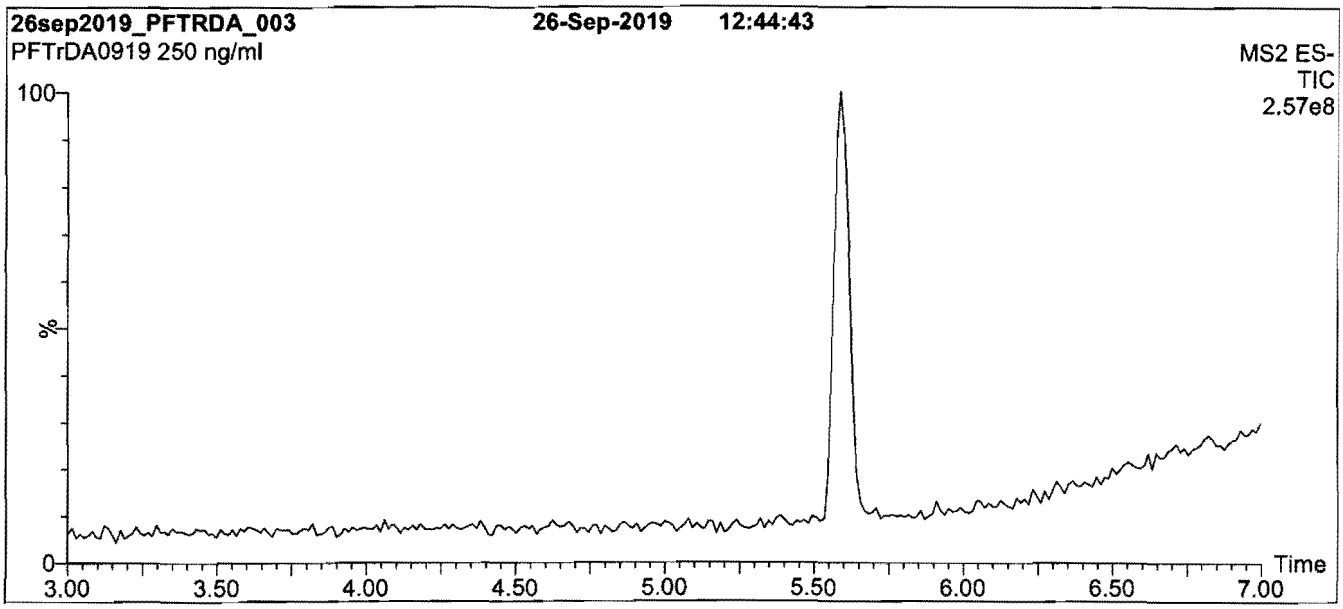
Flow: 300 µl/min

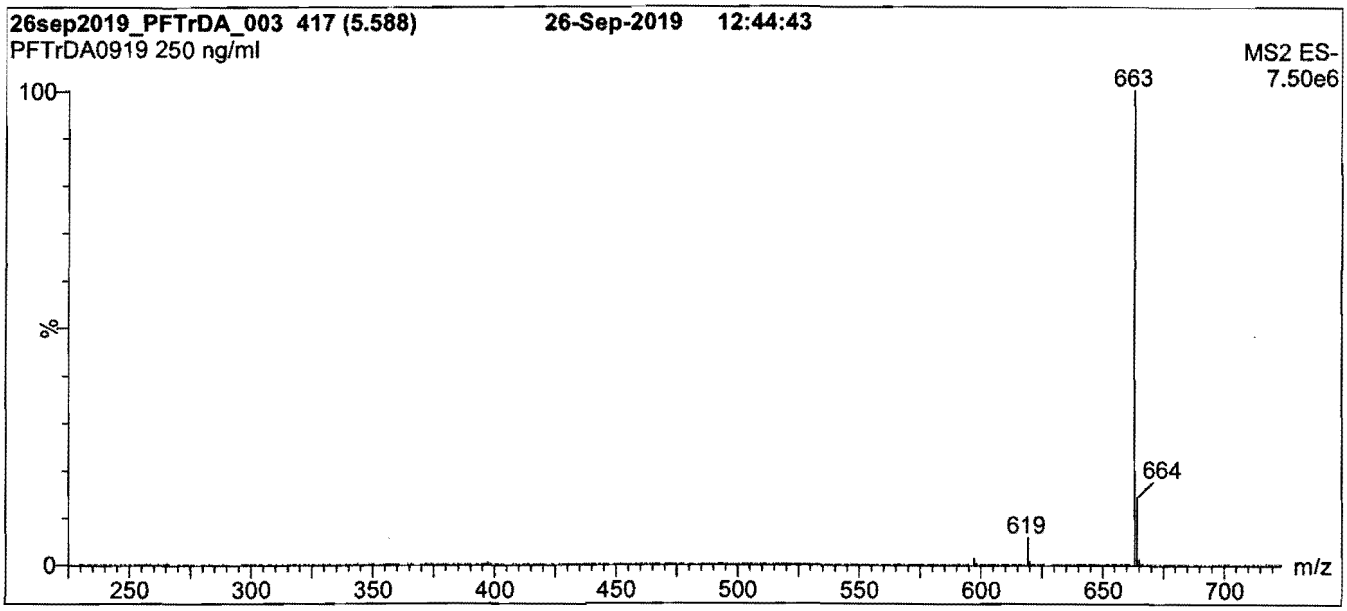
MS Parameters

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,...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

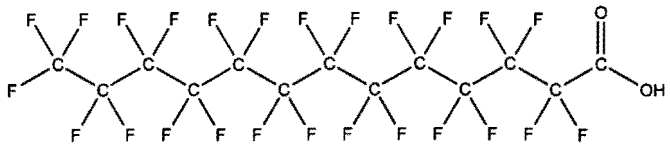
19L0691

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 ($C_{14}HF_{27}O_2$).

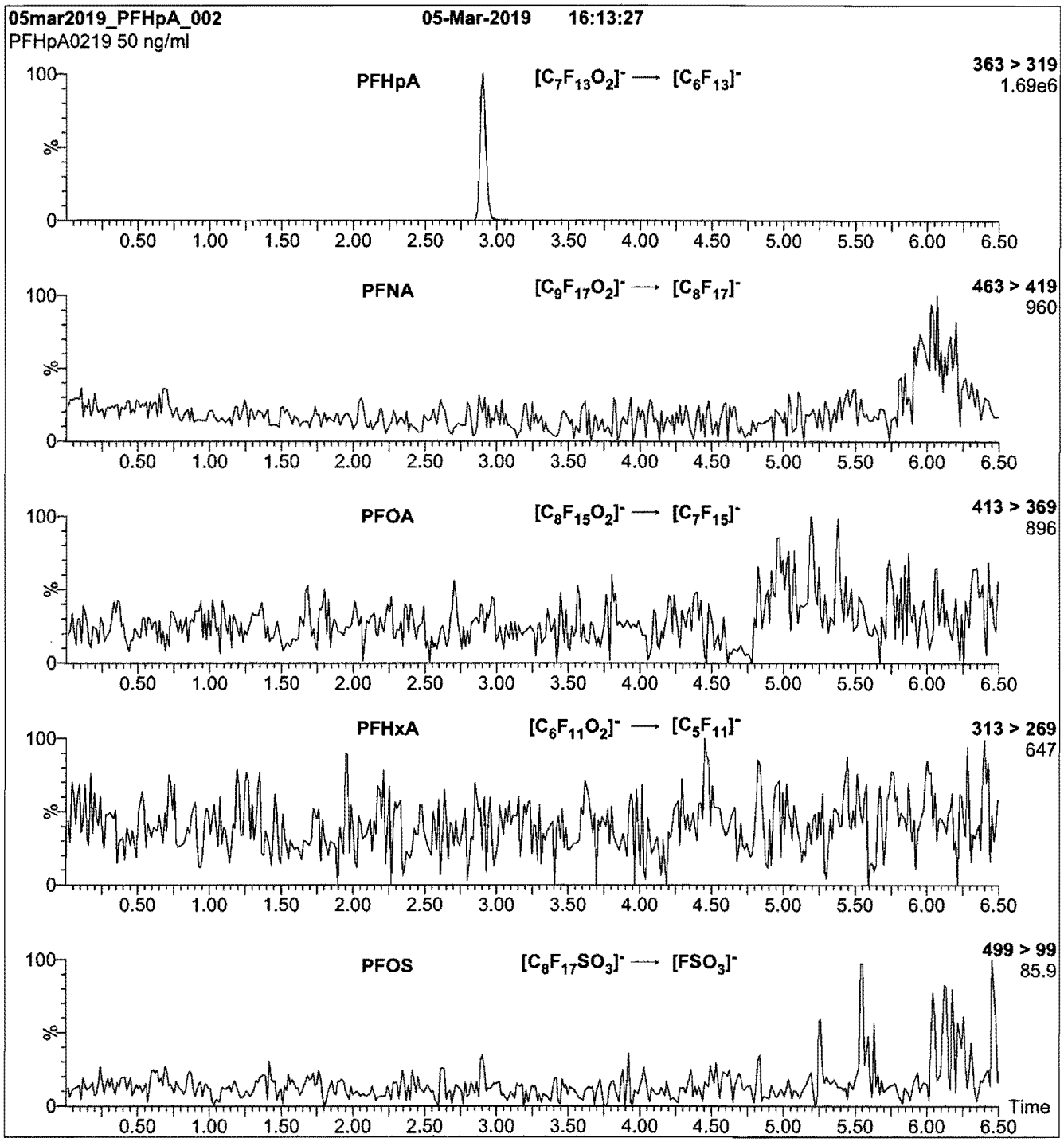
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

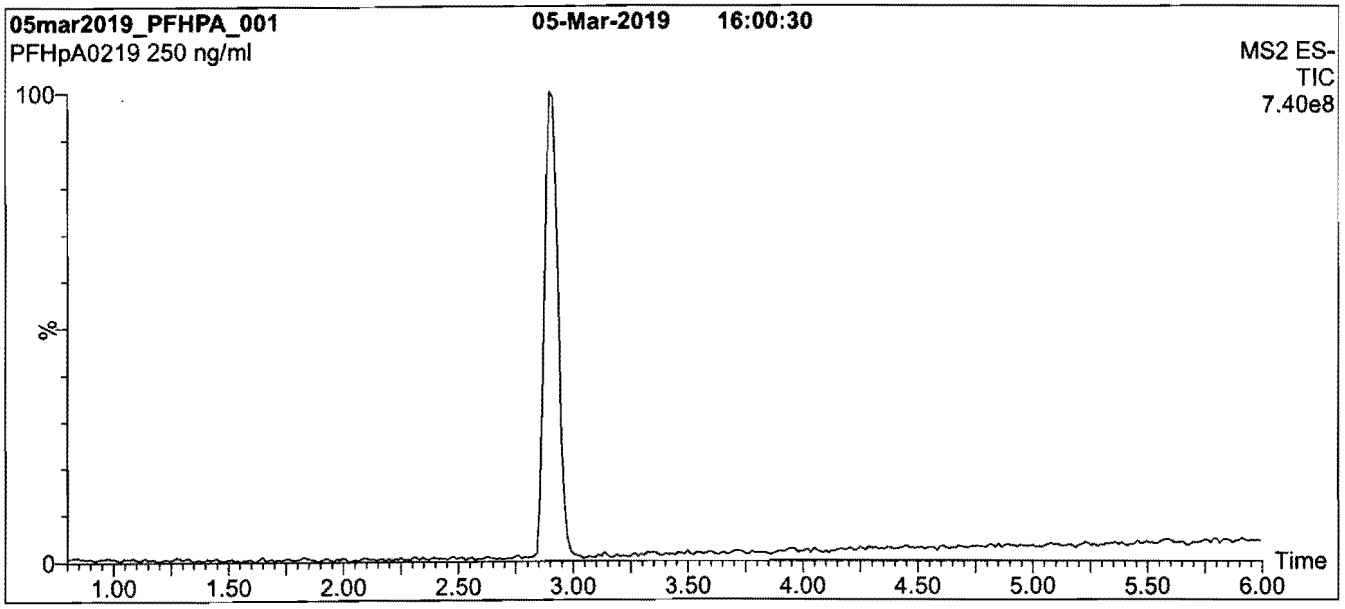
Flow: 300 µl/min

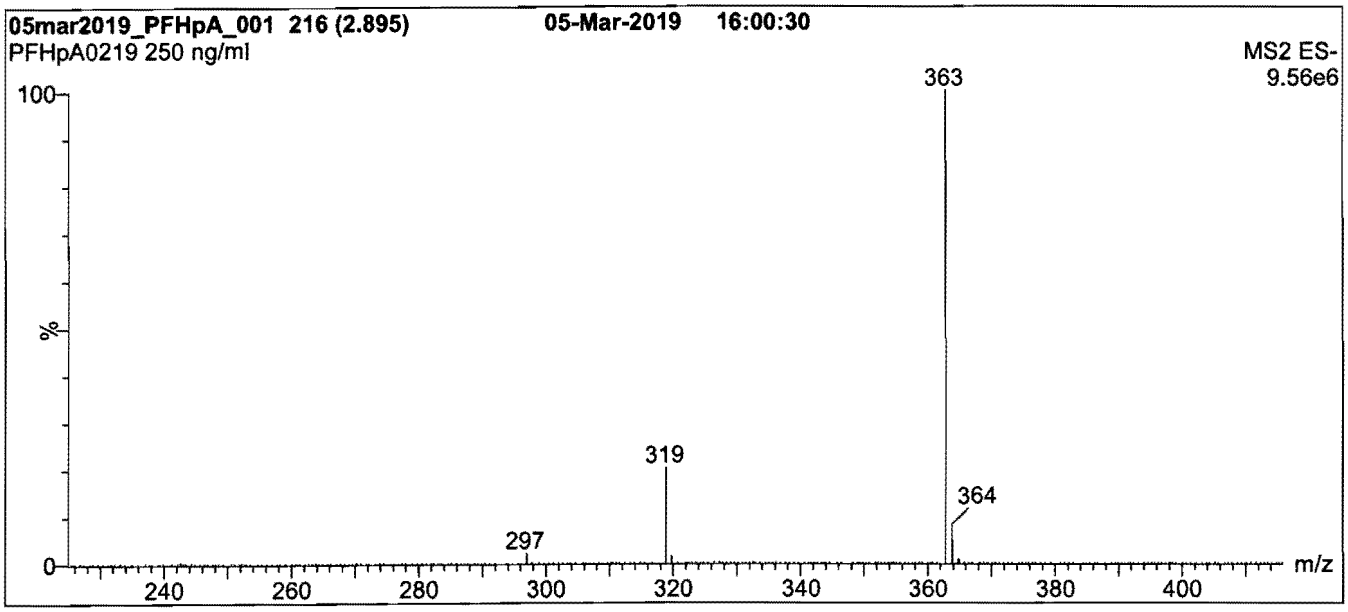
MS Parameters

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**

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

19L0642

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

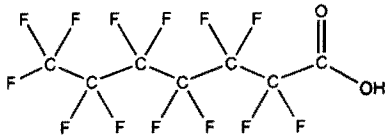
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

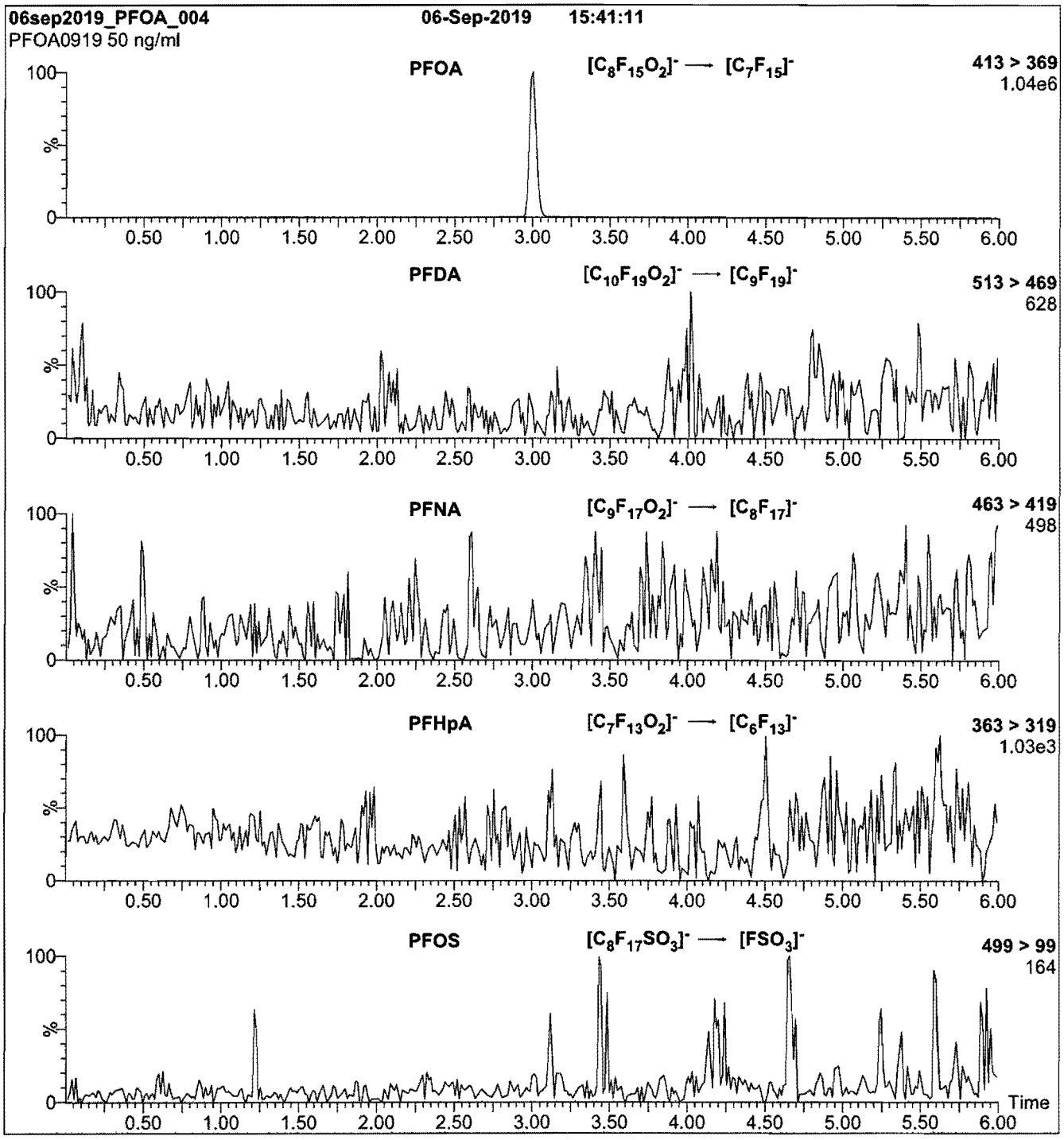
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

19L0643

Figure 2: **PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFOA)

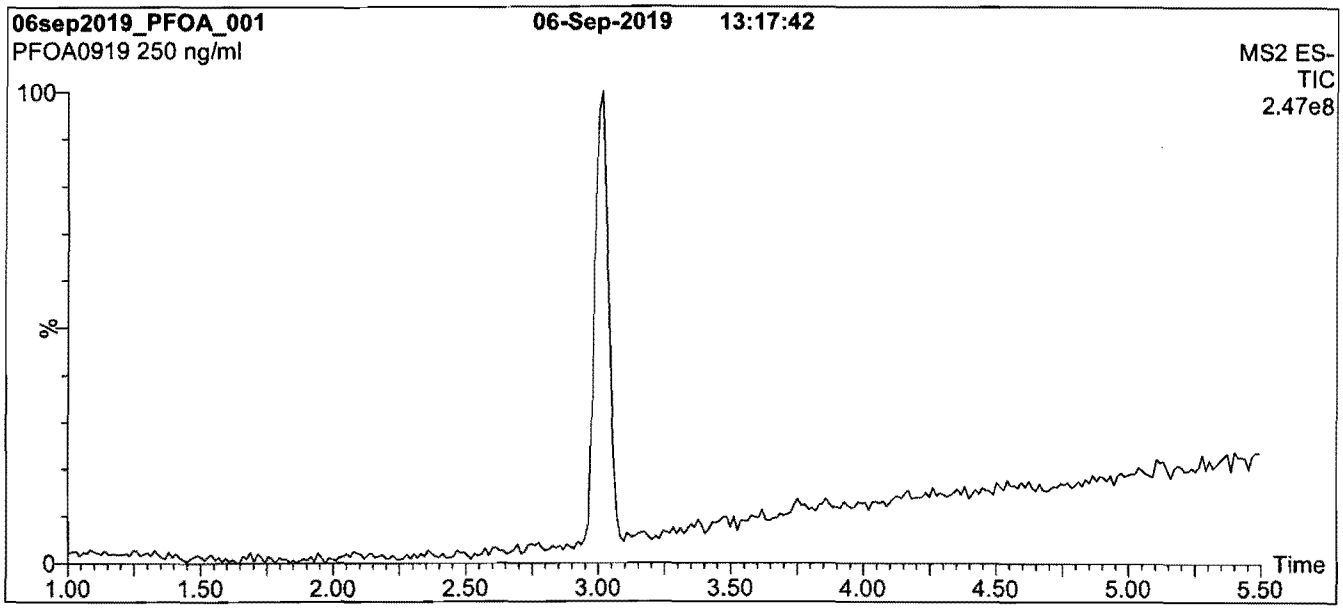
Mobile phase: Same as Figure 1

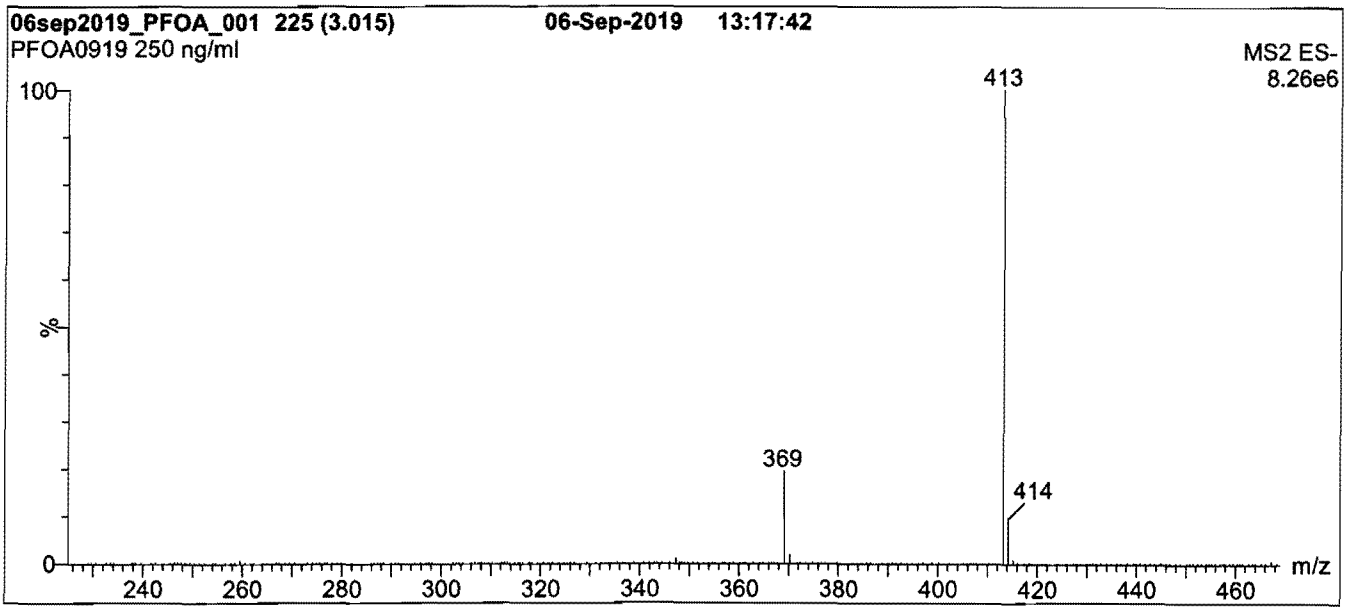
Flow: 300 µl/min

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

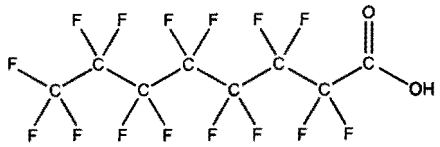
19L0643

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.

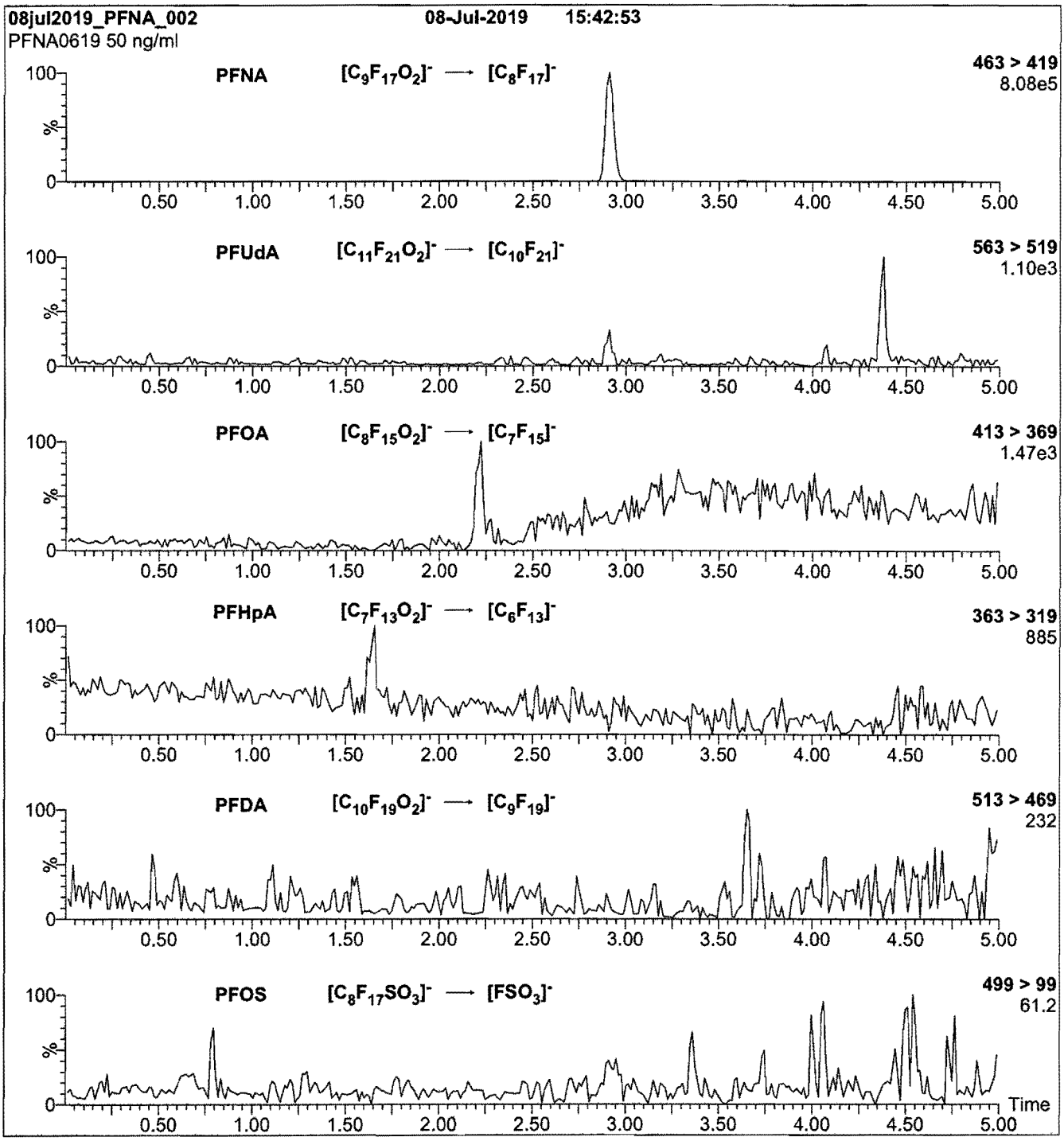
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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

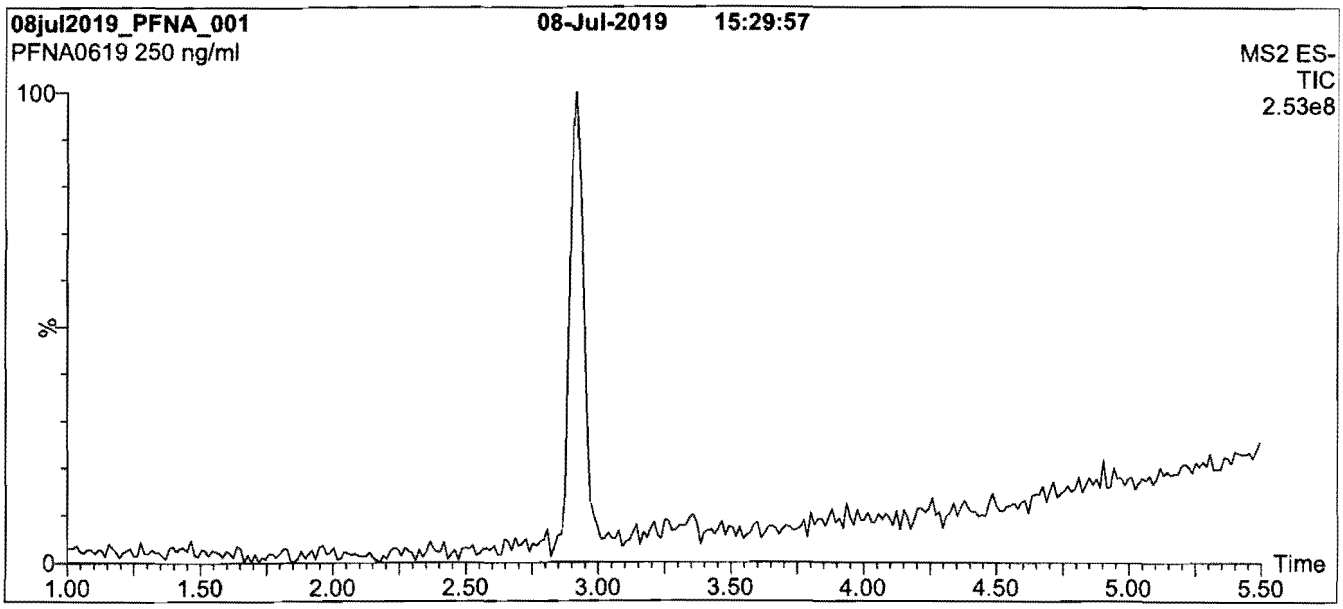
Flow: 300 µl/min

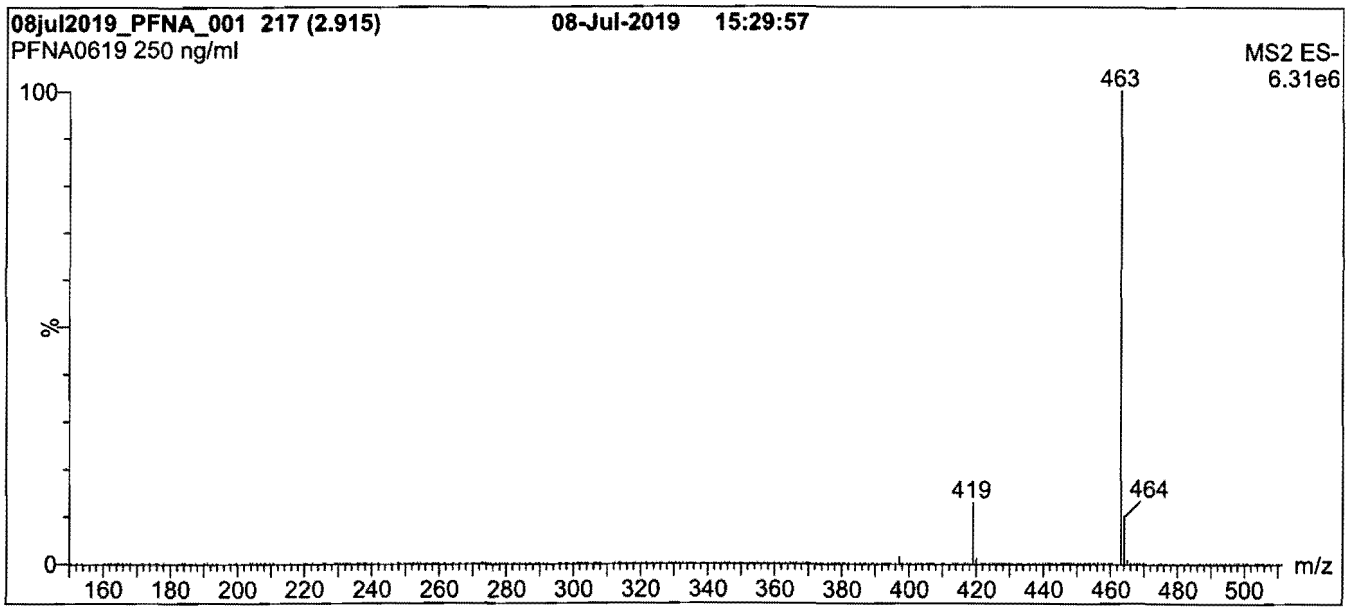
MS Parameters

Collision Gas (mbar) = 3.35e-3
Collision Energy (eV) = 10

19L0644

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:

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

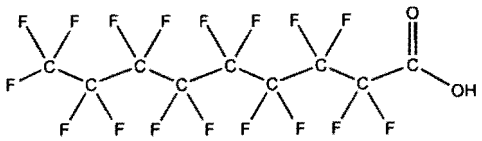
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0644

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).

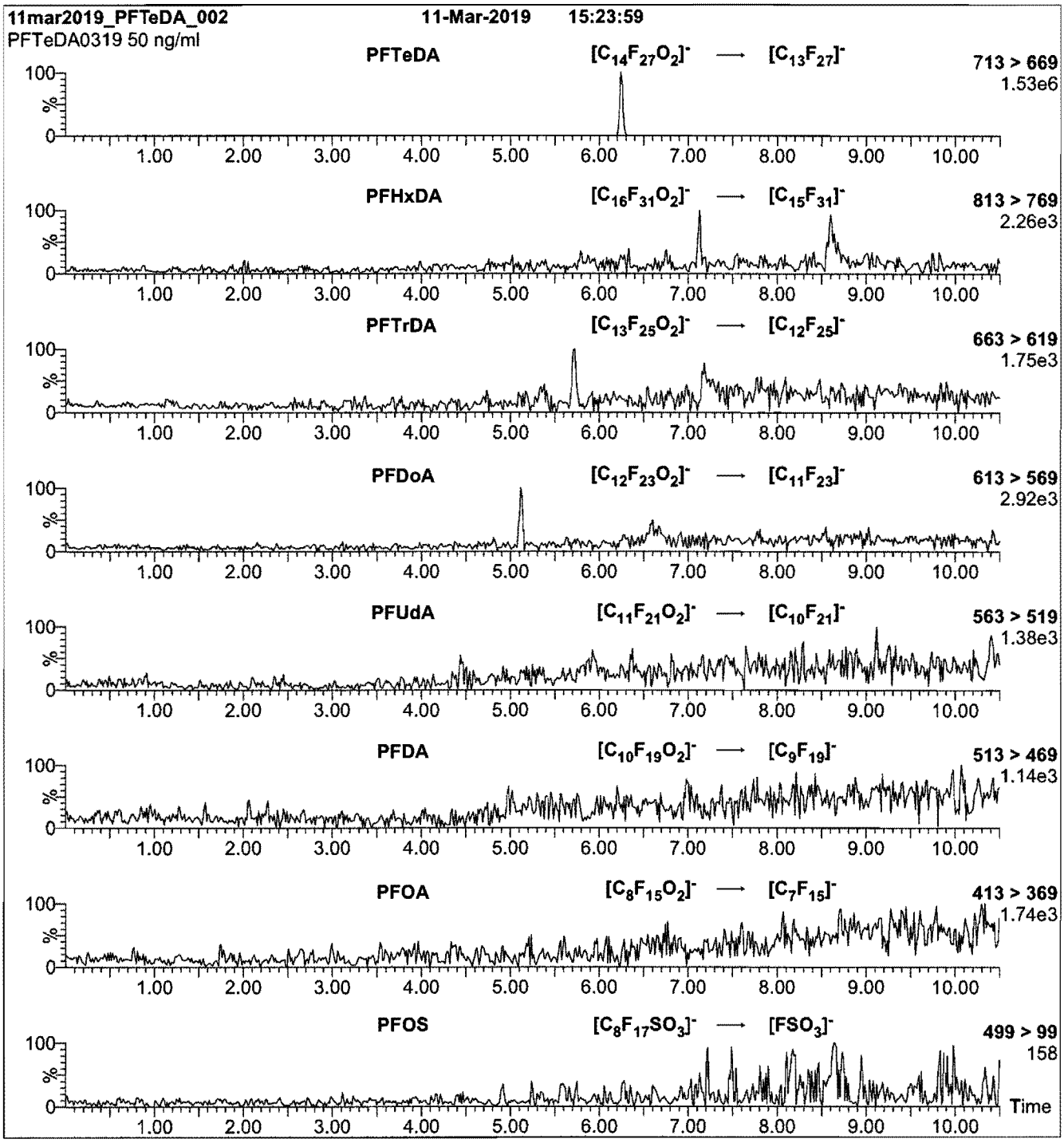
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

1920645

Figure 2: **PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (PFTeDA)

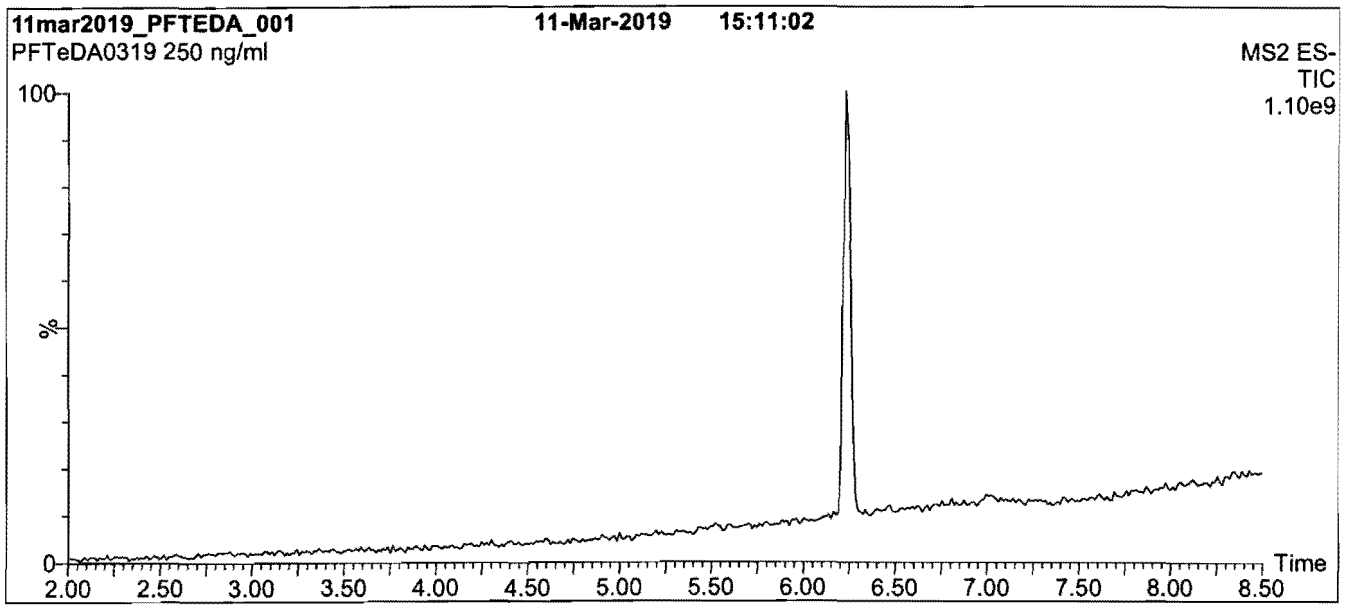
Mobile phase: Same as Figure 1

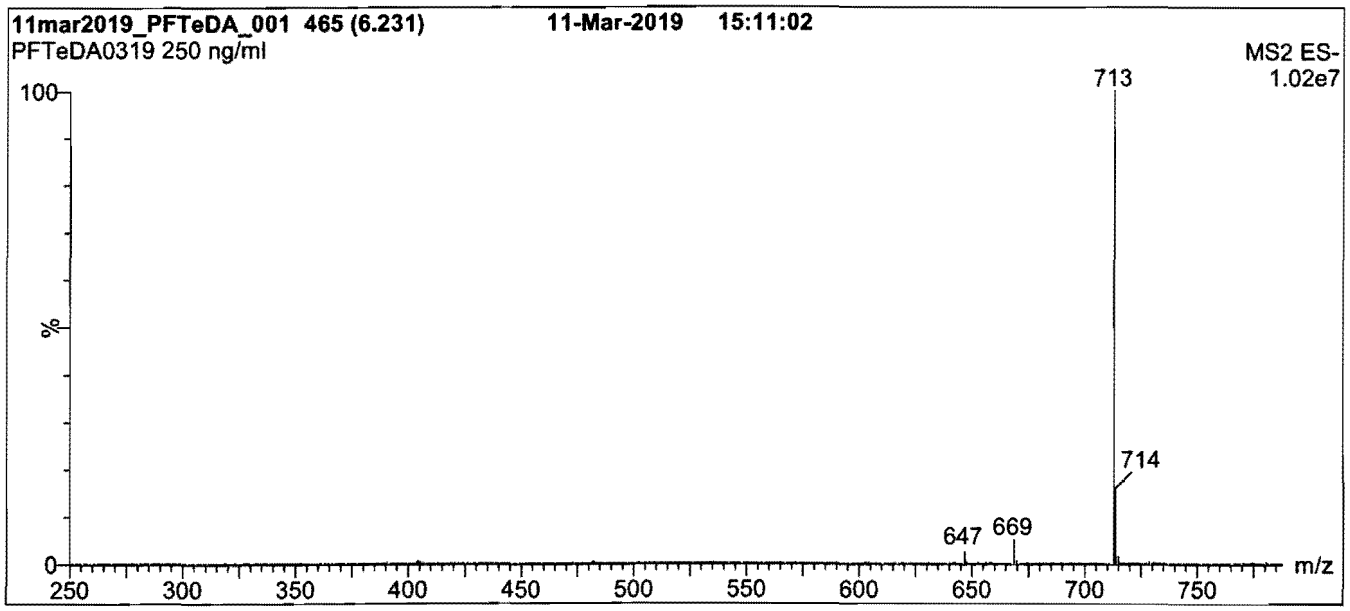
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.03e-3
Collision Energy (eV) = 14

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

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

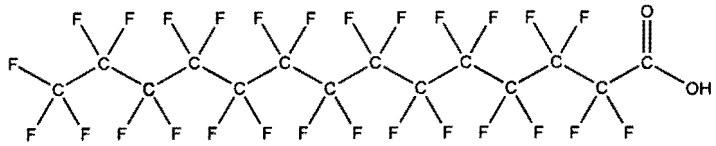
19L 0645

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 ($C_{16}HF_{31}O_2$).

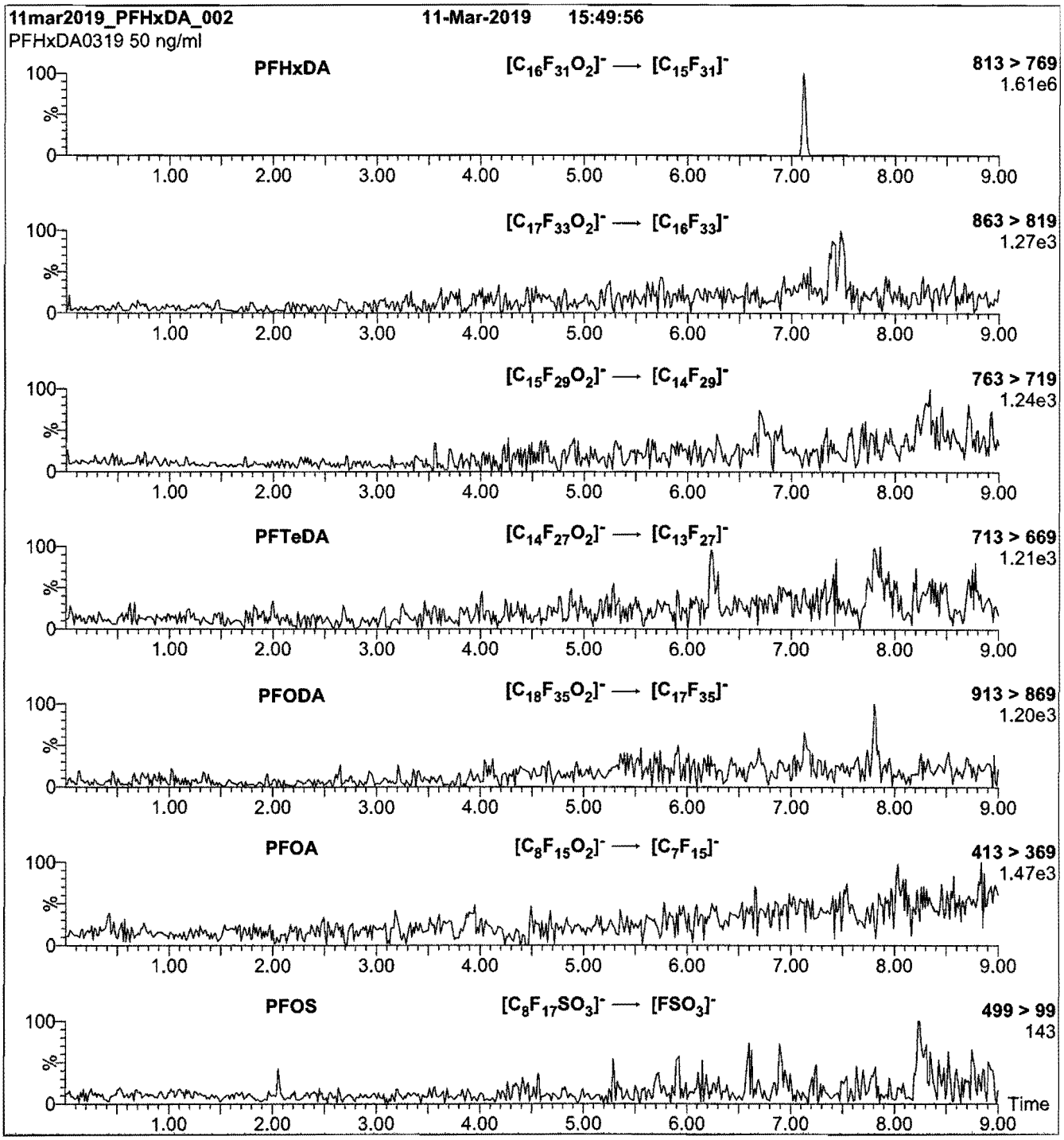
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

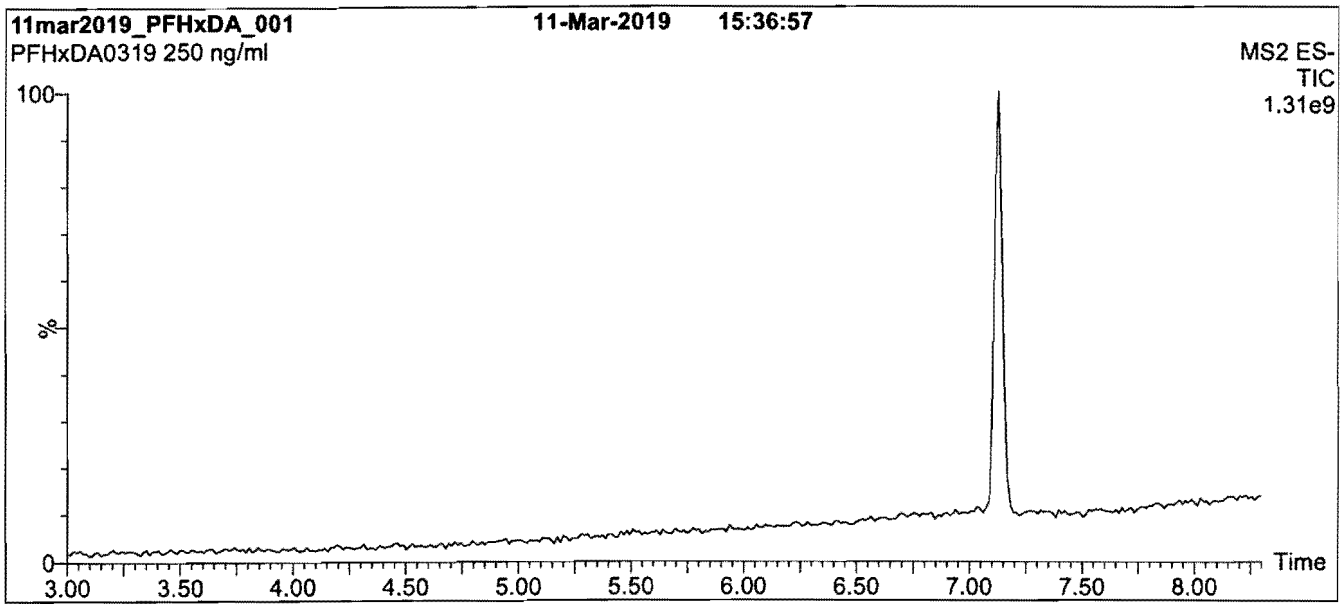
Flow: 300 µl/min

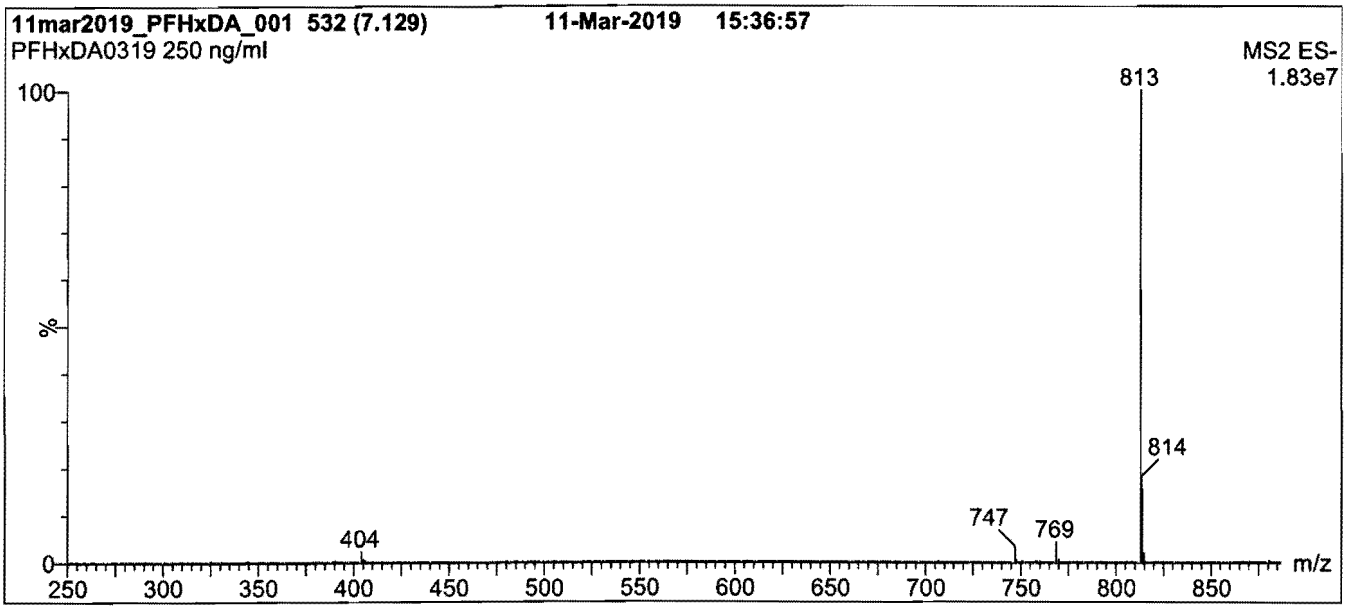
MS Parameters

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:

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

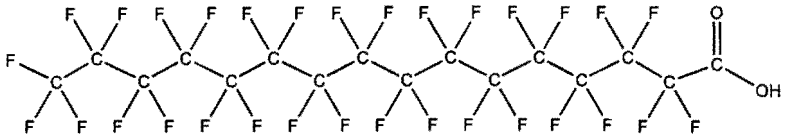
19L0646

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.

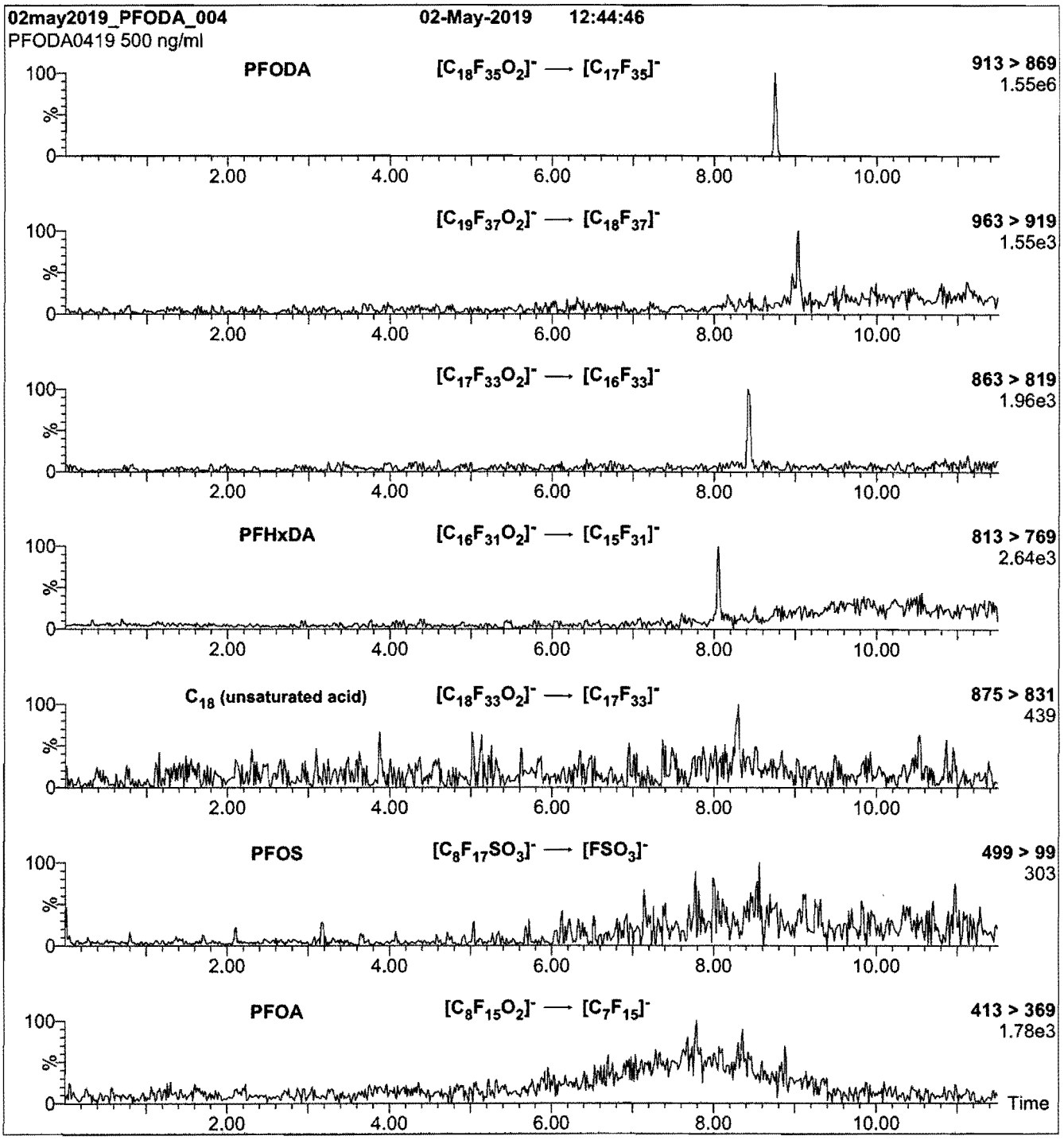
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

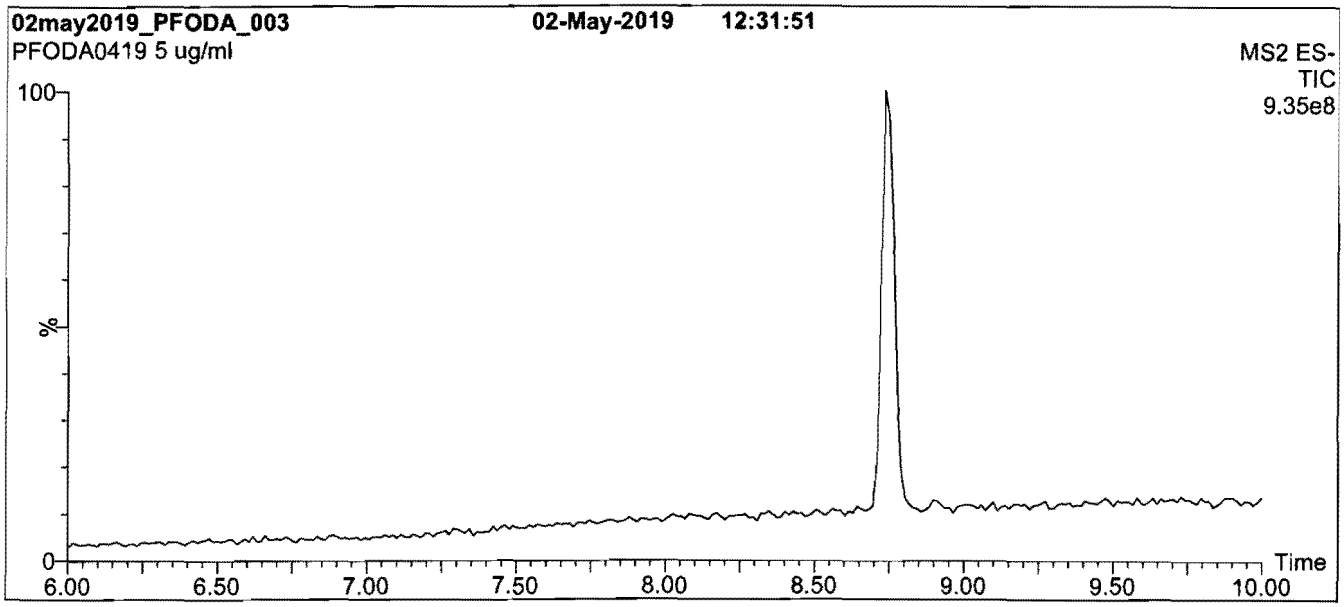
Mobile phase: Same as Figure 1

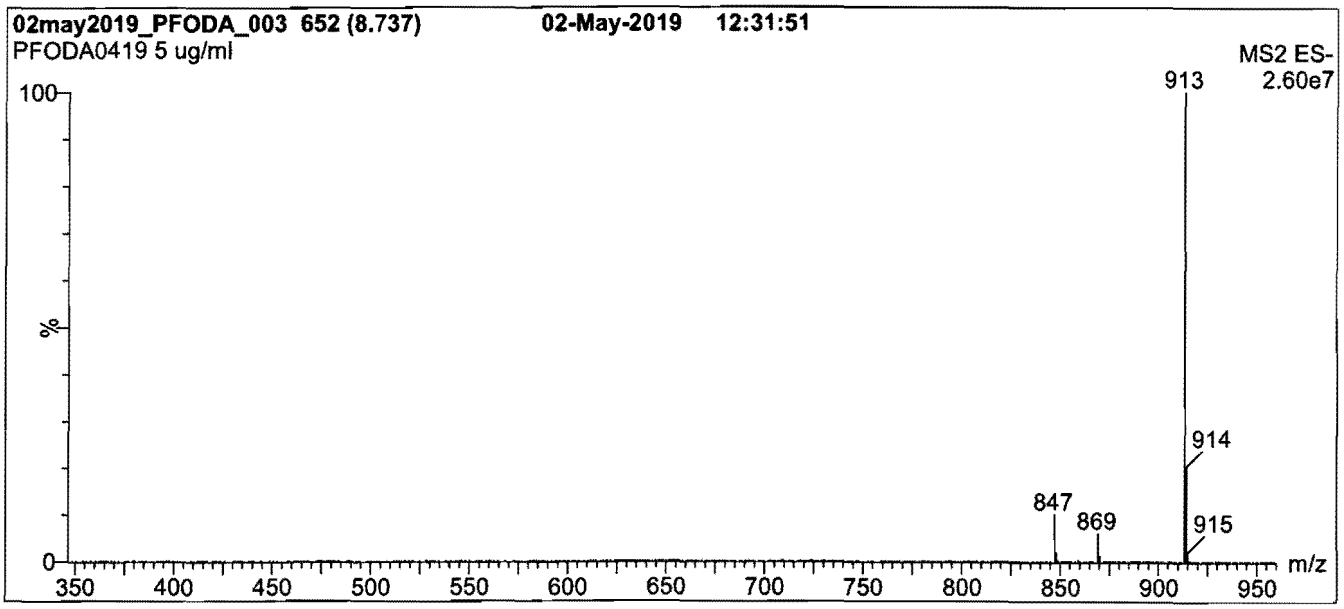
Flow: 300 µl/min

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

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

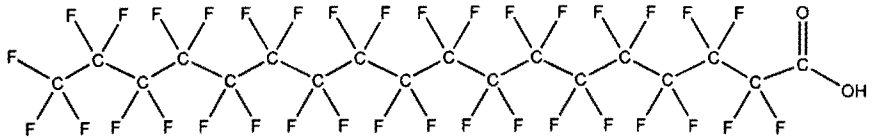
19L0647

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 ($C_{17}HF_{33}O_2$)

