



**Groundwater Sample Results,  
Level 2 Laboratory Report, Level 4 Laboratory Report,  
Electronic Data Deliverable, Data Validation Report,  
and the Sample Location Report, SDG J29267-1**

*Naval Air Station Meridian  
Meridian, Mississippi*

July 2019

# TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

## ANALYTICAL REPORT

TestAmerica Laboratories, Inc.  
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Tel: (916)373-5600

TestAmerica Job ID: 320-29267-1

Client Project/Site: Meridian 10006-7-105420 JM01 Navy Clean  
Revision: 2

For:  
CH2M Hill, Inc.  
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Herndon, Virginia 20171

Attn: Mr. Michael Zamboni



Authorized for release by:  
8/9/2017 11:38:50 AM

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### LINKS

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[www.testamericainc.com](http://www.testamericainc.com)

*The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.*

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*

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# Definitions/Glossary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
E	Result exceeded calibration range.
D	The reported value is from a dilution.
Q	One or more quality control criteria failed.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)



# Case Narrative

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Job ID: 320-29267-1**

**Laboratory: TestAmerica Sacramento**

**Narrative**

## CASE NARRATIVE

**Client: CH2M Hill, Inc.**

**Project: Meridian 10006-7-105420 JM01 Navy Clean**

**Report Number: 320-29267-1**

### Revision - August 9, 2017

Report revised to include the 20X dilution for sample MEAFF-T45C-05-2008MW01-0617 (320-29267-9) which was inadvertently omitted in the initial report.

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

### RECEIPT

The samples were received on 6/20/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 0.8° C.

### Receipt Exceptions

# Case Narrative

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Job ID: 320-29267-1 (Continued)

### Laboratory: TestAmerica Sacramento (Continued)

The container labels for the following samples did not match the information listed on the Chain-of-Custody (COC): MEAFF-T45-2003MW01-0617 (320-29267-7) and MEAFF-IW07-SO-0617 (320-29267-24). The container labels list a sample ID of MEAFF-T45C-2003MW01-0617, while the COC lists MEAFF-T45-2003MW01-0617. The container label lists a sample ID of MEAFF-IW08-SO-0617 (with time 13:00), while the COC lists MEAFF-IW08 SO-0617 (with time 13:00). The samples were logged in per the COC.

### PFAS

Samples MEAFF-IW04-SO-0617 (320-29267-20), MEAFF-IW05-SO-0617 (320-29267-21), MEAFF-IW06-SO-0617 (320-29267-22), MEAFF-IW07-SO-0617 (320-29267-23) and MEAFF-IW07-SO-0617 (320-29267-24) were analyzed for PFAs in accordance with 537 Modified. The samples were prepared on 07/01/2017 and analyzed on 07/19/2017.

The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 18O2 PFHxS: MEAFF-T45C-05-2008MW01-0617 (320-29267-9). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

The Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for 13C2 PFDa in the following samples: (CCV 320-171828/12). The associated samples are dilutions that do not require this IDA. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

The following samples were diluted to bring the concentration of target analytes within the calibration range: MEAFF-TA4J-1984MW01-0617 (320-29267-5), MEAFF-T45C-05-2008MW01-0617 (320-29267-9), MEAFF-T2C-1996MW01-0617 (320-29267-14) and MEAFF-IW03-GW-0617 (320-29267-18). Elevated reporting limits (RLs) are provided.

The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: MEAFF-TA4J-1984MW01-0617 (320-29267-5), MEAFF-T45C-05-2008MW01-0617 (320-29267-9), MEAFF-T2C-1996MW01-0617 (320-29267-14) and MEAFF-IW03-GW-0617 (320-29267-18). These analytes have been qualified; however, the peaks did not saturate the instrument detector. These samples have been run at dilution and both sets of data have been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-170766.

The following samples: MEAFF-TA4J-1984MW01-0617 (320-29267-5) and MEAFF-T45-2003MW01-0617 (320-29267-7) were decanted prior to preparation due to excessive sediment in sample bottle.

The following samples: MEAFF-UNKN6MW01-0617 (320-29267-6), MEAFF-UNKN5MW01-0617 (320-29267-8), MEAFF-T45C-05-2008MW01-0617 (320-29267-9), MEAFF-T2C-1996MW01-0617 (320-29267-14), MEAFF-UNKN11MW01-0617 (320-29267-15), MEAFF-TA4J-1985MW01-0617 (320-29267-17) and MEAFF-IW03-GW-0617 (320-29267-18) were decanted prior to preparation due to excessive sediment in sample bottles. Decanted samples were turbid and would potentially clog the solid phase extraction columns. Therefore, samples were centrifuged prior to extraction.

The sample had grayish black material left on the bottom, after concentrating down the sample to dryness. The sample was then brought up with 400 uL of MeOH and 100 uL of water, for a final volume of 0.5 mL. MEAFF-TA4J-1985MW01-0617 (320-29267-17)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### PERCENT SOLIDS

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-TA4J-1987MW01-0617

Lab Sample ID: 320-29267-1

No Detections.

## Client Sample ID: MEAFF-AGAMW01-0617

Lab Sample ID: 320-29267-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	4.4	M	2.5	0.73	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.5	J M	2.5	0.90	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN20MW01-0617

Lab Sample ID: 320-29267-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	1.8	J M	2.3	0.70	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	19		2.3	0.85	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-EASTBMW01-0617

Lab Sample ID: 320-29267-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.77	J M	2.3	0.69	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	37		3.7	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.3	0.84	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-TA4J-1984MW01-0617

Lab Sample ID: 320-29267-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	4800	M E	2.5	0.75	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8200	E	4.0	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1100	E	2.5	0.92	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	11000	D M	130	38	ng/L	50		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	12000	D	200	64	ng/L	50		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	640	D	130	46	ng/L	50		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN6MW01-0617

Lab Sample ID: 320-29267-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.76	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	18		4.1	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.5	M	2.5	0.94	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-T45-2003MW01-0617

Lab Sample ID: 320-29267-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	3.0	M	2.3	0.70	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.4	J M	3.7	1.2	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN5MW01-0617

Lab Sample ID: 320-29267-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.74	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.8		4.0	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	30		2.5	0.91	ng/L	1		537 (Modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

# Detection Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-T45C-05-2008MW01-0617

## Lab Sample ID: 320-29267-9

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	1300	M E	2.4	0.71	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	190		3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2600	E	2.4	0.88	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	1900	D M	48	14	ng/L	20		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	190	D	76	24	ng/L	20		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	8100	E D	48	18	ng/L	20		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL2	1800	D M	120	36	ng/L	50		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL2	190	D	190	61	ng/L	50		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL2	8200	D	120	44	ng/L	50		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-FD06-0617

## Lab Sample ID: 320-29267-10

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	4.5	M	2.2	0.66	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.2	0.81	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-TA4-SOUTHMW01-0617

## Lab Sample ID: 320-29267-11

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	2.5	M	2.4	0.73	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0	J M	2.4	0.89	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-EB08-0617

## Lab Sample ID: 320-29267-12

No Detections.

## Client Sample ID: MEAFF-EB09-0617

## Lab Sample ID: 320-29267-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	4.6		3.6	1.2	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-T2C-1996MW01-0617

## Lab Sample ID: 320-29267-14

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	9.0	M	2.4	0.71	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	720	E	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		2.4	0.87	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	9.6	J D M	12	3.6	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	770	D	19	6.1	ng/L	5		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN11MW01-0617

## Lab Sample ID: 320-29267-15

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	1.8	J M	2.5	0.74	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4	J	4.0	1.3	ng/L	1		537 (Modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

# Detection Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-EB10-0617

Lab Sample ID: 320-29267-16

No Detections.

## Client Sample ID: MEAFF-TA4J-1985MW01-0617

Lab Sample ID: 320-29267-17

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.78	J M	2.5	0.73	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-IW03-GW-0617

Lab Sample ID: 320-29267-18

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	510	M E	2.4	0.70	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	560	E	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	410	E	2.4	0.86	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	550	D M	12	3.5	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	590	D	19	6.0	ng/L	5		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	450	D	12	4.3	ng/L	5		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-FB02-0617

Lab Sample ID: 320-29267-19

No Detections.

## Client Sample ID: MEAFF-IW04-SO-0617

Lab Sample ID: 320-29267-20

No Detections.

## Client Sample ID: MEAFF-IW05-SO-0617

Lab Sample ID: 320-29267-21

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.23	J M	0.63	0.16	ug/Kg	1	*	537 (Modified)	Total/NA

## Client Sample ID: MEAFF-IW06-SO-0617

Lab Sample ID: 320-29267-22

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.37	J M	0.60	0.12	ug/Kg	1	*	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.7		0.60	0.15	ug/Kg	1	*	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2		0.48	0.12	ug/Kg	1	*	537 (Modified)	Total/NA

## Client Sample ID: MEAFF-IW07-SO-0617

Lab Sample ID: 320-29267-23

No Detections.

## Client Sample ID: MEAFF-IW08-SO-0617

Lab Sample ID: 320-29267-24

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-TA4J-1987MW01-0617**

**Lab Sample ID: 320-29267-1**

Date Collected: 06/17/17 09:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.9	U	2.4	0.71	ng/L		06/24/17 12:27	06/28/17 23:47	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.8	1.2	ng/L		06/24/17 12:27	06/28/17 23:47	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	0.87	ng/L		06/24/17 12:27	06/28/17 23:47	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	38		25 - 150				06/24/17 12:27	06/28/17 23:47	1
13C4 PFOS	109		25 - 150				06/24/17 12:27	06/28/17 23:47	1
18O2 PFHxS	110		25 - 150				06/24/17 12:27	06/28/17 23:47	1

**Client Sample ID: MEAFF-AGAMW01-0617**

**Lab Sample ID: 320-29267-2**

Date Collected: 06/17/17 10:00

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	4.4	M	2.5	0.73	ng/L		06/24/17 12:27	06/28/17 23:54	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U M	3.9	1.3	ng/L		06/24/17 12:27	06/28/17 23:54	1
Perfluorobutanesulfonic acid (PFBS)	1.5	J M	2.5	0.90	ng/L		06/24/17 12:27	06/28/17 23:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	69		25 - 150				06/24/17 12:27	06/28/17 23:54	1
13C4 PFOS	110		25 - 150				06/24/17 12:27	06/28/17 23:54	1
18O2 PFHxS	112		25 - 150				06/24/17 12:27	06/28/17 23:54	1

**Client Sample ID: MEAFF-UNKN20MW01-0617**

**Lab Sample ID: 320-29267-3**

Date Collected: 06/17/17 11:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	J M	2.3	0.70	ng/L		06/24/17 12:27	06/29/17 00:01	1
Perfluorooctanesulfonic acid (PFOS)	2.8	U	3.7	1.2	ng/L		06/24/17 12:27	06/29/17 00:01	1
Perfluorobutanesulfonic acid (PFBS)	19		2.3	0.85	ng/L		06/24/17 12:27	06/29/17 00:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	42		25 - 150				06/24/17 12:27	06/29/17 00:01	1
13C4 PFOS	108		25 - 150				06/24/17 12:27	06/29/17 00:01	1
18O2 PFHxS	109		25 - 150				06/24/17 12:27	06/29/17 00:01	1

**Client Sample ID: MEAFF-EASTBMW01-0617**

**Lab Sample ID: 320-29267-4**

Date Collected: 06/17/17 11:35

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.77	J M	2.3	0.69	ng/L		06/24/17 12:27	06/29/17 00:08	1
Perfluorooctanesulfonic acid (PFOS)	37		3.7	1.2	ng/L		06/24/17 12:27	06/29/17 00:08	1
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.3	0.84	ng/L		06/24/17 12:27	06/29/17 00:08	1

TestAmerica Sacramento



# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-EASTBMW01-0617

Date Collected: 06/17/17 11:35

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-4

Matrix: Water

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	64		25 - 150	06/24/17 12:27	06/29/17 00:08	1
13C4 PFOS	116		25 - 150	06/24/17 12:27	06/29/17 00:08	1
18O2 PFHxS	117		25 - 150	06/24/17 12:27	06/29/17 00:08	1

## Client Sample ID: MEAFF-TA4J-1984MW01-0617

Date Collected: 06/17/17 17:55

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-5

Matrix: Water

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	4800	M E	2.5	0.75	ng/L		06/24/17 12:27	06/29/17 00:28	1
Perfluorooctanesulfonic acid (PFOS)	8200	E	4.0	1.3	ng/L		06/24/17 12:27	06/29/17 00:28	1
Perfluorobutanesulfonic acid (PFBS)	1100	E	2.5	0.92	ng/L		06/24/17 12:27	06/29/17 00:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	36		25 - 150	06/24/17 12:27	06/29/17 00:28	1
13C4 PFOS	32		25 - 150	06/24/17 12:27	06/29/17 00:28	1
18O2 PFHxS	30		25 - 150	06/24/17 12:27	06/29/17 00:28	1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	11000	D M	130	38	ng/L		06/24/17 12:27	06/29/17 18:18	50
Perfluorooctanesulfonic acid (PFOS)	12000	D	200	64	ng/L		06/24/17 12:27	06/29/17 18:18	50
Perfluorobutanesulfonic acid (PFBS)	640	D	130	46	ng/L		06/24/17 12:27	06/29/17 18:18	50

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	99		25 - 150	06/24/17 12:27	06/29/17 18:18	50
13C4 PFOS	103		25 - 150	06/24/17 12:27	06/29/17 18:18	50
18O2 PFHxS	111		25 - 150	06/24/17 12:27	06/29/17 18:18	50

## Client Sample ID: MEAFF-UNKN6MW01-0617

Date Collected: 06/17/17 16:20

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-6

Matrix: Water

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.76	ng/L		06/24/17 12:27	06/29/17 00:35	1
Perfluorooctanesulfonic acid (PFOS)	18		4.1	1.3	ng/L		06/24/17 12:27	06/29/17 00:35	1
Perfluorobutanesulfonic acid (PFBS)	2.5	M	2.5	0.94	ng/L		06/24/17 12:27	06/29/17 00:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	61		25 - 150	06/24/17 12:27	06/29/17 00:35	1
13C4 PFOS	105		25 - 150	06/24/17 12:27	06/29/17 00:35	1
18O2 PFHxS	105		25 - 150	06/24/17 12:27	06/29/17 00:35	1

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-T45-2003MW01-0617**

**Lab Sample ID: 320-29267-7**

Date Collected: 06/17/17 17:05

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	3.0	M	2.3	0.70	ng/L		06/24/17 12:27	06/29/17 00:49	1
Perfluorooctanesulfonic acid (PFOS)	1.4	J M	3.7	1.2	ng/L		06/24/17 12:27	06/29/17 00:49	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U M	2.3	0.86	ng/L		06/24/17 12:27	06/29/17 00:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	62		25 - 150				06/24/17 12:27	06/29/17 00:49	1
13C4 PFOS	105		25 - 150				06/24/17 12:27	06/29/17 00:49	1
18O2 PFHxS	112		25 - 150				06/24/17 12:27	06/29/17 00:49	1

**Client Sample ID: MEAFF-UNKN5MW01-0617**

**Lab Sample ID: 320-29267-8**

Date Collected: 06/17/17 14:30

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.74	ng/L		06/24/17 12:27	06/29/17 00:56	1
Perfluorooctanesulfonic acid (PFOS)	6.8		4.0	1.3	ng/L		06/24/17 12:27	06/29/17 00:56	1
Perfluorobutanesulfonic acid (PFBS)	30		2.5	0.91	ng/L		06/24/17 12:27	06/29/17 00:56	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	83		25 - 150				06/24/17 12:27	06/29/17 00:56	1
13C4 PFOS	112		25 - 150				06/24/17 12:27	06/29/17 00:56	1
18O2 PFHxS	115		25 - 150				06/24/17 12:27	06/29/17 00:56	1

**Client Sample ID: MEAFF-T45C-05-2008MW01-0617**

**Lab Sample ID: 320-29267-9**

Date Collected: 06/17/17 13:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1300	M E	2.4	0.71	ng/L		06/24/17 12:27	06/29/17 01:03	1
Perfluorooctanesulfonic acid (PFOS)	190		3.8	1.2	ng/L		06/24/17 12:27	06/29/17 01:03	1
Perfluorobutanesulfonic acid (PFBS)	2600	E	2.4	0.88	ng/L		06/24/17 12:27	06/29/17 01:03	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	67		25 - 150				06/24/17 12:27	06/29/17 01:03	1
13C4 PFOS	96		25 - 150				06/24/17 12:27	06/29/17 01:03	1
18O2 PFHxS	18	Q	25 - 150				06/24/17 12:27	06/29/17 01:03	1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1900	D M	48	14	ng/L		06/24/17 12:27	06/29/17 18:25	20
Perfluorooctanesulfonic acid (PFOS)	190	D	76	24	ng/L		06/24/17 12:27	06/29/17 18:25	20
Perfluorobutanesulfonic acid (PFBS)	8100	E D	48	18	ng/L		06/24/17 12:27	06/29/17 18:25	20
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	117		25 - 150				06/24/17 12:27	06/29/17 18:25	20
13C4 PFOS	102		25 - 150				06/24/17 12:27	06/29/17 18:25	20

TestAmerica Sacramento



# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-T45C-05-2008MW01-0617**

**Lab Sample ID: 320-29267-9**

Date Collected: 06/17/17 13:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	74		25 - 150	06/24/17 12:27	06/29/17 18:25	20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL2**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1800	D M	120	36	ng/L		06/24/17 12:27	06/30/17 12:20	50
Perfluorooctanesulfonic acid (PFOS)	190	D	190	61	ng/L		06/24/17 12:27	06/30/17 12:20	50
Perfluorobutanesulfonic acid (PFBS)	8200	D	120	44	ng/L		06/24/17 12:27	06/30/17 12:20	50
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	96		25 - 150	06/24/17 12:27	06/30/17 12:20	50			
13C4 PFOS	86		25 - 150	06/24/17 12:27	06/30/17 12:20	50			
18O2 PFHxS	85		25 - 150	06/24/17 12:27	06/30/17 12:20	50			

**Client Sample ID: MEAFF-FD06-0617**

**Lab Sample ID: 320-29267-10**

Date Collected: 06/17/17 00:00

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	4.5	M	2.2	0.66	ng/L		06/23/17 16:59	06/28/17 09:39	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U M	3.5	1.1	ng/L		06/23/17 16:59	06/28/17 09:39	1
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.2	0.81	ng/L		06/23/17 16:59	06/28/17 09:39	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	43		25 - 150	06/23/17 16:59	06/28/17 09:39	1			
13C4 PFOS	105		25 - 150	06/23/17 16:59	06/28/17 09:39	1			
18O2 PFHxS	99		25 - 150	06/23/17 16:59	06/28/17 09:39	1			

**Client Sample ID: MEAFF-TA4-SOUTHMW01-0617**

**Lab Sample ID: 320-29267-11**

Date Collected: 06/17/17 15:15

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.5	M	2.4	0.73	ng/L		06/24/17 12:27	06/29/17 01:10	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U M	3.9	1.2	ng/L		06/24/17 12:27	06/29/17 01:10	1
Perfluorobutanesulfonic acid (PFBS)	2.0	J M	2.4	0.89	ng/L		06/24/17 12:27	06/29/17 01:10	1
Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
13C4 PFOA	99		25 - 150	06/24/17 12:27	06/29/17 01:10	1			
13C4 PFOS	107		25 - 150	06/24/17 12:27	06/29/17 01:10	1			
18O2 PFHxS	103		25 - 150	06/24/17 12:27	06/29/17 01:10	1			

**Client Sample ID: MEAFF-EB08-0617**

**Lab Sample ID: 320-29267-12**

Date Collected: 06/17/17 17:30

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U	2.2	0.67	ng/L		06/24/17 12:27	06/29/17 01:17	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-EB08-0617

Date Collected: 06/17/17 17:30

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-12

Matrix: Water

### Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	1.1	ng/L		06/24/17 12:27	06/29/17 01:17	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U M	2.2	0.82	ng/L		06/24/17 12:27	06/29/17 01:17	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	124		25 - 150				06/24/17 12:27	06/29/17 01:17	1
13C4 PFOS	102		25 - 150				06/24/17 12:27	06/29/17 01:17	1
18O2 PFHxS	107		25 - 150				06/24/17 12:27	06/29/17 01:17	1

## Client Sample ID: MEAFF-EB09-0617

Date Collected: 06/17/17 18:25

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-13

Matrix: Water

### Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U M	2.3	0.68	ng/L		06/24/17 12:27	06/29/17 01:24	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>4.6</b>		3.6	1.2	ng/L		06/24/17 12:27	06/29/17 01:24	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.3	0.84	ng/L		06/24/17 12:27	06/29/17 01:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	143		25 - 150				06/24/17 12:27	06/29/17 01:24	1
13C4 PFOS	106		25 - 150				06/24/17 12:27	06/29/17 01:24	1
18O2 PFHxS	116		25 - 150				06/24/17 12:27	06/29/17 01:24	1

## Client Sample ID: MEAFF-T2C-1996MW01-0617

Date Collected: 06/18/17 08:50

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-14

Matrix: Water

### Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanoic acid (PFOA)</b>	<b>9.0</b>	<b>M</b>	2.4	0.71	ng/L		06/24/17 12:27	06/29/17 01:30	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>720</b>	<b>E</b>	3.8	1.2	ng/L		06/24/17 12:27	06/29/17 01:30	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>2.8</b>		2.4	0.87	ng/L		06/24/17 12:27	06/29/17 01:30	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	108		25 - 150				06/24/17 12:27	06/29/17 01:30	1
13C4 PFOS	92		25 - 150				06/24/17 12:27	06/29/17 01:30	1
18O2 PFHxS	119		25 - 150				06/24/17 12:27	06/29/17 01:30	1

### Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanoic acid (PFOA)</b>	<b>9.6</b>	<b>J D M</b>	12	3.6	ng/L		06/24/17 12:27	06/29/17 18:32	5
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>770</b>	<b>D</b>	19	6.1	ng/L		06/24/17 12:27	06/29/17 18:32	5
Perfluorobutanesulfonic acid (PFBS)	9.5	U	12	4.4	ng/L		06/24/17 12:27	06/29/17 18:32	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	119		25 - 150				06/24/17 12:27	06/29/17 18:32	5
13C4 PFOS	122		25 - 150				06/24/17 12:27	06/29/17 18:32	5
18O2 PFHxS	135		25 - 150				06/24/17 12:27	06/29/17 18:32	5

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-UNKN11MW01-0617**

**Lab Sample ID: 320-29267-15**

Date Collected: 06/18/17 09:50

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	J M	2.5	0.74	ng/L	-	06/24/17 12:27	06/29/17 01:37	1
Perfluorooctanesulfonic acid (PFOS)	2.4	J	4.0	1.3	ng/L	-	06/24/17 12:27	06/29/17 01:37	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U M	2.5	0.91	ng/L	-	06/24/17 12:27	06/29/17 01:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	68		25 - 150				06/24/17 12:27	06/29/17 01:37	1
13C4 PFOS	114		25 - 150				06/24/17 12:27	06/29/17 01:37	1
18O2 PFHxS	117		25 - 150				06/24/17 12:27	06/29/17 01:37	1

**Client Sample ID: MEAFF-EB10-0617**

**Lab Sample ID: 320-29267-16**

Date Collected: 06/18/17 10:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	0.66	ng/L	-	06/24/17 12:27	06/29/17 01:44	1
Perfluorooctanesulfonic acid (PFOS)	2.6	U	3.5	1.1	ng/L	-	06/24/17 12:27	06/29/17 01:44	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	0.81	ng/L	-	06/24/17 12:27	06/29/17 01:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	135		25 - 150				06/24/17 12:27	06/29/17 01:44	1
13C4 PFOS	111		25 - 150				06/24/17 12:27	06/29/17 01:44	1
18O2 PFHxS	120		25 - 150				06/24/17 12:27	06/29/17 01:44	1

**Client Sample ID: MEAFF-TA4J-1985MW01-0617**

**Lab Sample ID: 320-29267-17**

Date Collected: 06/18/17 11:30

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.78	J M	2.5	0.73	ng/L	-	06/24/17 12:27	06/29/17 01:51	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	1.3	ng/L	-	06/24/17 12:27	06/29/17 01:51	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.90	ng/L	-	06/24/17 12:27	06/29/17 01:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	37		25 - 150				06/24/17 12:27	06/29/17 01:51	1
13C4 PFOS	111		25 - 150				06/24/17 12:27	06/29/17 01:51	1
18O2 PFHxS	124		25 - 150				06/24/17 12:27	06/29/17 01:51	1

**Client Sample ID: MEAFF-IW03-GW-0617**

**Lab Sample ID: 320-29267-18**

Date Collected: 06/18/17 12:05

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	510	M E	2.4	0.70	ng/L	-	06/24/17 12:27	06/29/17 02:05	1
Perfluorooctanesulfonic acid (PFOS)	560	E	3.8	1.2	ng/L	-	06/24/17 12:27	06/29/17 02:05	1
Perfluorobutanesulfonic acid (PFBS)	410	E	2.4	0.86	ng/L	-	06/24/17 12:27	06/29/17 02:05	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	77		25 - 150				06/24/17 12:27	06/29/17 02:05	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW03-GW-0617**

**Lab Sample ID: 320-29267-18**

Date Collected: 06/18/17 12:05

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOS	95		25 - 150	06/24/17 12:27	06/29/17 02:05	1
18O2 PFHxS	63		25 - 150	06/24/17 12:27	06/29/17 02:05	1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	550	D M	12	3.5	ng/L		06/24/17 12:27	06/29/17 18:39	5
Perfluorooctanesulfonic acid (PFOS)	590	D	19	6.0	ng/L		06/24/17 12:27	06/29/17 18:39	5
Perfluorobutanesulfonic acid (PFBS)	450	D	12	4.3	ng/L		06/24/17 12:27	06/29/17 18:39	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	95		25 - 150	06/24/17 12:27	06/29/17 18:39	5
13C4 PFOS	112		25 - 150	06/24/17 12:27	06/29/17 18:39	5
18O2 PFHxS	101		25 - 150	06/24/17 12:27	06/29/17 18:39	5

**Client Sample ID: MEAFF-FB02-0617**

**Lab Sample ID: 320-29267-19**

Date Collected: 06/18/17 13:40

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	0.67	ng/L		06/24/17 12:27	06/29/17 02:12	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	1.1	ng/L		06/24/17 12:27	06/29/17 02:12	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	0.82	ng/L		06/24/17 12:27	06/29/17 02:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	125		25 - 150	06/24/17 12:27	06/29/17 02:12	1
13C4 PFOS	112		25 - 150	06/24/17 12:27	06/29/17 02:12	1
18O2 PFHxS	113		25 - 150	06/24/17 12:27	06/29/17 02:12	1

**Client Sample ID: MEAFF-IW04-SO-0617**

**Lab Sample ID: 320-29267-20**

Date Collected: 06/18/17 12:20

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 90.7

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.32	U M	0.54	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:15	1
Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.14	ug/Kg	☼	07/01/17 09:40	07/19/17 00:15	1
Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:15	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	113		25 - 150	07/01/17 09:40	07/19/17 00:15	1
13C4 PFOS	67		25 - 150	07/01/17 09:40	07/19/17 00:15	1
18O2 PFHxS	80		25 - 150	07/01/17 09:40	07/19/17 00:15	1

**Client Sample ID: MEAFF-IW05-SO-0617**

**Lab Sample ID: 320-29267-21**

Date Collected: 06/18/17 12:30

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 79.1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.38	U M	0.63	0.13	ug/Kg	☼	07/01/17 09:40	07/19/17 00:22	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-IW05-SO-0617

Date Collected: 06/18/17 12:30

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-21

Matrix: Solid

Percent Solids: 79.1

### Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.23	J M	0.63	0.16	ug/Kg	☼	07/01/17 09:40	07/19/17 00:22	1
Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.50	0.13	ug/Kg	☼	07/01/17 09:40	07/19/17 00:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	109		25 - 150				07/01/17 09:40	07/19/17 00:22	1
13C4 PFOS	62		25 - 150				07/01/17 09:40	07/19/17 00:22	1
18O2 PFHxS	80		25 - 150				07/01/17 09:40	07/19/17 00:22	1

## Client Sample ID: MEAFF-IW06-SO-0617

Date Collected: 06/18/17 12:40

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-22

Matrix: Solid

Percent Solids: 82.8

### Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.37	J M	0.60	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:29	1
Perfluorooctanesulfonic acid (PFOS)	9.7		0.60	0.15	ug/Kg	☼	07/01/17 09:40	07/19/17 00:29	1
Perfluorobutanesulfonic acid (PFBS)	1.2		0.48	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:29	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	116		25 - 150				07/01/17 09:40	07/19/17 00:29	1
13C4 PFOS	82		25 - 150				07/01/17 09:40	07/19/17 00:29	1
18O2 PFHxS	85		25 - 150				07/01/17 09:40	07/19/17 00:29	1

## Client Sample ID: MEAFF-IW07-SO-0617

Date Collected: 06/18/17 12:50

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-23

Matrix: Solid

Percent Solids: 86.7

### Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.34	U	0.57	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:36	1
Perfluorooctanesulfonic acid (PFOS)	0.34	U	0.57	0.14	ug/Kg	☼	07/01/17 09:40	07/19/17 00:36	1
Perfluorobutanesulfonic acid (PFBS)	0.34	U	0.45	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:36	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	126		25 - 150				07/01/17 09:40	07/19/17 00:36	1
13C4 PFOS	70		25 - 150				07/01/17 09:40	07/19/17 00:36	1
18O2 PFHxS	91		25 - 150				07/01/17 09:40	07/19/17 00:36	1

## Client Sample ID: MEAFF-IW08-SO-0617

Date Collected: 06/18/17 13:00

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-24

Matrix: Solid

Percent Solids: 92.7

### Method: 537 (Modified) - Perfluorinated Hydrocarbons

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.32	U M	0.54	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:43	1
Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.14	ug/Kg	☼	07/01/17 09:40	07/19/17 00:43	1
Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	119		25 - 150				07/01/17 09:40	07/19/17 00:43	1
13C4 PFOS	73		25 - 150				07/01/17 09:40	07/19/17 00:43	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW08-SO-0617**

**Date Collected: 06/18/17 13:00**

**Date Received: 06/20/17 09:20**

**Lab Sample ID: 320-29267-24**

**Matrix: Solid**

**Percent Solids: 92.7**

**Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
18O2 PFHxS	88		25 - 150

<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
07/01/17 09:40	07/19/17 00:43	1

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# Isotope Dilution Summary

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Solid

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)		
		3C4 PFO <sub>x</sub> (25-150)	3C4 PFO <sub>3</sub> (25-150)	3O2 PFH <sub>x</sub> (25-150)
320-29267-20	MEAFF-IW04-SO-0617	113	67	80
320-29267-21	MEAFF-IW05-SO-0617	109	62	80
320-29267-22	MEAFF-IW06-SO-0617	116	82	85
320-29267-23	MEAFF-IW07-SO-0617	126	70	91
320-29267-24	MEAFF-IW08-SO-0617	119	73	88
320-29267-24 MS	MEAFF-IW08-SO-0617	120	77	99
320-29267-24 MSD	MEAFF-IW08-SO-0617	122	81	92
LCS 320-172026/2-A	Lab Control Sample	118	90	96
MB 320-172026/1-A	Method Blank	128	93	93

#### Surrogate Legend

13C4 PFOA = 13C4 PFOA  
 13C4 PFOS = 13C4 PFOS  
 18O2 PFHxS = 18O2 PFHxS

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)		
		3C4 PFO <sub>x</sub> (25-150)	3C4 PFO <sub>3</sub> (25-150)	3O2 PFH <sub>x</sub> (25-150)
320-29267-1	MEAFF-TA4J-1987MW01-0617	38	109	110
320-29267-2	MEAFF-AGAMW01-0617	69	110	112
320-29267-3	MEAFF-UNKN20MW01-0617	42	108	109
320-29267-4	MEAFF-EASTBMW01-0617	64	116	117
320-29267-4 MS	MEAFF-EASTBMW01-0617	72	113	123
320-29267-4 MSD	MEAFF-EASTBMW01-0617	60	107	112
320-29267-5	MEAFF-TA4J-1984MW01-0617	36	32	30
320-29267-5 - DL	MEAFF-TA4J-1984MW01-0617	99	103	111
320-29267-6	MEAFF-UNKN6MW01-0617	61	105	105
320-29267-7	MEAFF-T45-2003MW01-0617	62	105	112
320-29267-8	MEAFF-UNKN5MW01-0617	83	112	115
320-29267-9	MEAFF-T45C-05-2008MW01-0617	67	96	18 Q
320-29267-9 - DL	MEAFF-T45C-05-2008MW01-0617	117	102	74
320-29267-9 - DL2	MEAFF-T45C-05-2008MW01-0617	96	86	85
320-29267-10	MEAFF-FD06-0617	43	105	99
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	99	107	103
320-29267-12	MEAFF-EB08-0617	124	102	107
320-29267-13	MEAFF-EB09-0617	143	106	116
320-29267-14	MEAFF-T2C-1996MW01-0617	108	92	119
320-29267-14 - DL	MEAFF-T2C-1996MW01-0617	119	122	135
320-29267-15	MEAFF-UNKN11MW01-0617	68	114	117
320-29267-16	MEAFF-EB10-0617	135	111	120
320-29267-17	MEAFF-TA4J-1985MW01-0617	37	111	124
320-29267-18	MEAFF-IW03-GW-0617	77	95	63
320-29267-18 - DL	MEAFF-IW03-GW-0617	95	112	101

TestAmerica Sacramento



# Isotope Dilution Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

Matrix: Water

Prep Type: Total/NA

### Percent Isotope Dilution Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)		
		3C4 PFO/ (25-150)	3C4 PFO: (25-150)	3O2 PFHx (25-150)
320-29267-19	MEAFF-FB02-0617	125	112	113
LCS 320-170766/2-A	Lab Control Sample	117	101	103
LCS 320-170805/2-A	Lab Control Sample	125	107	116
LCSD 320-170766/3-A	Lab Control Sample Dup	117	98	101
MB 320-170766/1-A	Method Blank	124	104	104
MB 320-170805/1-A	Method Blank	133	108	114

### Surrogate Legend

13C4 PFOA = 13C4 PFOA  
13C4 PFOS = 13C4 PFOS  
18O2 PFHxS = 18O2 PFHxS



# QC Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

**Lab Sample ID: MB 320-170766/1-A**

**Matrix: Water**

**Analysis Batch: 171335**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 170766**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.0	U	2.5	0.75	ng/L		06/23/17 16:59	06/28/17 09:18	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		06/23/17 16:59	06/28/17 09:18	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U M	2.5	0.92	ng/L		06/23/17 16:59	06/28/17 09:18	1

Isotope Dilution	%Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	124		25 - 150	06/23/17 16:59	06/28/17 09:18	1
13C4 PFOS	104		25 - 150	06/23/17 16:59	06/28/17 09:18	1
18O2 PFHxS	104		25 - 150	06/23/17 16:59	06/28/17 09:18	1

**Lab Sample ID: LCS 320-170766/2-A**

**Matrix: Water**

**Analysis Batch: 171335**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

**Prep Batch: 170766**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA)	40.0	41.6		ng/L		104	60 - 140
Perfluorooctanesulfonic acid (PFOS)	37.1	41.6		ng/L		112	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.4	39.8		ng/L		113	50 - 150

Isotope Dilution	%Recovery	LCS Qualifier	Limits
13C4 PFOA	117		25 - 150
13C4 PFOS	101		25 - 150
18O2 PFHxS	103		25 - 150

**Lab Sample ID: LCSD 320-170766/3-A**

**Matrix: Water**

**Analysis Batch: 171335**

**Client Sample ID: Lab Control Sample Dup**

**Prep Type: Total/NA**

**Prep Batch: 170766**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA)	40.0	40.6		ng/L		102	60 - 140	2	30
Perfluorooctanesulfonic acid (PFOS)	37.1	42.8		ng/L		115	60 - 140	3	30
Perfluorobutanesulfonic acid (PFBS)	35.4	40.5		ng/L		115	50 - 150	2	30

Isotope Dilution	%Recovery	LCSD Qualifier	Limits
13C4 PFOA	117		25 - 150
13C4 PFOS	98		25 - 150
18O2 PFHxS	101		25 - 150

**Lab Sample ID: MB 320-170805/1-A**

**Matrix: Water**

**Analysis Batch: 171594**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

**Prep Batch: 170805**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.0	U	2.5	0.75	ng/L		06/24/17 12:27	06/28/17 23:33	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		06/24/17 12:27	06/28/17 23:33	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.92	ng/L		06/24/17 12:27	06/28/17 23:33	1

TestAmerica Sacramento

# QC Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOA	133		25 - 150	06/24/17 12:27	06/28/17 23:33	1
13C4 PFOS	108		25 - 150	06/24/17 12:27	06/28/17 23:33	1
18O2 PFHxS	114		25 - 150	06/24/17 12:27	06/28/17 23:33	1

**Lab Sample ID: LCS 320-170805/2-A**  
**Matrix: Water**  
**Analysis Batch: 171594**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 170805**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	37.1	41.2		ng/L		111	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.4	37.7		ng/L		107	50 - 150

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFOA	125		25 - 150
13C4 PFOS	107		25 - 150
18O2 PFHxS	116		25 - 150