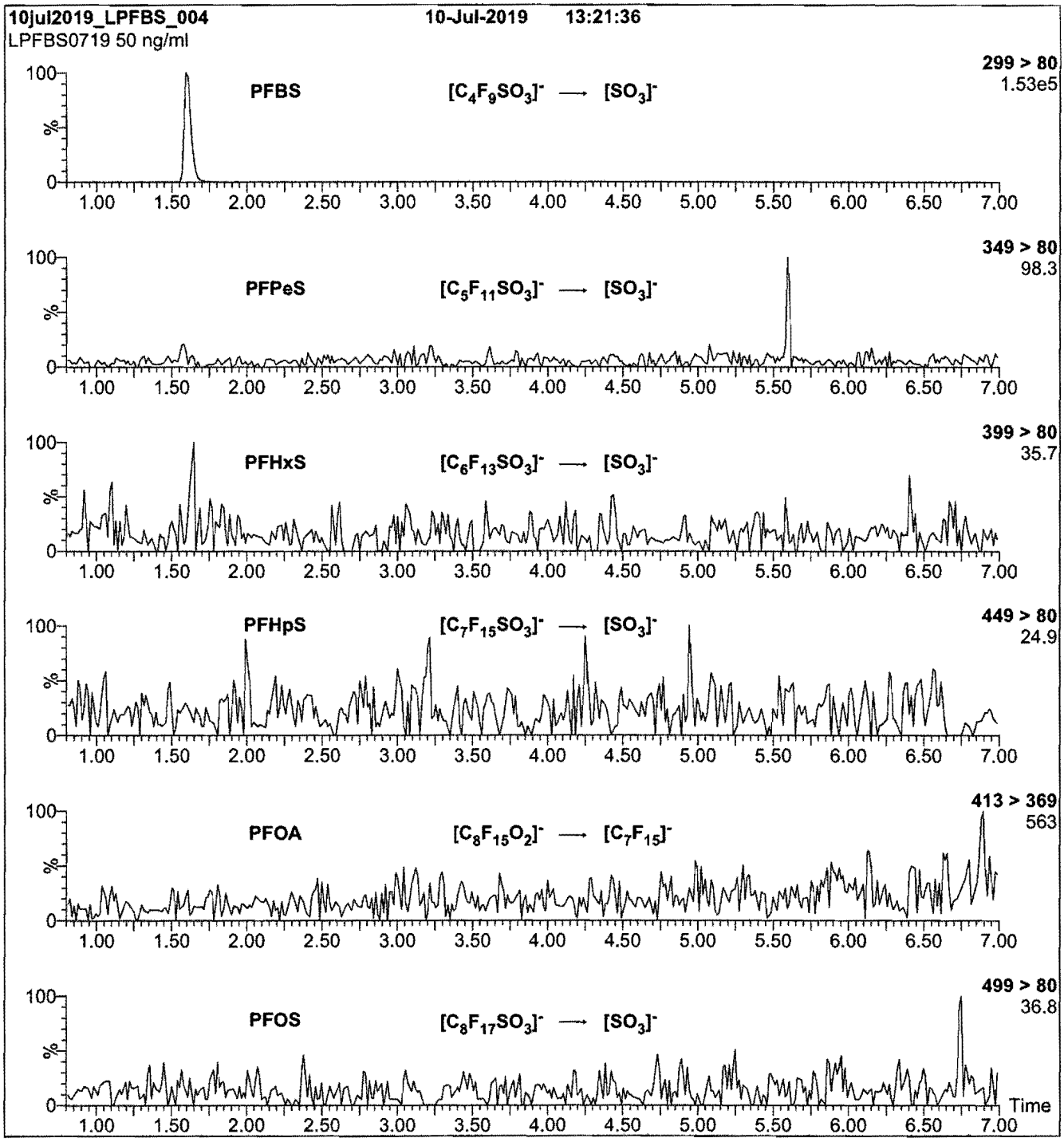
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

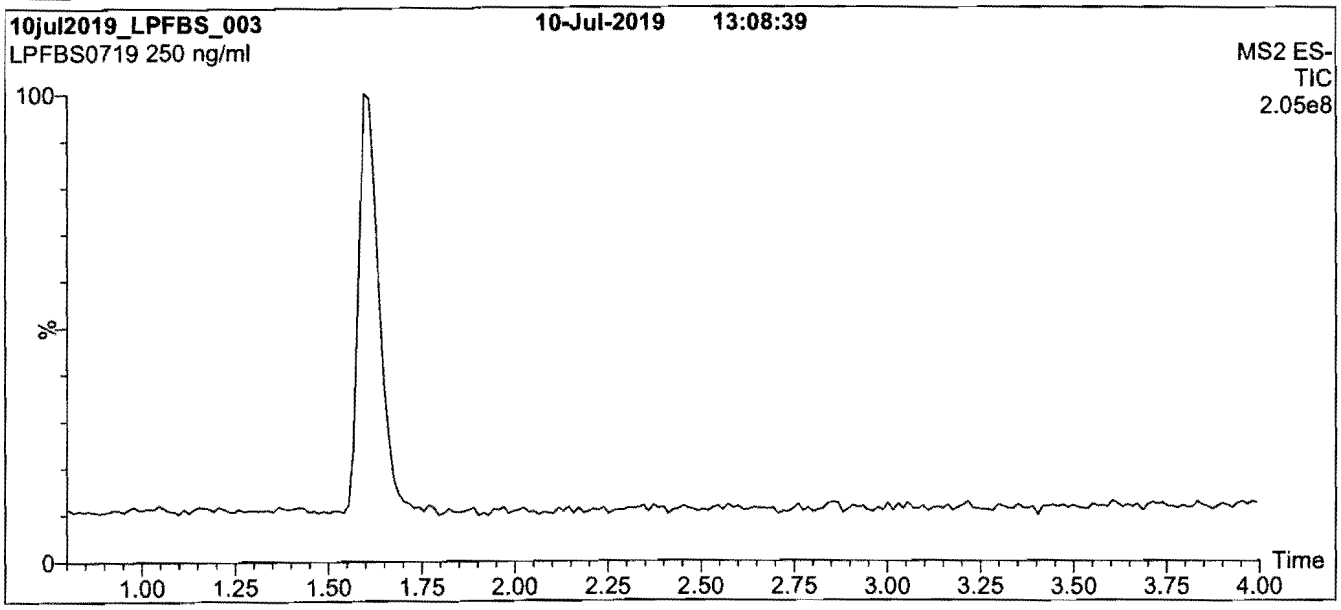
Mobile phase: Same as Figure 1

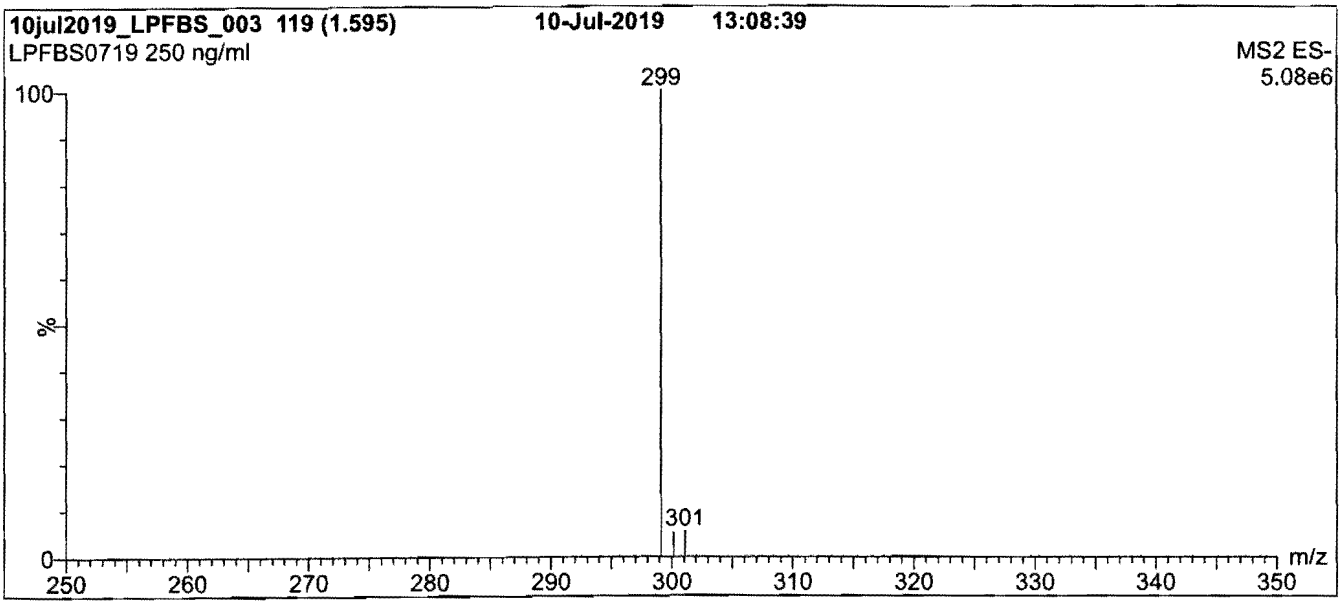
Flow: 300 µl/min

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

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

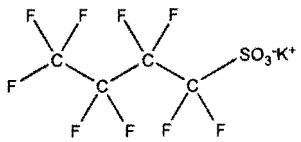
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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:

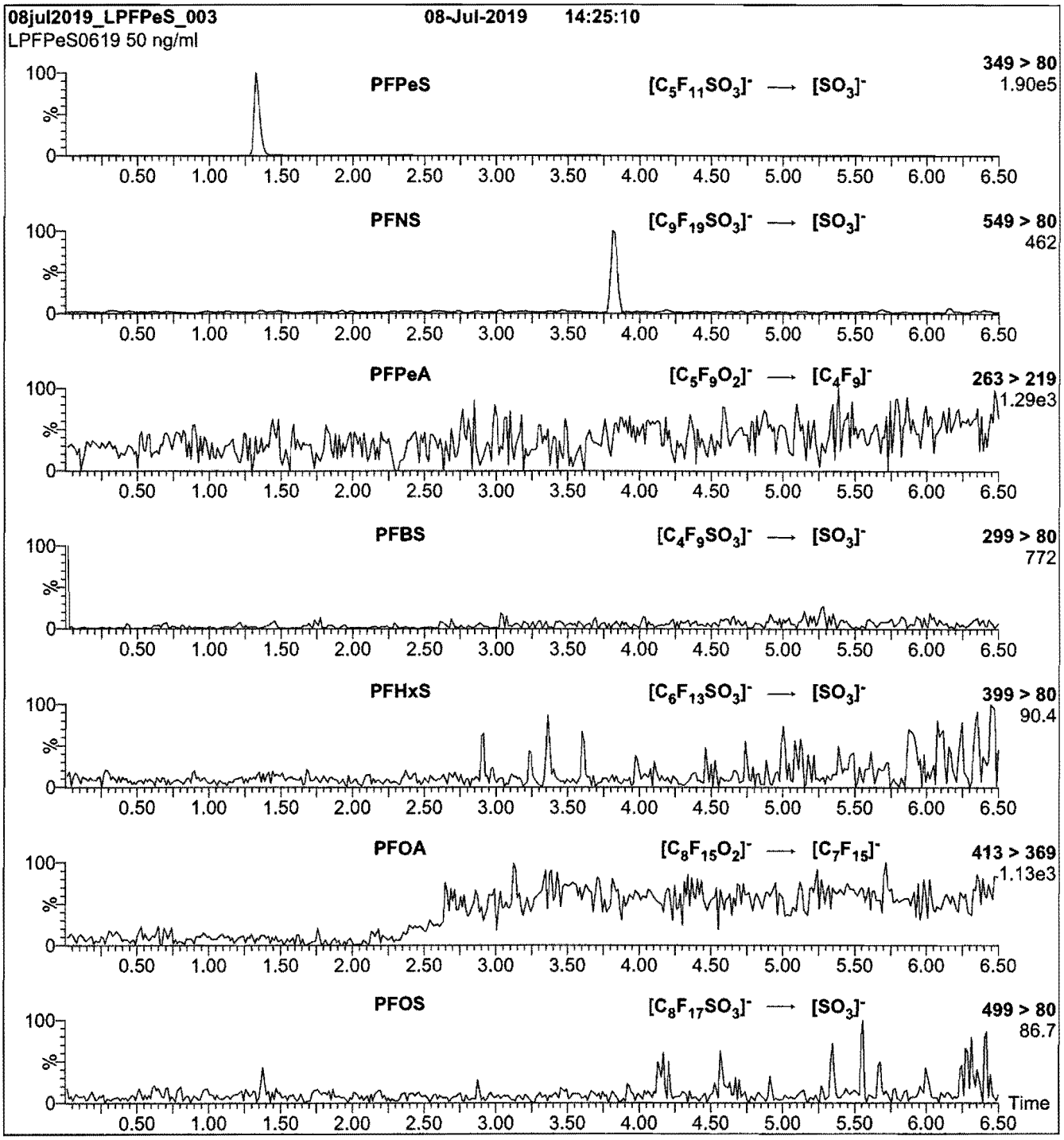
- See page 2 for further details.
- Contains ~ 0.2% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

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

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

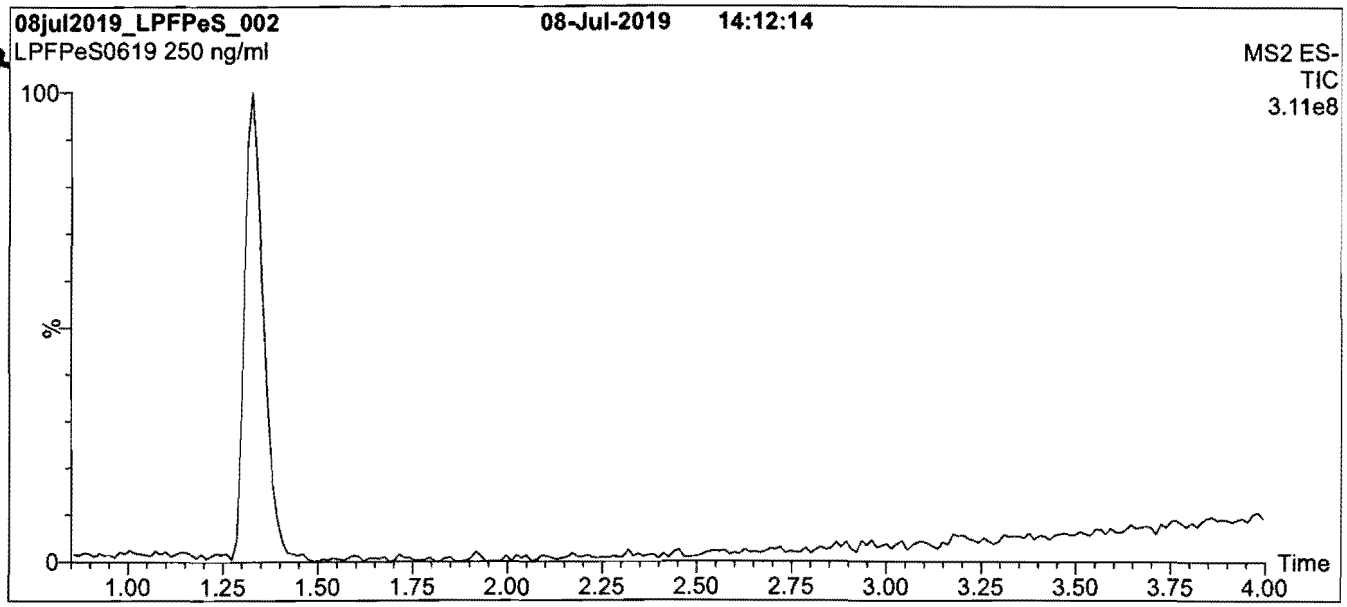
Flow: 300 µl/min

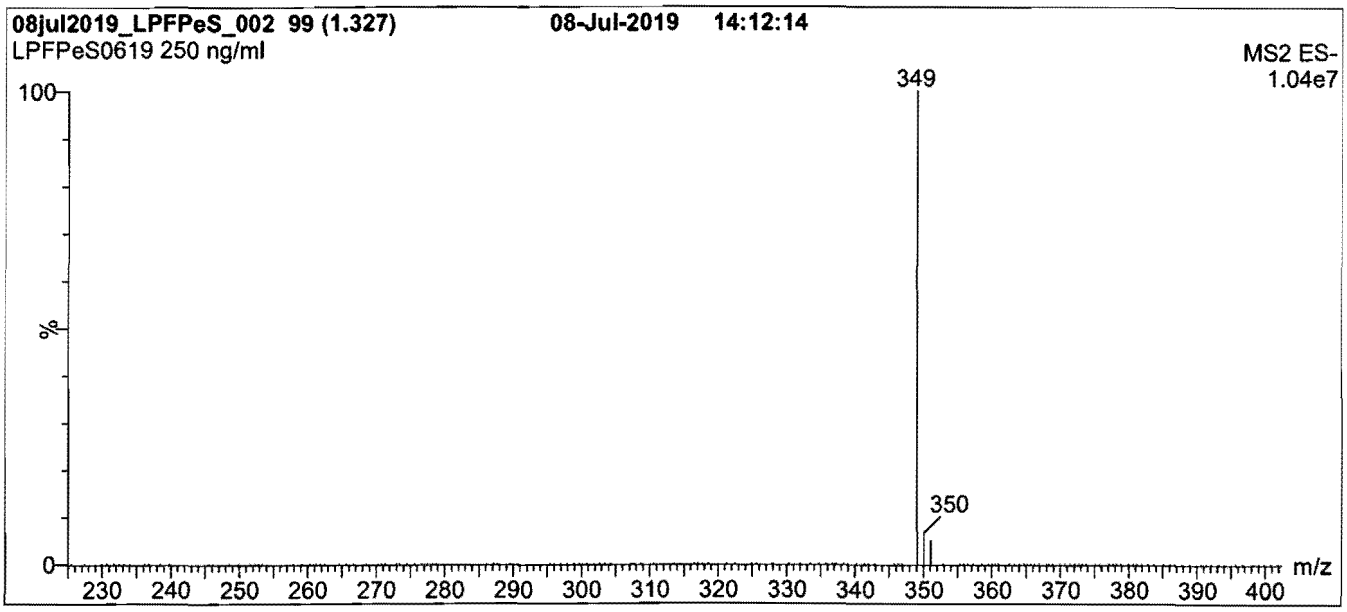
MS Parameters

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:

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

19L0649

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

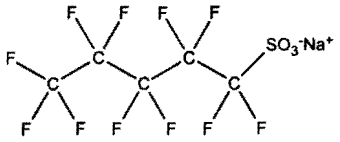
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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:

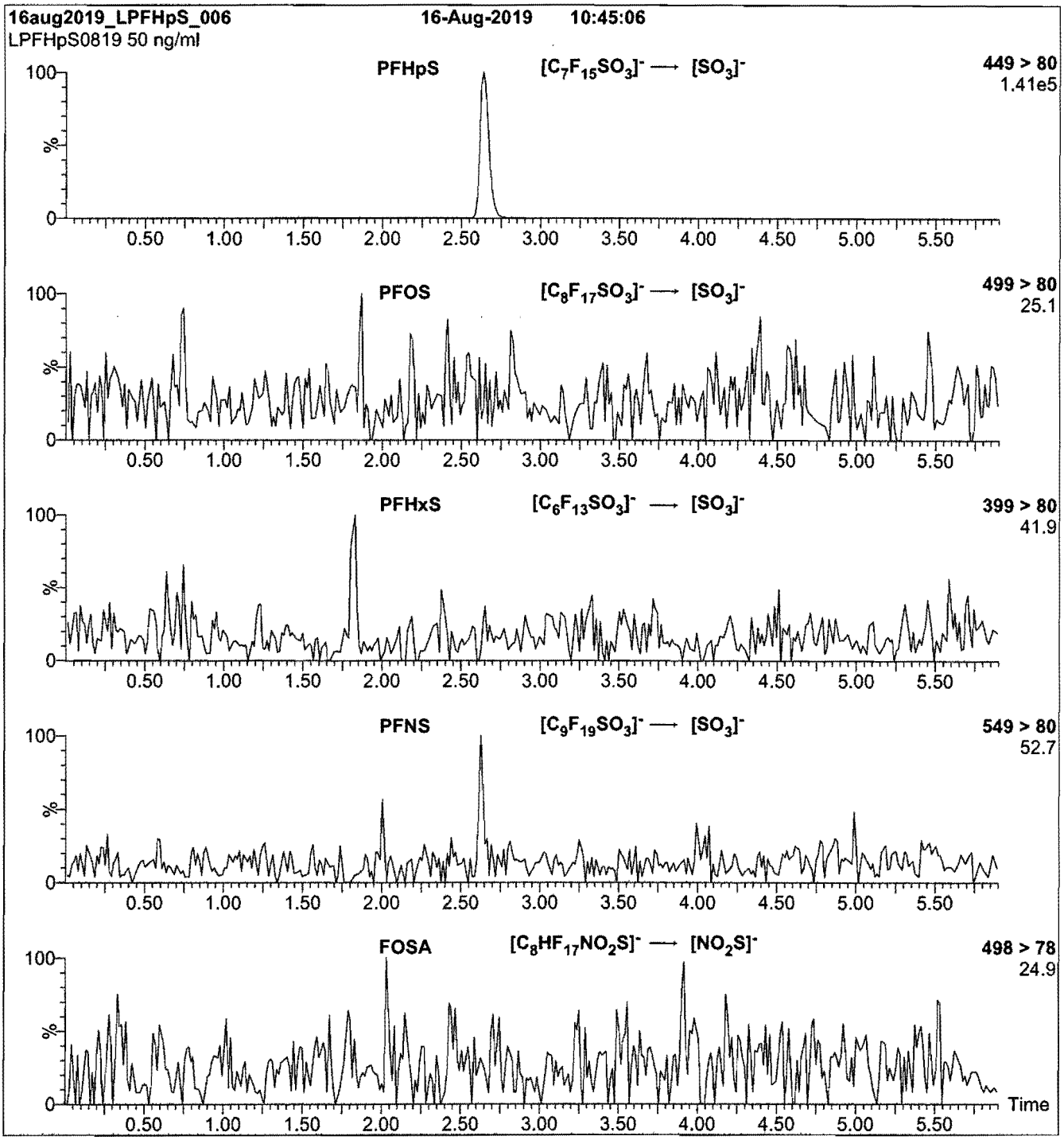
- See page 2 for further details.
- Contains ~ 0.3% of sodium perfluoro-1-nonanesulfonate (L-PFNS).

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:

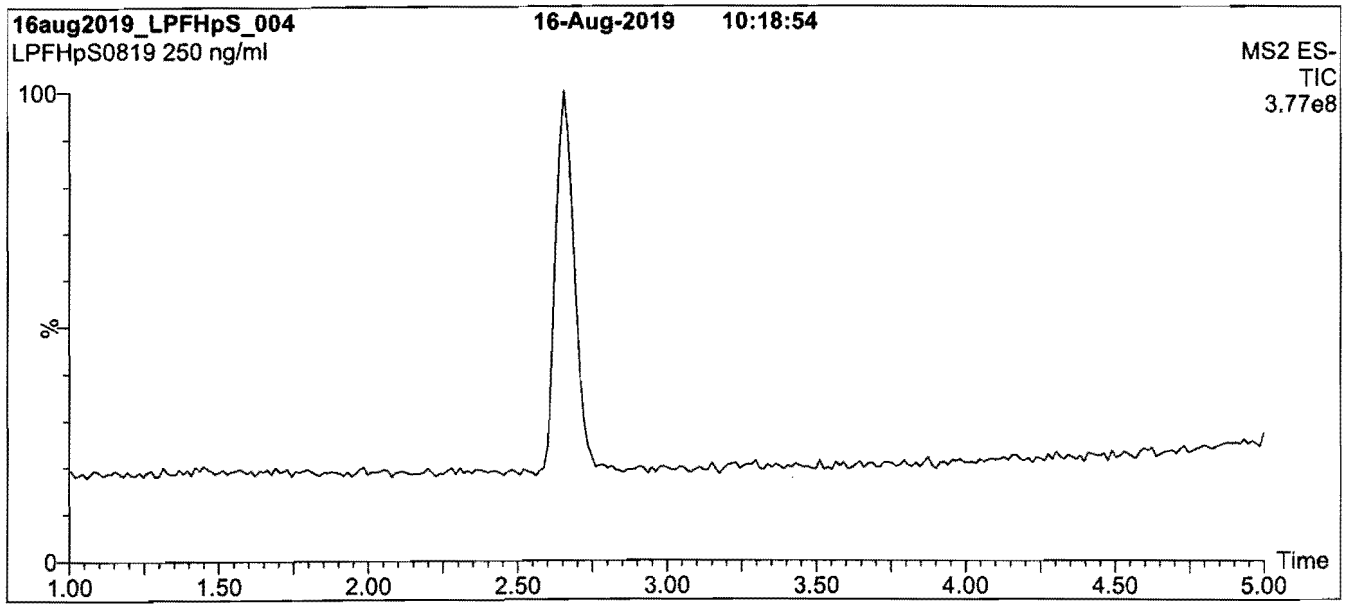
Injection: On-column (L-PFHpS)

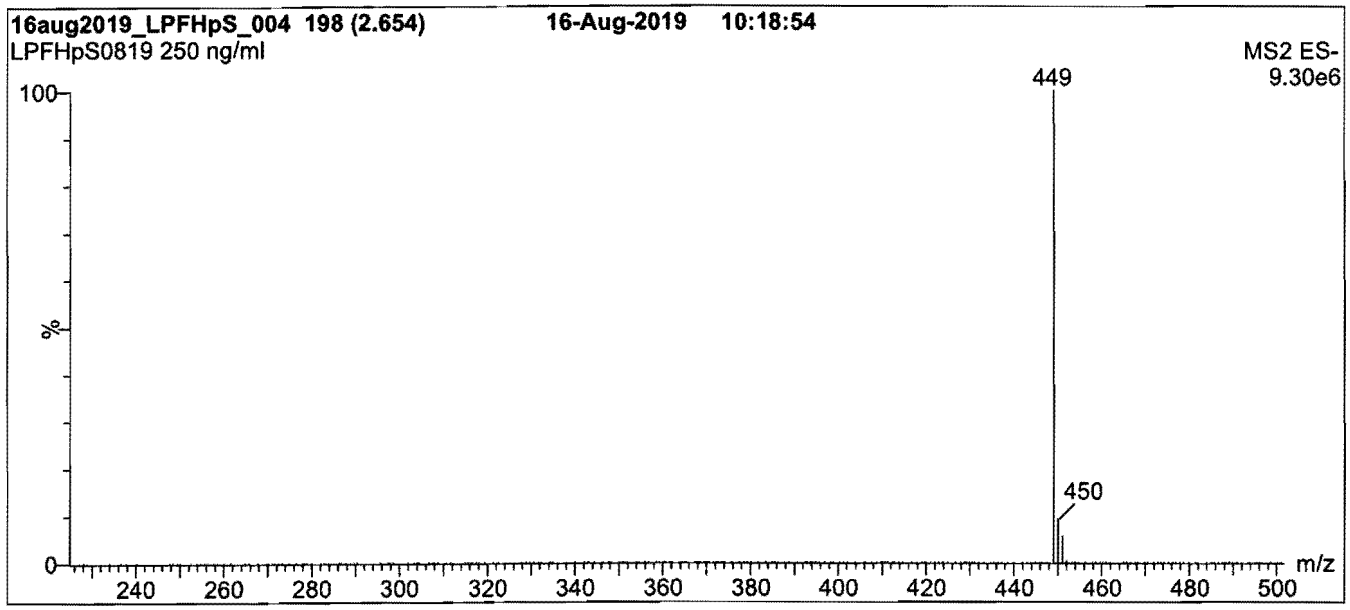
Mobile phase: Same as Figure 1

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

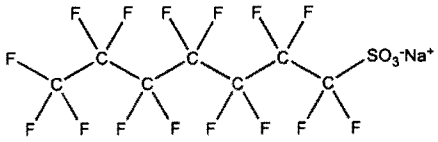
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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) 47.6 ± 2.4 µg/ml (PFHpS anion)	**SOLVENT(S):**	Methanol
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:

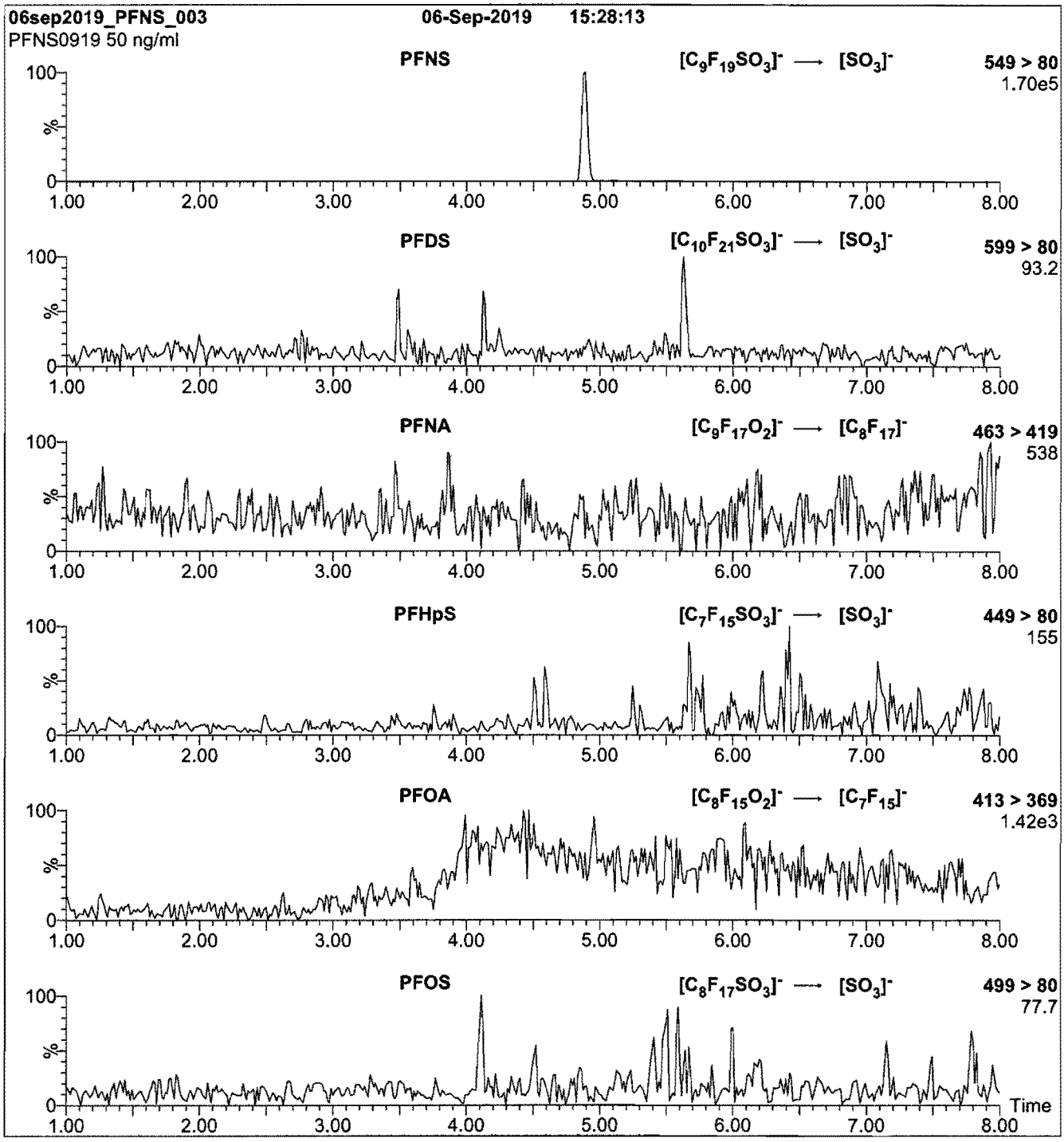
- See page 2 for further details.

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)

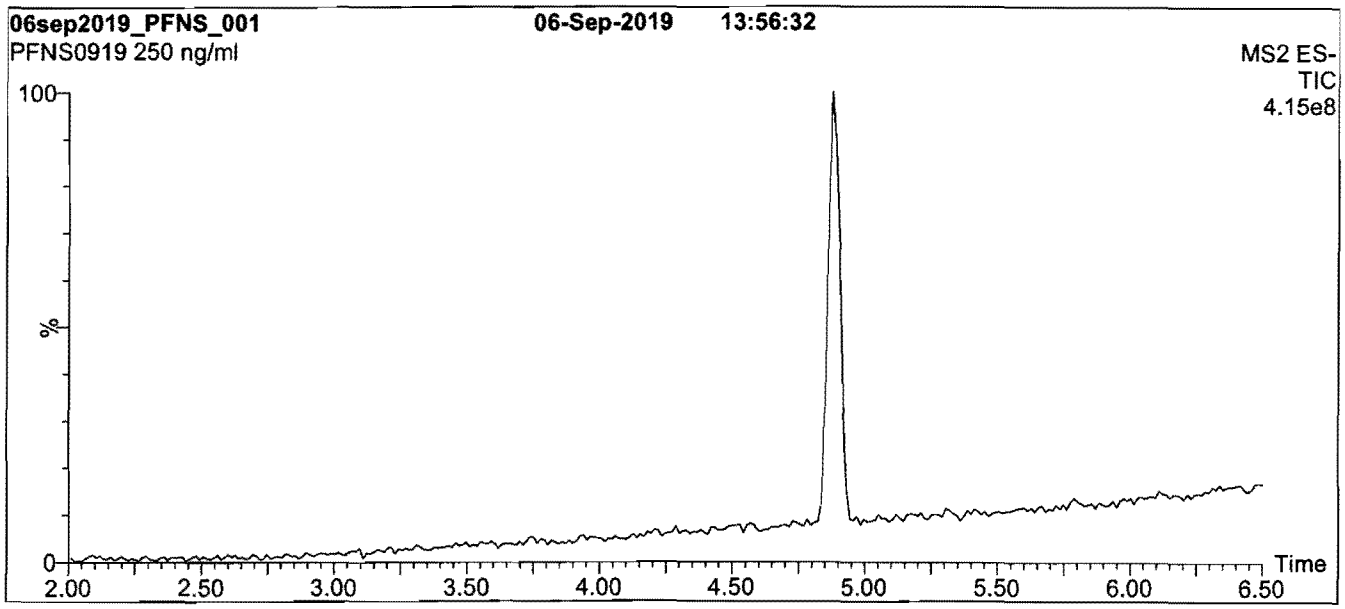
Mobile phase: Same as Figure 1

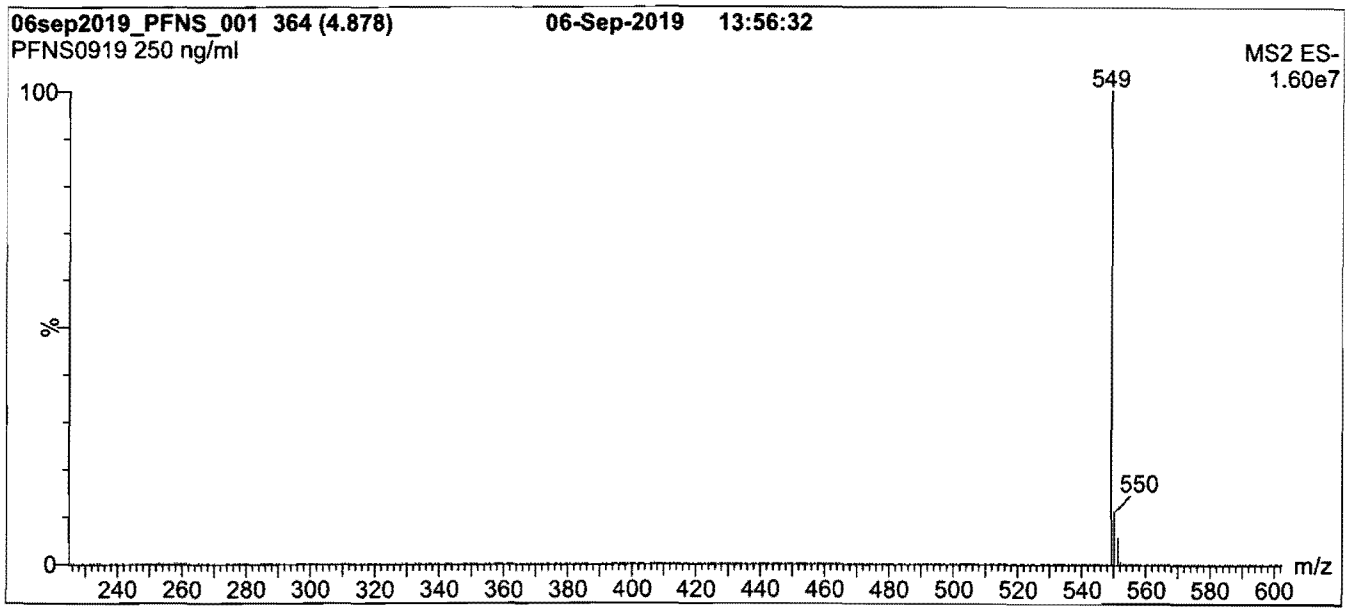
Flow: 300 µl/min

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:

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

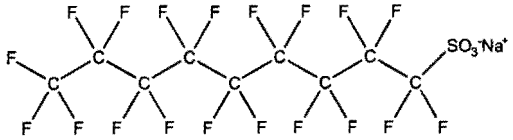
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

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.

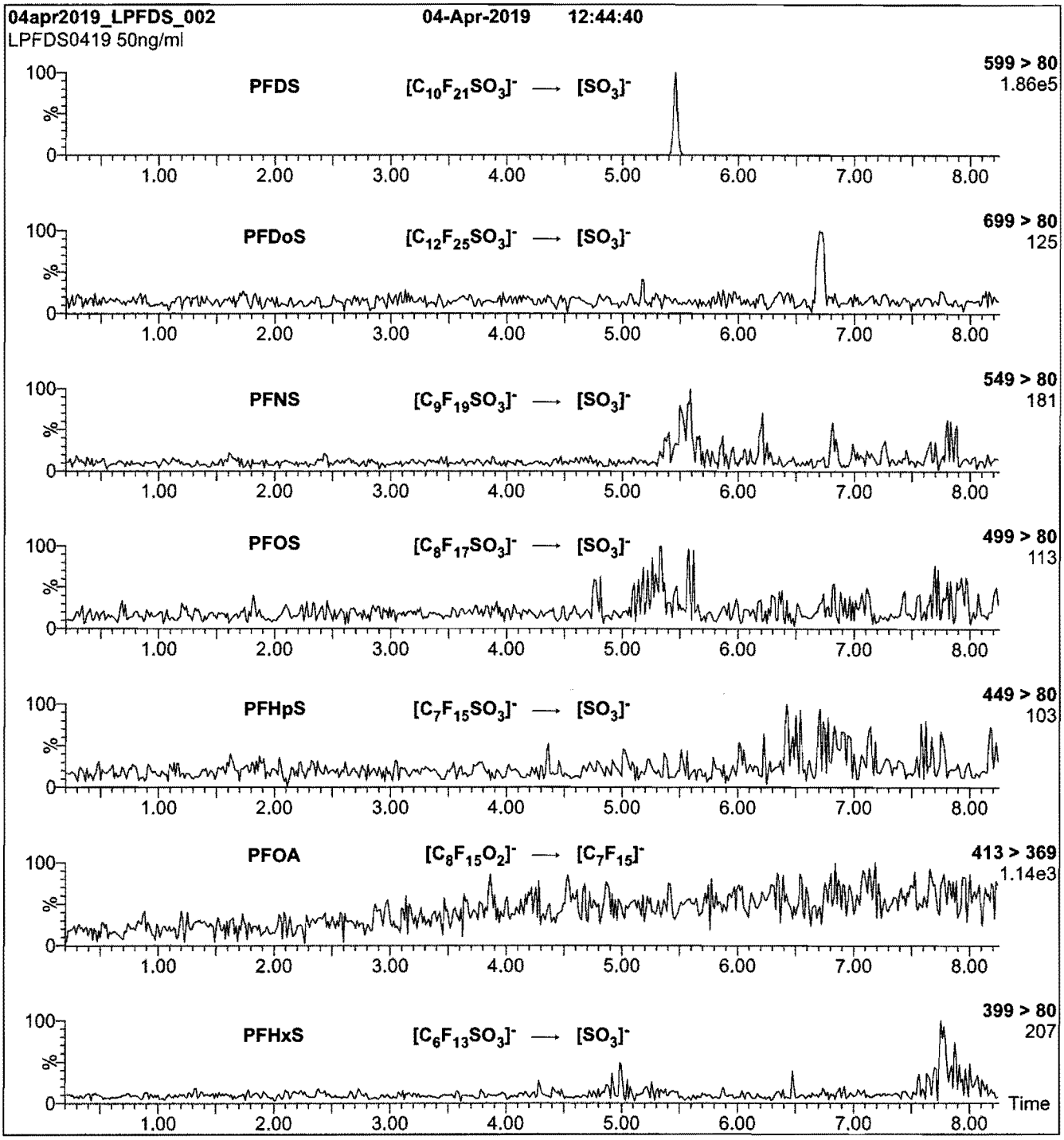
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

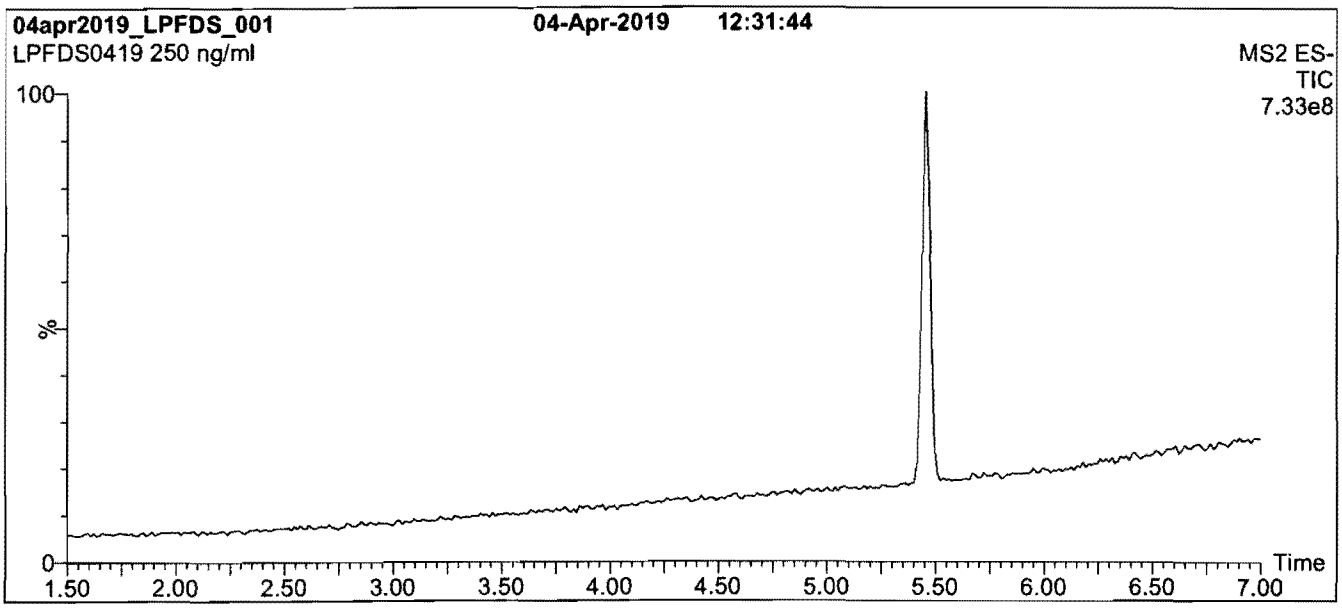
Flow: 300 µl/min

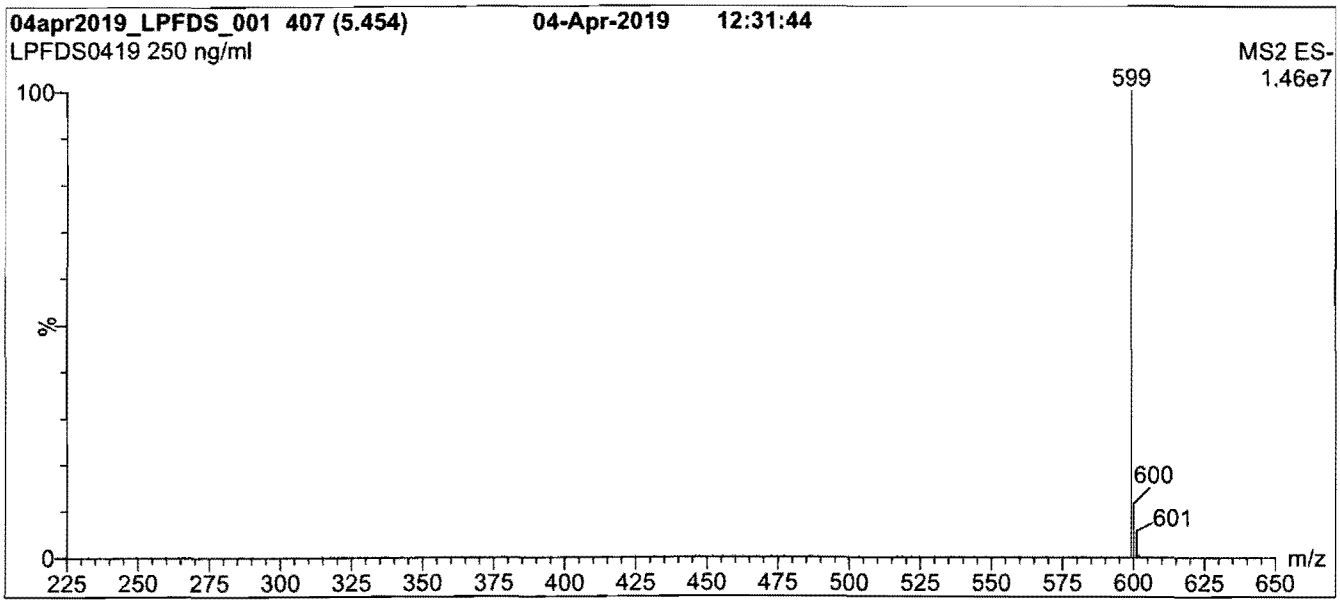
MS Parameters

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:

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

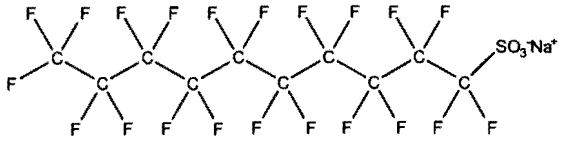
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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).

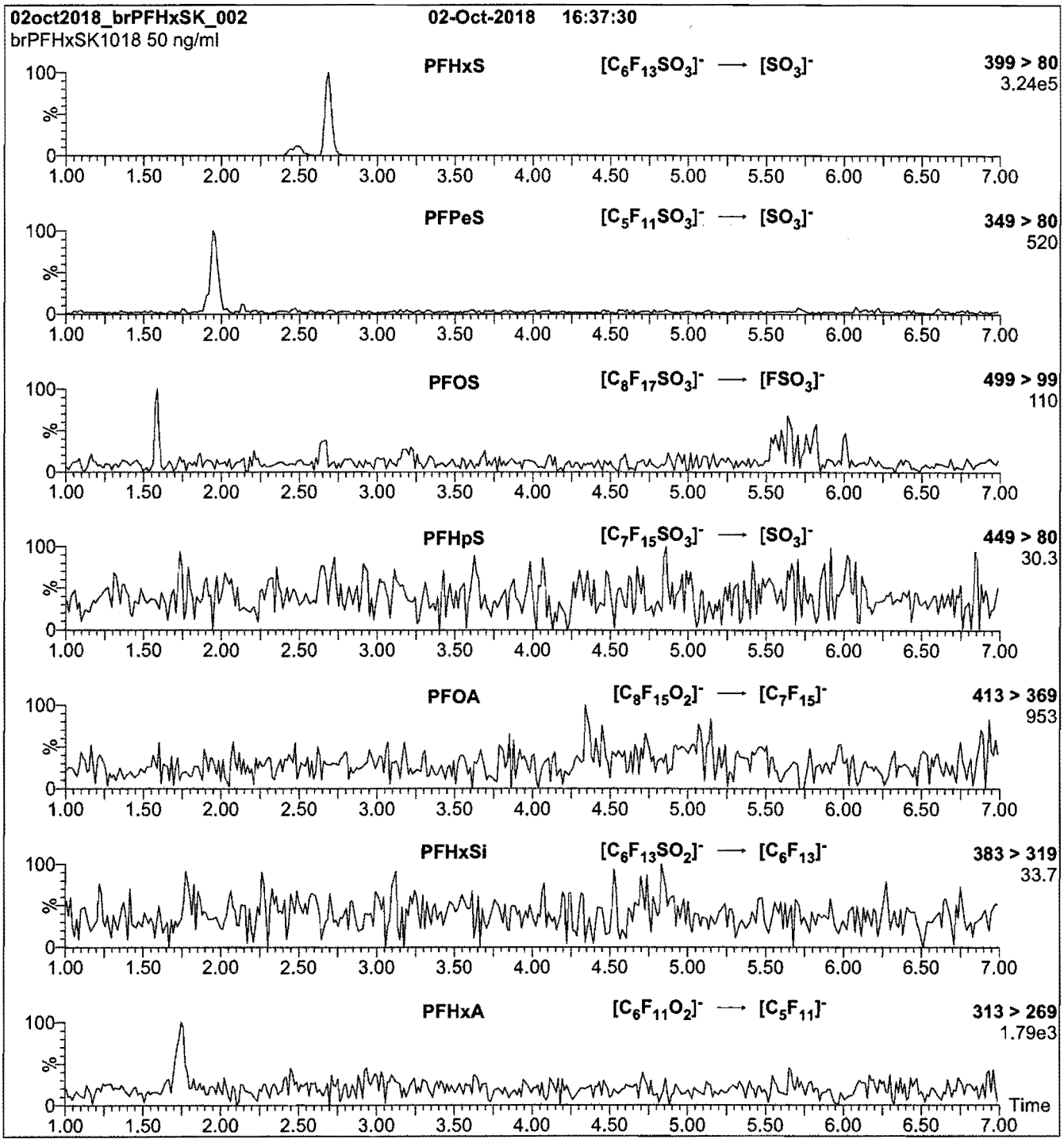
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

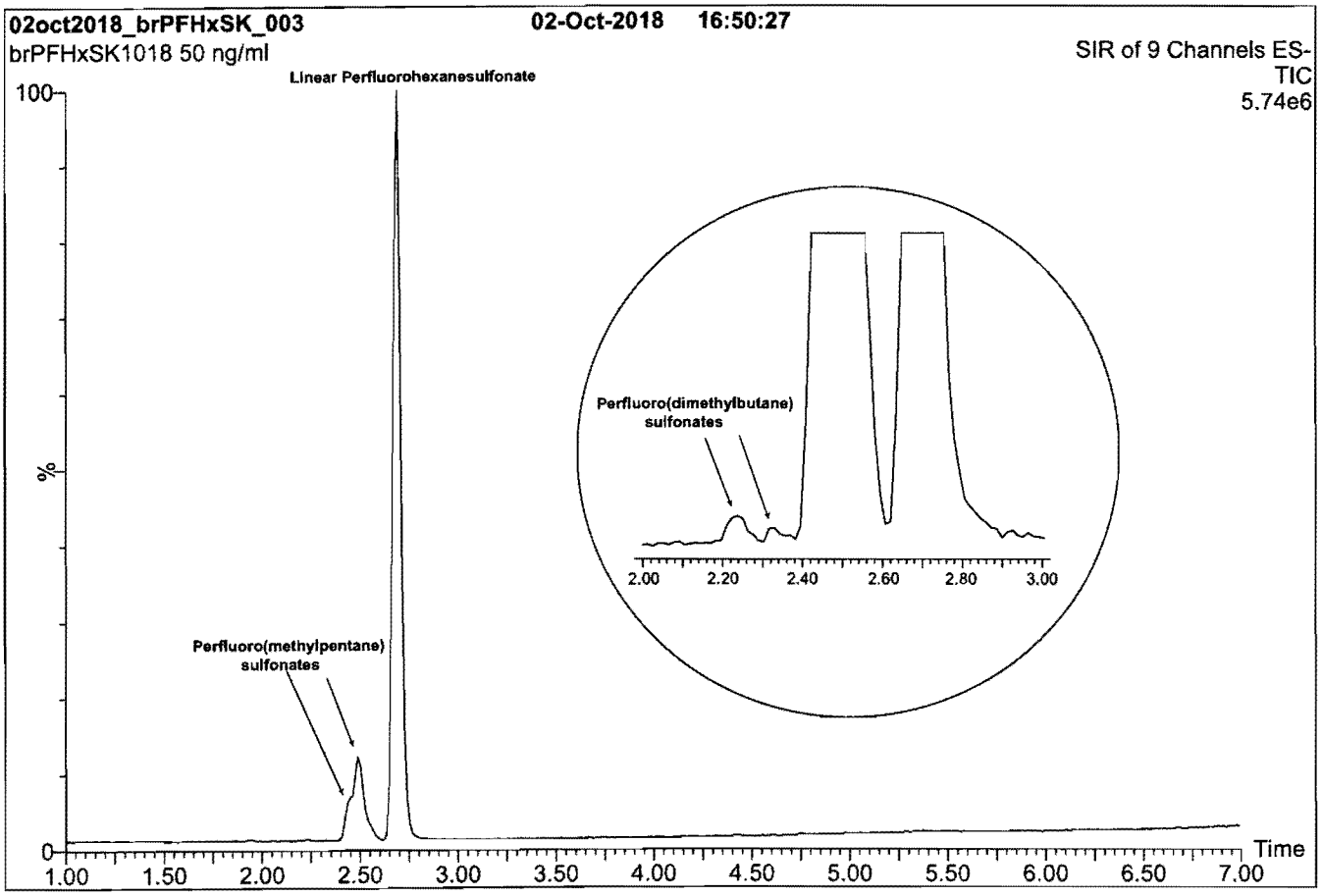
Mobile phase: Same as Figures 1 and 2

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

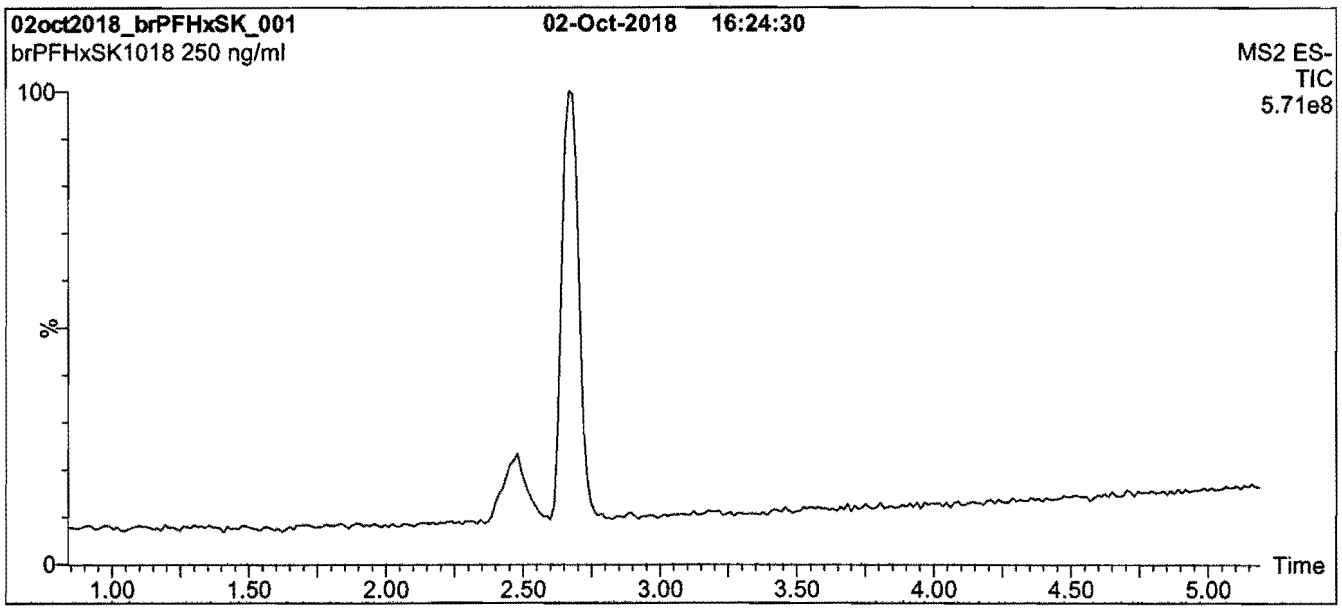
MS Parameters

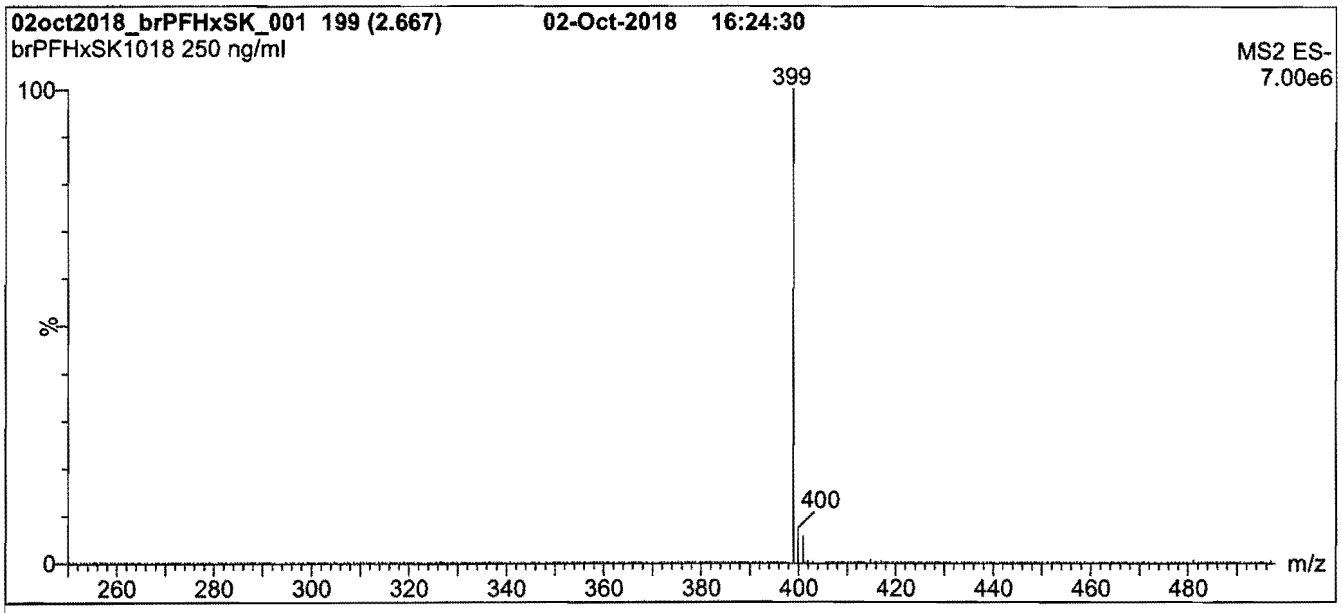
Experiment: SIR (9 channels)

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

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:

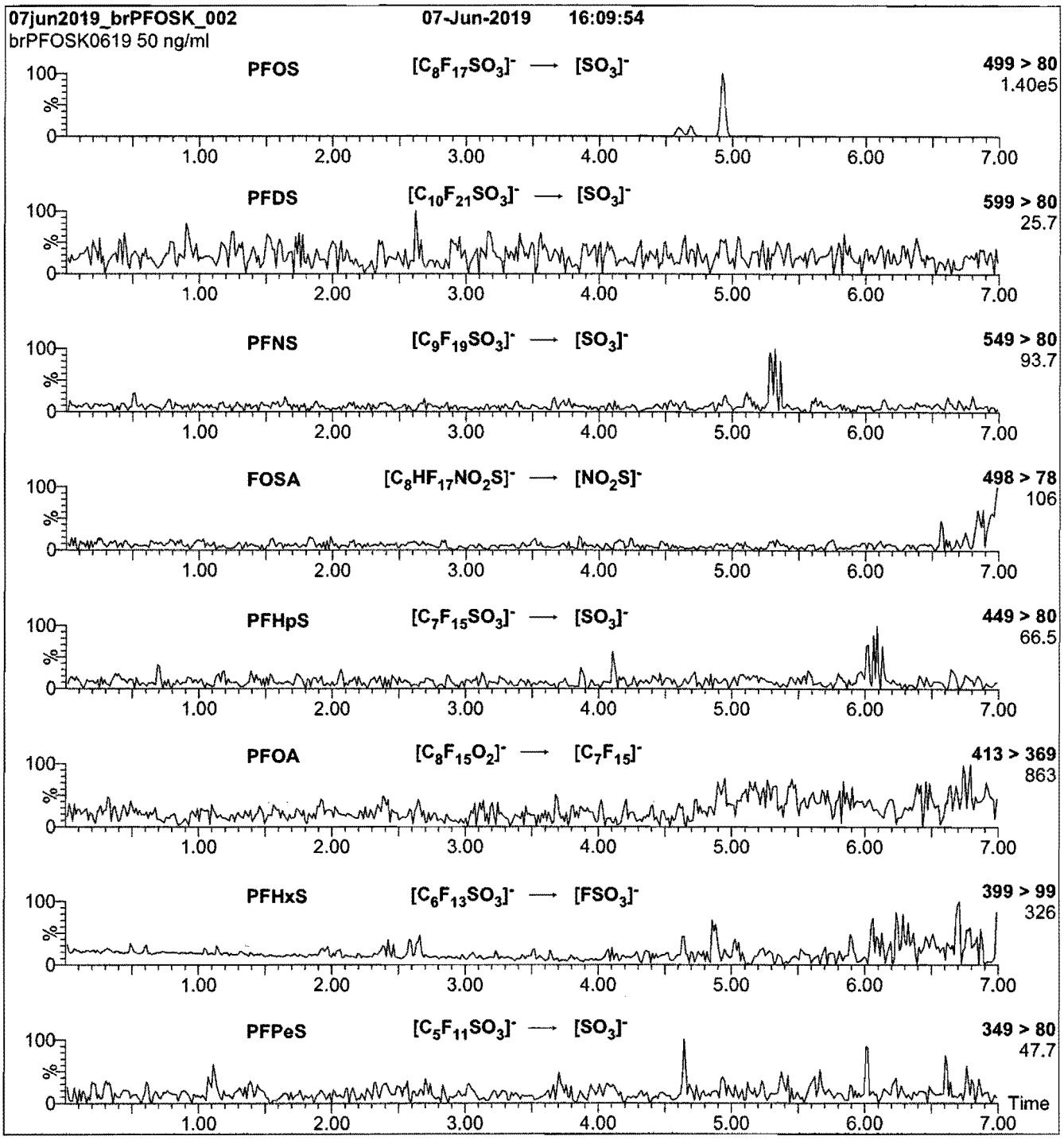
- See page 2 for further details.
- Contains ~ 0.3% of perfluoro-n-hexanoic acid and ~ 0.15% of perfluoro-1-pentanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

19L0654

Figure 3: **br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (br-PFOSK)

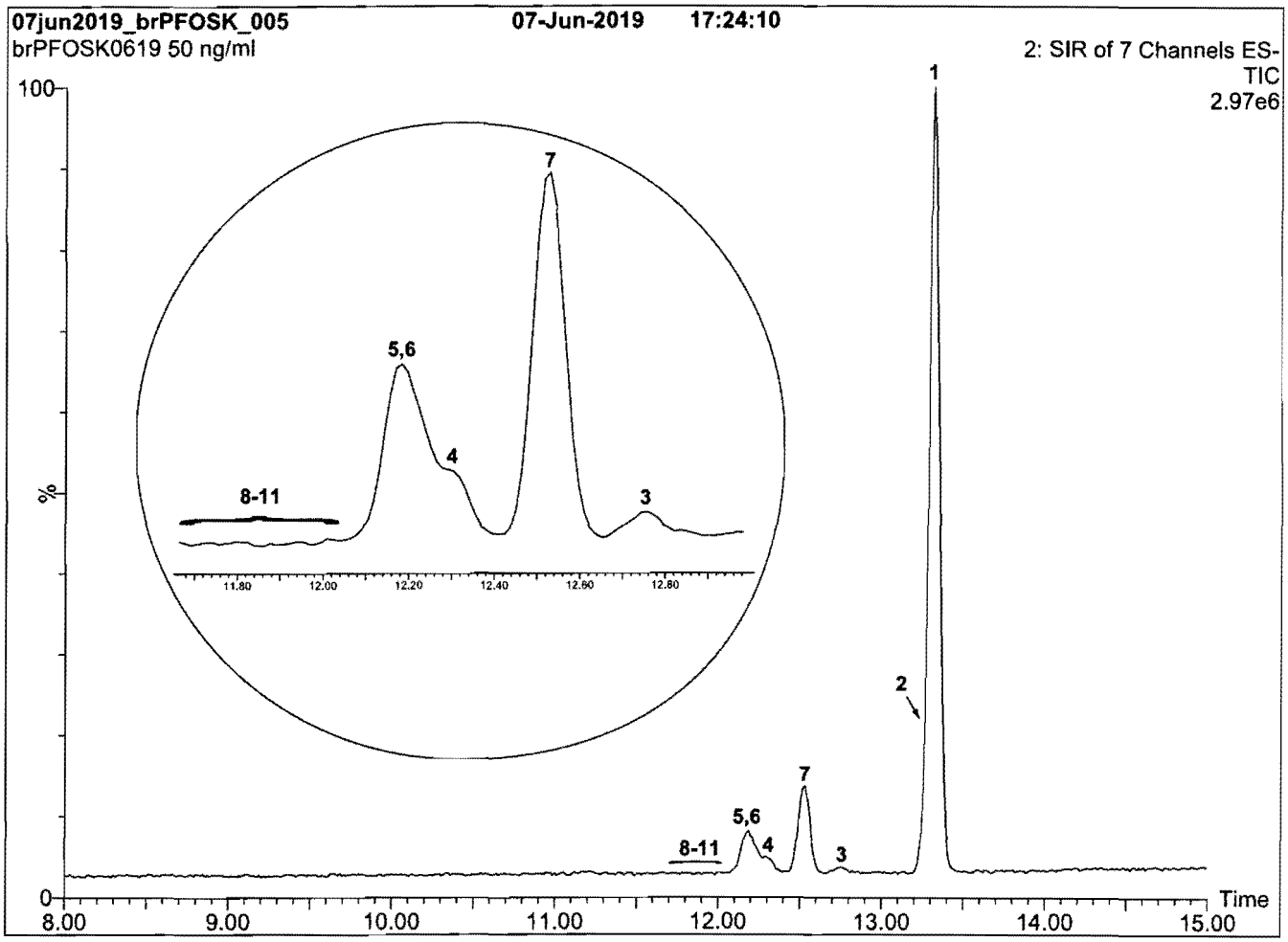
Mobile phase: Same as Figure 2

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

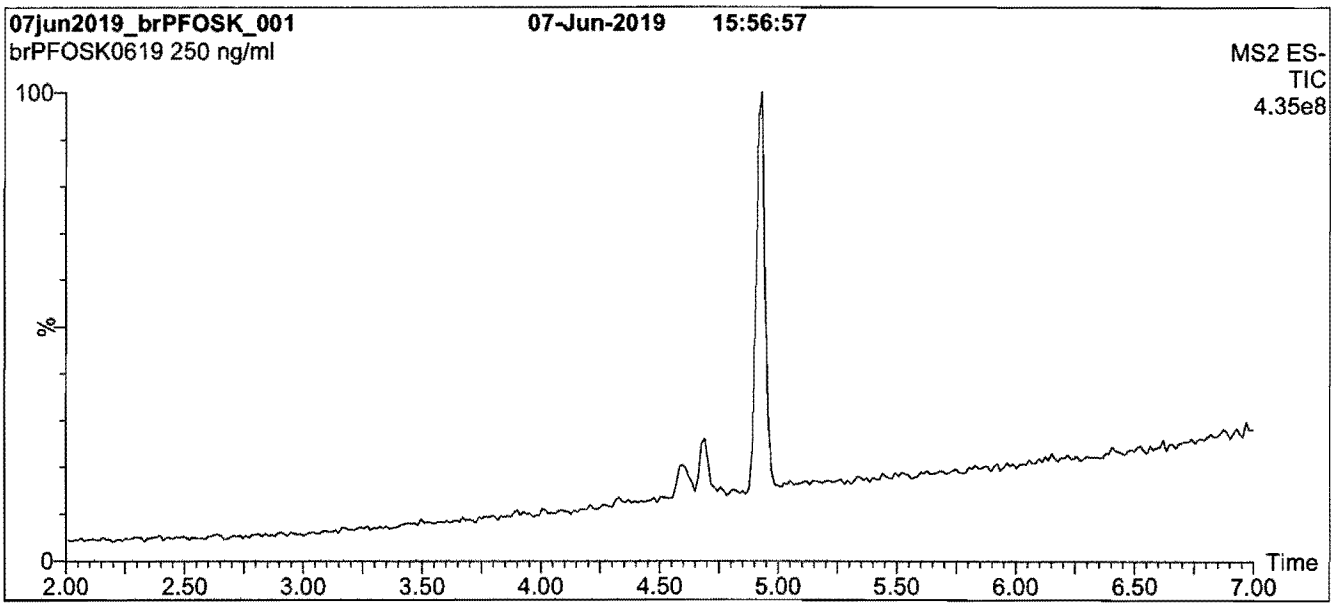
Flow: 300 µl/min

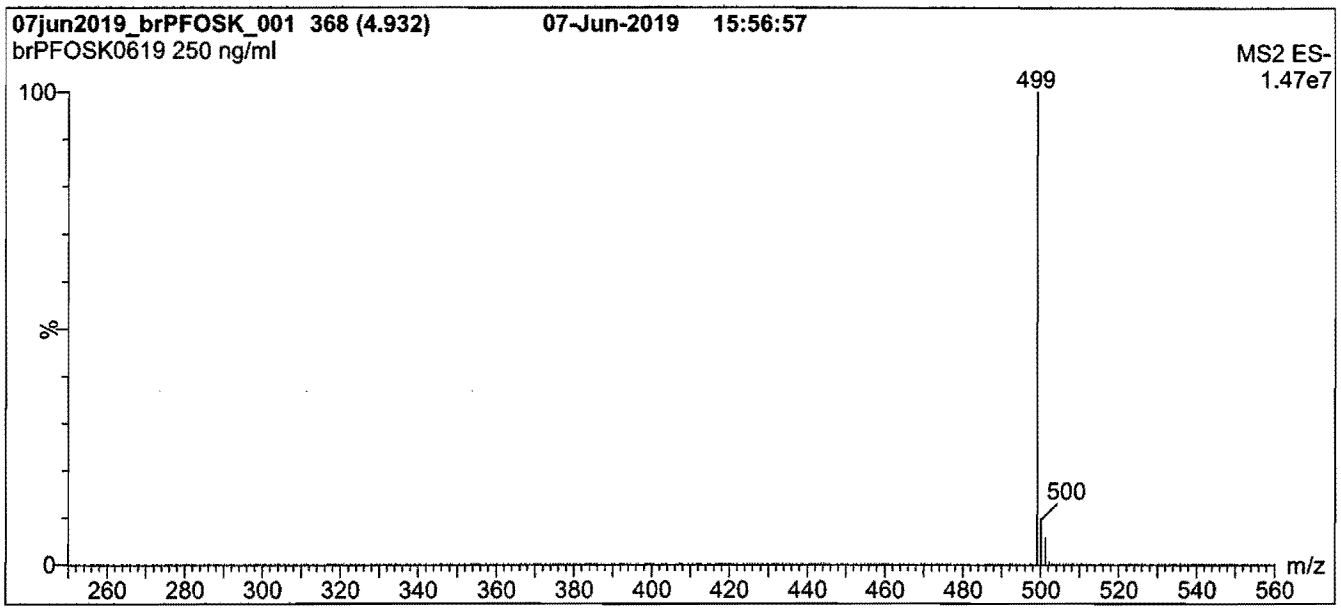
MS Conditions:

SIR (ES^-)
Source = 120 °C
Desolvation = 500 °C
Cone Voltage = 2.00V

1910654

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	$CF_3C(CF_3)_2CF_2CF_2CF_2CF_2SO_3^-K^+$	0.2
9	Potassium 4,4-di(trifluoromethyl)perfluorohexanesulfonate	$CF_3CF_2C(CF_3)_2CF_2CF_2CF_2SO_3^-K^+$	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 $x_1, x_2, \ldots x_n$ 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

19L0654

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)

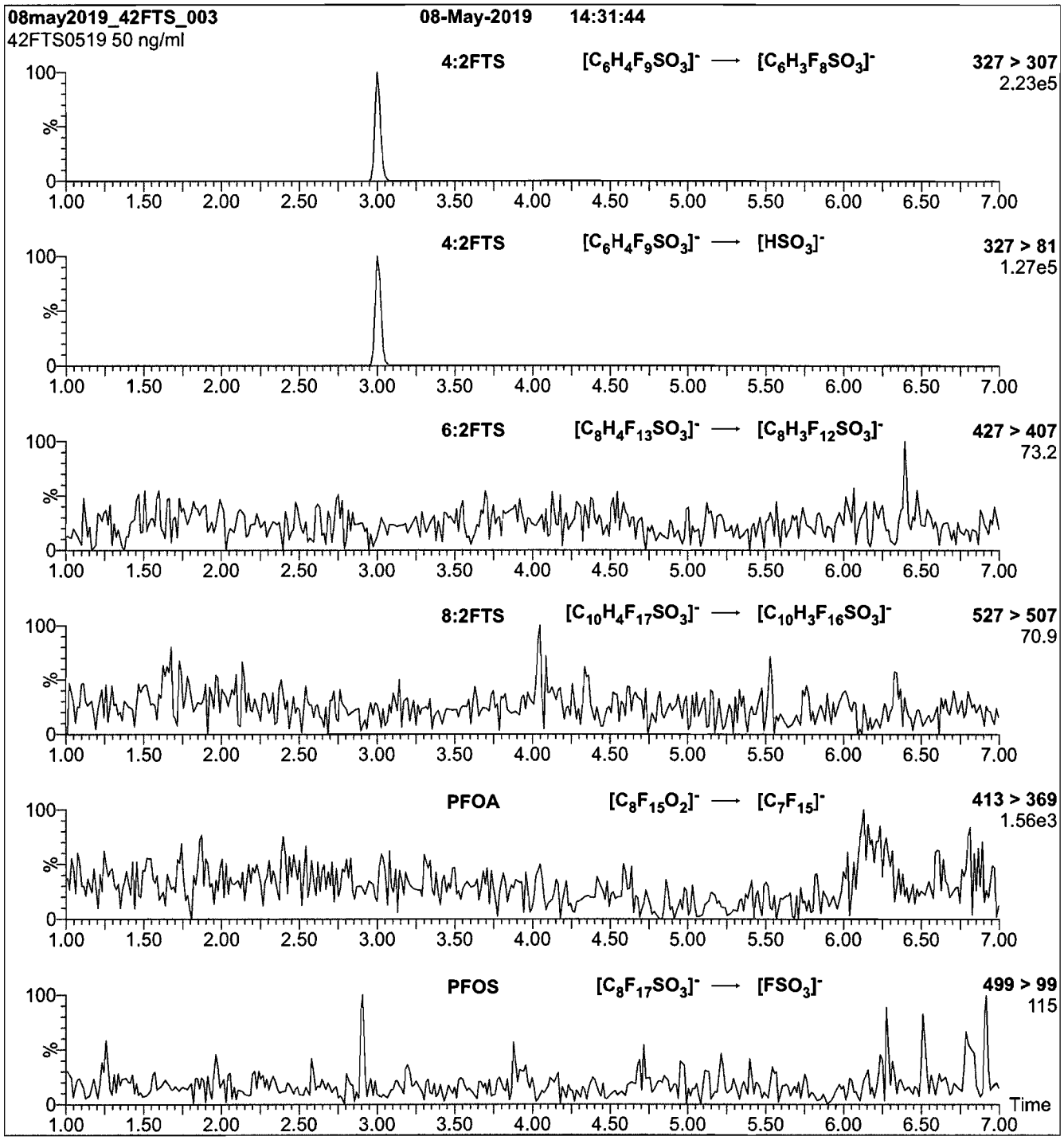
ADDITIONAL INFORMATION:

- 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

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA
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

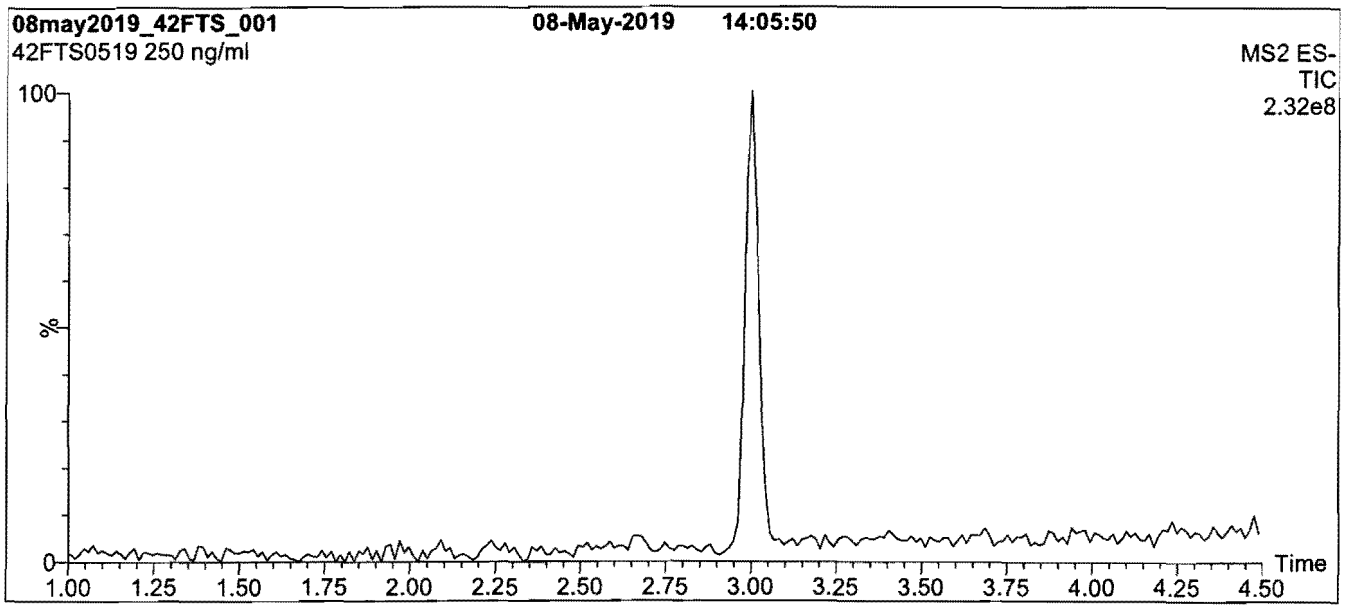
MS Parameters

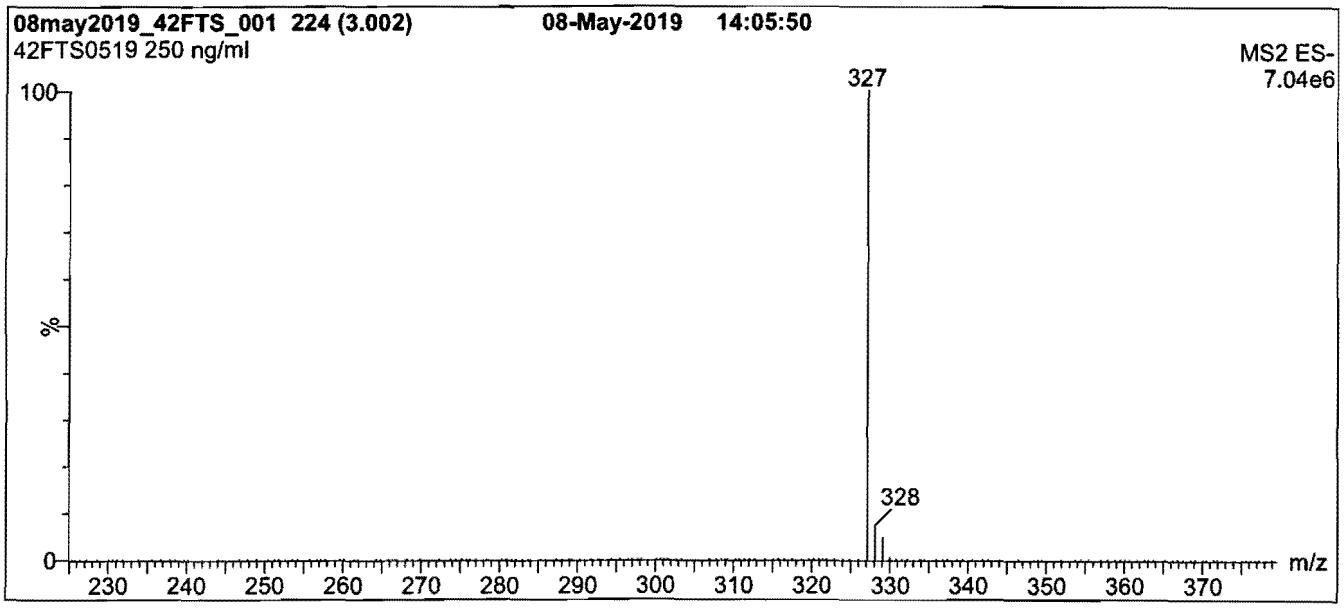
Collision Gas (mbar) = 3.07e-3

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:

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

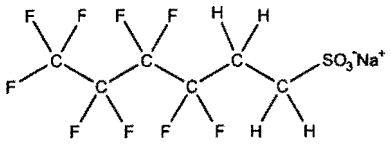
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

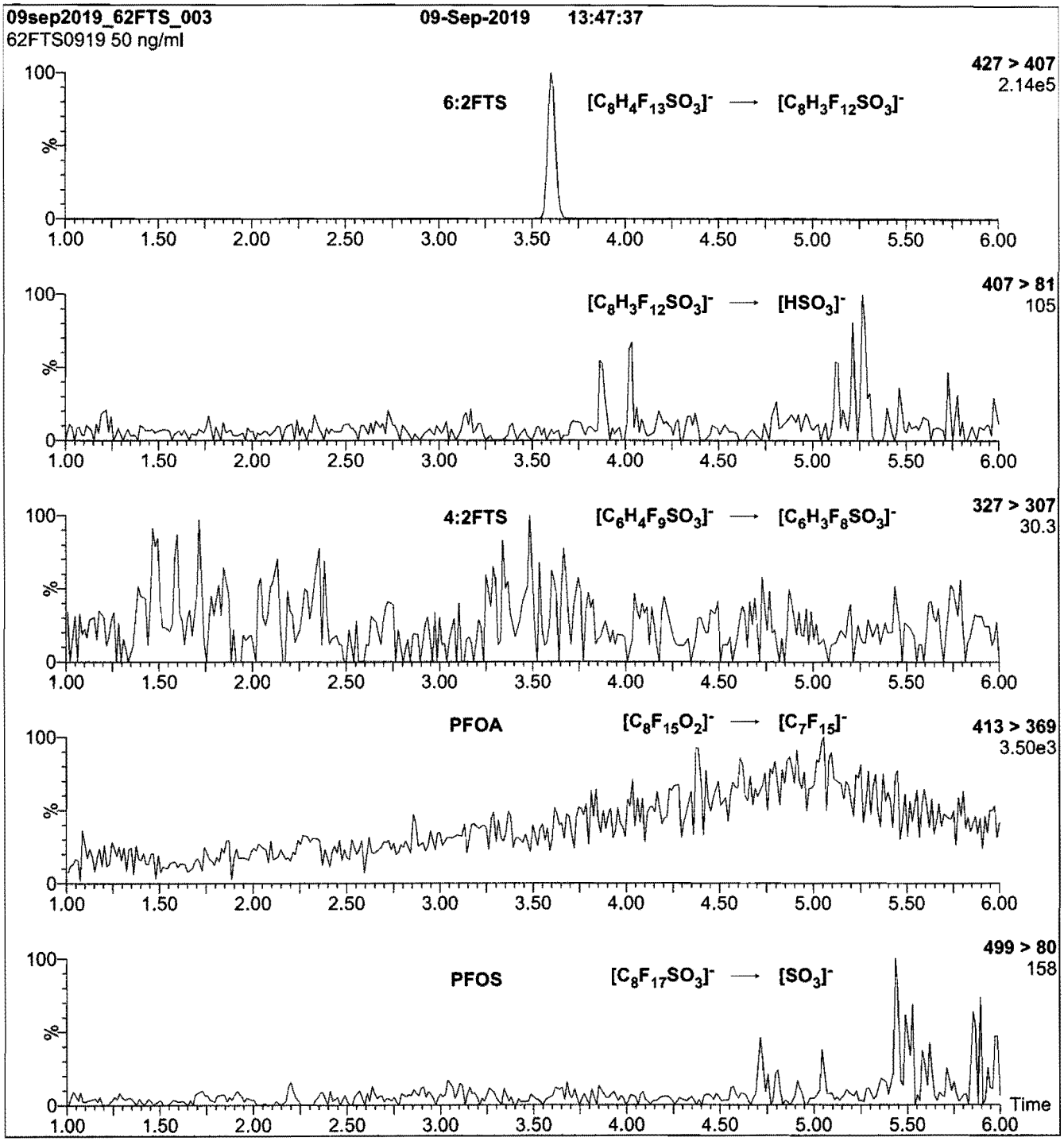
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

19L0656

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

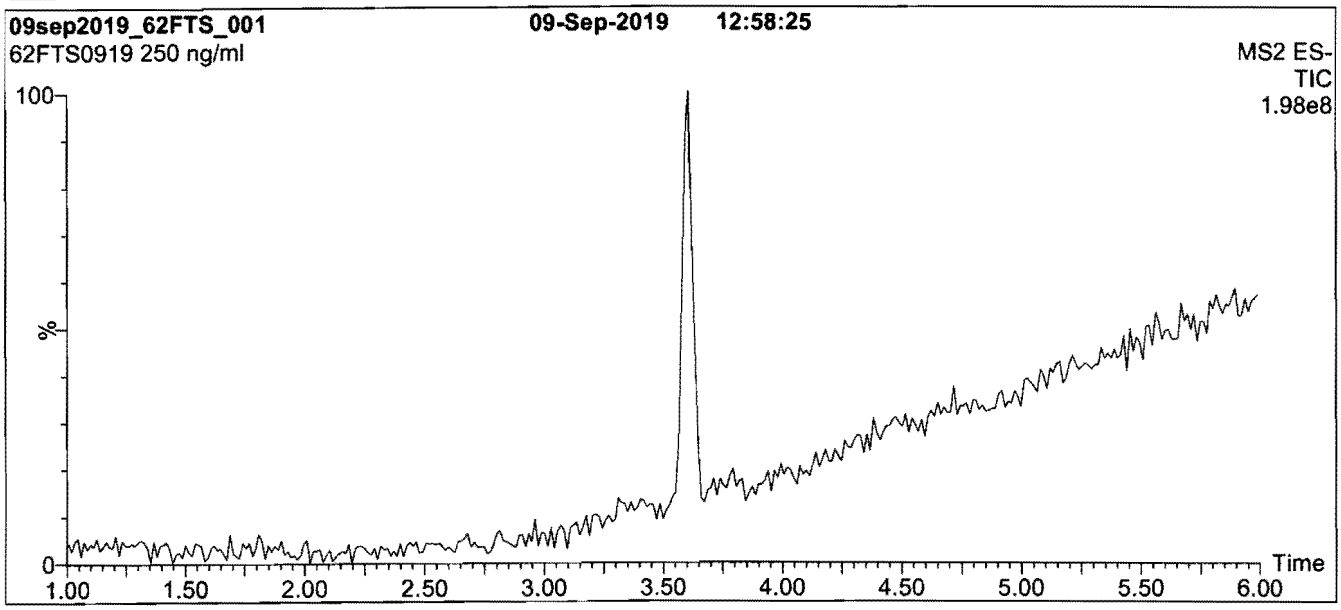
Flow: 300 µl/min

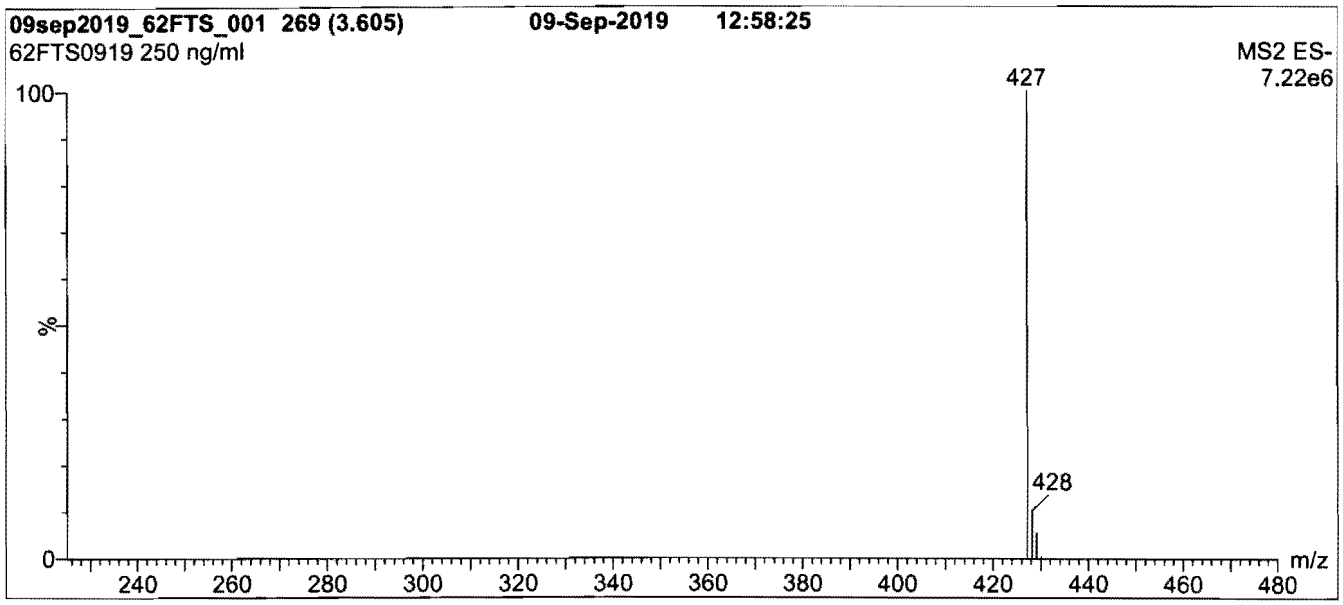
MS Parameters

Collision Gas (mbar) = 3.61e-3
Collision Energy (eV) = 20

19L0656

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

1910656

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

19L0656

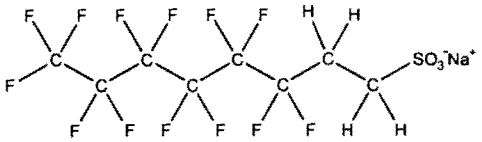
WELLINGTON LABORATORIES

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:

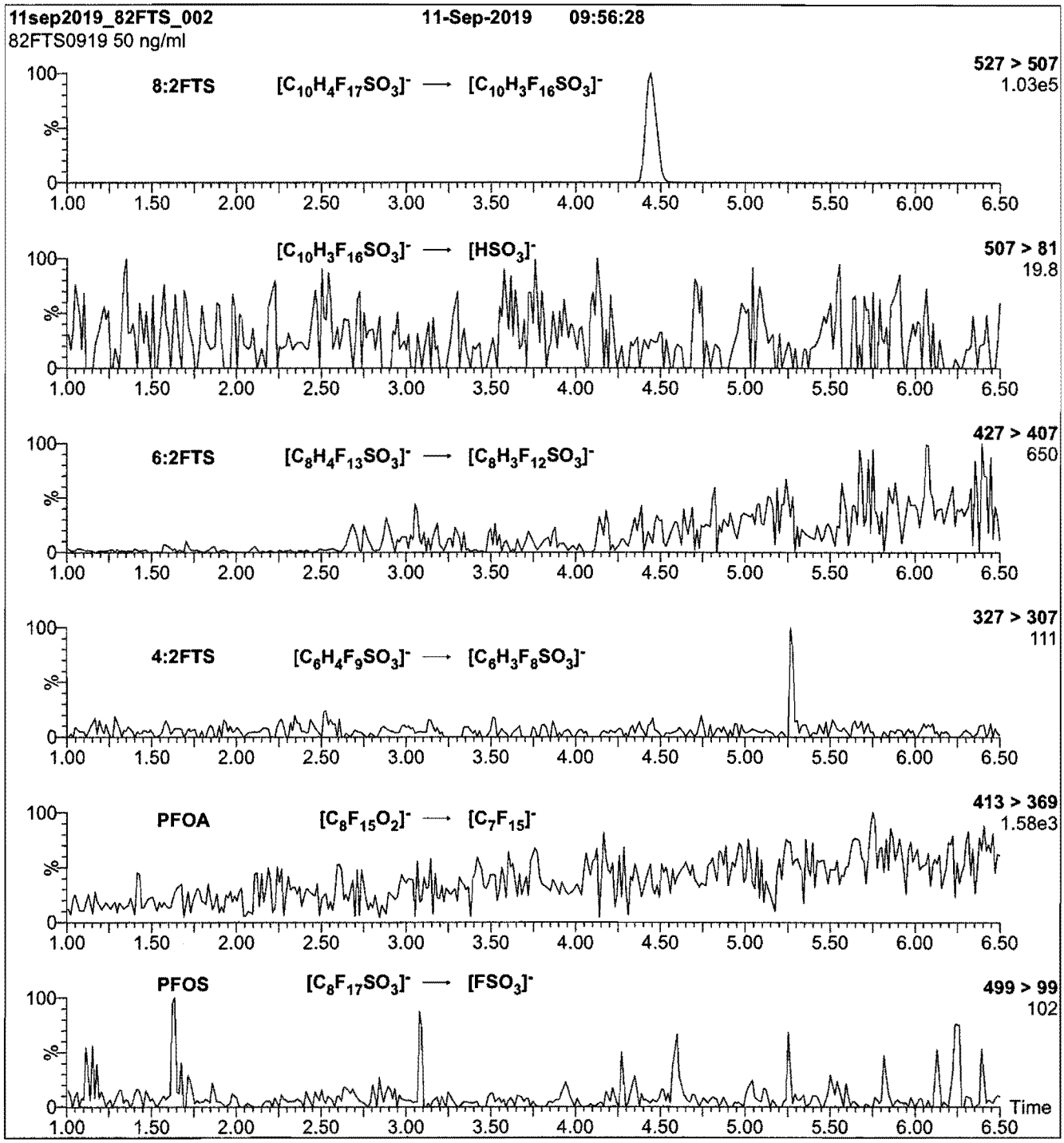
- See page 2 for further details.

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

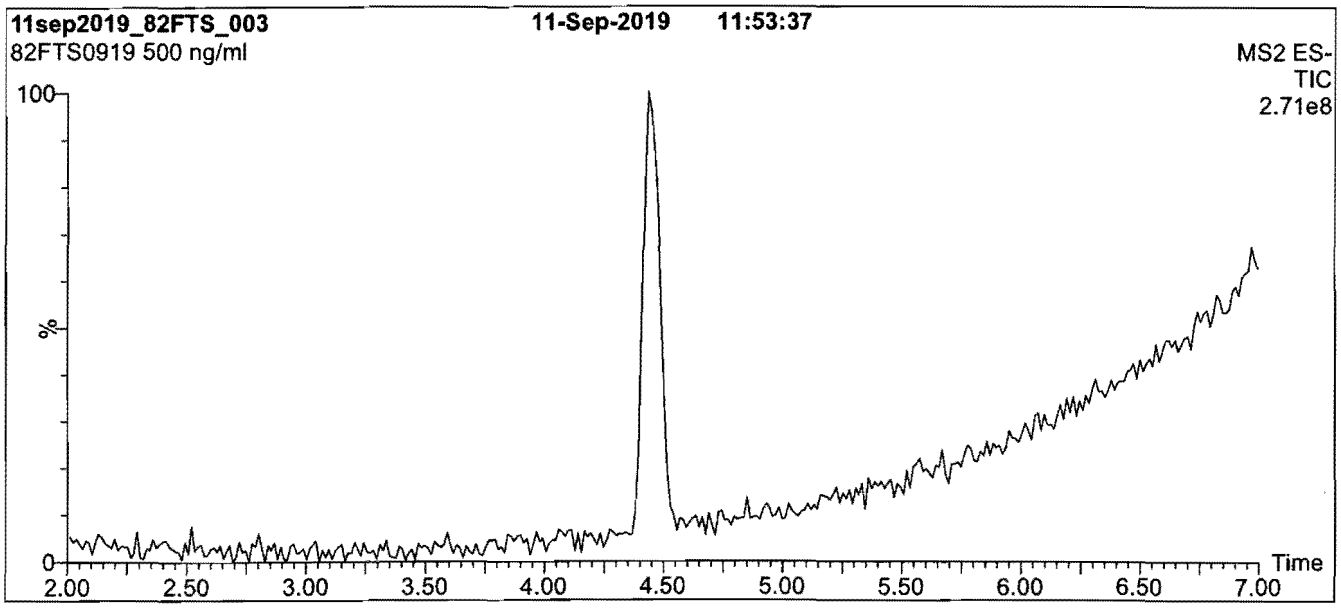
Flow: 300 µl/min

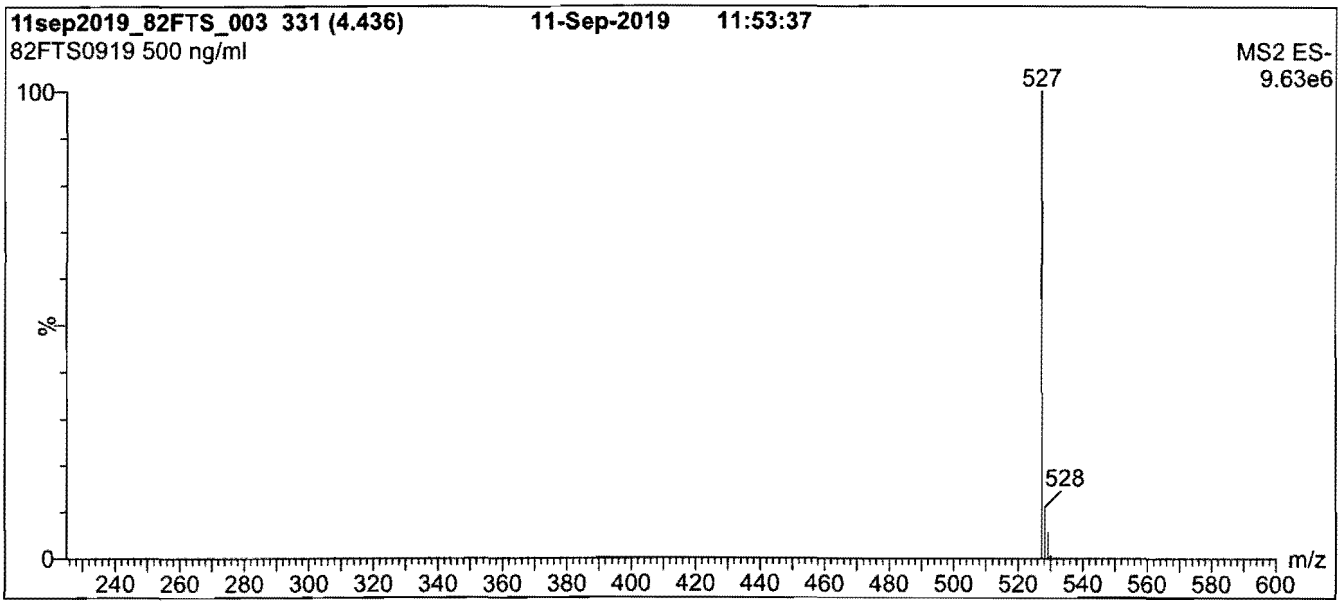
MS Parameters

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

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

19L0657

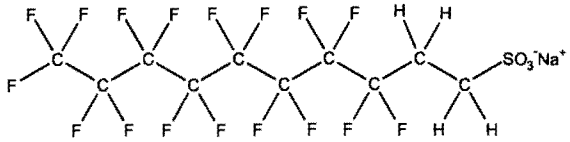
WELLINGTON LABORATORIES

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.

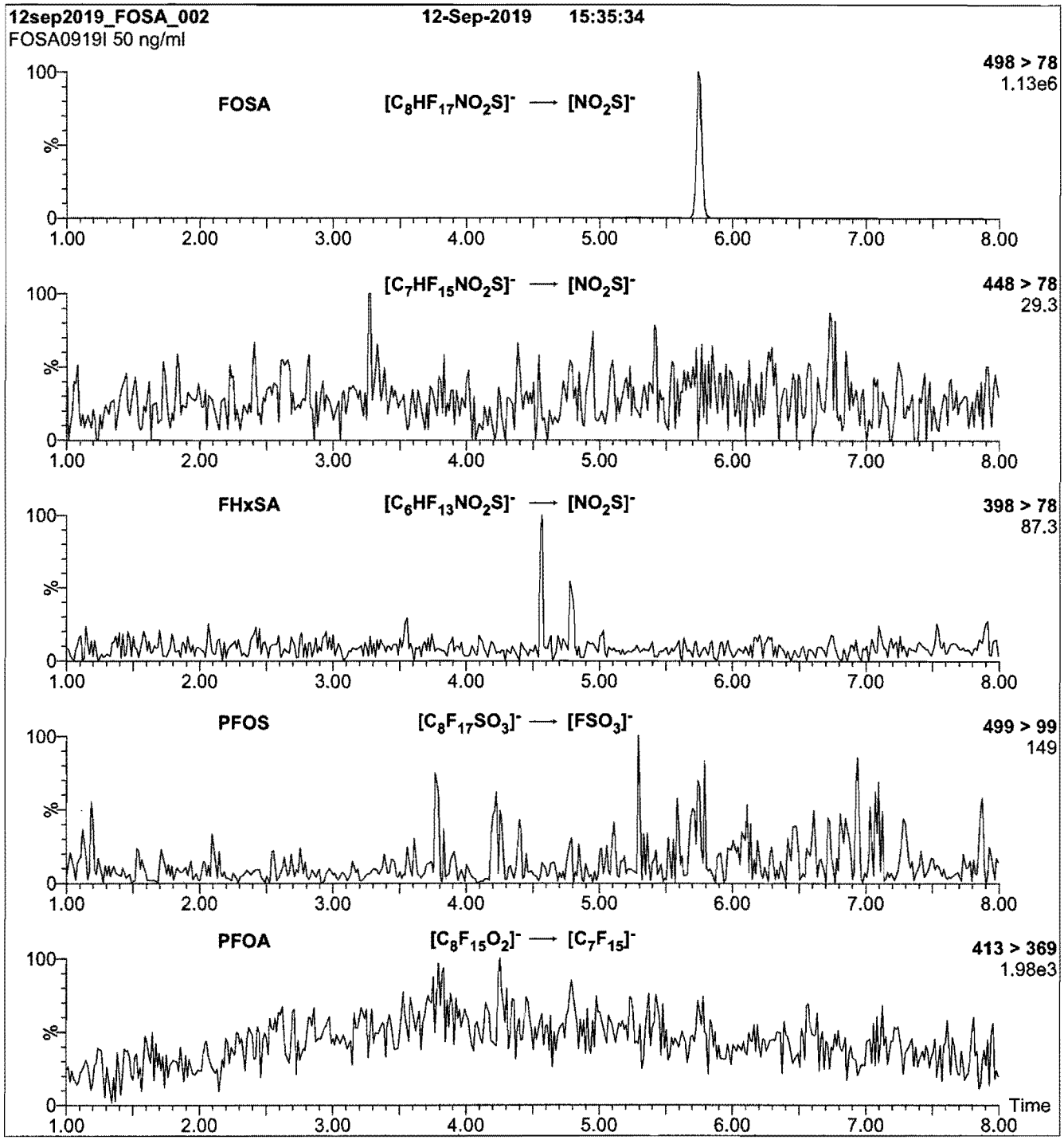
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

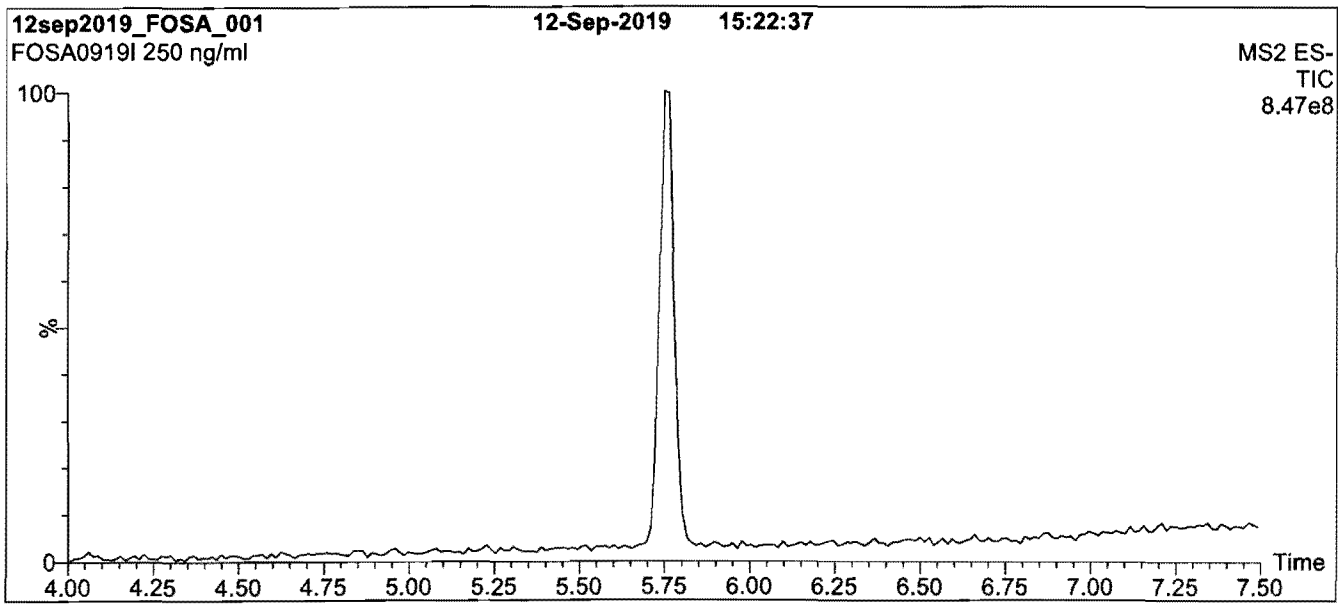
MS Parameters

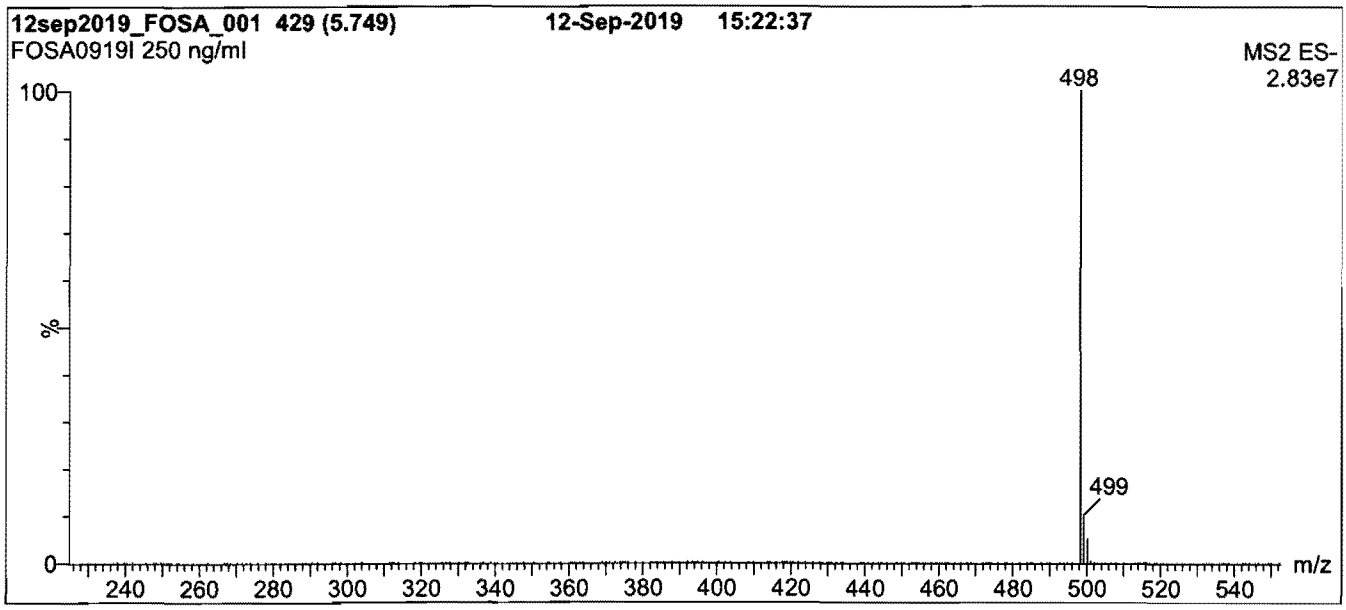
Collision Gas (mbar) = 3.57e-3

Collision Energy (eV) = 30

19L0658

Figure 1: **FOSA-I; LC/MS Data (TIC and Mass Spectrum)**





Conditions for Figure 1:

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) = 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:

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

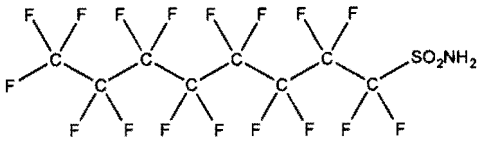
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0658

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	FOSA-I	**LOT NUMBER:**	FOSA0919I
COMPOUND:	Perfluoro-1-octanesulfonamide		
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:

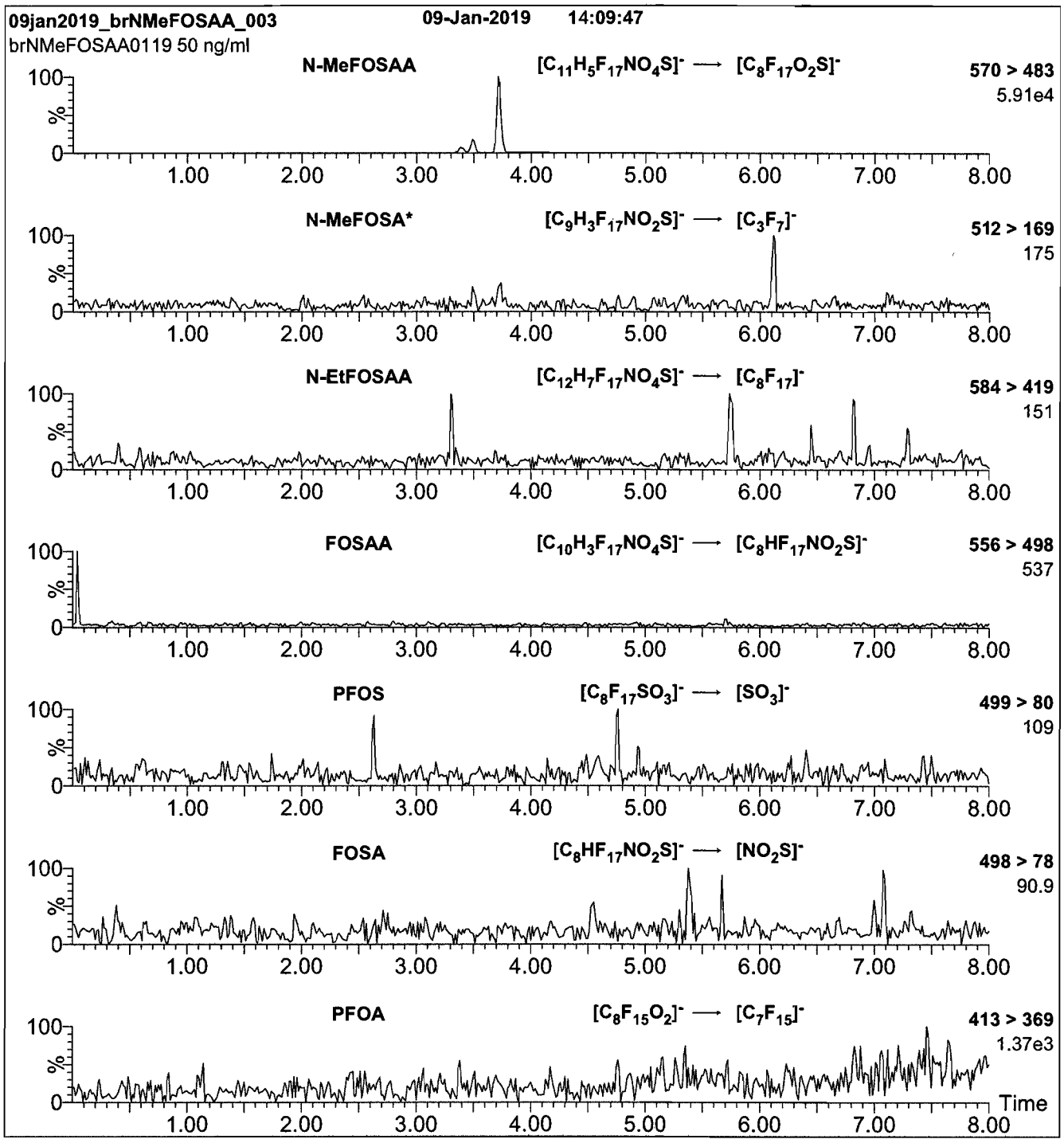
- See page 2 for further details.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

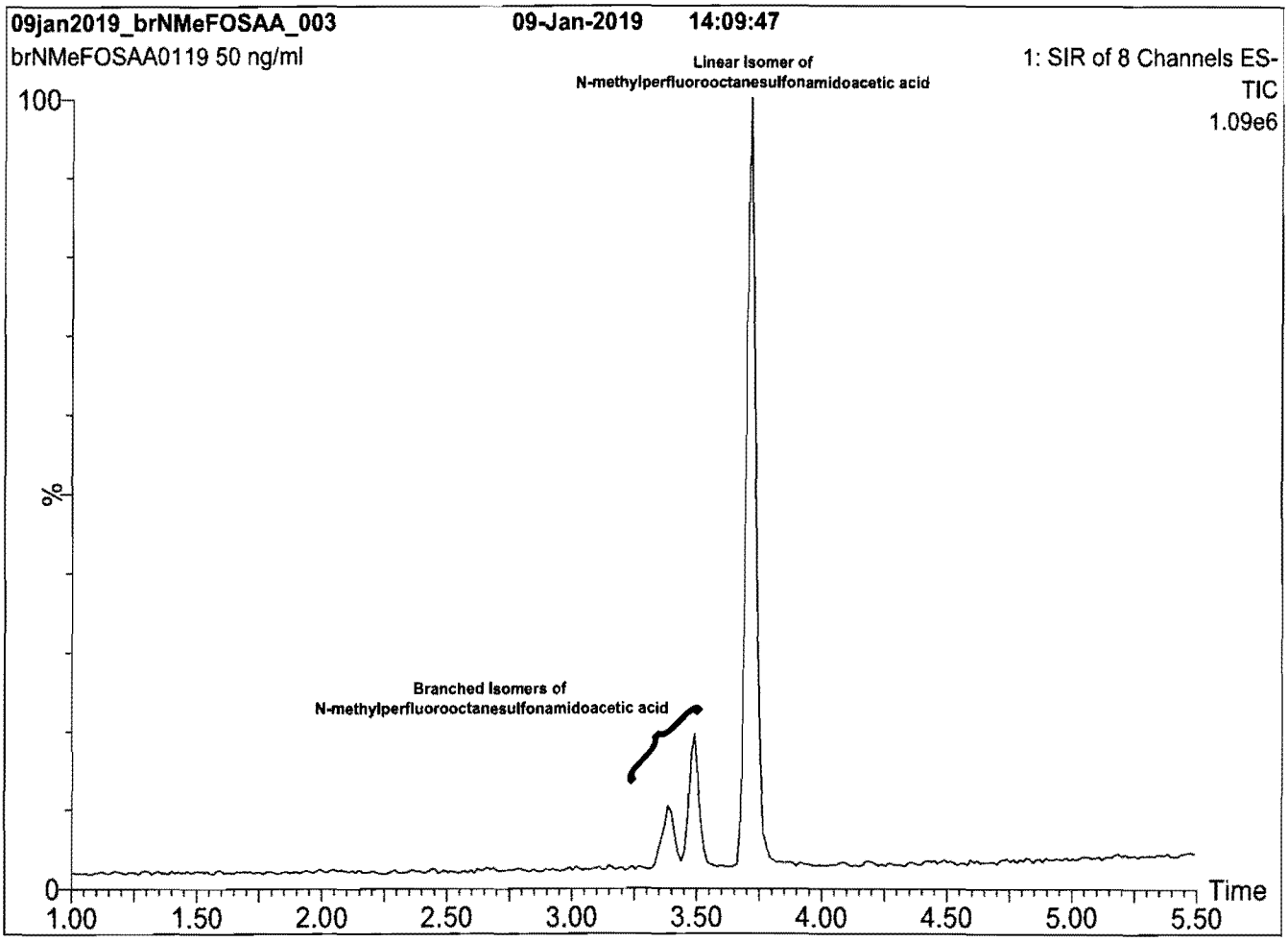
Mobile phase: Same as Figure 1

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

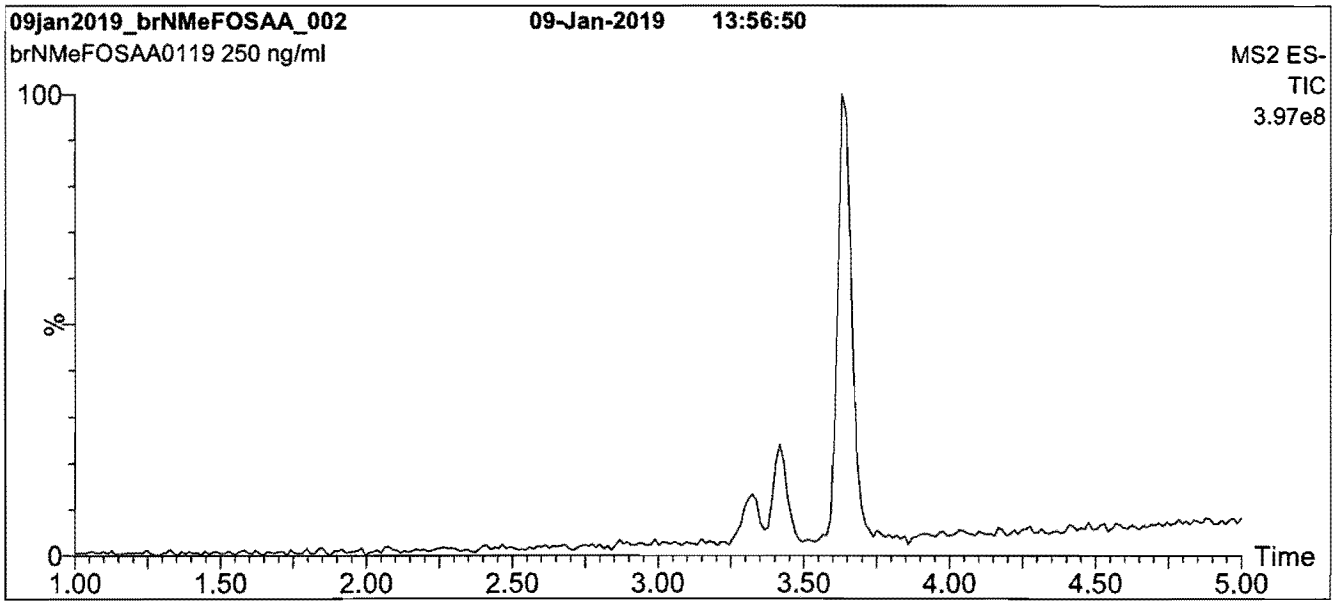
Flow: 300 µl/min

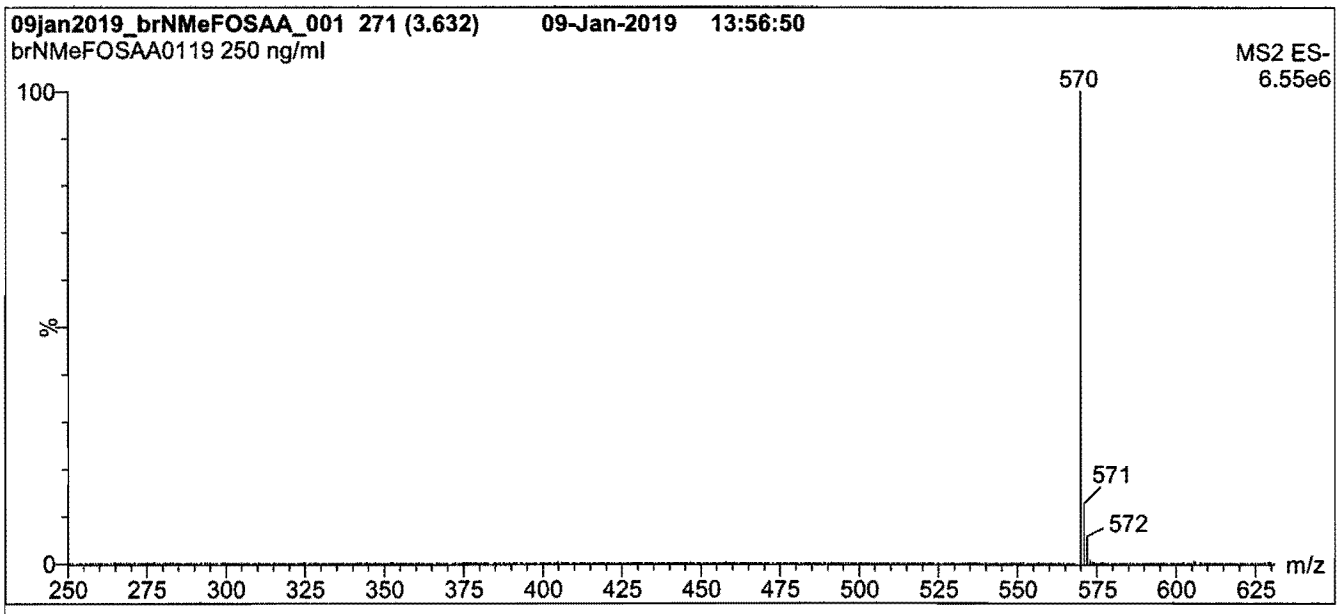
MS Parameters

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)

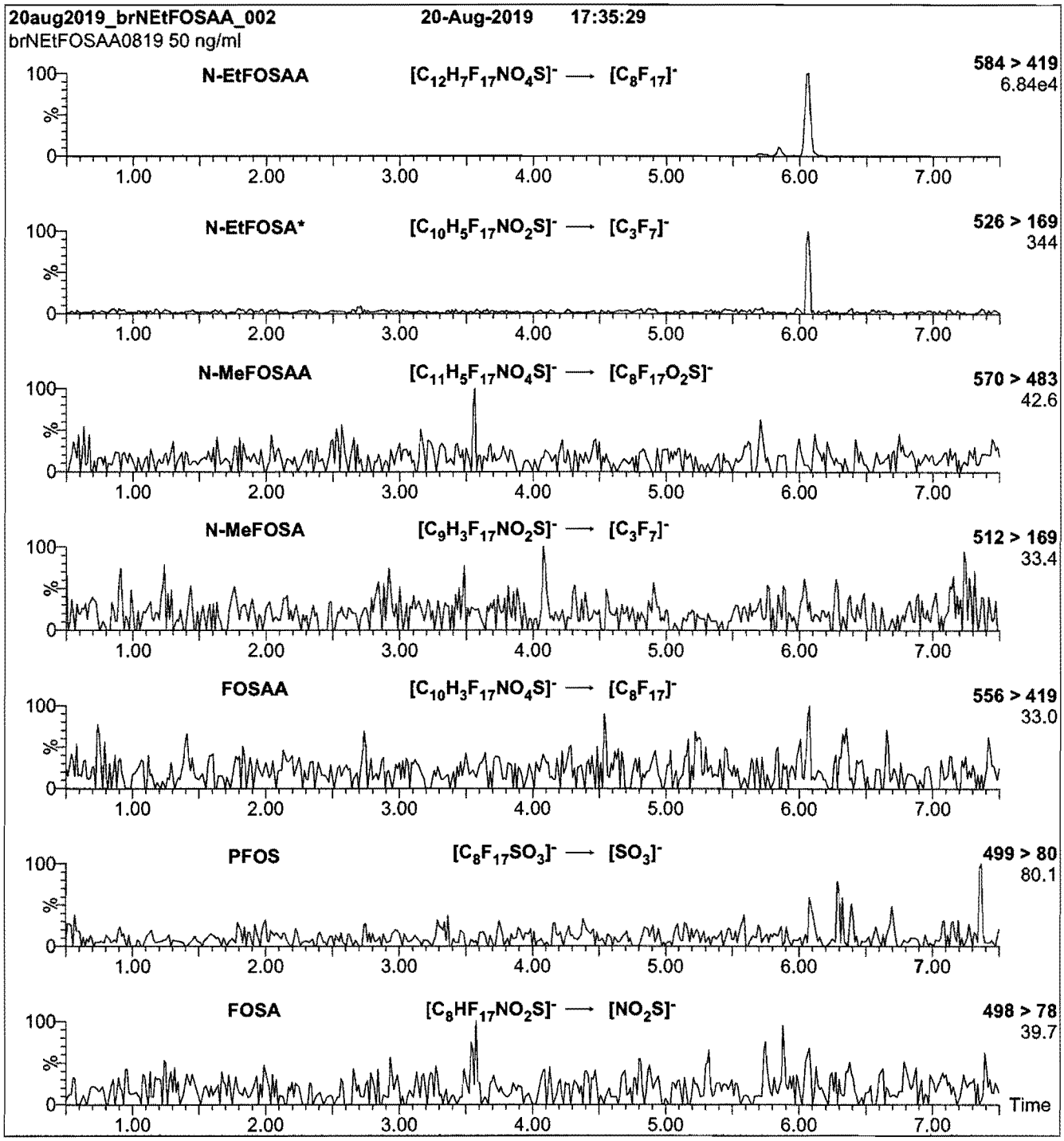
ADDITIONAL INFORMATION:

- 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)

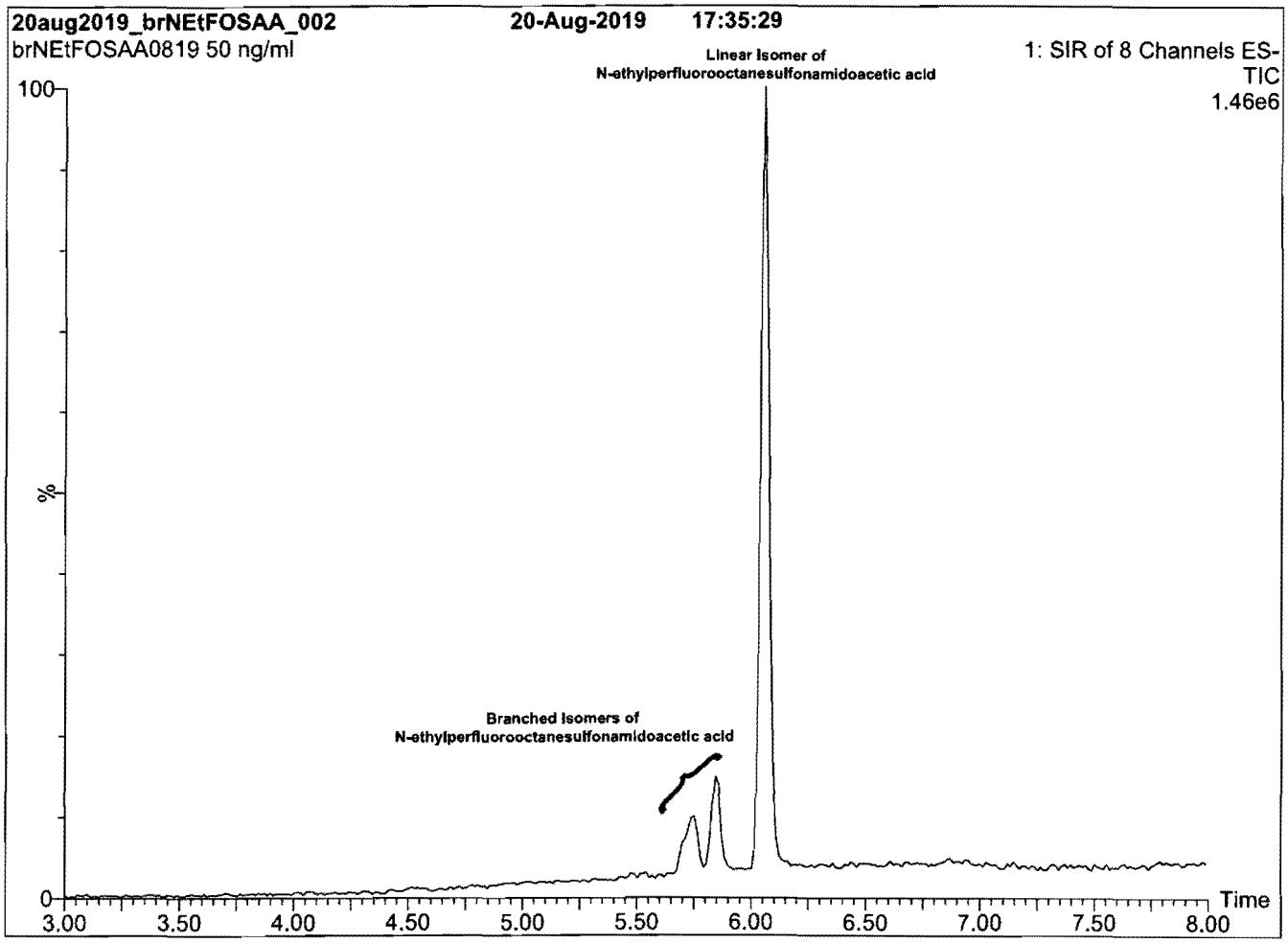
Mobile phase: Same as Figure 1

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

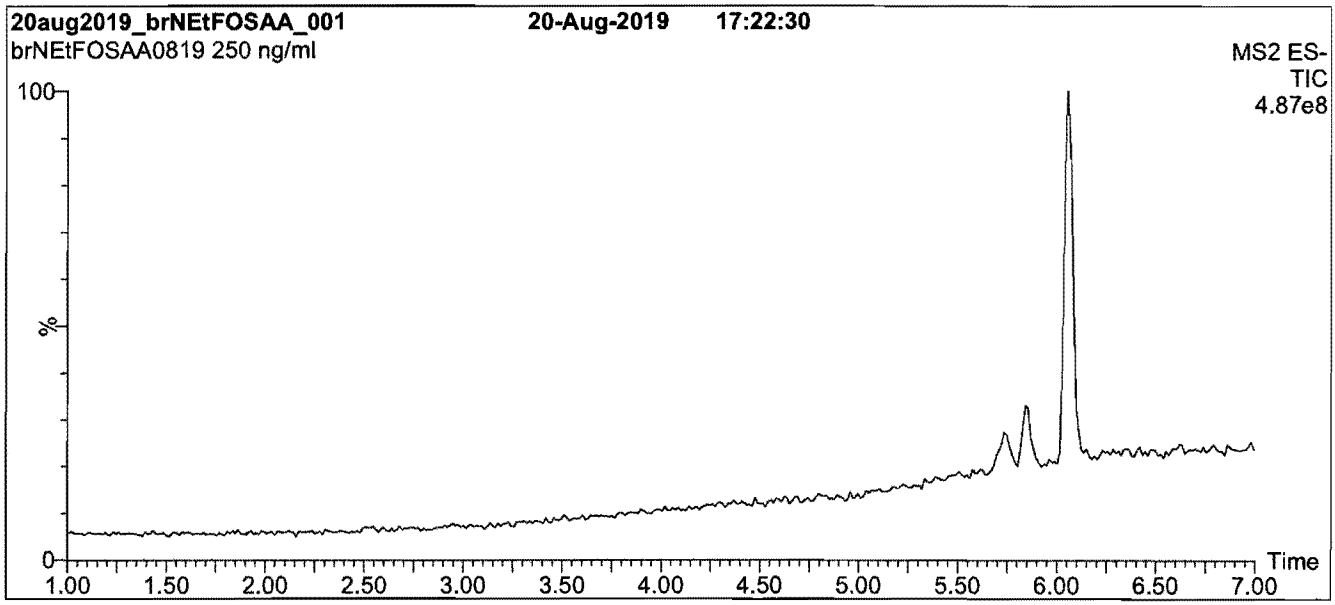
MS Parameters

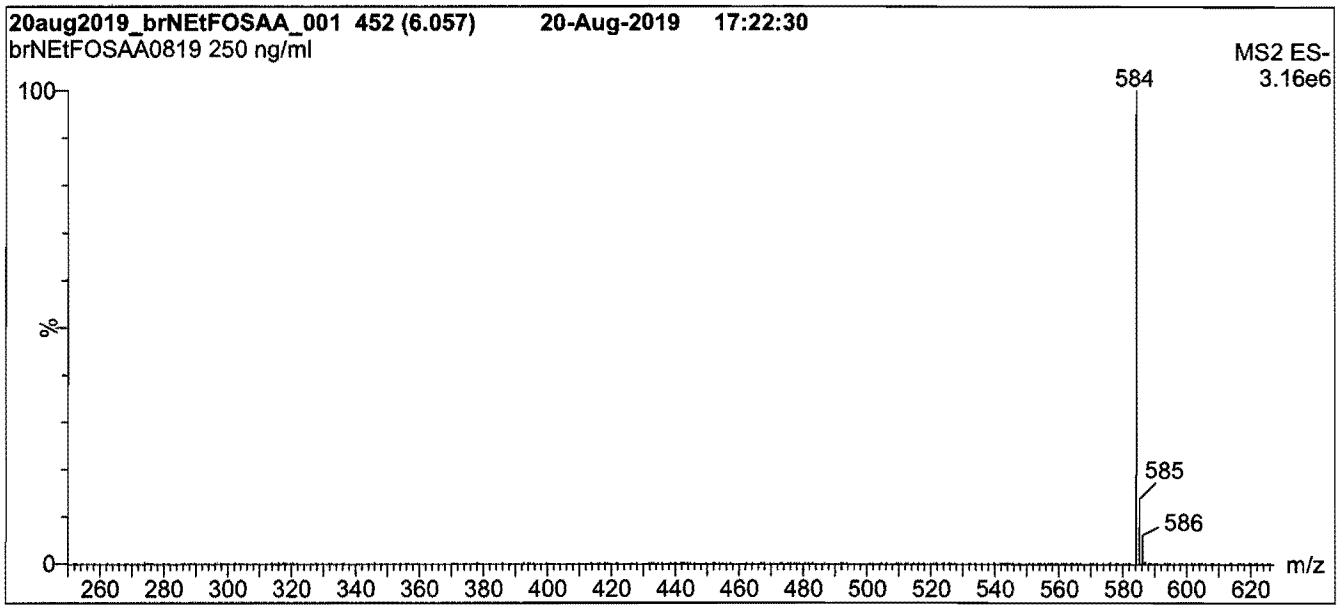
Experiment: SIR (8 channels)

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

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)

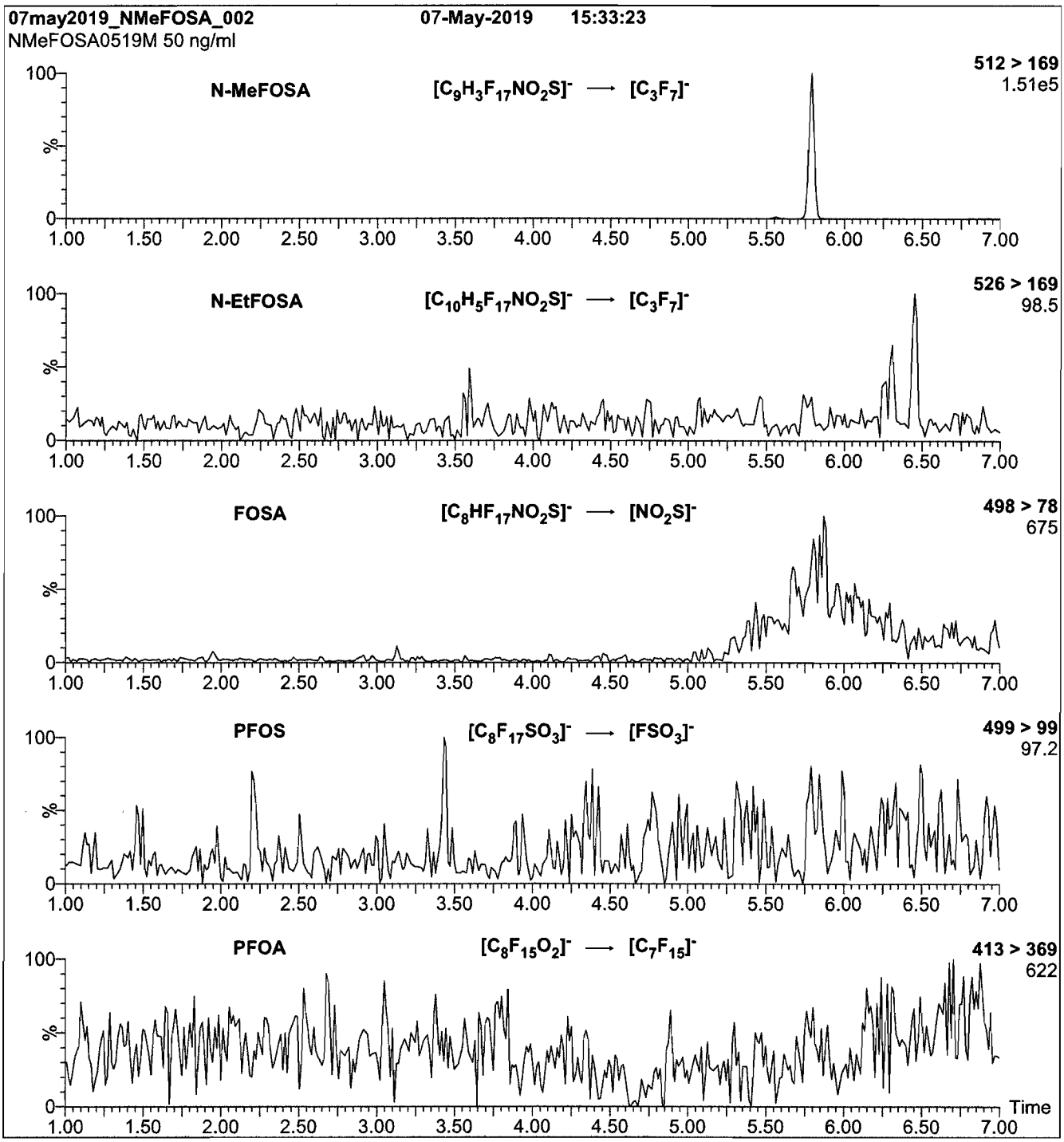
ADDITIONAL INFORMATION:

- 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

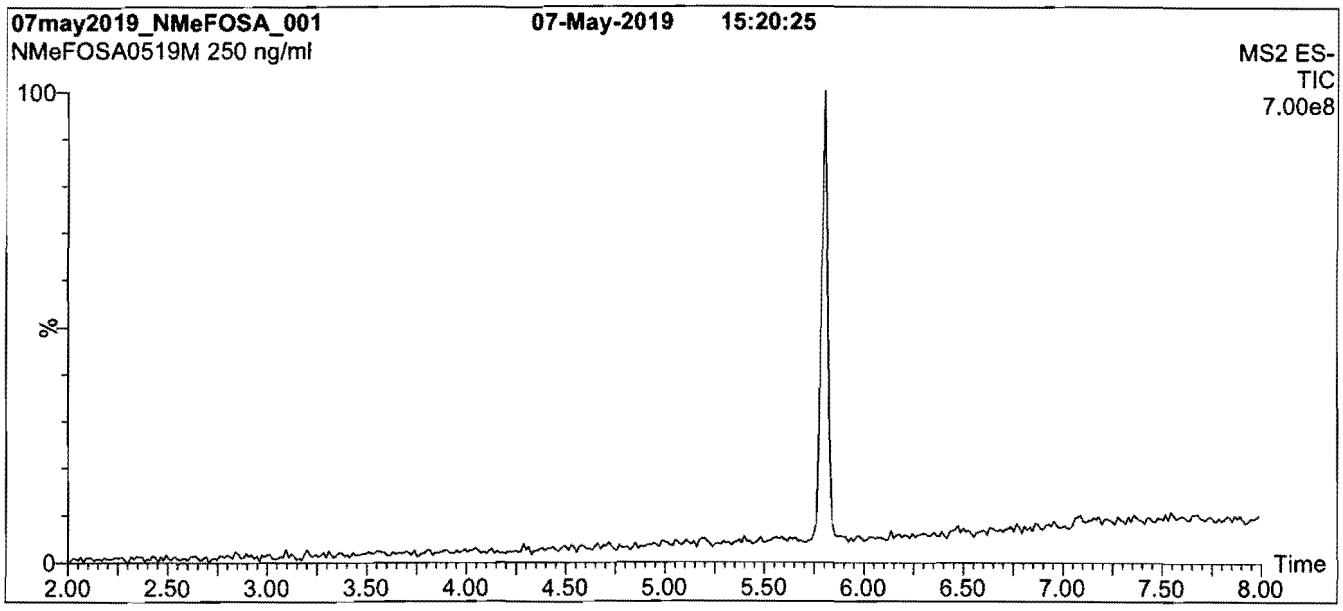
Flow: 300 µl/min

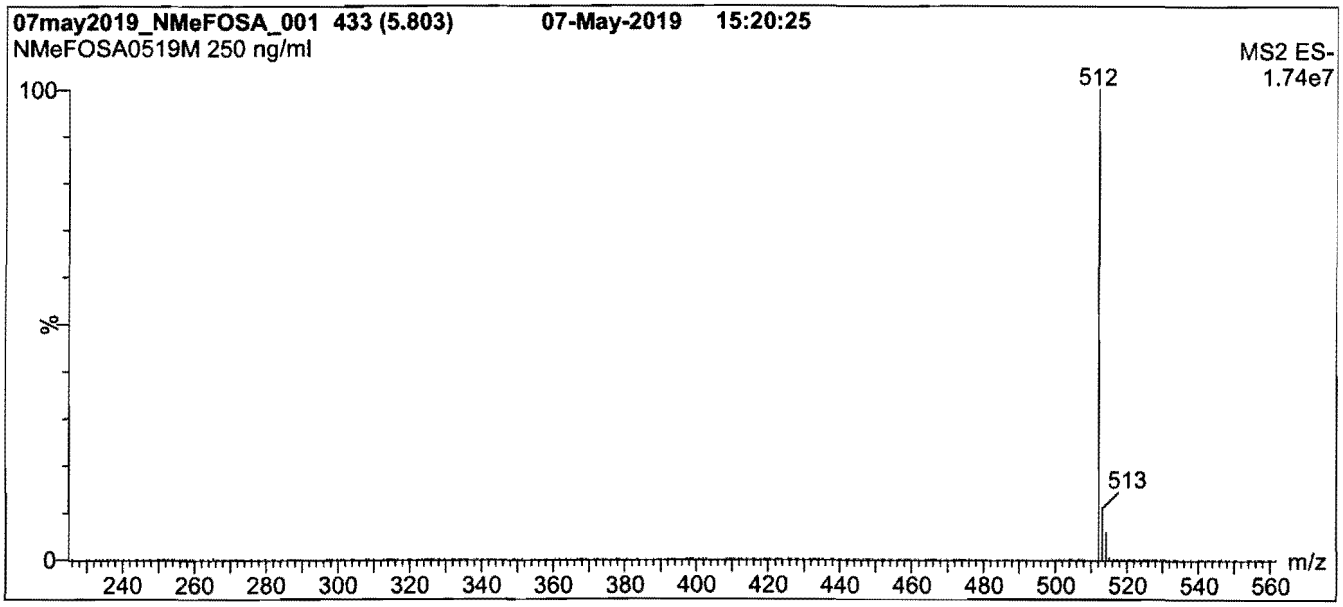
MS Parameters

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:

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

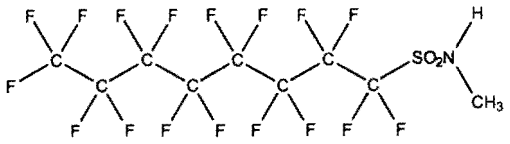
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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.

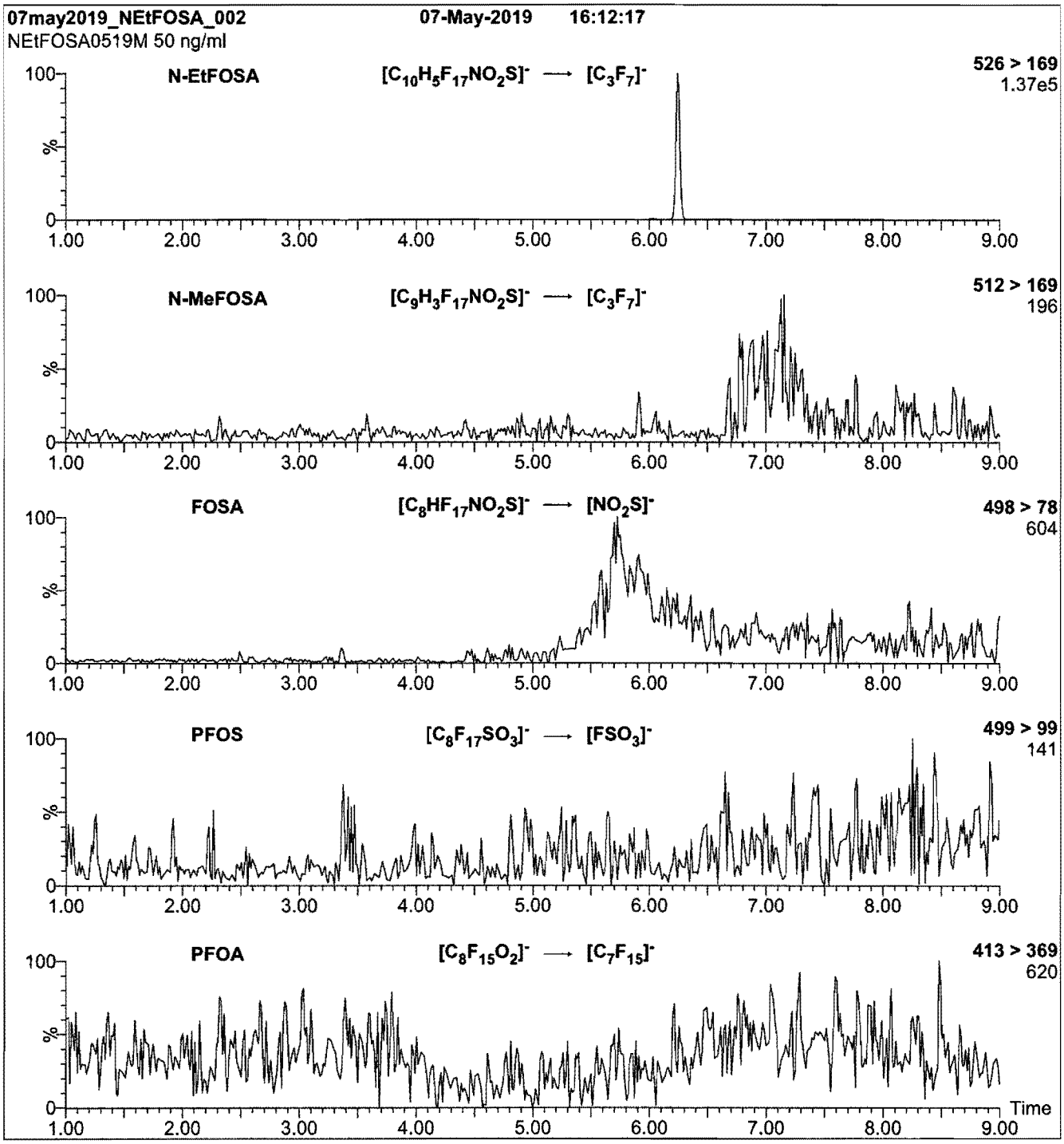
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

19L0662

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

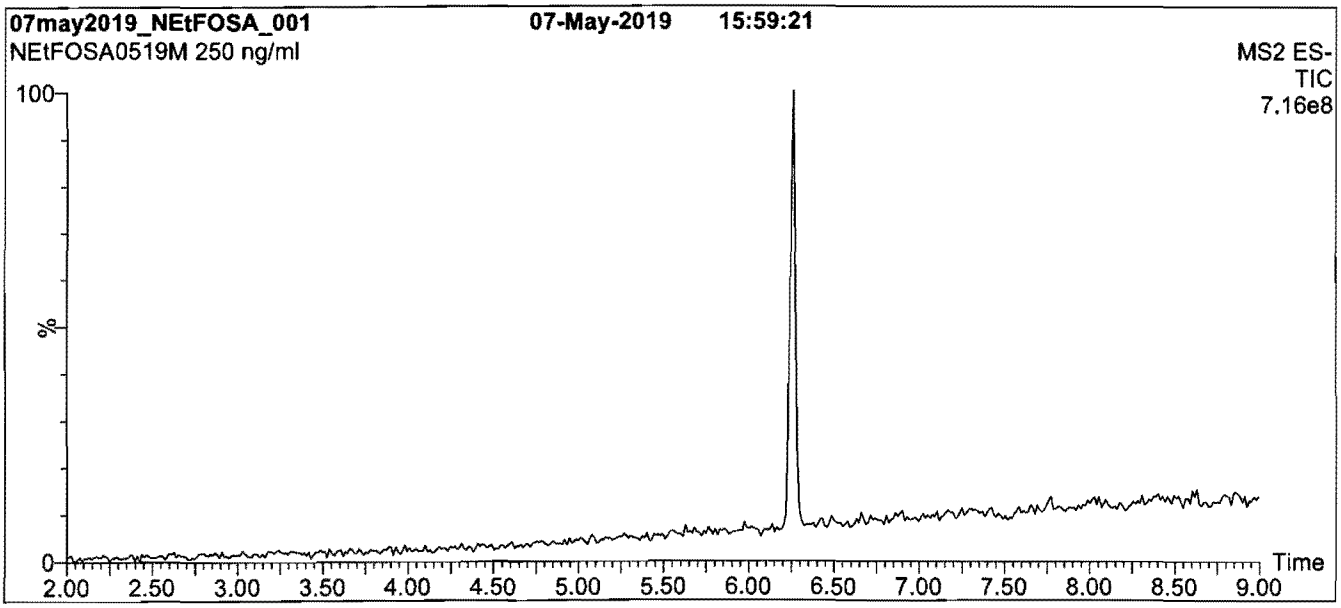
Flow: 300 µl/min

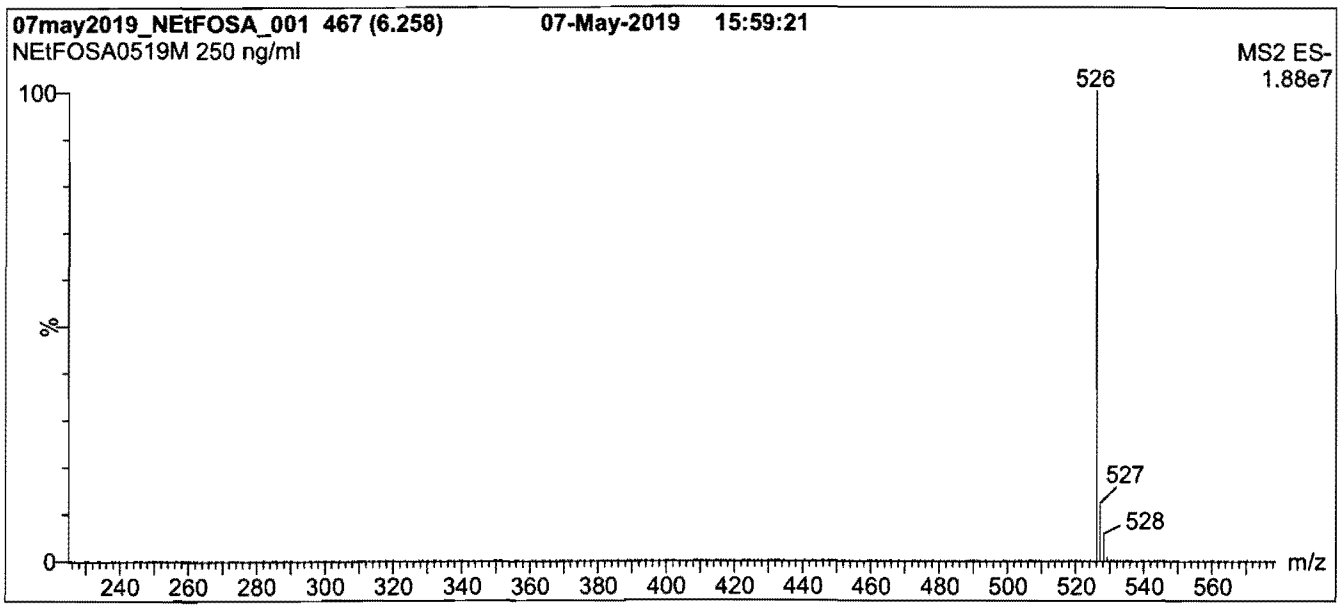
MS Parameters

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:

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

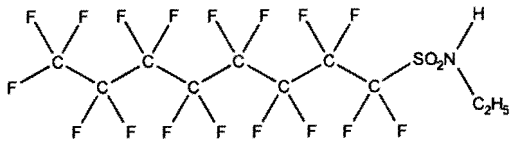
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0662

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:

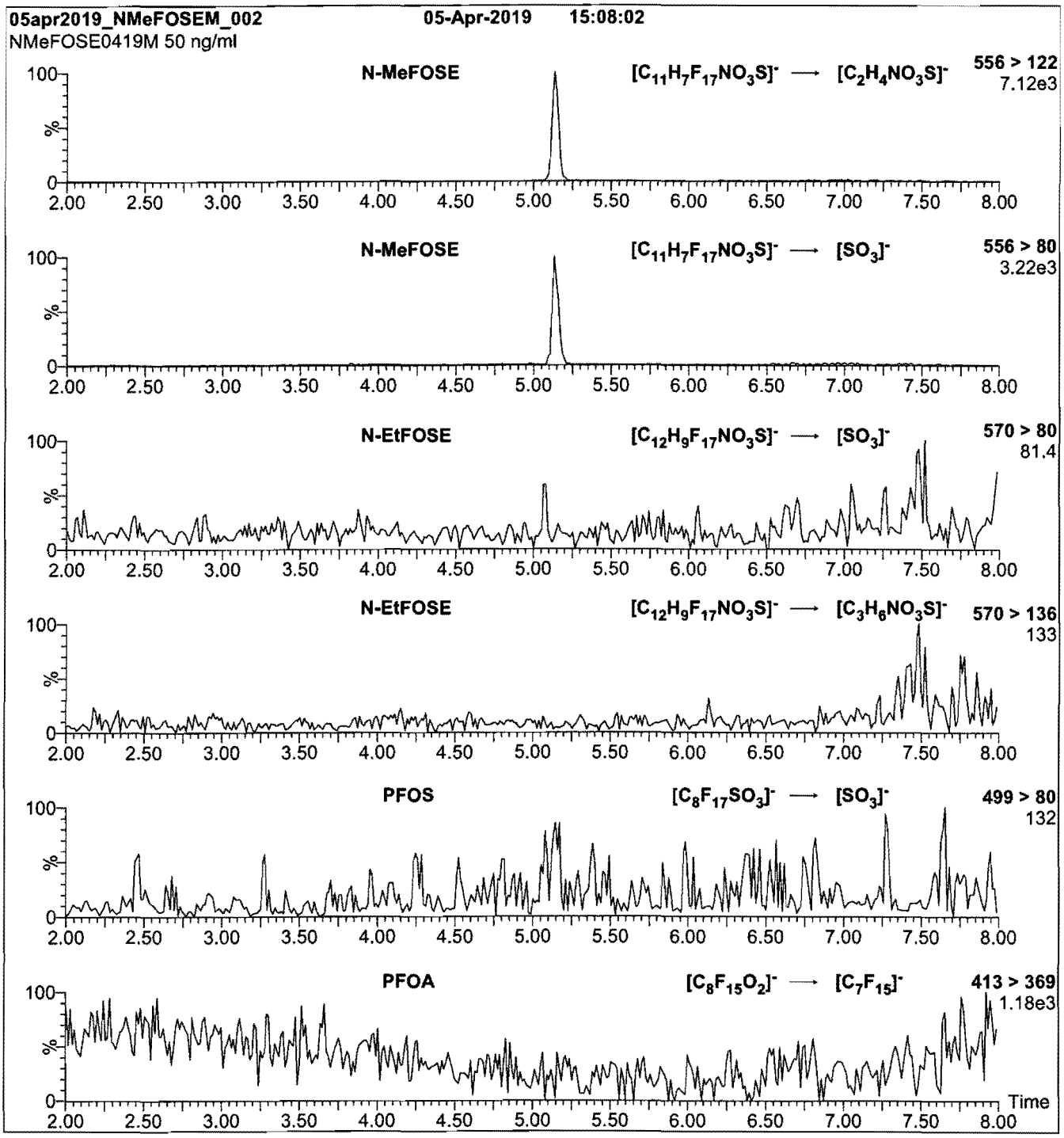
- See page 2 for further details.
- Contains ~ 0.5% branched isomers of N-ethylperfluorooctanesulfonamide.

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)

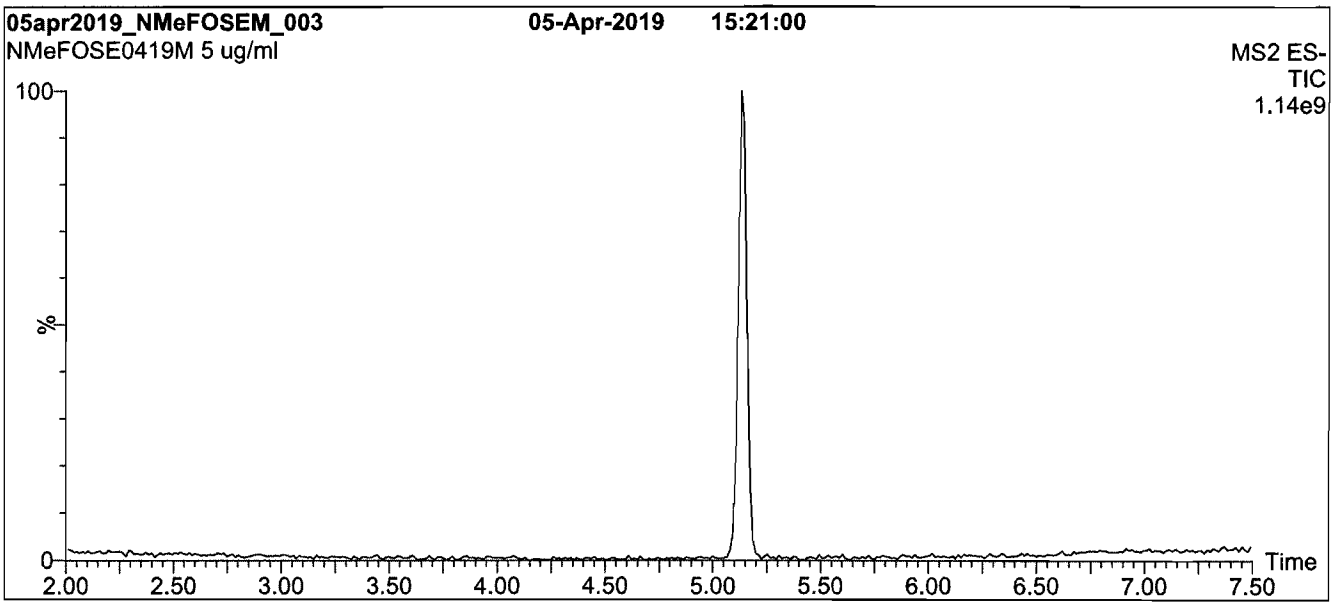
Mobile phase: Same as Figure 2

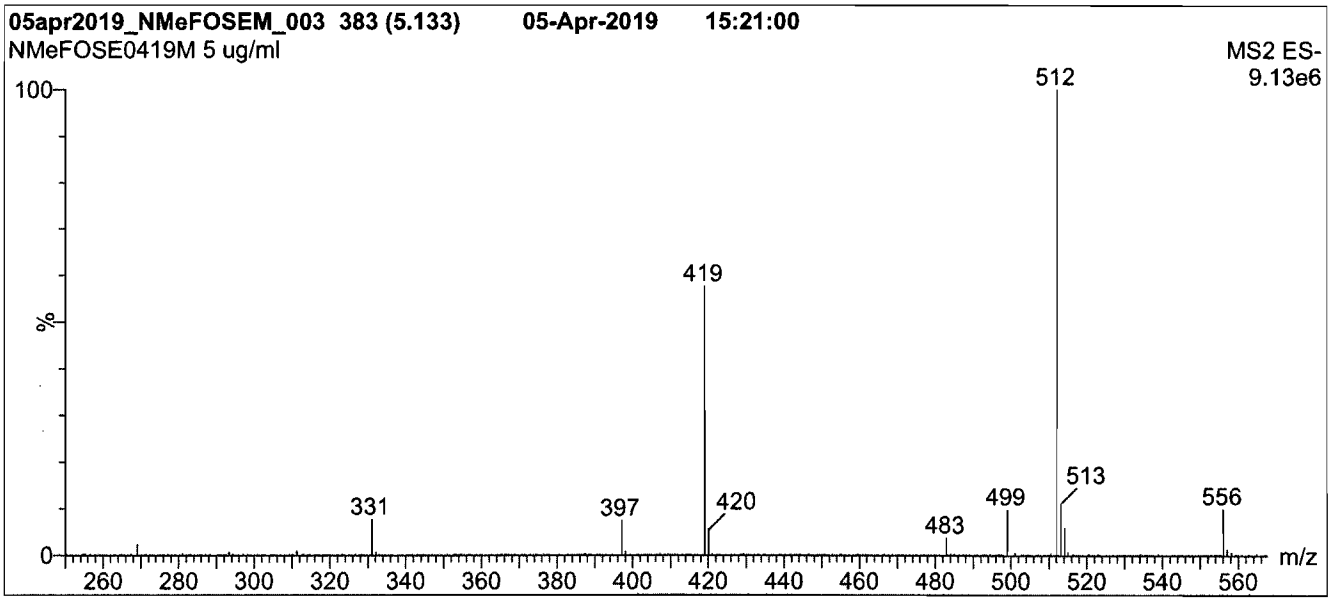
Flow: 300 µl/min

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

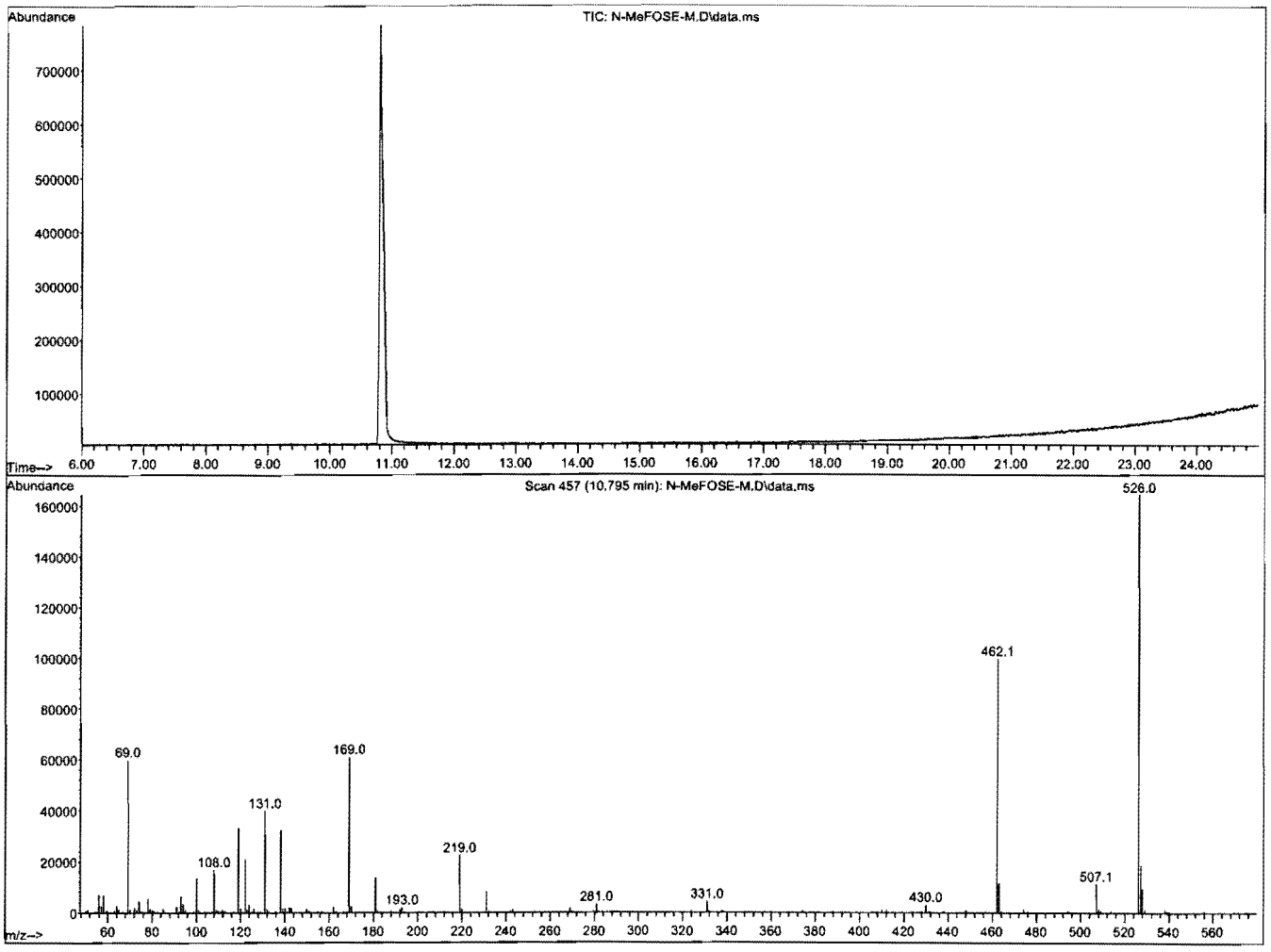
Flow: 300 µl/min

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)

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

1910663

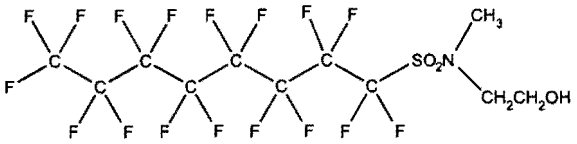
WELLINGTON LABORATORIES

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:

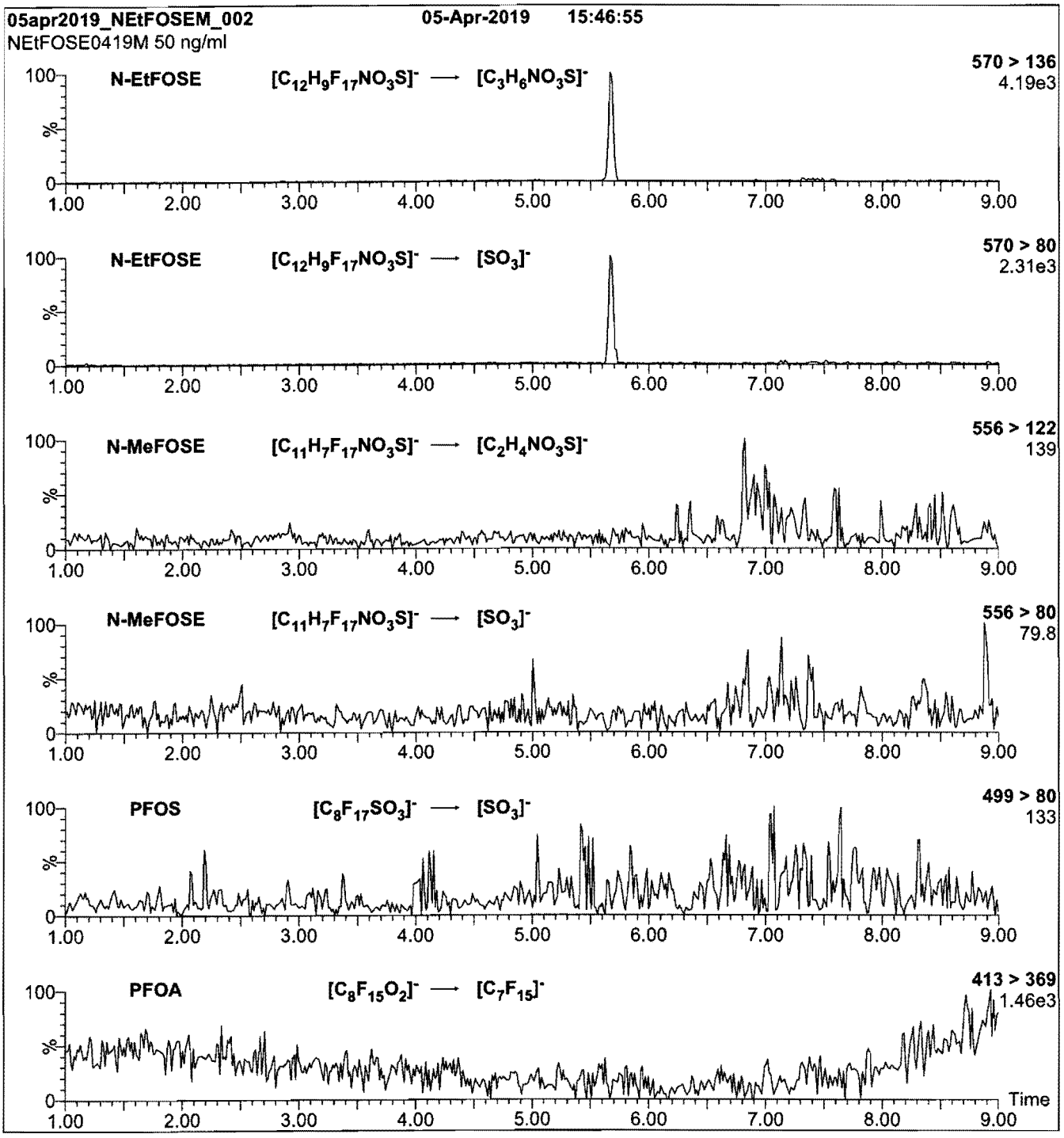
- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

Figure 3: **N-EtFOSE-M; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 3:

Injection: On-column (N-EtFOSE-M)

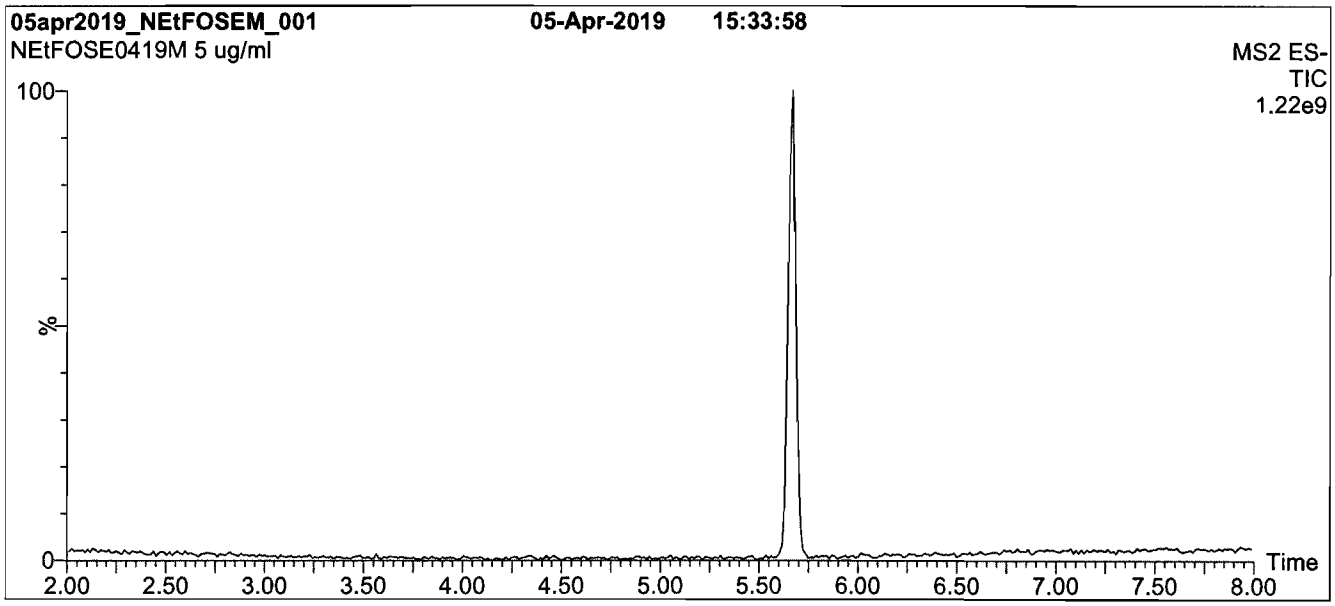
Mobile phase: Same as Figure 2

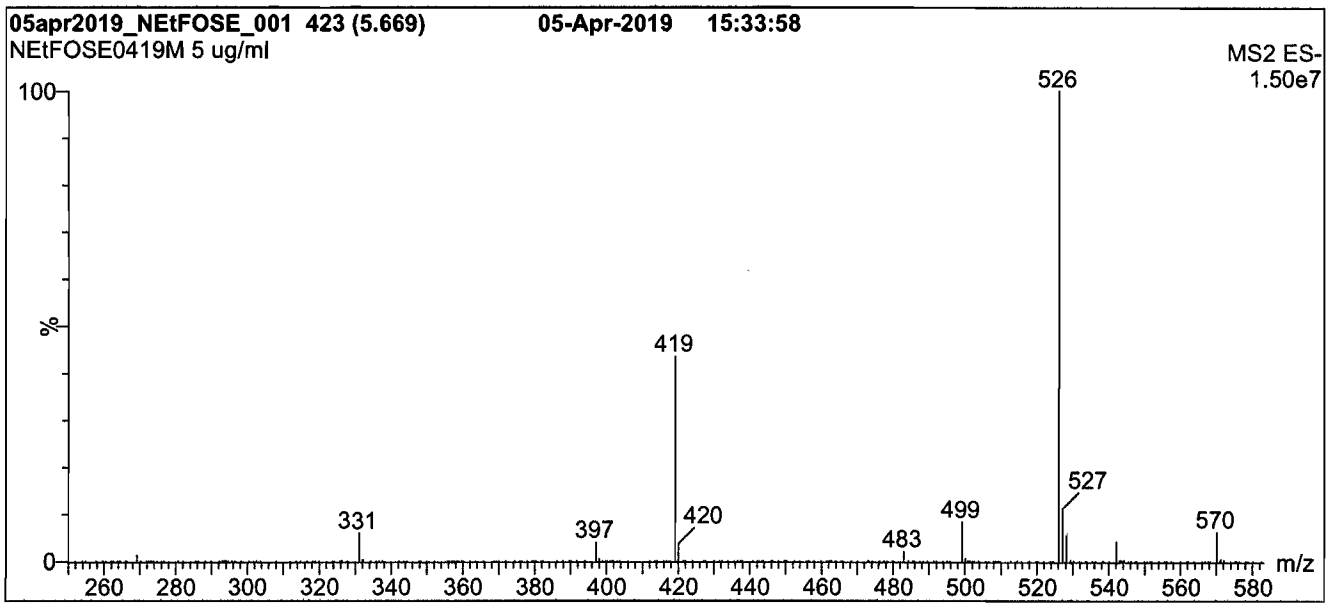
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.76e-3
Collision Energy (eV) = 32

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

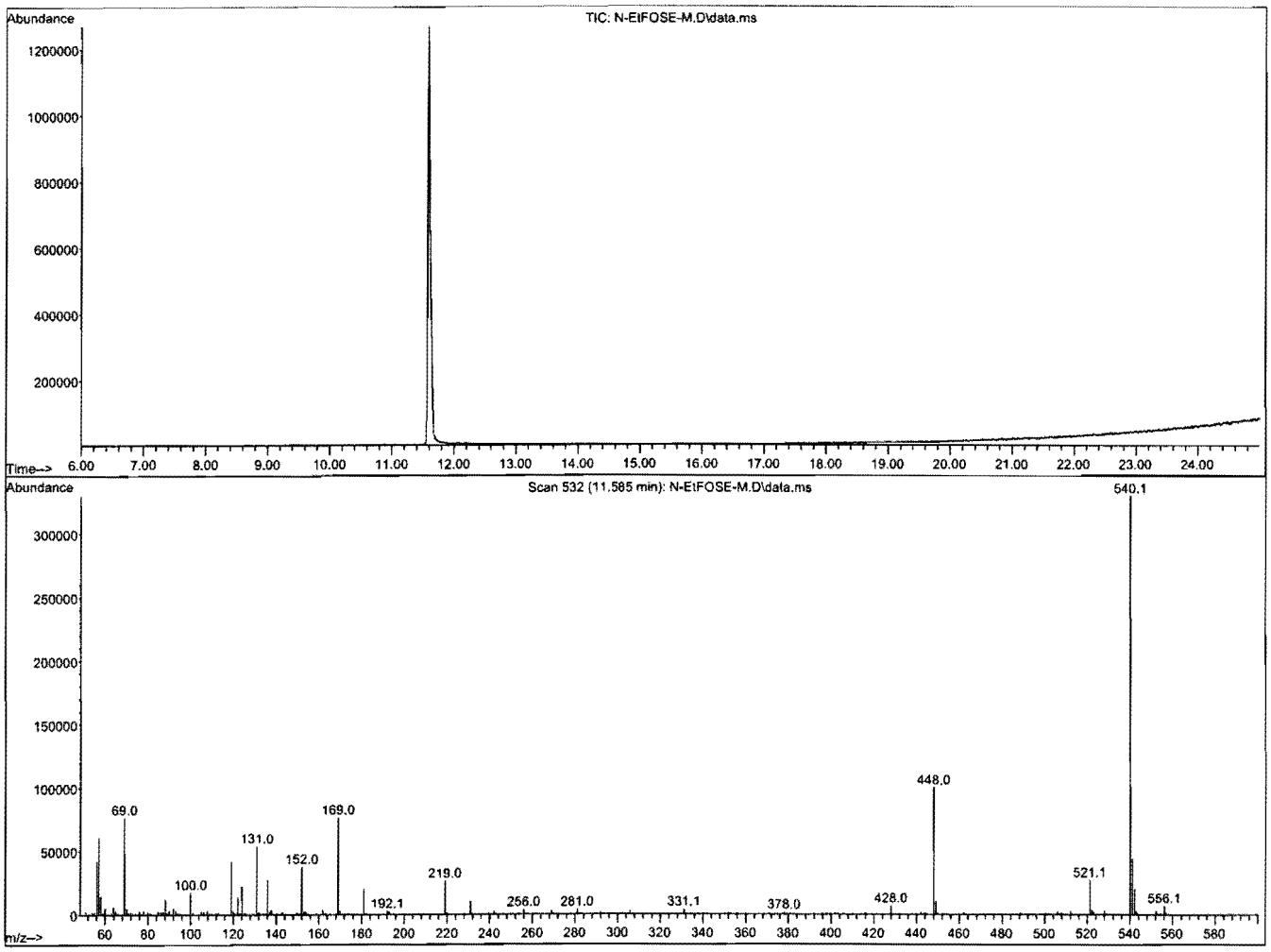
Flow: 300 µl/min

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

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

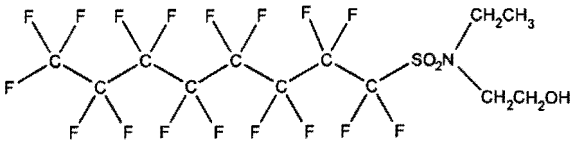
19L 0664

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:

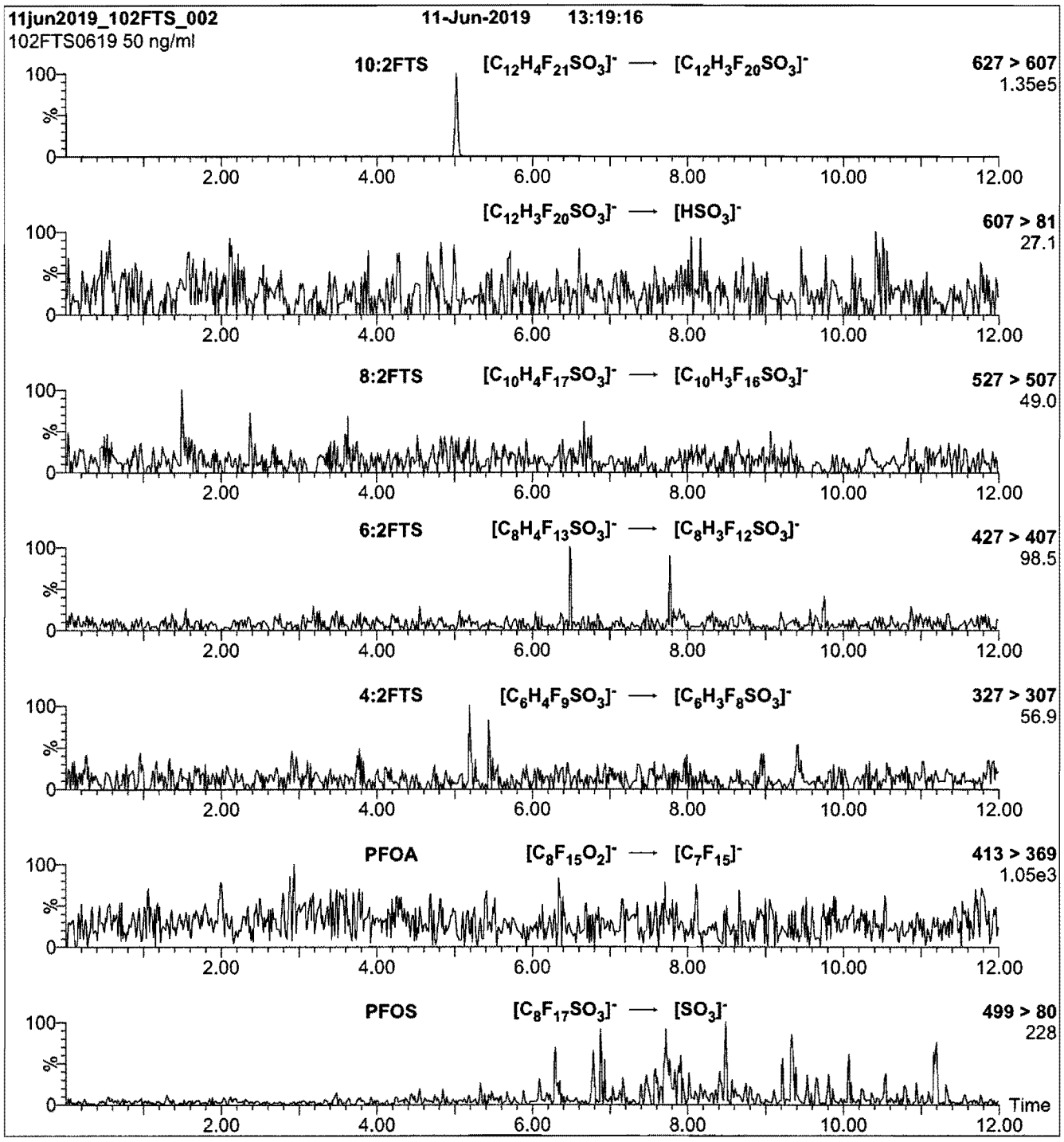
- See page 2 for further details.
- In order to see the molecular ion (adduct free), the LC mobile phase should be free of ammonium acetate buffer.