**Lab Sample ID: 320-29267-4 MS**  
**Matrix: Water**  
**Analysis Batch: 171594**

**Client Sample ID: MEAFF-EASTBMW01-0617**  
**Prep Type: Total/NA**  
**Prep Batch: 170805**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perfluorooctanesulfonic acid (PFOS)	37		34.7	75.0		ng/L		110	60 - 140
Perfluorobutanesulfonic acid (PFBS)	1.6	J	33.1	36.1		ng/L		104	50 - 150

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C4 PFOA	72		25 - 150
13C4 PFOS	113		25 - 150
18O2 PFHxS	123		25 - 150

**Lab Sample ID: 320-29267-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 171594**

**Client Sample ID: MEAFF-EASTBMW01-0617**  
**Prep Type: Total/NA**  
**Prep Batch: 170805**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
										RPD	Limit
Perfluorooctanoic acid (PFOA)	0.77	J M	38.4	38.8		ng/L		99	60 - 140	1	30
Perfluorooctanesulfonic acid (PFOS)	37		35.7	71.3		ng/L		97	60 - 140	5	30
Perfluorobutanesulfonic acid (PFBS)	1.6	J	34.0	36.3		ng/L		102	50 - 150	0	30

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C4 PFOA	60		25 - 150
13C4 PFOS	107		25 - 150
18O2 PFHxS	112		25 - 150

# QC Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

**Lab Sample ID: MB 320-172026/1-A**

**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.30	U	0.50	0.10	ug/Kg		07/01/17 09:40	07/19/17 00:01	1
Perfluorooctanesulfonic acid (PFOS)	0.30	U	0.50	0.13	ug/Kg		07/01/17 09:40	07/19/17 00:01	1
Perfluorobutanesulfonic acid (PFBS)	0.30	U	0.40	0.10	ug/Kg		07/01/17 09:40	07/19/17 00:01	1

Isotope Dilution	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	128		25 - 150	07/01/17 09:40	07/19/17 00:01	1
13C4 PFOS	93		25 - 150	07/01/17 09:40	07/19/17 00:01	1
18O2 PFHxS	93		25 - 150	07/01/17 09:40	07/19/17 00:01	1

**Lab Sample ID: LCS 320-172026/2-A**

**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA)	4.00	3.92		ug/Kg		98	60 - 140
Perfluorooctanesulfonic acid (PFOS)	3.71	4.16		ug/Kg		112	60 - 140
Perfluorobutanesulfonic acid (PFBS)	3.54	4.06		ug/Kg		115	50 - 150

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C4 PFOA	118		25 - 150
13C4 PFOS	90		25 - 150
18O2 PFHxS	96		25 - 150

**Lab Sample ID: 320-29267-24 MS**

**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: MEAFF-IW08-SO-0617**

**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanoic acid (PFOA)	0.32	U M	4.31	4.35		ug/Kg	☼	101	60 - 140
Perfluorooctanesulfonic acid (PFOS)	0.32	U	4.00	4.39		ug/Kg	☼	110	60 - 140
Perfluorobutanesulfonic acid (PFBS)	0.32	U	3.81	4.49		ug/Kg	☼	118	50 - 150

Isotope Dilution	MS %Recovery	MS Qualifier	Limits
13C4 PFOA	120		25 - 150
13C4 PFOS	77		25 - 150
18O2 PFHxS	99		25 - 150

**Lab Sample ID: 320-29267-24 MSD**

**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: MEAFF-IW08-SO-0617**

**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanoic acid (PFOA)	0.32	U M	4.31	4.30		ug/Kg	☼	100	60 - 140	1	30
Perfluorooctanesulfonic acid (PFOS)	0.32	U	4.00	4.55		ug/Kg	☼	114	60 - 140	4	30

TestAmerica Sacramento

# QC Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

Lab Sample ID: 320-29267-24 MSD

Matrix: Solid

Analysis Batch: 174824

Client Sample ID: MEAFF-IW08-SO-0617

Prep Type: Total/NA

Prep Batch: 172026

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perfluorobutanesulfonic acid (PFBS)	0.32	U	3.81	4.61		ug/Kg	☒	121	50 - 150	3	30
<b>Isotope Dilution</b>	<b>%Recovery</b>	<b>MSD Qualifier</b>	<b>MSD Limits</b>								
13C4 PFOA	122		25 - 150								
13C4 PFOS	81		25 - 150								
18O2 PFHxS	92		25 - 150								



# QC Association Summary

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## LCMS

### Prep Batch: 170766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-10	MEAFF-FD06-0617	Total/NA	Water	3535	
MB 320-170766/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-170766/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-170766/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

### Prep Batch: 170805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-1	MEAFF-TA4J-1987MW01-0617	Total/NA	Water	3535	
320-29267-2	MEAFF-AGAMW01-0617	Total/NA	Water	3535	
320-29267-3	MEAFF-UNKN20MW01-0617	Total/NA	Water	3535	
320-29267-4	MEAFF-EASTBMW01-0617	Total/NA	Water	3535	
320-29267-5 - DL	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	3535	
320-29267-5	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	3535	
320-29267-6	MEAFF-UNKN6MW01-0617	Total/NA	Water	3535	
320-29267-7	MEAFF-T45-2003MW01-0617	Total/NA	Water	3535	
320-29267-8	MEAFF-UNKN5MW01-0617	Total/NA	Water	3535	
320-29267-9 - DL2	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	3535	
320-29267-9	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	3535	
320-29267-9 - DL	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	3535	
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	Total/NA	Water	3535	
320-29267-12	MEAFF-EB08-0617	Total/NA	Water	3535	
320-29267-13	MEAFF-EB09-0617	Total/NA	Water	3535	
320-29267-14	MEAFF-T2C-1996MW01-0617	Total/NA	Water	3535	
320-29267-14 - DL	MEAFF-T2C-1996MW01-0617	Total/NA	Water	3535	
320-29267-15	MEAFF-UNKN11MW01-0617	Total/NA	Water	3535	
320-29267-16	MEAFF-EB10-0617	Total/NA	Water	3535	
320-29267-17	MEAFF-TA4J-1985MW01-0617	Total/NA	Water	3535	
320-29267-18	MEAFF-IW03-GW-0617	Total/NA	Water	3535	
320-29267-18 - DL	MEAFF-IW03-GW-0617	Total/NA	Water	3535	
320-29267-19	MEAFF-FB02-0617	Total/NA	Water	3535	
MB 320-170805/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-170805/2-A	Lab Control Sample	Total/NA	Water	3535	
320-29267-4 MS	MEAFF-EASTBMW01-0617	Total/NA	Water	3535	
320-29267-4 MSD	MEAFF-EASTBMW01-0617	Total/NA	Water	3535	

### Analysis Batch: 171335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-10	MEAFF-FD06-0617	Total/NA	Water	537 (Modified)	170766
MB 320-170766/1-A	Method Blank	Total/NA	Water	537 (Modified)	170766
LCS 320-170766/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	170766
LCSD 320-170766/3-A	Lab Control Sample Dup	Total/NA	Water	537 (Modified)	170766

### Analysis Batch: 171594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-1	MEAFF-TA4J-1987MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-2	MEAFF-AGAMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-3	MEAFF-UNKN20MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-4	MEAFF-EASTBMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-5	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-6	MEAFF-UNKN6MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-7	MEAFF-T45-2003MW01-0617	Total/NA	Water	537 (Modified)	170805

TestAmerica Sacramento

# QC Association Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## LCMS (Continued)

### Analysis Batch: 171594 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-8	MEAFF-UNKN5MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-9	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-12	MEAFF-EB08-0617	Total/NA	Water	537 (Modified)	170805
320-29267-13	MEAFF-EB09-0617	Total/NA	Water	537 (Modified)	170805
320-29267-14	MEAFF-T2C-1996MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-15	MEAFF-UNKN11MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-16	MEAFF-EB10-0617	Total/NA	Water	537 (Modified)	170805
320-29267-17	MEAFF-TA4J-1985MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-18	MEAFF-IW03-GW-0617	Total/NA	Water	537 (Modified)	170805
320-29267-19	MEAFF-FB02-0617	Total/NA	Water	537 (Modified)	170805
MB 320-170805/1-A	Method Blank	Total/NA	Water	537 (Modified)	170805
LCS 320-170805/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	170805
320-29267-4 MS	MEAFF-EASTBMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-4 MSD	MEAFF-EASTBMW01-0617	Total/NA	Water	537 (Modified)	170805

### Analysis Batch: 171828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-5 - DL	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-9 - DL	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-14 - DL	MEAFF-T2C-1996MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-18 - DL	MEAFF-IW03-GW-0617	Total/NA	Water	537 (Modified)	170805

### Analysis Batch: 171948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-9 - DL2	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	537 (Modified)	170805

### Prep Batch: 172026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-20	MEAFF-IW04-SO-0617	Total/NA	Solid	SHAKE	
320-29267-21	MEAFF-IW05-SO-0617	Total/NA	Solid	SHAKE	
320-29267-22	MEAFF-IW06-SO-0617	Total/NA	Solid	SHAKE	
320-29267-23	MEAFF-IW07-SO-0617	Total/NA	Solid	SHAKE	
320-29267-24	MEAFF-IW08-SO-0617	Total/NA	Solid	SHAKE	
MB 320-172026/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-172026/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-29267-24 MS	MEAFF-IW08-SO-0617	Total/NA	Solid	SHAKE	
320-29267-24 MSD	MEAFF-IW08-SO-0617	Total/NA	Solid	SHAKE	

### Analysis Batch: 174824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-20	MEAFF-IW04-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-21	MEAFF-IW05-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-22	MEAFF-IW06-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-23	MEAFF-IW07-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-24	MEAFF-IW08-SO-0617	Total/NA	Solid	537 (Modified)	172026
MB 320-172026/1-A	Method Blank	Total/NA	Solid	537 (Modified)	172026
LCS 320-172026/2-A	Lab Control Sample	Total/NA	Solid	537 (Modified)	172026
320-29267-24 MS	MEAFF-IW08-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-24 MSD	MEAFF-IW08-SO-0617	Total/NA	Solid	537 (Modified)	172026

TestAmerica Sacramento

# QC Association Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## General Chemistry

### Analysis Batch: 171957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-20	MEAFF-IW04-SO-0617	Total/NA	Solid	D 2216	
320-29267-21	MEAFF-IW05-SO-0617	Total/NA	Solid	D 2216	
320-29267-22	MEAFF-IW06-SO-0617	Total/NA	Solid	D 2216	
320-29267-23	MEAFF-IW07-SO-0617	Total/NA	Solid	D 2216	
320-29267-24	MEAFF-IW08-SO-0617	Total/NA	Solid	D 2216	
320-29267-20 DU	MEAFF-IW04-SO-0617	Total/NA	Solid	D 2216	

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-TA4J-1987MW01-0617**

**Lab Sample ID: 320-29267-1**

**Date Collected: 06/17/17 09:55**

**Matrix: Water**

**Date Received: 06/20/17 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.4 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/28/17 23:47	SBC	TAL SAC

**Client Sample ID: MEAFF-AGAMW01-0617**

**Lab Sample ID: 320-29267-2**

**Date Collected: 06/17/17 10:00**

**Matrix: Water**

**Date Received: 06/20/17 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.9 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/28/17 23:54	SBC	TAL SAC

**Client Sample ID: MEAFF-UNKN20MW01-0617**

**Lab Sample ID: 320-29267-3**

**Date Collected: 06/17/17 11:55**

**Matrix: Water**

**Date Received: 06/20/17 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			268.8 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 00:01	SBC	TAL SAC

**Client Sample ID: MEAFF-EASTBMW01-0617**

**Lab Sample ID: 320-29267-4**

**Date Collected: 06/17/17 11:35**

**Matrix: Water**

**Date Received: 06/20/17 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			272 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 00:08	SBC	TAL SAC

**Client Sample ID: MEAFF-TA4J-1984MW01-0617**

**Lab Sample ID: 320-29267-5**

**Date Collected: 06/17/17 17:55**

**Matrix: Water**

**Date Received: 06/20/17 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			249.3 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 00:28	SBC	TAL SAC
Total/NA	Prep	3535	DL		249.3 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	50			171828	06/29/17 18:18	SBC	TAL SAC



# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-UNKN6MW01-0617**

**Lab Sample ID: 320-29267-6**

Date Collected: 06/17/17 16:20

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			245.2 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 00:35	SBC	TAL SAC

**Client Sample ID: MEAFF-T45-2003MW01-0617**

**Lab Sample ID: 320-29267-7**

Date Collected: 06/17/17 17:05

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			267.7 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 00:49	SBC	TAL SAC

**Client Sample ID: MEAFF-UNKN5MW01-0617**

**Lab Sample ID: 320-29267-8**

Date Collected: 06/17/17 14:30

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			253 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 00:56	SBC	TAL SAC

**Client Sample ID: MEAFF-T45C-05-2008MW01-0617**

**Lab Sample ID: 320-29267-9**

Date Collected: 06/17/17 13:55

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			261.8 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:03	SBC	TAL SAC
Total/NA	Prep	3535	DL		261.8 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	20			171828	06/29/17 18:25	SBC	TAL SAC
Total/NA	Prep	3535	DL2		261.8 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL2	50			171948	06/30/17 12:20	SBC	TAL SAC

**Client Sample ID: MEAFF-FD06-0617**

**Lab Sample ID: 320-29267-10**

Date Collected: 06/17/17 00:00

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			282.9 mL	0.50 mL	170766	06/23/17 16:59	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171335	06/28/17 09:39	JRB	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-TA4-SOUTHMW01-0617**

**Lab Sample ID: 320-29267-11**

Date Collected: 06/17/17 15:15

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			257.5 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:10	SBC	TAL SAC

**Client Sample ID: MEAFF-EB08-0617**

**Lab Sample ID: 320-29267-12**

Date Collected: 06/17/17 17:30

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.8 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:17	SBC	TAL SAC

**Client Sample ID: MEAFF-EB09-0617**

**Lab Sample ID: 320-29267-13**

Date Collected: 06/17/17 18:25

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			274.6 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:24	SBC	TAL SAC

**Client Sample ID: MEAFF-T2C-1996MW01-0617**

**Lab Sample ID: 320-29267-14**

Date Collected: 06/18/17 08:50

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			262.3 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:30	SBC	TAL SAC
Total/NA	Prep	3535	DL		262.3 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5			171828	06/29/17 18:32	SBC	TAL SAC

**Client Sample ID: MEAFF-UNKN11MW01-0617**

**Lab Sample ID: 320-29267-15**

Date Collected: 06/18/17 09:50

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			251.2 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:37	SBC	TAL SAC

**Client Sample ID: MEAFF-EB10-0617**

**Lab Sample ID: 320-29267-16**

Date Collected: 06/18/17 10:55

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			284.5 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-EB10-0617**

**Lab Sample ID: 320-29267-16**

Date Collected: 06/18/17 10:55

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:44	SBC	TAL SAC

**Client Sample ID: MEAFF-TA4J-1985MW01-0617**

**Lab Sample ID: 320-29267-17**

Date Collected: 06/18/17 11:30

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			254.5 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 01:51	SBC	TAL SAC

**Client Sample ID: MEAFF-IW03-GW-0617**

**Lab Sample ID: 320-29267-18**

Date Collected: 06/18/17 12:05

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			265.4 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 02:05	SBC	TAL SAC
Total/NA	Prep	3535	DL		265.4 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5			171828	06/29/17 18:39	SBC	TAL SAC

**Client Sample ID: MEAFF-FB02-0617**

**Lab Sample ID: 320-29267-19**

Date Collected: 06/18/17 13:40

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			280.8 mL	0.50 mL	170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1			171594	06/29/17 02:12	SBC	TAL SAC

**Client Sample ID: MEAFF-IW04-SO-0617**

**Lab Sample ID: 320-29267-20**

Date Collected: 06/18/17 12:20

Matrix: Solid

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW04-SO-0617**

**Lab Sample ID: 320-29267-20**

Date Collected: 06/18/17 12:20

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 90.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.09 g	1.00 mL	172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1			174824	07/19/17 00:15	SBC	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW05-SO-0617**

**Lab Sample ID: 320-29267-21**

Date Collected: 06/18/17 12:30

Matrix: Solid

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW05-SO-0617**

**Lab Sample ID: 320-29267-21**

Date Collected: 06/18/17 12:30

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.03 g	1.00 mL	172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1			174824	07/19/17 00:22	SBC	TAL SAC

**Client Sample ID: MEAFF-IW06-SO-0617**

**Lab Sample ID: 320-29267-22**

Date Collected: 06/18/17 12:40

Matrix: Solid

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW06-SO-0617**

**Lab Sample ID: 320-29267-22**

Date Collected: 06/18/17 12:40

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.06 g	1.00 mL	172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1			174824	07/19/17 00:29	SBC	TAL SAC

**Client Sample ID: MEAFF-IW07-SO-0617**

**Lab Sample ID: 320-29267-23**

Date Collected: 06/18/17 12:50

Matrix: Solid

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW07-SO-0617**

**Lab Sample ID: 320-29267-23**

Date Collected: 06/18/17 12:50

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 86.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.07 g	1.00 mL	172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1			174824	07/19/17 00:36	SBC	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW08-SO-0617**

**Lab Sample ID: 320-29267-24**

**Date Collected: 06/18/17 13:00**

**Matrix: Solid**

**Date Received: 06/20/17 09:20**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1			171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW08-SO-0617**

**Lab Sample ID: 320-29267-24**

**Date Collected: 06/18/17 13:00**

**Matrix: Solid**

**Date Received: 06/20/17 09:20**

**Percent Solids: 92.7**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			5.01 g	1.00 mL	172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1			174824	07/19/17 00:43	SBC	TAL SAC

**Laboratory References:**

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



# Accreditation/Certification Summary

Client: CH2M Hill, Inc.

TestAmerica Job ID: 320-29267-1

Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

## Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17 *
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-29-18
Hawaii	State Program	9	N/A	01-29-18
Illinois	NELAP	5	200060	03-17-18
Kansas	NELAP	7	E-10375	10-31-17
L-A-B	DoD ELAP		L2468	01-20-18
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-18
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	04-01-18
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-18
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-18
Virginia	NELAP	3	460278	03-14-18
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.

TestAmerica Sacramento

# Method Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

Method	Method Description	Protocol	Laboratory
537 (Modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

**Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

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# Sample Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-29267-1	MEAFF-TA4J-1987MW01-0617	Water	06/17/17 09:55	06/20/17 09:20
320-29267-2	MEAFF-AGAMW01-0617	Water	06/17/17 10:00	06/20/17 09:20
320-29267-3	MEAFF-UNKN20MW01-0617	Water	06/17/17 11:55	06/20/17 09:20
320-29267-4	MEAFF-EASTBMW01-0617	Water	06/17/17 11:35	06/20/17 09:20
320-29267-5	MEAFF-TA4J-1984MW01-0617	Water	06/17/17 17:55	06/20/17 09:20
320-29267-6	MEAFF-UNKN6MW01-0617	Water	06/17/17 16:20	06/20/17 09:20
320-29267-7	MEAFF-T45-2003MW01-0617	Water	06/17/17 17:05	06/20/17 09:20
320-29267-8	MEAFF-UNKN5MW01-0617	Water	06/17/17 14:30	06/20/17 09:20
320-29267-9	MEAFF-T45C-05-2008MW01-0617	Water	06/17/17 13:55	06/20/17 09:20
320-29267-10	MEAFF-FD06-0617	Water	06/17/17 00:00	06/20/17 09:20
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	Water	06/17/17 15:15	06/20/17 09:20
320-29267-12	MEAFF-EB08-0617	Water	06/17/17 17:30	06/20/17 09:20
320-29267-13	MEAFF-EB09-0617	Water	06/17/17 18:25	06/20/17 09:20
320-29267-14	MEAFF-T2C-1996MW01-0617	Water	06/18/17 08:50	06/20/17 09:20
320-29267-15	MEAFF-UNKN11MW01-0617	Water	06/18/17 09:50	06/20/17 09:20
320-29267-16	MEAFF-EB10-0617	Water	06/18/17 10:55	06/20/17 09:20
320-29267-17	MEAFF-TA4J-1985MW01-0617	Water	06/18/17 11:30	06/20/17 09:20
320-29267-18	MEAFF-IW03-GW-0617	Water	06/18/17 12:05	06/20/17 09:20
320-29267-19	MEAFF-FB02-0617	Water	06/18/17 13:40	06/20/17 09:20
320-29267-20	MEAFF-IW04-SO-0617	Solid	06/18/17 12:20	06/20/17 09:20
320-29267-21	MEAFF-IW05-SO-0617	Solid	06/18/17 12:30	06/20/17 09:20
320-29267-22	MEAFF-IW06-SO-0617	Solid	06/18/17 12:40	06/20/17 09:20
320-29267-23	MEAFF-IW07-SO-0617	Solid	06/18/17 12:50	06/20/17 09:20
320-29267-24	MEAFF-IW08-SO-0617	Solid	06/18/17 13:00	06/20/17 09:20







Regulatory Program:  DW  NPDES  RCRA  Other:

TestAmerica Laboratories, Inc.

Client Contact		Project Manager: Bryan Burkingstock		Site Contact: Ryan Brown		Date: 6/19/17	
Company Name CH2M		Tel/Fax: 603-736-4111		Lab Contact: Jill Kellmann		Carrier: FedEx	
6600 Peachtree Dunwoody Road, 400 Embassy Row, Suite 600		Analysis Turnaround Time		Perform MS / MSD (Y / N)		COC No. 2 of 3 COCs	
Atlanta GA 30328		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below: 28 Days		Filtered Sample (Y / N)		Sampler: J. McCann	
(678) 530-4060 Phone		<input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Sample Type (C=Comp, G=Grab)		For Lab Use Only:	
(770) 604-9153 Fax		Sample Date		Sample Time		Walk-in Client:	
Project Name: Meridian 10006-7-105420 JM01 Navy CLEAN		Sample Date		Sample Time		Lab Sampling:	
Site: NAS Meridian		Sample Date		Sample Time		Job / SDG No.:	
P O # 10006-7-105420		Sample Date		Sample Time		Sample Specific Notes:	
Sample Identification	Sample Date	Sample Time	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Sample Specific Notes
MEAFF-TA4-SOUTH MW01-0617	6/17/17	1515	GW	2	N	X	
MEAFF-EB08-0617		1730					equipment blank
MEAFF-EB09-0617		1825					equipment blank
MEAFF-T2C-199(M)N01-0617	6/18/17	0830					
MEAFF-UNKN1) MW01-0617		0950					
MEAFF-EB10-0617		1055					equipment blank
MEAFF-TAHS-1985 MW01-0617		1130					
MEAFF-TN03-GW-0617		1205					
MEAFF-FR02-0617		1340					
MEAFF-TW04-SO-0617		1220	C	1			field blank
MEAFF-TN05-SO-0617		1230					
MEAFF-TW06-SO-0617		1240					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Unknown

Special Instructions/QC Requirements & Comments: Send results to Mike Zamboni - address on file

Return to Client  Dispose by Lab  Archive for \_\_\_\_\_ Months

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Cooler Temp. (°C): Obs'd: 0.7 Cor'd: 0.7	Therm ID No.: AT-1
Relinquished by: <i>Justine McLann</i>	Received by: <i>JAWS</i>	Date/Time: 6/19/17 1000
Relinquished by:	Received by:	Date/Time: 6/20/17 920
Relinquished by:	Received in Laboratory by:	Date/Time:







Regulatory Program:  DW  NPDES  RCRA  Other:

<b>Client Contact</b>	<b>Project Manager:</b> Bryan Burkingstock Tel/Fax: 603-736-4111	<b>Site Contact:</b> Ryan Brown Lab Contact: Jill Kellmann	<b>Date:</b> 6/19/17 <b>Carrier:</b> FedEx	<b>COC No.:</b> 13 of 3 COCs
<b>Company Name</b> CH2M	<b>Analysis Turnaround Time</b>			
6600 Peachtree Dunwoody Road, 400 Embassy Row, Suite 600	<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS			
Atlanta GA 30328	TAT if different from Below <u>28 Days</u>			
(678) 530-4060 Phone	<input type="checkbox"/> 2 weeks			
(770) 604-9153 Fax	<input type="checkbox"/> 1 week			
<b>Project Name:</b> Meridian 10006-7-105420 JM01 Navy CLEAN	<input type="checkbox"/> 2 days			
<b>Site:</b> NAS Meridian	<input type="checkbox"/> 1 day			
<b>P O #</b> 10006-7-105420				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes:
MEAFF - T445-1987MW01-0617	6/17/17	0955	G	GW	2	N	N	
MEAFF - AGAMW01-0617		1000						
MEAFF - UNKN20MW01-0617		1135						
MEAFF - EASTB MW01-0617		1135						
MEAFF - EASTB MW01-0617-MS		1135						
MEAFF - EASTB MW01-0617-SD		1135						
MEAFF - T445-1984MW01-0617		1755						
MEAFF - UNKN60MW01-0617		1620						
MEAFF - T445-2003MW01-0617		1705						
MEAFF - UNKN5 MW01-0617		1430						
MEAFF - T45C-05-2008MW01-0617		1355						
MEAFF - FDO6-0617								



**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazardous  Flammable  Skin Irritant  Poison B  Unknown

**Special Instructions/QC Requirements & Comments:** Send results to Mike Zamboni - address on file

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

<b>Custody Seal No.:</b>	<b>Cooler Temp. (°C):</b> Obs'd 0.5 / 0.7 Corr'd: -	<b>Therm ID No.:</b> A11-1
Relinquished by: <u>Justin McLann</u>	Received by: <u>Justin McLann</u>	Company: <u>FAW</u>
Relinquished by:	Received by:	Company:
Relinquished by:	Received in Laboratory by:	Company:

\* Labeled MEAFF - T45C-2003MW01-0617  
6/19/17





Regulatory Program:  DW  NPDES  RCRA  Other:

<b>Client Contact</b>		<b>Project Manager: Bryan Burkingstock</b>		<b>Date: 6/19/17</b>		<b>COC No: 2017-13</b>	
Company Name CH2M		Tel/Fax: 603-736-4111		<b>Carrier: FedEx</b>		<b>2 of 3 COCs</b>	
6600 Peachtree Dunwoody Road, 400 Embassy Row, Suite 600		<b>Analysis Turnaround Time</b>		<b>Site Contact: Ryan Brown</b>		<b>Sampler: J. McCann</b>	
Atlanta GA 30328		<input checked="" type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS		<b>Lab Contact: Jill Kellmann</b>		<b>For Lab Use Only:</b>	
(678) 530-4060 Phone		TAT if different from Below <b>28 Days</b>				<b>Walk-in Client:</b>	
(770) 604-9153 Fax		<input type="checkbox"/> 2 weeks				<b>Lab Sampling:</b>	
Project Name: Meridian 10006-7-105420 JM01 Navy CLEAN		<input type="checkbox"/> 1 week				<b>Job / SDG No.:</b>	
Site: NAS Meridian		<input type="checkbox"/> 2 days					
P O # 10006-7-105420		<input type="checkbox"/> 1 day					

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Sample Specific Notes:
MEAFF-TA4-SOUTH MW01-0617	6/17/17	1515	G	GW	2	NN	X	
MEAFF-EB08-0617	↓	1730						equipment blank
MEAFF-EB09-0617	↓	1825						equipment blank
MEAFF-T2C-199(MN01)-0617	6/18/17	0850						
MEAFF-UNKN11 MW01-0617	↓	0950						
MEAFF-EB10-0617	↓	1055						equipment blank
MEAFF-TAHS-1985 MW01-0617	↓	1130						
MEAFF-TN03-GW-0617	↓	1205						
MEAFF-FR02-0617	↓	1340						field blank
MEAFF-TW04-SO-0617	↓	1220	C	SO	1			
MEAFF-TN05-SO-0617	↓	1230						
MEAFF-TW06-SO-0617	↓	1240						

**Preservation Used:** 1=Ice, 2=HCl; 3=H2SO4; 4=HNO3; 5=NaOH; 6=Other

**Possible Hazard Identification:** Are any samples from a listed EPA Hazardous Waste? Please list any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Special Instructions/QC Requirements & Comments:** Send results to Mike Zamboni - address on file

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Cooler Temp. (°C): Obs'd: **0.7** Cor'd: **0.5** Therm ID No.: **AT-1**

Relinquished by: **Justine McCann** Company: **CH2M HILL** Received by: **Justine McCann** Company: **CH2M HILL** Date/Time: **6/19/17 1800** Date/Time: **6/20/17 920**

Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Received by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Company: \_\_\_\_\_ Received in Laboratory by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Date/Time: \_\_\_\_\_





# Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 320-29267-1

**Login Number: 29267**  
**List Number: 1**  
**Creator: Nelson, Kym D**

**List Source: TestAmerica Sacramento**

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	IDs on containers do not match the COC. Logged in per COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	





## ANALYTICAL REPORT

Job Number: 320-29267-1

Job Description: Meridian 10006-7-105420 JM01 Navy Clean

For:  
CH2M Hill, Inc.  
2411 Dulles Corner Park  
Suite 500  
Herndon, VA 20171  
Attention: Mr. Michael Zamboni



Approved for release.  
Jill Kellmann  
Manager of Project Management  
8/9/2017 11:57 AM

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Jill Kellmann, Manager of Project Management  
880 Riverside Parkway, West Sacramento, CA, 95605  
(916)374-4402  
jill.kellmann@testamericainc.com  
08/09/2017  
Revision: 1

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# Definitions/Glossary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Qualifiers

### LCMS

Qualifier	Qualifier Description
U	Undetected at the Limit of Detection.
J	Estimated: The analyte was positively identified; the quantitation is an estimation
M	Manual integrated compound.
E	Result exceeded calibration range.
D	The reported value is from a dilution.
Q	One or more quality control criteria failed.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

## CASE NARRATIVE

Client: CH2M Hill, Inc.

Project: Meridian 10006-7-105420 JM01 Navy Clean

Report Number: 320-29267-1

### Revision - August 9, 2017

Report revised to include the 20X dilution for sample MEAFF-T45C-05-2008MW01-0617 (320-29267-9) which was inadvertently omitted in the initial report.

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

TestAmerica West Sacramento attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

TestAmerica utilizes USEPA approved methods and DOD QSM, where applicable, in all analytical work. The samples presented in this report were analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

All parameters for which TestAmerica West Sacramento has certification were evaluated to the QSM specified reporting convention or to the client specified format if different from QSM. Parameters not certified under QSM, if any, were evaluated to the detection limit (DL) and include qualified results where applicable.

The sample(s) that contain constituents flagged with U are undetected. The result associated with this flag is the limit of detection (LOD).

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

All solid sample results are reported on an "as received" basis unless otherwise indicated by the presence of a % solids value in the method header.

This laboratory report is confidential and is intended for the sole use of TestAmerica and its client.

### RECEIPT

The samples were received on 6/20/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.7° C and 0.8° C.

### **Receipt Exceptions**

The container labels for the following samples did not match the information listed on the Chain-of-Custody (COC): MEAFF-T45-2003MW01-0617 (320-29267-7) and MEAFF-IW07-SO-0617 (320-29267-24). The container labels list a sample ID of MEAFF-T45C-2003MW01-0617, while the COC lists MEAFF-T45-2003MW01-0617. The container label lists a sample ID of MEAFF-IW08-SO-0617 (with time 13:00), while the COC lists MEAFF-IW08 SO-0617 (with time 13:00). The samples were logged in per the COC.

### PFAS

Samples MEAFF-IW04-SO-0617 (320-29267-20), MEAFF-IW05-SO-0617 (320-29267-21), MEAFF-IW06-SO-0617 (320-29267-22), MEAFF-IW07-SO-0617 (320-29267-23) and MEAFF-IW07-SO-0617 (320-29267-24) were analyzed for PFAs in accordance with 537 Modified. The samples were prepared on 07/01/2017 and analyzed on 07/19/2017.

The first level standard from the initial calibration curve is used to evaluate the tune criteria. The instrument mass windows are set at +/- 0.5amu; therefore, detection of the analyte serves as verification that the assigned mass is within +/- 0.5amu of the true value, which meets the DoD/DOE QSM tune criterion.

The Isotope Dilution Analyte (IDA) recovery associated with the following sample is below the method recommended limit for 18O2 PFHxS: MEAFF-T45C-05-2008MW01-0617 (320-29267-9). Generally, data quality is not considered affected if the IDA signal-to-noise ratio is greater than 10:1, which is achieved for all IDA in the sample.

The Isotope Dilution Analyte (IDA) recovery is above the method recommended limit for 13C2 PFD0A in the following samples: (CCV 320-171828/12). The associated samples are dilutions that do not require this IDA. Quantitation by isotope dilution generally precludes any adverse effect on data quality due to elevated IDA recoveries.

The following samples were diluted to bring the concentration of target analytes within the calibration range: MEAFF-TA4J-1984MW01-0617 (320-29267-5), MEAFF-T45C-05-2008MW01-0617 (320-29267-9), MEAFF-T2C-1996MW01-0617 (320-29267-14) and MEAFF-IW03-GW-0617 (320-29267-18). Elevated reporting limits (RLs) are provided.

The concentration of one or more analytes associated with the following samples exceeded the instrument calibration range: MEAFF-TA4J-1984MW01-0617 (320-29267-5), MEAFF-T45C-05-2008MW01-0617 (320-29267-9), MEAFF-T2C-1996MW01-0617 (320-29267-14) and MEAFF-IW03-GW-0617 (320-29267-18). These analytes have been qualified; however, the peaks did not saturate the instrument detector. These samples have been run at dilution and both sets of data have been reported.

Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 320-170766.

The following samples: MEAFF-TA4J-1984MW01-0617 (320-29267-5) and MEAFF-T45-2003MW01-0617 (320-29267-7) were decanted prior to preparation due to excessive sediment in sample bottle.

The following samples: MEAFF-UNKN6MW01-0617 (320-29267-6), MEAFF-UNKN5MW01-0617 (320-29267-8), MEAFF-T45C-05-2008MW01-0617 (320-29267-9), MEAFF-T2C-1996MW01-0617 (320-29267-14), MEAFF-UNKN11MW01-0617 (320-29267-15), MEAFF-TA4J-1985MW01-0617 (320-29267-17) and MEAFF-IW03-GW-0617 (320-29267-18) were decanted prior to preparation due to excessive sediment in sample bottles. Decanted samples were turbid and would potentially clog the solid phase extraction columns. Therefore, samples were centrifuged prior to extraction.

The sample had grayish black material left on the bottom, after concentrating down the sample to dryness. The sample was then brought up with 400 uL of MeOH and 100 uL of water, for a final volume of 0.5 mL. MEAFF-TA4J-1985MW01-0617 (320-29267-17)

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

#### **PERCENT SOLIDS**

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Detection Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-TA4J-1987MW01-0617

Lab Sample ID: 320-29267-1

No Detections.

## Client Sample ID: MEAFF-AGAMW01-0617

Lab Sample ID: 320-29267-2

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	4.4	M	2.5	0.73	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.5	J M	2.5	0.90	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN20MW01-0617

Lab Sample ID: 320-29267-3

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	1.8	J M	2.3	0.70	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	19		2.3	0.85	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-EASTBMW01-0617

Lab Sample ID: 320-29267-4

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.77	J M	2.3	0.69	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	37		3.7	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.3	0.84	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-TA4J-1984MW01-0617

Lab Sample ID: 320-29267-5

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	4800	M E	2.5	0.75	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	8200	E	4.0	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1100	E	2.5	0.92	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	11000	D M	130	38	ng/L	50		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	12000	D	200	64	ng/L	50		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	640	D	130	46	ng/L	50		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN6MW01-0617

Lab Sample ID: 320-29267-6

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.76	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	18		4.1	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.5	M	2.5	0.94	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-T45-2003MW01-0617

Lab Sample ID: 320-29267-7

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	3.0	M	2.3	0.70	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	1.4	J M	3.7	1.2	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN5MW01-0617

Lab Sample ID: 320-29267-8

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.74	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	6.8		4.0	1.3	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	30		2.5	0.91	ng/L	1		537 (Modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento



# Detection Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-T45C-05-2008MW01-0617

## Lab Sample ID: 320-29267-9

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	1300	M E	2.4	0.71	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	190		3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2600	E	2.4	0.88	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	1900	D M	48	14	ng/L	20		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	190	D	76	24	ng/L	20		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	8100	E D	48	18	ng/L	20		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL2	1800	D M	120	36	ng/L	50		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL2	190	D	190	61	ng/L	50		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL2	8200	D	120	44	ng/L	50		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-FD06-0617

## Lab Sample ID: 320-29267-10

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	4.5	M	2.2	0.66	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.2	0.81	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-TA4-SOUTHMW01-0617

## Lab Sample ID: 320-29267-11

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	2.5	M	2.4	0.73	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.0	J M	2.4	0.89	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-EB08-0617

## Lab Sample ID: 320-29267-12

No Detections.

## Client Sample ID: MEAFF-EB09-0617

## Lab Sample ID: 320-29267-13

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	4.6		3.6	1.2	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-T2C-1996MW01-0617

## Lab Sample ID: 320-29267-14

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	9.0	M	2.4	0.71	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	720	E	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	2.8		2.4	0.87	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	9.6	J D M	12	3.6	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	770	D	19	6.1	ng/L	5		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-UNKN11MW01-0617

## Lab Sample ID: 320-29267-15

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	1.8	J M	2.5	0.74	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	2.4	J	4.0	1.3	ng/L	1		537 (Modified)	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

# Detection Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-EB10-0617

Lab Sample ID: 320-29267-16

No Detections.

## Client Sample ID: MEAFF-TA4J-1985MW01-0617

Lab Sample ID: 320-29267-17

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.78	J M	2.5	0.73	ng/L	1		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-IW03-GW-0617

Lab Sample ID: 320-29267-18

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	510	M E	2.4	0.70	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	560	E	3.8	1.2	ng/L	1		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	410	E	2.4	0.86	ng/L	1		537 (Modified)	Total/NA
Perfluorooctanoic acid (PFOA) - DL	550	D M	12	3.5	ng/L	5		537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS) - DL	590	D	19	6.0	ng/L	5		537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS) - DL	450	D	12	4.3	ng/L	5		537 (Modified)	Total/NA

## Client Sample ID: MEAFF-FB02-0617

Lab Sample ID: 320-29267-19

No Detections.

## Client Sample ID: MEAFF-IW04-SO-0617

Lab Sample ID: 320-29267-20

No Detections.

## Client Sample ID: MEAFF-IW05-SO-0617

Lab Sample ID: 320-29267-21

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanesulfonic acid (PFOS)	0.23	J M	0.63	0.16	ug/Kg	1	☼	537 (Modified)	Total/NA

## Client Sample ID: MEAFF-IW06-SO-0617

Lab Sample ID: 320-29267-22

Analyte	Result	Qualifier	LOQ	DL	Unit	Dil Fac	D	Method	Prep Type
Perfluorooctanoic acid (PFOA)	0.37	J M	0.60	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorooctanesulfonic acid (PFOS)	9.7		0.60	0.15	ug/Kg	1	☼	537 (Modified)	Total/NA
Perfluorobutanesulfonic acid (PFBS)	1.2		0.48	0.12	ug/Kg	1	☼	537 (Modified)	Total/NA

## Client Sample ID: MEAFF-IW07-SO-0617

Lab Sample ID: 320-29267-23

No Detections.

## Client Sample ID: MEAFF-IW08-SO-0617

Lab Sample ID: 320-29267-24

No Detections.

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-TA4J-1987MW01-0617**

**Lab Sample ID: 320-29267-1**

Date Collected: 06/17/17 09:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.9	U	2.4	0.71	ng/L		06/24/17 12:27	06/28/17 23:47	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.8	1.2	ng/L		06/24/17 12:27	06/28/17 23:47	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	0.87	ng/L		06/24/17 12:27	06/28/17 23:47	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	38		25 - 150				06/24/17 12:27	06/28/17 23:47	1
13C4 PFOS	109		25 - 150				06/24/17 12:27	06/28/17 23:47	1
18O2 PFHxS	110		25 - 150				06/24/17 12:27	06/28/17 23:47	1

**Client Sample ID: MEAFF-AGAMW01-0617**

**Lab Sample ID: 320-29267-2**

Date Collected: 06/17/17 10:00

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	4.4	M	2.5	0.73	ng/L		06/24/17 12:27	06/28/17 23:54	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U M	3.9	1.3	ng/L		06/24/17 12:27	06/28/17 23:54	1
Perfluorobutanesulfonic acid (PFBS)	1.5	J M	2.5	0.90	ng/L		06/24/17 12:27	06/28/17 23:54	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	69		25 - 150				06/24/17 12:27	06/28/17 23:54	1
13C4 PFOS	110		25 - 150				06/24/17 12:27	06/28/17 23:54	1
18O2 PFHxS	112		25 - 150				06/24/17 12:27	06/28/17 23:54	1

**Client Sample ID: MEAFF-UNKN20MW01-0617**

**Lab Sample ID: 320-29267-3**

Date Collected: 06/17/17 11:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	J M	2.3	0.70	ng/L		06/24/17 12:27	06/29/17 00:01	1
Perfluorooctanesulfonic acid (PFOS)	2.8	U	3.7	1.2	ng/L		06/24/17 12:27	06/29/17 00:01	1
Perfluorobutanesulfonic acid (PFBS)	19		2.3	0.85	ng/L		06/24/17 12:27	06/29/17 00:01	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	42		25 - 150				06/24/17 12:27	06/29/17 00:01	1
13C4 PFOS	108		25 - 150				06/24/17 12:27	06/29/17 00:01	1
18O2 PFHxS	109		25 - 150				06/24/17 12:27	06/29/17 00:01	1

**Client Sample ID: MEAFF-EASTBMW01-0617**

**Lab Sample ID: 320-29267-4**

Date Collected: 06/17/17 11:35

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.77	J M	2.3	0.69	ng/L		06/24/17 12:27	06/29/17 00:08	1
Perfluorooctanesulfonic acid (PFOS)	37		3.7	1.2	ng/L		06/24/17 12:27	06/29/17 00:08	1
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.3	0.84	ng/L		06/24/17 12:27	06/29/17 00:08	1

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-EASTBMW01-0617**

**Lab Sample ID: 320-29267-4**

Date Collected: 06/17/17 11:35

Matrix: Water

Date Received: 06/20/17 09:20

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	64		25 - 150	06/24/17 12:27	06/29/17 00:08	1
13C4 PFOS	116		25 - 150	06/24/17 12:27	06/29/17 00:08	1
18O2 PFHxS	117		25 - 150	06/24/17 12:27	06/29/17 00:08	1

**Client Sample ID: MEAFF-TA4J-1984MW01-0617**

**Lab Sample ID: 320-29267-5**

Date Collected: 06/17/17 17:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	4800	M E	2.5	0.75	ng/L		06/24/17 12:27	06/29/17 00:28	1
Perfluorooctanesulfonic acid (PFOS)	8200	E	4.0	1.3	ng/L		06/24/17 12:27	06/29/17 00:28	1
Perfluorobutanesulfonic acid (PFBS)	1100	E	2.5	0.92	ng/L		06/24/17 12:27	06/29/17 00:28	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	36		25 - 150	06/24/17 12:27	06/29/17 00:28	1
13C4 PFOS	32		25 - 150	06/24/17 12:27	06/29/17 00:28	1
18O2 PFHxS	30		25 - 150	06/24/17 12:27	06/29/17 00:28	1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	11000	D M	130	38	ng/L		06/24/17 12:27	06/29/17 18:18	50
Perfluorooctanesulfonic acid (PFOS)	12000	D	200	64	ng/L		06/24/17 12:27	06/29/17 18:18	50
Perfluorobutanesulfonic acid (PFBS)	640	D	130	46	ng/L		06/24/17 12:27	06/29/17 18:18	50

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	99		25 - 150	06/24/17 12:27	06/29/17 18:18	50
13C4 PFOS	103		25 - 150	06/24/17 12:27	06/29/17 18:18	50
18O2 PFHxS	111		25 - 150	06/24/17 12:27	06/29/17 18:18	50

**Client Sample ID: MEAFF-UNKN6MW01-0617**

**Lab Sample ID: 320-29267-6**

Date Collected: 06/17/17 16:20

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.76	ng/L		06/24/17 12:27	06/29/17 00:35	1
Perfluorooctanesulfonic acid (PFOS)	18		4.1	1.3	ng/L		06/24/17 12:27	06/29/17 00:35	1
Perfluorobutanesulfonic acid (PFBS)	2.5	M	2.5	0.94	ng/L		06/24/17 12:27	06/29/17 00:35	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	61		25 - 150	06/24/17 12:27	06/29/17 00:35	1
13C4 PFOS	105		25 - 150	06/24/17 12:27	06/29/17 00:35	1
18O2 PFHxS	105		25 - 150	06/24/17 12:27	06/29/17 00:35	1

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-T45-2003MW01-0617**

**Lab Sample ID: 320-29267-7**

Date Collected: 06/17/17 17:05

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	3.0	M	2.3	0.70	ng/L		06/24/17 12:27	06/29/17 00:49	1
Perfluorooctanesulfonic acid (PFOS)	1.4	J M	3.7	1.2	ng/L		06/24/17 12:27	06/29/17 00:49	1
Perfluorobutanesulfonic acid (PFBS)	1.9	U M	2.3	0.86	ng/L		06/24/17 12:27	06/29/17 00:49	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	62		25 - 150				06/24/17 12:27	06/29/17 00:49	1
13C4 PFOS	105		25 - 150				06/24/17 12:27	06/29/17 00:49	1
18O2 PFHxS	112		25 - 150				06/24/17 12:27	06/29/17 00:49	1

**Client Sample ID: MEAFF-UNKN5MW01-0617**

**Lab Sample ID: 320-29267-8**

Date Collected: 06/17/17 14:30

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	6.2	M	2.5	0.74	ng/L		06/24/17 12:27	06/29/17 00:56	1
Perfluorooctanesulfonic acid (PFOS)	6.8		4.0	1.3	ng/L		06/24/17 12:27	06/29/17 00:56	1
Perfluorobutanesulfonic acid (PFBS)	30		2.5	0.91	ng/L		06/24/17 12:27	06/29/17 00:56	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	83		25 - 150				06/24/17 12:27	06/29/17 00:56	1
13C4 PFOS	112		25 - 150				06/24/17 12:27	06/29/17 00:56	1
18O2 PFHxS	115		25 - 150				06/24/17 12:27	06/29/17 00:56	1

**Client Sample ID: MEAFF-T45C-05-2008MW01-0617**

**Lab Sample ID: 320-29267-9**

Date Collected: 06/17/17 13:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1300	M E	2.4	0.71	ng/L		06/24/17 12:27	06/29/17 01:03	1
Perfluorooctanesulfonic acid (PFOS)	190		3.8	1.2	ng/L		06/24/17 12:27	06/29/17 01:03	1
Perfluorobutanesulfonic acid (PFBS)	2600	E	2.4	0.88	ng/L		06/24/17 12:27	06/29/17 01:03	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	67		25 - 150				06/24/17 12:27	06/29/17 01:03	1
13C4 PFOS	96		25 - 150				06/24/17 12:27	06/29/17 01:03	1
18O2 PFHxS	18	Q	25 - 150				06/24/17 12:27	06/29/17 01:03	1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1900	D M	48	14	ng/L		06/24/17 12:27	06/29/17 18:25	20
Perfluorooctanesulfonic acid (PFOS)	190	D	76	24	ng/L		06/24/17 12:27	06/29/17 18:25	20
Perfluorobutanesulfonic acid (PFBS)	8100	E D	48	18	ng/L		06/24/17 12:27	06/29/17 18:25	20
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	117		25 - 150				06/24/17 12:27	06/29/17 18:25	20
13C4 PFOS	102		25 - 150				06/24/17 12:27	06/29/17 18:25	20

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-T45C-05-2008MW01-0617**

**Lab Sample ID: 320-29267-9**

Date Collected: 06/17/17 13:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
18O2 PFHxS	74		25 - 150	06/24/17 12:27	06/29/17 18:25	20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL2**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1800	D M	120	36	ng/L		06/24/17 12:27	06/30/17 12:20	50
Perfluorooctanesulfonic acid (PFOS)	190	D	190	61	ng/L		06/24/17 12:27	06/30/17 12:20	50
Perfluorobutanesulfonic acid (PFBS)	8200	D	120	44	ng/L		06/24/17 12:27	06/30/17 12:20	50

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	96		25 - 150	06/24/17 12:27	06/30/17 12:20	50
13C4 PFOS	86		25 - 150	06/24/17 12:27	06/30/17 12:20	50
18O2 PFHxS	85		25 - 150	06/24/17 12:27	06/30/17 12:20	50

**Client Sample ID: MEAFF-FD06-0617**

**Lab Sample ID: 320-29267-10**

Date Collected: 06/17/17 00:00

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	4.5	M	2.2	0.66	ng/L		06/23/17 16:59	06/28/17 09:39	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U M	3.5	1.1	ng/L		06/23/17 16:59	06/28/17 09:39	1
Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.2	0.81	ng/L		06/23/17 16:59	06/28/17 09:39	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	43		25 - 150	06/23/17 16:59	06/28/17 09:39	1
13C4 PFOS	105		25 - 150	06/23/17 16:59	06/28/17 09:39	1
18O2 PFHxS	99		25 - 150	06/23/17 16:59	06/28/17 09:39	1

**Client Sample ID: MEAFF-TA4-SOUTHMW01-0617**

**Lab Sample ID: 320-29267-11**

Date Collected: 06/17/17 15:15

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	2.5	M	2.4	0.73	ng/L		06/24/17 12:27	06/29/17 01:10	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U M	3.9	1.2	ng/L		06/24/17 12:27	06/29/17 01:10	1
Perfluorobutanesulfonic acid (PFBS)	2.0	J M	2.4	0.89	ng/L		06/24/17 12:27	06/29/17 01:10	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C4 PFOA	99		25 - 150	06/24/17 12:27	06/29/17 01:10	1
13C4 PFOS	107		25 - 150	06/24/17 12:27	06/29/17 01:10	1
18O2 PFHxS	103		25 - 150	06/24/17 12:27	06/29/17 01:10	1

**Client Sample ID: MEAFF-EB08-0617**

**Lab Sample ID: 320-29267-12**

Date Collected: 06/17/17 17:30

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U	2.2	0.67	ng/L		06/24/17 12:27	06/29/17 01:17	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-EB08-0617**

**Lab Sample ID: 320-29267-12**

Date Collected: 06/17/17 17:30

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	1.1	ng/L		06/24/17 12:27	06/29/17 01:17	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U M	2.2	0.82	ng/L		06/24/17 12:27	06/29/17 01:17	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	124		25 - 150				06/24/17 12:27	06/29/17 01:17	1
13C4 PFOS	102		25 - 150				06/24/17 12:27	06/29/17 01:17	1
18O2 PFHxS	107		25 - 150				06/24/17 12:27	06/29/17 01:17	1

**Client Sample ID: MEAFF-EB09-0617**

**Lab Sample ID: 320-29267-13**

Date Collected: 06/17/17 18:25

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U M	2.3	0.68	ng/L		06/24/17 12:27	06/29/17 01:24	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>4.6</b>		3.6	1.2	ng/L		06/24/17 12:27	06/29/17 01:24	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.3	0.84	ng/L		06/24/17 12:27	06/29/17 01:24	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	143		25 - 150				06/24/17 12:27	06/29/17 01:24	1
13C4 PFOS	106		25 - 150				06/24/17 12:27	06/29/17 01:24	1
18O2 PFHxS	116		25 - 150				06/24/17 12:27	06/29/17 01:24	1

**Client Sample ID: MEAFF-T2C-1996MW01-0617**

**Lab Sample ID: 320-29267-14**

Date Collected: 06/18/17 08:50

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanoic acid (PFOA)</b>	<b>9.0</b>	<b>M</b>	2.4	0.71	ng/L		06/24/17 12:27	06/29/17 01:30	1
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>720</b>	<b>E</b>	3.8	1.2	ng/L		06/24/17 12:27	06/29/17 01:30	1
<b>Perfluorobutanesulfonic acid (PFBS)</b>	<b>2.8</b>		2.4	0.87	ng/L		06/24/17 12:27	06/29/17 01:30	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	108		25 - 150				06/24/17 12:27	06/29/17 01:30	1
13C4 PFOS	92		25 - 150				06/24/17 12:27	06/29/17 01:30	1
18O2 PFHxS	119		25 - 150				06/24/17 12:27	06/29/17 01:30	1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Perfluorooctanoic acid (PFOA)</b>	<b>9.6</b>	<b>J D M</b>	12	3.6	ng/L		06/24/17 12:27	06/29/17 18:32	5
<b>Perfluorooctanesulfonic acid (PFOS)</b>	<b>770</b>	<b>D</b>	19	6.1	ng/L		06/24/17 12:27	06/29/17 18:32	5
Perfluorobutanesulfonic acid (PFBS)	9.5	U	12	4.4	ng/L		06/24/17 12:27	06/29/17 18:32	5
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	119		25 - 150				06/24/17 12:27	06/29/17 18:32	5
13C4 PFOS	122		25 - 150				06/24/17 12:27	06/29/17 18:32	5
18O2 PFHxS	135		25 - 150				06/24/17 12:27	06/29/17 18:32	5



# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-UNKN11MW01-0617**

**Lab Sample ID: 320-29267-15**

Date Collected: 06/18/17 09:50

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	J M	2.5	0.74	ng/L		06/24/17 12:27	06/29/17 01:37	1
Perfluorooctanesulfonic acid (PFOS)	2.4	J	4.0	1.3	ng/L		06/24/17 12:27	06/29/17 01:37	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U M	2.5	0.91	ng/L		06/24/17 12:27	06/29/17 01:37	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	68		25 - 150				06/24/17 12:27	06/29/17 01:37	1
13C4 PFOS	114		25 - 150				06/24/17 12:27	06/29/17 01:37	1
18O2 PFHxS	117		25 - 150				06/24/17 12:27	06/29/17 01:37	1

**Client Sample ID: MEAFF-EB10-0617**

**Lab Sample ID: 320-29267-16**

Date Collected: 06/18/17 10:55

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	0.66	ng/L		06/24/17 12:27	06/29/17 01:44	1
Perfluorooctanesulfonic acid (PFOS)	2.6	U	3.5	1.1	ng/L		06/24/17 12:27	06/29/17 01:44	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	0.81	ng/L		06/24/17 12:27	06/29/17 01:44	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	135		25 - 150				06/24/17 12:27	06/29/17 01:44	1
13C4 PFOS	111		25 - 150				06/24/17 12:27	06/29/17 01:44	1
18O2 PFHxS	120		25 - 150				06/24/17 12:27	06/29/17 01:44	1

**Client Sample ID: MEAFF-TA4J-1985MW01-0617**

**Lab Sample ID: 320-29267-17**

Date Collected: 06/18/17 11:30

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.78	J M	2.5	0.73	ng/L		06/24/17 12:27	06/29/17 01:51	1
Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	1.3	ng/L		06/24/17 12:27	06/29/17 01:51	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.90	ng/L		06/24/17 12:27	06/29/17 01:51	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	37		25 - 150				06/24/17 12:27	06/29/17 01:51	1
13C4 PFOS	111		25 - 150				06/24/17 12:27	06/29/17 01:51	1
18O2 PFHxS	124		25 - 150				06/24/17 12:27	06/29/17 01:51	1

**Client Sample ID: MEAFF-IW03-GW-0617**

**Lab Sample ID: 320-29267-18**

Date Collected: 06/18/17 12:05

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	510	M E	2.4	0.70	ng/L		06/24/17 12:27	06/29/17 02:05	1
Perfluorooctanesulfonic acid (PFOS)	560	E	3.8	1.2	ng/L		06/24/17 12:27	06/29/17 02:05	1
Perfluorobutanesulfonic acid (PFBS)	410	E	2.4	0.86	ng/L		06/24/17 12:27	06/29/17 02:05	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	77		25 - 150				06/24/17 12:27	06/29/17 02:05	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW03-GW-0617**

**Lab Sample ID: 320-29267-18**

Date Collected: 06/18/17 12:05

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)**

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFOS	95		25 - 150	06/24/17 12:27	06/29/17 02:05	1
<sup>18</sup> O2 PFHxS	63		25 - 150	06/24/17 12:27	06/29/17 02:05	1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons - DL**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	550	D M	12	3.5	ng/L		06/24/17 12:27	06/29/17 18:39	5
Perfluorooctanesulfonic acid (PFOS)	590	D	19	6.0	ng/L		06/24/17 12:27	06/29/17 18:39	5
Perfluorobutanesulfonic acid (PFBS)	450	D	12	4.3	ng/L		06/24/17 12:27	06/29/17 18:39	5

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFOA	95		25 - 150	06/24/17 12:27	06/29/17 18:39	5
<sup>13</sup> C4 PFOS	112		25 - 150	06/24/17 12:27	06/29/17 18:39	5
<sup>18</sup> O2 PFHxS	101		25 - 150	06/24/17 12:27	06/29/17 18:39	5

**Client Sample ID: MEAFF-FB02-0617**

**Lab Sample ID: 320-29267-19**

Date Collected: 06/18/17 13:40

Matrix: Water

Date Received: 06/20/17 09:20

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	0.67	ng/L		06/24/17 12:27	06/29/17 02:12	1
Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	1.1	ng/L		06/24/17 12:27	06/29/17 02:12	1
Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	0.82	ng/L		06/24/17 12:27	06/29/17 02:12	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFOA	125		25 - 150	06/24/17 12:27	06/29/17 02:12	1
<sup>13</sup> C4 PFOS	112		25 - 150	06/24/17 12:27	06/29/17 02:12	1
<sup>18</sup> O2 PFHxS	113		25 - 150	06/24/17 12:27	06/29/17 02:12	1

**Client Sample ID: MEAFF-IW04-SO-0617**

**Lab Sample ID: 320-29267-20**

Date Collected: 06/18/17 12:20

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 90.7

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.32	U M	0.54	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:15	1
Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.14	ug/Kg	☼	07/01/17 09:40	07/19/17 00:15	1
Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:15	1

Isotope Dilution	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
<sup>13</sup> C4 PFOA	113		25 - 150	07/01/17 09:40	07/19/17 00:15	1
<sup>13</sup> C4 PFOS	67		25 - 150	07/01/17 09:40	07/19/17 00:15	1
<sup>18</sup> O2 PFHxS	80		25 - 150	07/01/17 09:40	07/19/17 00:15	1

**Client Sample ID: MEAFF-IW05-SO-0617**

**Lab Sample ID: 320-29267-21**

Date Collected: 06/18/17 12:30

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 79.1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.38	U M	0.63	0.13	ug/Kg	☼	07/01/17 09:40	07/19/17 00:22	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW05-SO-0617**

**Lab Sample ID: 320-29267-21**

Date Collected: 06/18/17 12:30

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 79.1

**Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanesulfonic acid (PFOS)	0.23	J M	0.63	0.16	ug/Kg	☼	07/01/17 09:40	07/19/17 00:22	1
Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.50	0.13	ug/Kg	☼	07/01/17 09:40	07/19/17 00:22	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	109		25 - 150				07/01/17 09:40	07/19/17 00:22	1
13C4 PFOS	62		25 - 150				07/01/17 09:40	07/19/17 00:22	1
18O2 PFHxS	80		25 - 150				07/01/17 09:40	07/19/17 00:22	1

**Client Sample ID: MEAFF-IW06-SO-0617**

**Lab Sample ID: 320-29267-22**

Date Collected: 06/18/17 12:40

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 82.8

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.37	J M	0.60	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:29	1
Perfluorooctanesulfonic acid (PFOS)	9.7		0.60	0.15	ug/Kg	☼	07/01/17 09:40	07/19/17 00:29	1
Perfluorobutanesulfonic acid (PFBS)	1.2		0.48	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:29	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	116		25 - 150				07/01/17 09:40	07/19/17 00:29	1
13C4 PFOS	82		25 - 150				07/01/17 09:40	07/19/17 00:29	1
18O2 PFHxS	85		25 - 150				07/01/17 09:40	07/19/17 00:29	1

**Client Sample ID: MEAFF-IW07-SO-0617**

**Lab Sample ID: 320-29267-23**

Date Collected: 06/18/17 12:50

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 86.7

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.34	U	0.57	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:36	1
Perfluorooctanesulfonic acid (PFOS)	0.34	U	0.57	0.14	ug/Kg	☼	07/01/17 09:40	07/19/17 00:36	1
Perfluorobutanesulfonic acid (PFBS)	0.34	U	0.45	0.12	ug/Kg	☼	07/01/17 09:40	07/19/17 00:36	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	126		25 - 150				07/01/17 09:40	07/19/17 00:36	1
13C4 PFOS	70		25 - 150				07/01/17 09:40	07/19/17 00:36	1
18O2 PFHxS	91		25 - 150				07/01/17 09:40	07/19/17 00:36	1

**Client Sample ID: MEAFF-IW08-SO-0617**

**Lab Sample ID: 320-29267-24**

Date Collected: 06/18/17 13:00

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 92.7

**Method: 537 (Modified) - Perfluorinated Hydrocarbons**

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
Perfluorooctanoic acid (PFOA)	0.32	U M	0.54	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:43	1
Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.14	ug/Kg	☼	07/01/17 09:40	07/19/17 00:43	1
Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.11	ug/Kg	☼	07/01/17 09:40	07/19/17 00:43	1
Isotope Dilution	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
13C4 PFOA	119		25 - 150				07/01/17 09:40	07/19/17 00:43	1
13C4 PFOS	73		25 - 150				07/01/17 09:40	07/19/17 00:43	1

TestAmerica Sacramento

# Client Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW08-SO-0617**

**Date Collected: 06/18/17 13:00**

**Date Received: 06/20/17 09:20**

**Lab Sample ID: 320-29267-24**

**Matrix: Solid**

**Percent Solids: 92.7**

**Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)**

<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>18O2 PFHxS</i>	<i>88</i>		<i>25 - 150</i>	<i>07/01/17 09:40</i>	<i>07/19/17 00:43</i>	<i>1</i>

# Default Detection Limits

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

Prep: 3535

Analyte	LOQ	DL	Units	Method
Perfluorobutanesulfonic acid (PFBS)	2.5	0.92	ng/L	537 (Modified)
Perfluorooctanesulfonic acid (PFOS)	4.0	1.3	ng/L	537 (Modified)
Perfluorooctanoic acid (PFOA)	2.5	0.75	ng/L	537 (Modified)

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

Prep: SHAKE

Analyte	LOQ	DL	Units	Method
Perfluorobutanesulfonic acid (PFBS)	0.40	0.10	ug/Kg	537 (Modified)
Perfluorooctanesulfonic acid (PFOS)	0.50	0.13	ug/Kg	537 (Modified)
Perfluorooctanoic acid (PFOA)	0.50	0.10	ug/Kg	537 (Modified)

# Isotope Dilution Summary

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)		
		3C4 PFO/ (25-150)	3C4 PFO: (25-150)	3O2 PFHx (25-150)
320-29267-20	MEAFF-IW04-SO-0617	113	67	80
320-29267-21	MEAFF-IW05-SO-0617	109	62	80
320-29267-22	MEAFF-IW06-SO-0617	116	82	85
320-29267-23	MEAFF-IW07-SO-0617	126	70	91
320-29267-24	MEAFF-IW08-SO-0617	119	73	88
320-29267-24 MS	MEAFF-IW08-SO-0617	120	77	99
320-29267-24 MSD	MEAFF-IW08-SO-0617	122	81	92
LCS 320-172026/2-A	Lab Control Sample	118	90	96
MB 320-172026/1-A	Method Blank	128	93	93

**Surrogate Legend**

- 13C4 PFOA = 13C4 PFOA
- 13C4 PFOS = 13C4 PFOS
- 18O2 PFHxS = 18O2 PFHxS

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)		
		3C4 PFO/ (25-150)	3C4 PFO: (25-150)	3O2 PFHx (25-150)
320-29267-1	MEAFF-TA4J-1987MW01-0617	38	109	110
320-29267-2	MEAFF-AGAMW01-0617	69	110	112
320-29267-3	MEAFF-UNKN20MW01-0617	42	108	109
320-29267-4	MEAFF-EASTBMW01-0617	64	116	117
320-29267-4 MS	MEAFF-EASTBMW01-0617	72	113	123
320-29267-4 MSD	MEAFF-EASTBMW01-0617	60	107	112
320-29267-5	MEAFF-TA4J-1984MW01-0617	36	32	30
320-29267-5 - DL	MEAFF-TA4J-1984MW01-0617	99	103	111
320-29267-6	MEAFF-UNKN6MW01-0617	61	105	105
320-29267-7	MEAFF-T45-2003MW01-0617	62	105	112
320-29267-8	MEAFF-UNKN5MW01-0617	83	112	115
320-29267-9	MEAFF-T45C-05-2008MW01-0617	67	96	18 Q
320-29267-9 - DL	MEAFF-T45C-05-2008MW01-0617	117	102	74
320-29267-9 - DL2	MEAFF-T45C-05-2008MW01-0617	96	86	85
320-29267-10	MEAFF-FD06-0617	43	105	99
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	99	107	103
320-29267-12	MEAFF-EB08-0617	124	102	107
320-29267-13	MEAFF-EB09-0617	143	106	116
320-29267-14	MEAFF-T2C-1996MW01-0617	108	92	119
320-29267-14 - DL	MEAFF-T2C-1996MW01-0617	119	122	135
320-29267-15	MEAFF-UNKN11MW01-0617	68	114	117
320-29267-16	MEAFF-EB10-0617	135	111	120
320-29267-17	MEAFF-TA4J-1985MW01-0617	37	111	124
320-29267-18	MEAFF-IW03-GW-0617	77	95	63
320-29267-18 - DL	MEAFF-IW03-GW-0617	95	112	101
320-29267-19	MEAFF-FB02-0617	125	112	113
LCS 320-170766/2-A	Lab Control Sample	117	101	103
LCS 320-170805/2-A	Lab Control Sample	125	107	116

# Isotope Dilution Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Isotope Dilution Recovery (Acceptance Limits)		
		<sup>3</sup> C4 PFO/ (25-150)	<sup>3</sup> C4 PFO/ (25-150)	<sup>18</sup> O2 PFHx (25-150)
LCSD 320-170766/3-A	Lab Control Sample Dup	117	98	101
MB 320-170766/1-A	Method Blank	124	104	104
MB 320-170805/1-A	Method Blank	133	108	114

### Surrogate Legend

13C4 PFOA = 13C4 PFOA  
13C4 PFOS = 13C4 PFOS  
18O2 PFHxS = 18O2 PFHxS



# QC Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons

**Lab Sample ID: MB 320-170766/1-A**  
**Matrix: Water**  
**Analysis Batch: 171335**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 170766**

Analyte	MB	MB	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid (PFOA)	2.0	U	2.5	0.75	ng/L		06/23/17 16:59	06/28/17 09:18	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		06/23/17 16:59	06/28/17 09:18	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U M	2.5	0.92	ng/L		06/23/17 16:59	06/28/17 09:18	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOA	124		25 - 150	06/23/17 16:59	06/28/17 09:18	1
13C4 PFOS	104		25 - 150	06/23/17 16:59	06/28/17 09:18	1
18O2 PFHxS	104		25 - 150	06/23/17 16:59	06/28/17 09:18	1

**Lab Sample ID: LCS 320-170766/2-A**  
**Matrix: Water**  
**Analysis Batch: 171335**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 170766**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
Perfluorooctanoic acid (PFOA)	40.0	41.6		ng/L		104	60 - 140
Perfluorooctanesulfonic acid (PFOS)	37.1	41.6		ng/L		112	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.4	39.8		ng/L		113	50 - 150

Isotope Dilution	LCS	LCS	Limits
	%Recovery	Qualifier	
13C4 PFOA	117		25 - 150
13C4 PFOS	101		25 - 150
18O2 PFHxS	103		25 - 150

**Lab Sample ID: LCSD 320-170766/3-A**  
**Matrix: Water**  
**Analysis Batch: 171335**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 170766**

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	Limits	RPD	RPD Limit
		Result	Qualifier						
Perfluorooctanoic acid (PFOA)	40.0	40.6		ng/L		102	60 - 140	2	30
Perfluorooctanesulfonic acid (PFOS)	37.1	42.8		ng/L		115	60 - 140	3	30
Perfluorobutanesulfonic acid (PFBS)	35.4	40.5		ng/L		115	50 - 150	2	30

Isotope Dilution	LCSD	LCSD	Limits
	%Recovery	Qualifier	
13C4 PFOA	117		25 - 150
13C4 PFOS	98		25 - 150
18O2 PFHxS	101		25 - 150

**Lab Sample ID: MB 320-170805/1-A**  
**Matrix: Water**  
**Analysis Batch: 171594**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 170805**

Analyte	MB	MB	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid (PFOA)	2.0	U	2.5	0.75	ng/L		06/24/17 12:27	06/28/17 23:33	1
Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	1.3	ng/L		06/24/17 12:27	06/28/17 23:33	1
Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	0.92	ng/L		06/24/17 12:27	06/28/17 23:33	1

TestAmerica Sacramento

# QC Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

Isotope Dilution	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOA	133		25 - 150	06/24/17 12:27	06/28/17 23:33	1
13C4 PFOS	108		25 - 150	06/24/17 12:27	06/28/17 23:33	1
18O2 PFHxS	114		25 - 150	06/24/17 12:27	06/28/17 23:33	1

**Lab Sample ID: LCS 320-170805/2-A**  
**Matrix: Water**  
**Analysis Batch: 171594**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 170805**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid (PFOS)	37.1	41.2		ng/L		111	60 - 140
Perfluorobutanesulfonic acid (PFBS)	35.4	37.7		ng/L		107	50 - 150

Isotope Dilution	LCS LCS		Limits
	%Recovery	Qualifier	
13C4 PFOA	125		25 - 150
13C4 PFOS	107		25 - 150
18O2 PFHxS	116		25 - 150

**Lab Sample ID: 320-29267-4 MS**  
**Matrix: Water**  
**Analysis Batch: 171594**

**Client Sample ID: MEAFF-EASTBMW01-0617**  
**Prep Type: Total/NA**  
**Prep Batch: 170805**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Perfluorooctanesulfonic acid (PFOS)	37		34.7	75.0		ng/L		110	60 - 140
Perfluorobutanesulfonic acid (PFBS)	1.6	J	33.1	36.1		ng/L		104	50 - 150

Isotope Dilution	MS MS		Limits
	%Recovery	Qualifier	
13C4 PFOA	72		25 - 150
13C4 PFOS	113		25 - 150
18O2 PFHxS	123		25 - 150

**Lab Sample ID: 320-29267-4 MSD**  
**Matrix: Water**  
**Analysis Batch: 171594**

**Client Sample ID: MEAFF-EASTBMW01-0617**  
**Prep Type: Total/NA**  
**Prep Batch: 170805**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Perfluorooctanesulfonic acid (PFOS)	37		35.7	71.3		ng/L		97	60 - 140	5	30
Perfluorobutanesulfonic acid (PFBS)	1.6	J	34.0	36.3		ng/L		102	50 - 150	0	30

Isotope Dilution	MSD MSD		Limits
	%Recovery	Qualifier	
13C4 PFOA	60		25 - 150
13C4 PFOS	107		25 - 150
18O2 PFHxS	112		25 - 150

# QC Sample Results

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

**Lab Sample ID: MB 320-172026/1-A**  
**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	MB	MB	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Perfluorooctanoic acid (PFOA)	0.30	U	0.50	0.10	ug/Kg		07/01/17 09:40	07/19/17 00:01	1
Perfluorooctanesulfonic acid (PFOS)	0.30	U	0.50	0.13	ug/Kg		07/01/17 09:40	07/19/17 00:01	1
Perfluorobutanesulfonic acid (PFBS)	0.30	U	0.40	0.10	ug/Kg		07/01/17 09:40	07/19/17 00:01	1

Isotope Dilution	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
13C4 PFOA	128		25 - 150	07/01/17 09:40	07/19/17 00:01	1
13C4 PFOS	93		25 - 150	07/01/17 09:40	07/19/17 00:01	1
18O2 PFHxS	93		25 - 150	07/01/17 09:40	07/19/17 00:01	1

**Lab Sample ID: LCS 320-172026/2-A**  
**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	Limits
		Result	Qualifier				
Perfluorooctanoic acid (PFOA)	4.00	3.92		ug/Kg		98	60 - 140
Perfluorooctanesulfonic acid (PFOS)	3.71	4.16		ug/Kg		112	60 - 140
Perfluorobutanesulfonic acid (PFBS)	3.54	4.06		ug/Kg		115	50 - 150

Isotope Dilution	LCS	LCS	Limits
	%Recovery	Qualifier	
13C4 PFOA	118		25 - 150
13C4 PFOS	90		25 - 150
18O2 PFHxS	96		25 - 150

**Lab Sample ID: 320-29267-24 MS**  
**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: MEAFF-IW08-SO-0617**  
**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	Limits
	Result	Qualifier		Result	Qualifier				
Perfluorooctanoic acid (PFOA)	0.32	U M	4.31	4.35		ug/Kg	☼	101	60 - 140
Perfluorooctanesulfonic acid (PFOS)	0.32	U	4.00	4.39		ug/Kg	☼	110	60 - 140
Perfluorobutanesulfonic acid (PFBS)	0.32	U	3.81	4.49		ug/Kg	☼	118	50 - 150

Isotope Dilution	MS	MS	Limits
	%Recovery	Qualifier	
13C4 PFOA	120		25 - 150
13C4 PFOS	77		25 - 150
18O2 PFHxS	99		25 - 150

**Lab Sample ID: 320-29267-24 MSD**  
**Matrix: Solid**  
**Analysis Batch: 174824**

**Client Sample ID: MEAFF-IW08-SO-0617**  
**Prep Type: Total/NA**  
**Prep Batch: 172026**

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Perfluorooctanoic acid (PFOA)	0.32	U M	4.31	4.30		ug/Kg	☼	100	60 - 140	1	30
Perfluorooctanesulfonic acid (PFOS)	0.32	U	4.00	4.55		ug/Kg	☼	114	60 - 140	4	30

TestAmerica Sacramento

# QC Sample Results

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Method: 537 (Modified) - Perfluorinated Hydrocarbons (Continued)