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

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

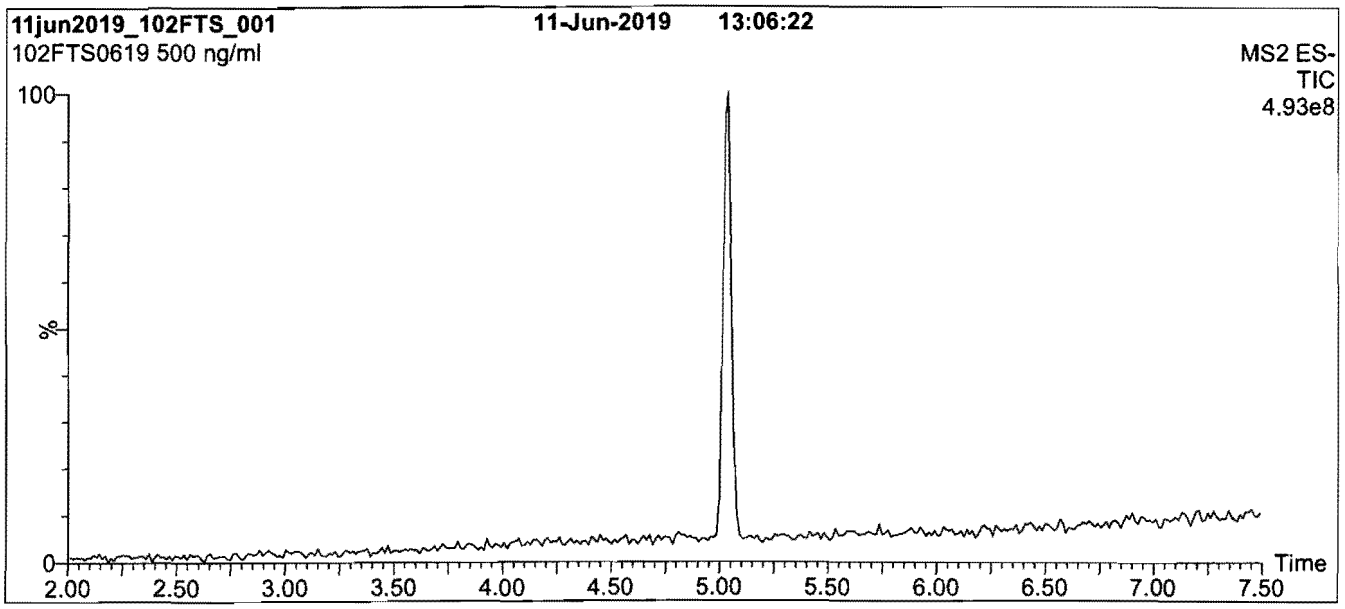
Flow: 300 µl/min

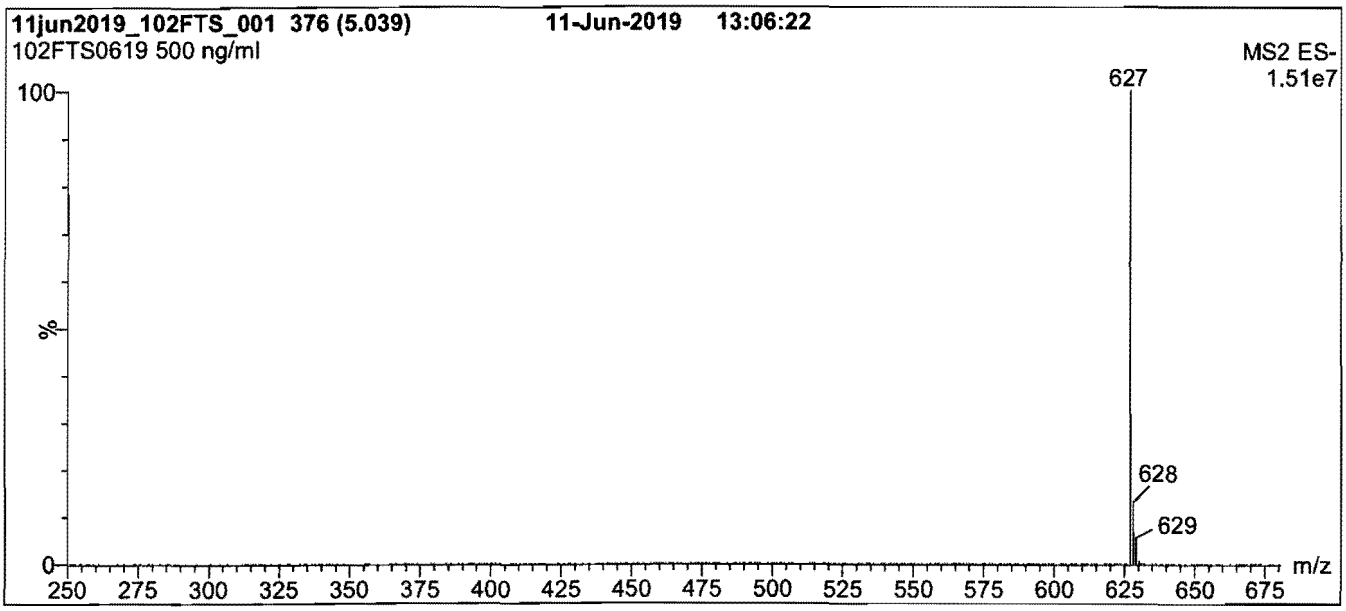
MS Parameters

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:

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

19L0665

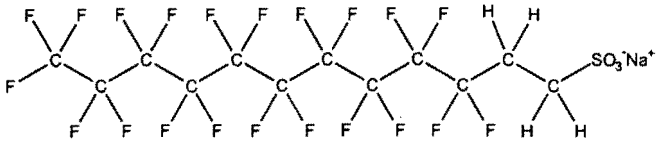
WELLINGTON LABORATORIES

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

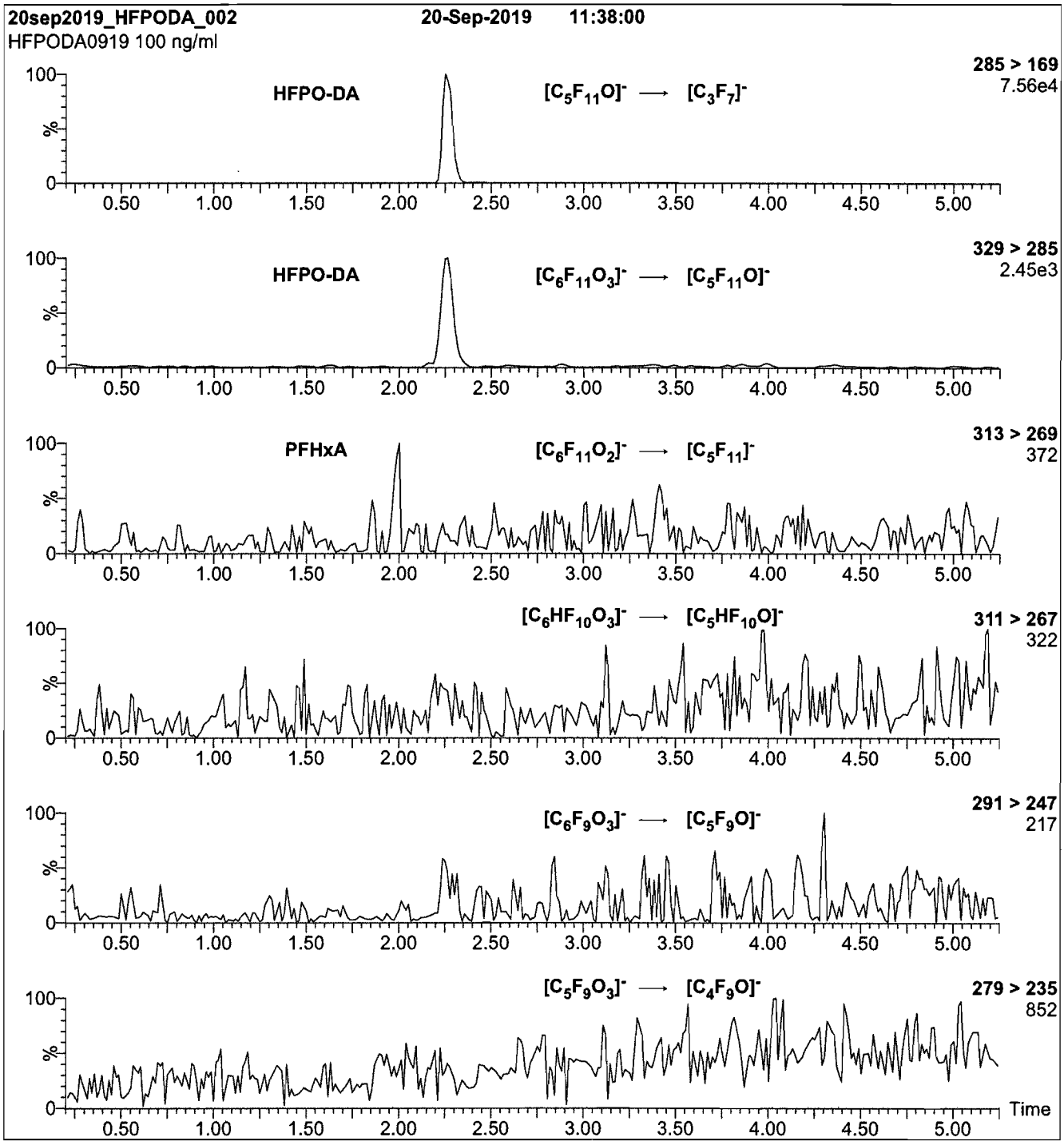
Certified By: _____ **Date:** 06/18/2019 (mm/dd/yyyy)

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

1910666

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

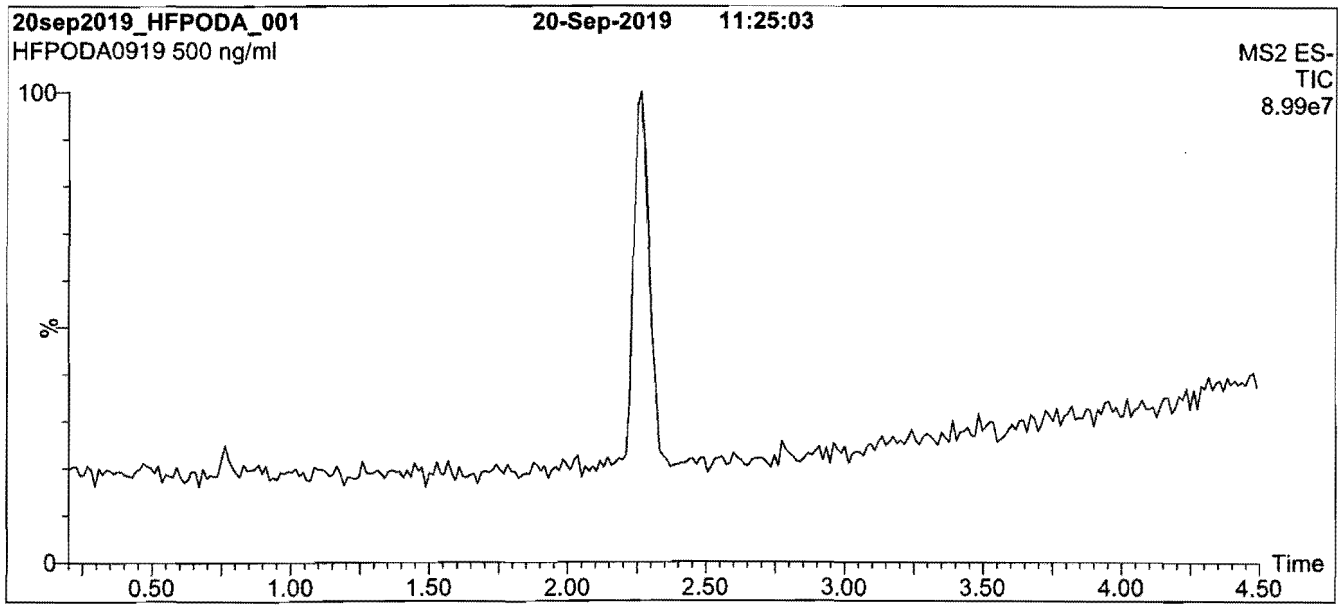
Flow: 300 µl/min

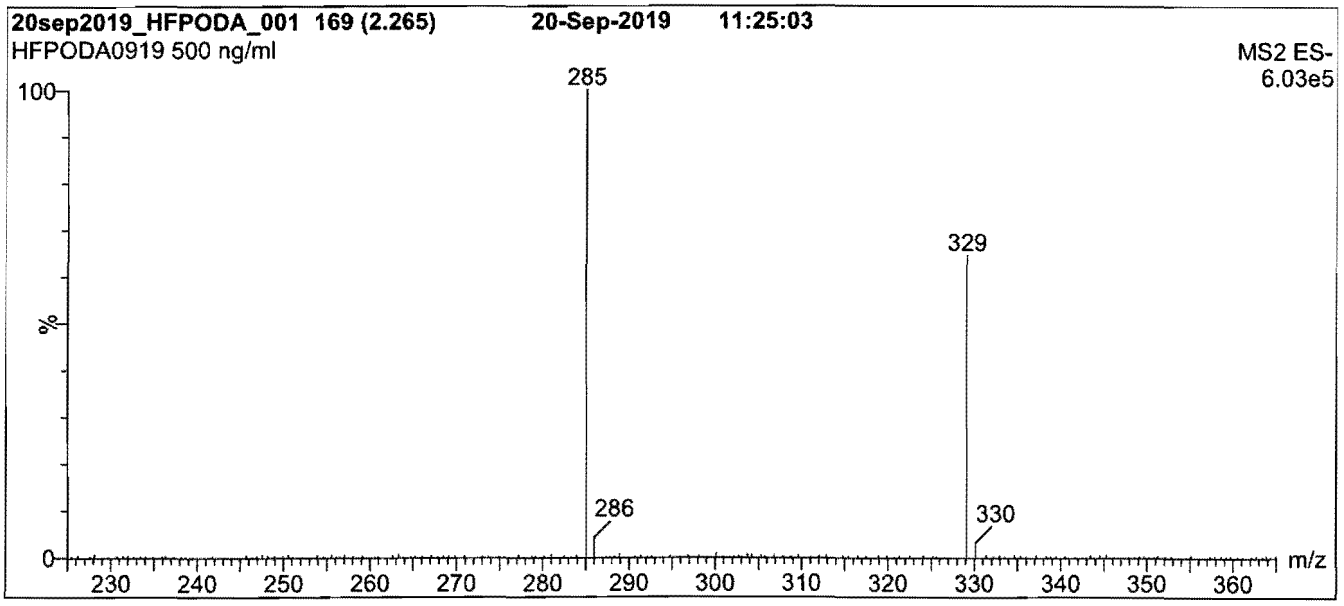
MS Parameters

Collision Gas (mbar) = 3.60e-3
Collision Energy (eV) = 8

1910666

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

19L 0666

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

19L0666

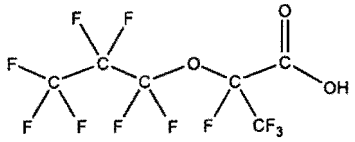
WELLINGTON LABORATORIES

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.

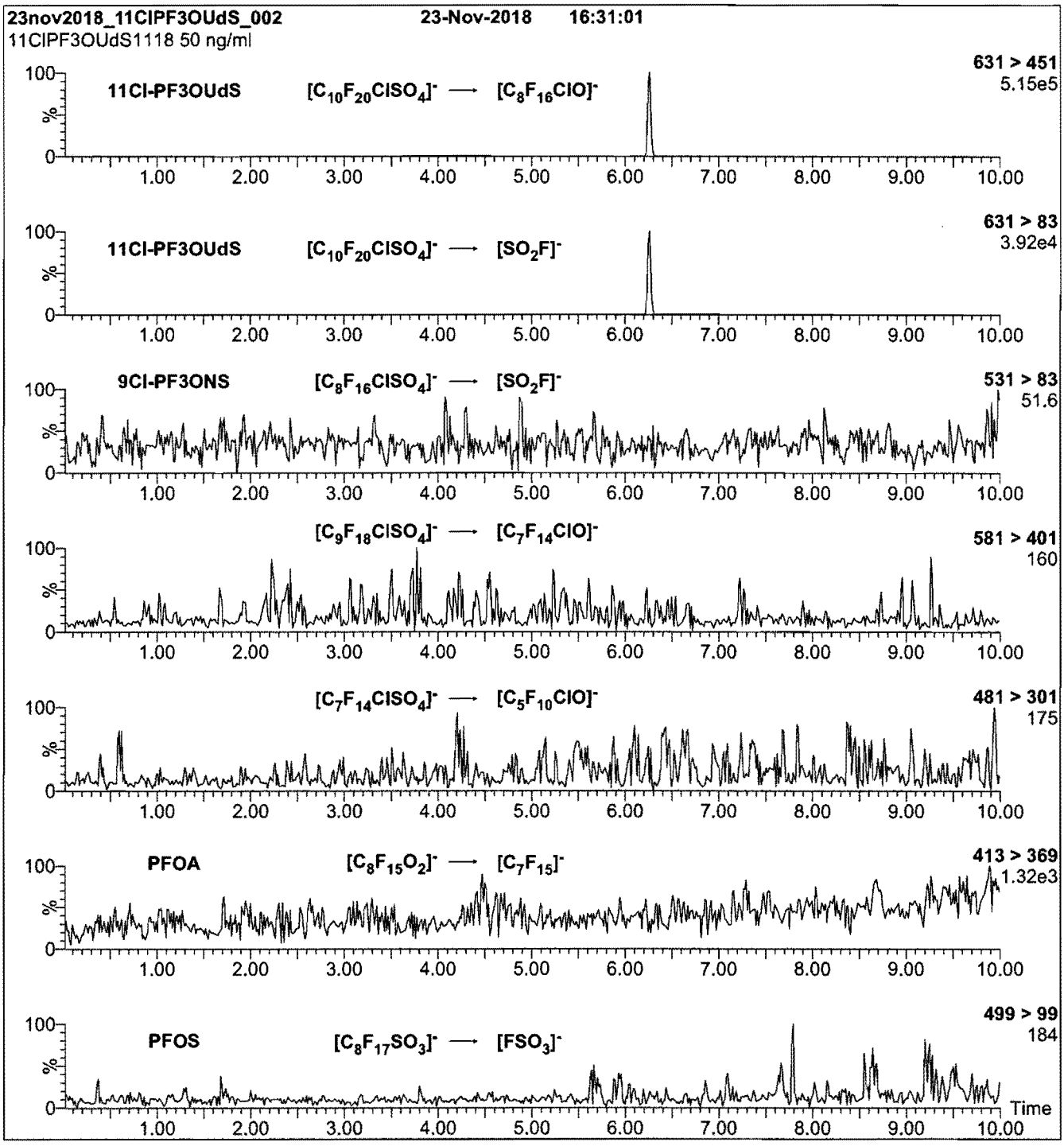
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

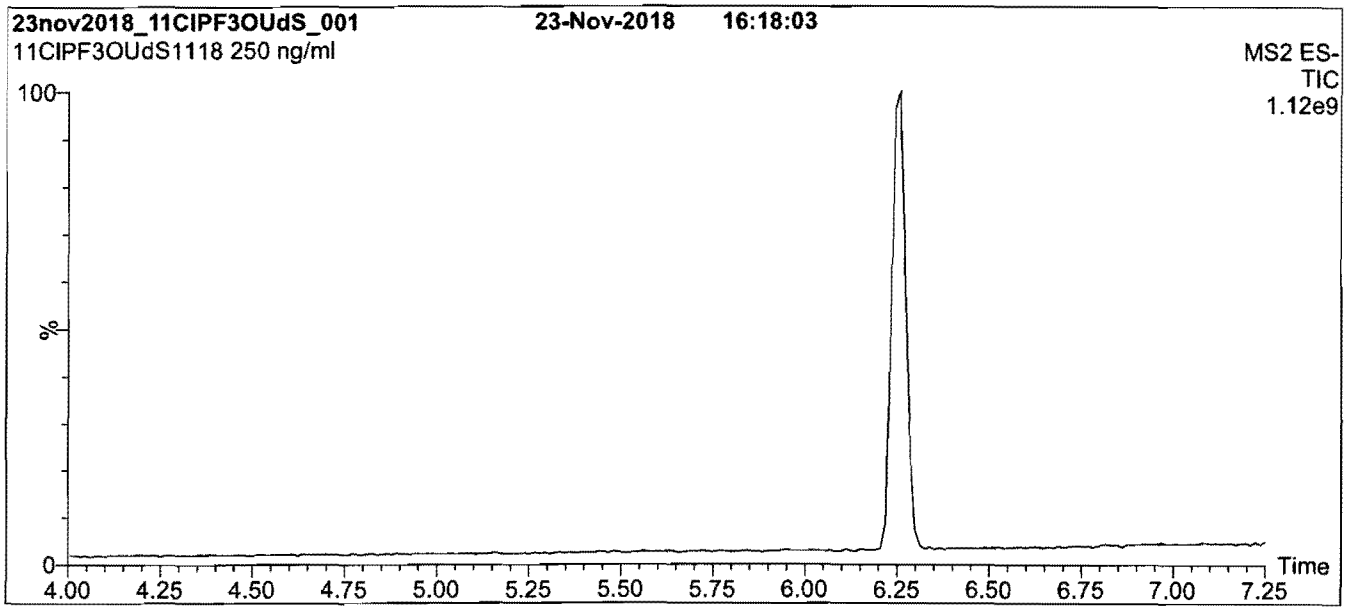
Mobile phase: Same as Figure 1

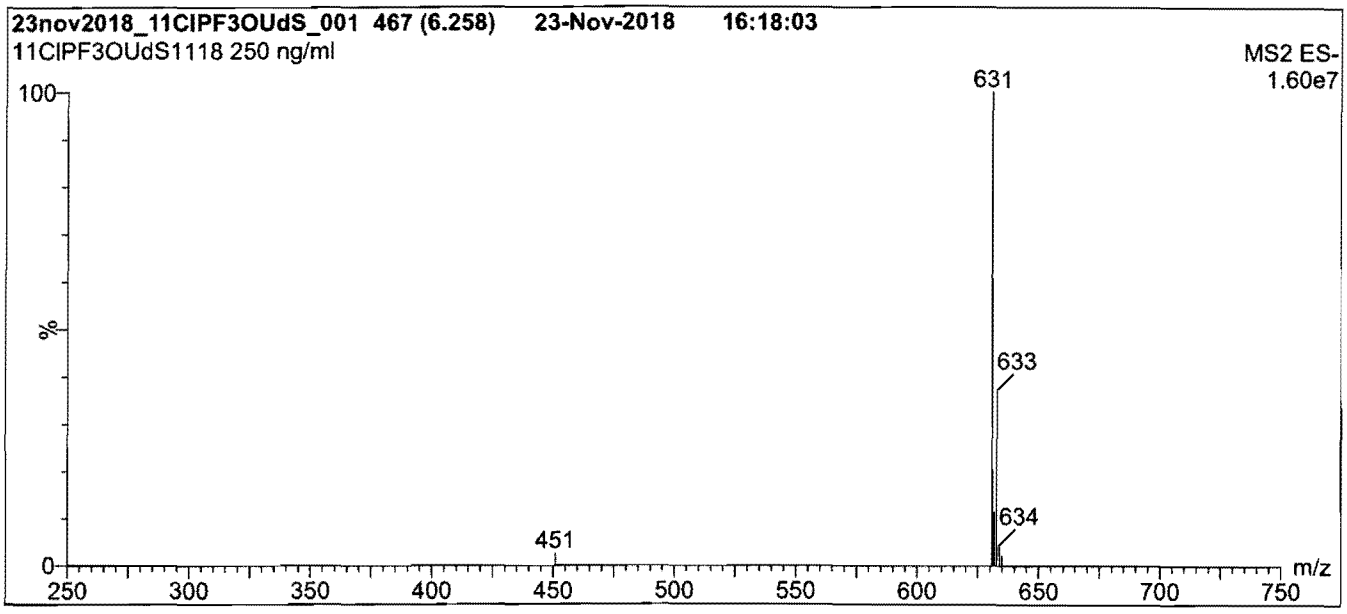
Flow: 300 µl/min

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:

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

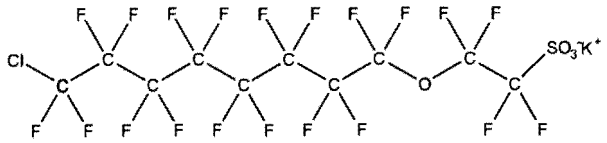
19L0667

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.

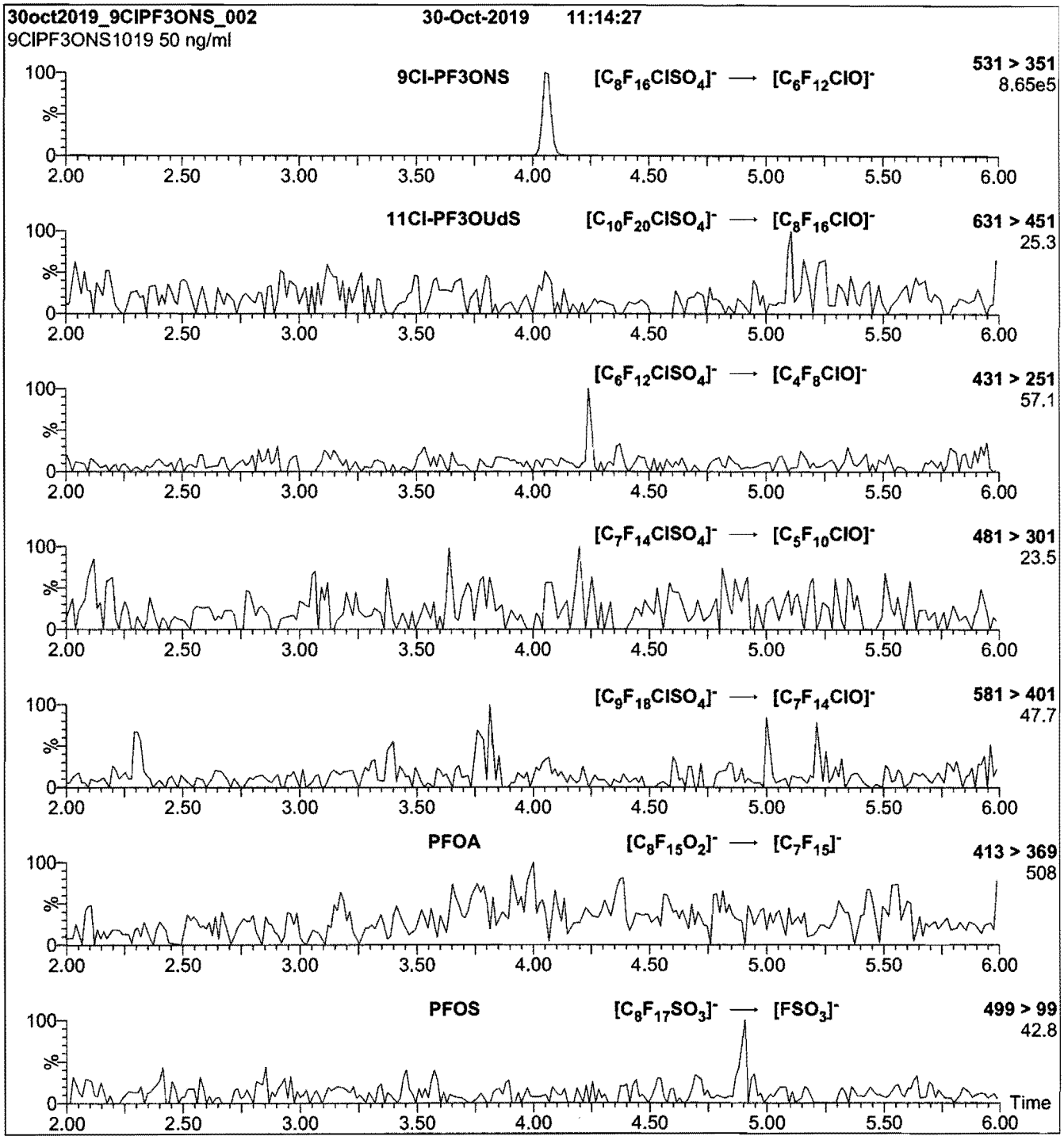
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

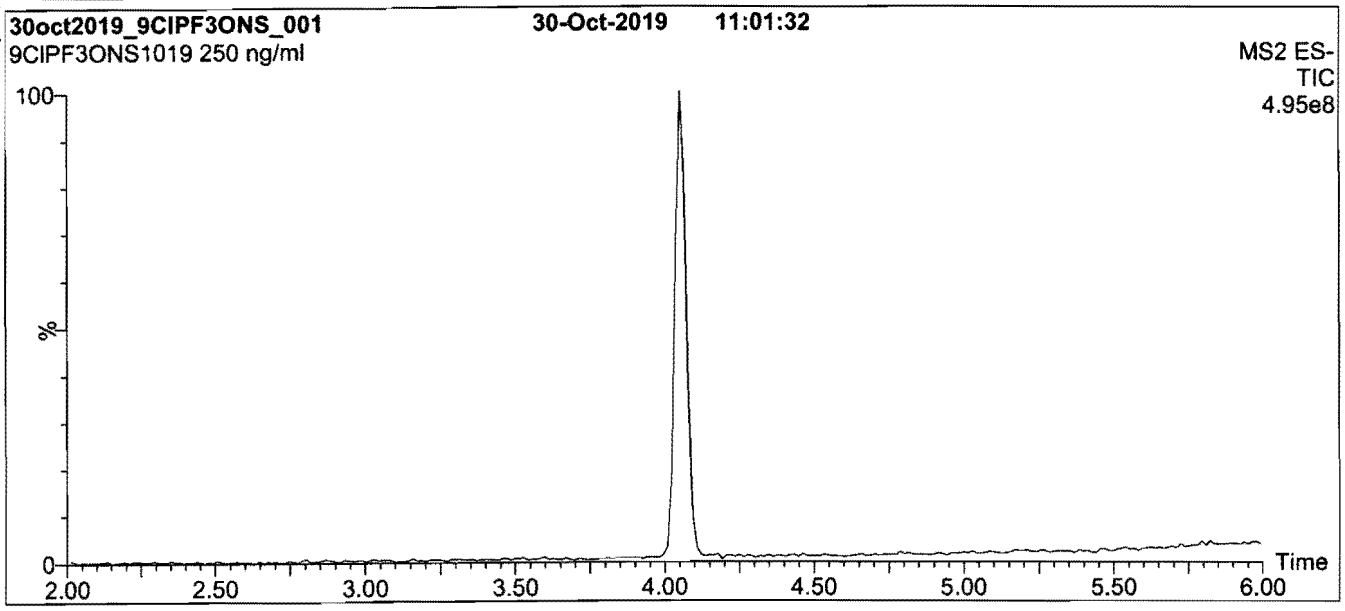
Flow: 300 µl/min

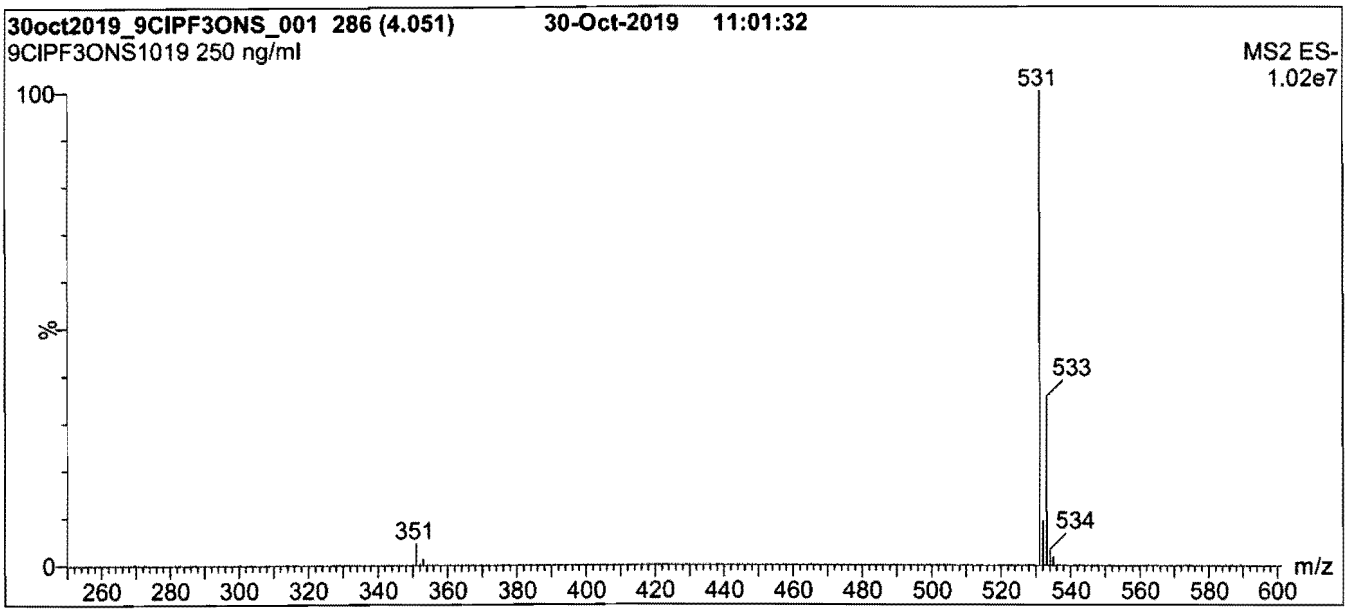
MS Parameters

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:

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

19L0668

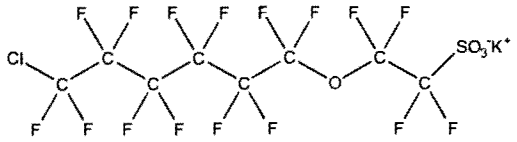
WELLINGTON LABORATORIES

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

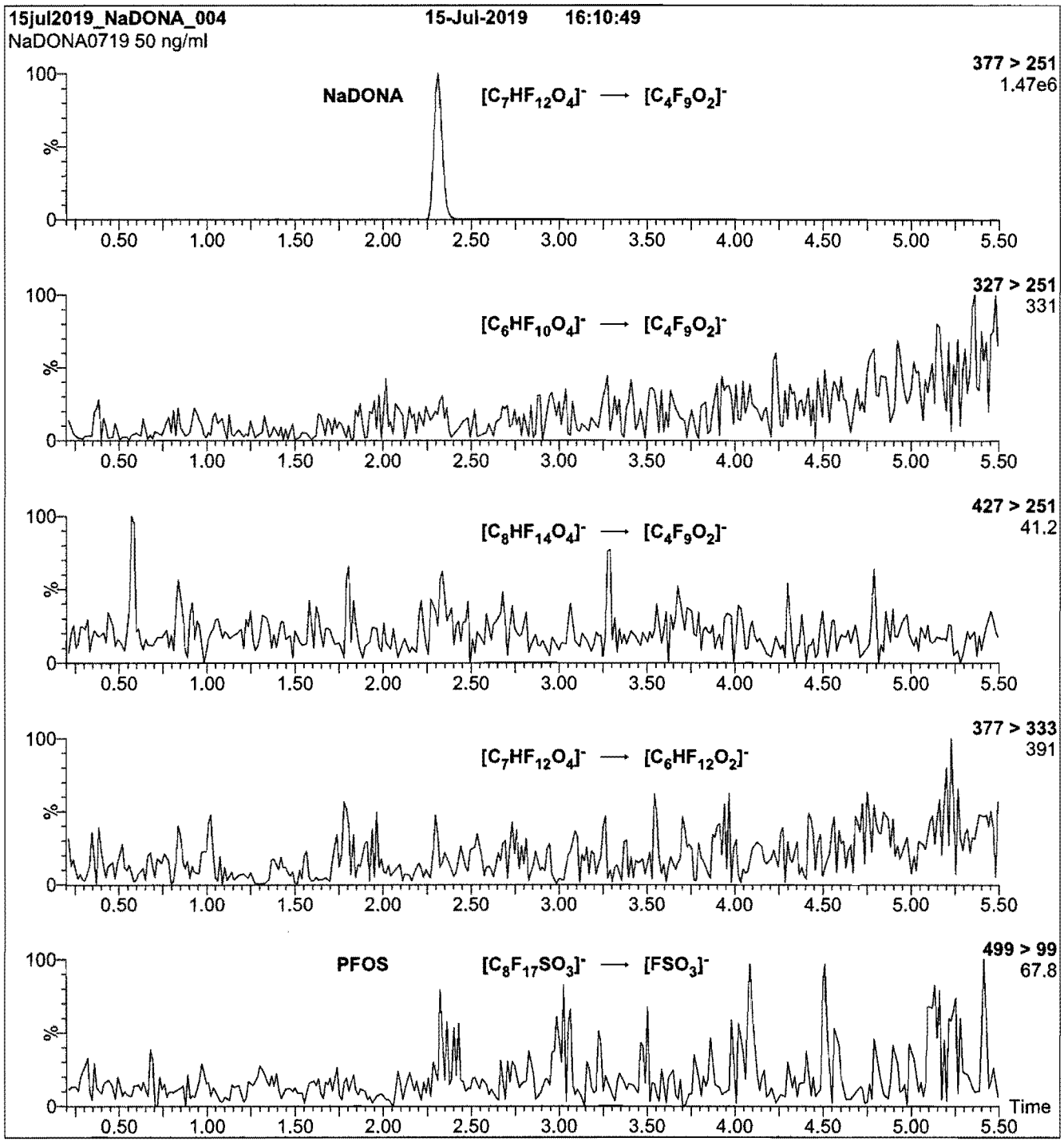
Certified By: _____ **Date:** 11/04/2019 (mm/dd/yyyy)

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

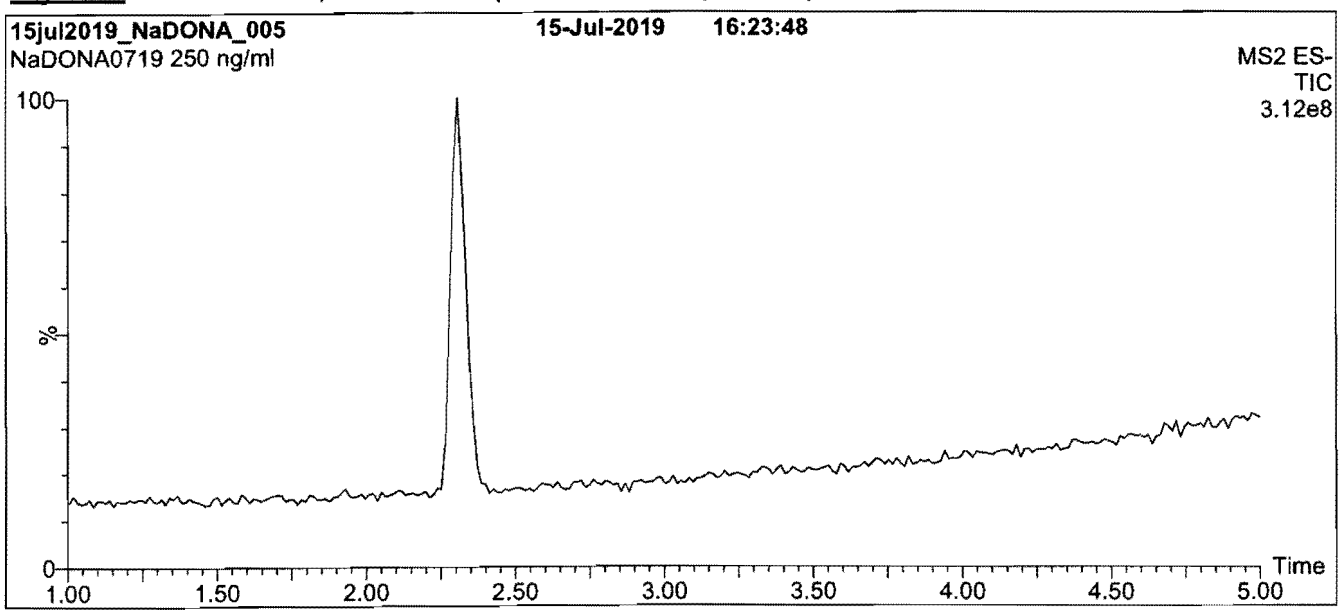
Flow: 300 µl/min

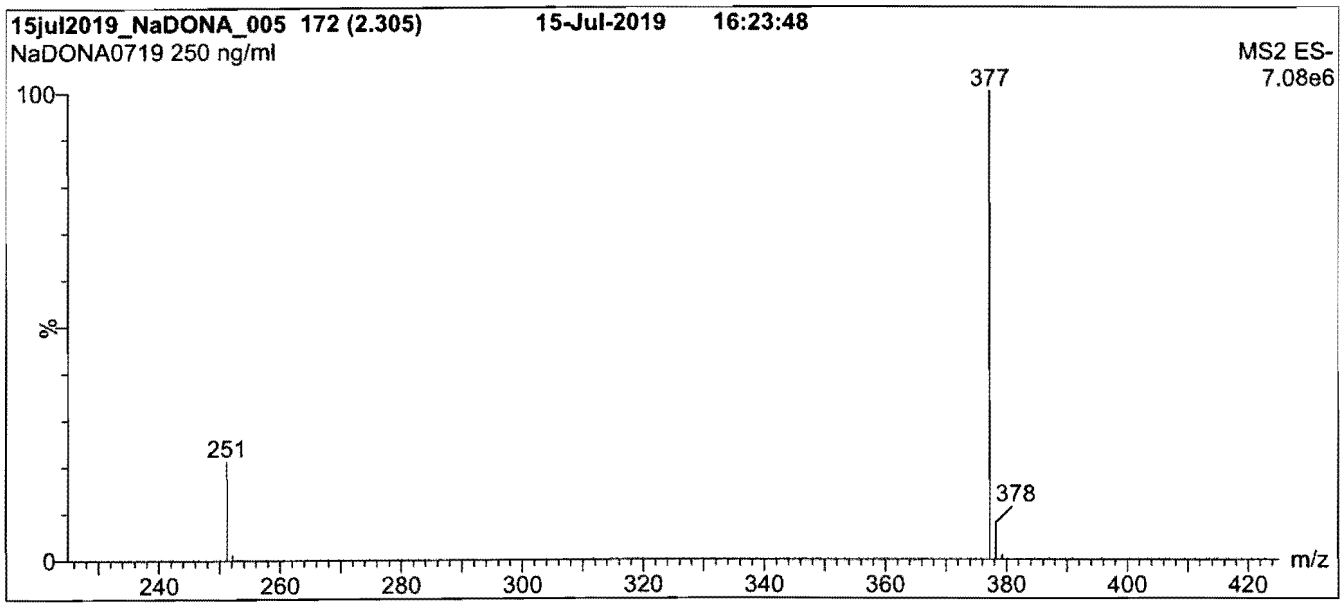
MS Parameters

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:

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

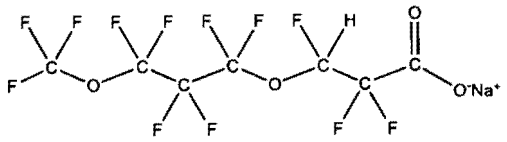
19L0669

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.

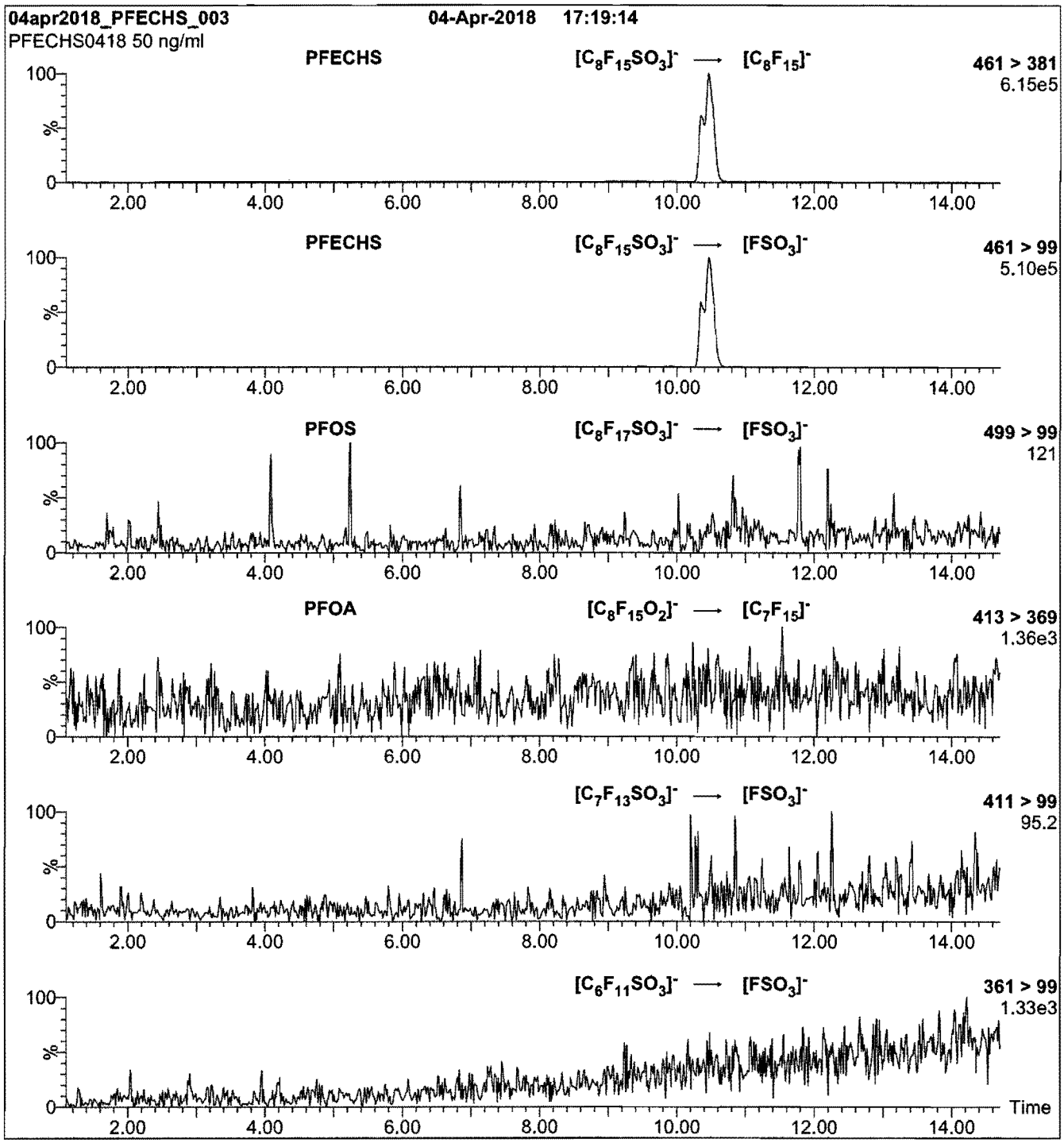
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

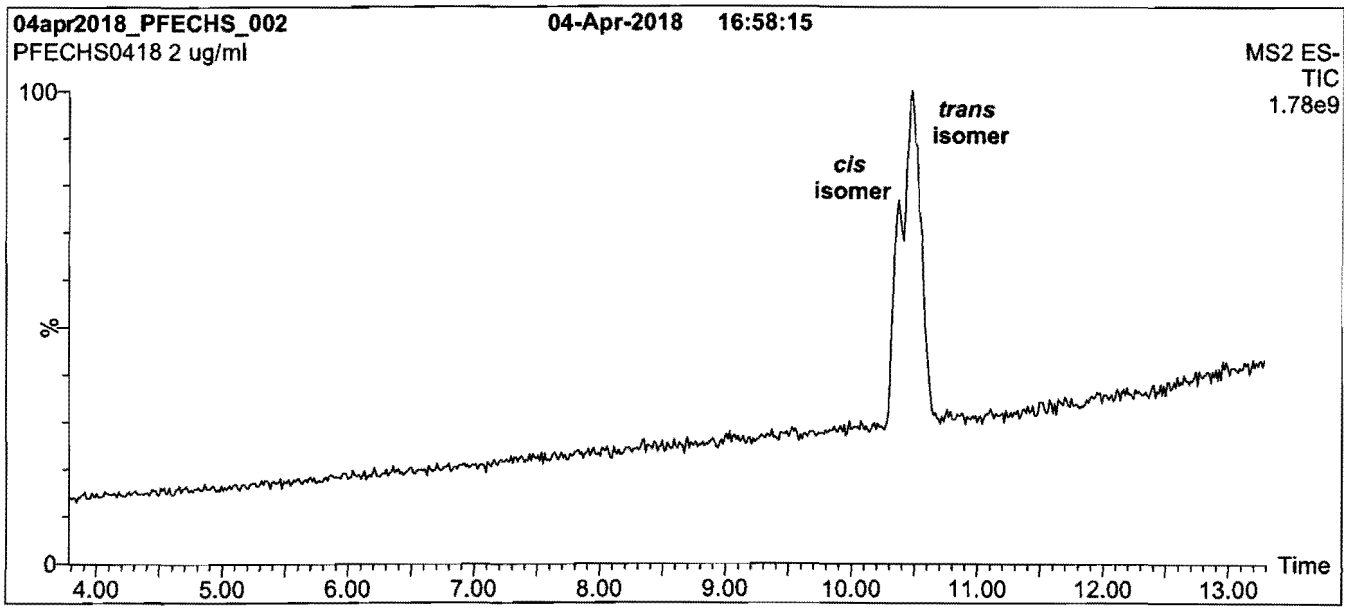
Flow: 300 µl/min

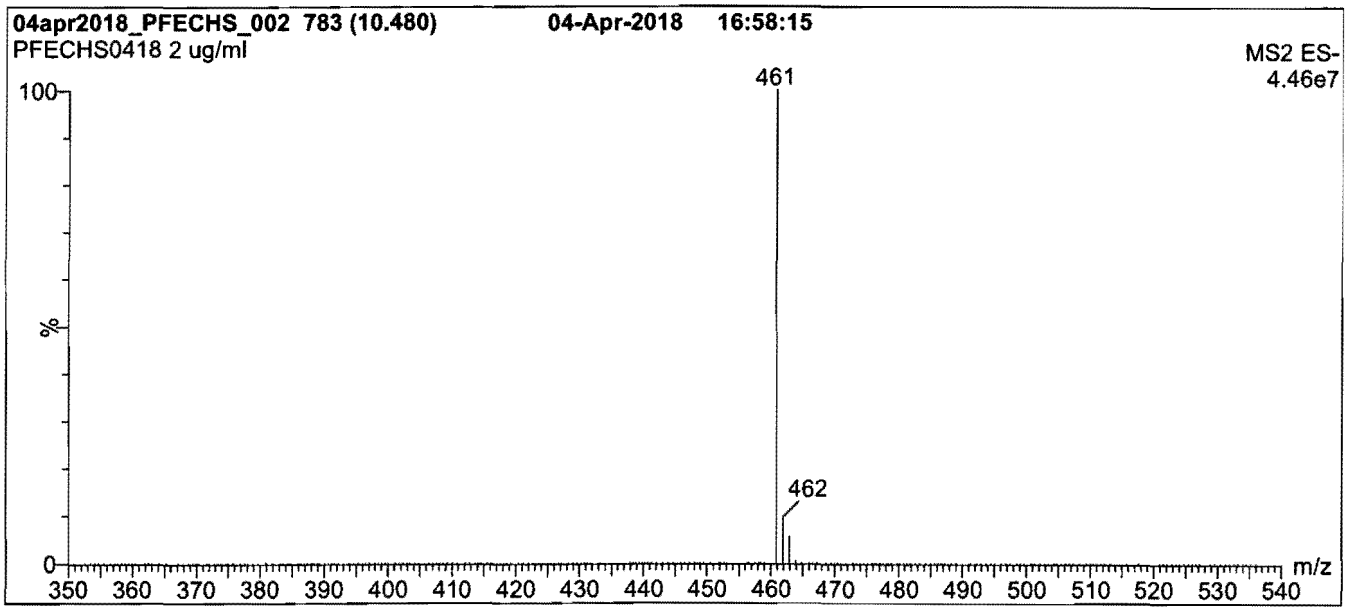
MS Parameters

Collision Gas (mbar) = 3.37e-3
Collision Energy (eV) = 24

1910670

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

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 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

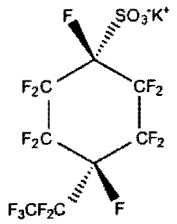
WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

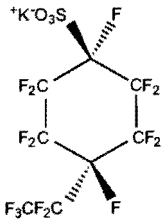
PRODUCT CODE: PFECHS **LOT NUMBER:** PFECHS0418

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.

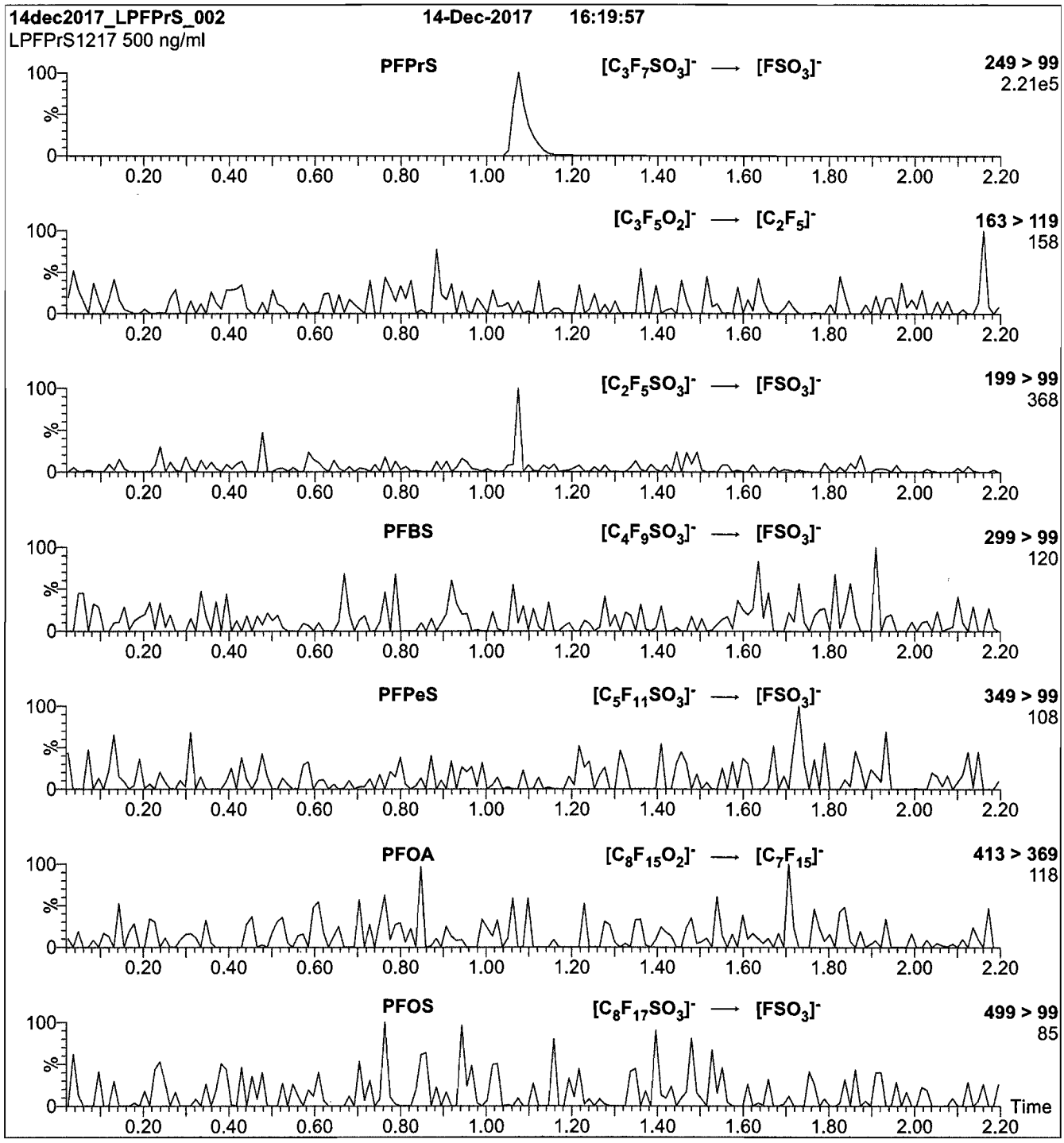
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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)

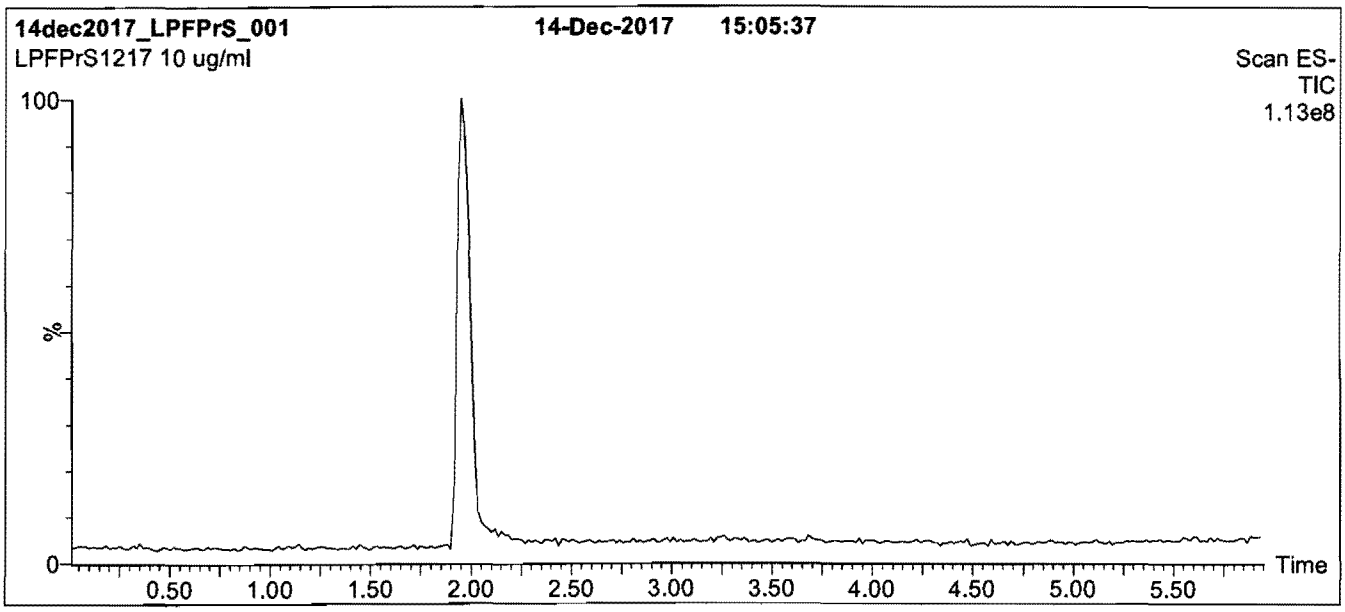
Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H_2O
(both with 10 mM NH_4OAc buffer)

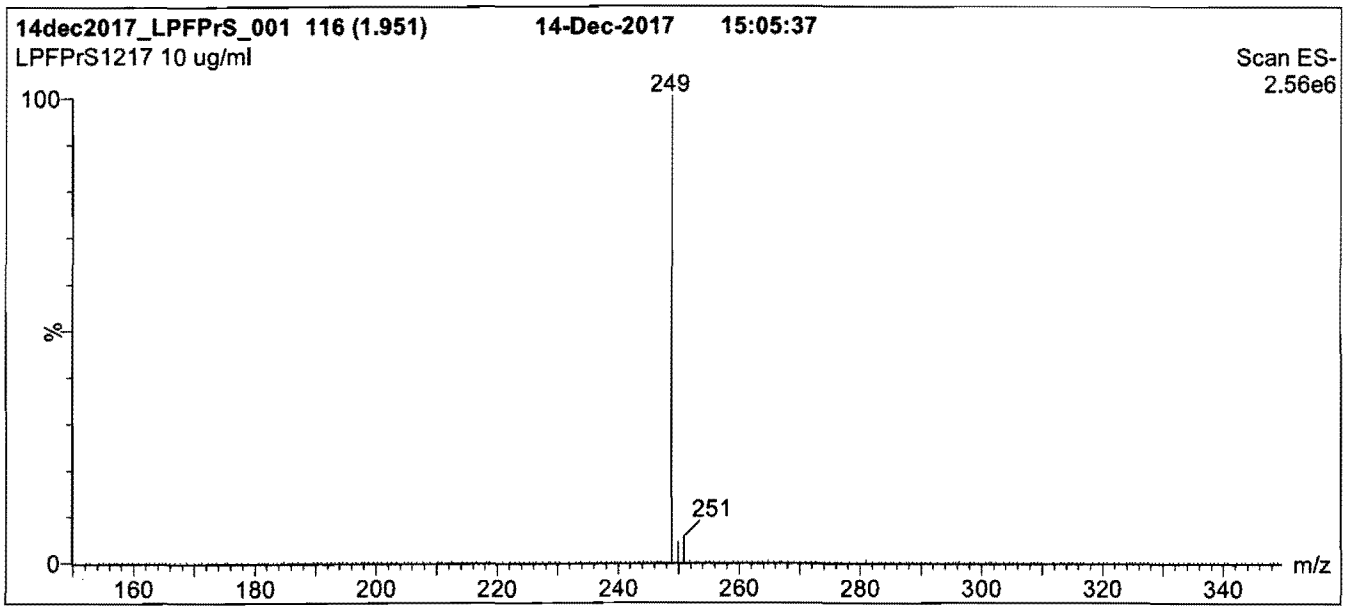
Flow: 300 µl/min

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

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

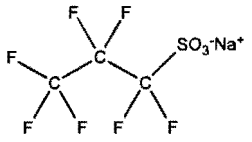
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

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

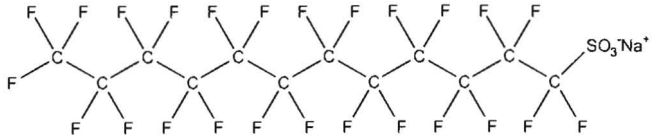
19L1707

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:

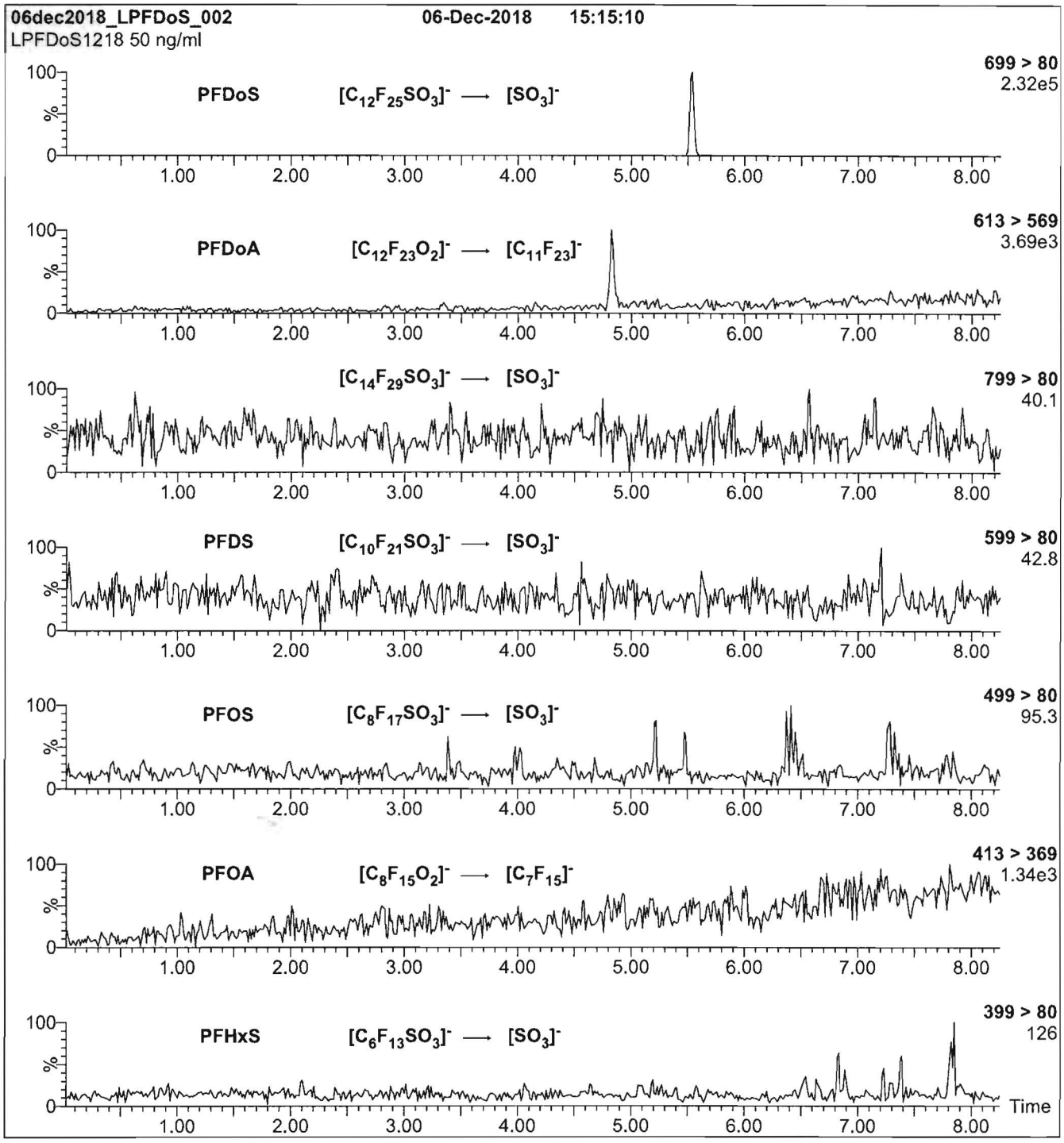
- See page 2 for further details.
- Contains ~ 0.2% of perfluoro-n-dodecanoic acid (PFDoA).