**Lab Sample ID: 320-29267-24 MSD**

**Matrix: Solid**

**Analysis Batch: 174824**

**Client Sample ID: MEAFF-IW08-SO-0617**

**Prep Type: Total/NA**

**Prep Batch: 172026**

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Perfluorobutanesulfonic acid (PFBS)	0.32	U	3.81	4.61		ug/Kg	☼	121	50 - 150	3	30
	<i>MSD</i>	<i>MSD</i>									
<i>Isotope Dilution</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>								
<i>13C4 PFOA</i>	<i>122</i>		<i>25 - 150</i>								
<i>13C4 PFOS</i>	<i>81</i>		<i>25 - 150</i>								
<i>18O2 PFHxS</i>	<i>92</i>		<i>25 - 150</i>								

# QC Association Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## LCMS

### Prep Batch: 170766

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-10	MEAFF-FD06-0617	Total/NA	Water	3535	
MB 320-170766/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-170766/2-A	Lab Control Sample	Total/NA	Water	3535	
LCSD 320-170766/3-A	Lab Control Sample Dup	Total/NA	Water	3535	

### Prep Batch: 170805

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-1	MEAFF-TA4J-1987MW01-0617	Total/NA	Water	3535	
320-29267-2	MEAFF-AGAMW01-0617	Total/NA	Water	3535	
320-29267-3	MEAFF-UNKN20MW01-0617	Total/NA	Water	3535	
320-29267-4	MEAFF-EASTBMW01-0617	Total/NA	Water	3535	
320-29267-5 - DL	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	3535	
320-29267-5	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	3535	
320-29267-6	MEAFF-UNKN6MW01-0617	Total/NA	Water	3535	
320-29267-7	MEAFF-T45-2003MW01-0617	Total/NA	Water	3535	
320-29267-8	MEAFF-UNKN5MW01-0617	Total/NA	Water	3535	
320-29267-9 - DL	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	3535	
320-29267-9 - DL2	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	3535	
320-29267-9	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	3535	
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	Total/NA	Water	3535	
320-29267-12	MEAFF-EB08-0617	Total/NA	Water	3535	
320-29267-13	MEAFF-EB09-0617	Total/NA	Water	3535	
320-29267-14 - DL	MEAFF-T2C-1996MW01-0617	Total/NA	Water	3535	
320-29267-14	MEAFF-T2C-1996MW01-0617	Total/NA	Water	3535	
320-29267-15	MEAFF-UNKN11MW01-0617	Total/NA	Water	3535	
320-29267-16	MEAFF-EB10-0617	Total/NA	Water	3535	
320-29267-17	MEAFF-TA4J-1985MW01-0617	Total/NA	Water	3535	
320-29267-18 - DL	MEAFF-IW03-GW-0617	Total/NA	Water	3535	
320-29267-18	MEAFF-IW03-GW-0617	Total/NA	Water	3535	
320-29267-19	MEAFF-FB02-0617	Total/NA	Water	3535	
MB 320-170805/1-A	Method Blank	Total/NA	Water	3535	
LCS 320-170805/2-A	Lab Control Sample	Total/NA	Water	3535	
320-29267-4 MS	MEAFF-EASTBMW01-0617	Total/NA	Water	3535	
320-29267-4 MSD	MEAFF-EASTBMW01-0617	Total/NA	Water	3535	

### Analysis Batch: 171335

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-10	MEAFF-FD06-0617	Total/NA	Water	537 (Modified)	170766
MB 320-170766/1-A	Method Blank	Total/NA	Water	537 (Modified)	170766
LCS 320-170766/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	170766
LCSD 320-170766/3-A	Lab Control Sample Dup	Total/NA	Water	537 (Modified)	170766

### Analysis Batch: 171594

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-1	MEAFF-TA4J-1987MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-2	MEAFF-AGAMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-3	MEAFF-UNKN20MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-4	MEAFF-EASTBMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-5	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-6	MEAFF-UNKN6MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-7	MEAFF-T45-2003MW01-0617	Total/NA	Water	537 (Modified)	170805

TestAmerica Sacramento

# QC Association Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## LCMS (Continued)

### Analysis Batch: 171594 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-8	MEAFF-UNKN5MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-9	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-12	MEAFF-EB08-0617	Total/NA	Water	537 (Modified)	170805
320-29267-13	MEAFF-EB09-0617	Total/NA	Water	537 (Modified)	170805
320-29267-14	MEAFF-T2C-1996MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-15	MEAFF-UNKN11MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-16	MEAFF-EB10-0617	Total/NA	Water	537 (Modified)	170805
320-29267-17	MEAFF-TA4J-1985MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-18	MEAFF-IW03-GW-0617	Total/NA	Water	537 (Modified)	170805
320-29267-19	MEAFF-FB02-0617	Total/NA	Water	537 (Modified)	170805
MB 320-170805/1-A	Method Blank	Total/NA	Water	537 (Modified)	170805
LCS 320-170805/2-A	Lab Control Sample	Total/NA	Water	537 (Modified)	170805
320-29267-4 MS	MEAFF-EASTBMW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-4 MSD	MEAFF-EASTBMW01-0617	Total/NA	Water	537 (Modified)	170805

### Analysis Batch: 171828

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-5 - DL	MEAFF-TA4J-1984MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-9 - DL	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-14 - DL	MEAFF-T2C-1996MW01-0617	Total/NA	Water	537 (Modified)	170805
320-29267-18 - DL	MEAFF-IW03-GW-0617	Total/NA	Water	537 (Modified)	170805

### Analysis Batch: 171948

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-9 - DL2	MEAFF-T45C-05-2008MW01-0617	Total/NA	Water	537 (Modified)	170805

### Prep Batch: 172026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-20	MEAFF-IW04-SO-0617	Total/NA	Solid	SHAKE	
320-29267-21	MEAFF-IW05-SO-0617	Total/NA	Solid	SHAKE	
320-29267-22	MEAFF-IW06-SO-0617	Total/NA	Solid	SHAKE	
320-29267-23	MEAFF-IW07-SO-0617	Total/NA	Solid	SHAKE	
320-29267-24	MEAFF-IW08-SO-0617	Total/NA	Solid	SHAKE	
MB 320-172026/1-A	Method Blank	Total/NA	Solid	SHAKE	
LCS 320-172026/2-A	Lab Control Sample	Total/NA	Solid	SHAKE	
320-29267-24 MS	MEAFF-IW08-SO-0617	Total/NA	Solid	SHAKE	
320-29267-24 MSD	MEAFF-IW08-SO-0617	Total/NA	Solid	SHAKE	

### Analysis Batch: 174824

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-20	MEAFF-IW04-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-21	MEAFF-IW05-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-22	MEAFF-IW06-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-23	MEAFF-IW07-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-24	MEAFF-IW08-SO-0617	Total/NA	Solid	537 (Modified)	172026
MB 320-172026/1-A	Method Blank	Total/NA	Solid	537 (Modified)	172026
LCS 320-172026/2-A	Lab Control Sample	Total/NA	Solid	537 (Modified)	172026
320-29267-24 MS	MEAFF-IW08-SO-0617	Total/NA	Solid	537 (Modified)	172026
320-29267-24 MSD	MEAFF-IW08-SO-0617	Total/NA	Solid	537 (Modified)	172026

TestAmerica Sacramento

# QC Association Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## General Chemistry

### Analysis Batch: 171957

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-29267-20	MEAFF-IW04-SO-0617	Total/NA	Solid	D 2216	
320-29267-21	MEAFF-IW05-SO-0617	Total/NA	Solid	D 2216	
320-29267-22	MEAFF-IW06-SO-0617	Total/NA	Solid	D 2216	
320-29267-23	MEAFF-IW07-SO-0617	Total/NA	Solid	D 2216	
320-29267-24	MEAFF-IW08-SO-0617	Total/NA	Solid	D 2216	
320-29267-20 DU	MEAFF-IW04-SO-0617	Total/NA	Solid	D 2216	

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-TA4J-1987MW01-0617

Date Collected: 06/17/17 09:55

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/28/17 23:47	SBC	TAL SAC

## Client Sample ID: MEAFF-AGAMW01-0617

Date Collected: 06/17/17 10:00

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/28/17 23:54	SBC	TAL SAC

## Client Sample ID: MEAFF-UNKN20MW01-0617

Date Collected: 06/17/17 11:55

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 00:01	SBC	TAL SAC

## Client Sample ID: MEAFF-EASTBMW01-0617

Date Collected: 06/17/17 11:35

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 00:08	SBC	TAL SAC

## Client Sample ID: MEAFF-TA4J-1984MW01-0617

Date Collected: 06/17/17 17:55

Date Received: 06/20/17 09:20

## Lab Sample ID: 320-29267-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 00:28	SBC	TAL SAC
Total/NA	Prep	3535	DL		170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	50	171828	06/29/17 18:18	SBC	TAL SAC



# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-UNKN6MW01-0617

Lab Sample ID: 320-29267-6

Date Collected: 06/17/17 16:20

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 00:35	SBC	TAL SAC

## Client Sample ID: MEAFF-T45-2003MW01-0617

Lab Sample ID: 320-29267-7

Date Collected: 06/17/17 17:05

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 00:49	SBC	TAL SAC

## Client Sample ID: MEAFF-UNKN5MW01-0617

Lab Sample ID: 320-29267-8

Date Collected: 06/17/17 14:30

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 00:56	SBC	TAL SAC

## Client Sample ID: MEAFF-T45C-05-2008MW01-0617

Lab Sample ID: 320-29267-9

Date Collected: 06/17/17 13:55

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:03	SBC	TAL SAC
Total/NA	Prep	3535	DL		170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	20	171828	06/29/17 18:25	SBC	TAL SAC
Total/NA	Prep	3535	DL2		170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL2	50	171948	06/30/17 12:20	SBC	TAL SAC

## Client Sample ID: MEAFF-FD06-0617

Lab Sample ID: 320-29267-10

Date Collected: 06/17/17 00:00

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170766	06/23/17 16:59	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171335	06/28/17 09:39	JRB	TAL SAC

# Lab Chronicle

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-TA4-SOUTHMW01-0617**

**Lab Sample ID: 320-29267-11**

Date Collected: 06/17/17 15:15

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:10	SBC	TAL SAC

**Client Sample ID: MEAFF-EB08-0617**

**Lab Sample ID: 320-29267-12**

Date Collected: 06/17/17 17:30

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:17	SBC	TAL SAC

**Client Sample ID: MEAFF-EB09-0617**

**Lab Sample ID: 320-29267-13**

Date Collected: 06/17/17 18:25

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:24	SBC	TAL SAC

**Client Sample ID: MEAFF-T2C-1996MW01-0617**

**Lab Sample ID: 320-29267-14**

Date Collected: 06/18/17 08:50

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:30	SBC	TAL SAC
Total/NA	Prep	3535	DL		170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5	171828	06/29/17 18:32	SBC	TAL SAC

**Client Sample ID: MEAFF-UNKN11MW01-0617**

**Lab Sample ID: 320-29267-15**

Date Collected: 06/18/17 09:50

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:37	SBC	TAL SAC

**Client Sample ID: MEAFF-EB10-0617**

**Lab Sample ID: 320-29267-16**

Date Collected: 06/18/17 10:55

Matrix: Water

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Client Sample ID: MEAFF-EB10-0617

Date Collected: 06/18/17 10:55

Date Received: 06/20/17 09:20

Lab Sample ID: 320-29267-16

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:44	SBC	TAL SAC

## Client Sample ID: MEAFF-TA4J-1985MW01-0617

Date Collected: 06/18/17 11:30

Date Received: 06/20/17 09:20

Lab Sample ID: 320-29267-17

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 01:51	SBC	TAL SAC

## Client Sample ID: MEAFF-IW03-GW-0617

Date Collected: 06/18/17 12:05

Date Received: 06/20/17 09:20

Lab Sample ID: 320-29267-18

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 02:05	SBC	TAL SAC
Total/NA	Prep	3535	DL		170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)	DL	5	171828	06/29/17 18:39	SBC	TAL SAC

## Client Sample ID: MEAFF-FB02-0617

Date Collected: 06/18/17 13:40

Date Received: 06/20/17 09:20

Lab Sample ID: 320-29267-19

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3535			170805	06/24/17 12:27	JER	TAL SAC
Total/NA	Analysis	537 (Modified)		1	171594	06/29/17 02:12	SBC	TAL SAC

## Client Sample ID: MEAFF-IW04-SO-0617

Date Collected: 06/18/17 12:20

Date Received: 06/20/17 09:20

Lab Sample ID: 320-29267-20

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	171957	06/30/17 13:42	CFR	TAL SAC

## Client Sample ID: MEAFF-IW04-SO-0617

Date Collected: 06/18/17 12:20

Date Received: 06/20/17 09:20

Lab Sample ID: 320-29267-20

Matrix: Solid  
Percent Solids: 90.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1	174824	07/19/17 00:15	SBC	TAL SAC

TestAmerica Sacramento

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW05-SO-0617**

**Lab Sample ID: 320-29267-21**

Date Collected: 06/18/17 12:30

Matrix: Solid

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW05-SO-0617**

**Lab Sample ID: 320-29267-21**

Date Collected: 06/18/17 12:30

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 79.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1	174824	07/19/17 00:22	SBC	TAL SAC

**Client Sample ID: MEAFF-IW06-SO-0617**

**Lab Sample ID: 320-29267-22**

Date Collected: 06/18/17 12:40

Matrix: Solid

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW06-SO-0617**

**Lab Sample ID: 320-29267-22**

Date Collected: 06/18/17 12:40

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 82.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1	174824	07/19/17 00:29	SBC	TAL SAC

**Client Sample ID: MEAFF-IW07-SO-0617**

**Lab Sample ID: 320-29267-23**

Date Collected: 06/18/17 12:50

Matrix: Solid

Date Received: 06/20/17 09:20

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW07-SO-0617**

**Lab Sample ID: 320-29267-23**

Date Collected: 06/18/17 12:50

Matrix: Solid

Date Received: 06/20/17 09:20

Percent Solids: 86.7

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1	174824	07/19/17 00:36	SBC	TAL SAC

# Lab Chronicle

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

**Client Sample ID: MEAFF-IW08-SO-0617**

**Lab Sample ID: 320-29267-24**

**Date Collected: 06/18/17 13:00**

**Matrix: Solid**

**Date Received: 06/20/17 09:20**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	D 2216		1	171957	06/30/17 13:42	CFR	TAL SAC

**Client Sample ID: MEAFF-IW08-SO-0617**

**Lab Sample ID: 320-29267-24**

**Date Collected: 06/18/17 13:00**

**Matrix: Solid**

**Date Received: 06/20/17 09:20**

**Percent Solids: 92.7**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	SHAKE			172026	07/01/17 09:40	HJA	TAL SAC
Total/NA	Analysis	537 (Modified)		1	174824	07/19/17 00:43	SBC	TAL SAC

**Laboratory References:**

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Accreditation/Certification Summary

Client: CH2M Hill, Inc.  
 Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

## Laboratory: TestAmerica Sacramento

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-055	12-18-17
Arizona	State Program	9	AZ0708	08-11-17 *
Arkansas DEQ	State Program	6	88-0691	06-17-18
California	State Program	9	2897	01-31-18
Colorado	State Program	8	CA00044	08-31-17
Connecticut	State Program	1	PH-0691	06-30-19
Florida	NELAP	4	E87570	06-30-18
Georgia	State Program	4	N/A	01-29-18
Hawaii	State Program	9	N/A	01-29-18
Illinois	NELAP	5	200060	03-17-18
Kansas	NELAP	7	E-10375	10-31-17
L-A-B	DoD ELAP		L2468	01-20-18
Louisiana	NELAP	6	30612	06-30-18
Maine	State Program	1	CA0004	04-18-18
Michigan	State Program	5	9947	01-31-18
Nevada	State Program	9	CA00044	07-31-18
New Hampshire	NELAP	1	2997	04-18-18
New Jersey	NELAP	2	CA005	06-30-18
New York	NELAP	2	11666	04-01-18
Oregon	NELAP	10	4040	01-28-18
Pennsylvania	NELAP	3	68-01272	03-31-18
Texas	NELAP	6	T104704399	05-31-18
US Fish & Wildlife	Federal		LE148388-0	10-31-17
USDA	Federal		P330-11-00436	12-30-17
USEPA UCMR	Federal	1	CA00044	11-06-18
Utah	NELAP	8	CA00044	02-28-18
Virginia	NELAP	3	460278	03-14-18
Washington	State Program	10	C581	05-05-18
West Virginia (DW)	State Program	3	9930C	12-31-17
Wyoming	State Program	8	8TMS-L	01-29-17 *

\* Accreditation/Certification renewal pending - accreditation/certification considered valid.



# Method Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

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<b>Method</b>	<b>Method Description</b>	<b>Protocol</b>	<b>Laboratory</b>
537 (Modified)	Perfluorinated Hydrocarbons	EPA	TAL SAC
D 2216	Percent Moisture	ASTM	TAL SAC

**Protocol References:**

ASTM = ASTM International

EPA = US Environmental Protection Agency

**Laboratory References:**

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

# Sample Summary

Client: CH2M Hill, Inc.  
Project/Site: Meridian 10006-7-105420 JM01 Navy Clean

TestAmerica Job ID: 320-29267-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-29267-1	MEAFF-TA4J-1987MW01-0617	Water	06/17/17 09:55	06/20/17 09:20
320-29267-2	MEAFF-AGAMW01-0617	Water	06/17/17 10:00	06/20/17 09:20
320-29267-3	MEAFF-UNKN20MW01-0617	Water	06/17/17 11:55	06/20/17 09:20
320-29267-4	MEAFF-EASTBMW01-0617	Water	06/17/17 11:35	06/20/17 09:20
320-29267-5	MEAFF-TA4J-1984MW01-0617	Water	06/17/17 17:55	06/20/17 09:20
320-29267-6	MEAFF-UNKN6MW01-0617	Water	06/17/17 16:20	06/20/17 09:20
320-29267-7	MEAFF-T45-2003MW01-0617	Water	06/17/17 17:05	06/20/17 09:20
320-29267-8	MEAFF-UNKN5MW01-0617	Water	06/17/17 14:30	06/20/17 09:20
320-29267-9	MEAFF-T45C-05-2008MW01-0617	Water	06/17/17 13:55	06/20/17 09:20
320-29267-10	MEAFF-FD06-0617	Water	06/17/17 00:00	06/20/17 09:20
320-29267-11	MEAFF-TA4-SOUTHMW01-0617	Water	06/17/17 15:15	06/20/17 09:20
320-29267-12	MEAFF-EB08-0617	Water	06/17/17 17:30	06/20/17 09:20
320-29267-13	MEAFF-EB09-0617	Water	06/17/17 18:25	06/20/17 09:20
320-29267-14	MEAFF-T2C-1996MW01-0617	Water	06/18/17 08:50	06/20/17 09:20
320-29267-15	MEAFF-UNKN11MW01-0617	Water	06/18/17 09:50	06/20/17 09:20
320-29267-16	MEAFF-EB10-0617	Water	06/18/17 10:55	06/20/17 09:20
320-29267-17	MEAFF-TA4J-1985MW01-0617	Water	06/18/17 11:30	06/20/17 09:20
320-29267-18	MEAFF-IW03-GW-0617	Water	06/18/17 12:05	06/20/17 09:20
320-29267-19	MEAFF-FB02-0617	Water	06/18/17 13:40	06/20/17 09:20
320-29267-20	MEAFF-IW04-SO-0617	Solid	06/18/17 12:20	06/20/17 09:20
320-29267-21	MEAFF-IW05-SO-0617	Solid	06/18/17 12:30	06/20/17 09:20
320-29267-22	MEAFF-IW06-SO-0617	Solid	06/18/17 12:40	06/20/17 09:20
320-29267-23	MEAFF-IW07-SO-0617	Solid	06/18/17 12:50	06/20/17 09:20
320-29267-24	MEAFF-IW08-SO-0617	Solid	06/18/17 13:00	06/20/17 09:20

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171335

Lab Sample ID: MB 320-170766/1-A Client Sample ID: \_\_\_\_\_

Date Analyzed: 06/28/17 09:18 Lab File ID: 2017.06.27\_PFC\_B\_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.77	Baseline	barnettj	06/28/17 15:50

Lab Sample ID: 320-29267-10 Client Sample ID: MEAFF-FD06-0617

Date Analyzed: 06/28/17 09:39 Lab File ID: 2017.06.27\_PFC\_B\_009.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.66	Isomers	barnettj	06/28/17 15:49
Perfluorooctanesulfonic acid (PFOS)	3.02	Missed Peak	barnettj	06/28/17 15:49

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171594

Lab Sample ID: 320-29267-2 Client Sample ID: MEAFF-AGAMW01-0617

Date Analyzed: 06/28/17 23:54 Lab File ID: 2017.06.28B\_006.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.76	Baseline	chandrase nas	06/29/17 16:36
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:37
Perfluorooctanesulfonic acid (PFOS)	2.90	Assign Peak	chandrase nas	06/29/17 16:37

Lab Sample ID: 320-29267-3 Client Sample ID: MEAFF-UNKN20MW01-0617

Date Analyzed: 06/29/17 00:01 Lab File ID: 2017.06.28B\_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.64	Isomers	chandrase nas	06/29/17 16:37

Lab Sample ID: 320-29267-4 Client Sample ID: MEAFF-EASTBMW01-0617

Date Analyzed: 06/29/17 00:08 Lab File ID: 2017.06.28B\_008.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:38

Lab Sample ID: 320-29267-5 Client Sample ID: MEAFF-TA4J-1984MW01-0617

Date Analyzed: 06/29/17 00:28 Lab File ID: 2017.06.28B\_011.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:40

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171594

Lab Sample ID: 320-29267-6 Client Sample ID: MEAFF-UNKN6MW01-0617

Date Analyzed: 06/29/17 00:35 Lab File ID: 2017.06.28B\_012.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.75	Baseline	chandrase nas	06/29/17 16:41
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:41

Lab Sample ID: 320-29267-7 Client Sample ID: MEAFF-T45-2003MW01-0617

Date Analyzed: 06/29/17 00:49 Lab File ID: 2017.06.28B\_014.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.76	Baseline	chandrase nas	06/29/17 16:42
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:42
Perfluorooctanesulfonic acid (PFOS)	2.89	Assign Peak	chandrase nas	06/29/17 16:42

Lab Sample ID: 320-29267-8 Client Sample ID: MEAFF-UNKN5MW01-0617

Date Analyzed: 06/29/17 00:56 Lab File ID: 2017.06.28B\_015.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:42

Lab Sample ID: 320-29267-9 Client Sample ID: MEAFF-T45C-05-2008MW01-0617

Date Analyzed: 06/29/17 01:03 Lab File ID: 2017.06.28B\_016.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:43

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171594

Lab Sample ID: 320-29267-11 Client Sample ID: MEAFF-TA4-SOUTHMW01-0617

Date Analyzed: 06/29/17 01:10 Lab File ID: 2017.06.28B\_017.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.76	Baseline	chandrase nas	06/29/17 16:44
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:46
Perfluorooctanesulfonic acid (PFOS)	3.02	Assign Peak	chandrase nas	06/29/17 16:46

Lab Sample ID: 320-29267-12 Client Sample ID: MEAFF-EB08-0617

Date Analyzed: 06/29/17 01:17 Lab File ID: 2017.06.28B\_018.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.75	Baseline	chandrase nas	06/29/17 16:47

Lab Sample ID: 320-29267-13 Client Sample ID: MEAFF-EB09-0617

Date Analyzed: 06/29/17 01:24 Lab File ID: 2017.06.28B\_019.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.64	Isomers	chandrase nas	06/29/17 16:48

Lab Sample ID: 320-29267-14 Client Sample ID: MEAFF-T2C-1996MW01-0617

Date Analyzed: 06/29/17 01:30 Lab File ID: 2017.06.28B\_020.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:48



LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171594

Lab Sample ID: 320-29267-15 Client Sample ID: MEAFF-UNKN11MW01-0617

Date Analyzed: 06/29/17 01:37 Lab File ID: 2017.06.28B\_021.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorobutanesulfonic acid (PFBS)	1.76	Baseline	chandrase nas	06/29/17 16:49
Perfluorooctanoic acid (PFOA)	2.64	Isomers	chandrase nas	06/29/17 16:49

Lab Sample ID: 320-29267-16 Client Sample ID: MEAFF-EB10-0617

Date Analyzed: 06/29/17 01:44 Lab File ID: 2017.06.28B\_022.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:49

Lab Sample ID: 320-29267-17 Client Sample ID: MEAFF-TA4J-1985MW01-0617

Date Analyzed: 06/29/17 01:51 Lab File ID: 2017.06.28B\_023.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/29/17 16:50

Lab Sample ID: 320-29267-18 Client Sample ID: MEAFF-IW03-GW-0617

Date Analyzed: 06/29/17 02:05 Lab File ID: 2017.06.28B\_025.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.64	Isomers	chandrase nas	06/29/17 16:50

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171594

Lab Sample ID: 320-29267-19 Client Sample ID: MEAFF-FB02-0617

Date Analyzed: 06/29/17 02:12 Lab File ID: 2017.06.28B\_026.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.64	Isomers	chandrase nas	06/29/17 16:51

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171828

Lab Sample ID: 320-29267-5 DL Client Sample ID: MEAFF-TA4J-1984MW01-0617 DL

Date Analyzed: 06/29/17 18:18 Lab File ID: 2017.06.29D\_002.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.65	Isomers	chandrase nas	06/30/17 07:57

Lab Sample ID: 320-29267-9 DL Client Sample ID: MEAFF-T45C-05-2008MW01-0617 DL

Date Analyzed: 06/29/17 18:25 Lab File ID: 2017.06.29D\_003.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.66	Isomers	chandrase nas	06/30/17 07:57

Lab Sample ID: 320-29267-14 DL Client Sample ID: MEAFF-T2C-1996MW01-0617 DL

Date Analyzed: 06/29/17 18:32 Lab File ID: 2017.06.29D\_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.66	Isomers	chandrase nas	06/30/17 07:58

Lab Sample ID: 320-29267-18 DL Client Sample ID: MEAFF-IW03-GW-0617 DL

Date Analyzed: 06/29/17 18:39 Lab File ID: 2017.06.29D\_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.66	Isomers	chandrase nas	06/30/17 07:59

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 171948

Lab Sample ID: 320-29267-9 DL2 Client Sample ID: MEAFF-T45C-05-2008MW01-0617 DL2

Date Analyzed: 06/30/17 12:20 Lab File ID: 2017.06.30B\_001.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.68	Isomers	chandrase nas	06/30/17 13:15

LCMS MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Analysis Batch Number: 174824

Lab Sample ID: 320-29267-20 Client Sample ID: MEAFF-IW04-SO-0617

Date Analyzed: 07/19/17 00:15 Lab File ID: 2017.07.18C\_003.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.68	Isomers	chandrase nas	07/19/17 13:50

Lab Sample ID: 320-29267-21 Client Sample ID: MEAFF-IW05-SO-0617

Date Analyzed: 07/19/17 00:22 Lab File ID: 2017.07.18C\_004.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.68	Isomers	chandrase nas	07/19/17 13:50
Perfluorooctanesulfonic acid (PFOS)	3.05	Assign Peak	chandrase nas	07/19/17 13:51

Lab Sample ID: 320-29267-22 Client Sample ID: MEAFF-IW06-SO-0617

Date Analyzed: 07/19/17 00:29 Lab File ID: 2017.07.18C\_005.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.68	Isomers	chandrase nas	07/19/17 13:51

Lab Sample ID: 320-29267-24 Client Sample ID: MEAFF-IW08-SO-0617

Date Analyzed: 07/19/17 00:43 Lab File ID: 2017.07.18C\_007.d GC Column: GeminiC18 3x1 ID: 3(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Perfluorooctanoic acid (PFOA)	2.68	Isomers	chandrase nas	07/19/17 13:52

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
<b>LCM2-4:2FTSIC_00002</b>	08/06/17	05/26/17	MeOH/H2O, Lot 09285	5000 uL	LCPFC-IS_00002	1000 uL	13C2-PFOA	50 ng/mL
.LCPFC-IS_00002	11/24/17	05/24/17	Methanol, Lot 090285	30000 uL	LCM2PFOA_00006	150 uL	13C2-PFOA	0.25 ug/mL
.LCM2PFOA_00006	02/12/21	Wellington Laboratories	Wellington Laboratories, Lot M2PFOA0216		(Purchased Reagent)		13C2-PFOA	50 ug/mL
<b>LCMPFCSU_00074</b>	12/12/17	06/12/17	Methanol, Lot Baker 141039	200 mL	LCM2PFHxDA_00010	200 uL	13C2-PFHxDA	0.05 ug/mL
					LCM2PFTeDA_00009	200 uL	13C2-PFTeDA	0.05 ug/mL
					LCM4PFHPA_00009	200 uL	13C4-PFHpa	0.05 ug/mL
					LCM5PFPEA_00010	200 uL	13C5-PFPeA	0.05 ug/mL
					LCM8FOSA_00013	200 uL	13C8 FOSA	0.05 ug/mL
					LCMPFBA_00010	200 uL	13C4 PFBA	0.05 ug/mL
					LCMPFBS_00003	200 uL	13C3-PFBS	0.0465 ug/mL
					LCMPFDA_00015	200 uL	13C2 PFDA	0.05 ug/mL
					LCMPFDoA_00010	200 uL	13C2 PFDoA	0.05 ug/mL
					LCMPFHxA_00016	200 uL	13C2 PFHxA	0.05 ug/mL
					LCMPFHxS_00010	200 uL	18O2 PFHxS	0.0473 ug/mL
					LCMPFNA_00010	200 uL	13C5 PFNA	0.05 ug/mL
					LCMPFOA_00014	200 uL	13C4 PFOA	0.05 ug/mL
					LCMPFOS_00022	200 uL	13C4 PFOS	0.0478 ug/mL
					LCMPFUdA_00011	200 uL	13C2 PFUnA	0.05 ug/mL
.LCM2PFHxDA_00010	01/07/21	Wellington Laboratories	Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
.LCM2PFTeDA_00009	12/07/20	Wellington Laboratories	Wellington Laboratories, Lot M2PFTeDA0217		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
.LCM4PFHPA_00009	05/27/21	Wellington Laboratories	Wellington Laboratories, Lot M4PFHPA0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
.LCM5PFPEA_00010	11/22/21	Wellington Laboratories	Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
.LCM8FOSA_00013	12/22/20	Wellington Laboratories	Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
.LCMPFBA_00010	05/24/21	Wellington Laboratories	Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
.LCMPFBS_00003	08/02/21	Wellington Laboratories	Wellington Laboratories, Lot M3PFBS0815		(Purchased Reagent)		13C3-PFBS	46.5 ug/mL
.LCMPFDA_00015	09/30/21	Wellington Laboratories	Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
.LCMPFDoA_00010	04/08/21	Wellington Laboratories	Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
.LCMPFHxA_00016	11/22/21	Wellington Laboratories	Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
.LCMPFHxS_00010	02/17/22	Wellington Laboratories	Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
.LCMPFNA_00010	09/30/21	Wellington Laboratories	Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
.LCMPFOA_00014	04/12/22	Wellington Laboratories	Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL
.LCMPFOS_00022	12/12/21	Wellington Laboratories	Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LCMPFUdA_00011	11/22/21	Wellington Laboratories	Wellington Laboratories, Lot MPFUdA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
<b>LCMPFCSU_00078</b>	12/26/17	06/26/17	Methanol, Lot Baker 141039	200 mL	LCM2PFHxDA_00010	200 uL	13C2-PFHxDA	0.05 ug/mL
					LCM2PFTeDA_00009	200 uL	13C2-PFTeDA	0.05 ug/mL
					LCM4PFHPA_00009	200 uL	13C4-PFHpa	0.05 ug/mL
					LCM5PFPEA_00010	200 uL	13C5-PFPeA	0.05 ug/mL
					LCM8FOSA_00013	200 uL	13C8 FOSA	0.05 ug/mL
					LCMPFBA_00010	200 uL	13C4 PFBA	0.05 ug/mL
					LCMPFBS_00002	200 uL	13C3-PFBS	0.0465 ug/mL
					LCMPFDA_00015	200 uL	13C2 PFDA	0.05 ug/mL
					LCMPFDoA_00010	200 uL	13C2 PFDoA	0.05 ug/mL
					LCMPFHxA_00016	200 uL	13C2 PFHxA	0.05 ug/mL
					LCMPFHxS_00010	200 uL	18O2 PFHxS	0.0473 ug/mL
					LCMPFNA_00010	200 uL	13C5 PFNA	0.05 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMPFOA_00014	200 uL	13C4 PFOA	0.05 ug/mL
					LCMPFOS_00022	200 uL	13C4 PFOS	0.0478 ug/mL
					LCMPFUDa_00011	200 uL	13C2 PFUnA	0.05 ug/mL
.LCM2PFHxDA_00010	01/07/21	Wellington Laboratories, Lot M2PFHxDA1112			(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
.LCM2PFTeDA_00009	12/07/20	Wellington Laboratories, Lot M2PFTeDA0217			(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
.LCM4PFHFA_00009	05/27/21	Wellington Laboratories, Lot M4PFHFA0516			(Purchased Reagent)		13C4-PFHFA	50 ug/mL
.LCM5PFPEA_00010	11/22/21	Wellington Laboratories, Lot M5PFPeA1116			(Purchased Reagent)		13C5-PFPeA	50 ug/mL
.LCM8FOSA_00013	12/22/20	Wellington Laboratories, Lot M8FOSA1215I			(Purchased Reagent)		13C8 FOSA	50 ug/mL
.LCMPFBA_00010	05/24/21	Wellington Laboratories, Lot MPFBA0516			(Purchased Reagent)		13C4 PFBA	50 ug/mL
.LCMPFBS_00002	08/02/21	Wellington Laboratories, Lot M3PFBS0815			(Purchased Reagent)		13C3-PFBS	46.5 ug/mL
.LCMPFDA_00015	09/30/21	Wellington Laboratories, Lot MPFDA0916			(Purchased Reagent)		13C2 PFDA	50 ug/mL
.LCMPFDoA_00010	04/08/21	Wellington Laboratories, Lot MPFDoA0416			(Purchased Reagent)		13C2 PFDoA	50 ug/mL
.LCMPFHxA_00016	11/22/21	Wellington Laboratories, Lot MPFHxA1116			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
.LCMPFHxS_00010	02/17/22	Wellington Laboratories, Lot MPFHxS0217			(Purchased Reagent)		1802 PFHxS	47.3 ug/mL
.LCMPFNA_00010	09/30/21	Wellington Laboratories, Lot MPFNA0916			(Purchased Reagent)		13C5 PFNA	50 ug/mL
.LCMPFOA_00014	04/12/22	Wellington Laboratories, Lot MPFOA0417			(Purchased Reagent)		13C4 PFOA	50 ug/mL
.LCMPFOS_00022	12/12/21	Wellington Laboratories, Lot MPFOS1216			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
.LCMPFUDa_00011	11/22/21	Wellington Laboratories, Lot MPFUDa1116			(Purchased Reagent)		13C2 PFUnA	50 ug/mL
<b>LCPFC_FULLL-L1_00004</b>	09/02/17	06/01/17	MeOH/H2O, Lot 90285	5000 uL	LCMPFC2SU_00019	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
					LCMPFCSU_00069	250 uL	13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHFA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							1802 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
LCPFC2SP_00031	25 uL	Sodium	0.467 ng/mL					
		1H,1H,2H,2H-perfluorohexane sulfonate (4:2)						
		Sodium	0.474 ng/mL					
							Sodium	0.479 ng/mL
							1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	
							Sodium	0.479 ng/mL
							1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
							N-ethylperfluoro-1-octanesulfo namide	0.5 ng/mL		
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ng/mL		
							MeFOSA	0.5 ng/mL		
							N-methyl perfluorooctane sulfonamidoacetic acid	0.5 ng/mL		
							LCPFCIS_00002	50 uL	13C2-PFOA	50 ng/mL
							LCPFCSP_00098	25 uL	Perfluorobutyric acid	0.5 ng/mL
									Perfluorobutanesulfonic acid (PFBS)	0.442 ng/mL
									Perfluorodecanoic acid	0.5 ng/mL
									Perfluorododecanoic acid	0.5 ng/mL
									Perfluorodecane Sulfonic acid	0.482 ng/mL
									Perfluoroheptanoic acid	0.5 ng/mL
									Perfluoroheptanesulfonic Acid	0.476 ng/mL
									Perfluorohehexanoic acid	0.5 ng/mL
									Perfluorohehexadecanoic acid	0.5 ng/mL
									Perfluorohehexanesulfonic acid	0.455 ng/mL
									Perfluorononanoic acid	0.5 ng/mL
									Perfluorooctanoic acid (PFOA)	0.5 ng/mL
									Perfluorooctadecanoic acid	0.5 ng/mL
									Perfluorooctanesulfonic acid (PFOS)	0.464 ng/mL
									Perfluorooctane Sulfonamide	0.5 ng/mL
		Perfluoropentanoic acid	0.5 ng/mL							
		Perfluorotetradecanoic acid	0.5 ng/mL							
		Perfluorotridecanoic acid	0.5 ng/mL							
		Perfluoroundecanoic acid	0.5 ng/mL							
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NETfOSA-M 00005	100 uL	d-N-EtFOSA-M	1 ug/mL		
					LCd-NMeFOSA-M 00004	100 uL	d-N-MeFOSA-M	1 ug/mL		
					LCd3-NMeFOSAA 00004	100 uL	d3-NMeFOSAA	1 ug/mL		
					LCd5-NETfOSAA 00004	100 uL	d5-NETfOSAA	1 ug/mL		
					LCM2-6:FTS 00004	100 uL	M2-6:2FTS	0.95 ug/mL		
					LCM2-8:2FTS 00004	100 uL	M2-8:2FTS	0.958 ug/mL		
..LCd-NETfOSA-M 00005	06/10/21		WELLINGTON, Lot dNetFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL		
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL		
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL		
..LCd5-NETfOSAA 00004	11/22/21		WELLINGTON, Lot d5NETfOSAA1116		(Purchased Reagent)		d5-NETfOSAA	50 ug/mL		
..LCM2-6:FTS 00004	02/17/22		WELLINGTON, Lot M262FTS0217		(Purchased Reagent)		M2-6:2FTS	47.5 ug/mL		
..LCM2-8:2FTS 00004	08/22/21		WELLINGTON, Lot M282FTS0816		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL		
.LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL		
					LCM2PFTeDA_00008	200 uL	13C2-PFTeDA	1 ug/mL		
					LCM4PFHPA_00008	200 uL	13C4-PFHpA	1 ug/mL		
					LCM5PFPEA_00009	200 uL	13C5-PFPeA	1 ug/mL		
					LCM8FOSA_00012	200 uL	13C8 FOSA	1 ug/mL		
					LCMPFBA_00009	200 uL	13C4 PFBA	1 ug/mL		
					LCMPFDA_00013	200 uL	13C2 PFDA	1 ug/mL		

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMPFDoA_00009	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00014	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00009	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA_00009	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00013	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00020	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUDa_00010	200 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA_00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA_00008	12/07/20		Wellington Laboratories, Lot M2PFTeDA1115		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA_00008	05/27/21		Wellington Laboratories, Lot M4PFHpA0516		(Purchased Reagent)		13C4-PFHpA	50 ug/mL
..LCM5PFPEA_00009	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA_00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA_00009	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA_00013	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA_00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA_00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS_00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA_00009	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA_00013	10/18/21		Wellington Laboratories, Lot MPFOA1016		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS_00020	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUDa_00010	11/22/21		Wellington Laboratories, Lot MPFUDa1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFC2SP_00031	10/14/17	04/14/17	Methanol, Lot 104453	5000 uL	LCPFC2SP_00030	500 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.0934 ug/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.0958 ug/mL
							N-ethylperfluoro-1-octanesulfo namide	0.1 ug/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
							MeFOSA	0.1 ug/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
..LCPFC2SP_00030	10/14/17	04/14/17	Methanol, Lot 104453	10000 uL	LC4:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00002	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
...LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
...LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
...LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82FTS1015		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
...LCN-EtFOSA-M_00003	05/24/21		WELLINGTON, Lot NetFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
...LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NetFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
...LCN-MeFOSA-M_00002	05/24/21		WELLINGTON, Lot NMeFOSA0714M		(Purchased Reagent)		MeFOSA	50 ug/mL
...LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00002	10/17/17	04/17/17	Methanol, Lot 14139	2000 uL	LCM2PFOA_00005	200 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCPFCSP_00098	09/02/17	06/01/17	Methanol, Lot 157237	10000 uL	LCPFCSP_00096	1000 uL	Perfluorobutyric acid	0.1 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/mL
							Perfluorodecanoic acid	0.1 ug/mL
							Perfluorododecanoic acid	0.1 ug/mL
							Perfluorodecane Sulfonic acid	0.0964 ug/mL
							Perfluoroheptanoic acid	0.1 ug/mL
							Perfluoroheptanesulfonic Acid	0.0952 ug/mL
							Perfluorohexanoic acid	0.1 ug/mL
							Perfluorohexadecanoic acid	0.1 ug/mL
							Perfluorohexanesulfonic acid	0.091 ug/mL
							Perfluorononanoic acid	0.1 ug/mL
							Perfluorooctanoic acid (PFOA)	0.1 ug/mL
							Perfluorooctadecanoic acid	0.1 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0928 ug/mL
							Perfluorooctane Sulfonamide	0.1 ug/mL
							Perfluoropentanoic acid	0.1 ug/mL
							Perfluorotetradecanoic acid	0.1 ug/mL
							Perfluorotridecanoic acid	0.1 ug/mL
							Perfluoroundecanoic acid	0.1 ug/mL
..LCPFCSP_00096	09/02/17	05/24/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDa_00006	200 uL	Perfluorododecanoic acid	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00009	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA_00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUDa_00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
...LCPFBFA_00006	05/27/21		Wellington Laboratories, Lot PFBA0516		(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
...LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
...LCPFDA_00006	05/31/21		Wellington Laboratories, Lot PFDA0516		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
...LCPFDoA_00006	05/31/21		Wellington Laboratories, Lot PFDoA0516		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
...LCPFDS_00005	07/02/20		Wellington Laboratories, Lot LPFDS0615		(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
...LCPFHpA_00006	01/22/21		Wellington Laboratories, Lot PFHpA0116		(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
...LCPFHpS_00010	11/06/20		Wellington Laboratories, Lot LPFHpS1115		(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL
...LCPFHxA_00005	12/22/20		Wellington Laboratories, Lot PFHxA1215		(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL
...LCPFHxDA_00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516		(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL
...LCPFHxS-br_00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615		(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL
...LCPFNA_00007	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
...LCPFOA_00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA_00007	04/29/21		Wellington Laboratories, Lot PFODA0416		(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
...LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
...LCPFOSA_00009	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
...LCPFPeA_00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
...LCPFTeDA_00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
...LCPFTrDA_00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
...LCPFUDa_00006	08/19/20		Wellington Laboratories, Lot PFUDa0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
<b>LCPFC_FULL-L1_00005</b>	12/27/17	07/07/17	MeOH/H2O, Lot 90285	5000 uL	LCPMPC_ALL_SU_00001	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NMeFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
							13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
						LCPFC_ALL_SP_00001	25 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.474 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.479 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	0.5 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.5 ng/mL
							MeFOSA	0.5 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	0.5 ng/mL
							Perfluorobutyric acid	0.5 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	0.442 ng/mL
							Perfluorodecanoic acid	0.5 ng/mL
							Perfluorododecanoic acid	0.5 ng/mL
							Perfluorodecane Sulfonic acid	0.482 ng/mL
							Perfluoroheptanoic acid	0.5 ng/mL
							Perfluoroheptanesulfonic Acid	0.476 ng/mL
							Perfluorohexanoic acid	0.5 ng/mL
							Perfluorohexadecanoic acid	0.5 ng/mL
							Perfluorohexanesulfonic acid	0.455 ng/mL
							Perfluorononanoic acid	0.5 ng/mL
							Perfluorooctanoic acid (PFOA)	0.5 ng/mL
							Perfluorooctadecanoic acid	0.5 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.464 ng/mL
		Perfluorooctane Sulfonamide	0.5 ng/mL					
		Perfluoropentanoic acid	0.5 ng/mL					
		Perfluorotetradecanoic acid	0.5 ng/mL					
		Perfluorotridecanoic acid	0.5 ng/mL					
		Perfluoroundecanoic acid	0.5 ng/mL					
.LCMPFC_ALL_SU_00001	12/29/17	06/29/17	Methanol, Lot Baker 141039	10000 uL	LCPFCIS 00003	50 uL	13C2-PFOA	50 ng/mL
					LCD-NEtFOSA-M_00005	200 uL	d-N-EtFOSA-M	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCd-NMeFOSA-M 00004	200 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA 00004	200 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00004	200 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS 00004	200 uL	M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS 00004	200 uL	M2-8:2FTS	0.958 ug/mL
					LCM2PFHxDA 00010	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA 00009	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA 00009	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA 00010	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA 00013	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA 00010	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00015	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00010	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00016	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00010	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA 00010	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00014	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS 00022	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00011	200 uL	13C2 PFUnA	1 ug/mL
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNetFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FTS 00004	02/17/22		WELLINGTON, Lot M262FTS0217		(Purchased Reagent)		M2-6:2FTS	47.5 ug/mL
..LCM2-8:2FTS 00004	08/22/21		WELLINGTON, Lot M282FTS0816		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL
..LCM2PFHxDA 00010	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA 00009	12/07/20		Wellington Laboratories, Lot M2PFTeDA0217		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA 00009	05/27/21		Wellington Laboratories, Lot M4PFHpA0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00010	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00013	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00010	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00015	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00010	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00016	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00010	02/17/22		Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00010	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00014	04/12/22		Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00022	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00011	11/22/21		Wellington Laboratories, Lot MPFUdA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFC_ALL_SP_00001	12/27/17	07/07/17	Methanol, Lot 157237	10000 uL	LCPFC2SP_00037	1000 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.0934 ug/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.0958 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
							N-ethylperfluoro-1-octanesulfo namide	0.1 ug/mL		
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL		
							MeFOSA	0.1 ug/mL		
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL		
					LCPFCSP_00103	1000 uL	Perfluorobutyric acid	0.1 ug/mL		
							Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/mL		
							Perfluorodecanoic acid	0.1 ug/mL		
							Perfluorododecanoic acid	0.1 ug/mL		
							Perfluorodecane Sulfonic acid	0.0964 ug/mL		
							Perfluoroheptanoic acid	0.1 ug/mL		
							Perfluoroheptanesulfonic Acid	0.0952 ug/mL		
							Perfluorohexanoic acid	0.1 ug/mL		
							Perfluorohexadecanoic acid	0.1 ug/mL		
							Perfluorohexanesulfonic acid	0.091 ug/mL		
							Perfluorononanoic acid	0.1 ug/mL		
							Perfluorooctanoic acid (PFOA)	0.1 ug/mL		
							Perfluorooctadecanoic acid	0.1 ug/mL		
							Perfluorooctanesulfonic acid (PFOS)	0.0928 ug/mL		
Perfluorooctane Sulfonamide	0.1 ug/mL									
Perfluoropentanoic acid	0.1 ug/mL									
Perfluorotetradecanoic acid	0.1 ug/mL									
Perfluorotridecanoic acid	0.1 ug/mL									
Perfluoroundecanoic acid	0.1 ug/mL									
..LCPFC2SP_00037	01/07/18	07/07/17	Methanol, Lot 104453	10 mL	LC4:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL		
							LC6:2FTS_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
							LC8:2FTS_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
							LCN-EtFOSA-M_00004	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
							LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
							LCN-MeFOSA-M_00003	200 uL	MeFOSA	1 ug/mL
							LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
...LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL		
...LC6:2FTS_00003	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL		



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LC8:2FTS_00003	08/22/21		WELLINGTON, Lot 82FTS0816			(Purchased Reagent)	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
...LCN-EtFOSA-M_00004	05/24/21		WELLINGTON, Lot NETFOSA0516M			(Purchased Reagent)	N-ethylperfluoro-1-octanesulfonamide	50 ug/mL
...LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116			(Purchased Reagent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
...LCN-MeFOSA-M_00003	05/24/21		WELLINGTON, Lot NMeFOSA0516M			(Purchased Reagent)	MeFOSA	50 ug/mL
...LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116			(Purchased Reagent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCPFCSP_00103	12/27/17	06/27/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00010	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA_00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA_00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
...LCPFBA_00006	05/27/21		Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)	Perfluorobutyric acid	50 ug/mL
...LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
...LCPFDA_00006	05/31/21		Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)	Perfluorodecanoic acid	50 ug/mL
...LCPFDoA_00006	05/31/21		Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)	Perfluorododecanoic acid	50 ug/mL
...LCPFDS_00005	07/02/20		Wellington Laboratories, Lot LPFDS0615			(Purchased Reagent)	Perfluorodecane Sulfonic acid	48.2 ug/mL
...LCPFHpA_00006	01/22/21		Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)	Perfluoroheptanoic acid	50 ug/mL
...LCPFHpS_00010	11/06/20		Wellington Laboratories, Lot LPFHpS1115			(Purchased Reagent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL
...LCPFHxA_00005	12/22/20		Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)	Perfluorohexanoic acid	50 ug/mL
...LCPFHxDA_00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)	Perfluorohexadecanoic acid	50 ug/mL
...LCPFHxS-br_00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)	Perfluorohexanesulfonic acid	45.5 ug/mL
...LCPFNA_00007	10/23/20		Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)	Perfluorononanoic acid	50 ug/mL
...LCPFOA_00007	08/02/21		Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA_00007	04/29/21		Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)	Perfluorooctadecanoic acid	50 ug/mL
...LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
...LCPFOSA_00010	09/30/21		Wellington Laboratories, Lot FOSA0916I			(Purchased Reagent)	Perfluorooctane Sulfonamide	50 ug/mL
...LCPFPeA_00006	05/31/21		Wellington Laboratories, Lot PFPeA0516			(Purchased Reagent)	Perfluoropentanoic acid	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
...LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL		
...LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL		
...LCPFuDA 00006	08/19/20		Wellington Laboratories, Lot PFuDA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL		
.LCPFCIS 00003	12/30/17	06/30/17	Methanol, Lot 14139	5000 uL	LCM2PFOA_00005	500 uL	13C2-PFOA	5 ug/mL		
..LCM2PFOA 00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL		
<b>LCPFC_FULL-L2_00003</b>	08/13/17	04/16/17	MeOH/H2O, Lot 090285	5050 uL	LCMPFC2SU_00014	250 uL	d-N-EtFOSA-M	49.505 ng/mL		
							d-N-MeFOSA-M	49.505 ng/mL		
							d3-NMeFOSAA	49.505 ng/mL		
							d5-NEtFOSAA	49.505 ng/mL		
							M2-6:2FTS	47.0297 ng/mL		
					M2-8:2FTS	47.4257 ng/mL				
					LCMPFCSU_00057	250 uL	13C2-PFHxDA	49.505 ng/mL		
							13C2-PFTeDA	49.505 ng/mL		
							13C4-PFHpA	49.505 ng/mL		
							13C5-PFPeA	49.505 ng/mL		
							13C8 FOSA	49.505 ng/mL		
							13C4 PFBA	49.505 ng/mL		
							13C2 PFDA	49.505 ng/mL		
							13C2 PFDoA	49.505 ng/mL		
							13C2 PFHxA	49.505 ng/mL		
							18O2 PFHxS	46.8317 ng/mL		
							13C5 PFNA	49.505 ng/mL		
							13C4 PFOA	49.505 ng/mL		
							13C4 PFOS	47.3267 ng/mL		
					13C2 PFUnA	49.505 ng/mL				
LCPFCSP_00084	50 uL	Perfluorobutanesulfonic acid (PFBS)	0.875248 ng/mL							
		Perfluorooctanoic acid (PFOA)	0.990099 ng/mL							
		Perfluorooctanesulfonic acid (PFOS)	0.918812 ng/mL							
.LCMPFC2SU_00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M_00004	1000 uL	d-N-EtFOSA-M	1 ug/mL		
							LCd-NMeFOSA-M_00003	1000 uL	d-N-MeFOSA-M	1 ug/mL
							LCd3-NMeFOSAA_00003	1000 uL	d3-NMeFOSAA	1 ug/mL
							LCd5-NEtFOSAA_00003	1000 uL	d5-NEtFOSAA	1 ug/mL
							LCM2-6:FTS_00003	1000 uL	M2-6:2FTS	0.95 ug/mL
							LCM2-8:2FTS_00003	1000 uL	M2-8:2FTS	0.958 ug/mL
..LCd-NEtFOSA-M_00004	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL		
..LCd-NMeFOSA-M_00003	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL		
..LCd3-NMeFOSAA_00003	05/31/21		WELLINGTON, Lot d3NMeFOSAA0516		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL		
..LCd5-NEtFOSAA_00003	08/02/21		WELLINGTON, Lot d5NEtFOSAA0716		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL		
..LCM2-6:FTS_00003	01/08/21		WELLINGTON, Lot M262FTS0116		(Purchased Reagent)		M2-6:2FTS	47.5 ug/mL		
..LCM2-8:2FTS_00003	01/08/21		WELLINGTON, Lot M282FTS0116		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL		
.LCMPFCSU_00057	10/04/17	04/04/17	Methanol, Lot Baker 141039	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mL		
					LCM2PFTeDA_00007	1000 uL	13C2-PFTeDA	1 ug/mL		
					LCM4PFHPA_00007	1000 uL	13C4-PFHpA	1 ug/mL		
					LCM5PFPEA_00008	1000 uL	13C5-PFPeA	1 ug/mL		

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCM8FOSA_00011	1000 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00008	1000 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00011	1000 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA_00008	1000 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00012	1000 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00008	1000 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA_00008	1000 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00012	1000 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00018	1000 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUDa_00009	1000 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA_00008	01/07/21	Wellington Laboratories, Lot M2PFHxDA1112			(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA_00007	12/07/20	Wellington Laboratories, Lot M2PFTeDA1115			(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA_00007	05/27/21	Wellington Laboratories, Lot M4PFHPa0516			(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA_00008	05/22/20	Wellington Laboratories, Lot M5PFPeA0515			(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA_00011	12/22/17	Wellington Laboratories, Lot M8FOSA1215I			(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA_00008	05/24/21	Wellington Laboratories, Lot MPFBA0516			(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA_00011	08/19/20	Wellington Laboratories, Lot MPFDA0815			(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA_00008	04/08/21	Wellington Laboratories, Lot MPFDoA0416			(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA_00012	04/08/21	Wellington Laboratories, Lot MPFHxA0416			(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS_00008	10/23/20	Wellington Laboratories, Lot MPFHxS1015			(Purchased Reagent)		1802 PFHxS	47.3 ug/mL
..LCMPFNA_00008	04/13/19	Wellington Laboratories, Lot MPFNA0414			(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA_00012	01/22/21	Wellington Laboratories, Lot MPFOA0116			(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS_00018	08/03/21	Wellington Laboratories, Lot MPFOS0816			(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUDa_00009	02/12/21	Wellington Laboratories, Lot MPFUDa0216			(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFCSP_00084	09/02/17	03/23/17	Methanol, Lot 141039	10000 uL	LCPFCSP_00083	2000 uL	Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/mL
							Perfluorooctanoic acid (PFOA)	0.1 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0928 ug/mL
..LCPFCSP_00083	09/02/17	03/23/17	Methanol, Lot 141039	10000 uL	LCPFBS_00005	100 uL	Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
					LCPFOA_00006	100 uL	Perfluorooctanoic acid (PFOA)	0.5 ug/mL
					LCPFOS-br_00002	100 uL	Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
...LCPFBS_00005	03/15/21	Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
...LCPFOA_00006	11/06/20	Wellington Laboratories, Lot PFOA1115			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFOS-br_00002	10/14/20	Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
<b>LCPFC_FULL-L2_00005</b>	09/02/17	06/01/17	MeOH/H2O, Lot 090285	5 mL	LCMPFC2SU_00019	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
					LCMPFCSU_00069	250 uL	13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpa	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFC2SP_00031	50 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ng/mL
							N-ethylperfluoro-1-octanesulfoamide	1 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	1 ng/mL
							MeFOSA	1 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	1 ng/mL
					LCPFCIS_00002	50 uL	13C2-PFOA	50 ng/mL
					LCPFCSP_00098	50 uL	Perfluorobutyric acid	1 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	0.884 ng/mL
							Perfluorodecanoic acid	1 ng/mL
							Perfluorododecanoic acid	1 ng/mL
							Perfluorodecane Sulfonic acid	0.964 ng/mL
							Perfluoroheptanoic acid	1 ng/mL
							Perfluoroheptanesulfonic Acid	0.952 ng/mL
							Perfluorohexanoic acid	1 ng/mL
							Perfluorohexadecanoic acid	1 ng/mL
							Perfluorohexanesulfonic acid	0.91 ng/mL
							Perfluorononanoic acid	1 ng/mL
							Perfluorooctanoic acid (PFOA)	1 ng/mL
							Perfluorooctadecanoic acid	1 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.928 ng/mL
							Perfluorooctane Sulfonamide	1 ng/mL
							Perfluoropentanoic acid	1 ng/mL
							Perfluorotetradecanoic acid	1 ng/mL
							Perfluorotridecanoic acid	1 ng/mL
							Perfluoroundecanoic acid	1 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NEtFOSA-M 00005	100 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M 00004	100 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA 00004	100 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00004	100 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FtS 00004	100 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS 00004	100 uL	M2-8:2FtS	0.958 ug/mL
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS 00004	02/17/22		WELLINGTON, Lot M262FtS0217		(Purchased Reagent)		M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS 00004	08/22/21		WELLINGTON, Lot M282FtS0816		(Purchased Reagent)		M2-8:2FtS	47.9 ug/mL
.LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTEdA_00008	200 uL	13C2-PFTEdA	1 ug/mL
					LCM4PFHPA_00008	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA_00009	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00012	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00009	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00013	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA_00009	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00014	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00009	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA_00009	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00013	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00020	200 uL	13C4 PFOS	0.956 ug/mL
LCMPFUdA_00010	200 uL	13C2 PFUnA	1 ug/mL					
..LCM2PFHxDA 00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTEdA 00008	12/07/20		Wellington Laboratories, Lot M2PFTEdA1115		(Purchased Reagent)		13C2-PFTEdA	50 ug/mL
..LCM4PFHPA 00008	05/27/21		Wellington Laboratories, Lot M4PFHpa0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00009	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00009	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00013	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00009	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00013	10/18/21		Wellington Laboratories, Lot MPFOA1016		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00020	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00010	11/22/21		Wellington Laboratories, Lot MPFUdA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC2SP_00031	10/14/17	04/14/17	Methanol, Lot 104453	5000 uL	LCPFC2SP_00030	500 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.0934 ug/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.0958 ug/mL
							N-ethylperfluoro-1-octanesulfonamide	0.1 ug/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
							MeFOSA	0.1 ug/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
..LCPFC2SP_00030	10/14/17	04/14/17	Methanol, Lot 104453	10000 uL	LC4:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfonamide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00002	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
...LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216			(Purchased Reagent)	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
...LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS0616			(Purchased Reagent)	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
...LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82FTS1015			(Purchased Reagent)	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
...LCN-EtFOSA-M_00003	05/24/21		WELLINGTON, Lot NETFOSA0516M			(Purchased Reagent)	N-ethylperfluoro-1-octanesulfonamide	50 ug/mL
...LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116			(Purchased Reagent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
...LCN-MeFOSA-M_00002	05/24/21		WELLINGTON, Lot NMeFOSA0714M			(Purchased Reagent)	MeFOSA	50 ug/mL
...LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116			(Purchased Reagent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00002	10/17/17	04/17/17	Methanol, Lot 14139	2000 uL	LCM2PFOA_00005	200 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)	13C2-PFOA	50 ug/mL
.LCPFCSP_00098	09/02/17	06/01/17	Methanol, Lot 157237	10000 uL	LCPFCSP_00096	1000 uL	Perfluorobutyric acid	0.1 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/mL
							Perfluorodecanoic acid	0.1 ug/mL
							Perfluorododecanoic acid	0.1 ug/mL
							Perfluorodecane Sulfonic acid	0.0964 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid	0.1 ug/mL
							Perfluoroheptanesulfonic Acid	0.0952 ug/mL
							Perfluorohexanoic acid	0.1 ug/mL
							Perfluorohexadecanoic acid	0.1 ug/mL
							Perfluorohexanesulfonic acid	0.091 ug/mL
							Perfluorononanoic acid	0.1 ug/mL
							Perfluorooctanoic acid (PFOA)	0.1 ug/mL
							Perfluorooctadecanoic acid	0.1 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0928 ug/mL
							Perfluorooctane Sulfonamide	0.1 ug/mL
							Perfluoropentanoic acid	0.1 ug/mL
							Perfluorotetradecanoic acid	0.1 ug/mL
							Perfluorotridecanoic acid	0.1 ug/mL
							Perfluoroundecanoic acid	0.1 ug/mL
..LCPFCSP_00096	09/02/17	05/24/17	Methanol, Lot 090285	10000 uL	LCPFBFA 00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBFS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA 00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00009	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
LCPFUdA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL					
...LCPFBFA 00006	05/27/21	Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)	Perfluorobutyric acid	50 ug/mL	
...LCPFBFS_00006	03/15/21	Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL	
...LCPFDA 00006	05/31/21	Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)	Perfluorodecanoic acid	50 ug/mL	
...LCPFDoA 00006	05/31/21	Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)	Perfluorododecanoic acid	50 ug/mL	
...LCPFDS 00005	07/02/20	Wellington Laboratories, Lot LPFDS0615			(Purchased Reagent)	Perfluorodecane Sulfonic acid	48.2 ug/mL	
...LCPFHpA 00006	01/22/21	Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)	Perfluoroheptanoic acid	50 ug/mL	
...LCPFHpS 00010	11/06/20	Wellington Laboratories, Lot LPFHpS1115			(Purchased Reagent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL	
...LCPFHxA 00005	12/22/20	Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)	Perfluorohexanoic acid	50 ug/mL	
...LCPFHxDA 00007	05/25/21	Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)	Perfluorohexadecanoic acid	50 ug/mL	
...LCPFHxS-br 00003	07/03/20	Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)	Perfluorohexanesulfonic acid	45.5 ug/mL	
...LCPFNA 00007	10/23/20	Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)	Perfluorononanoic acid	50 ug/mL	



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
...LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
...LCPFODA 00007	04/29/21		Wellington Laboratories, Lot PFODA0416		(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
...LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
...LCPFOSA 00009	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
...LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
...LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
...LCPFTTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
...LCPFUdA 00006	08/19/20		Wellington Laboratories, Lot PFUdA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
<b>LCPFC_FULL-L2_00006</b>	12/27/17	07/07/17	MeOH/H2O, Lot 090285	5000 uL	LCMPFC_ALL_SU_00001	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NMeFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
							13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
					13C4 PFOS	47.8 ng/mL		
					13C2 PFUnA	50 ng/mL		
					LCPFC_ALL_SP_00001	50 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	0.934 ng/mL
							Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ng/mL
							Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.958 ng/mL
							N-ethylperfluoro-1-octanesulfonamide	1 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	1 ng/mL
							MeFOSA	1 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	1 ng/mL
Perfluorobutyric acid	1 ng/mL							
Perfluorobutanesulfonic acid (PFBS)	0.884 ng/mL							
Perfluorodecanoic acid	1 ng/mL							

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorododecanoic acid	1 ng/mL
							Perfluorodecane Sulfonic acid	0.964 ng/mL
							Perfluoroheptanoic acid	1 ng/mL
							Perfluoroheptanesulfonic Acid	0.952 ng/mL
							Perfluorohexanoic acid	1 ng/mL
							Perfluorohexadecanoic acid	1 ng/mL
							Perfluorohexanesulfonic acid	0.91 ng/mL
							Perfluorononanoic acid	1 ng/mL
							Perfluorooctanoic acid (PFOA)	1 ng/mL
							Perfluorooctadecanoic acid	1 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	0.928 ng/mL
							Perfluorooctane Sulfonamide	1 ng/mL
							Perfluoropentanoic acid	1 ng/mL
							Perfluorotetradecanoic acid	1 ng/mL
							Perfluorotridecanoic acid	1 ng/mL
							Perfluoroundecanoic acid	1 ng/mL
					LCPFCIS 00003	50 uL	13C2-PFOA	50 ng/mL
..LCMPFC_ALL_SU_00001	12/29/17	06/29/17	Methanol, Lot Baker 141039	10000 uL	LCd-NEtFOSA-M_00005	200 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00004	200 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00004	200 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA_00004	200 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FtS_00004	200 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS_00004	200 uL	M2-8:2FtS	0.958 ug/mL
					LCM2PFHxDA_00010	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00009	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00009	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA_00010	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00013	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00010	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00015	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA_00010	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00016	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00010	200 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA_00010	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00014	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00022	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA_00011	200 uL	13C2 PFUnA	1 ug/mL
..LCd-NEtFOSA-M_00005	06/10/21		WELLINGTON, Lot dNetFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M_00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA_00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA_00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS_00004	02/17/22		WELLINGTON, Lot M262FtS0217		(Purchased Reagent)		M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS_00004	08/22/21		WELLINGTON, Lot M282FtS0816		(Purchased Reagent)		M2-8:2FtS	47.9 ug/mL
..LCM2PFHxDA_00010	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA_00009	12/07/20		Wellington Laboratories, Lot M2PFTeDA0217		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA_00009	05/27/21		Wellington Laboratories, Lot M4PFHPA0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
..LCM5PFPEA 00010	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL		
..LCM8FOSA 00013	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL		
..LCMPFBA 00010	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL		
..LCMPFDA 00015	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL		
..LCMPFDoA 00010	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL		
..LCMPFHxA 00016	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL		
..LCMPFHxS 00010	02/17/22		Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL		
..LCMPFNA 00010	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL		
..LCMPFOA 00014	04/12/22		Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL		
..LCMPFOS 00022	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL		
..LCMPFudA 00011	11/22/21		Wellington Laboratories, Lot MPFudA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL		
.LCPFC_ALL_SP_00001	12/27/17	07/07/17	Methanol, Lot 157237	10000 uL	LCPFC2SP_00037	1000 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.0934 ug/mL		
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL		
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.0958 ug/mL		
							N-ethylperfluoro-1-octanesulfoamide	0.1 ug/mL		
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL		
							MeFOSA	0.1 ug/mL		
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL		
							LCPFCSP_00103	1000 uL	Perfluorobutyric acid	0.1 ug/mL
									Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/mL
									Perfluorodecanoic acid	0.1 ug/mL
									Perfluorododecanoic acid	0.1 ug/mL
									Perfluorodecane Sulfonic acid	0.0964 ug/mL
									Perfluoroheptanoic acid	0.1 ug/mL
					Perfluoroheptanesulfonic Acid	0.0952 ug/mL				
					Perfluorohexanoic acid	0.1 ug/mL				
					Perfluorohexadecanoic acid	0.1 ug/mL				
					Perfluorohexanesulfonic acid	0.091 ug/mL				
					Perfluorononanoic acid	0.1 ug/mL				
					Perfluorooctanoic acid (PFOA)	0.1 ug/mL				
					Perfluorooctadecanoic acid	0.1 ug/mL				
					Perfluorooctanesulfonic acid (PFOS)	0.0928 ug/mL				
					Perfluorooctane Sulfonamide	0.1 ug/mL				
					Perfluoropentanoic acid	0.1 ug/mL				
					Perfluorotetradecanoic acid	0.1 ug/mL				
					Perfluorotridecanoic acid	0.1 ug/mL				
					Perfluoroundecanoic acid	0.1 ug/mL				

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFC2SP_00037	01/07/18	07/07/17	Methanol, Lot 104453	10 mL	LC4:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FTS_00003	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00003	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00004	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00003	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
...LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216			(Purchased Reagent)	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
...LC6:2FTS_00003	06/25/21		WELLINGTON, Lot 62FTS0616			(Purchased Reagent)	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
...LC8:2FTS_00003	08/22/21		WELLINGTON, Lot 82FTS0816			(Purchased Reagent)	Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
...LCN-EtFOSA-M_00004	05/24/21		WELLINGTON, Lot NEtFOSA0516M			(Purchased Reagent)	N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
...LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NEtFOSAA0116			(Purchased Reagent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
...LCN-MeFOSA-M_00003	05/24/21		WELLINGTON, Lot NMeFOSA0516M			(Purchased Reagent)	MeFOSA	50 ug/mL
...LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116			(Purchased Reagent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCPFCSP_00103	12/27/17	06/27/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHXS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFoA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00010	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
					LCPFFTeDA 00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL		
					LCPFFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL		
					LCPFUdA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL		
...LCPFBFA 00006	05/27/21	Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL		
...LCPFBFS_00006	03/15/21	Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL		
...LCPFFDA 00006	05/31/21	Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL		
..LCPFFDoA 00006	05/31/21	Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL		
...LCPFFDS 00005	07/02/20	Wellington Laboratories, Lot LPFDS0615			(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL		
...LCPFFHpA 00006	01/22/21	Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL		
...LCPFFHps 00010	11/06/20	Wellington Laboratories, Lot LPFFHps1115			(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL		
...LCPFFHxA 00005	12/22/20	Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL		
...LCPFFHxDA 00007	05/25/21	Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL		
..LCPFFHxS-br 00003	07/03/20	Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL		
...LCPFFNA 00007	10/23/20	Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL		
...LCPFFOA 00007	08/02/21	Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL		
...LCPFFODA 00007	04/29/21	Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL		
...LCPFFOS-br_00003	10/14/20	Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL		
...LCPFFOSA 00010	09/30/21	Wellington Laboratories, Lot FOSA0916I			(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL		
...LCPFFPeA 00006	05/31/21	Wellington Laboratories, Lot PFPeA0516			(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL		
...LCPFFTeDA 00005	12/09/20	Wellington Laboratories, Lot PFTeDA1215			(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL		
...LCPFFTrDA 00005	02/12/21	Wellington Laboratories, Lot PFTTrDA0216			(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL		
..LCPFFUdA 00006	08/19/20	Wellington Laboratories, Lot PFUdA0815			(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL		
.LCPFFCIS 00003	12/30/17	06/30/17	Methanol, Lot 14139	5000 uL	LCM2PFOA 00005	500 uL	13C2-PFOA	5 ug/mL		
..LCM2PFOA 00005	06/19/18	Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)		13C2-PFOA	50 ug/mL		
<b>LCPFC_FULLL-L3_00004</b>	09/02/17	06/01/17	MeOH/H2O, Lot 090285	5000 uL	LCMPFC2SU_00019	250 uL	d-N-EtFOSA-M	50 ng/mL		
							d-N-MeFOSA-M	50 ng/mL		
							d3-NMeFOSAA	50 ng/mL		
							d5-NMeFOSAA	50 ng/mL		
							M2-6:2FTS	47.5 ng/mL		
							M2-8:2FTS	47.9 ng/mL		
							LCMPFCSU_00069	250 uL	13C2-PFHxDA	50 ng/mL
									13C2-PFTeDA	50 ng/mL
									13C4-PFHpA	50 ng/mL
									13C5-PFPeA	50 ng/mL
					13C8 FOSA	50 ng/mL				
					13C4 PFBA	50 ng/mL				
					13C2 PFDA	50 ng/mL				
					13C2 PFDoA	50 ng/mL				
					13C2 PFHxA	50 ng/mL				
					18O2 PFHxS	47.3 ng/mL				
					13C5 PFNA	50 ng/mL				
					13C4 PFOA	50 ng/mL				
					13C4 PFOS	47.8 ng/mL				
					13C2 PFUnA	50 ng/mL				