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)

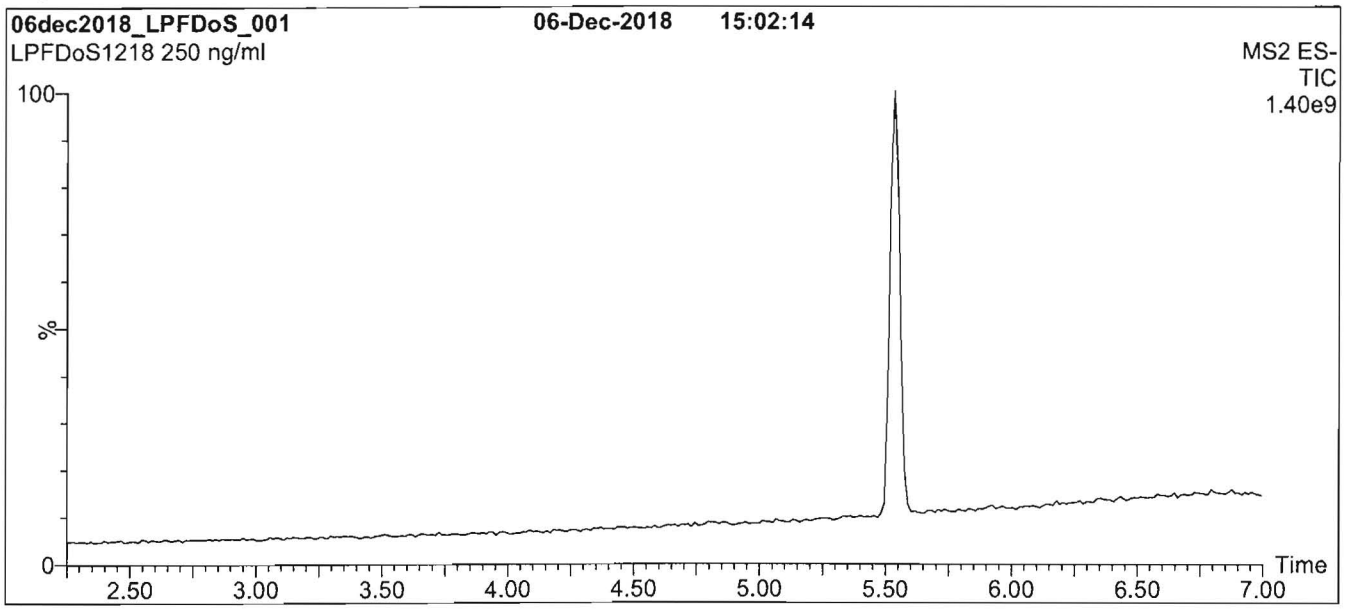
Mobile phase: Same as Figure 1

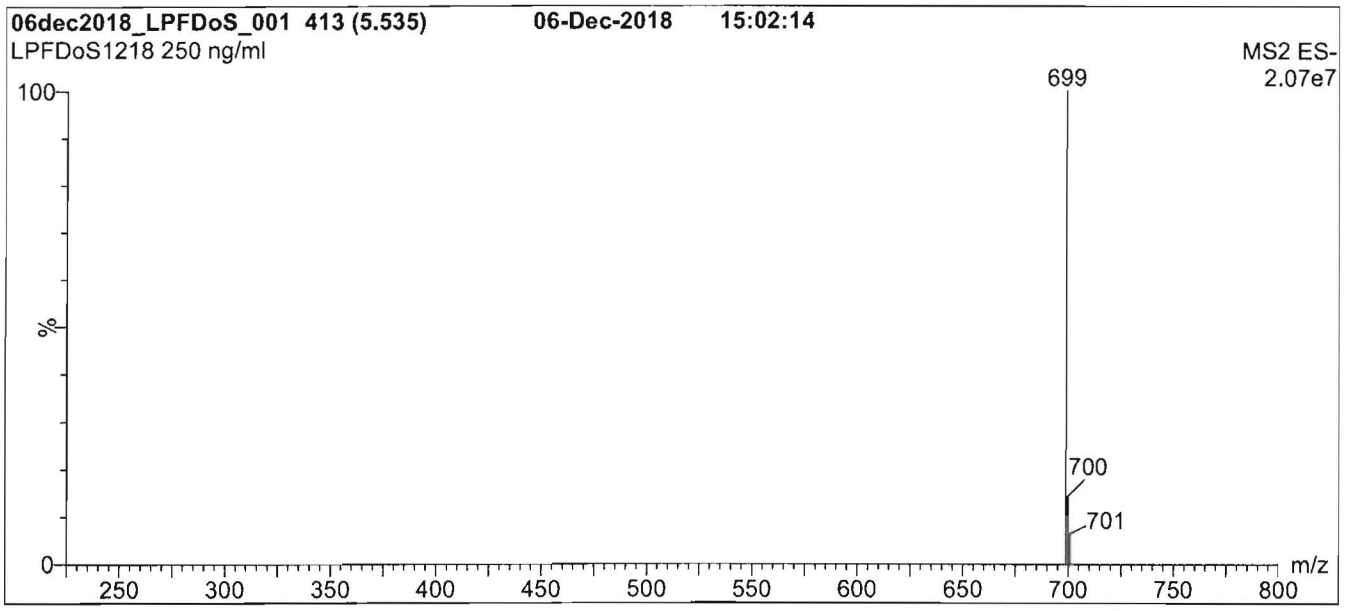
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 3.27e-3
Collision Energy (eV) = 60

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

19L1707

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

Analytical Standard Record

Vista Analytical Laboratory

20A0804

Parent Standards used in this standard:

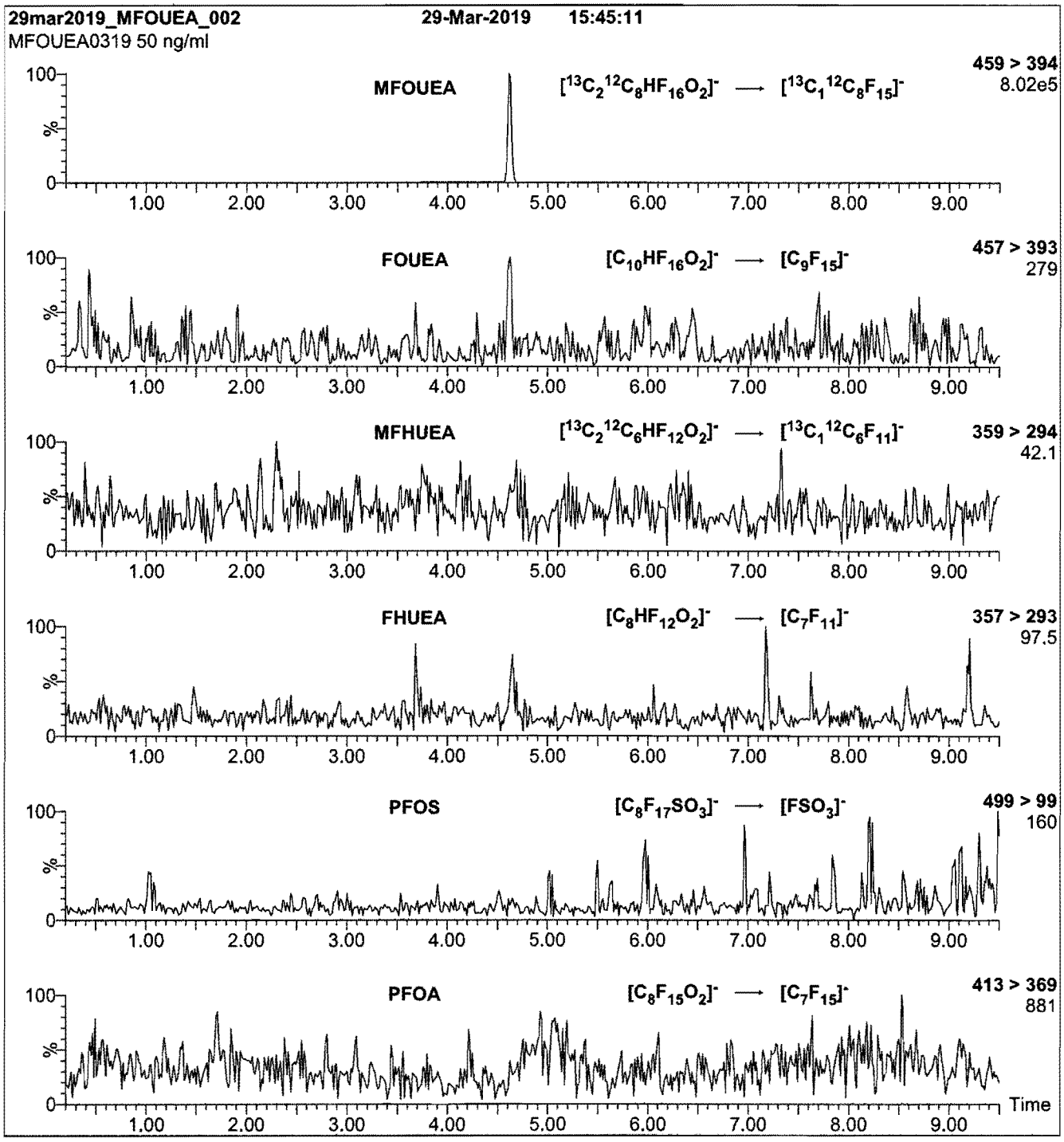
Standard	Description	Prepared	Prepared By	Expires	(mls)
19L0626	13C2-FOUEA	06-Dec-19	** Vendor **	29-Mar-21	1
19L0627	13C4-PFBA	06-Dec-19	** Vendor **	15-Nov-24	1
19L0628	13C6-PFDA	06-Dec-19	** Vendor **	25-Jul-24	1
19L0629	13C9-PFNA	06-Dec-19	** Vendor **	08-Sep-23	1
19L0630	13C7-PFUdA	06-Dec-19	** Vendor **	22-Jul-24	1
19L0631	13C5-PFHxA	06-Dec-19	** Vendor **	27-Sep-23	1
19L0632	18O2-PFHxS	06-Dec-19	** Vendor **	10-Jan-24	1.06
19L0633	13C4-PFOS	06-Dec-19	** Vendor **	01-Nov-24	1.05
19L0634	13C8-PFOA	06-Dec-19	** Vendor **	05-Mar-24	1.02

Description:	PFC-RS	Expires:	09-Jan-21
Standard Type:	Reagent	Prepared:	08-Jan-20
Solvent:	MeOH	Prepared By:	Brittany M. Lamb
Final Volume (mls):	40	Department:	LCMS
Vials:	1	Last Edit:	08-Jan-20 12:43 by BML

10 uL spike

Analyte	CAS Number	Concentration	Units
18O2-PFHxS		1.25	ug/mL
13C9-PFNA		1.25	ug/mL
13C8-PFOA		1.25	ug/mL
13C7-PFUnA		1.25	ug/mL
13C6-PFDA		1.25	ug/mL
13C5-PFHxA		1.25	ug/mL
13C4-PFOS		1.25	ug/mL
13C4-PFBA		1.25	ug/mL
13C2-FOUEA		1.25	ug/mL

Figure 2: **MFOUEA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MFOUEA)

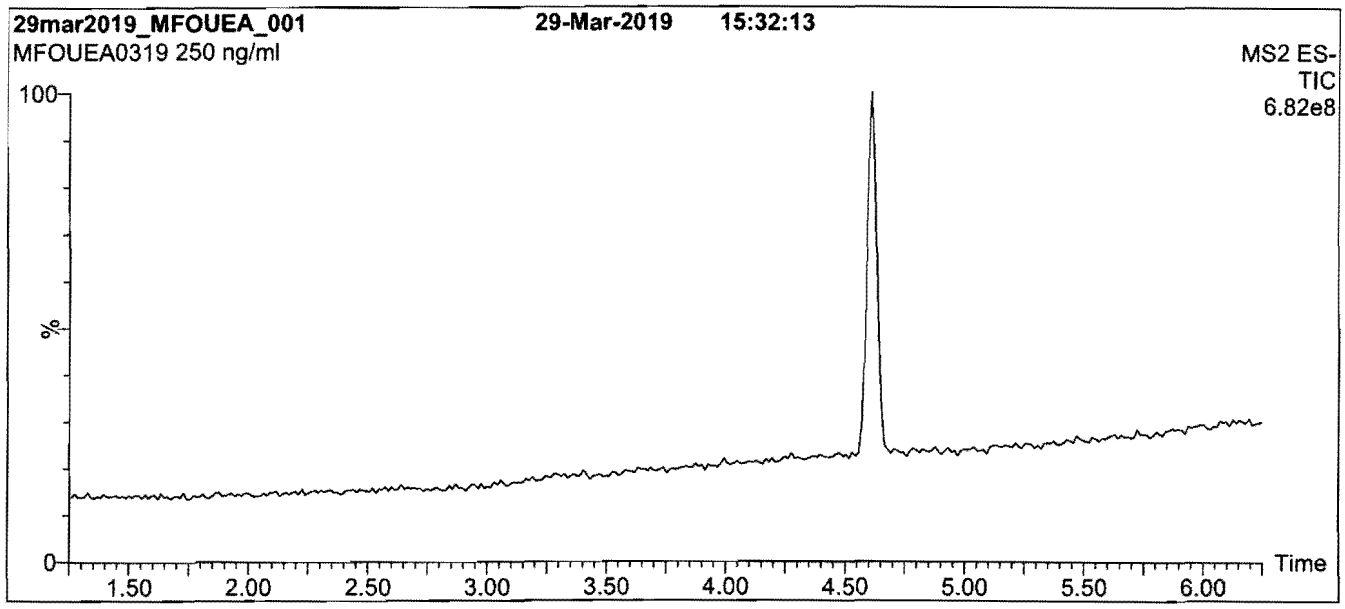
Mobile phase: Same as Figure 1

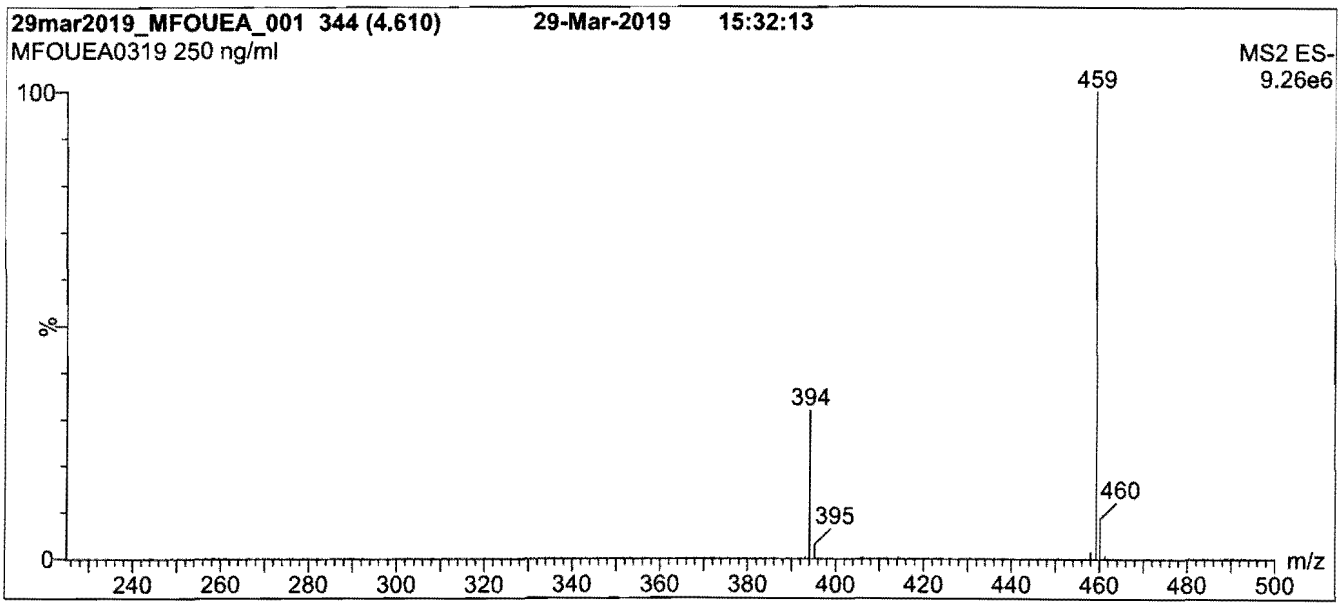
Flow: 300 µl/min

MS Parameters

Collision Gas (mbar) = 2.84e-3
Collision Energy (eV) = 10

Figure 1: **MFOUEA; 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) = 0.70
Cone Voltage (V) = 28.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0626

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

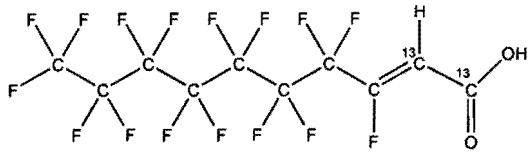
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0626

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MFOUEA	**LOT NUMBER:**	MFOUEA0319
COMPOUND:	2H-Perfluoro-[1,2-$^{13}C_2$]-2-decenoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_2{}^{12}C_8H_2F_{16}O_2$	**MOLECULAR WEIGHT:**	460.08
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Anhydrous Isopropanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2\text{-}^{13}C_2$)
LAST TESTED: (mm/dd/yyyy)	03/29/2019		
EXPIRY DATE: (mm/dd/yyyy)	03/29/2021		
RECOMMENDED STORAGE:	Refrigerate ampoule		

DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

ADDITIONAL INFORMATION:

- See page 2 for further details.
- Dilution of this standard in methanol may lead to the formation of 2H-3-methoxy-perfluoro-[1,2-$^{13}C_2$]-2-decenoic acid. This reaction can be catalyzed by the presence of acid or base. All dilutions should be routinely checked for degradation.

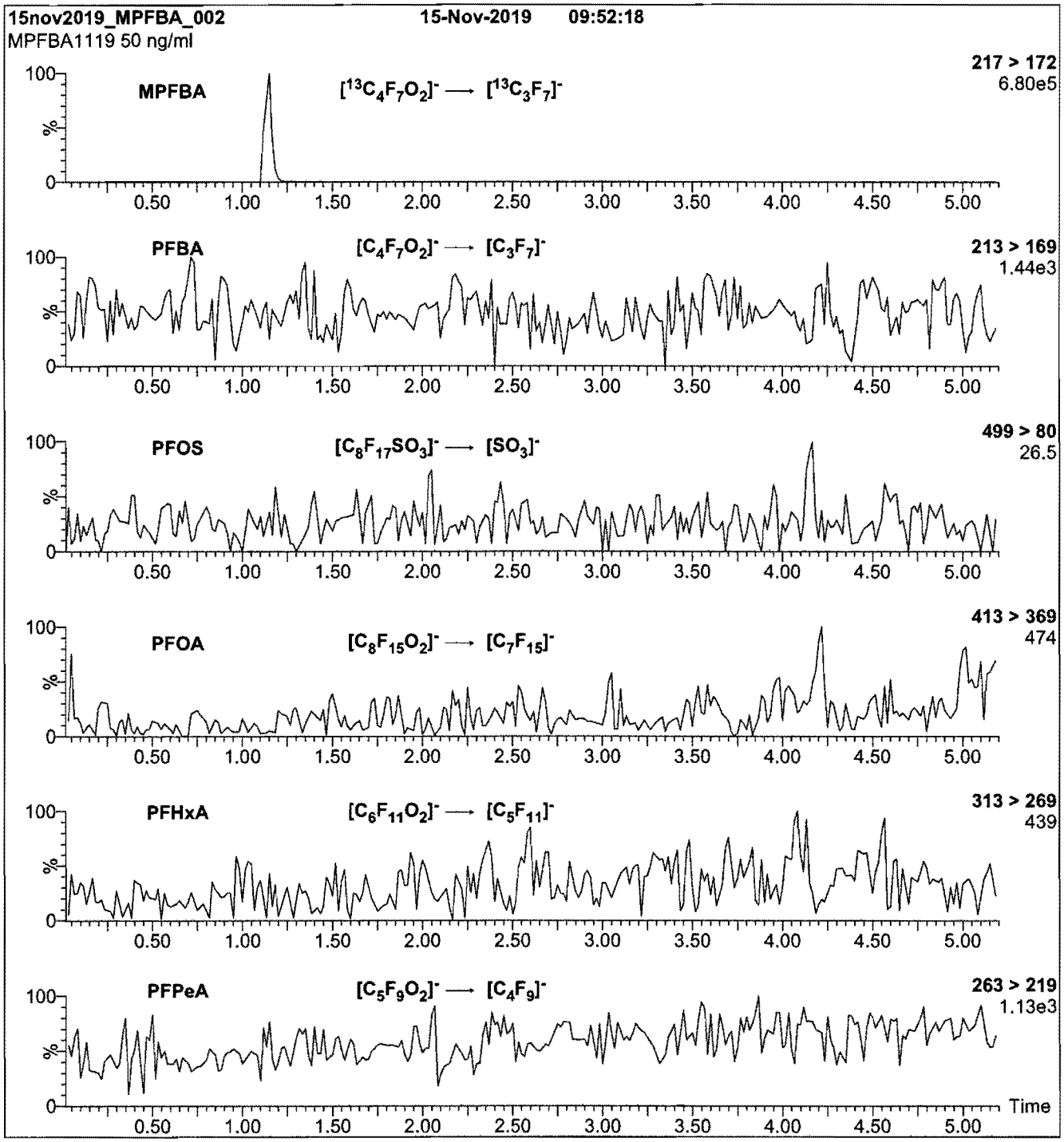
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 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

19L0627

Figure 2: **MPFBA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFBA)

Mobile phase: Same as Figure 1

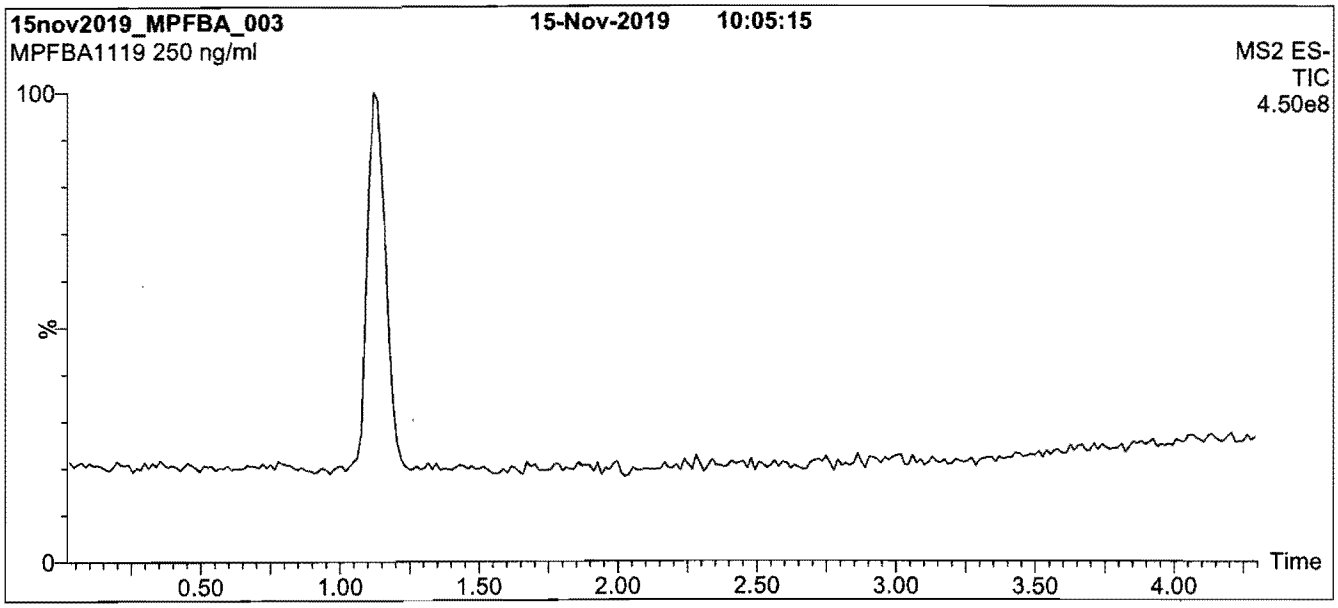
Flow: 300 µl/min

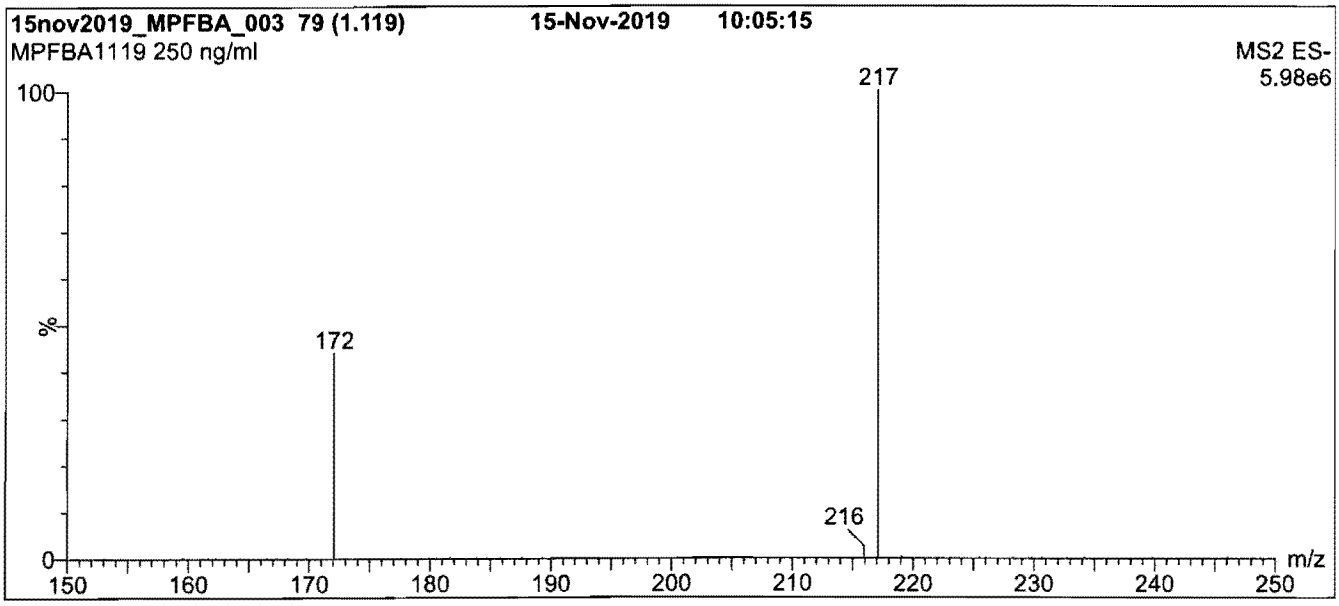
MS Parameters

Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 8

19L0627

Figure 1: **MPFBA; 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) = 2.00
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0627

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

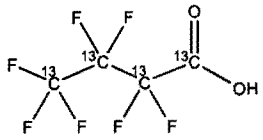
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0627

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFBA	**LOT NUMBER:**	MPFBA1119
COMPOUND:	Perfluoro-n-[1,2,3,4-$^{13}C_4$]butanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_4HF_7O_2$	**MOLECULAR WEIGHT:**	218.01
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C (1,2,3,4-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	11/15/2019		
EXPIRY DATE: (mm/dd/yyyy)	11/15/2024		
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 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

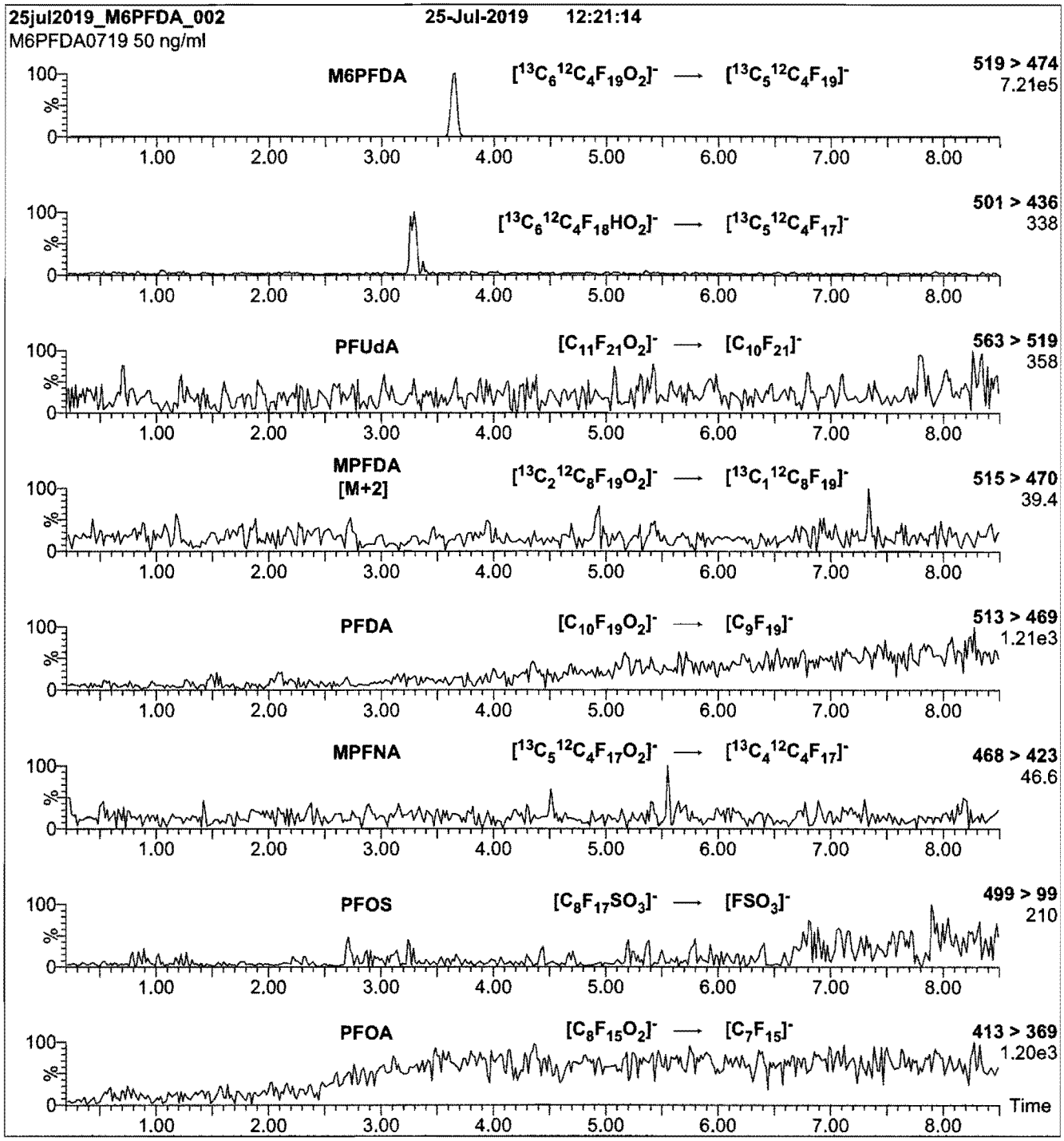
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 11/15/2019 (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

19L0628

Figure 2: **M6PFDA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M6PFDA)

Mobile phase: Same as Figure 1

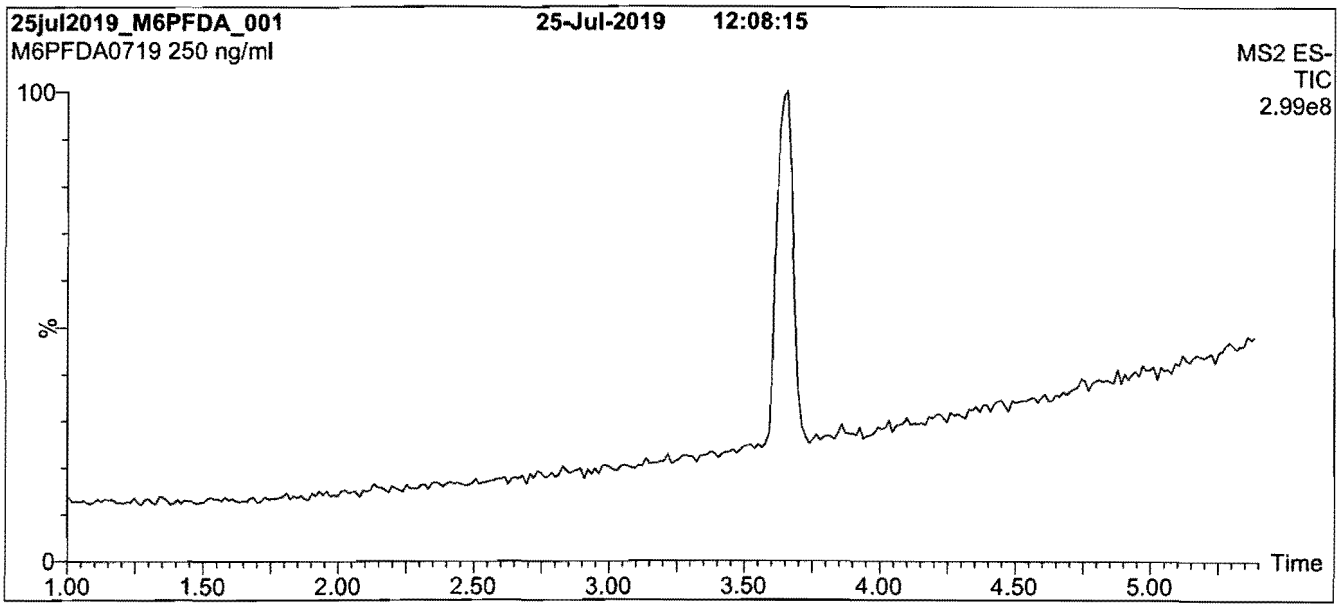
Flow: 300 µl/min

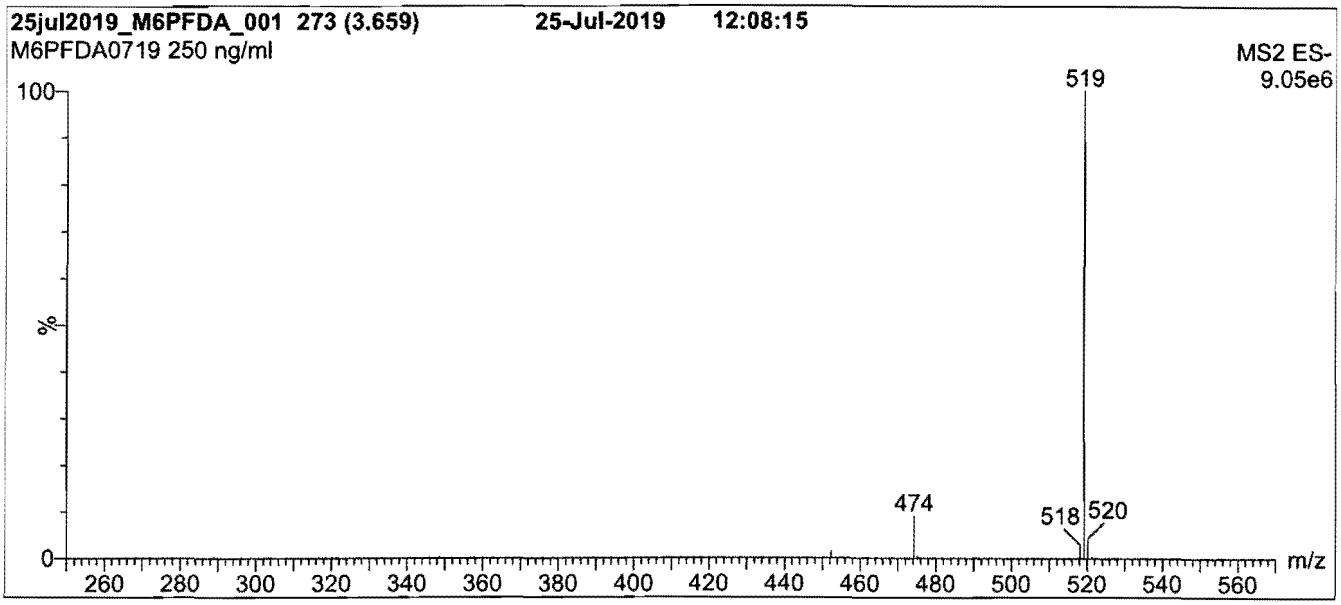
MS Parameters

Collision Gas (mbar) = 3.33e-3
Collision Energy (eV) = 10

19L0628

Figure 1: **M6PFDA; 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0628

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

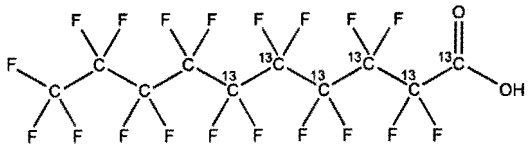
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0628

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M6PFDA	**LOT NUMBER:**	M6PFDA0719
COMPOUND:	Perfluoro-n-[1,2,3,4,5,6-$^{13}C_6$]decanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_6{}^{12}C_4HF_{19}O_2$	**MOLECULAR WEIGHT:**	520.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4,5,6$-$^{13}C_6$)
LAST TESTED: (mm/dd/yyyy)	07/25/2019		
EXPIRY DATE: (mm/dd/yyyy)	07/25/2024		
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.

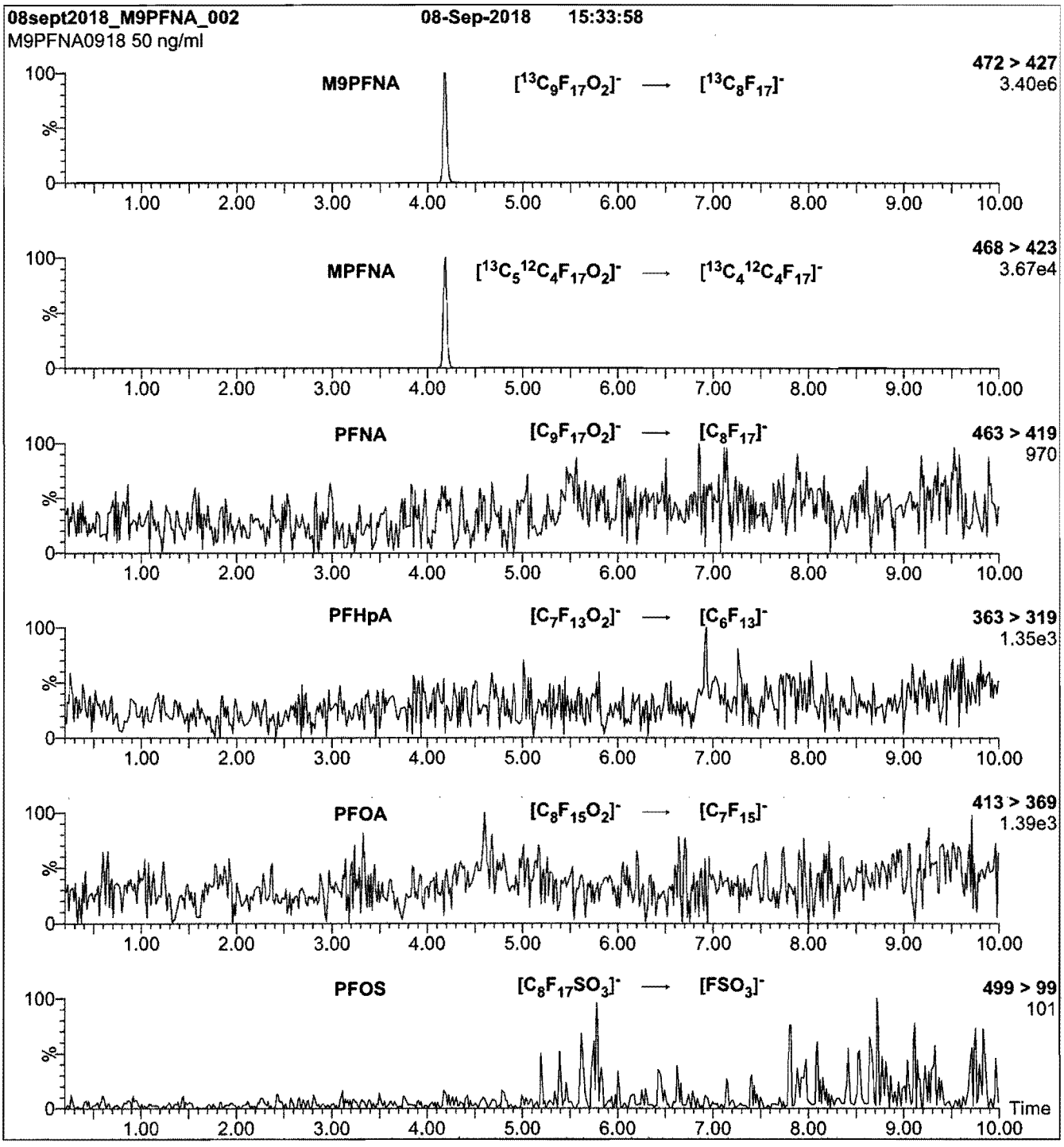
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 07/26/2019 (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

19L0629

Figure 2: **M9PFNA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M9PFNA)

Mobile phase: Same as Figure 1

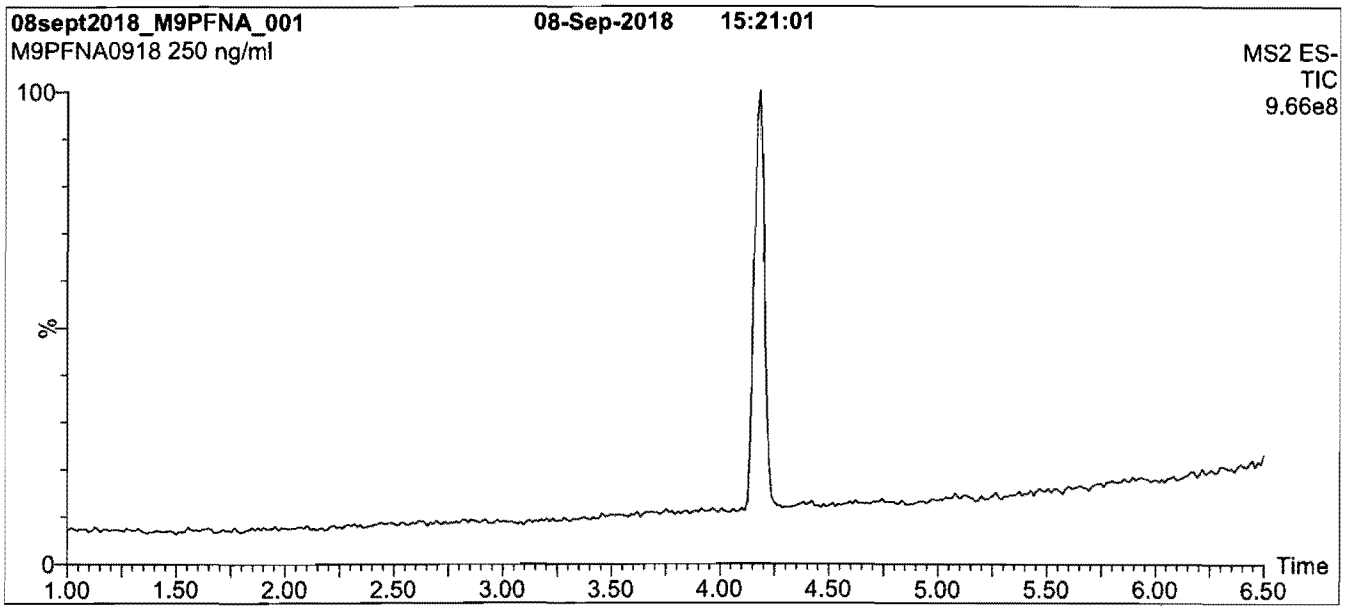
Flow: 300 µl/min

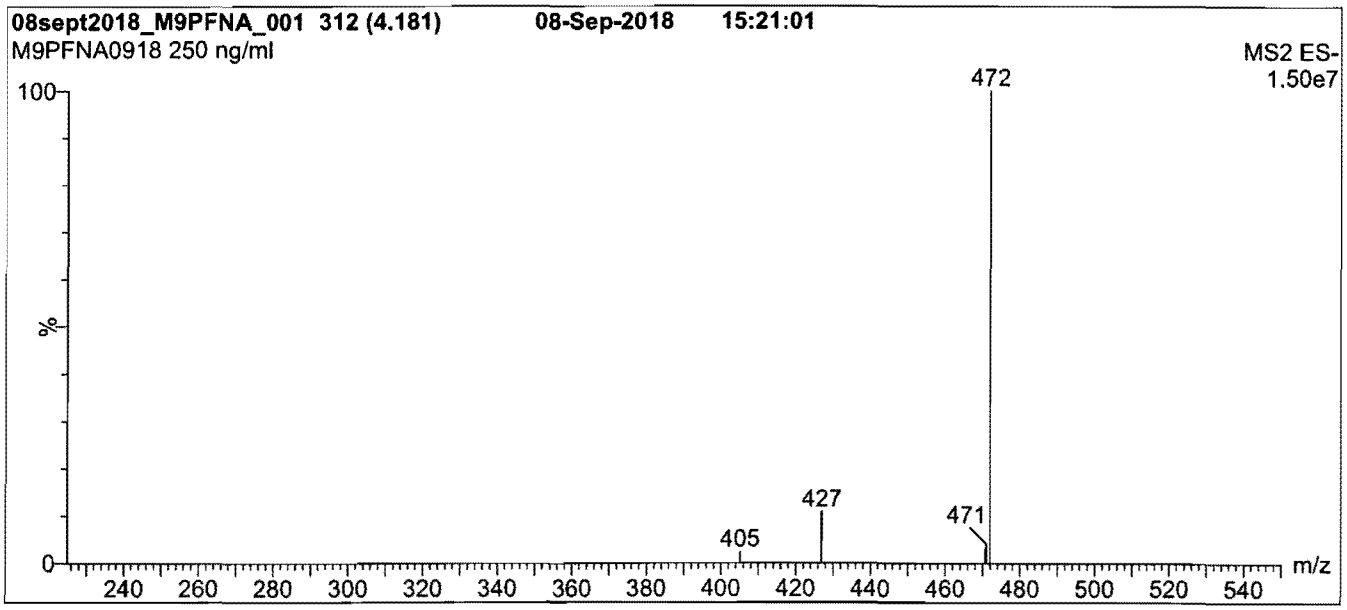
MS Parameters

Collision Gas (mbar) = 2.95e-3
Collision Energy (eV) = 10

19L0629

Figure 1: **M9PFNA; 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

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

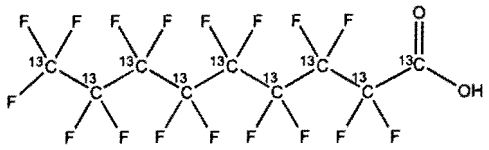
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0629

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS DOCUMENTATION

PRODUCT CODE:	M9PFNA	**LOT NUMBER:**	M9PFNA0918
COMPOUND:	Perfluoro-n-[$^{13}C_9$]nonanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_9HF_{17}O_2$	**MOLECULAR WEIGHT:**	473.01
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_9$)
LAST TESTED: (mm/dd/yyyy)	09/08/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/08/2023		
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 ~ 1.0% of $^{13}C_5{}^{12}C_4HF_{17}O_2$ (MPFNA).

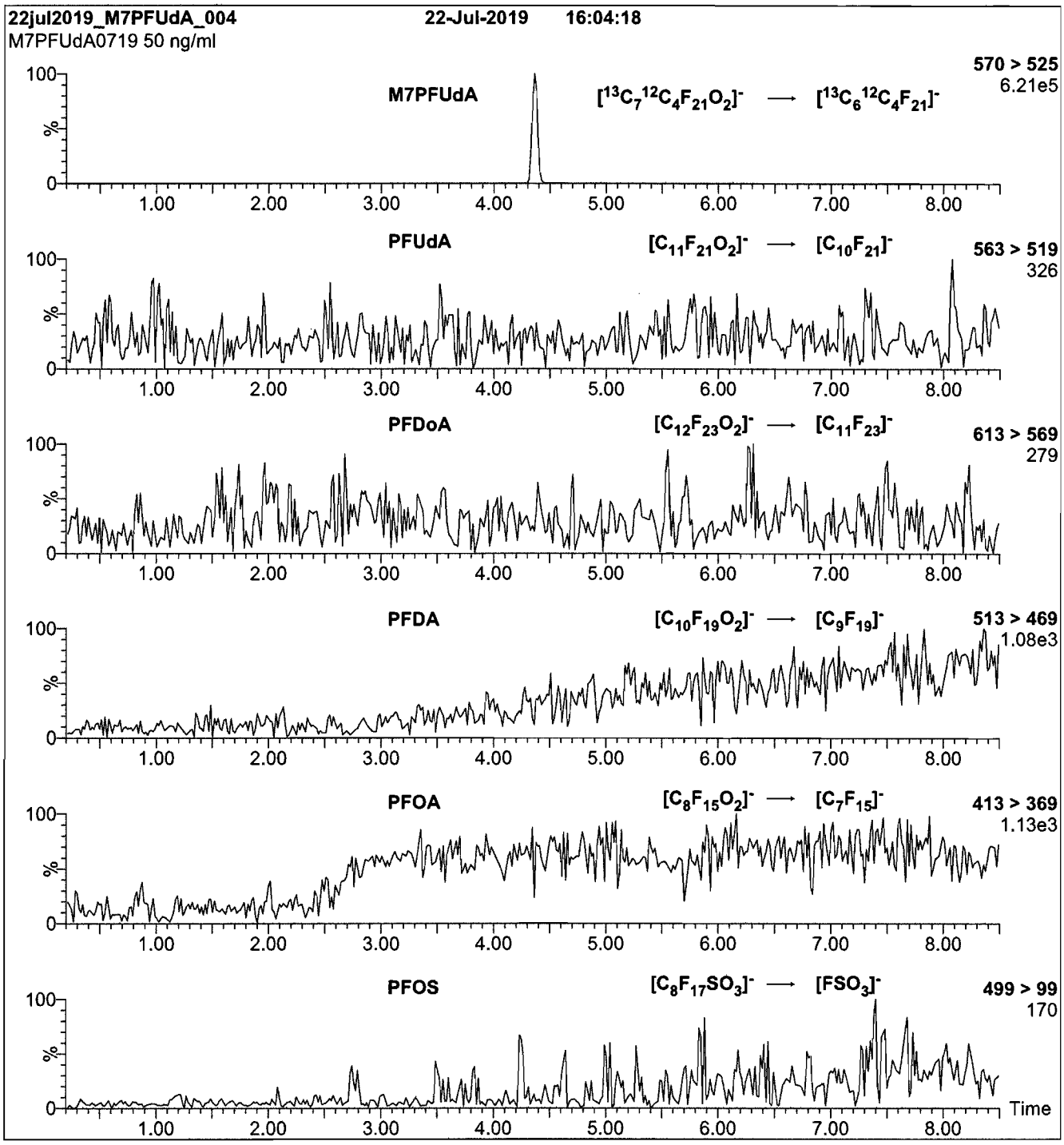
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/19/2018 (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

19L0630

Figure 2: **M7PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M7PFUdA)

Mobile phase: Same as Figure 1

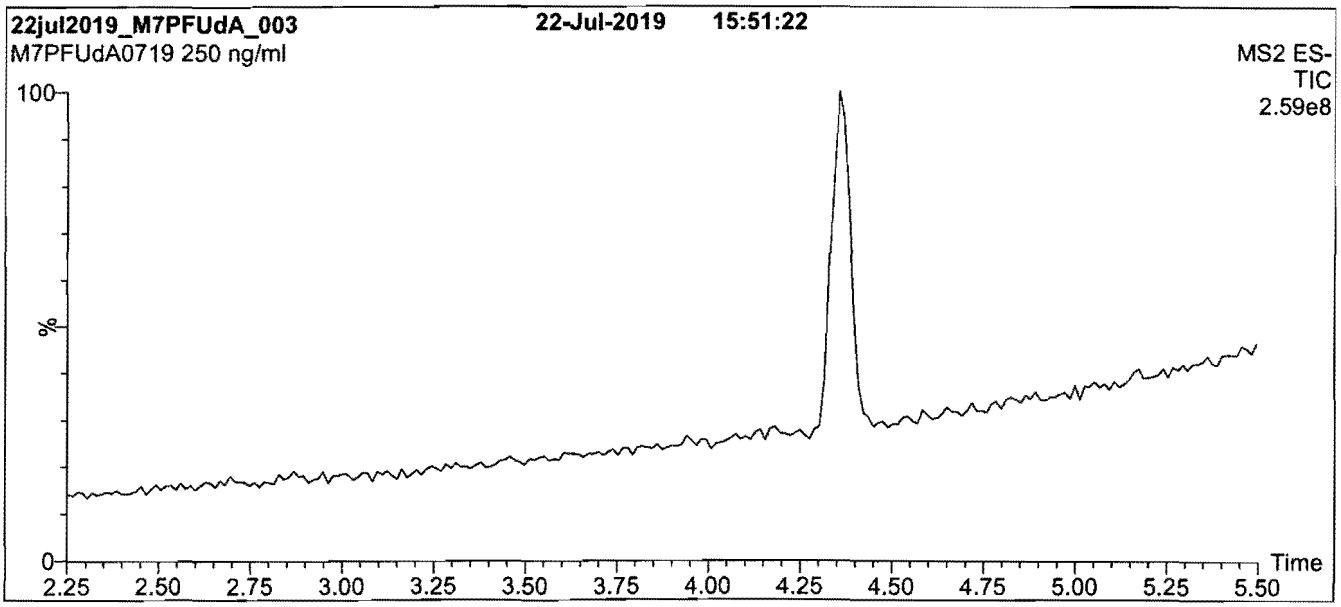
Flow: 300 µl/min

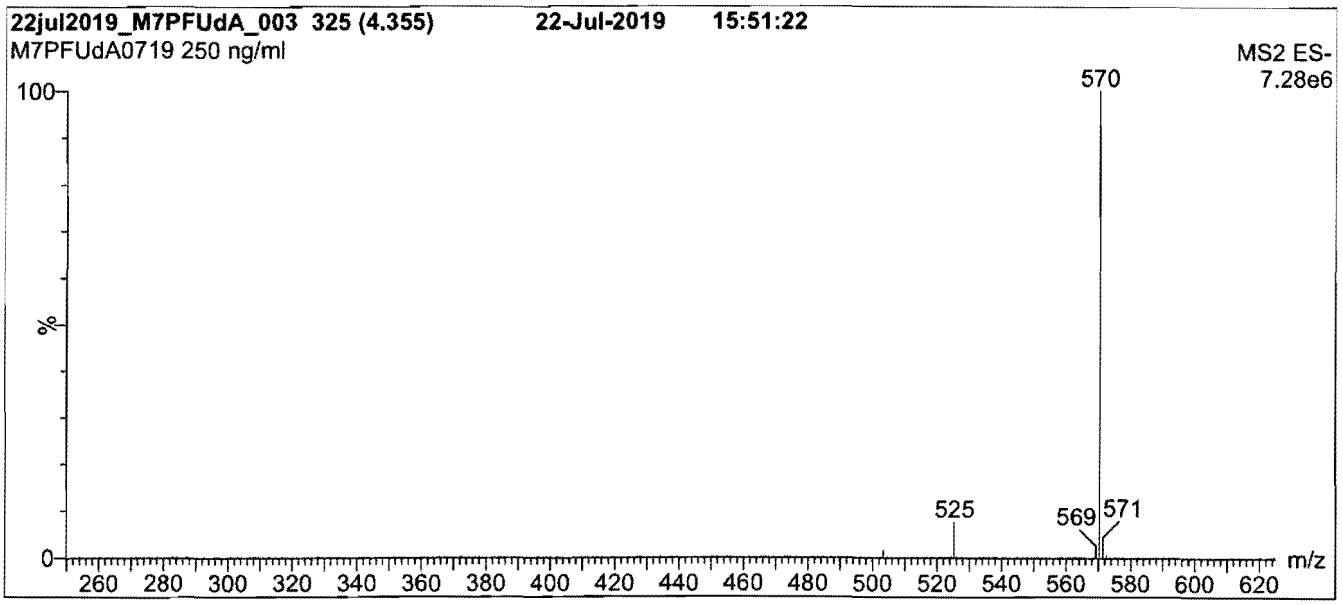
MS Parameters

Collision Gas (mbar) = 3.41e-3
Collision Energy (eV) = 12

19L0630

Figure 1: **M7PFUdA; 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) = 2.50
Cone Voltage (V) = 10.00
Desolvation Temperature (°C) = 500
Desolvation Gas Flow (l/hr) = 1000

19L0630

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

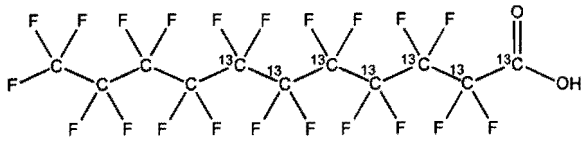
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0630

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M7PFUdA	**LOT NUMBER:**	M7PFUdA0719
COMPOUND:	Perfluoro-n-[1,2,3,4,5,6,7-$^{13}C_7$]undecanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_7{}^{12}C_4HF_{21}O_2$	**MOLECULAR WEIGHT:**	571.04
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C
LAST TESTED: (mm/dd/yyyy)	07/22/2019		(1,2,3,4,5,6,7-$^{13}C_7$)
EXPIRY DATE: (mm/dd/yyyy)	07/22/2024		
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.