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFC2SP_00031	250 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	4.67 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	4.74 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	4.79 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	5 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	5 ng/mL
							MeFOSA	5 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	5 ng/mL
					LCPFCIS_00002	50 uL	13C2-PFOA	50 ng/mL
					LCPFCSP_00098	250 uL	Perfluorobutyric acid	5 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	4.42 ng/mL
							Perfluorodecanoic acid	5 ng/mL
							Perfluorododecanoic acid	5 ng/mL
							Perfluorodecane Sulfonic acid	4.82 ng/mL
							Perfluoroheptanoic acid	5 ng/mL
							Perfluoroheptanesulfonic Acid	4.76 ng/mL
							Perfluorohexanoic acid	5 ng/mL
							Perfluorohexadecanoic acid	5 ng/mL
							Perfluorohexanesulfonic acid	4.55 ng/mL
							Perfluorononanoic acid	5 ng/mL
							Perfluorooctanoic acid (PFOA)	5 ng/mL
							Perfluorooctadecanoic acid	5 ng/mL
Perfluorooctanesulfonic acid (PFOS)	4.64 ng/mL							
Perfluorooctane Sulfonamide	5 ng/mL							
Perfluoropentanoic acid	5 ng/mL							
Perfluorotetradecanoic acid	5 ng/mL							
Perfluorotridecanoic acid	5 ng/mL							
Perfluoroundecanoic acid	5 ng/mL							
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NEtFOSA-M 00005	100 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M 00004	100 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA 00004	100 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00004	100 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FtS 00004	100 uL	M2-6:2FtS	0.95 ug/mL
LCM2-8:2FtS 00004	100 uL	M2-8:2FtS	0.958 ug/mL					
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M			(Purchased Reagent)	d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M			(Purchased Reagent)	d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116			(Purchased Reagent)	d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116			(Purchased Reagent)	d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS 00004	02/17/22		WELLINGTON, Lot M262FtS0217			(Purchased Reagent)	M2-6:2FtS	47.5 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCM2-8:2FTS 00004	08/22/21		WELLINGTON, Lot M282FTS0816		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL
..LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTEDA 00008	200 uL	13C2-PFTEDA	1 ug/mL
					LCM4PFHPA 00008	200 uL	13C4-PFHPa	1 ug/mL
					LCM5PFPEA 00009	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA 00012	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA 00009	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00013	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00009	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00014	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00009	200 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA 00009	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00013	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS 00020	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00010	200 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA 00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTEDA 00008	12/07/20		Wellington Laboratories, Lot M2PFTEDA1115		(Purchased Reagent)		13C2-PFTEDA	50 ug/mL
..LCM4PFHPA 00008	05/27/21		Wellington Laboratories, Lot M4PFHPa0516		(Purchased Reagent)		13C4-PFHPa	50 ug/mL
..LCM5PFPEA 00009	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00009	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00013	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		1802 PFHxS	47.3 ug/mL
..LCMPFNA 00009	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00013	10/18/21		Wellington Laboratories, Lot MPFOA1016		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00020	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00010	11/22/21		Wellington Laboratories, Lot MPFUdA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFC2SP_00031	10/14/17	04/14/17	Methanol, Lot 104453	5000 uL	LCPFC2SP_00030	500 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.0934 ug/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.0958 ug/mL
							N-ethylperfluoro-1-octanesulfo namide	0.1 ug/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
							MeFOSA	0.1 ug/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
..LCPFC2SP_00030	10/14/17	04/14/17	Methanol, Lot 104453	10000 uL	LC4:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC6:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00002	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
...LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
...LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
...LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82FTS1015		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
...LCN-EtFOSA-M_00003	05/24/21		WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
...LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
...LCN-MeFOSA-M_00002	05/24/21		WELLINGTON, Lot NMeFOSA0714M		(Purchased Reagent)		MeFOSA	50 ug/mL
...LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00002	10/17/17	04/17/17	Methanol, Lot 14139	2000 uL	LCM2PFOA_00005	200 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCPFCSP_00098	09/02/17	06/01/17	Methanol, Lot 157237	10000 uL	LCPFCSP_00096	1000 uL	Perfluorobutyric acid	0.1 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/mL
							Perfluorodecanoic acid	0.1 ug/mL
							Perfluorododecanoic acid	0.1 ug/mL
							Perfluorodecane Sulfonic acid	0.0964 ug/mL
							Perfluoroheptanoic acid	0.1 ug/mL
							Perfluoroheptanesulfonic Acid	0.0952 ug/mL
							Perfluorohexanoic acid	0.1 ug/mL
							Perfluorohexadecanoic acid	0.1 ug/mL
							Perfluorohexanesulfonic acid	0.091 ug/mL
							Perfluorononanoic acid	0.1 ug/mL
							Perfluorooctanoic acid (PFOA)	0.1 ug/mL
							Perfluorooctadecanoic acid	0.1 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	0.0928 ug/mL
							Perfluorooctane Sulfonamide	0.1 ug/mL
							Perfluoropentanoic acid	0.1 ug/mL
							Perfluorotetradecanoic acid	0.1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluorotridecanoic acid	0.1 ug/mL
							Perfluoroundecanoic acid	0.1 ug/mL
..LCPFCSP_00096	09/02/17	05/24/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00009	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL					
LCPFTrDA_00005	200 uL	Perfluorotridecanoic acid	1 ug/mL					
LCPFUdA_00006	200 uL	Perfluoroundecanoic acid	1 ug/mL					
...LCPFBA_00006	05/27/21	Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)	Perfluorobutyric acid	50 ug/mL	
...LCPFBS_00006	03/15/21	Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL	
...LCPFDA_00006	05/31/21	Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)	Perfluorodecanoic acid	50 ug/mL	
...LCPFDoA_00006	05/31/21	Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)	Perfluorododecanoic acid	50 ug/mL	
...LCPFDS_00005	07/02/20	Wellington Laboratories, Lot LPFDS0615			(Purchased Reagent)	Perfluorodecane Sulfonic acid	48.2 ug/mL	
...LCPFHpA_00006	01/22/21	Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)	Perfluoroheptanoic acid	50 ug/mL	
...LCPFHpS_00010	11/06/20	Wellington Laboratories, Lot LPFHpS1115			(Purchased Reagent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL	
...LCPFHxA_00005	12/22/20	Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)	Perfluorohexanoic acid	50 ug/mL	
...LCPFHxDA_00007	05/25/21	Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)	Perfluorohexadecanoic acid	50 ug/mL	
...LCPFHxS-br_00003	07/03/20	Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)	Perfluorohexanesulfonic acid	45.5 ug/mL	
...LCPFNA_00007	10/23/20	Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)	Perfluorononanoic acid	50 ug/mL	
...LCPFOA_00007	08/02/21	Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	50 ug/mL	
...LCPFODA_00007	04/29/21	Wellington Laboratories, Lot PFODA416			(Purchased Reagent)	Perfluorooctadecanoic acid	50 ug/mL	
...LCPFOS-br_00003	10/14/20	Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL	
...LCPFOSA_00009	09/02/17	Wellington Laboratories, Lot FOSA0815I			(Purchased Reagent)	Perfluorooctane Sulfonamide	50 ug/mL	
...LCPFPeA_00006	05/31/21	Wellington Laboratories, Lot PFPeA0516			(Purchased Reagent)	Perfluoropentanoic acid	50 ug/mL	
...LCPFTeDA_00005	12/09/20	Wellington Laboratories, Lot PFTeDA1215			(Purchased Reagent)	Perfluorotetradecanoic acid	50 ug/mL	
...LCPFTrDA_00005	02/12/21	Wellington Laboratories, Lot PFTrDA0216			(Purchased Reagent)	Perfluorotridecanoic acid	50 ug/mL	
...LCPFUdA_00006	08/19/20	Wellington Laboratories, Lot PFUdA0815			(Purchased Reagent)	Perfluoroundecanoic acid	50 ug/mL	
<b>LCPFC_FULL-L3_00005</b>	12/27/17	07/07/17	MeOH/H2O, Lot 090285	5000 uL	LCMPFC_ALL_SU_00001	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NETFOSAA	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
							13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDaA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFCA_ALL_SP_00001	250 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	4.67 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	4.74 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	4.79 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	5 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	5 ng/mL
							MeFOSA	5 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	5 ng/mL
							Perfluorobutyric acid	5 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	4.42 ng/mL
							Perfluorodecanoic acid	5 ng/mL
							Perfluorododecanoic acid	5 ng/mL
							Perfluorodecane Sulfonic acid	4.82 ng/mL
							Perfluoroheptanoic acid	5 ng/mL
							Perfluoroheptanesulfonic Acid	4.76 ng/mL
							Perfluorohexanoic acid	5 ng/mL
							Perfluorohexadecanoic acid	5 ng/mL
							Perfluorohexanesulfonic acid	4.55 ng/mL
							Perfluorononanoic acid	5 ng/mL
							Perfluorooctanoic acid (PFOA)	5 ng/mL
							Perfluorooctadecanoic acid	5 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	4.64 ng/mL
							Perfluorooctane Sulfonamide	5 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoropentanoic acid	5 ng/mL
							Perfluorotetradecanoic acid	5 ng/mL
							Perfluorotridecanoic acid	5 ng/mL
							Perfluoroundecanoic acid	5 ng/mL
					LCPFCIS 00003	50 uL	13C2-PFOA	50 ng/mL
.LCMPFC_ALL_SU_00001	12/29/17	06/29/17	Methanol, Lot Baker 141039	10000 uL	LCd-NEtFOSA-M_00005	200 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M 00004	200 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA 00004	200 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00004	200 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FtS 00004	200 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS 00004	200 uL	M2-8:2FtS	0.958 ug/mL
					LCM2PFHxDA 00010	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFtEDA 00009	200 uL	13C2-PFtEDA	1 ug/mL
					LCM4PFHPA 00009	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA 00010	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA 00013	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA 00010	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00015	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00010	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00016	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00010	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA 00010	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00014	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS 00022	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFudA 00011	200 uL	13C2 PFUnA	1 ug/mL
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS 00004	02/17/22		WELLINGTON, Lot M262FtS0217		(Purchased Reagent)		M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS 00004	08/22/21		WELLINGTON, Lot M282FtS0816		(Purchased Reagent)		M2-8:2FtS	47.9 ug/mL
..LCM2PFHxDA 00010	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFtEDA 00009	12/07/20		Wellington Laboratories, Lot M2PFtEDA0217		(Purchased Reagent)		13C2-PFtEDA	50 ug/mL
..LCM4PFHPA 00009	05/27/21		Wellington Laboratories, Lot M4PFHPA0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00010	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00013	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00010	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00015	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00010	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00016	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00010	02/17/22		Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00010	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00014	04/12/22		Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00022	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFudA 00011	11/22/21		Wellington Laboratories, Lot MPFudA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.LCPFC_ALL_SP_00001	12/27/17	07/07/17	Methanol, Lot 157237	10000 uL	LCPFC2SP_00037	1000 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	0.0934 ug/mL
							Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.0948 ug/mL
							Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.0958 ug/mL
							N-ethylperfluoro-1-octanesulfo namide	0.1 ug/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
							MeFOSA	0.1 ug/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	0.1 ug/mL
					LCPFCSP_00103	1000 uL	Perfluorobutyric acid	0.1 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.0884 ug/mL
							Perfluorodecanoic acid	0.1 ug/mL
							Perfluorododecanoic acid	0.1 ug/mL
							Perfluorodecane Sulfonic acid	0.0964 ug/mL
							Perfluoroheptanoic acid	0.1 ug/mL
							Perfluoroheptanesulfonic Acid	0.0952 ug/mL
							Perfluorohexanoic acid	0.1 ug/mL
							Perfluorohexadecanoic acid	0.1 ug/mL
							Perfluorohexanesulfonic acid	0.091 ug/mL
							Perfluorononanoic acid	0.1 ug/mL
							Perfluorooctanoic acid (PFOA)	0.1 ug/mL
							Perfluorooctadecanoic acid	0.1 ug/mL
Perfluorooctanesulfonic acid (PFOS)	0.0928 ug/mL							
Perfluorooctane Sulfonamide	0.1 ug/mL							
Perfluoropentanoic acid	0.1 ug/mL							
Perfluorotetradecanoic acid	0.1 ug/mL							
Perfluorotridecanoic acid	0.1 ug/mL							
Perfluoroundecanoic acid	0.1 ug/mL							
..LCPFC2SP_00037	01/07/18	07/07/17	Methanol, Lot 104453	10 mL	LC4:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FTS_00003	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00003	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00004	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCN-MeFOSA-M 00003	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
...LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
...LC6:2FTS_00003	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
...LC8:2FTS_00003	08/22/21		WELLINGTON, Lot 82FTS0816		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
...LCN-EtFOSA-M_00004	05/24/21		WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50 ug/mL
...LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
...LCN-MeFOSA-M 00003	05/24/21		WELLINGTON, Lot NMeFOSA0516M		(Purchased Reagent)		MeFOSA	50 ug/mL
...LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
...LCPFCSP_00103	12/27/17	06/27/17	Methanol, Lot 090285	10000 uL	LCPFBA 00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA 00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00010	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
...LCPFBA 00006	05/27/21		Wellington Laboratories, Lot PFBA0516		(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
...LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
...LCPFDA 00006	05/31/21		Wellington Laboratories, Lot PFDA0516		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
...LCPFDoA 00006	05/31/21		Wellington Laboratories, Lot PFDoA0516		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
...LCPFDS 00005	07/02/20		Wellington Laboratories, Lot LPFDS0615		(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
...LCPFHpA 00006	01/22/21		Wellington Laboratories, Lot PFHpA0116		(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
...LCPFHpS 00010	11/06/20		Wellington Laboratories, Lot LPFHpS1115		(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL
...LCPFHxA 00005	12/22/20		Wellington Laboratories, Lot PFHxA1215		(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
...LCPFHxDA 00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516		(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL		
...LCPFHxS-br 00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615		(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL		
...LCPFNA 00007	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL		
...LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL		
...LCPFODA 00007	04/29/21		Wellington Laboratories, Lot PFODA0416		(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL		
...LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL		
...LCPFOSA 00010	09/30/21		Wellington Laboratories, Lot FOSA0916I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL		
...LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL		
...LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL		
...LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL		
...LCPFUDa 00006	08/19/20		Wellington Laboratories, Lot PFUDa0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL		
.LCPFCIS 00003	12/30/17	06/30/17	Methanol, Lot 14139	5000 uL	LCM2PFOA 00005	500 uL	13C2-PFOA	5 ug/mL		
..LCM2PFOA 00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL		
<b>LCPFC_FULLL-L4_00003</b>	08/13/17	04/16/17	MeOH/H2O, Lot 090285	5050 uL	LCMPFC2SU_00014	250 uL	d-N-EtFOSA-M	49.505 ng/mL		
							d-N-MeFOSA-M	49.505 ng/mL		
							d3-NMeFOSAA	49.505 ng/mL		
							d5-NEtFOSAA	49.505 ng/mL		
							M2-6:2FTS	47.0297 ng/mL		
							M2-8:2FTS	47.4257 ng/mL		
							LCMPFCSU_00057	250 uL	13C2-PFHxDA	49.505 ng/mL
									13C2-PFTeDA	49.505 ng/mL
									13C4-PFHpa	49.505 ng/mL
									13C5-PFPeA	49.505 ng/mL
					13C8 FOSA	49.505 ng/mL				
					13C4 PFBA	49.505 ng/mL				
					13C2 PFDA	49.505 ng/mL				
					13C2 PFDoA	49.505 ng/mL				
					13C2 PFHxA	49.505 ng/mL				
					18O2 PFHxS	46.8317 ng/mL				
					13C5 PFNA	49.505 ng/mL				
					13C4 PFOA	49.505 ng/mL				
					13C4 PFOS	47.3267 ng/mL				
					13C2 PFUnA	49.505 ng/mL				
LCPFCSP_00086	200 uL	Perfluorobutanesulfonic acid (PFBS)	17.505 ng/mL							
		Perfluorooctanoic acid (PFOA)	19.802 ng/mL							
		Perfluorooctanesulfonic acid (PFOS)	18.3762 ng/mL							
.LCMPFC2SU_00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M_00004	1000 uL	d-N-EtFOSA-M	1 ug/mL		
							LCd-NMeFOSA-M_00003	1000 uL	d-N-MeFOSA-M	1 ug/mL
							LCd3-NMeFOSAA_00003	1000 uL	d3-NMeFOSAA	1 ug/mL
							LCd5-NEtFOSAA_00003	1000 uL	d5-NEtFOSAA	1 ug/mL
							LCM2-6:FtS_00003	1000 uL	M2-6:2FTS	0.95 ug/mL
							LCM2-8:2FtS_00003	1000 uL	M2-8:2FTS	0.958 ug/mL
..LCd-NEtFOSA-M_00004	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL		
..LCd-NMeFOSA-M_00003	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL		
..LCd3-NMeFOSAA_00003	05/31/21		WELLINGTON, Lot d3NMeFOSAA0516		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL		



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

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SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCd5-NEtFOSAA 00003	08/02/21		WELLINGTON, Lot d5NETFOSAA0716		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FTS 00003	01/08/21		WELLINGTON, Lot M262FTS0116		(Purchased Reagent)		M2-6:2FTS	47.5 ug/mL
..LCM2-8:2FTS 00003	01/08/21		WELLINGTON, Lot M282FTS0116		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL
..LCMPFCSU_00057	10/04/17	04/04/17	Methanol, Lot Baker 141039	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA 00007	1000 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHFA 00007	1000 uL	13C4-PFHFA	1 ug/mL
					LCM5PFPEA 00008	1000 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA 00011	1000 uL	13C8 FOSA	1 ug/mL
					LCMPFBA 00008	1000 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00011	1000 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00008	1000 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00012	1000 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00008	1000 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA 00008	1000 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00012	1000 uL	13C4 PFOA	1 ug/mL
					LCMPFOS 00018	1000 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00009	1000 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA 00008	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA 00007	12/07/20		Wellington Laboratories, Lot M2PFTeDA1115		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHFA 00007	05/27/21		Wellington Laboratories, Lot M4PFHFA0516		(Purchased Reagent)		13C4-PFHFA	50 ug/mL
..LCM5PFPEA 00008	05/22/20		Wellington Laboratories, Lot M5PFPeA0515		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00011	12/22/17		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00008	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00011	08/19/20		Wellington Laboratories, Lot MPFDA0815		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00008	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00012	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00008	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00008	04/13/19		Wellington Laboratories, Lot MPFNA0414		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00012	01/22/21		Wellington Laboratories, Lot MPFOA0116		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00009	02/12/21		Wellington Laboratories, Lot MPFUdA0216		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFCSP_00086	09/02/17	04/05/17	Methanol, Lot 141039	10000 uL	LCPFBS_00005	100 uL	Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
					LCPFOA 00007	100 uL	Perfluorooctanoic acid (PFOA)	0.5 ug/mL
					LCPFOS-br_00002	100 uL	Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
..LCPFBS_00005	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFOS-br_00002	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
<b>LCPFC_FULL-L4_00005</b>	09/02/17	05/30/17	MeOH/H2O, Lot 090285	5000 uL	LCMPFC2SU_00019	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
LCMPFCSU_00069					250 uL	13C2-PFHxDA	50 ng/mL	
						13C2-PFTeDA	50 ng/mL	
						13C4-PFHpA	50 ng/mL	
						13C5-PFPeA	50 ng/mL	
						13C8 FOSA	50 ng/mL	
						13C4 PFBA	50 ng/mL	
						13C2 PFDA	50 ng/mL	
						13C2 PFDoA	50 ng/mL	
						13C2 PFHxA	50 ng/mL	
						18O2 PFHxS	47.3 ng/mL	
						13C5 PFNA	50 ng/mL	
						13C4 PFOA	50 ng/mL	
						13C4 PFOS	47.8 ng/mL	
						13C2 PFUnA	50 ng/mL	
						LCPFC2SP_00030		
Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	18.96 ng/mL							
Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	19.16 ng/mL							
N-ethylperfluoro-1-octanesulfo namide	20 ng/mL							
N-ethyl perfluorooctane sulfonamidoacetic acid	20 ng/mL							
MeFOSA	20 ng/mL							
N-methyl perfluorooctane sulfonamidoacetic acid	20 ng/mL							
13C2-PFOA	50 ng/mL							
LCPFCSP_00096					100 uL	Perfluorobutyric acid	20 ng/mL	
						Perfluorobutanesulfonic acid (PFBS)	17.68 ng/mL	
						Perfluorodecanoic acid	20 ng/mL	
						Perfluorododecanoic acid	20 ng/mL	
						Perfluorodecane Sulfonic acid	19.28 ng/mL	
						Perfluoroheptanoic acid	20 ng/mL	
						Perfluoroheptanesulfonic Acid	19.04 ng/mL	
						Perfluorohexanoic acid	20 ng/mL	
						Perfluorohexadecanoic acid	20 ng/mL	
						Perfluorohexanesulfonic acid	18.2 ng/mL	
						Perfluorononanoic acid	20 ng/mL	
						Perfluorooctanoic acid (PFOA)	20 ng/mL	
						Perfluorooctadecanoic acid	20 ng/mL	
						Perfluorooctanesulfonic acid (PFOS)	18.56 ng/mL	
						Perfluorooctane Sulfonamide	20 ng/mL	
Perfluoropentanoic acid	20 ng/mL							

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration	
					Reagent ID	Volume Added			
							Perfluorotetradecanoic acid	20 ng/mL	
							Perfluorotridecanoic acid	20 ng/mL	
							Perfluoroundecanoic acid	20 ng/mL	
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NEtFOSA-M 00005	100 uL	d-N-EtFOSA-M	1 ug/mL	
					LCd-NMeFOSA-M 00004	100 uL	d-N-MeFOSA-M	1 ug/mL	
					LCd3-NMeFOSAA 00004	100 uL	d3-NMeFOSAA	1 ug/mL	
					LCd5-NEtFOSAA 00004	100 uL	d5-NEtFOSAA	1 ug/mL	
					LCM2-6:FtS 00004	100 uL	M2-6:2FtS	0.95 ug/mL	
					LCM2-8:2FtS 00004	100 uL	M2-8:2FtS	0.958 ug/mL	
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M				(Purchased Reagent)	d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M				(Purchased Reagent)	d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116				(Purchased Reagent)	d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116				(Purchased Reagent)	d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS 00004	02/17/22		WELLINGTON, Lot M262FtS0217				(Purchased Reagent)	M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS 00004	08/22/21		WELLINGTON, Lot M282FtS0816				(Purchased Reagent)	M2-8:2FtS	47.9 ug/mL
.LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL	
					LCM2PFTEdA 00008	200 uL	13C2-PFTEdA	1 ug/mL	
					LCM4PFHPA 00008	200 uL	13C4-PFHpa	1 ug/mL	
					LCM5PFPEA 00009	200 uL	13C5-PFPeA	1 ug/mL	
					LCM8FOSA 00012	200 uL	13C8 FOSA	1 ug/mL	
					LCMPFBA 00009	200 uL	13C4 PFBA	1 ug/mL	
					LCMPFDA 00013	200 uL	13C2 PFDA	1 ug/mL	
					LCMPFDoA 00009	200 uL	13C2 PFDoA	1 ug/mL	
					LCMPFHxA 00014	200 uL	13C2 PFHxA	1 ug/mL	
					LCMPFHxS 00009	200 uL	1802 PFHxS	0.946 ug/mL	
					LCMPFNA 00009	200 uL	13C5 PFNA	1 ug/mL	
					LCMPFOA 00013	200 uL	13C4 PFOA	1 ug/mL	
					LCMPFOS 00020	200 uL	13C4 PFOS	0.956 ug/mL	
					LCMPFUdA 00010	200 uL	13C2 PFUnA	1 ug/mL	
..LCM2PFHxDA 00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112				(Purchased Reagent)	13C2-PFHxDA	50 ug/mL
..LCM2PFTEdA 00008	12/07/20		Wellington Laboratories, Lot M2PFTEdA1115				(Purchased Reagent)	13C2-PFTEdA	50 ug/mL
..LCM4PFHPA 00008	05/27/21		Wellington Laboratories, Lot M4PFHPa0516				(Purchased Reagent)	13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00009	11/22/21		Wellington Laboratories, Lot M5PFPeA1116				(Purchased Reagent)	13C5-PFPeA	50 ug/mL
..LCM8FOSA 00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I				(Purchased Reagent)	13C8 FOSA	50 ug/mL
..LCMPFBA 00009	05/24/21		Wellington Laboratories, Lot MPFBA0516				(Purchased Reagent)	13C4 PFBA	50 ug/mL
..LCMPFDA 00013	09/30/21		Wellington Laboratories, Lot MPFDA0916				(Purchased Reagent)	13C2 PFDA	50 ug/mL
..LCMPFDoA 00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416				(Purchased Reagent)	13C2 PFDoA	50 ug/mL
..LCMPFHxA 00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116				(Purchased Reagent)	13C2 PFHxA	50 ug/mL
..LCMPFHxS 00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015				(Purchased Reagent)	1802 PFHxS	47.3 ug/mL
..LCMPFNA 00009	09/30/21		Wellington Laboratories, Lot MPFNA0916				(Purchased Reagent)	13C5 PFNA	50 ug/mL
..LCMPFOA 00013	10/18/21		Wellington Laboratories, Lot MPFOA1016				(Purchased Reagent)	13C4 PFOA	50 ug/mL
..LCMPFOS 00020	12/12/21		Wellington Laboratories, Lot MPFOS1216				(Purchased Reagent)	13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00010	11/22/21		Wellington Laboratories, Lot MPFUdA1116				(Purchased Reagent)	13C2 PFUnA	50 ug/mL
.LCPFCS2SP_00030	10/14/17	04/14/17	Methanol, Lot 104453	10000 uL	LC4:2FtS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL	

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC6:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00002	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
..LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82FTS1015		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00003	05/24/21		WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M_00002	05/24/21		WELLINGTON, Lot NMeFOSA0714M		(Purchased Reagent)		MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00002	10/17/17	04/17/17	Methanol, Lot 14139	2000 uL	LCM2PFOA_00005	200 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCPFCSP_00096	09/02/17	05/24/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHXS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00009	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUDA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA 00006	05/27/21	Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21	Wellington Laboratories, Lot LPPFBS0316			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA 00006	05/31/21	Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA 00006	05/31/21	Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS 00005	07/02/20	Wellington Laboratories, Lot LPPFDS0615			(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpa 00006	01/22/21	Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
..LCPFHpS 00010	11/06/20	Wellington Laboratories, Lot LPPFHpS1115			(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL
..LCPFHxA 00005	12/22/20	Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL
..LCPFHxDA 00007	05/25/21	Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL
..LCPFHxS-br 00003	07/03/20	Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA 00007	10/23/20	Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA 00007	08/02/21	Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA 00007	04/29/21	Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
..LCPFOS-br_00003	10/14/20	Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
..LCPFOSA 00009	09/02/17	Wellington Laboratories, Lot FOSA0815I			(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00006	05/31/21	Wellington Laboratories, Lot PFPeA0516			(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
..LCPFTeDA 00005	12/09/20	Wellington Laboratories, Lot PFTeDA1215			(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
..LCPFTrDA 00005	02/12/21	Wellington Laboratories, Lot PFTTrDA0216			(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
..LCPFUDA 00006	08/19/20	Wellington Laboratories, Lot PFUDA0815			(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
<b>LCPFC_FULL-L4_00008</b>	12/27/17	07/07/17	MeOH/H2O, Lot 090285	5000 uL	LCPFC_ALL_SU_00001	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
							13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpa	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
					13C4 PFOS	47.8 ng/mL		
					13C2 PFUnA	50 ng/mL		
LCPFC2SP_00037	100 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	18.68 ng/mL					

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	18.96 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	19.16 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	20 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	20 ng/mL
							MeFOSA	20 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	20 ng/mL
					LCPFCIS_00003	50 uL	13C2-PFOA	50 ng/mL
					LCPFCSP_00103	100 uL	Perfluorobutyric acid	20 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	17.68 ng/mL
							Perfluorodecanoic acid	20 ng/mL
							Perfluorododecanoic acid	20 ng/mL
							Perfluorodecane Sulfonic acid	19.28 ng/mL
							Perfluoroheptanoic acid	20 ng/mL
							Perfluoroheptanesulfonic Acid	19.04 ng/mL
							Perfluorohexanoic acid	20 ng/mL
							Perfluorohexadecanoic acid	20 ng/mL
							Perfluorohexanesulfonic acid	18.2 ng/mL
							Perfluorononanoic acid	20 ng/mL
							Perfluorooctanoic acid (PFOA)	20 ng/mL
							Perfluorooctadecanoic acid	20 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	18.56 ng/mL
							Perfluorooctane Sulfonamide	20 ng/mL
							Perfluoropentanoic acid	20 ng/mL
							Perfluorotetradecanoic acid	20 ng/mL
							Perfluorotridecanoic acid	20 ng/mL
							Perfluoroundecanoic acid	20 ng/mL
.LCMPFC_ALL_SU_00001	12/29/17	06/29/17	Methanol, Lot Baker 141039	10000 uL	LCd-NETFOSA-M_00005	200 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00004	200 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00004	200 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NETFOSAA_00004	200 uL	d5-NETFOSAA	1 ug/mL
					LCM2-6:FtS_00004	200 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS_00004	200 uL	M2-8:2FtS	0.958 ug/mL
					LCM2PFHxDA_00010	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00009	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00009	200 uL	13C4-PFHPA	1 ug/mL
					LCM5PFPEA_00010	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00013	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00010	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00015	200 uL	13C2 PFDA	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMPFDoA_00010	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00016	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00010	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA_00010	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00014	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00022	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUDa_00011	200 uL	13C2 PFUnA	1 ug/mL
..LCd-NETfOSA-M_00005	06/10/21		WELLINGTON, Lot dNETfOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M_00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA_00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NETfOSAA_00004	11/22/21		WELLINGTON, Lot d5NETfOSAA1116		(Purchased Reagent)		d5-NETfOSAA	50 ug/mL
..LCM2-6:FtS_00004	02/17/22		WELLINGTON, Lot M262FtS0217		(Purchased Reagent)		M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS_00004	08/22/21		WELLINGTON, Lot M282FtS0816		(Purchased Reagent)		M2-8:2FtS	47.9 ug/mL
..LCM2PFHxDA_00010	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTEdA_00009	12/07/20		Wellington Laboratories, Lot M2PFTEdA0217		(Purchased Reagent)		13C2-PFTEdA	50 ug/mL
..LCM4PFHPA_00009	05/27/21		Wellington Laboratories, Lot M4PFHPA0516		(Purchased Reagent)		13C4-PFHPA	50 ug/mL
..LCM5PFPEA_00010	11/22/21		Wellington Laboratories, Lot M5PFPEA1116		(Purchased Reagent)		13C5-PFPEA	50 ug/mL
..LCM8FOSA_00013	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA_00010	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA_00015	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA_00010	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA_00016	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS_00010	02/17/22		Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA_00010	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA_00014	04/12/22		Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS_00022	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUDa_00011	11/22/21		Wellington Laboratories, Lot MPFUDa1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPPC2SP_00037	01/07/18	07/07/17	Methanol, Lot 104453	10 mL	LC4:2FtS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FtS_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FtS_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00004	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00003	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2FtS_00002	12/12/21		WELLINGTON, Lot 42FtS1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2FtS_00003	06/25/21		WELLINGTON, Lot 62FtS0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC8:2FTS_00003	08/22/21		WELLINGTON, Lot 82FTS0816			(Purchased Reagent)	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00004	05/24/21		WELLINGTON, Lot NETFOSA0516M			(Purchased Reagent)	N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116			(Purchased Reagent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M_00003	05/24/21		WELLINGTON, Lot NMeFOSA0516M			(Purchased Reagent)	MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116			(Purchased Reagent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00003	12/30/17	06/30/17	Methanol, Lot 14139	5000 uL	LCM2PFOA_00005	500 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)	13C2-PFOA	50 ug/mL
.LCPFCSP_00103	12/27/17	06/27/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00010	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA_00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA_00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA_00006	05/27/21		Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)	Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA_00006	05/31/21		Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)	Perfluorodecanoic acid	50 ug/mL
..LCPFDoA_00006	05/31/21		Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)	Perfluorododecanoic acid	50 ug/mL
..LCPFDS_00005	07/02/20		Wellington Laboratories, Lot LPFDS0615			(Purchased Reagent)	Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpA_00006	01/22/21		Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)	Perfluoroheptanoic acid	50 ug/mL
..LCPFHpS_00010	11/06/20		Wellington Laboratories, Lot LPFHpS1115			(Purchased Reagent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL
..LCPFHxA_00005	12/22/20		Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)	Perfluorohexanoic acid	50 ug/mL
..LCPFHxDA_00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)	Perfluorohexadecanoic acid	50 ug/mL
..LCPFHxS-br_00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)	Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA_00007	10/23/20		Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)	Perfluorononanoic acid	50 ug/mL
..LCPFOA_00007	08/02/21		Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA_00007	04/29/21		Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)	Perfluorooctadecanoic acid	50 ug/mL
..LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
..LCPFOSA 00010	09/30/21		Wellington Laboratories, Lot FOSA0916I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL		
..LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL		
..LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL		
..LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL		
..LCPFUdA 00006	08/19/20		Wellington Laboratories, Lot PFUdA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL		
<b>LCPFC_FULL-L5_00004</b>	08/13/17	05/06/17	MeOH/H2O, Lot 090285	5050 uL	LCMPFC2SU_00014	250 uL	d-N-EtFOSA-M	49.505 ng/mL		
							d-N-MeFOSA-M	49.505 ng/mL		
							d3-NMeFOSAA	49.505 ng/mL		
							d5-NEtFOSAA	49.505 ng/mL		
							M2-6:2FTS	47.0297 ng/mL		
					LCMPFCSU_00057	250 uL	13C2-PFHxDA	49.505 ng/mL		
							13C2-PFTeDA	49.505 ng/mL		
							13C4-PFHpA	49.505 ng/mL		
							13C5-PFPeA	49.505 ng/mL		
							13C8 FOSA	49.505 ng/mL		
							13C4 PFBA	49.505 ng/mL		
							13C2 PFDA	49.505 ng/mL		
							13C2 PFDoA	49.505 ng/mL		
							13C2 PFHxA	49.505 ng/mL		
							18O2 PFHxS	46.8317 ng/mL		
							13C5 PFNA	49.505 ng/mL		
							13C4 PFOA	49.505 ng/mL		
							13C4 PFOS	47.3267 ng/mL		
					LCPFCSP_00086	500 uL	Perfluorobutanesulfonic acid (PFBS)	43.7624 ng/mL		
							Perfluorooctanoic acid (PFOA)	49.505 ng/mL		
Perfluorooctanesulfonic acid (PFOS)	45.9406 ng/mL									
.LCMPFC2SU_00014	08/13/17	02/13/17	Methanol, Lot 104453	50000 uL	LCd-NEtFOSA-M 00004	1000 uL	d-N-EtFOSA-M	1 ug/mL		
							LCd-NMeFOSA-M 00003	1 ug/mL		
							LCd3-NMeFOSAA 00003	1 ug/mL		
							LCd5-NEtFOSAA 00003	1 ug/mL		
							LCM2-6:FTS 00003	0.95 ug/mL		
							LCM2-8:2FTS 00003	0.958 ug/mL		
..LCd-NEtFOSA-M 00004	06/10/21		WELLINGTON, Lot dNetFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL		
..LCd-NMeFOSA-M 00003	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL		
..LCd3-NMeFOSAA 00003	05/31/21		WELLINGTON, Lot d3NMeFOSAA0516		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL		
..LCd5-NEtFOSAA 00003	08/02/21		WELLINGTON, Lot d5NEtFOSAA0716		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL		
..LCM2-6:FTS 00003	01/08/21		WELLINGTON, Lot M262FTS0116		(Purchased Reagent)		M2-6:2FTS	47.5 ug/mL		
..LCM2-8:2FTS 00003	01/08/21		WELLINGTON, Lot M282FTS0116		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL		
.LCMPFCSU_00057	10/04/17	04/04/17	Methanol, Lot Baker 141039	50000 uL	LCM2PFHxDA_00008	1000 uL	13C2-PFHxDA	1 ug/mL		
							LCM2PFTeDA_00007	1000 uL	13C2-PFTeDA	1 ug/mL
							LCM4PFHPA_00007	1000 uL	13C4-PFHpA	1 ug/mL
							LCM5PFPEA_00008	1000 uL	13C5-PFPeA	1 ug/mL
							LCM8FOSA_00011	1000 uL	13C8 FOSA	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMPFBA 00008	1000 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00011	1000 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00008	1000 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00012	1000 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00008	1000 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA 00008	1000 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00012	1000 uL	13C4 PFOA	1 ug/mL
					LCMPFOS 00018	1000 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00009	1000 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA 00008	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA 00007	12/07/20		Wellington Laboratories, Lot M2PFTeDA1115		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA 00007	05/27/21		Wellington Laboratories, Lot M4PFHpa0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00008	05/22/20		Wellington Laboratories, Lot M5PFPeA0515		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00011	12/22/17		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00008	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00011	08/19/20		Wellington Laboratories, Lot MPFDA0815		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00008	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00012	04/08/21		Wellington Laboratories, Lot MPFHxA0416		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00008	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00008	04/13/19		Wellington Laboratories, Lot MPFNA0414		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00012	01/22/21		Wellington Laboratories, Lot MPFOA0116		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00018	08/03/21		Wellington Laboratories, Lot MPFOS0816		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00009	02/12/21		Wellington Laboratories, Lot MPFUdA0216		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFCSP_00086	09/02/17	04/05/17	Methanol, Lot 141039	10000 uL	LCPFBS_00005	100 uL	Perfluorobutanesulfonic acid (PFBS)	0.442 ug/mL
					LCPFOA 00007	100 uL	Perfluorooctanoic acid (PFOA)	0.5 ug/mL
					LCPFOS-br_00002	100 uL	Perfluorooctanesulfonic acid (PFOS)	0.464 ug/mL
..LCPFBS_00005	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFOS-br_00002	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
<b>LCPFC_FULL-L5_00005</b>	09/02/17	05/30/17	MeOH/H2O, Lot 090285	5000 uL	LCMPFC2SU_00019	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NMeFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
					LCMPFCSU_00069	250 uL	13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpa	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFC2SP_00030	250 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	50 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	50 ng/mL
							MeFOSA	50 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	50 ng/mL
					LCPFCIS_00002	50 uL	13C2-PFOA	50 ng/mL
					LCPFCSP_00096	250 uL	Perfluorobutyric acid	50 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	44.2 ng/mL
							Perfluorodecanoic acid	50 ng/mL
							Perfluorododecanoic acid	50 ng/mL
							Perfluorodecane Sulfonic acid	48.2 ng/mL
							Perfluoroheptanoic acid	50 ng/mL
							Perfluoroheptanesulfonic Acid	47.6 ng/mL
							Perfluorohexanoic acid	50 ng/mL
							Perfluorohexadecanoic acid	50 ng/mL
							Perfluorohexanesulfonic acid	45.5 ng/mL
							Perfluorononanoic acid	50 ng/mL
							Perfluorooctanoic acid (PFOA)	50 ng/mL
							Perfluorooctadecanoic acid	50 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	46.4 ng/mL
		Perfluorooctane Sulfonamide	50 ng/mL					
		Perfluoropentanoic acid	50 ng/mL					
		Perfluorotetradecanoic acid	50 ng/mL					
		Perfluorotridecanoic acid	50 ng/mL					
		Perfluoroundecanoic acid	50 ng/mL					
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NEtFOSA-M_00005	100 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00004	100 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00004	100 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA_00004	100 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FtS_00004	100 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS_00004	100 uL	M2-8:2FtS	0.958 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS 00004	02/17/22		WELLINGTON, Lot M262FtS0217		(Purchased Reagent)		M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS 00004	08/22/21		WELLINGTON, Lot M282FtS0816		(Purchased Reagent)		M2-8:2FtS	47.9 ug/mL
.LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00008	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00008	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA_00009	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00012	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00009	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00013	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA_00009	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00014	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00009	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA_00009	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00013	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00020	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA_00010	200 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA 00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA 00008	12/07/20		Wellington Laboratories, Lot M2PFTeDA1115		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA 00008	05/27/21		Wellington Laboratories, Lot M4PFHpA0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00009	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00009	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00013	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00009	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00013	10/18/21		Wellington Laboratories, Lot MPFOA1016		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00020	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00010	11/22/21		Wellington Laboratories, Lot MPFUdA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPC2SP_00030	10/14/17	04/14/17	Methanol, Lot 104453	10000 uL	LC4:2FtS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FtS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FtS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfonamide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00002	200 uL	MeFOSA	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
..LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82FTS1015		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00003	05/24/21		WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M_00002	05/24/21		WELLINGTON, Lot NMeFOSA0714M		(Purchased Reagent)		MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00002	10/17/17	04/17/17	Methanol, Lot 14139	2000 uL	LCM2PFOA_00005	200 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCPFCSP_00096	09/02/17	05/24/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00009	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA_00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA_00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA_00006	05/27/21		Wellington Laboratories, Lot PFBA0516		(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA_00006	05/31/21		Wellington Laboratories, Lot PFDA0516		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA_00006	05/31/21		Wellington Laboratories, Lot PFDoA0516		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS_00005	07/02/20		Wellington Laboratories, Lot LPFDS0615		(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpA_00006	01/22/21		Wellington Laboratories, Lot PFHpA0116		(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
..LCPFHpS_00010	11/06/20		Wellington Laboratories, Lot LPFHpS1115		(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFHxA 00005	12/22/20		Wellington Laboratories, Lot PFHxA1215		(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL
..LCPFHxDA 00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516		(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL
..LCPFHxS-br 00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615		(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA 00007	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA 00007	04/29/21		Wellington Laboratories, Lot PFODA0416		(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
..LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
..LCPFOSA 00009	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
..LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
..LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
..LCPFuDA 00006	08/19/20		Wellington Laboratories, Lot PFUdA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
<b>LCPFC_FULL-L5_00008</b>	12/27/17	07/07/17	MeOH/H2O, Lot 090285	5000 uL	LCMPFC_ALL_SU_00001	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
							13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
					13C4 PFOA	50 ng/mL		
					13C4 PFOS	47.8 ng/mL		
					13C2 PFUnA	50 ng/mL		
					LCPFC2SP_00037	250 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	46.7 ng/mL
							Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	47.4 ng/mL
							Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	47.9 ng/mL
		N-ethylperfluoro-1-octanesulfo namide	50 ng/mL					
		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ng/mL					
		MeFOSA	50 ng/mL					