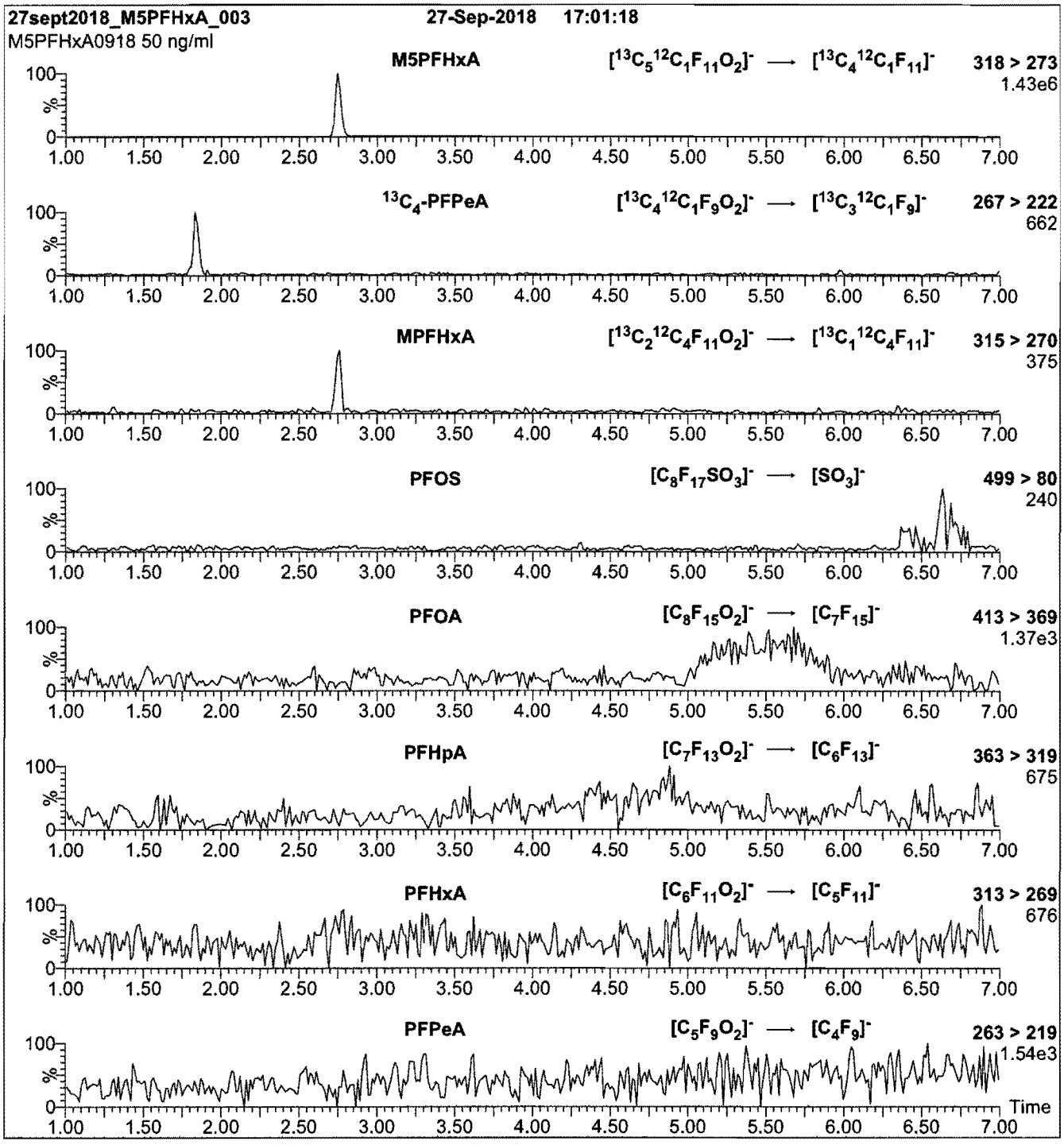
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 09/12/2019 (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

19L0631

Figure 2: **M5PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M5PFHxA)

Mobile phase: Same as Figure 1

Flow: 300 µl/min

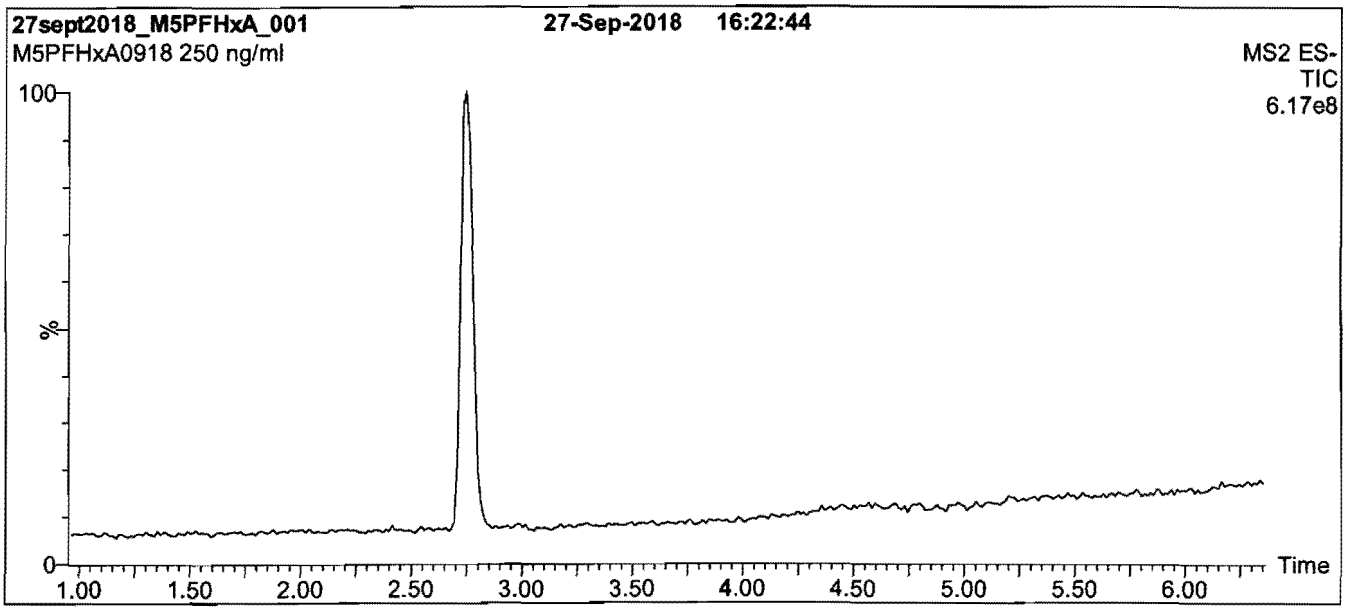
MS Parameters

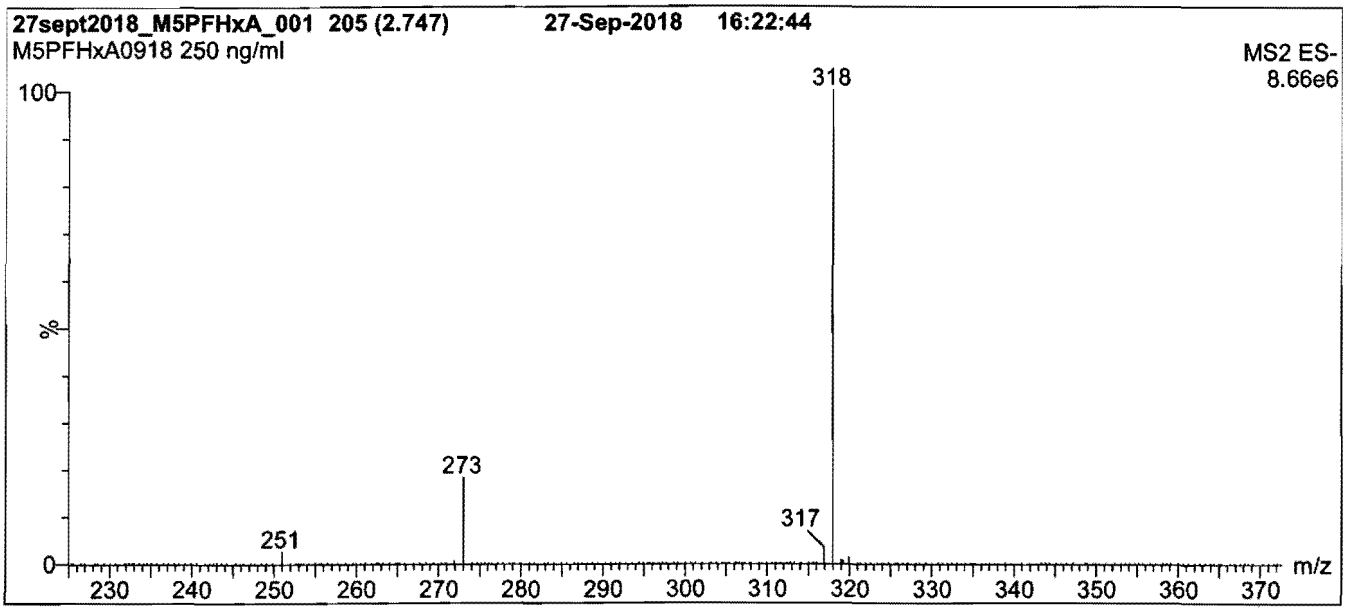
Collision Gas (mbar) = 2.97e-3
Collision Energy (eV) = 8

Form#:27, Issued 2004-11-10
Revision#:6, Revised 2018-08-14

19L0631

Figure 1: **M5PFHxA; 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 (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

19L0631

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

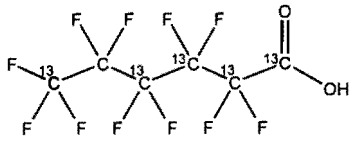
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0631

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M5PFHxA	**LOT NUMBER:**	M5PFHxA0918
COMPOUND:	Perfluoro-n-[1,2,3,4,6-$^{13}C_5$]hexanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_5{}^{12}C_1HF_{11}O_2$	**MOLECULAR WEIGHT:**	319.02
CONCENTRATION:	50 ± 2.5 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4,6\text{-}^{13}C_5$)
LAST TESTED: (mm/dd/yyyy)	09/27/2018		
EXPIRY DATE: (mm/dd/yyyy)	09/27/2023		
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:

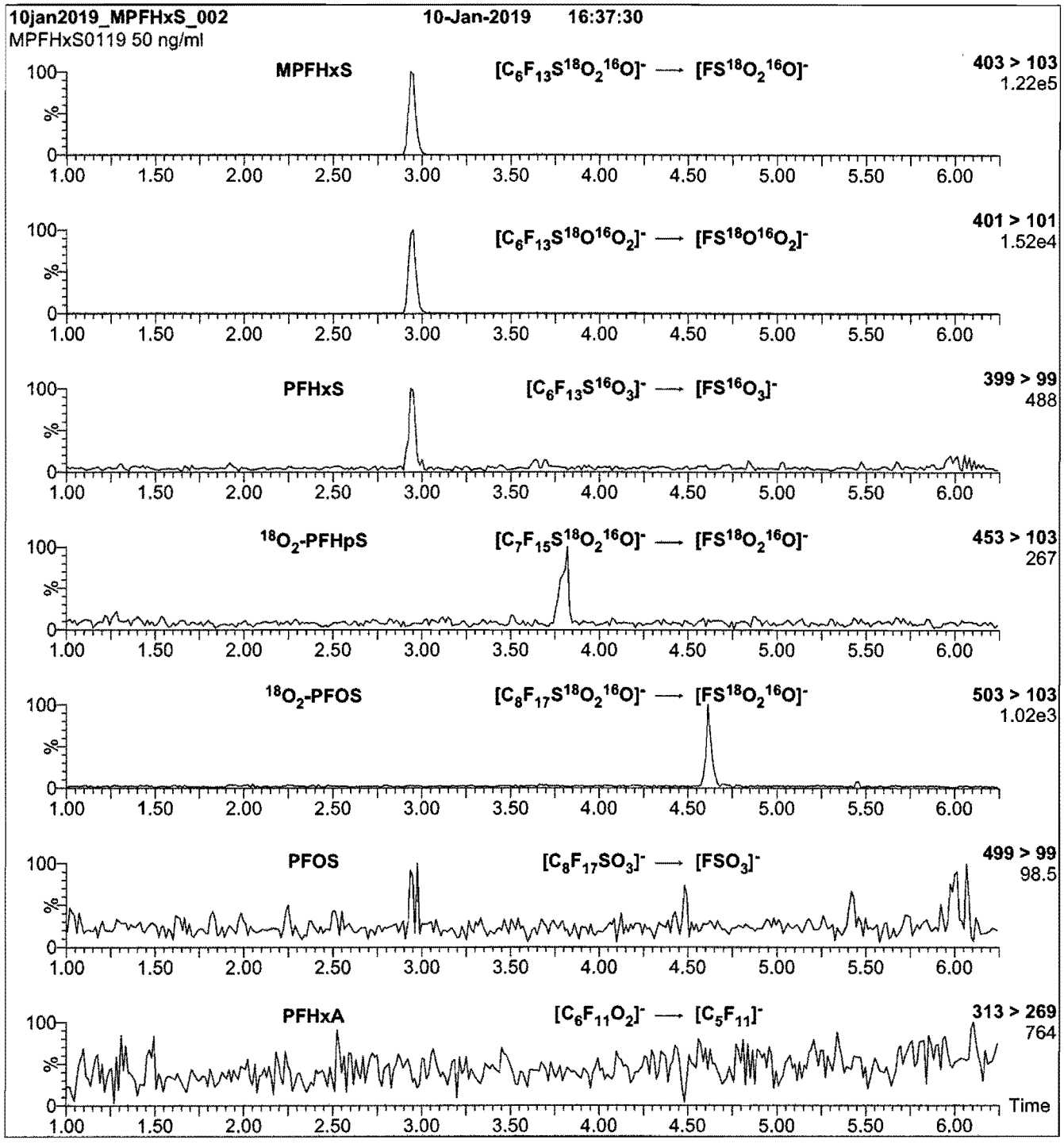
- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 10/01/2018 (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: **MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFHxS)

Mobile phase: Same as Figure 1

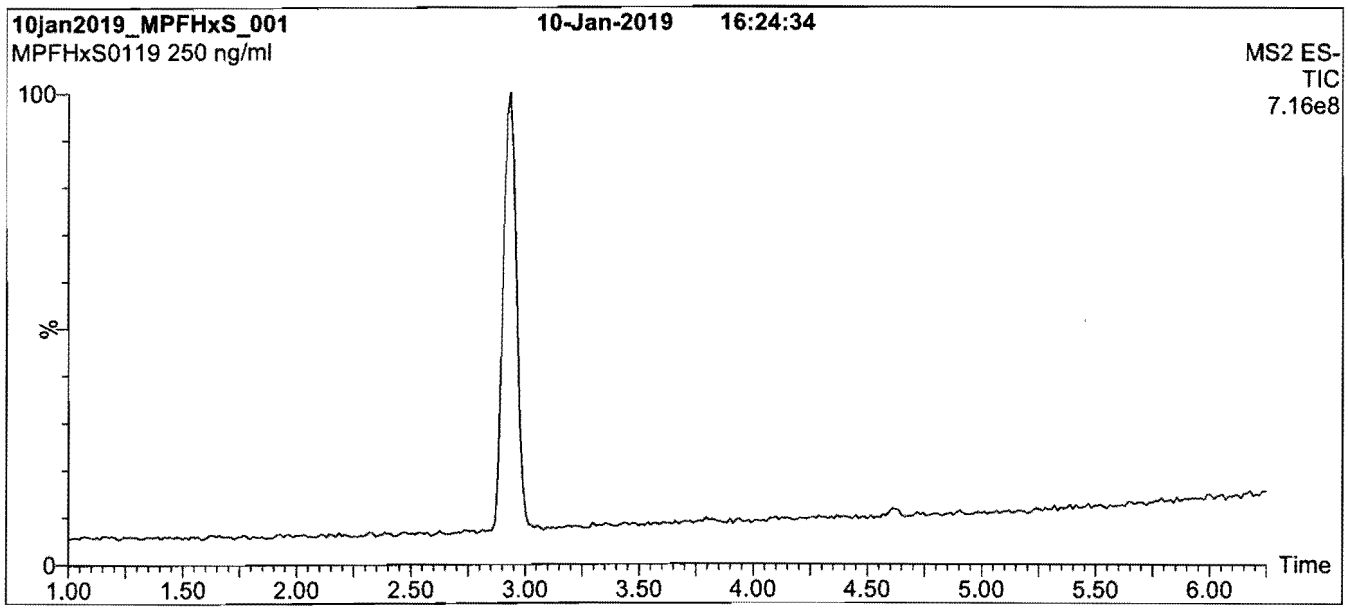
Flow: 300 µl/min

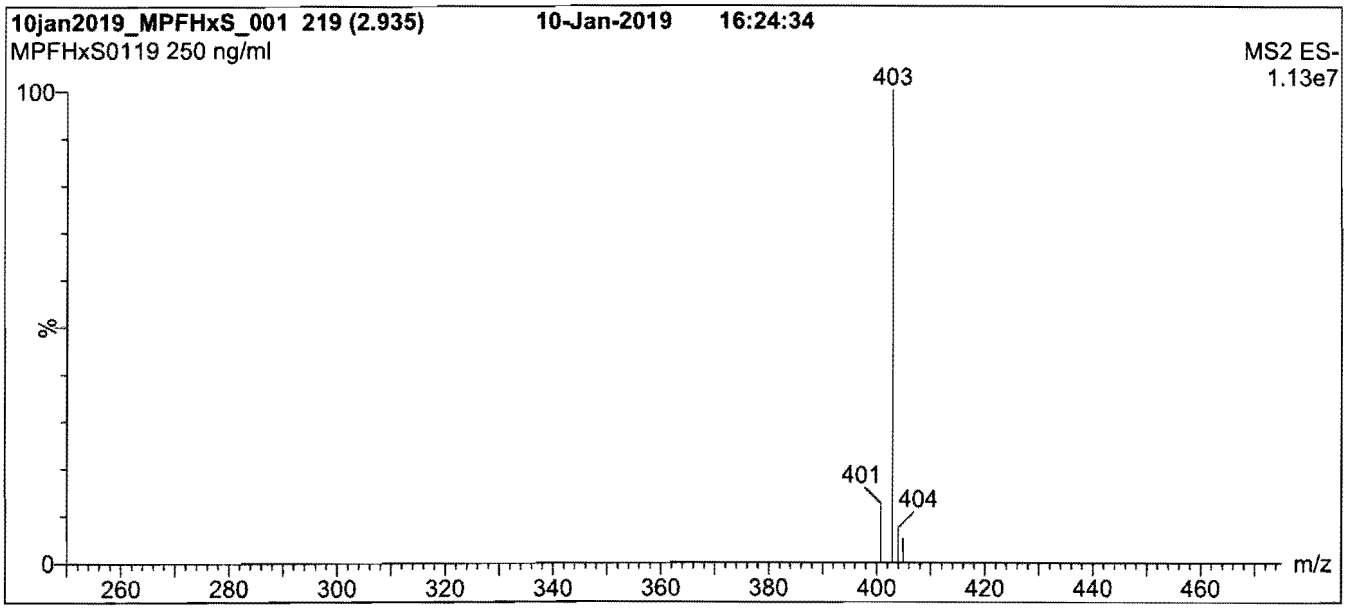
MS Parameters

Collision Gas (mbar) = 2.88e-3
Collision Energy (eV) = 32

19L0632

Figure 1: **MPFHxS; 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) = 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 $x_1, x_2, \ldots x_n$ 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

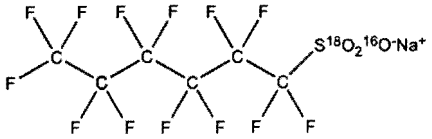
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0632

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	MPFHxS	**LOT NUMBER:**	MPFHxS0119
COMPOUND:	Sodium perfluoro-1-hexane[$^{18}O_2$]sulfonate		
STRUCTURE:		**CAS #:**	1585941-14-5



MOLECULAR FORMULA:	$C_6F_{13}S^{16}O_2{}^{18}ONa$	**MOLECULAR WEIGHT:**	426.10
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.3 ± 2.4 µg/ml (MPFHxS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	>94% ($^{18}O_2$)
LAST TESTED: (mm/dd/yyyy)	01/10/2019		
EXPIRY DATE: (mm/dd/yyyy)	01/10/2024		
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:

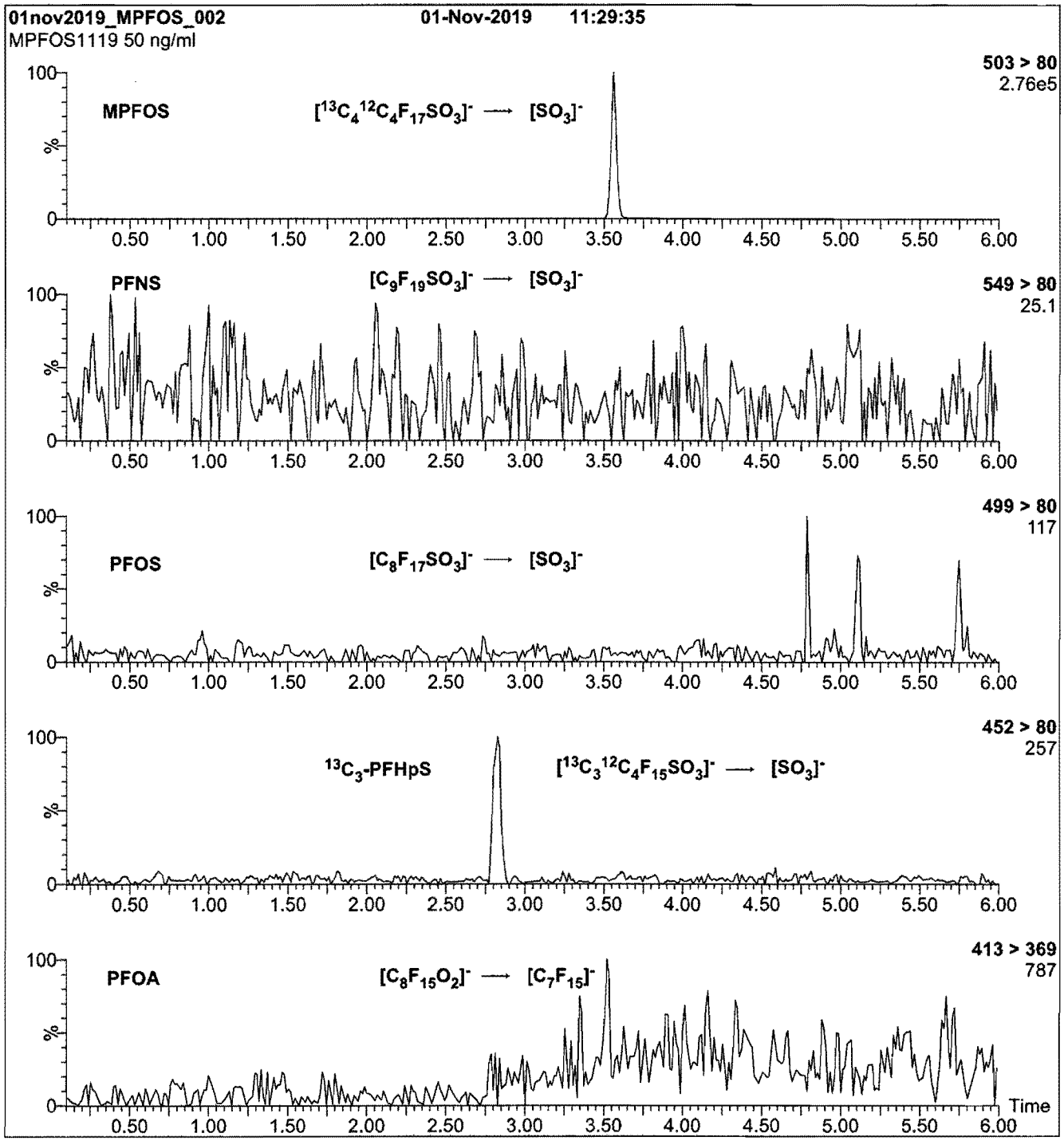
- See page 2 for further details.
- The response factor for MPFHxS ($C_6F_{13}S^{16}O_2{}^{18}O^-$) has been observed to be up to 10% lower than for PFHxS ($C_6F_{13}S^{16}O_3^-$) when both compounds are injected together. This difference may vary between instruments.
- Contains ~ 0.6% of sodium perfluoro-1-octane[$^{18}O_2$]sulfonate ($^{18}O_2$-PFOS) and ~ 0.2% of sodium perfluoro-1-heptane[$^{18}O_2$]sulfonate ($^{18}O_2$-PFHpS).
- Due to the isotopic purity of the starting material ($^{18}O_2$ >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 01/21/2019 (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

Figure 2: **MPFOS; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (MPFOS)

Mobile phase: Same as Figure 1

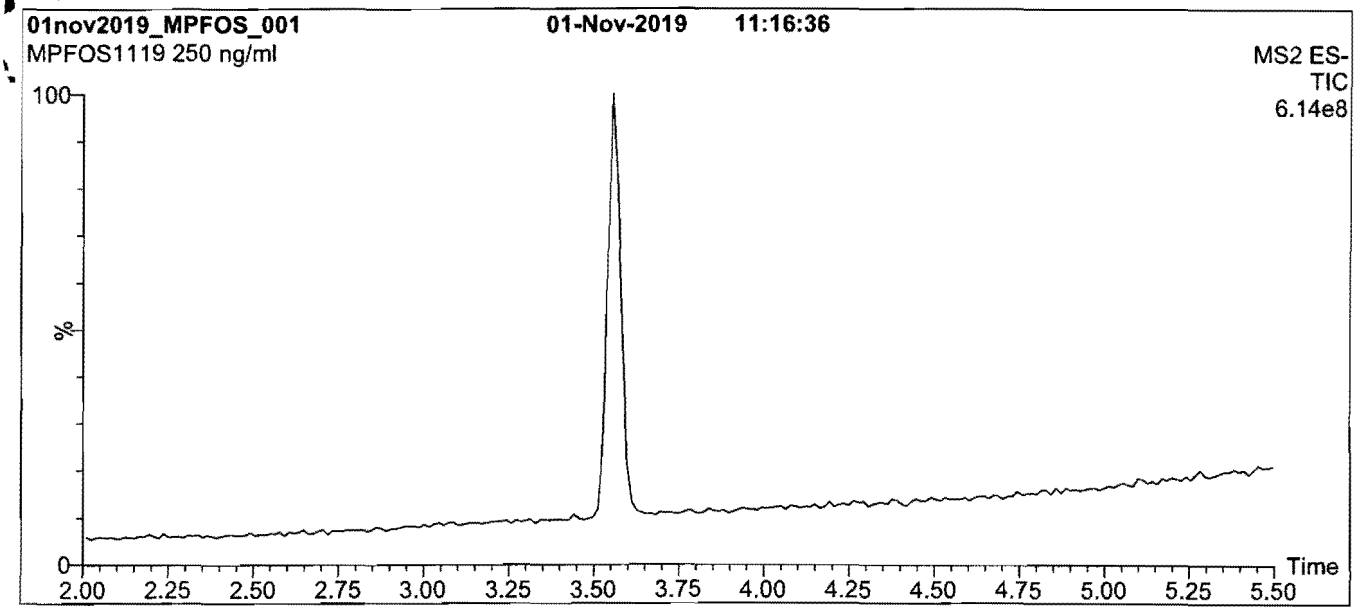
Flow: 300 µl/min

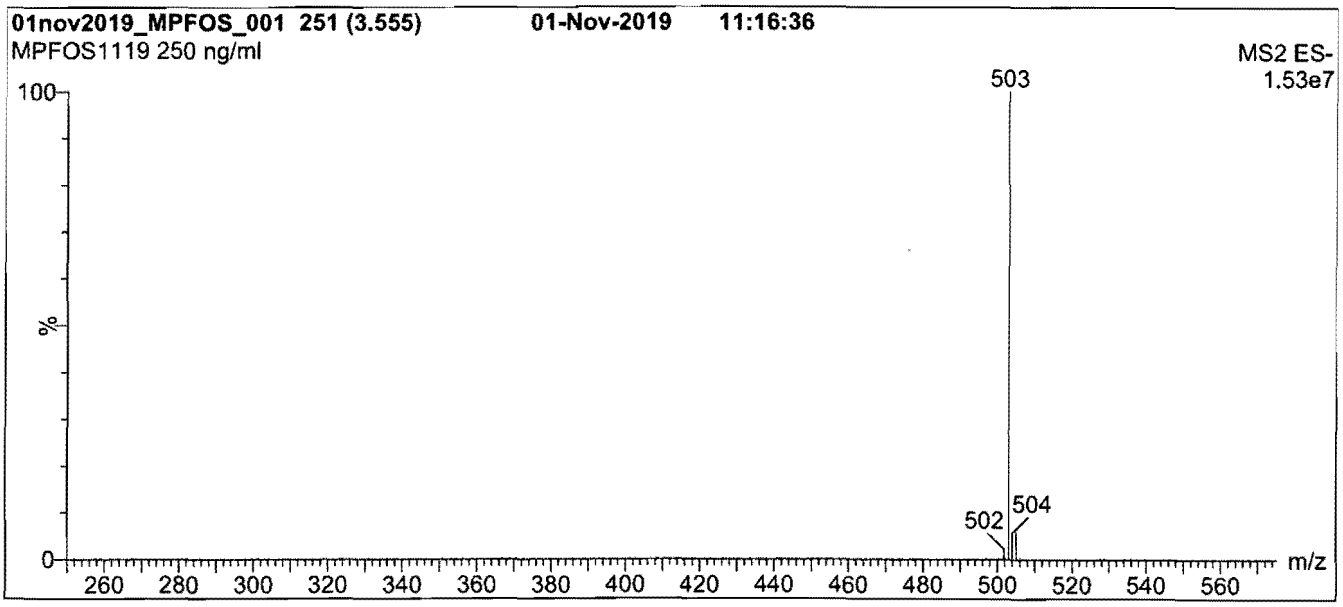
MS Parameters

Collision Gas (mbar) = 3.39e-3
Collision Energy (eV) = 42

19L0633

Figure 1: **MPFOS; 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) = 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. A1226

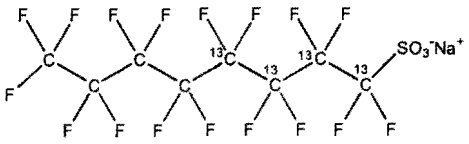
ANAB ACCREDITED ISO 17034 REFERENCE MATERIAL PRODUCER

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

PRODUCT CODE:	MPFOS	**LOT NUMBER:**	MPFOS1119
COMPOUND:	Sodium perfluoro-1-[1,2,3,4-$^{13}C_4$]octanesulfonate		
STRUCTURE:		**CAS #:**	960315-53-1



MOLECULAR FORMULA:	$^{13}C_4{}^{12}C_4F_{17}SO_3Na$	**MOLECULAR WEIGHT:**	526.08
CONCENTRATION:	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (MPFOS anion)	**SOLVENT(S):**	Methanol
CHEMICAL PURITY:	>98%	**ISOTOPIC PURITY:**	≥99% ^{13}C ($1,2,3,4$-$^{13}C_4$)
LAST TESTED: (mm/dd/yyyy)	11/01/2019		
EXPIRY DATE: (mm/dd/yyyy)	11/01/2024		
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 ~ 0.3% Sodium perfluoro-1-[1,2,3-$^{13}C_3$]heptanesulfonate.

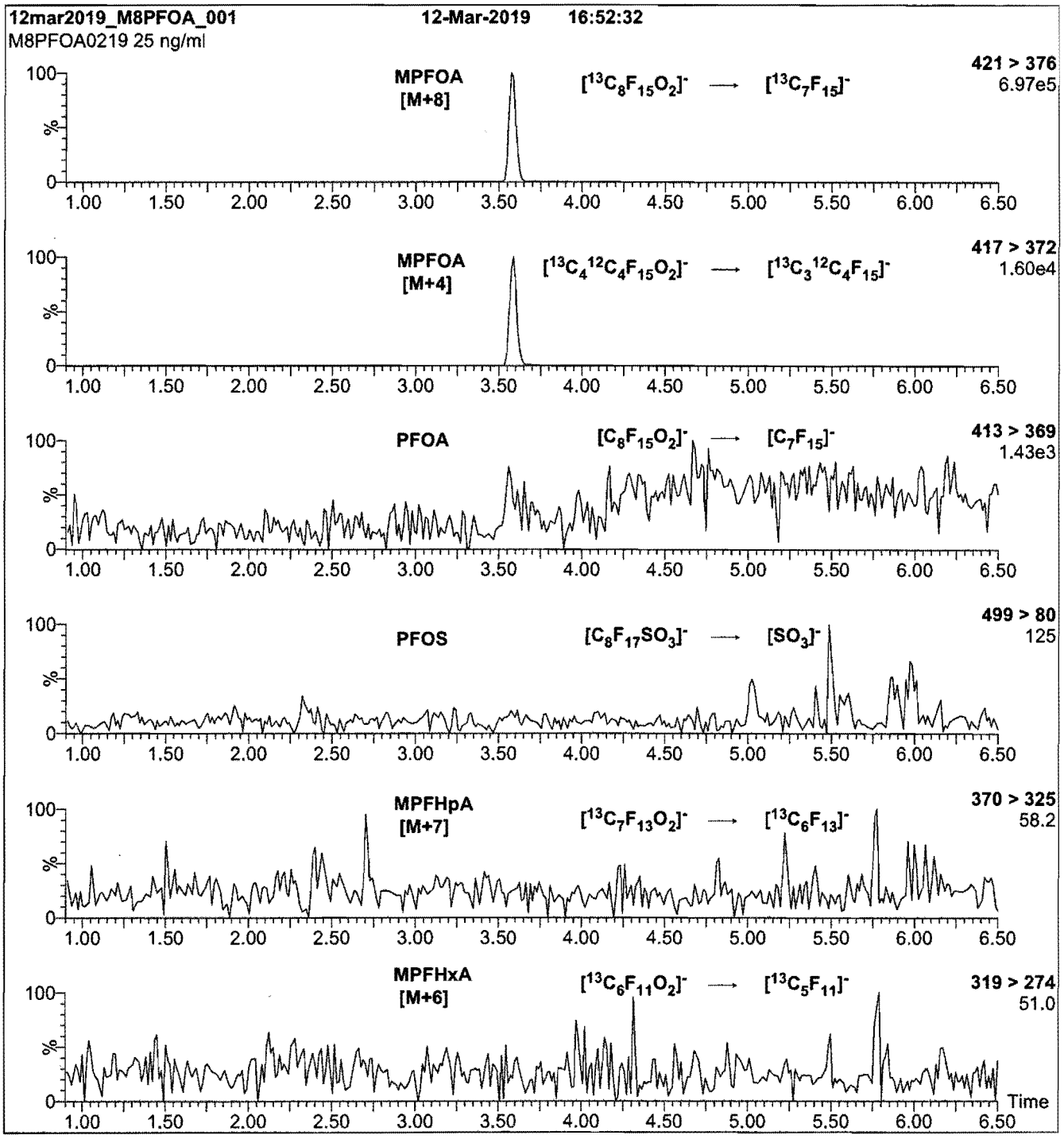
FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

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

19L0634

Figure 2: **M8PFOA; LC/MS/MS Data (Selected MRM Transitions)**



Conditions for Figure 2:

Injection: On-column (M8PFOA)

Mobile phase: Same as Figure 1

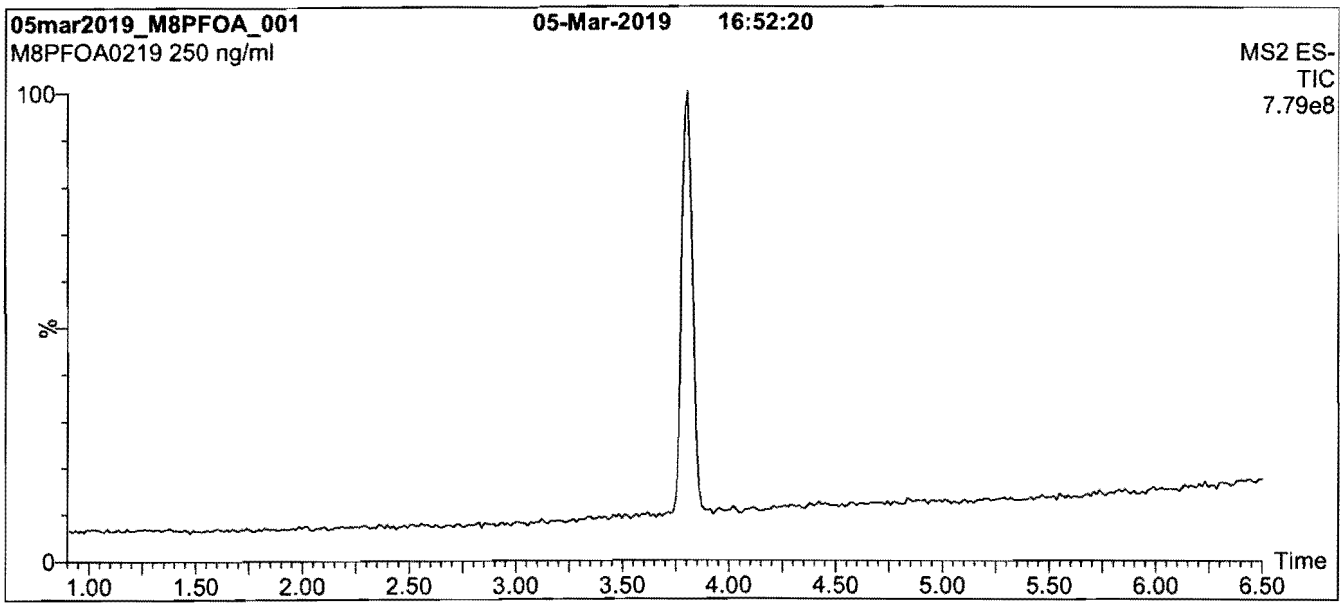
Flow: 300 µl/min

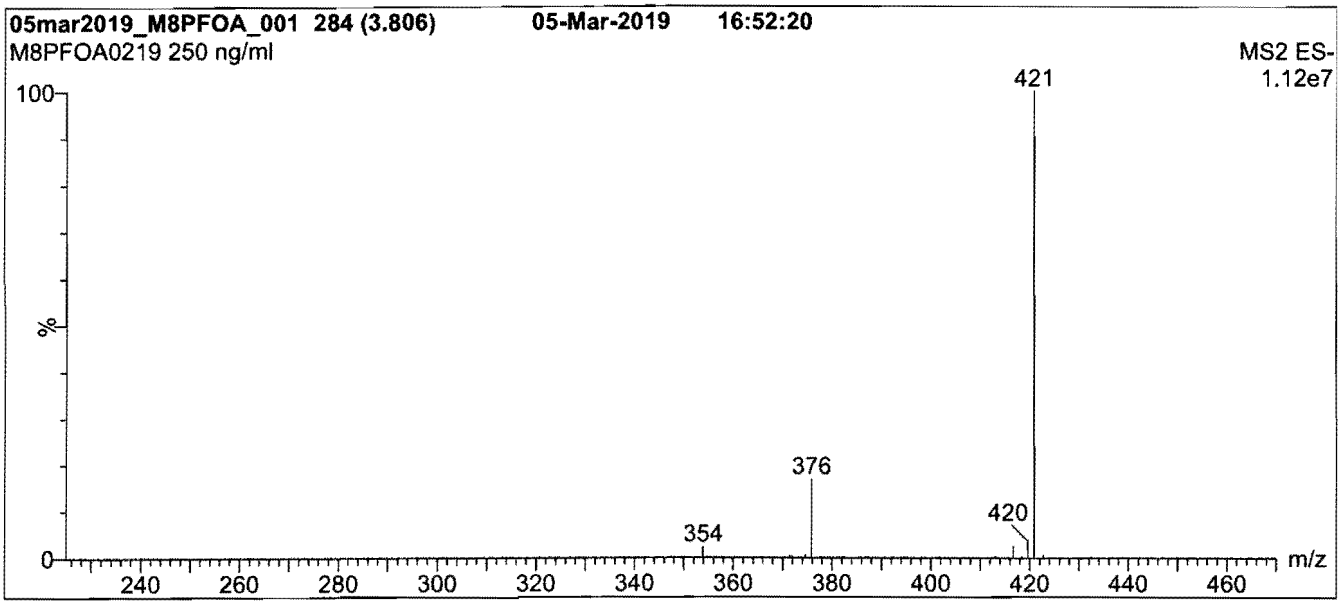
MS Parameters

Collision Gas (mbar) = 2.74e-3
Collision Energy (eV) = 8

19L0634

Figure 1: **M8PFOA; 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

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

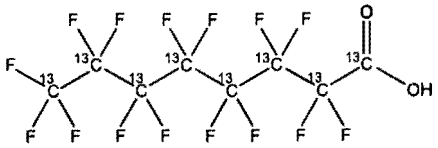
For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at www.well-labs.com or contact us directly at info@well-labs.com

19L0634

WELLINGTON LABORATORIES

CERTIFICATE OF ANALYSIS
DOCUMENTATION

PRODUCT CODE:	M8PFOA	**LOT NUMBER:**	M8PFOA0219
COMPOUND:	Perfluoro-n-[$^{13}C_8$]octanoic acid		
STRUCTURE:		**CAS #:**	Not available



MOLECULAR FORMULA:	$^{13}C_8HF_{15}O_2$	**MOLECULAR WEIGHT:**	422.01
CONCENTRATION:	48.9 ± 2.4 µg/ml	**SOLVENT(S):**	Methanol Water (<1%)
CHEMICAL PURITY:	97.8% (M8PFOA) 2.2% (MPFOA [M+4])	**ISOTOPIC PURITY:**	≥99% ^{13}C ($^{13}C_8$)
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.
- Contains < 0.1% of native perfluoro-n-octanoic acid (PFOA) and ~ 2.2% of [M+4] perfluoro-n-octanoic acid.

FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE

Certified By: _____ **Date:** 08/07/2019 (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

"sys_sample_code","lab_anl_method_name","analysis_date","analysis_time","total_or_dissolved","column_number","test_type","cas_rn","chemical_name","result_value","result_error_delta","result_type_code","reportable_result","detect_flag","lab_qualifiers","organic_yn","method_detection_limit","reporting_detection_limit","quantatation_limit","result_unit","detection_limit_unit","tic_retention_time","result_comment","qc_original_conc","qc_spike_added","qc_spike_measured","qc_spike_recovery","qc_dup_original_conc","qc_dup_spike_added","qc_dup_spike_measured","qc_dup_spike_recovery","qc_rpd","qc_spike_lcl","qc_spike_ucl","qc_rpd_cl","qc_spike_status","qc_dup_spike_status","qc_rpd_status"
"EB04-20200219","537_MOD","03/03/20","19:53","N","NA","000","375-73-5","PFBS","","","TRG","Yes","N","U","Y","0.00136","0.00199","0.00398","UG_L","UG_L","","","

(PFUNA)","","","TRG","Yes","N","U","Y","0.00136","0.00199","0.00398","UG_L","UG_L","","","

"EB04-20200219","537_MOD","03/03/20","19:53","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","60.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","60.3","60.3","","","","","","50","150","","","","",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","375-73-5","PFBS","0.0264","","TRG","Yes","Y","","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.206","","TRG","Yes","Y","","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","","","TRG","Yes","N","U","Y","0.00239","0.00298","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0855","","TRG","Yes","Y","","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.0754","","TRG","Yes","Y","","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.446","","TRG","Yes","Y","","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","0.00295","","TRG","Yes","Y","J","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.0192","","TRG","Yes","Y","","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00136","0.00198","0.00397","UG_L","UG_L",""
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID

(PFUNA)","","","TRG","Yes","N","U","Y","0.00136","0.00198","0.00397","UG_L","UG_L","","","

","","","","
"IS720W02D-20200219","537_MOD","03/03/20","20:03","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","65.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","65.3","65.3","","","","","","50","150","","","","",""
"IS720W06D-20200219","537_MOD","03/03/20","20:14","N","NA","000","375-73-5","PFBS","0.0307","","TRG","Yes","Y","","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","

(PFUNA)","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","

","","","","
"IS720W06D-20200219","537_MOD","03/03/20","20:14","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","67.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","67.8","67.8","","","","","","50","150","","","","","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","375-73-5","PFBS","0.0172","","TRG","Yes","Y","","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.151","","TRG","Yes","Y","","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","","","TRG","Yes","N","U","Y","0.00244","0.00304","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0700","","TRG","Yes","Y","","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","","","TRG","Yes","N","U","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.0561","","TRG","Yes","Y","","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.540","","TRG","Yes","Y","","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","","","TRG","Yes","N","U","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.0169","","TRG","Yes","Y","","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","","","TRG","Yes","N","U","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","","","TRG","Yes","N","U","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","2355-31-9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","2991-50-6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00139","0.00202","0.00405","UG_L","UG_L","
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","2058-94-

8","PERFLUOROUNDECANOIC ACID
(PFUNA)","","","TRG","Yes","N","U","Y","0.00139","0.00202","0.00405","UG_L","UG_L","","","

PFDoA","64.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","64.5","64.5","","","","","","50","150","
","","","",""
"IS720W03D-20200219","537_MOD","03/03/20","20:24","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","64.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","64.9","64.9","","","","","","50","150"
,"","","","",""
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","375-73-
5","PFBS","0.106","","TRG","Yes","Y","","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","0.291","","TRG","Yes","Y","","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE
OXIDE DIMER ACID (HFPO-
DA)","","","TRG","Yes","N","U","Y","0.00254","0.00316","0.00422","UG_L","UG_L","","","","","","","","","","","","
","","","","","",""
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","0.0852","","TRG","Yes","Y","","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","919005-14-4","4,8-DIOXA-3H-
PERFLUORONONANOIC ACID
(ADONA)","","","TRG","Yes","N","U","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","355-46-
4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","1.32","","TRG","Yes","Y","","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW08S-20200219","537_MOD","03/05/20","06:44","N","NA","DL1","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","2.23","","TRG","Yes","Y","D","Y","0.00722","0.0105","0.0211","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)","0.00262","","TRG","Yes","Y","J,
Q","Y","0.00144","0.00211","0.00422","UG_L","UG_L","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","0.0397","","TRG","Yes","Y","Q","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","756426-58-1","9-
CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-
PF3ONS)","","","TRG","Yes","N","U","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC
ACID
(PFUNA)","","","TRG","Yes","N","U","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","","
"TW08S-20200219","537_MOD","03/03/20","20:35","N","NA","000","763051-92-9","11-

CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","","","TRG","Yes","N","U","Y","0.00144","0.00211","0.00422","UG_L","UG_L","","","

,"","","","",""
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","375-73-
5","PFBS","0.152","","TRG","Yes","Y","","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","0.316","","TRG","Yes","Y","","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE
OXIDE DIMER ACID (HFPO-
DA)","","","TRG","Yes","N","U","Y","0.00238","0.00295","0.00394","UG_L","UG_L","","","","","","","","","","","","
","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","0.0720","","TRG","Yes","Y","","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","919005-14-4","4,8-DIOXA-3H-
PERFLUORONONANOIC ACID
(ADONA)","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","355-46-
4","PERFLUOROHEXANESULFONIC ACID
(PFHXS)","0.647","","TRG","Yes","Y","","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","0.343","","TRG","Yes","Y","","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)","0.00315","","TRG","Yes","Y","J,
Q","Y","0.00135","0.00197","0.00394","UG_L","UG_L","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION
","0.114","","TRG","Yes","Y","","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","","","","","","","","
","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","756426-58-1","9-
CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-
PF3ONS)","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","335-76-2","PERFLUORODECANOIC ACID
(PFDA)","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","","
","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","2355-31-
9","MeFOSAA","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","
","","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","2991-50-
6","EtFOSAA","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC
ACID
(PFUNA)","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","763051-92-9","11-
CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-
PF3OUdS)","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","","","","","","","","
","","","","","","","","","
"TW09S-20200219","537_MOD","03/05/20","06:12","N","NA","000","307-55-1","PERFLUORODODECANOIC

ACID
(PFDOA)","","","TRG","Yes","N","U","Y","0.00135","0.00197","0.00394","UG_L","UG_L","","","

"TW10S-20200219","537_MOD","03/03/20","20:56","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.266","","TRG","Yes","Y","","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","

8","PFTrDA","","","TRG","Yes","N","U","Y","0.00138","0.00202","0.00404","UG_L","UG_L","","","

OXIDE DIMER ACID (HFPO-
DA)","","","TRG","Yes","N","U","Y","0.00240","0.00299","0.00398","UG_L","UG_L","","","

","","","","","","","","","","
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C3-PFBS","13C3-PFBS","95.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","95.6","95.6","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","66.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","66.3","66.3","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C2-PFHxA","13C2-PFHxA","72.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","72.0","72.0","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C4-PFHpA","13C4-PFHpA","76.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","76.6","76.6","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C3-PFHxS","13C3-PFHxS","80.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","80.9","80.9","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C5-PFNA","13C5-PFNA","88.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.0","88.0","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C2-PFOA","13C2-PFOA","85.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","85.6","85.6","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C8-PFOS","13C8-PFOS","87.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.9","87.9","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C2-PFDA","13C2-PFDA","83.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","83.5","83.5","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","102","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","102","102","","","","","","50","150","","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C2-PFUnA","13C2-PFUnA","73.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","73.3","73.3","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","81.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","81.7","81.7","","","","","","50","150","","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C2-PFDoA","13C2-PFDoA","75.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","75.0","75.0","","","","","","50","150","","","","",""
"TW11S-20200219","537_MOD","03/03/20","21:06","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","74.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","74.8","74.8","","","","","","50","150","","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","375-73-5","PFBS","1.35","","TRG","Yes","Y","","Y","0.00137","0.00201","0.00401","UG_L","UG_L","","","","","","","","","","

ACID
(PFHPA)","2.28","","TRG","Yes","Y","D","Y","0.0137","0.0201","0.0401","UG_L","UG_L","","","

"","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","76.1","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","76.1","76.1","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/05/20","06:54","N","NA","DL1","13C2-PFHxA","13C2-PFHxA","85.0","","IS","Yes","Y","D","Y","","","","","PCT_REC","","","","","100","85.0","85.0","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/05/20","06:54","N","NA","DL1","13C4-PFHpA","13C4-PFHpA","79.0","","IS","Yes","Y","D","Y","","","","","PCT_REC","","","","","100","79.0","79.0","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/05/20","06:54","N","NA","DL1","13C3-PFHxS","13C3-PFHxS","82.0","","IS","Yes","Y","D","Y","","","","","PCT_REC","","","","","100","82.0","82.0","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","13C5-PFNA","13C5-PFNA","86.0","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","86.0","86.0","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/05/20","06:54","N","NA","DL1","13C2-PFOA","13C2-PFOA","86.0","","IS","Yes","Y","D","Y","","","","","PCT_REC","","","","","100","86.0","86.0","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/05/20","06:54","N","NA","DL1","13C8-PFOS","13C8-PFOS","80.0","","IS","Yes","Y","D","Y","","","","","PCT_REC","","","","","100","80.0","80.0","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","13C2-PFDA","13C2-PFDA","87.3","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","87.3","87.3","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","109","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","109","109","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","13C2-PFUnA","13C2-PFUnA","86.6","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","86.6","86.6","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","77.9","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","77.9","77.9","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","13C2-PFDoA","13C2-PFDoA","71.3","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","71.3","71.3","","","","","","50","150","","","","",""
"TW13S-20200219","537_MOD","03/03/20","21:17","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","70.0","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","70.0","70.0","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","375-73-5","PFBS","0.185","","TRG","Yes","Y","","Y","0.00134","0.00196","0.00392","UG_L","UG_L","","","","","","

PERFLUORONONANOIC ACID
(ADONA)","","","TRG","Yes","N","U","Y","0.00134","0.00196","0.00392","UG_L","UG_L","","","

"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C2-PFHxA","13C2-PFHxA","73.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","73.2","73.2","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C4-PFHpA","13C4-PFHpA","75.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","75.7","75.7","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C3-PFHxS","13C3-PFHxS","74.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","74.9","74.9","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C5-PFNA","13C5-PFNA","73.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","73.9","73.9","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C2-PFOA","13C2-PFOA","71.6","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","71.6","71.6","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C8-PFOS","13C8-PFOS","84.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","84.8","84.8","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C2-PFDA","13C2-PFDA","82.2","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","82.2","82.2","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","81.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","81.0","81.0","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C2-PFUnA","13C2-PFUnA","75.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","75.0","75.0","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","71.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","71.9","71.9","","","","","","50","150","","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C2-PFDoA","13C2-PFDoA","69.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","69.5","69.5","","","","","","50","150","","","","",""
"TW12S-20200219","537_MOD","03/05/20","06:23","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","61.4","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","61.4","61.4","","","","","","50","150","","","","","",""
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","375-73-5","PFBS","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L",""
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L",""
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","","","TRG","Yes","N","U","Y","0.00241","0.00300","0.00400","UG_L","UG_L",""
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L",""
"B0B0186-BLK1","537_MOD","03/03/20","19:21","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",""
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC

ACID
(PFHXS)","","","TRG","Yes","N","U","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","

","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C3-PFHxS","13C3-PFHxS","79.0","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","79.0","79.0","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C5-PFNA","13C5-PFNA","71.9","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","71.9","71.9","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C2-PFOA","13C2-PFOA","71.3","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","71.3","71.3","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C8-PFOS","13C8-PFOS","82.7","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","82.7","82.7","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C2-PFDA","13C2-PFDA","72.5","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","72.5","72.5","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","60.7","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","60.7","60.7","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C2-PFUnA","13C2-PFUnA","69.1","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","69.1","69.1","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","45.1","","IS","Yes","Y","H","Y","","","","","PCT_REC","","","","","100","45.1","45.1","","","","","","50","150","","+","","",""
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C2-PFDoA","13C2-PFDoA","62.1","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","62.1","62.1","","","","","","50","150","","","","","","
"B0B0186-BLK1","537_MOD","03/03/20","19:21","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","55.2","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","55.2","55.2","","","","","","50","150","","","","","","
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","375-73-5","PFBS","0.0395","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0395","98.7","","","","","","","72","130","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID (PFHXA)","0.0422","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0422","106","","","","","","","72","129","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE OXIDE DIMER ACID (HFPO-DA)","0.0427","","TRG","Yes","Y","","Y","0.00241","0.00300","0.00400","UG_L","UG_L","","","","0.0400","0.0427","107","","","","","","","70","130","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID (PFHPA)","0.0386","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0386","96.5","","","","","","","72","130","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","919005-14-4","4,8-DIOXA-3H-PERFLUORONONANOIC ACID (ADONA)","0.0368","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0368","91.9","","","","","","","70","130","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC ACID (PFHXS)","0.0364","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0364","91.1","","","","","","","68","131","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID (PFOA)","0.0374","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0

374","93.4","","","","","","","71","133","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","375-95-1","PERFLUORONONANOIC ACID (PFNA)","0.0395","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0395","98.8","","","","","","","69","130","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","1763-23-1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION","0.0361","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0361","90.2","","","","","","","65","140","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","0.0373","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0373","93.1","","","","","","","70","130","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","0.0386","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0386","96.5","","","","","","","71","129","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","2355-31-9","MeFOSAA","0.0412","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0412","103","","","","","","","65","136","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","2991-50-6","EtFOSAA","0.0410","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0410","102","","","","","","","61","135","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","0.0401","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0401","100","","","","","","","69","133","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","0.0417","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0417","104","","","","","","","70","130","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","0.0406","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0406","102","","","","","","","72","134","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","72629-94-8","PFTrDA","0.0320","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0320","80.0","","","","","","","65","144","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","376-06-7","PFTeDA","0.0453","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0453","113","","","","","","","71","132","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C3-PFBS","13C3-PFBS","87.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.5","87.5","","","","","","50","150","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","71.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","71.1","71.1","","","","","","50","150","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C2-PFHxA","13C2-PFHxA","78.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","78.8","78.8","","","","","","50","150","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C4-PFHpA","13C4-PFHpA","84.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","84.5","84.5","","","","","","50","150","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C3-PFHxS","13C3-PFHxS","87.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","87.0","87.0","","","","","","50","150","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C5-PFNA","13C5-PFNA","86.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.9","86.9","","","","","","50","150",""

,"","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C2-PFOA","13C2-
PFOA","86.0","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","86.0","86.0","","","","","","50","150","",
"","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C8-PFOS","13C8-
PFOS","96.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","96.3","96.3","","","","","","50","150","","
","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C2-PFDA","13C2-
PFDA","90.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","90.1","90.1","","","","","","50","150","",
"","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","d3-MeFOSAA","d3-
MeFOSAA","84.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","84.5","84.5","","","","","","50","15
0","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C2-PFUnA","13C2-
PFUnA","74.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","74.1","74.1","","","","","","50","150","
","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","d5-EtFOSAA","d5-
EtFOSAA","65.1","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","65.1","65.1","","","","","","50","150
","","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C2-PFDoA","13C2-
PFDoA","74.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","74.9","74.9","","","","","","50","150","
","","","",""
"B0B0186-BS1","537_MOD","03/03/20","19:32","N","NA","000","13C2-PFTeDA","13C2-
PFTeDA","55.9","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","55.9","55.9","","","","","","50","150"
,"","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","375-73-
5","PFBS","0.0416","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.
0416","104","","","","","5.17","72","130","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","307-24-4","PERFLUOROHEXANOIC ACID
(PFHXA)","0.0390","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.
0390","97.5","","","","","7.84","72","129","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13252-13-6","HEXAFLUOROPROPYLENE
OXIDE DIMER ACID (HFPO-
DA)","0.0410","","TRG","Yes","Y","","Y","0.00241","0.00300","0.00400","UG_L","UG_L","","","","0.0400","0.0410
","103","","","","","4.11","70","130","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","375-85-9","PERFLUOROHEPTANOIC ACID
(PFHPA)","0.0386","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.
0386","96.5","","","","","0.000981","72","130","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","919005-14-4","4,8-DIOXA-3H-
PERFLUORONONANOIC ACID
(ADONA)","0.0405","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0
.0405","101","","","","","9.74","70","130","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","355-46-4","PERFLUOROHEXANESULFONIC
ACID
(PFHXS)","0.0360","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.
0360","89.9","","","","","1.30","68","131","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","335-67-1","PERFLUOROOCTANOIC ACID
(PFOA)","0.0385","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0
385","96.3","","","","","3.06","71","133","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","375-95-1","PERFLUORONONANOIC ACID
(PFNA)","0.0394","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0
394","98.4","","","","","0.477","69","130","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","1763-23-
1","HEPTADECAFLUOROACTANESULFONIC ACID SOLUTION

","0.0403","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0403","101","","","","","","11.1","65","140","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","756426-58-1","9-CHLOROHEXADECAFLUORO-3-OXANONE-1-SULFONIC ACID (9Cl-PF3ONS)","0.0385","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0385","96.2","","","","","","3.21","70","130","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","335-76-2","PERFLUORODECANOIC ACID (PFDA)","0.0435","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0435","109","","","","","","11.8","71","129","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","2355-31-9","MeFOSAA","0.0321","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0321","80.4","","","","","","24.7","65","136","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","2991-50-6","EtFOSAA","0.0335","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0335","83.7","","","","","","20.1","61","135","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","2058-94-8","PERFLUOROUNDECANOIC ACID (PFUNA)","0.0413","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0413","103","","","","","","2.95","69","133","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","763051-92-9","11-CHLOROEICOSAFLUORO-3-OXAUNDECANE-1-SULFONIC ACID (11Cl-PF3OUdS)","0.0445","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0445","111","","","","","","6.47","70","130","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","307-55-1","PERFLUORODODECANOIC ACID (PFDOA)","0.0393","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0393","98.1","","","","","","3.39","72","134","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","72629-94-8","PFTrDA","0.0331","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0331","82.7","","","","","","3.23","65","144","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","376-06-7","PFTeDA","0.0389","","TRG","Yes","Y","","Y","0.00137","0.00200","0.00400","UG_L","UG_L","","","","0.0400","0.0389","97.3","","","","","","15.2","71","132","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C3-PFBS","13C3-PFBS","91.3","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","91.3","91.3","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C3-HFPO-DA","13C3-HFPO-DA","79.4","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","79.4","79.4","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C2-PFHxA","13C2-PFHxA","83.9","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","83.9","83.9","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C4-PFHpA","13C4-PFHpA","83.0","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","83.0","83.0","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C3-PFHxS","13C3-PFHxS","91.5","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","91.5","91.5","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C5-PFNA","13C5-PFNA","90.5","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","90.5","90.5","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C2-PFOA","13C2-PFOA","93.8","","IS","Yes","Y","","Y","","","","","PCT_REC","","","","","100","93.8","93.8","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C8-PFOS","13C8-

PFOS","91.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","91.7","91.7","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C2-PFDA","13C2-PFDA","77.7","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","77.7","77.7","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","d3-MeFOSAA","d3-MeFOSAA","88.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","88.3","88.3","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C2-PFUnA","13C2-PFUnA","64.8","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","64.8","64.8","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","d5-EtFOSAA","d5-EtFOSAA","62.5","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","62.5","62.5","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C2-PFDoA","13C2-PFDoA","65.3","","IS","Yes","Y","","Y","","","","PCT_REC","","","","","100","65.3","65.3","","","","","","50","150","","","","",""
"B0B0186-BSD1","537_MOD","03/03/20","19:42","N","NA","000","13C2-PFTeDA","13C2-PFTeDA","47.3","","IS","Yes","Y","H","Y","","","","PCT_REC","","","","","100","47.3","47.3","","","","","","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. March 20, 2020
7376 SW Durham Road
Portland, OR 97224
Attn: Ms. Kimberly Shiroodi
Kimberly.Shiroodi@woodplc.com

SUBJECT: MCAS El Toro & Tustin PFAs, Data Validation

Dear Ms. Shiroodi,

Enclosed are the final validation reports for the fraction listed below. These SDGs were received on March 11, 2020. Attachment 1 is a summary of the samples that were reviewed for analysis.

LDC Project #47508:

SDG #	**Fraction**
2000314,2000321,2000330 2000356,2000372,2000390	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 & 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
Pgeng@lab-data.com
Project Manager/Senior Chemist

6,538 pages-ADV (100% Stage 4 for this job)

Attachment 1

Client Select / Stage 2B/4

LDC #47508 (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	2000314	03/11/20	03/25/20	13	0																														
B	2000321	03/11/20	03/25/20	10	0																														
C	2000330	03/11/20	03/25/20	4	0																														
D	2000356	03/11/20	03/25/20	9	0																														
E	2000372	03/11/20	03/25/20	7	0																														
F	2000390	03/11/20	03/25/20	4	0																														
Total	J/PG			47	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	47

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\47508ST.wpd

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 19, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000314

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
I006MW03SR-20200212	2000314-03	Water	02/12/20
I006MW05SR-20200212	2000314-04	Water	02/12/20
DUP01-20200212	2000314-05	Water	02/12/20
I006MW01S-20200212	2000314-06	Water	02/12/20
I006MW08S-20200212	2000314-07	Water	02/12/20
BMW07S-20200212	2000314-08	Water	02/12/20
I005MW01SR-20200212	2000314-09	Water	02/12/20
DUP05-20200212	2000314-10	Water	02/12/20
IS72MW15S-20200212	2000314-11	Water	02/12/20
IS72MW18SR-20200212	2000314-12	Water	02/12/20
222MW02S-20200212	2000314-13	Water	02/12/20
DUP03-20200212	2000314-14	Water	02/12/20
A000MW42S-20200212	2000314-15	Water	02/12/20
I006MW03SR-20200212MS	2000314-03MS	Water	02/12/20
I006MW03SR-20200212MSD	2000314-03MSD	Water	02/12/20

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.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

For each calibration 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 EB01-20200212 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200212 was identified as a source blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For I006MW03SR-20200212MS/MSD, no data were qualified for perfluorohexane sulfonic acid (PFHxS) percent recoveries (%R) and Perfluorohexanoic acid (PFHxA) and Perfluoroheptanoic acid (PFHpA) relative percent differences (RPD) outside the QC limits since the parent sample results were greater than 4X the spike concentration. All other 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 I006MW05SR-20200212 and DUP01-20200212, samples I005MW01SR-20200212 and DUP05-20200212, and samples 222MW02S-20200212 and DUP03-20200212 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
	I006MW05SR-20200212	DUP01-20200212				
Perfluorobutanesulfonic acid (PFBS)	0.0509	0.0556	9 (≤30)	-	-	-
Perfluorohexanoic acid (PFHxA)	0.129	0.130	1 (≤30)	-	-	-
Perfluoroheptanoic acid (PFHpA)	0.0436	0.0468	7 (≤30)	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	0.215	0.205	5 (≤30)	-	-	-
Perfluorooctanoic acid (PFOA)	0.0464	0.0441	5 (≤30)	-	-	-
Perfluorooctanesulfonic acid (PFOS)	0.0182	0.0226	22 (≤30)	-	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	I005MW01SR-20200212	DUP05-20200212				
Perfluorobutanesulfonic acid (PFBS)	0.501	0.525	5 (≤30)	-	-	-
Perfluorohexanoic acid (PFHxA)	1.52	1.51	1 (≤30)	-	-	-
Perfluoroheptanoic acid (PFHpA)	0.395	0.411	4 (≤30)	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	2.62	2.84	8 (≤30)	-	-	-
Perfluorooctanoic acid (PFOA)	3.76	4.15	10 (≤30)	-	-	-
Perfluorononanoic acid (PFNA)	0.0245	0.0267	9 (≤30)	-	-	-
Perfluorooctanesulfonic acid (PFOS)	1.08	1.11	3 (≤30)	-	-	-
Perfluorodecanoic acid (PFDA)	0.00196U	0.00176	-	0.0002 (≤0.00396)	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	222MW02S-20200212	DUP03-20200212				
Perfluorobutanesulfonic acid (PFBS)	0.00456	0.00587	-	0.00131 (≤0.00409)	-	-
Perfluorohexanesulfonic acid (PFHxS)	0.0145	0.0166	-	0.0021 (≤0.00409)	-	-
Perfluorooctanesulfonic acid (PFOS)	0.00624	0.00544	-	0.0008 (≤0.00409)	-	-

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
IS72MW15S-20200212	13C2-PFTeDA	34.4 (50-150)	Perfluorotetradecanoic acid (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
BMW07S-20200212	Perfluorodecanoic acid (PFDA)	50.940 (4.8175-14.4525)	J (all detects)	A
DUP03-20200212	Perfluorooctanesulfonic acid (PFOS)	3.412 (1.12-3.36)	J (all detects)	A
A000MW42S-20200212	Perfluorooctanesulfonic acid (PFOS)	9.108 (1.12-3.36)	J (all detects)	A
DUP05-20200212	Perfluorodecanoic acid (PFDA)	14.922 (4.8175-14.4525)	J (all detects)	A

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 ion abundance ratio, data were qualified as estimated 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 2000314

Sample	Compound	Flag	A or P	Reason
BMW07S-20200212	Perfluorodecanoic acid (PFDA)	J (all detects)	A	Target compound identification (ion abundance ratio)
DUP03-20200212	Perfluorooctanesulfonic acid (PFOS)	J (all detects)	A	Target compound identification (ion abundance ratio)
A000MW42S-20200212	Perfluorooctanesulfonic acid (PFOS)	J (all detects)	A	Target compound identification (ion abundance ratio)
DUP05-20200212	Perfluorodecanoic acid (PFDA)	J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000314

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000314

No Sample Data Qualified in this SDG

LDC #: 47508A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/26/20

SDG #: 2000314 Stage 4 Page: 1 of 2

Laboratory: Vista Analytical Laboratory Reviewer: 2nd Reviewer:

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD≤20% .Y² True /ICV≤30%
IV.	Continuing calibration/ISC	A	CCV/ISC≤30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=2. SB=1
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	
X.	Labeled Compounds	SW	D=4+5. 13+14. 9+10
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; 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~~	~~SB01-20200212~~	~~2000314-01~~	~~Water~~	~~02/12/20~~
~~2~~	~~EB01-20200212~~	~~2000314-02~~	~~Water~~	~~02/12/20~~
3	I006MW03SR-20200212	2000314-03	Water	02/12/20
4	I006MW05SR-20200212	2000314-04	Water	02/12/20
5	DUP01-20200212	2000314-05	Water	02/12/20
6	I006MW01S-20200212	2000314-06	Water	02/12/20
7	I006MW08S-20200212	2000314-07	Water	02/12/20
8	BMW07S-20200212	2000314-08	Water	02/12/20
9	I005MW01SR-20200212	2000314-09	Water	02/12/20
10	DUP05-20200212	2000314-10	Water	02/12/20
11	IS72MW15S-20200212	2000314-11	Water	02/12/20
12	IS72MW18SR-20200212	2000314-12	Water	02/12/20
13	222MW02S-20200212	2000314-13	Water	02/12/20
14	DUP03-20200212	2000314-14	Water	02/12/20
15	A000MW42S-20200212	2000314-15	Water	02/12/20

LDC #: 47508A96 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/13/20
SDG #: 2000314 Stage 4 Page: 2 of 2
Laboratory: Vista Analytical Laboratory Reviewer:
2nd Reviewer: JW

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

16	I006MW03SR-20200212MS	2000314-03MS	Water	02/12/20
17	I006MW03SR-20200212MSD	2000314-03MSD	Water	02/12/20
18				
19				
20				

Notes:

	B0B0118-BS1						

LDC #: 47528A86

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: CF
2nd Reviewer: JM

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?	✓			
Was 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 standard analyzed after each initial calibration for each instrument?	✓			
Were all 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?		✓		
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?		✓		

LDC #: 47508A 46

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: [illegible]
2nd Reviewer: JVG

Validation Area	Yes	No	NA	Findings/Comments
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: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 47508A96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: 0
2nd Reviewer: JVG

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

(Y) N N/A Were 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
		16/17	~~PFHxS~~	172 (68-131)	132 (68-131)	( )	3	No Qual (>4x)
			~~PFHxA~~	( )	( )	46.4 (≤30)		
			~~PFHpA~~	( )	( )	41.7 (↓)		↓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC#: 47508A96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: Q
2nd Reviewer: JM6

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound	Concentration (ug/L)		(≤30) RPD	Difference (≤LOQ)	Limits	Qual
	4	5				
PFBS	0.0509	0.0556	9			
PFHxA	0.129	0.130	1			
PFHpA	0.0436	0.0468	7			
PFHxS	0.215	0.205	5			
PFOA	0.0464	0.0441	5			
PFOS	0.0182	0.0226	22			

Compound	Concentration (ug/L)		(≤30) RPD	Difference (≤LOQ)	Limits	Qual
	9	10				
PFBS	0.501	0.525	5			
PFHxA	1.52	1.51	1			
PFHpA	0.395	0.411	4			
PFHxS	2.62	2.84	8			
PFOA	3.76	4.15	10			
PFNA	0.0245	0.0267	9			
PFOS	1.08	1.11	3			
PFDA	0.00196U	0.00176		0.0002	≤0.00396	

Compound	Concentration (ug/L)		(≤30) RPD	Difference (≤LOQ)	Limits	Qual
	13	14				
PFBS	0.00456	0.00587		0.00131	≤0.00409	
PFHxS	0.0145	0.0166		0.0021	≤0.00409	
PFOS	0.00624	0.00544		0.0008	≤0.00409	

LDC #: 47503A96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: 9
2nd Reviewer: JK

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
		11 (NO)	13C2-PFTeDA	34.4	(50-150)	J (all detects) (PFTeDA)
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	

LDC #: 47508A96

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 5.1.1

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 between 50-150%?

#	Date	Sample ID	Associated Samples	Ion Ratio ~~[illegible]~~ 50-150% Finding	Qualifications
		8	PFDA	50.940 (4.8175-14.4525)	Jdet3/A
		14	PFOS	3.412 (1.12-3.36)	
		15	PFOS	9.108	
		10	PFDA	14.922 (4.8175-14.4525)	

LDC#: 47508896

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/20/2020	MQ4	PFBS	1	0.778438094	0.250
			2	1.089880137	0.500
			3	2.682696141	1.000
			4	4.958188677	2.000
			5	12.64820119	5.000
			6	25.44695127	10.000
			7	117.4792844	50.000
			8	238.0977354	100.000
			9	566.0823864	250.000
			10	1133.899995	500.000

Regression Output		*Reported*
Constant	*2.209556*	*0.162081*
Std Err of Y Est		
R Squared	*0.999907*	*0.999487*
Degrees of Freedom		
X Coefficient(s)	*2.265108*	*2.287390*
Std Err of Coef.		
Correlation Coefficient	*0.999953*	
Coefficient of Determination (r^2)	*0.999907*	*0.999487*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/20/2020	MQ4	PFHxA	1	0.284890588	0.250
			2	0.446339310	0.500
			3	0.984796904	1.000
			4	2.021324537	2.000
			5	5.003588711	5.000
			6	9.977193119	10.000
			7	47.15559216	50.000
			8	92.60790279	100.000
			9	225.8014014	250.000
			10	431.1547913	500.000

Regression Output		***Reported***
Constant	*1.829494*	*0.066967*
Std Err of Y Est		
R Squared	*0.999430*	*0.998785*
Degrees of Freedom		
X Coefficient(s)	*0.867639*	*0.886822*
Std Err of Coef.		
Correlation Coefficient	*0.999715*	
Coefficient of Determination (r^2)	*0.999430*	*0.998785*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/25/2020	MQ4	PFHxA	1	0.248125134	0.250
			2	0.539146786	0.500
			3	1.168615070	1.000
			4	2.008352724	2.000
			5	5.175495037	5.000
			6	10.07310758	10.000
			7	47.12403550	50.000
			8	93.66908582	100.000
			9	221.5552772	250.000
			10	439.8474496	500.000

Regression Output		***Reported***
Constant	*1.341585*	*0.084469*
Std Err of Y Est		
R Squared	*0.999839*	*0.999064*
Degrees of Freedom		
X Coefficient(s)	*0.879448*	*0.893131*
Std Err of Coef.		
Correlation Coefficient	*0.999919*	
Coefficient of Determination (r^2)	*0.999839*	*0.999064*

LDC #: 47508A96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Reviewer: CA
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/25/2020	MQ4	PFOS	1	0.170391718	0.250	0.0625
			2	0.424665941	0.500	0.25
			3	0.885487794	1.000	1
			4	2.19426531	2.000	4
			5	5.106805482	5.000	25
			6	10.73537158	10.000	100
			7	43.83599873	50.000	2500
			8	96.62892738	100.000	10000
			9	229.6765896	250.000	62500
			10	466.5084977	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	0.40720		-0.00626015
Std Err of Y Est				
R Squared		0.9998589		0.9992040
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.917505066	2.81034E-05	0.936367	-0.00001248
Std Err of Coef.				
Correlation Coefficient		0.999929		
Coefficient of Determination (r^2)		0.999859		

Validation Findings Worksheet
Initial Calibration Calculation Verification

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/27/2020	MQ4	PFOA	1	0.322971593	0.250	0.0625
			2	0.664649291	0.500	0.25
			3	1.41593446	1.000	1
			4	2.504266854	2.000	4
			5	6.608790835	5.000	25
			6	12.89285388	10.000	100
			7	58.00272182	50.000	2500
			8	117.4198491	100.000	10000
			9	276.2363349	250.000	62500
			10	502.6360698	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	0.20152		0.0799012
Std Err of Y Est				
R Squared		0.9999868		0.9998180
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.20400609	-0.000398275	1.20955	-0.000410213
Std Err of Coef.				
Correlation Coefficient		0.999993		
Coefficient of Determination (r^2)		0.999987		

LDC #: 47308A90

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: 9
2nd Reviewer: JB

METHOD: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	20022004-37	2-20-20	~~PFOA ($^{13}C_2$-PFOA)~~ PFBS	10.000	11.8	11.77	17.7	17.7
			~~PFOS ($^{13}C_8$-PFOS)~~ PFHxA	↓	10.6	10.58	5.8	5.8
2	20022004-50	2/21/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFBS	10.000	10.9	10.87	8.7	8.7
			PFOS ($^{13}C_8$-PFOS) PFHxA	↓	10.7	10.66	6.6	6.6
3	20022504-53	2/26/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFHxA	10.00	11.1	11.06	10.6	10.6
			PFOS ($^{13}C_8$-PFOS) PFOS	10.00	11.2	11.20	12.0	12.0
4	20022704-86	2/28/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFOA	10.00	9.67	9.67	3.3	3.3
			~~PFOS ($^{13}C_8$-PFOS)~~					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 41508A96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Reviewer: 9
2nd Reviewer: JVG

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 16/17

Compound	Spike Added (µg/L)		Sample Concentration (µg/L)	Spiked Sample Concentration (µg/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD *	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
PFOA	0.038T	0.0395	0.303	0.350	0.349	123	121	116	116	5.86	4.22
PFOS	↓	↓	0.00993	0.0498	0.044T	103	103	88.1	88.0	15.6	15.6

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results. * Use %R to calculated RPD due to a different spike conc.

Privileged and Confidential

LDC #: 41508A96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: 9
2nd Reviewer: JM

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: BQB0118-BS1

Compound	Spike Added (µg/L)		Spike Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	NA	0.0355	NA	88.7	88.7				
PFOS	V	V	0.0369	V	92.2	92.2				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47528A96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: Cr
2nd reviewer: JVG

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1, PFBS

Conc. = $\frac{(\frac{3.5Te3 \times 12.5}{1.49e3} - 0.162081)(\quad)(1)(\quad)}{(2.28739)(254)(\quad)(\quad)}$

= 0.0513 µg/L

#	Sample ID	Compound	Reported Concentration µg/L	Calculated Concentration ( )	Qualification
	1	PFBS	0.0513		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 19, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000321

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
EB02-20200213	2000321-01	Water	02/13/20
I013WMW02SR-20200213	2000321-02	Water	02/13/20
IS72MW17S-20200213	2000321-03	Water	02/13/20
I012MW01SR-20200213	2000321-04	Water	02/13/20
I012MW10S-20200213	2000321-05	Water	02/13/20
I012MW11S-20200213	2000321-06	Water	02/13/20
I012MW15S-20200213	2000321-07	Water	02/13/20
DUP02-20200213	2000321-08	Water	02/13/20
I003MW01S-20200213	2000321-09	Water	02/13/20
I003MW15S-20200213	2000321-10	Water	02/13/20
I003MW02S-20200213	2000321-11	Water	02/13/20
IS72MW17S-20200213MS	2000321-03MS	Water	02/13/20
IS72MW17S-20200213MSD	2000321-03MSD	Water	02/13/20

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.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

For each calibration 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 EB02-20200213 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200212 (from SDG 2000314) was identified as a source blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For IS72MW17S-20200213MS/MSD, no data were qualified for perfluorohexanoic acid (PFHxA), perfluorohexanesulfonic acid (PFHxS), and perfluorooctanoic acid (PFOA) percent recoveries (%R) and perfluorooctanoic acid (PFOA), relative percent differences (RPD) outside the QC limits since the parent sample results were greater than 4X the spike concentration. All other 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 I012MW15S-20200213 and DUP02-20200213 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
	I012MW15S-20200213	DUP02-20200213				
Perfluorobutanesulfonic acid (PFBS)	0.179	0.181	1 (≤30)	-	-	-
Perfluorohexanoic acid (PFHxA)	0.908	0.881	3 (≤30)	-	-	-
Perfluoroheptanoic acid (PFHpA)	0.200	0.191	5 (≤30)	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	0.526	0.505	4 (≤30)	-	-	-
Perfluorooctanoic acid (PFOA)	0.312	0.306	2 (≤30)	-	-	-
Perfluorononanoic acid (PFNA)	0.00292	0.00251	-	0.0004 (≤0.00406)	-	-
Perfluorooctanesulfonic acid (PFOS)	0.109	0.112	3 (≤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 with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
I013WMW02SR-20200213	Perfluorooctanesulfonic acid (PFOS)	4.901 (1.304-3.912)	J (all detects)	A

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 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 2000321

Sample	Compound	Flag	A or P	Reason
I013WMW02SR-20200213	Perfluorooctanesulfonic acid (PFOS)	J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000321

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000321

No Sample Data Qualified in this SDG

LDC #: 47508B96

SDG #: 2000321

Laboratory: Vista Analytical Laboratory

VALIDATION COMPLETENESS WORKSHEET

Stage 4

Date: 3/16/20

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A+A	RSD ≤ 20%. r^2 Tme/ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV/ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=1. SB=SB01-20200212 (2000314)
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	D=T+B
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; 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~~	~~EB02-20200213~~	~~2000321-01~~	~~Water~~	~~02/13/20~~
2	I013WMW02SR-20200213	2000321-02	Water	02/13/20
3	IS72MW17S-20200213	2000321-03	Water	02/13/20
4	I012MW01SR-20200213	2000321-04	Water	02/13/20
5	I012MW10S-20200213	2000321-05	Water	02/13/20
6	I012MW11S-20200213	2000321-06	Water	02/13/20
7	I012MW15S-20200213	2000321-07	Water	02/13/20
8	DUP02-20200213	2000321-08	Water	02/13/20
9	I003MW01S-20200213	2000321-09	Water	02/13/20
10	I003MW15S-20200213	2000321-10	Water	02/13/20
11	I003MW02S-20200213	2000321-11	Water	02/13/20
12	IS72MW17S-20200213MS	2000321-03MS	Water	02/13/20
13	IS72MW17S-20200213MSD	2000321-03MSD	Water	02/13/20
14				
15	BOB012T-B4-1			

LDC #: 47508B9S

VALIDATION FINDINGS CHECKLIST

Reviewer: Q
2nd Reviewer: JM

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?	✓			
Was 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 standard analyzed after each initial calibration for each instrument?	✓			
Were all 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?		✓		
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?		✓		

LDC #: 47528B96

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer: JM

Validation Area	Yes	No	NA	Findings/Comments
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: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 47308B96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: 9+
2nd Reviewer: SV6

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were 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
		12/13	PFHxA	101 (72-129)	145 (72-129)	( )	3	No Qual >4x
			PFHxS	191 (68-131)	158 (68-131)	( )		↓
			PFOA	419 (71-133)	225 (71-133)	( )		
			PFOA	( )	( )	60.2 (≤30)		✓
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )	

LDC#: 47508B96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Page: 1 of 1
Reviewer: 9
2nd Reviewer: JV4

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound	Concentration (ug/L)		(≤30) RPD	Difference (≤LOQ)	Limits	Qual
	7	8				
PFBS	0.179	0.181	1			
PFHxA	0.908	0.881	3			
PFHpA	0.200	0.191	5			
PFHxS	0.526	0.505	4			
PFOA	0.312	0.306	2			
PFNA	0.00292	0.00251		0.0004	≤0.00406	
PFOS	0.109	0.112	3			

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2020\47508B96_WOOD.wpd

LDC #: 47008B96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Page: 1 of 1
Reviewer: 9
2nd Reviewer: AM

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
		9	$^{13}C_3$-PFHxS	35.2	(50-150)	No Qual (20x)
			$^{13}C_8$-PFOS	156	(↓)	↓ (10x)
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	

LDC #: 47508B96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Reviewer: 9
2nd Reviewer: JM6

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.1.1

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 between 50-150%?

#	Date	Sample ID	Associated Samples	Finding (Ion Ratio (50-150%))	Qualifications
		2	PFOS	4.901 (1.304 - 3.913)	Lots/J

LDC#: 47508B96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: SV

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/25/2020	MQ4	PFHxA	1	0.248125134	0.250
			2	0.539146786	0.500
			3	1.168615070	1.000
			4	2.008352724	2.000
			5	5.175495037	5.000
			6	10.07310758	10.000
			7	47.12403550	50.000
			8	93.66908582	100.000
			9	221.5552772	250.000
			10	439.8474496	500.000

Regression Output		***Reported***
Constant	*1.341585*	*0.084469*
Std Err of Y Est		
R Squared	*0.999839*	*0.999064*
Degrees of Freedom		
X Coefficient(s)	*0.879448*	*0.893131*
Std Err of Coef.		
Correlation Coefficient	*0.999919*	
Coefficient of Determination (r^2)	*0.999839*	*0.999064*

LDC #: 47528B96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: SM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/25/2020	MQ4	PFOS	1	0.170391718	0.250	0.0625
			2	0.424665941	0.500	0.25
			3	0.885487794	1.000	1
			4	2.19426531	2.000	4
			5	5.106805482	5.000	25
			6	10.73537158	10.000	100
			7	43.83599873	50.000	2500
			8	96.62892738	100.000	10000
			9	229.6765896	250.000	62500
			10	466.5084977	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	0.40720		-0.00626015
Std Err of Y Est				
R Squared		0.9998589		0.9992040
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	0.917505066	2.81034E-05	0.936367	-0.00001248
Std Err of Coef.				
Correlation Coefficient		0.999929		
Coefficient of Determination (r^2)		0.999859		

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/20/2020	MQ4	PFBS	1	0.218140541	0.250
			2	0.476012601	0.500
			3	0.98083487	1.000
			4	2.429106694	2.000
			5	6.071180012	5.000
			6	11.56255063	10.000
			7	59.02012306	50.000
			8	115.8441307	100.000
			9	268.6755383	250.000
			10	533.3780838	500.000

Regression Output		***Reported***
Constant	*1.855723*	*0.000349*
Std Err of Y Est		
R Squared	*0.999682*	*0.998678*
Degrees of Freedom		
X Coefficient(s)	*1.066774*	*1.087170*
Std Err of Coef.		
Correlation Coefficient	*0.999841*	
Coefficient of Determination (r^2)	*0.999682*	*0.998678*

LDC #: 47288B46

Validation Findings Worksheet
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/26/2020	MQ4	PFOA	1	0.364321782	0.250	0.0625
			2	0.719574409	0.500	0.25
			3	1.352100428	1.000	1
			4	2.401378426	2.000	4
			5	6.039297964	5.000	25
			6	11.76681779	10.000	100
			7	54.54803356	50.000	2500
			8	115.7280924	100.000	10000
			9	272.0486296	250.000	62500
			10	521.2496897	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	0.18709		0.120191
Std Err of Y Est				
R Squared		0.9999340		0.9997660
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.143310231	-0.000203208	1.14636	-0.000209775
Std Err of Coef.				
Correlation Coefficient		0.999967		
Coefficient of Determination (r^2)		0.999934		

LDC #: 45088B96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: DM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/29/2020	MQ4	PFHxS	1	0.090312611	0.250	0.0625
			2	0.554619134	0.500	0.25
			3	0.879094479	1.000	1
			4	1.88339845	2.000	4
			5	5.243644386	5.000	25
			6	11.85984225	10.000	100
			7	50.53408586	50.000	2500
			8	102.9247442	100.000	10000
			9	270.4999765	250.000	62500
			10	481.5067366	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	-1.40260		-0.145925
Std Err of Y Est				
R Squared		0.9994316		0.9986790
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.155909744	-0.000375202	1.09858	-0.000251852
Std Err of Coef.				
Correlation Coefficient		0.999716		
Coefficient of Determination (r^2)		0.999432		

LDC #: 47503B96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Reviewer: A
2nd Reviewer: JVG

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/29/2020	MQ4	PFOA	1	0.341872059	0.250	0.0625
			2	0.833811058	0.500	0.25
			3	1.310270348	1.000	1
			4	2.523838971	2.000	4
			5	6.966030299	5.000	25
			6	13.0191009	10.000	100
			7	62.65294692	50.000	2500
			8	116.749093	100.000	10000
			9	284.132683	250.000	62500
			10	558.8260031	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	1.01258		0.255567
Std Err of Y Est				
R Squared		0.9999339		0.9995660
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.162937577	-9.60201E-05	1.19871	-0.000173152
Std Err of Coef.				
Correlation Coefficient		0.999967		
Coefficient of Determination (r^2)		0.999934		

LDC #: 47588396

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: JV6

METHOD: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	20022501-3C	2/25/20	PFOA ($^{13}C_2$-PFOA) PFHxA	10.00	10.9	10.87	8.7	8.7
			PFOS ($^{13}C_8$-PFOS) PFOS	10.00	10.6	10.55	5.5	5.5
2	20022501-3	2/26/20	PFOA ($^{13}C_2$-PFOA) PFHxA	10.0	11.1	11.06	10.6	10.6
			PFOS ($^{13}C_8$-PFOS) PFOS	↓	11.2	11.2	12.0	12.0
3	20022601-3	2/26/20	PFOA ($^{13}C_2$-PFOA) PFBA	10.0	10.4	10.41	4.1	4.1
			PFOS ($^{13}C_8$-PFOS) PFOA	10.0	10.7	10.66	6.6	6.6
4	20022601-5	2/27/20	PFOA ($^{13}C_2$-PFOA) PFBA	10.00	10.1	10.13	1.3	1.3
			PFOS ($^{13}C_8$-PFOS) PFOA	10.00	9.56	9.56	4.4	4.4

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 41508B46

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 4
2nd Reviewer: JVL

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = | MSC - MSC | * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 13/13

Compound	Spike Added (µg/L)		Sample Concentration (µg/L)	Spiked Sample Concentration (µg/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
PFOA	0.0396	0.0408	0.881	1.05	0.973	419	417	~~60.2~~ 25	225	60.2	62.0
PFOS	↓	↓	0.134	0.175	0.184	103	103	120	122	15.2	16.9

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47988B96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: JVG

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: BOB012T-BS1

Compound	Spike Added (µg/L)		Spike Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	NA	0.0406	NA	102	102				
PFOS	↓	↓	0.0342	↓	~~85.6~~	~~85.5~~				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47508B96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: JVG

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 2, PFOA:

Conc. = $\frac{(-1.14636+\sqrt{(1.14636)^2-4(-0.000209775)(-\frac{22.24\times12.5}{1.38e4}+0.120191)})}{(2)(-0.000209775)(245)(\quad)}$

= 0.7401 µg/L

#	Sample ID	Compound	Reported Concentration (µg/L)	Calculated Concentration ( )	Qualification
	2	PFOA	0.741		

LDC Report# 47508C96

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 19, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000330

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
I003MW05S-20200214	2000330-02	Water	02/14/20
I003MW12S-20200214	2000330-03	Water	02/14/20
DUP04-20200214	2000330-04	Water	02/14/20
I003MW14S-20200214	2000330-05	Water	02/14/20
I003MW14S-20200214MS	2000330-05MS	Water	02/14/20
I003MW14S-20200214MSD	2000330-05MSD	Water	02/14/20

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.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

For each calibration 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 EB03-20200214 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200212 (from SDG 2000314) was identified as a source blank. No contaminants were found.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. For I003MW14S-20200214MS/MSD, no data were qualified for perfluorobutanesulfonic acid (PFBS), perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), and perfluorooctanoic acid (PFOA) percent outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	RPD (Limits)	Flag	A or P
I003MW14S-20200214MS/MSD (I003MW14S-20200214)	MeFOSAA	32.5 (≤30)	NA	-

For I003MW14S-20200214MS/MSD, no data were qualified for perfluorobutanesulfonic acid (PFBS), perfluorohexanoic acid (PFHxA), perfluoroheptanoic acid (PFHpA), and perfluorooctanoic acid (PFOA) relative percent differences (RPD) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

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 I003MW12S-20200214 and DUP04-20200214 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
	I003MW12S-20200214	DUP04-20200214				
Perfluorobutanesulfonic acid (PFBS)	0.0346	0.0349	1 (≤30)	-	-	-
Perfluorohexanoic acid (PFHxA)	0.164	0.155	6 (≤30)	-	-	-

Compound	Concentration (ug/L)		RPD (Limits)	Difference (Limits)	Flag	A or P
	I003MW12S-20200214	DUP04-20200214				
Perfluoroheptanoic acid (PFHpA)	0.0538	0.0547	2 (≤30)	-	-	-
Perfluorohexanesulfonic acid (PFHxS)	0.190	0.166	13 (≤30)	-	-	-
Perfluorooctanoic acid (PFOA)	0.402	0.403	0 (≤30)	-	-	-
Perfluorooctanesulfonic acid (PFOS)	0.0519	0.0574	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
DUP04-20200214	13C2-PFTeDA	39.9 (50-150)	Perfluorotetradecanoic acid (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 2000330

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000330

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000330

No Sample Data Qualified in this SDG

LDC #: 47508C96 **VALIDATION COMPLETENESS WORKSHEET** Date: 3/16/20
SDG #: 2000330 Stage 4 Page: 1 of 1
Laboratory: Vista Analytical Laboratory Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	RSD≤20%, r^2 TWO/ICV≤30%
IV.	Continuing calibration/ISC	A	CCV/ISC≤30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=1 .SB=SB01-20200212(2000314)
VII.	Matrix spike/Matrix spike duplicates	TW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	TW	D=3+4
X.	Labeled Compounds	TW	
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~~	~~EB03-20200214~~	~~2000330-01~~	~~Water~~	~~02/14/20~~
2	I003MW05S-20200214	2000330-02	Water	02/14/20
3	I003MW12S-20200214	2000330-03	Water	02/14/20
4	DUP04-20200214	2000330-04	Water	02/14/20
5	I003MW14S-20200214	2000330-05	Water	02/14/20
6	I003MW14S-20200214MS	2000330-05MS	Water	02/14/20
7	I003MW14S-20200214MSD	2000330-05MSD	Water	02/14/20
8				
9				
10				

Notes:

	B0B0137-B4-1						

LDC #: 47508C96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: JVC

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?	✓			
Was 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 standard analyzed after each initial calibration for each instrument?	✓			
Were all 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?		✓		
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?		✓		

LDC #: 47508C96

VALIDATION FINDINGS CHECKLIST

Reviewer: Q
2nd Reviewer: SM6

Validation Area	Yes	No	NA	Findings/Comments
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: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 47508c96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates

Page: 1 of 1
Reviewer: 2
2nd Reviewer: JM

METHOD: LC/MS PFAS (EPA Method 537M)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Were 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
		6/7	~~PFBS~~	53.1 (72-130)	68.3 (72-130)	( )	5	No Qual >4x
			~~PFHxA~~	( )	69.9 (72-129)	69.9 (≤30)		
			~~PFHpA~~	138 (72-130)	~~572~~ (70-130) -314	614 ( )		
				( )	( )	( )		
			~~PFHxS~~	44.2 (68-131)	-379 (68-131)	253 ( )		
			PFOA	64.4 (71-133)	26.4 (71-133)	83.7 ( )		
				( )	( )	( )		
			MeFOSAA	( )	( )	32.5 (≤30)	5 (ND)	Hold/A
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		
				( )	( )	( )		

LDC#: 47508C96

VALIDATION FINDINGS WORKSHEET
Field Duplicates

Reviewer: 9
2nd Reviewer: JM

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.3

Compound	Concentration (ug/L)		(≤30) RPD	Difference (≤LOQ)	Limits	Qual
	3	4				
PFBS	0.0346	0.0349	1			
PFHxA	0.164	0.155	6			
PFHpA	0.0538	0.0547	2			
PFHxS	0.190	0.166	13			
PFOA	0.402	0.403	0			
PFOS	0.0519	0.0574	10			

V:\FIELD DUPLICATES\Field Duplicates\FD_Organics\2020\47508C96_WOOD.wpd

LDC #: 47508C96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: 9
2nd Reviewer: JM

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	13C2-PFOA	161	(50-150)	No qual (5x)
					( )	
		4 (N/D)	13C2PFTeDA	39.9	( )	Verify (PFTeDA)
					( )	
		5	13C3-PFHxA	187	( )	No qual (5x)
			13C3-PFOA	174	( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	

LDC#: 47508C96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 2
2nd Reviewer: JV6

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/24/2020	MQ4	PFBS	1	0.633875728	0.250
			2	1.101680907	0.500
			3	2.371425822	1.000
			4	5.122410556	2.000
			5	12.14561292	5.000
			6	24.17966012	10.000
			7	120.66273230	50.000
			8	249.1365015	100.000
			9	585.9840235	250.000
			10	1193.961241	500.000

Regression Output		*Reported*
Constant	*0.816967*	*0.022226*
Std Err of Y Est		
R Squared	*0.999841*	*0.999677*
Degrees of Freedom		
X Coefficient(s)	*2.380549*	*2.389200*
Std Err of Coef.		
Correlation Coefficient	*0.999921*	
Coefficient of Determination (r^2)	*0.999841*	*0.999677*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/24/2020	MQ4	PFHxA	1	0.315503721	0.250
			2	0.503071002	0.500
			3	1.029558277	1.000
			4	2.035496213	2.000
			5	5.038662651	5.000
			6	9.900583622	10.000
			7	47.51574284	50.000
			8	91.75496192	100.000
			9	228.7017249	250.000
			10	450.1274278	500.000

Regression Output		***Reported***
Constant	*0.859876*	*0.075621*
Std Err of Y Est		
R Squared	*0.999930*	*0.999659*
Degrees of Freedom		
X Coefficient(s)	*0.901577*	*0.910113*
Std Err of Coef.		
Correlation Coefficient	*0.999965*	
Coefficient of Determination (r^2)	*0.999930*	*0.999659*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/27/2020	MQ4	PFBS	1	0.632118722	0.250
			2	1.586507597	0.500
			3	2.742775839	1.000
			4	4.901326024	2.000
			5	12.22165384	5.000
			6	27.67974785	10.000
			7	128.6912281	50.000
			8	253.2448455	100.000
			9	578.2133693	250.000
			10	1165.917419	500.000

Regression Output		***Reported***
Constant	*3.957059*	*0.185525*
Std Err of Y Est		
R Squared	*0.999640*	*0.998443*
Degrees of Freedom		
X Coefficient(s)	*2.325181*	*2.366230*
Std Err of Coef.		
Correlation Coefficient	*0.999820*	
Coefficient of Determination (r^2)	*0.999640*	*0.998443*

LDC #: 47508C96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: DV

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/27/2020	MQ4	PFOA	1	0.322971593	0.250	0.0625
			2	0.664649291	0.500	0.25
			3	1.41593446	1.000	1
			4	2.504266854	2.000	4
			5	6.608790835	5.000	25
			6	12.89285388	10.000	100
			7	58.00272182	50.000	2500
			8	117.4198491	100.000	10000
			9	276.2363349	250.000	62500
			10	502.6360698	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	0.20152		0.0799012
Std Err of Y Est				
R Squared		0.9999868		0.9998180
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.20400609	-0.000398275	1.20955	-0.000410213
Std Err of Coef.				
Correlation Coefficient		0.999993		
Coefficient of Determination (r^2)		0.999987		

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
2/28/2020	MQ4	PFHxA	1	0.303600128	0.250
			2	0.597584798	0.500
			3	1.164206205	1.000
			4	1.968289604	2.000
			5	5.098500037	5.000
			6	9.640800994	10.000
			7	47.14252829	50.000
			8	95.7879666	100.000
			9	219.0447367	250.000
			10	420.3159336	500.000

Regression Output		***Reported***
Constant	*2.481143*	*0.122807*
Std Err of Y Est		
R Squared	*0.999080*	*0.997551*
Degrees of Freedom		
X Coefficient(s)	*0.844901*	*0.870570*
Std Err of Coef.		
Correlation Coefficient	*0.999540*	
Coefficient of Determination (r^2)	*0.999080*	*0.997551*

LDC #: 47988C96

Validation Findings Worksheet
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: SM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	Instrument	Compound	Standard	(Y) Response	(X) Conc.	(X^2) Conc.
2/28/2020	MQ4	PFHxS	1	0.12583571	0.250	0.0625
			2	0.546220095	0.500	0.25
			3	1.100093989	1.000	1
			4	2.268965029	2.000	4
			5	5.842901742	5.000	25
			6	12.00998324	10.000	100
			7	51.40861626	50.000	2500
			8	106.1284785	100.000	10000
			9	267.918899	250.000	62500
			10	468.4202122	500.000	250000

Regression Output	Calculated		*Reported*	
Constant	c	-1.04004		-0.0812317
Std Err of Y Est				
R Squared		0.9996150		0.9990280
Degrees of Freedom				
	b	a	b	a
X Coefficient(s)	1.170779375	-0.000459763	1.12704	-0.00036565
Std Err of Coef.				
Correlation Coefficient		0.999807		
Coefficient of Determination (r^2)		0.999615		

LDC #: 47508C96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: JM

METHOD: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	200224P1-34	2/24/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFBS	10.00	10.4	10.37	3.7	3.7
			~~PFOS ($^{13}C_8$-PFOS)~~	10.00	10.8	10.77	7.7	7.7
2	200228P2-75	2/29/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFHxA	10.0	11.1	11.14	11.4	11.4
			~~PFOS ($^{13}C_8$-PFOS)~~	10.0	9.57	9.57	4.3	4.3
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 47508C96

VALIDATION FINDINGS WORKSHEET
Matrix Spike/Matrix Spike Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: JV6

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SSC - SC)/SA Where: SSC = Spiked sample concentration; SA = Spike added; SC = Sample concentation

RPD = I MSC - MSC I * 2/(MSC + MSDC) MSC = Matrix spike concentration MSDC = Matrix spike duplicate concentration

MS/MSD samples: 6/7

Compound	Spike Added (ng/L)		Sample Concentration (ng/L)	Spiked Sample Concentration (ng/L)		Matrix Spike Percent Recovery		Matrix Spike Duplicate Percent Recovery		MS/MSD RPD	
	MS	MSD	------	MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
PFOA	0.202	0.202	4.36	4.49	4.42	64.4	64.4	26.4	29.7	83.7	31.57
PFOS	~~0.675~~ 0.0403	0.0405	0.601	~~0.695~~ 0.649	0.649	111	109	120	119	7.79	0.62

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47508C96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA

Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC)

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: B0B013T-BS1

Compound	Spike Added (µg/L)		Spike Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	NA	0.0354	NA	88.5	88.5				
PFOS	↓	↓	0.0359	↓	89.7	89.7				

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 47508C96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: JM

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 1, PFBS:

Conc. = $\frac{(1380)(\frac{134000 \times 12.5}{2.3892} - 0.022262)}{(256)}$

= 0.198 µg/L

#	Sample ID	Compound	Reported Concentration (µg/L)	Calculated Concentration ( )	Qualification
	1	PFBS	0.198		

Privileged and Confidential

LDC Report# 47508D96

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 19, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000356

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
IS720W02D-20200219	2000356-02	Water	02/19/20
IS720W06D-20200219	2000356-03	Water	02/19/20
IS720W03D-20200219	2000356-04	Water	02/19/20
TW08S-20200219	2000356-05	Water	02/19/20
TW09S-20200219	2000356-06	Water	02/19/20
TW10S-20200219	2000356-07	Water	02/19/20
TW11S-20200219	2000356-08	Water	02/19/20
TW13S-20200219	2000356-09	Water	02/19/20
TW12S-20200219	2000356-10	Water	02/19/20

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.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

For each calibration 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 EB04-20200219 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200212 (from SDG 2000314) 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 method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. 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 with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
IS720W06D-20200219	Perfluorononanoic acid (PFNA)	14.064 (2.6685-8.0055)	J (all detects)	A
TW08S-20200219	Perfluorononanoic acid (PFNA) Perfluorooctanesulfonic acid (PFOS)	8.031 (2.6685-8.005) 3.631 (1.027-3.081)	J (all detects) J (all detects)	A
TW09S-20200219	Perfluorononanoic acid (PFNA)	8.314 (2.6685-8.0055)	J (all detects)	A

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 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 2000356

Sample	Compound	Flag	A or P	Reason
IS720W06D-20200219 TW09S-20200219	Perfluorononanoic acid (PFNA)	J (all detects)	A	Target compound identification (ion abundance ratio)
TW08S-20200219	Perfluorononanoic acid (PFNA) Perfluorooctanesulfonic acid (PFOS)	J (all detects) J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000356

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000356

No Sample Data Qualified in this SDG

LDC #: 47508D96

SDG #: 2000356

Laboratory: Vista Analytical Laboratory

VALIDATION COMPLETENESS WORKSHEET

Stage 4

Date: 3/14/20

Page: 1 of 1

Reviewer: V

2nd Reviewer: JVG

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A, A	RSD≤20%. r² TMC/ICV≤30%
IV.	Continuing calibration/ISC	A	CCV/ISC≤30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=1. EB=SB01-20200212 (2000314)
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	TW	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	TW	
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~~	~~EB04-20200219~~	~~2000356-01~~	~~Water~~	~~02/19/20~~
2	IS720W02D-20200219	2000356-02	Water	02/19/20
3	IS720W06D-20200219	2000356-03	Water	02/19/20
4	IS720W03D-20200219	2000356-04	Water	02/19/20
5	TW08S-20200219	2000356-05	Water	02/19/20
6	TW09S-20200219	2000356-06	Water	02/19/20
7	TW10S-20200219	2000356-07	Water	02/19/20
8	TW11S-20200219	2000356-08	Water	02/19/20
9	TW13S-20200219	2000356-09	Water	02/19/20
10	TW12S-20200219	2000356-10	Water	02/19/20
11				

Notes:

	B0B0186-BK1						

LDC #: 47808696

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer: JM

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?	✓			
Was 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 standard analyzed after each initial calibration for each instrument?	✓			
Were all 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?		✓		
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?			✓	

LDC #: 47583D96

VALIDATION FINDINGS CHECKLIST

Reviewer: 9
2nd Reviewer: JW

Validation Area	Yes	No	NA	Findings/Comments
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: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 47508096

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: 9
2nd Reviewer: JV4

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
		300B0186-BLK1	d5-EtFOSAA	45.1	(30-150)	J+ (all detects) A
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	

LDC #: 475080 96

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 5.1.1

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 between 50-150%?

#	Date	Sample ID	Associated Samples	Ion Ratio 50-150% Finding	Qualifications
		3	PFNA	14.064 (2.6685 - 8.0055)	Jdets/A
		5	PFNA	8.031 (2.6685 - 8.0055)	
			PFOS	3.631 (1.027 - 3.081)	
		6	PFNA	8.314 (2.6685 - 8.0055)	

LDC#: 47508D96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 4
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/3/2020	MQ4	PFBS	1	0.554705098	0.250
			2	1.200240315	0.500
			3	2.661566497	1.000
			4	4.565038616	2.000
			5	11.70798422	5.000
			6	24.59190858	10.000
			7	123.1772944	50.000
			8	228.7428464	100.000
			9	652.3548228	250.000
			10	1232.788197	500.000

Regression Output		***Reported***
Constant	*-0.438622*	*-0.055572*
Std Err of Y Est		
R Squared	*0.999028*	*0.998545*
Degrees of Freedom		
X Coefficient(s)	*2.488959*	*2.484790*
Std Err of Coef.		
Correlation Coefficient	*0.999514*	
Coefficient of Determination (r^2)	*0.999028*	*0.998545*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/3/2020	MQ4	PFHxA	1	0.284453925	0.250
			2	0.563641632	0.500
			3	0.853216191	1.000
			4	1.758122628	2.000
			5	3.931533913	5.000
			6	8.197558343	10.000
			7	44.22352528	50.000
			8	88.16450415	100.000
			9	228.8115199	250.000
			10	439.6866489	500.000

Regression Output		***Reported***
Constant	*0.288773*	*0.023652*
Std Err of Y Est		
R Squared	*0.999657*	*0.999493*
Degrees of Freedom		
X Coefficient(s)	*0.885537*	*0.888423*
Std Err of Coef.		
Correlation Coefficient	*0.999829*	
Coefficient of Determination (r^2)	*0.999657*	*0.999493*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/4/2020	MQ4	PFBS	1	0.587190232	0.250
			2	1.302489993	0.500
			3	2.382420295	1.000
			4	4.640189802	2.000
			5	12.43729927	5.000
			6	22.28433527	10.000
			7	120.4758055	50.000
			8	242.8732193	100.000
			9	682.9602572	250.000
			10	1288.660676	500.000

Regression Output		***Reported***
Constant	*-1.500233*	*-0.116823*
Std Err of Y Est		
R Squared	*0.999024*	*0.998244*
Degrees of Freedom		
X Coefficient(s)	*2.605286*	*2.590230*
Std Err of Coef.		
Correlation Coefficient	*0.999512*	
Coefficient of Determination (r^2)	*0.999024*	*0.998244*

LDC#: 47898D96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/4/2020	MQ4	PFHxA	1	0.31107562	0.250
			2	0.537330688	0.500
			3	0.920922420	1.000
			4	1.813037164	2.000
			5	4.474043531	5.000
			6	9.166550489	10.000
			7	43.86348346	50.000
			8	85.83019426	100.000
			9	226.2737151	250.000
			10	433.2922326	500.000

Regression Output		***Reported***
Constant	*0.492762*	*0.058589*
Std Err of Y Est		
R Squared	*0.999590*	*0.999543*
Degrees of Freedom		
X Coefficient(s)	*0.872441*	*0.877166*
Std Err of Coef.		
Correlation Coefficient	*0.999795*	
Coefficient of Determination (r^2)	*0.999590*	*0.999543*

LDC #: 47088D96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: 9
2nd Reviewer: SM

METHOD: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	20030422S9	3/5/20	~~PFOA ($^{13}C_2$-PFOA)~~ ~~PFBS~~	10.00	9.86	9.86	1.4	1.4
			~~PFOS ($^{13}C_8$-PFOS)~~	10.00	10.1	10.08	0.8	0.8
2			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #41608D96

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: 9
2nd Reviewer: JM

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 80B0186-BS1/BSD1

Compound	Spike Added (µL)		Spike Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	0.0400	0.0374	0.0385	93.4	93.4	96.3	96.3	3.06	2.90
PFOS	↓	↓	0.0361	0.0403	90.2	90.2	101	101	11.1	11.0

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47508D96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: [illegible]
2nd reviewer: JVG

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 2, PFBS

Conc. = $\frac{(\frac{995 \times 12.5}{756})(\quad)(0.055572)(1)(\quad)}{(2.48474)(252)(\quad)(\quad)}$

= 0.0264 µg/L

#	Sample ID	Compound	Reported Concentration µg/L	Calculated Concentration ( )	Qualification
	2	PFBS	0.0264		

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 19, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000372

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TW07S-20200220	2000372-02	Water	02/20/20
TW05S-20200220	2000372-03	Water	02/20/20
TW06S-20200220	2000372-04	Water	02/20/20
TW21S-20200220	2000372-05	Water	02/20/20
TW20S-20200220	2000372-06	Water	02/20/20
TW19S-20200220	2000372-07	Water	02/20/20
TW18S-20200220	2000372-08	Water	02/20/20

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.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

For each calibration 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 EB04-20200219 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200212 (from SDG 2000314) 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 method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. 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 with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
TW05S-20200220	Perfluorononanoic acid (PFNA)	9.388 (2.6685-8.0055)	J (all detects)	A
TW21S-20200220	Perfluorononanoic acid (PFNA)	16.165 (3.6265-10.8795)	J (all detects)	A
TW20S-20200220	Perfluorohexanoic acid (PFHxA)	125.926 (10.3835-31.1505)	J (all detects)	A
TW18S-20200220	Perfluoroheptanoic acid (PFHpA)	27.375 (8.382-25.146)	J (all detects)	A

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 ion abundance ratio, data were qualified as estimated 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 2000372

Sample	Compound	Flag	A or P	Reason
TW05S-20200220 TW21S-20200220	Perfluorononanoic acid (PFNA)	J (all detects)	A	Target compound identification (ion abundance ratio)
TW20S-20200220	Perfluorohexanoic acid (PFHxA)	J (all detects)	A	Target compound identification (ion abundance ratio)
TW18S-20200220	Perfluoroheptanoic acid (PFHpA)	J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000372

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000372

No Sample Data Qualified in this SDG

LDC #: 47508E96

SDG #: 2000372

Laboratory: Vista Analytical Laboratory

VALIDATION COMPLETENESS WORKSHEET

Stage 4

Date: 3/16/20

Page: 1 of 1

Reviewer:

2nd Reviewer: JVG

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A / A	RSD ≤ 20% . r^2 TWL/ICV ≤ 30%
IV.	Continuing calibration/ISC	A	CCV/ISC ≤ 30%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=1 SB=SB01-20200212(2000314)
VII.	Matrix spike/Matrix spike duplicates	N	CS
VIII.	Laboratory control samples	A	LCS/D
IX.	Field duplicates	N	
X.	Labeled Compounds	A	
VI.	Compound quantitation RL/LOQ/LODs	A	
XII.	Target compound identification	TW	
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~~	~~EB05--20200220~~	~~2000372-01~~	~~Water~~	~~02/20/20~~
2	TW07S-20200220	2000372-02	Water	02/20/20
3	TW05S-20200220	2000372-03	Water	02/20/20
4	TW06S-20200220	2000372-04	Water	02/20/20
5	TW21S-20200220	2000372-05	Water	02/20/20
6	TW20S-20200220	2000372-06	Water	02/20/20
7	TW19S-20200220	2000372-07	Water	02/20/20
8	TW18S-20200220	2000372-08	Water	02/20/20
9				
10				

Notes:

	B0B0213-BK1						

LDC #: 47508296

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: JW

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?	✓			
Was 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 standard analyzed after each initial calibration for each instrument?	✓			
Were all 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?		✓		
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?			✓	

LDC #: 47508296

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer: JV6

Validation Area	Yes	No	NA	Findings/Comments
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: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 47508E96

VALIDATION FINDINGS WORKSHEET
Target Compound Identification

Reviewer: 9
2nd Reviewer: JM

METHOD: LC/MS/MS and Isotope Dilution Compliant with Table B-15 of DoD QSM 5.1.1

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 between 50-150%?

#	Date	Sample ID	Associated Samples	Ion Ratio (50-150%) Finding	Qualifications
		3	PFNA	9.388 (2.685-8.0055)	J+ (all) / A
		5	PFNA	16.165 (3.6265-10.8795)	
		6	PFHxA	125.926 (10.3835-31.1505)	
		8	PFHpA	27.375 (0.382-25.146)	

LDC#: 41582 98

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/4/2020	MQ4	PFBS	1	0.587190232	0.250
			2	1.302489993	0.500
			3	2.382420295	1.000
			4	4.640189802	2.000
			5	12.43729927	5.000
			6	22.28433527	10.000
			7	120.4758055	50.000
			8	242.8732193	100.000
			9	682.9602572	250.000
			10	1288.660676	500.000

Regression Output		***Reported***
Constant	*-1.500233*	*-0.116823*
Std Err of Y Est		
R Squared	*0.999024*	*0.998244*
Degrees of Freedom		
X Coefficient(s)	*2.605286*	*2.590230*
Std Err of Coef.		
Correlation Coefficient	*0.999512*	
Coefficient of Determination (r^2)	*0.999024*	*0.998244*

LDC#: 47582-96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer:
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/4/2020	MQ4	PFHxA	1	0.31107562	0.250
			2	0.537330688	0.500
			3	0.920922420	1.000
			4	1.813037164	2.000
			5	4.474043531	5.000
			6	9.166550489	10.000
			7	43.86348346	50.000
			8	85.83019426	100.000
			9	226.2737151	250.000
			10	433.2922326	500.000

Regression Output		***Reported***
Constant	*0.492762*	*0.058589*
Std Err of Y Est		
R Squared	*0.999590*	*0.999543*
Degrees of Freedom		
X Coefficient(s)	*0.872441*	*0.877166*
Std Err of Coef.		
Correlation Coefficient	*0.999795*	
Coefficient of Determination (r^2)	*0.999590*	*0.999543*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/5/2020	MQ4	PFBS	1	0.726555356	0.250
			2	1.104992504	0.500
			3	2.524191830	1.000
			4	5.242095397	2.000
			5	12.56394309	5.000
			6	24.35921505	10.000
			7	128.0155043	50.000
			8	263.9439244	100.000
			9	580.1280986	250.000
			10	1282.892279	500.000

Regression Output		***Reported***
Constant	*-1.958225*	*0.020965*
Std Err of Y Est		
R Squared	*0.997967*	*0.997821*
Degrees of Freedom		
X Coefficient(s)	*2.526349*	*2.504810*
Std Err of Coef.		
Correlation Coefficient	*0.998983*	
Coefficient of Determination (r^2)	*0.997967*	*0.997821*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/5/2020	MQ4	PFHxA	1	0.303339179	0.250
			2	0.512576408	0.500
			3	0.938837798	1.000
			4	1.910591972	2.000
			5	4.666418299	5.000
			6	9.287534991	10.000
			7	45.54031784	50.000
			8	89.32557222	100.000
			9	217.1793728	250.000
			10	414.4291907	500.000

Regression Output		***Reported***
Constant	*1.769943*	*0.082029*
Std Err of Y Est		
R Squared	*0.999397*	*0.998840*
Degrees of Freedom		
X Coefficient(s)	*0.834171*	*0.852543*
Std Err of Coef.		
Correlation Coefficient	*0.999698*	
Coefficient of Determination (r^2)	*0.999397*	*0.998840*

LDC #: ~~41508270~~

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Page: 1 of 1
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
RRF = $(A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	~~20030SP-31~~	~~3/6/20~~	~~PFOA ($^{13}C_2$-PFOA)~~ ~~PFBS~~	10.00	9.65	9.65	3.5	3.5
			~~PFOS ($^{13}C_8$-PFOS)~~ ~~PFHxA~~	10.00	10.4	10.42	4.2	4.2
2			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47008296

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Page: 1 of 1
Reviewer: 9
2nd Reviewer: JVC

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = I LCSC - LCSDC I * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: BOB0213-BS1/-BSD1

Compound	Spike Added (µg/L)		Spike Concentration (ng)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	0.0400	0.0429	0.0420	107	107	105	105	2.03	2.12
PFOS	↓	↓	0.0403	0.0436	101	101	109	109	7.91	7.87

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47508296

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Page: 1 of 1
Reviewer: 9
2nd reviewer: JM

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x	=	Area of the characteristic ion (EICP) for the compound to be measured
A_{is}	=	Area of the characteristic ion (EICP) for the specific internal standard
I_s	=	Amount of internal standard added in nanograms (ng)
V_o	=	Volume or weight of sample extract in milliliters (ml) or grams (g).
V_i	=	Volume of extract injected in microliters (ul)
V_t	=	Volume of the concentrated extract in microliters (ul)
Df	=	Dilution Factor.
%S	=	Percent solids, applicable to soil and solid matrices only.
2.0	=	Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 2, PFHxA

Conc. = $\frac{(1.33e4 \times 12.5)}{(1.38e4 \times 1)} \times \frac{0.005859}{(0.877166)(254)} \times \frac{(1)}{(\quad)} \times \frac{(\quad)}{(\quad)}$

= 0.0497 ng/L

#	Sample ID	Compound	Reported Concentration (ng/L)	Calculated Concentration ( )	Qualification
	2	PFHxA	0.0494		

Privileged and Confidential

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: MCAS El Toro and Tustin PFAS

LDC Report Date: March 20, 2020

Parameters: Perfluoroalkyl & Polyfluoroalkyl Substances

Validation Level: Stage 4

Laboratory: Vista Analytical Laboratory

Sample Delivery Group (SDG): 2000390

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
TW14S-20200221	2000390-02	Water	02/21/20
TW17S-20200221	2000390-03	Water	02/21/20
TW16S-20200221	2000390-04	Water	02/21/20
TW15S-20200221	2000390-05	Water	02/21/20

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.

The percent relative standard deviations (%RSD) were less than or equal to 20.0% for all compounds.

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination (r^2) were greater than or equal to 0.990.

For each calibration 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 EB06-20200221 was identified as an equipment blank. No contaminants were found.

Sample SB01-20200212 (from SDG 2000314) 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 method. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

IX. Field Duplicates

No field duplicates were identified in this SDG.

X. 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 with the following exceptions:

Sample	Compound	Ion Abundance Ratio (Limits)	Flag	A or P
TW14S-20200221	Perfluorononanoic acid (PFNA)	8.665 (2.6685-8.0055)	J (all detects)	A
TW15S-20200221	Perfluorononanoic acid (PFNA)	8.257 (2.6685-8.0055)	J (all detects)	A

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 ion abundance ratio, data were qualified as estimated 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 2000390

Sample	Compound	Flag	A or P	Reason
TW14S-20200221 TW15S-20200221	Perfluorononanoic acid (PFNA)	J (all detects)	A	Target compound identification (ion abundance ratio)

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Laboratory Blank Data Qualification Summary - SDG 2000390

No Sample Data Qualified in this SDG

MCAS El Toro and Tustin PFAS
Perfluoroalkyl & Polyfluoroalkyl Substances - Field Blank Data Qualification Summary - SDG 2000390

No Sample Data Qualified in this SDG

LDC #: 47508F96

SDG #: 2000390

Laboratory: Vista Analytical Laboratory

VALIDATION COMPLETENESS WORKSHEET

Stage 4

Date: 3/16/20

Page: 1 of 1

Reviewer: [illegible]

2nd Reviewer: [illegible]

METHOD: LC/MS Perfluoroalkyl & Polyfluoroalkyl Substances (EPA Method 537M DOD QSM 5.3)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	LC/MS Instrument performance check	A	
III.	Initial calibration/ICV	A/A	ASO ≤ 20% · r² TMC/ICV ≤ 3%
IV.	Continuing calibration/ISC	A	CCV/ISC ≤ 3%
V.	Laboratory Blanks	A	
VI.	Field blanks	ND	EB=1 SB=SB01-20200212 (2000314)
VII.	Matrix spike/Matrix spike duplicates	N	CS
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; 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~~	~~EB06-20200221~~	~~2000390-01~~	~~Water~~	~~02/21/20~~
2	TW14S-20200221	2000390-02	Water	02/21/20
3	TW17S-20200221	2000390-03	Water	02/21/20
4	TW16S-20200221	2000390-04	Water	02/21/20
5	TW15S-20200221	2000390-05	Water	02/21/20
6				
7				
8				
9				
10				

Notes:

	B0B0213-B44						

LDC #: 47508F96

VALIDATION FINDINGS CHECKLIST

Page: 1 of 2
Reviewer: 9
2nd Reviewer: JM

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?	✓			
Was 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 standard analyzed after each initial calibration for each instrument?	✓			
Were all 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?		✓		
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?			✓	

LDC #: 47508F96

VALIDATION FINDINGS CHECKLIST

Page: 2 of 2
Reviewer: 9
2nd Reviewer: SW

Validation Area	Yes	No	NA	Findings/Comments
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: PFOS/PFOAs

A. Perfluorohexanoic acid (PFHxA)			
B. Perfluoroheptanoic acid (PFHpA)			
C. Perfluorooctanoic acid (PFOA)			
D. Perfluorononanoic acid (PFNA)			
E. Perfluorodecanoic acid (PFDA)			
F. Perfluoroundecanoic acid (PFUnA)			
G. Perfluorododecanoic acid (PFDoA)			
H. Perfluorotridecanoic acid (PFTriDA)			
I. Perfluorotetradecanoic acid (PFTeDA)			
J. Perfluorobutanesulfonic acid (PFBS)			
K. Perfluorohexanesulfonic acid (PFHxS)			
L. Perfluoroheptanesulfonic acid (PFHpS)			
M. Perfluorooctanesulfonic acid (PFOS)			
N.Perfluorodecanesulfonic acid (PFDS)			
O. Perfluorooctane Sulfonamide (FOSA)			
P. Perfluorobutanoic acid (PFBA)			
Q. Perfluoropentanoic acis (PFPeA)			
R. 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2FTS)			
S. 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2 FTS)			
T. N-methyl perfluorooctanesulfonamidoacetic acid (NMeFOSAA)			
U. N-Ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)			
V. 1H,1H,2H,2H-Perfluorohexanesulfonic Acid (4:2FTS)			

LDC #: 47308E96

VALIDATION FINDINGS WORKSHEET
Labeled Compounds

Reviewer: 9
2nd Reviewer: JVG

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	13C2-PFOA	160	(50-150)	No Qual (15X)
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	
					( )	

LDC #: 47508E96

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 5.1.1

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 between 50-150%?

#	Date	Sample ID	Associated Samples	Ion Ratio (50-150%) Finding	Qualifications
		2	PFNA	8.665 (2.6685 - 8.0055)	Ldets/A
		5	PFNA	8.257	

LDC#: 47508F96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 2nd Reviewer:

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/4/2020	MQ4	PFBS	1	0.587190232	0.250
			2	1.302489993	0.500
			3	2.382420295	1.000
			4	4.640189802	2.000
			5	12.43729927	5.000
			6	22.28433527	10.000
			7	120.4758055	50.000
			8	242.8732193	100.000
			9	682.9602572	250.000
			10	1288.660676	500.000

Regression Output		*Reported*
Constant	*-1.500233*	*-0.116823*
Std Err of Y Est		
R Squared	*0.999024*	*0.998244*
Degrees of Freedom		
X Coefficient(s)	*2.605286*	*2.590230*
Std Err of Coef.		
Correlation Coefficient	*0.999512*	
Coefficient of Determination (r^2)	*0.999024*	*0.998244*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/4/2020	MQ4	PFHxA	1	0.31107562	0.250
			2	0.537330688	0.500
			3	0.920922420	1.000
			4	1.813037164	2.000
			5	4.474043531	5.000
			6	9.166550489	10.000
			7	43.86348346	50.000
			8	85.83019426	100.000
			9	226.2737151	250.000
			10	433.2922326	500.000

Regression Output		***Reported***
Constant	*0.492762*	*0.058589*
Std Err of Y Est		
R Squared	*0.999590*	*0.999543*
Degrees of Freedom		
X Coefficient(s)	*0.872441*	*0.877166*
Std Err of Coef.		
Correlation Coefficient	*0.999795*	
Coefficient of Determination (r^2)	*0.999590*	*0.999543*

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/5/2020	MQ4	PFBS	1	0.726555356	0.250
			2	1.104992504	0.500
			3	2.524191830	1.000
			4	5.242095397	2.000
			5	12.56394309	5.000
			6	24.35921505	10.000
			7	128.0155043	50.000
			8	263.9439244	100.000
			9	580.1280986	250.000
			10	1282.892279	500.000

Regression Output		*Reported*
Constant	*-1.958225*	*0.020965*
Std Err of Y Est		
R Squared	*0.997967*	*0.997821*
Degrees of Freedom		
X Coefficient(s)	*2.526349*	*2.504810*
Std Err of Coef.		
Correlation Coefficient	*0.998983*	
Coefficient of Determination (r^2)	*0.997967*	*0.997821*

LDC#: 47608F96

VALIDATION FINDINGS WORKSHEET
Initial Calibration Calculation Verification

Reviewer: 9
2nd Reviewer: JM

Method: LC/MS PFCs (EPA Method 537)

Calibration Date	System	Compound	Standard	(Y) Response	(X) Concentration
3/5/2020	MQ4	PFHxA	1	0.303339179	0.250
			2	0.512576408	0.500
			3	0.938837798	1.000
			4	1.910591972	2.000
			5	4.666418299	5.000
			6	9.287534991	10.000
			7	45.54031784	50.000
			8	89.32557222	100.000
			9	217.1793728	250.000
			10	414.4291907	500.000

Regression Output		***Reported***
Constant	*1.769943*	*0.082029*
Std Err of Y Est		
R Squared	*0.999397*	*0.998840*
Degrees of Freedom		
X Coefficient(s)	*0.834171*	*0.852543*
Std Err of Coef.		
Correlation Coefficient	*0.999698*	
Coefficient of Determination (r^2)	*0.999397*	*0.998840*

LDC #: 47508F96

VALIDATION FINDINGS WORKSHEET
Continuing Calibration Results Verification

Reviewer: 9
2nd Reviewer: JVG

METHOD: LC/MS PFAS (EPA Method 537M)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

% Difference = 100 * (ave. RRF - RRF)/ave. RRF
$RRF = (A_x)(C_{is})/(A_{is})(C_x)$

Where: ave. RRF = initial calibration average RRF
RRF = continuing calibration RRF
A_x = Area of compound, A_{is} = Area of associated internal standard
C_x = Concentration of compound, C_{is} = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (Reference Internal Standard)	Average RRF (initial)	Reported RRF	Recalculated RRF	Reported %D	Recalculated %D
1	200324P2-29	3/5/20	~~PFOA ($^{13}C_2$-PFOA)~~ PFBS	10.00	9.73	9.73	2.7	2.7
			~~PFOS ($^{13}C_8$-PFOS)~~ PFHxA	10.00	9.92	9.92	0.8	0.8
2			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
3			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					
4			PFOA ($^{13}C_2$-PFOA)					
			PFOS ($^{13}C_8$-PFOS)					

Comments: Refer to Continuing Calibration findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47808-7D

VALIDATION FINDINGS WORKSHEET
Laboratory Control Sample/Laboratory Control Sample Duplicates Results Verification

Reviewer: Q
2nd Reviewer: JM6

METHOD: LC/MS PFAS (EPA Method 537M)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery = 100 * (SC/SA Where: SSC = Spike concentration
SA = Spike added

RPD = | LCSC - LCSDC | * 2/(LCSC + LCSDC) LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS/LCSD samples: 280B0213-BS1/-BSD1

Compound	Spike Added (µg/L)		Spike Concentration (µg/L)		LCS Percent Recovery		LCSD Percent Recovery		LCS/LCSD RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
PFOA	0.0400	0.0400	0.0429	0.0420	107	107	105	105	2.03	2.12
PFOS	↓	↓	0.0403	0.0436	101	101	109	109	7.91	7.87

Comments: Refer to Laboratory Control Sample/Laboratory Control Sample Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

Privileged and Confidential

LDC #: 47508F96

VALIDATION FINDINGS WORKSHEET
Sample Calculation Verification

Reviewer: [signature]
2nd reviewer: [signature]

METHOD: LC/MS PFOS/PFOAs (EPA Method 537M)

Y N N/A Were all reported results recalculated and verified for all level IV samples?
Y N N/A Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

Concentration = $\frac{(A_x)(I_s)(V_t)(DF)(2.0)}{(A_{is})(RRF)(V_o)(V_i)(\%S)}$

A_x = Area of the characteristic ion (EICP) for the compound to be measured

A_{is} = Area of the characteristic ion (EICP) for the specific internal standard

I_s = Amount of internal standard added in nanograms (ng)

V_o = Volume or weight of sample extract in milliliters (ml) or grams (g).

V_i = Volume of extract injected in microliters (ul)

V_t = Volume of the concentrated extract in microliters (ul)

Df = Dilution Factor.

%S = Percent solids, applicable to soil and solid matrices only.

2.0 = Factor of 2 to account for GPC cleanup

Example:

Sample I.D. 2 PFHxA:

Conc. = $\frac{1.51e4 \times 12.5}{(1.33e4)(0.877166)(252)} - 0.05859 \; (1)(\quad)(\quad)$

= 0.0639 µg/L

#	Sample ID	Compound	Reported Concentration µg/L	Calculated Concentration ( )	Qualification
	2	PFHxA	00640		

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	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356

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 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356

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	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW06D	Monitoring well	6081257.3	2206051.6	IS720W06D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW13S	Temporary well point	6082826.527	2204296.191	TW13S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW11S	Temporary well point	6081826.527	2204801.4	TW11S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW12S	Temporary well point	6082284.861	2204046.191	TW12S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW02D	Monitoring well	6081771.9	2206338.6	IS720W02D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356

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 0000001A	TW09S	Temporary well point	6080899.444	2205223.275	TW09S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	SITE 00013S	IS72OW03D	Monitoring well	6081703.4	2206019.2	IS720W03D-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000004B	TW10S	Temporary well point	6081451.527	2204905.566	TW10S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356
TUSTIN_MCAS	OU 0000001A	TW08S	Temporary well point	6080920.277	2206723.275	TW08S-20200219	Ground water	19-Feb-20	Perfluoroalkyl Compounds	2000356