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							N-methyl perfluorooctane sulfonamidoacetic acid	50 ng/mL
					LCPFCIS_00003	50 uL	13C2-PFOA	50 ng/mL
					LCPFCSP_00103	250 uL	Perfluorobutyric acid	50 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	44.2 ng/mL
							Perfluorodecanoic acid	50 ng/mL
							Perfluorododecanoic acid	50 ng/mL
							Perfluorodecane Sulfonic acid	48.2 ng/mL
							Perfluoroheptanoic acid	50 ng/mL
							Perfluoroheptanesulfonic Acid	47.6 ng/mL
							Perfluorohexanoic acid	50 ng/mL
							Perfluorohexadecanoic acid	50 ng/mL
							Perfluorohexanesulfonic acid	45.5 ng/mL
							Perfluorononanoic acid	50 ng/mL
							Perfluorooctanoic acid (PFOA)	50 ng/mL
							Perfluorooctadecanoic acid	50 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	46.4 ng/mL
							Perfluorooctane Sulfonamide	50 ng/mL
							Perfluoropentanoic acid	50 ng/mL
							Perfluorotetradecanoic acid	50 ng/mL
							Perfluorotridecanoic acid	50 ng/mL
							Perfluoroundecanoic acid	50 ng/mL
.LCMPFC_ALL_SU_00001	12/29/17	06/29/17	Methanol, Lot Baker 141039	10000 uL	LCd-NEtFOSA-M_00005	200 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00004	200 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00004	200 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA_00004	200 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS_00004	200 uL	M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS_00004	200 uL	M2-8:2FTS	0.958 ug/mL
					LCM2PFHxDA_00010	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00009	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00009	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA_00010	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00013	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00010	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00015	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA_00010	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00016	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00010	200 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA_00010	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00014	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00022	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUDa_00011	200 uL	13C2 PFUnA	1 ug/mL
..LCd-NEtFOSA-M_00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M_00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA_00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCd5-NETFOSAA 00004	11/22/21		WELLINGTON, Lot d5NETFOSAA1116		(Purchased Reagent)		d5-NETFOSAA	50 ug/mL
..LCM2-6:F2S 00004	02/17/22		WELLINGTON, Lot M262F2S0217		(Purchased Reagent)		M2-6:2F2S	47.5 ug/mL
..LCM2-8:2F2S 00004	08/22/21		WELLINGTON, Lot M282F2S0816		(Purchased Reagent)		M2-8:2F2S	47.9 ug/mL
..LCM2PFHxDA 00010	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTEDA 00009	12/07/20		Wellington Laboratories, Lot M2PFTEDA0217		(Purchased Reagent)		13C2-PFTEDA	50 ug/mL
..LCM4PFHPA 00009	05/27/21		Wellington Laboratories, Lot M4PFHPA0516		(Purchased Reagent)		13C4-PFHpA	50 ug/mL
..LCM5PFPEA 00010	11/22/21		Wellington Laboratories, Lot M5PFPEA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00013	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00010	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00015	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00010	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00016	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00010	02/17/22		Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00010	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00014	04/12/22		Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00022	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFudA 00011	11/22/21		Wellington Laboratories, Lot MPFudA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPF2SP_00037	01/07/18	07/07/17	Methanol, Lot 104453	10 mL	LC4:2F2S_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2F2S_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2F2S_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00004	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00003	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2F2S_00002	12/12/21		WELLINGTON, Lot 42F2S1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2F2S_00003	06/25/21		WELLINGTON, Lot 62F2S0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
..LC8:2F2S_00003	08/22/21		WELLINGTON, Lot 82F2S0816		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00004	05/24/21		WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M_00003	05/24/21		WELLINGTON, Lot NMeFOSA0516M		(Purchased Reagent)		MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCPFCIS_00003	12/30/17	06/30/17	Methanol, Lot 14139	5000 uL	LCM2PFOA_00005	500 uL	13C2-PFOA	5 ug/mL



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCM2PFOA 00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
..LCPFCSP_00103	12/27/17	06/27/17	Methanol, Lot 090285	10000 uL	LCPFBA 00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA 00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHXS-br 00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00010	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUDA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA 00006	05/27/21		Wellington Laboratories, Lot PFBA0516		(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA 00006	05/31/21		Wellington Laboratories, Lot PFDA0516		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA 00006	05/31/21		Wellington Laboratories, Lot PFDoA0516		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS 00005	07/02/20		Wellington Laboratories, Lot LPFDS0615		(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpA 00006	01/22/21		Wellington Laboratories, Lot PFHpA0116		(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
..LCPFHpS 00010	11/06/20		Wellington Laboratories, Lot LPFHPS1115		(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL
..LCPFHxA 00005	12/22/20		Wellington Laboratories, Lot PFHxA1215		(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL
..LCPFHxDA 00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516		(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL
..LCPFHXS-br 00003	07/03/20		Wellington Laboratories, Lot brPFHXS0615		(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA 00007	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA 00007	04/29/21		Wellington Laboratories, Lot PFODA0416		(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
..LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
..LCPFOSA 00010	09/30/21		Wellington Laboratories, Lot FOSA0916I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
..LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
..LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
..LCPFUDA 00006	08/19/20		Wellington Laboratories, Lot PFUDA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
LCPFC_FULL-L6_00005	09/02/17	05/30/17	MeOH/H2O, Lot 090285	5000 uL	LCPMFC2SU_00019	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NMeFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							M2-8:2FTS	47.9 ng/mL
					LCMPFCSU_00069	250 uL	13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFC2SP_00030	500 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	93.4 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	94.8 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	95.8 ng/mL
							N-ethylperfluoro-1-octanesulfoamide	100 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	100 ng/mL
							MeFOSA	100 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	100 ng/mL
							LCPFCIS_00002	50 uL
					LCPFCSP_00096	500 uL	Perfluorobutyric acid	100 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	88.4 ng/mL
							Perfluorodecanoic acid	100 ng/mL
							Perfluorododecanoic acid	100 ng/mL
							Perfluorodecane Sulfonic acid	96.4 ng/mL
							Perfluoroheptanoic acid	100 ng/mL
							Perfluoroheptanesulfonic Acid	95.2 ng/mL
							Perfluorohexanoic acid	100 ng/mL
							Perfluorohexadecanoic acid	100 ng/mL
							Perfluorohexanesulfonic acid	91 ng/mL
							Perfluorononanoic acid	100 ng/mL
							Perfluorooctanoic acid (PFOA)	100 ng/mL
							Perfluorooctadecanoic acid	100 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	92.8 ng/mL
					Perfluorooctane Sulfonamide	100 ng/mL		

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoropentanoic acid	100 ng/mL
							Perfluorotetradecanoic acid	100 ng/mL
							Perfluorotridecanoic acid	100 ng/mL
							Perfluoroundecanoic acid	100 ng/mL
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NEtFOSA-M 00005	100 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M 00004	100 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA 00004	100 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00004	100 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FtS 00004	100 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS 00004	100 uL	M2-8:2FtS	0.958 ug/mL
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNetFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS 00004	02/17/22		WELLINGTON, Lot M262FtS0217		(Purchased Reagent)		M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS 00004	08/22/21		WELLINGTON, Lot M282FtS0816		(Purchased Reagent)		M2-8:2FtS	47.9 ug/mL
.LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTEdA_00008	200 uL	13C2-PFTEdA	1 ug/mL
					LCM4PFHPA_00008	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA_00009	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00012	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00009	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00013	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA_00009	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00014	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00009	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA_00009	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00013	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00020	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA_00010	200 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA 00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTEdA 00008	12/07/20		Wellington Laboratories, Lot M2PFTEdA1115		(Purchased Reagent)		13C2-PFTEdA	50 ug/mL
..LCM4PFHPA 00008	05/27/21		Wellington Laboratories, Lot M4PFHpa0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00009	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00009	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00013	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00009	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00013	10/18/21		Wellington Laboratories, Lot MPFOA1016		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00020	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA 00010	11/22/21		Wellington Laboratories, Lot MPFUdA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFCSU_00030	10/14/17	04/14/17	Methanol, Lot 104453	10000 uL	LC4:2FtS_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LC6:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00002	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
..LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82FTS1015		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00003	05/24/21		WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M_00002	05/24/21		WELLINGTON, Lot NMeFOSA0714M		(Purchased Reagent)		MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00002	10/17/17	04/17/17	Methanol, Lot 14139	2000 uL	LCM2PFOA_00005	200 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCPFCSP_00096	09/02/17	05/24/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHXS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00009	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUDA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA 00006	05/27/21	Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21	Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA 00006	05/31/21	Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA 00006	05/31/21	Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS 00005	07/02/20	Wellington Laboratories, Lot LPFDS0615			(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpA 00006	01/22/21	Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
..LCPFHpS 00010	11/06/20	Wellington Laboratories, Lot LPFHpS1115			(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL
..LCPFHxA 00005	12/22/20	Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL
..LCPFHxDA 00007	05/25/21	Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL
..LCPFHxS-br 00003	07/03/20	Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA 00007	10/23/20	Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA 00007	08/02/21	Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA 00007	04/29/21	Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
..LCPFOS-br_00003	10/14/20	Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
..LCPFOSA 00009	09/02/17	Wellington Laboratories, Lot FOSA0815I			(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00006	05/31/21	Wellington Laboratories, Lot PFPeA0516			(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
..LCPFTeDA 00005	12/09/20	Wellington Laboratories, Lot PFTeDA1215			(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
..LCPFTrDA 00005	02/12/21	Wellington Laboratories, Lot PFTrDA0216			(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
..LCPFUDA 00006	08/19/20	Wellington Laboratories, Lot PFUDA0815			(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
<b>LCPFC_FULL-L6_00006</b>	12/27/17	07/07/17	MeOH/H2O, Lot 090285	5000 uL	LCPFC_ALL_SU_00001	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
							13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
					13C4 PFOS	47.8 ng/mL		
					13C2 PFUnA	50 ng/mL		
LCPFC2SP_00037	500 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	93.4 ng/mL					

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	94.8 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	95.8 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	100 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	100 ng/mL
							MeFOSA	100 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	100 ng/mL
					LCPFCIS_00003	50 uL	13C2-PFOA	50 ng/mL
					LCPFCSP_00103	500 uL	Perfluorobutyric acid	100 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	88.4 ng/mL
							Perfluorodecanoic acid	100 ng/mL
							Perfluorododecanoic acid	100 ng/mL
							Perfluorodecane Sulfonic acid	96.4 ng/mL
							Perfluoroheptanoic acid	100 ng/mL
							Perfluoroheptanesulfonic Acid	95.2 ng/mL
							Perfluorohexanoic acid	100 ng/mL
							Perfluorohexadecanoic acid	100 ng/mL
							Perfluorohexanesulfonic acid	91 ng/mL
							Perfluorononanoic acid	100 ng/mL
							Perfluorooctanoic acid (PFOA)	100 ng/mL
							Perfluorooctadecanoic acid	100 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	92.8 ng/mL
							Perfluorooctane Sulfonamide	100 ng/mL
							Perfluoropentanoic acid	100 ng/mL
							Perfluorotetradecanoic acid	100 ng/mL
							Perfluorotridecanoic acid	100 ng/mL
							Perfluoroundecanoic acid	100 ng/mL
.LCMPFC_ALL_SU_00001	12/29/17	06/29/17	Methanol, Lot Baker 141039	10000 uL	LCd-NETFOSA-M_00005	200 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00004	200 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00004	200 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NETFOSAA_00004	200 uL	d5-NETFOSAA	1 ug/mL
					LCM2-6:FtS_00004	200 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS_00004	200 uL	M2-8:2FtS	0.958 ug/mL
					LCM2PFHxDA_00010	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA_00009	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA_00009	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA_00010	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00013	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00010	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00015	200 uL	13C2 PFDA	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCMPFDoA_00010	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00016	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00010	200 uL	18O2 PFHxS	0.946 ug/mL
					LCMPFNA_00010	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00014	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00022	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUDa_00011	200 uL	13C2 PFUnA	1 ug/mL
..LCd-NETFOA-M_00005	06/10/21		WELLINGTON, Lot dNETFOA0616M		(Purchased Reagent)		d-N-EtFOA-M	50 ug/mL
..LCd-NMeFOA-M_00004	06/10/21		WELLINGTON, Lot dNMeFOA0616M		(Purchased Reagent)		d-N-MeFOA-M	50 ug/mL
..LCd3-NMeFOA_00004	11/22/21		WELLINGTON, Lot d3NMeFOA1116		(Purchased Reagent)		d3-NMeFOA	50 ug/mL
..LCd5-NETFOA_00004	11/22/21		WELLINGTON, Lot d5NETFOA1116		(Purchased Reagent)		d5-NETFOA	50 ug/mL
..LCM2-6:F2S_00004	02/17/22		WELLINGTON, Lot M262F2S0217		(Purchased Reagent)		M2-6:F2S	47.5 ug/mL
..LCM2-8:F2S_00004	08/22/21		WELLINGTON, Lot M282F2S0816		(Purchased Reagent)		M2-8:F2S	47.9 ug/mL
..LCM2PFHxDA_00010	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTEdA_00009	12/07/20		Wellington Laboratories, Lot M2PFTEdA0217		(Purchased Reagent)		13C2-PFTEdA	50 ug/mL
..LCM4PFHPA_00009	05/27/21		Wellington Laboratories, Lot M4PFHPA0516		(Purchased Reagent)		13C4-PFHPA	50 ug/mL
..LCM5PFPEA_00010	11/22/21		Wellington Laboratories, Lot M5PFPEA1116		(Purchased Reagent)		13C5-PFPEA	50 ug/mL
..LCM8FOA_00013	12/22/20		Wellington Laboratories, Lot M8FOA1215I		(Purchased Reagent)		13C8 FOA	50 ug/mL
..LCMPFBA_00010	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA_00015	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA_00010	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA_00016	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS_00010	02/17/22		Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA_00010	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA_00014	04/12/22		Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS_00022	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUDa_00011	11/22/21		Wellington Laboratories, Lot MPFUDa1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPPC2SP_00037	01/07/18	07/07/17	Methanol, Lot 104453	10 mL	LC4:2F2S_00002	200 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2F2S_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2F2S_00003	200 uL	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOA-M_00004	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOA-M_00003	200 uL	MeFOA	1 ug/mL
					LCN-MeFOA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2F2S_00002	12/12/21		WELLINGTON, Lot 42F2S1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2F2S_00003	06/25/21		WELLINGTON, Lot 62F2S0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LC8:2FTS_00003	08/22/21		WELLINGTON, Lot 82FTS0816			(Purchased Reagent)	Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00004	05/24/21		WELLINGTON, Lot NETFOSA0516M			(Purchased Reagent)	N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116			(Purchased Reagent)	N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M_00003	05/24/21		WELLINGTON, Lot NMeFOSA0516M			(Purchased Reagent)	MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116			(Purchased Reagent)	N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS_00003	12/30/17	06/30/17	Methanol, Lot 14139	5000 uL	LCM2PFOA_00005	500 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA_00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613			(Purchased Reagent)	13C2-PFOA	50 ug/mL
.LCPFCSP_00103	12/27/17	06/27/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA_00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA_00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br_00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA_00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA_00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA_00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA_00010	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA_00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA_00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA_00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA_00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA_00006	05/27/21		Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)	Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)	Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA_00006	05/31/21		Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)	Perfluorodecanoic acid	50 ug/mL
..LCPFDoA_00006	05/31/21		Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)	Perfluorododecanoic acid	50 ug/mL
..LCPFDS_00005	07/02/20		Wellington Laboratories, Lot LPFDS0615			(Purchased Reagent)	Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpA_00006	01/22/21		Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)	Perfluoroheptanoic acid	50 ug/mL
..LCPFHpS_00010	11/06/20		Wellington Laboratories, Lot LPFHpS1115			(Purchased Reagent)	Perfluoroheptanesulfonic Acid	47.6 ug/mL
..LCPFHxA_00005	12/22/20		Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)	Perfluorohexanoic acid	50 ug/mL
..LCPFHxDA_00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)	Perfluorohexadecanoic acid	50 ug/mL
..LCPFHxS-br_00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)	Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA_00007	10/23/20		Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)	Perfluorononanoic acid	50 ug/mL
..LCPFOA_00007	08/02/21		Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)	Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA_00007	04/29/21		Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)	Perfluorooctadecanoic acid	50 ug/mL
..LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)	Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCPFOSA 00010	09/30/21		Wellington Laboratories, Lot FOSA0916I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
..LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
..LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
..LCPFUdA 00006	08/19/20		Wellington Laboratories, Lot PFUdA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
<b>LCPFC_FULL-L7_00003</b>	09/02/17	05/30/17	MeOH/H2O, Lot 090285	5000 uL	LCMPFC2SU_00019	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NEtFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
					M2-8:2FTS	47.9 ng/mL		
					LCMPFCSU_00069	250 uL	13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
					13C2 PFUnA	50 ng/mL		
					LCPFC2SP_00030	1000 uL	Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	186.8 ng/mL
							Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	189.6 ng/mL
							Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	191.6 ng/mL
							N-ethylperfluoro-1-octanesulfo namide	200 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	200 ng/mL
							MeFOSA	200 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	200 ng/mL
LCPFCIS_00002	50 uL	13C2-PFOA	50 ng/mL					
LCPFCSP_00096	1000 uL	Perfluorobutyric acid	200 ng/mL					
		Perfluorobutanesulfonic acid (PFBS)	176.8 ng/mL					
		Perfluorodecanoic acid	200 ng/mL					
		Perfluorododecanoic acid	200 ng/mL					
		Perfluorodecane Sulfonic acid	192.8 ng/mL					

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Perfluoroheptanoic acid	200 ng/mL
							Perfluoroheptanesulfonic Acid	190.4 ng/mL
							Perfluorohexanoic acid	200 ng/mL
							Perfluorohexadecanoic acid	200 ng/mL
							Perfluorohexanesulfonic acid	182 ng/mL
							Perfluorononanoic acid	200 ng/mL
							Perfluorooctanoic acid (PFOA)	200 ng/mL
							Perfluorooctadecanoic acid	200 ng/mL
							Perfluorooctanesulfonic acid (PFOS)	185.6 ng/mL
							Perfluorooctane Sulfonamide	200 ng/mL
							Perfluoropentanoic acid	200 ng/mL
							Perfluorotetradecanoic acid	200 ng/mL
							Perfluorotridecanoic acid	200 ng/mL
							Perfluoroundecanoic acid	200 ng/mL
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NEtFOSA-M 00005	100 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M 00004	100 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA 00004	100 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA 00004	100 uL	d5-NEtFOSAA	1 ug/mL
					LCM2-6:FTS 00004	100 uL	M2-6:2FTS	0.95 ug/mL
					LCM2-8:2FTS 00004	100 uL	M2-8:2FTS	0.958 ug/mL
..LCd-NEtFOSA-M 00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M 00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA 00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA 00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FTS 00004	02/17/22		WELLINGTON, Lot M262FTS0217		(Purchased Reagent)		M2-6:2FTS	47.5 ug/mL
..LCM2-8:2FTS 00004	08/22/21		WELLINGTON, Lot M282FTS0816		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL
.LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA 00008	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA 00008	200 uL	13C4-PFHpa	1 ug/mL
					LCM5PFPEA 00009	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA 00012	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA 00009	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00013	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00009	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00014	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00009	200 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA 00009	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00013	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS 00020	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA 00010	200 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA 00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA 00008	12/07/20		Wellington Laboratories, Lot M2PFTeDA1115		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA 00008	05/27/21		Wellington Laboratories, Lot M4PFHPA0516		(Purchased Reagent)		13C4-PFHpa	50 ug/mL
..LCM5PFPEA 00009	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00009	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCMPFDA 00013	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		18O2 PFHxS	47.3 ug/mL
..LCMPFNA 00009	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00013	10/18/21		Wellington Laboratories, Lot MPFOA1016		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00020	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUDa 00010	11/22/21		Wellington Laboratories, Lot MPFUDa1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
.LCPFC2SP_00030	10/14/17	04/14/17	Methanol, Lot 104453	10000 uL	LC4:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FTS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00003	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
					LCN-MeFOSA-M_00002	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2FTS_00002	12/12/21		WELLINGTON, Lot 42FTS1216		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2FTS_00002	06/25/21		WELLINGTON, Lot 62FTS0616		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
..LC8:2FTS_00002	10/23/20		WELLINGTON, Lot 82FTS1015		(Purchased Reagent)		Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00003	05/24/21		WELLINGTON, Lot NETFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfo namide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NETFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M_00002	05/24/21		WELLINGTON, Lot NMeFOSA0714M		(Purchased Reagent)		MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS 00002	10/17/17	04/17/17	Methanol, Lot 14139	2000 uL	LCM2PFOA_00005	200 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA 00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCPFCSP_00096	09/02/17	05/24/17	Methanol, Lot 090285	10000 uL	LCPFBA_00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA_00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA_00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS_00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA_00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS_00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00009	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA 00006	05/27/21		Wellington Laboratories, Lot PFBA0516		(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA 00006	05/31/21		Wellington Laboratories, Lot PFDA0516		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA 00006	05/31/21		Wellington Laboratories, Lot PFDoA0516		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS 00005	07/02/20		Wellington Laboratories, Lot LPFDS0615		(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpA 00006	01/22/21		Wellington Laboratories, Lot PFHpA0116		(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
..LCPFHpS 00010	11/06/20		Wellington Laboratories, Lot LPFHpS1115		(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL
..LCPFHxA 00005	12/22/20		Wellington Laboratories, Lot PFHxA1215		(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL
..LCPFHxDA 00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516		(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL
..LCPFHxS-br 00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615		(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL
..LCPFNA 00007	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
..LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
..LCPFODA 00007	04/29/21		Wellington Laboratories, Lot PFODA0416		(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
..LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
..LCPFOSA 00009	09/02/17		Wellington Laboratories, Lot FOSA0815I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
..LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
..LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
..LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
..LCPFUdA 00006	08/19/20		Wellington Laboratories, Lot PFUdA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL
<b>LCPFC_FULL-L7_00004</b>	12/27/17	07/07/17	MeOH/H2O, Lot 090285	5000 uL	LCPMFC_ALL_SU_00001	250 uL	d-N-EtFOSA-M	50 ng/mL
							d-N-MeFOSA-M	50 ng/mL
							d3-NMeFOSAA	50 ng/mL
							d5-NetFOSAA	50 ng/mL
							M2-6:2FTS	47.5 ng/mL
							M2-8:2FTS	47.9 ng/mL
							13C2-PFHxDA	50 ng/mL
							13C2-PFTeDA	50 ng/mL
							13C4-PFHpA	50 ng/mL
							13C5-PFPeA	50 ng/mL
							13C8 FOSA	50 ng/mL
							13C4 PFBA	50 ng/mL
							13C2 PFDA	50 ng/mL
							13C2 PFDoA	50 ng/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							13C2 PFHxA	50 ng/mL
							18O2 PFHxS	47.3 ng/mL
							13C5 PFNA	50 ng/mL
							13C4 PFOA	50 ng/mL
							13C4 PFOS	47.8 ng/mL
							13C2 PFUnA	50 ng/mL
					LCPFC2SP_00037	1000 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	186.8 ng/mL
							Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	189.6 ng/mL
							Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	191.6 ng/mL
							N-ethylperfluoro-1-octanesulfonamide	200 ng/mL
							N-ethyl perfluorooctane sulfonamidoacetic acid	200 ng/mL
							MeFOSA	200 ng/mL
							N-methyl perfluorooctane sulfonamidoacetic acid	200 ng/mL
					LCPFCIS_00003	50 uL	13C2-PFOA	50 ng/mL
					LCPFCSP_00103	1000 uL	Perfluorobutyric acid	200 ng/mL
							Perfluorobutanesulfonic acid (PFBS)	176.8 ng/mL
							Perfluorodecanoic acid	200 ng/mL
							Perfluorododecanoic acid	200 ng/mL
							Perfluorodecane Sulfonic acid	192.8 ng/mL
							Perfluoroheptanoic acid	200 ng/mL
							Perfluoroheptanesulfonic Acid	190.4 ng/mL
							Perfluorohexanoic acid	200 ng/mL
							Perfluorohexadecanoic acid	200 ng/mL
							Perfluorohexanesulfonic acid	182 ng/mL
							Perfluorononanoic acid	200 ng/mL
							Perfluorooctanoic acid (PFOA)	200 ng/mL
		Perfluorooctadecanoic acid	200 ng/mL					
		Perfluorooctanesulfonic acid (PFOS)	185.6 ng/mL					
		Perfluorooctane Sulfonamide	200 ng/mL					
		Perfluoropentanoic acid	200 ng/mL					
		Perfluorotetradecanoic acid	200 ng/mL					
		Perfluorotridecanoic acid	200 ng/mL					
		Perfluoroundecanoic acid	200 ng/mL					
.LCMPFC_ALL_SU_00001	12/29/17	06/29/17	Methanol, Lot Baker 141039	10000 uL	LCd-NEtFOSA-M_00005	200 uL	d-N-EtFOSA-M	1 ug/mL
					LCd-NMeFOSA-M_00004	200 uL	d-N-MeFOSA-M	1 ug/mL
					LCd3-NMeFOSAA_00004	200 uL	d3-NMeFOSAA	1 ug/mL
					LCd5-NEtFOSAA_00004	200 uL	d5-NEtFOSAA	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCM2-6:FtS_00004	200 uL	M2-6:2FtS	0.95 ug/mL
					LCM2-8:2FtS_00004	200 uL	M2-8:2FtS	0.958 ug/mL
					LCM2PFHxDA_00010	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFtEDA_00009	200 uL	13C2-PFtEDA	1 ug/mL
					LCM4PFHPA_00009	200 uL	13C4-PFHpA	1 ug/mL
					LCM5PFPEA_00010	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA_00013	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA_00010	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA_00015	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA_00010	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA_00016	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS_00010	200 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA_00010	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA_00014	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS_00022	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUdA_00011	200 uL	13C2 PFUnA	1 ug/mL
..LCd-NEtFOSA-M_00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL
..LCd-NMeFOSA-M_00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL
..LCd3-NMeFOSAA_00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL
..LCd5-NEtFOSAA_00004	11/22/21		WELLINGTON, Lot d5NEtFOSAA1116		(Purchased Reagent)		d5-NEtFOSAA	50 ug/mL
..LCM2-6:FtS_00004	02/17/22		WELLINGTON, Lot M262FtS0217		(Purchased Reagent)		M2-6:2FtS	47.5 ug/mL
..LCM2-8:2FtS_00004	08/22/21		WELLINGTON, Lot M282FtS0816		(Purchased Reagent)		M2-8:2FtS	47.9 ug/mL
..LCM2PFHxDA_00010	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFtEDA_00009	12/07/20		Wellington Laboratories, Lot M2PFtEDA0217		(Purchased Reagent)		13C2-PFtEDA	50 ug/mL
..LCM4PFHPA_00009	05/27/21		Wellington Laboratories, Lot M4PFHpA0516		(Purchased Reagent)		13C4-PFHpA	50 ug/mL
..LCM5PFPEA_00010	11/22/21		Wellington Laboratories, Lot M5PFPeA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA_00013	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA_00010	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA_00015	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA_00010	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA_00016	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS_00010	02/17/22		Wellington Laboratories, Lot MPFHxS0217		(Purchased Reagent)		1802 PFHxS	47.3 ug/mL
..LCMPFNA_00010	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA_00014	04/12/22		Wellington Laboratories, Lot MPFOA0417		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS_00022	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUdA_00011	11/22/21		Wellington Laboratories, Lot MPFUdA1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFC2SP_00037	01/07/18	07/07/17	Methanol, Lot 104453	10 mL	LC4:2FtS_00002	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorohexane sulfonate (4:2)	0.934 ug/mL
					LC6:2FtS_00003	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorooctane sulfonate (6:2)	0.948 ug/mL
					LC8:2FtS_00003	200 uL	Sodium 1H, 1H, 2H, 2H-perfluorodecane sulfonate (8:2)	0.958 ug/mL
					LCN-EtFOSA-M_00004	200 uL	N-ethylperfluoro-1-octanesulfo namide	1 ug/mL
					LCN-EtFOSAA_00002	200 uL	N-ethyl perfluorooctane sulfonamidoacetic acid	1 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCN-MeFOSA-M 00003	200 uL	MeFOSA	1 ug/mL
					LCN-MeFOSAA_00003	200 uL	N-methyl perfluorooctane sulfonamidoacetic acid	1 ug/mL
..LC4:2Fts_00002	12/12/21		WELLINGTON, Lot 42Fts1216		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorohexane sulfonate (4:2)	46.7 ug/mL
..LC6:2Fts_00003	06/25/21		WELLINGTON, Lot 62Fts0616		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorooctane sulfonate (6:2)	47.4 ug/mL
..LC8:2Fts_00003	08/22/21		WELLINGTON, Lot 82Fts0816		(Purchased Reagent)		Sodium 1H,1H,2H,2H-perfluorodecane sulfonate (8:2)	47.9 ug/mL
..LCN-EtFOSA-M_00004	05/24/21		WELLINGTON, Lot NetFOSA0516M		(Purchased Reagent)		N-ethylperfluoro-1-octanesulfonamide	50 ug/mL
..LCN-EtFOSAA_00002	01/20/21		WELLINGTON, Lot NetFOSAA0116		(Purchased Reagent)		N-ethyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
..LCN-MeFOSA-M 00003	05/24/21		WELLINGTON, Lot NMeFOSA0516M		(Purchased Reagent)		MeFOSA	50 ug/mL
..LCN-MeFOSAA_00003	01/20/21		WELLINGTON, Lot NMeFOSAA0116		(Purchased Reagent)		N-methyl perfluorooctane sulfonamidoacetic acid	50 ug/mL
.LCPFCIS 00003	12/30/17	06/30/17	Methanol, Lot 14139	5000 uL	LCM2PFOA 00005	500 uL	13C2-PFOA	5 ug/mL
..LCM2PFOA 00005	06/19/18		Wellington Laboratories, Lot M2PFOA0613		(Purchased Reagent)		13C2-PFOA	50 ug/mL
.LCPFCSP_00103	12/27/17	06/27/17	Methanol, Lot 090285	10000 uL	LCPFBA 00006	200 uL	Perfluorobutyric acid	1 ug/mL
					LCPFBS_00006	200 uL	Perfluorobutanesulfonic acid (PFBS)	0.884 ug/mL
					LCPFDA 00006	200 uL	Perfluorodecanoic acid	1 ug/mL
					LCPFDoA 00006	200 uL	Perfluorododecanoic acid	1 ug/mL
					LCPFDS 00005	200 uL	Perfluorodecane Sulfonic acid	0.964 ug/mL
					LCPFHpA 00006	200 uL	Perfluoroheptanoic acid	1 ug/mL
					LCPFHpS 00010	200 uL	Perfluoroheptanesulfonic Acid	0.952 ug/mL
					LCPFHxA 00005	200 uL	Perfluorohexanoic acid	1 ug/mL
					LCPFHxDA 00007	200 uL	Perfluorohexadecanoic acid	1 ug/mL
					LCPFHxS-br 00003	200 uL	Perfluorohexanesulfonic acid	0.91 ug/mL
					LCPFNA 00007	200 uL	Perfluorononanoic acid	1 ug/mL
					LCPFOA 00007	200 uL	Perfluorooctanoic acid (PFOA)	1 ug/mL
					LCPFODA 00007	200 uL	Perfluorooctadecanoic acid	1 ug/mL
					LCPFOS-br_00003	200 uL	Perfluorooctanesulfonic acid (PFOS)	0.928 ug/mL
					LCPFOSA 00010	200 uL	Perfluorooctane Sulfonamide	1 ug/mL
					LCPFPeA 00006	200 uL	Perfluoropentanoic acid	1 ug/mL
					LCPFTeDA 00005	200 uL	Perfluorotetradecanoic acid	1 ug/mL
					LCPFTrDA 00005	200 uL	Perfluorotridecanoic acid	1 ug/mL
					LCPFUdA 00006	200 uL	Perfluoroundecanoic acid	1 ug/mL
..LCPFBA 00006	05/27/21		Wellington Laboratories, Lot PFBA0516		(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
..LCPFBS_00006	03/15/21		Wellington Laboratories, Lot LPFBS0316		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
..LCPFDA 00006	05/31/21		Wellington Laboratories, Lot PFDA0516		(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
..LCPFDoA 00006	05/31/21		Wellington Laboratories, Lot PFDoA0516		(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
..LCPFDS 00005	07/02/20		Wellington Laboratories, Lot LPFDS0615		(Purchased Reagent)		Perfluorodecane Sulfonic acid	48.2 ug/mL
..LCPFHpA 00006	01/22/21		Wellington Laboratories, Lot PFHpA0116		(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration		
					Reagent ID	Volume Added				
..LCPFHps 00010	11/06/20		Wellington Laboratories, Lot LPPHps1115		(Purchased Reagent)		Perfluoroheptanesulfonic Acid	47.6 ug/mL		
..LCPFHxA 00005	12/22/20		Wellington Laboratories, Lot PFHxA1215		(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL		
..LCPFHxDA 00007	05/25/21		Wellington Laboratories, Lot PFHxDA0516		(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL		
..LCPFHxS-br 00003	07/03/20		Wellington Laboratories, Lot brPFHxSK0615		(Purchased Reagent)		Perfluorohexanesulfonic acid	45.5 ug/mL		
..LCPFNA 00007	10/23/20		Wellington Laboratories, Lot PFNA1015		(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL		
..LCPFOA 00007	08/02/21		Wellington Laboratories, Lot PFOA0716		(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL		
..LCPFODA 00007	04/29/21		Wellington Laboratories, Lot PFODA0416		(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL		
..LCPFOS-br_00003	10/14/20		Wellington Laboratories, Lot brPFOSK1015		(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL		
..LCPFOSA 00010	09/30/21		Wellington Laboratories, Lot FOSA0916I		(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL		
..LCPFPeA 00006	05/31/21		Wellington Laboratories, Lot PFPeA0516		(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL		
..LCPFTeDA 00005	12/09/20		Wellington Laboratories, Lot PFTeDA1215		(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL		
..LCPFTrDA 00005	02/12/21		Wellington Laboratories, Lot PFTTrDA0216		(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL		
..LCPFUdA 00006	08/19/20		Wellington Laboratories, Lot PFUdA0815		(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL		
<b>LCPFCIC_FULL_00003</b>	09/02/17	05/30/17	MeOH/H2O, Lot 09285	5050 uL	LCMPFC2SU_00019	250 uL	d-N-EtFOSA-M	49.505 ng/mL		
							d-N-MeFOSA-M	49.505 ng/mL		
							d3-NMeFOSAA	49.505 ng/mL		
							d5-NEtFOSAA	49.505 ng/mL		
							M2-6:2FTS	47.0297 ng/mL		
							M2-8:2FTS	47.4257 ng/mL		
							LCMPFCSU_00069	250 uL	13C2-PFHxDA	49.505 ng/mL
									13C2-PFTeDA	49.505 ng/mL
									13C4-PFHpA	49.505 ng/mL
									13C5-PFPeA	49.505 ng/mL
					13C8 FOSA	49.505 ng/mL				
					13C4 PFBA	49.505 ng/mL				
					13C2 PFDA	49.505 ng/mL				
					13C2 PFDoA	49.505 ng/mL				
					13C2 PFHxA	49.505 ng/mL				
					18O2 PFHxS	46.8317 ng/mL				
					13C5 PFNA	49.505 ng/mL				
					13C4 PFOA	49.505 ng/mL				
					13C4 PFOS	47.3267 ng/mL				
					13C2 PFUnA	49.505 ng/mL				
LCPFACMXB_00007	125 uL	Perfluorobutanesulfonic acid (PFBS)	43.8119 ng/mL							
		Perfluorooctanesulfonic acid (PFOS)	47.2772 ng/mL							
		Perfluorooctanoic acid (PFOA)	49.505 ng/mL							
.LCMPFC2SU_00019	11/30/17	05/30/17	Methanol, Lot 104453	5000 uL	LCd-NEtFOSA-M_00005	100 uL	d-N-EtFOSA-M	1 ug/mL		
							LCd-NMeFOSA-M_00004	100 uL	d-N-MeFOSA-M	1 ug/mL
							LCd3-NMeFOSAA_00004	100 uL	d3-NMeFOSAA	1 ug/mL
							LCd5-NEtFOSAA_00004	100 uL	d5-NEtFOSAA	1 ug/mL
							LCM2-6:FtS_00004	100 uL	M2-6:2FTS	0.95 ug/mL
							LCM2-8:2FtS_00004	100 uL	M2-8:2FTS	0.958 ug/mL
..LCd-NEtFOSA-M_00005	06/10/21		WELLINGTON, Lot dNEtFOSA0616M		(Purchased Reagent)		d-N-EtFOSA-M	50 ug/mL		
..LCd-NMeFOSA-M_00004	06/10/21		WELLINGTON, Lot dNMeFOSA0616M		(Purchased Reagent)		d-N-MeFOSA-M	50 ug/mL		
..LCd3-NMeFOSAA_00004	11/22/21		WELLINGTON, Lot d3NMeFOSAA1116		(Purchased Reagent)		d3-NMeFOSAA	50 ug/mL		



REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
..LCd5-NETFOSAA 00004	11/22/21		WELLINGTON, Lot d5NETFOSAA1116		(Purchased Reagent)		d5-NETFOSAA	50 ug/mL
..LCM2-6:FTS 00004	02/17/22		WELLINGTON, Lot M262FTS0217		(Purchased Reagent)		M2-6:2FTS	47.5 ug/mL
..LCM2-8:2FTS 00004	08/22/21		WELLINGTON, Lot M282FTS0816		(Purchased Reagent)		M2-8:2FTS	47.9 ug/mL
..LCMPFCSU_00069	11/24/17	05/24/17	Methanol, Lot Baker 141039	10000 uL	LCM2PFHxDA_00009	200 uL	13C2-PFHxDA	1 ug/mL
					LCM2PFTeDA 00008	200 uL	13C2-PFTeDA	1 ug/mL
					LCM4PFHPA 00008	200 uL	13C4-PFHpA	1 ug/mL
					LCM5PFPEA 00009	200 uL	13C5-PFPeA	1 ug/mL
					LCM8FOSA 00012	200 uL	13C8 FOSA	1 ug/mL
					LCMPFBA 00009	200 uL	13C4 PFBA	1 ug/mL
					LCMPFDA 00013	200 uL	13C2 PFDA	1 ug/mL
					LCMPFDoA 00009	200 uL	13C2 PFDoA	1 ug/mL
					LCMPFHxA 00014	200 uL	13C2 PFHxA	1 ug/mL
					LCMPFHxS 00009	200 uL	1802 PFHxS	0.946 ug/mL
					LCMPFNA 00009	200 uL	13C5 PFNA	1 ug/mL
					LCMPFOA 00013	200 uL	13C4 PFOA	1 ug/mL
					LCMPFOS 00020	200 uL	13C4 PFOS	0.956 ug/mL
					LCMPFUDa 00010	200 uL	13C2 PFUnA	1 ug/mL
..LCM2PFHxDA 00009	01/07/21		Wellington Laboratories, Lot M2PFHxDA1112		(Purchased Reagent)		13C2-PFHxDA	50 ug/mL
..LCM2PFTeDA 00008	12/07/20		Wellington Laboratories, Lot M2PFTeDA1115		(Purchased Reagent)		13C2-PFTeDA	50 ug/mL
..LCM4PFHPA 00008	05/27/21		Wellington Laboratories, Lot M4PFHpa0516		(Purchased Reagent)		13C4-PFHpA	50 ug/mL
..LCM5PFPEA 00009	11/22/21		Wellington Laboratories, Lot M5PFPA1116		(Purchased Reagent)		13C5-PFPeA	50 ug/mL
..LCM8FOSA 00012	12/22/20		Wellington Laboratories, Lot M8FOSA1215I		(Purchased Reagent)		13C8 FOSA	50 ug/mL
..LCMPFBA 00009	05/24/21		Wellington Laboratories, Lot MPFBA0516		(Purchased Reagent)		13C4 PFBA	50 ug/mL
..LCMPFDA 00013	09/30/21		Wellington Laboratories, Lot MPFDA0916		(Purchased Reagent)		13C2 PFDA	50 ug/mL
..LCMPFDoA 00009	04/08/21		Wellington Laboratories, Lot MPFDoA0416		(Purchased Reagent)		13C2 PFDoA	50 ug/mL
..LCMPFHxA 00014	11/22/21		Wellington Laboratories, Lot MPFHxA1116		(Purchased Reagent)		13C2 PFHxA	50 ug/mL
..LCMPFHxS 00009	10/23/20		Wellington Laboratories, Lot MPFHxS1015		(Purchased Reagent)		1802 PFHxS	47.3 ug/mL
..LCMPFNA 00009	09/30/21		Wellington Laboratories, Lot MPFNA0916		(Purchased Reagent)		13C5 PFNA	50 ug/mL
..LCMPFOA 00013	10/18/21		Wellington Laboratories, Lot MPFOA1016		(Purchased Reagent)		13C4 PFOA	50 ug/mL
..LCMPFOS 00020	12/12/21		Wellington Laboratories, Lot MPFOS1216		(Purchased Reagent)		13C4 PFOS	47.8 ug/mL
..LCMPFUDa 00010	11/22/21		Wellington Laboratories, Lot MPFUDa1116		(Purchased Reagent)		13C2 PFUnA	50 ug/mL
..LCPFACMXB_00007	11/06/20		Wellington Laboratories, Lot PFACMXB1115		(Purchased Reagent)		Perfluorobutanesulfonic acid (PFBS)	1.77 ug/mL
							Perfluorooctanesulfonic acid (PFOS)	1.91 ug/mL
							Perfluorooctanoic acid (PFOA)	2 ug/mL
LCPFCSP_00095	09/02/17	05/19/17	Methanol, Lot 090285	250 mL	LCPFBA 00005	100 uL	Perfluorobutyric acid	0.02 ug/mL
					LCPFBS_00005	100 uL	Perfluorobutane Sulfonate	0.01768 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	0.01768 ug/mL
					LCPFDA 00006	100 uL	Perfluorodecanoic acid	0.02 ug/mL
					LCPFDoA 00006	100 uL	Perfluorododecanoic acid	0.02 ug/mL
					LCPFDS_00006	100 uL	Perfluorodecane Sulfonate	0.01928 ug/mL
							Perfluorodecane Sulfonic acid	0.01928 ug/mL
					LCPFHpa 00006	100 uL	Perfluoroheptanoic acid	0.02 ug/mL
					LCPFHps_00009	100 uL	Perfluoroheptane Sulfonate	0.01904 ug/mL
							Perfluoroheptanesulfonic Acid	0.01904 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					LCPFHxA 00005	100 uL	Perfluorohexanoic acid	0.02 ug/mL
					LCPFHxDA 00006	100 uL	Perfluorohexadecanoic acid	0.02 ug/mL
					LCPFHxS-br_00002	100 uL	Perfluorohexane Sulfonate	0.0182 ug/mL
							Perfluorohexanesulfonic acid	0.0182 ug/mL
					LCPFNA 00006	100 uL	Perfluorononanoic acid	0.02 ug/mL
					LCPFOA 00007	100 uL	Perfluorooctanoic acid (PFOA)	0.02 ug/mL
					LCPFODA 00006	100 uL	Perfluorooctadecanoic acid	0.02 ug/mL
					LCPFOS-br_00002	100 uL	Perfluorooctanesulfonic acid (PFOS)	0.01856 ug/mL
					LCPFOSA 00009	100 uL	Perfluorooctane Sulfonamide	0.02 ug/mL
					LCPFPeA 00006	100 uL	Perfluoropentanoic acid	0.02 ug/mL
					LCPFTeDA 00005	100 uL	Perfluorotetradecanoic acid	0.02 ug/mL
					LCPFTrDA 00005	100 uL	Perfluorotridecanoic acid	0.02 ug/mL
					LCPFUdA 00005	100 uL	Perfluoroundecanoic acid	0.02 ug/mL
.LCPFBA 00005	05/27/21	Wellington Laboratories, Lot PFBA0516			(Purchased Reagent)		Perfluorobutyric acid	50 ug/mL
.LCPFBS_00005	03/15/21	Wellington Laboratories, Lot LPFBS0316			(Purchased Reagent)		Perfluorobutane Sulfonate	44.2 ug/mL
							Perfluorobutanesulfonic acid (PFBS)	44.2 ug/mL
.LCPFDA 00006	05/31/21	Wellington Laboratories, Lot PFDA0516			(Purchased Reagent)		Perfluorodecanoic acid	50 ug/mL
.LCPFDoA 00006	05/31/21	Wellington Laboratories, Lot PFDoA0516			(Purchased Reagent)		Perfluorododecanoic acid	50 ug/mL
.LCPFDS_00006	05/24/21	Wellington Laboratories, Lot LPFDS0516			(Purchased Reagent)		Perfluorodecane Sulfonate	48.2 ug/mL
							Perfluorodecane Sulfonic acid	48.2 ug/mL
.LCPFHpA 00006	01/22/21	Wellington Laboratories, Lot PFHpA0116			(Purchased Reagent)		Perfluoroheptanoic acid	50 ug/mL
.LCPFHpS_00009	11/06/20	Wellington Laboratories, Lot LPFHpS1115			(Purchased Reagent)		Perfluoroheptane Sulfonate	47.6 ug/mL
							Perfluoroheptanesulfonic Acid	47.6 ug/mL
.LCPFHxA 00005	12/22/20	Wellington Laboratories, Lot PFHxA1215			(Purchased Reagent)		Perfluorohexanoic acid	50 ug/mL
.LCPFHxDA 00006	05/25/21	Wellington Laboratories, Lot PFHxDA0516			(Purchased Reagent)		Perfluorohexadecanoic acid	50 ug/mL
.LCPFHxS-br_00002	07/03/20	Wellington Laboratories, Lot brPFHxSK0615			(Purchased Reagent)		Perfluorohexane Sulfonate	45.5 ug/mL
							Perfluorohexanesulfonic acid	45.5 ug/mL
.LCPFNA 00006	10/23/20	Wellington Laboratories, Lot PFNA1015			(Purchased Reagent)		Perfluorononanoic acid	50 ug/mL
.LCPFOA 00007	08/02/21	Wellington Laboratories, Lot PFOA0716			(Purchased Reagent)		Perfluorooctanoic acid (PFOA)	50 ug/mL
.LCPFODA 00006	04/29/21	Wellington Laboratories, Lot PFODA0416			(Purchased Reagent)		Perfluorooctadecanoic acid	50 ug/mL
.LCPFOS-br_00002	10/14/20	Wellington Laboratories, Lot brPFOSK1015			(Purchased Reagent)		Perfluorooctanesulfonic acid (PFOS)	46.4 ug/mL
.LCPFOSA 00009	09/02/17	Wellington Laboratories, Lot FOSA0815I			(Purchased Reagent)		Perfluorooctane Sulfonamide	50 ug/mL
.LCPFPeA 00006	05/31/21	Wellington Laboratories, Lot PFPeA0516			(Purchased Reagent)		Perfluoropentanoic acid	50 ug/mL
.LCPFTeDA 00005	12/09/20	Wellington Laboratories, Lot PFTeDA1215			(Purchased Reagent)		Perfluorotetradecanoic acid	50 ug/mL
.LCPFTrDA 00005	02/12/21	Wellington Laboratories, Lot PFTrDA0216			(Purchased Reagent)		Perfluorotridecanoic acid	50 ug/mL
.LCPFUdA 00005	08/19/20	Wellington Laboratories, Lot PFUdA0815			(Purchased Reagent)		Perfluoroundecanoic acid	50 ug/mL

Reagent

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**LC4 : 2FTS\_00002**

R: SBC 3/31/17



896827  
ID: LC4:2FTS\_00002  
Exp: 12/12/21 Prpd:  
4:2FTS

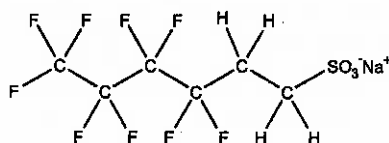


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 4:2FTS **LOT NUMBER:** 42FTS1216  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorohexane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>4</sub>F<sub>9</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 350.13  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
46.7 ± 2.3 µg/ml (4:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/12/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 12/12/2021  
**RECOMMENDED STORAGE:** Refrigerate ampoule

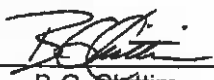
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 12/21/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • Info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

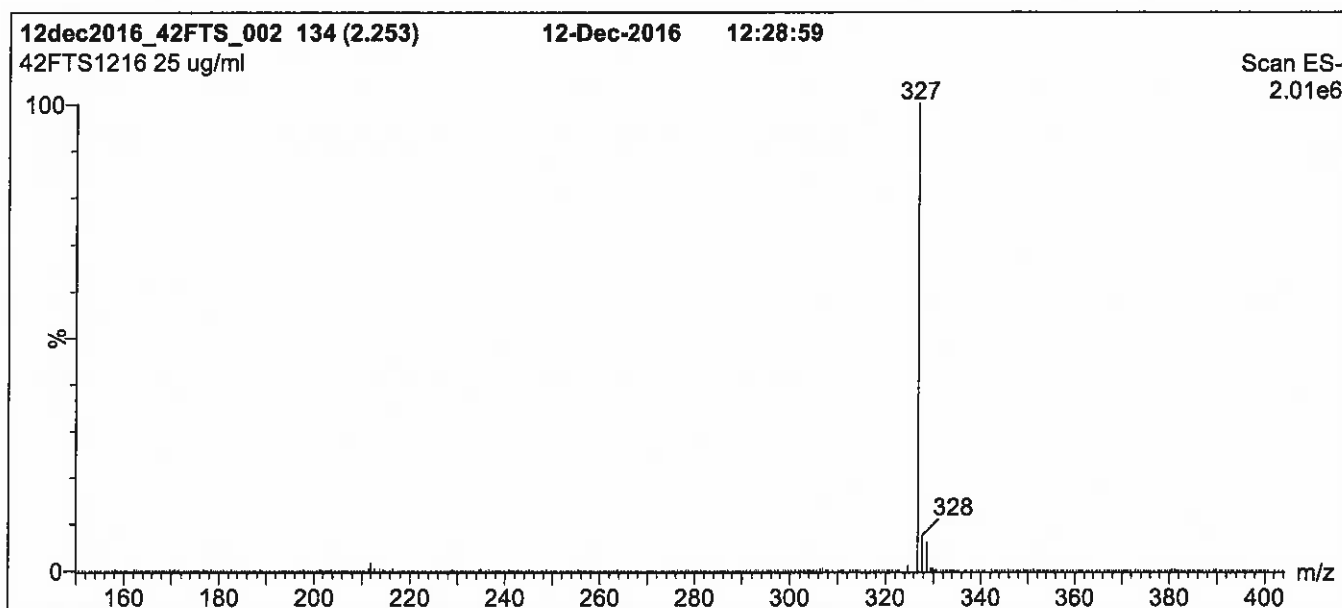
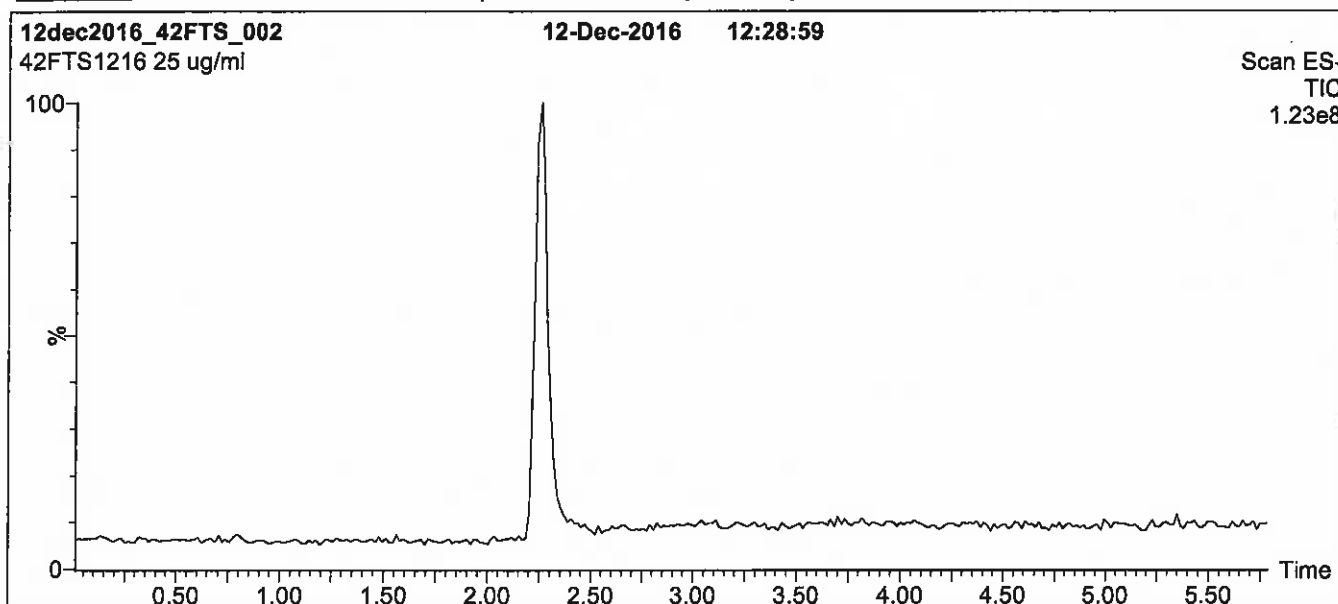
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: 4:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

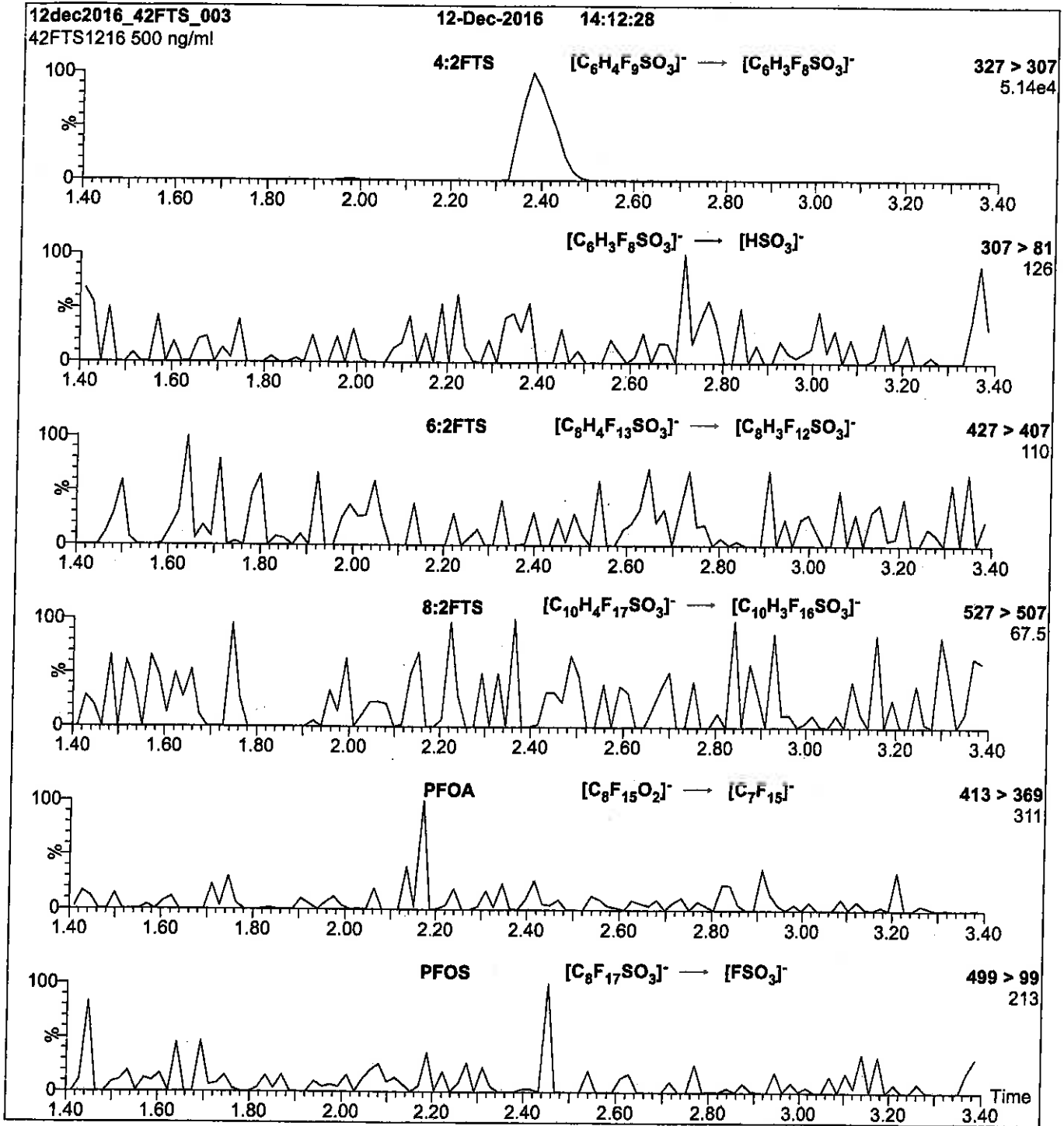
**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 25.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: 4:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml 4:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 25

Reagent

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**LC6:2FTS\_00002**





### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

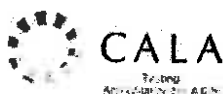
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

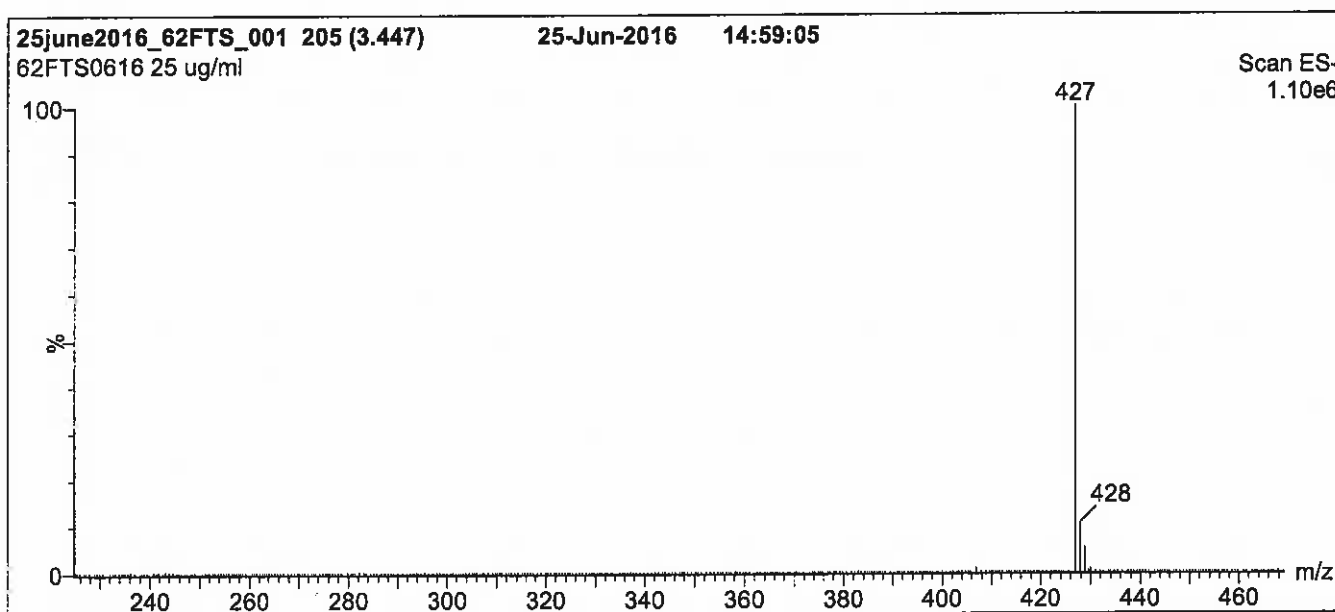
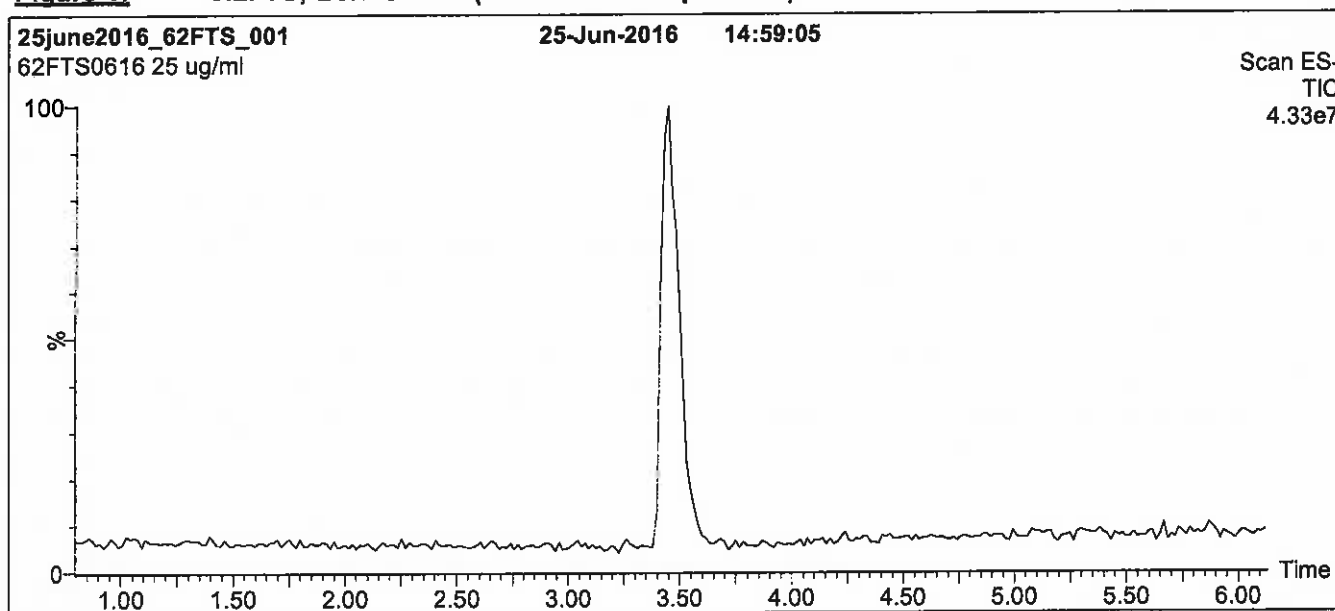
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: 6:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro micro API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

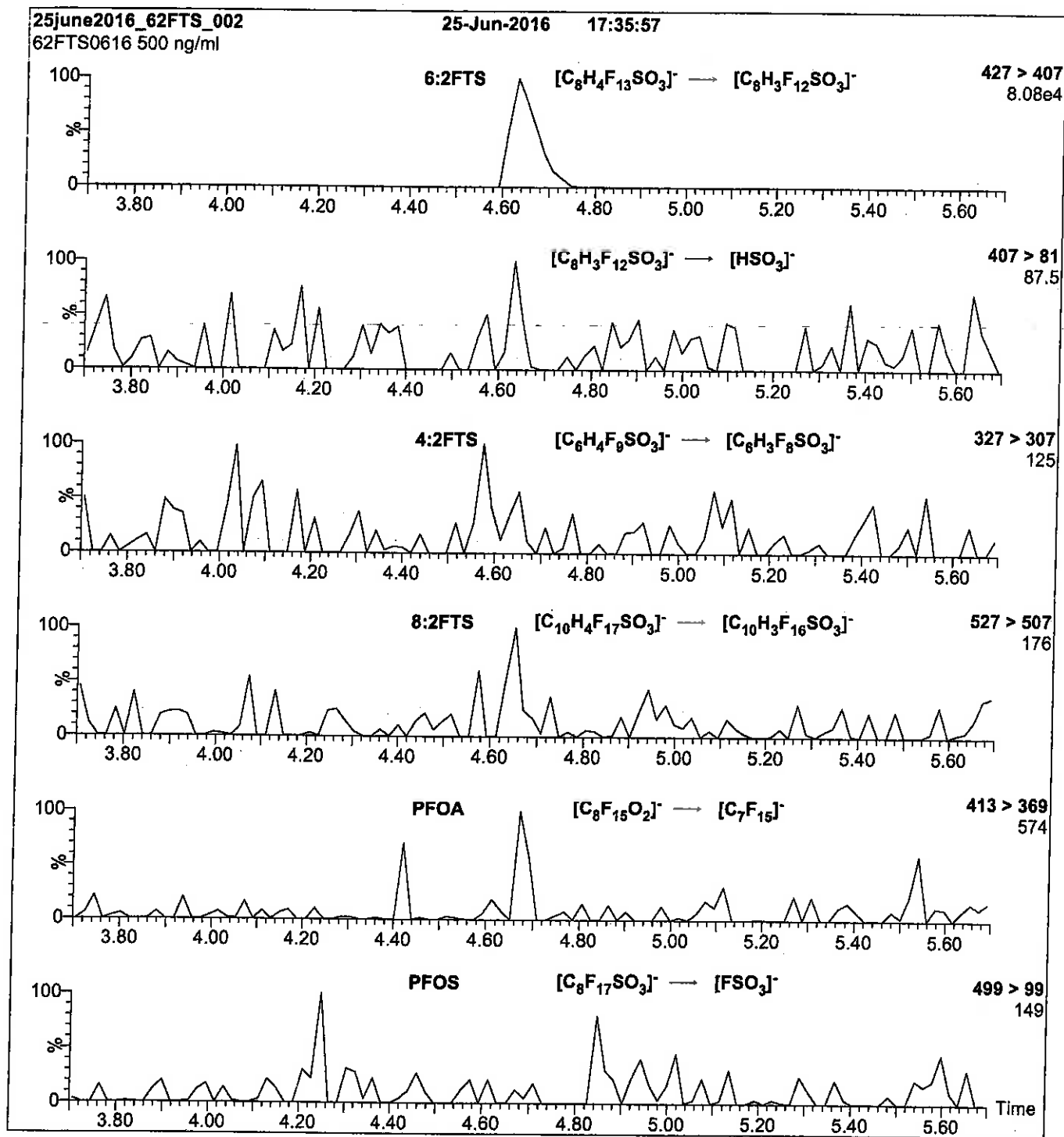
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 30.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: 6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml 6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
Collision Energy (eV) = 25

Reagent

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**LC6:2FTS\_00003**

P: 12/29/16 SKV

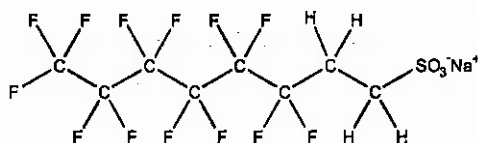


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 6:2FTS **LOT NUMBER:** 62FTS0616  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorooctane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>4</sub>F<sub>15</sub>SO<sub>3</sub>Na **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) 06/25/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 06/25/2021  
**RECOMMENDED STORAGE:** Refrigerate ampoule

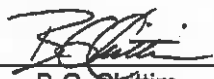
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 06/29/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

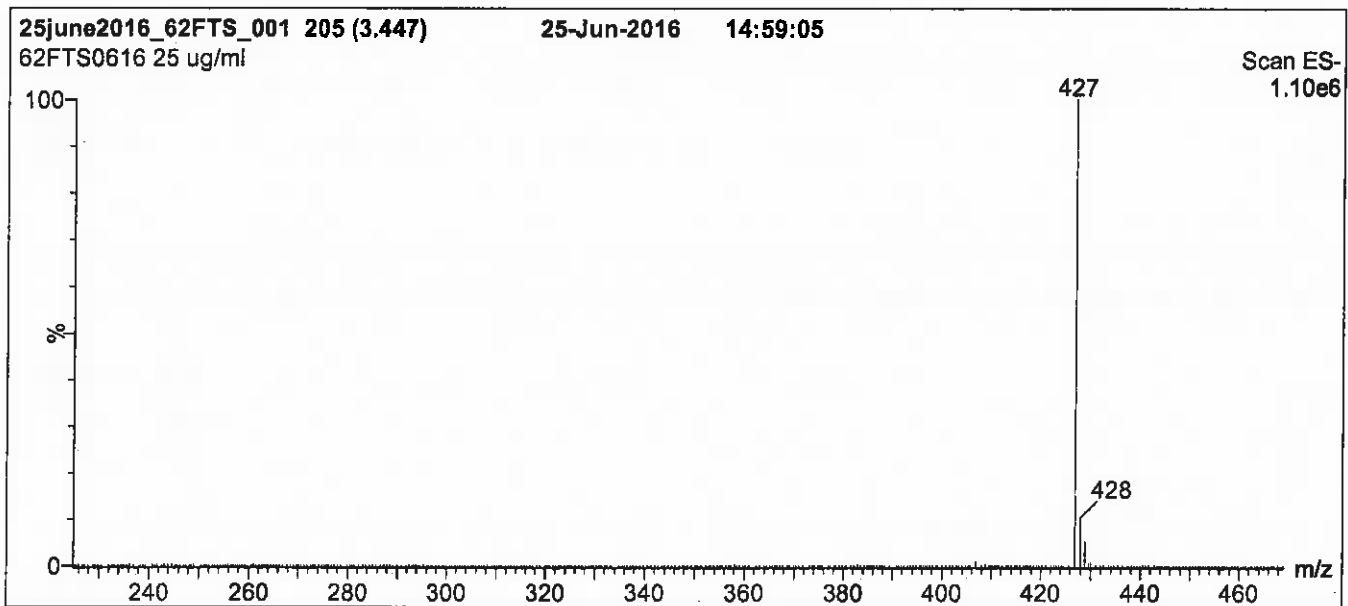
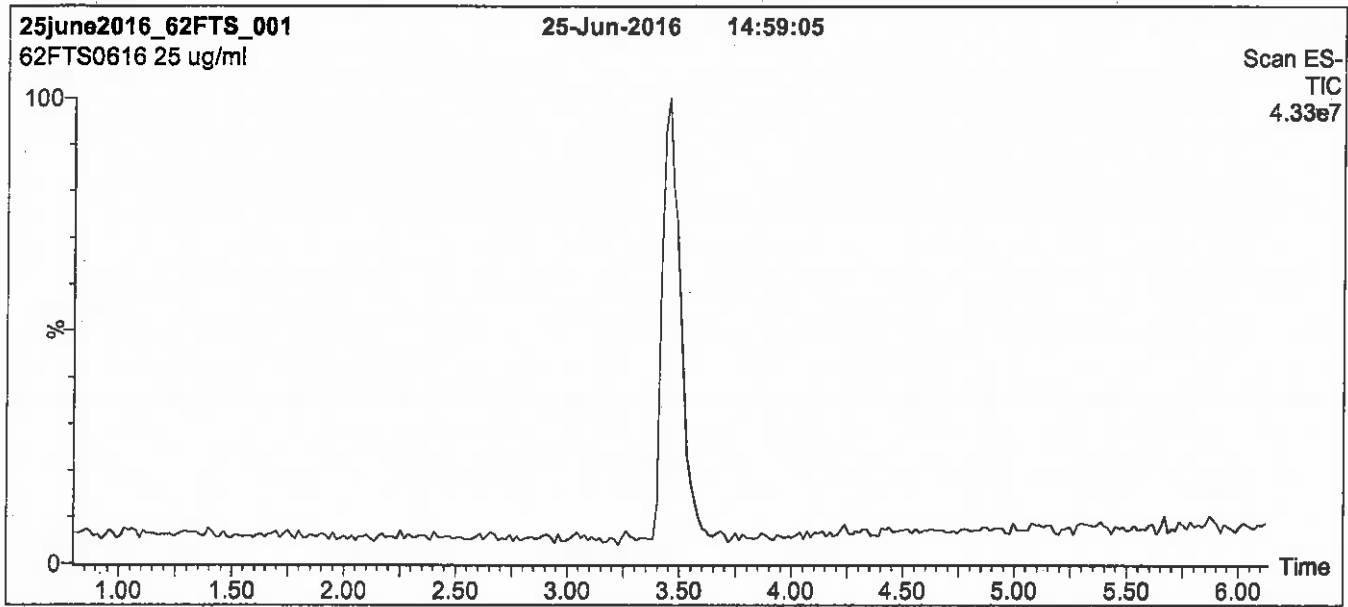
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: 6:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7 μm, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300 μl/min

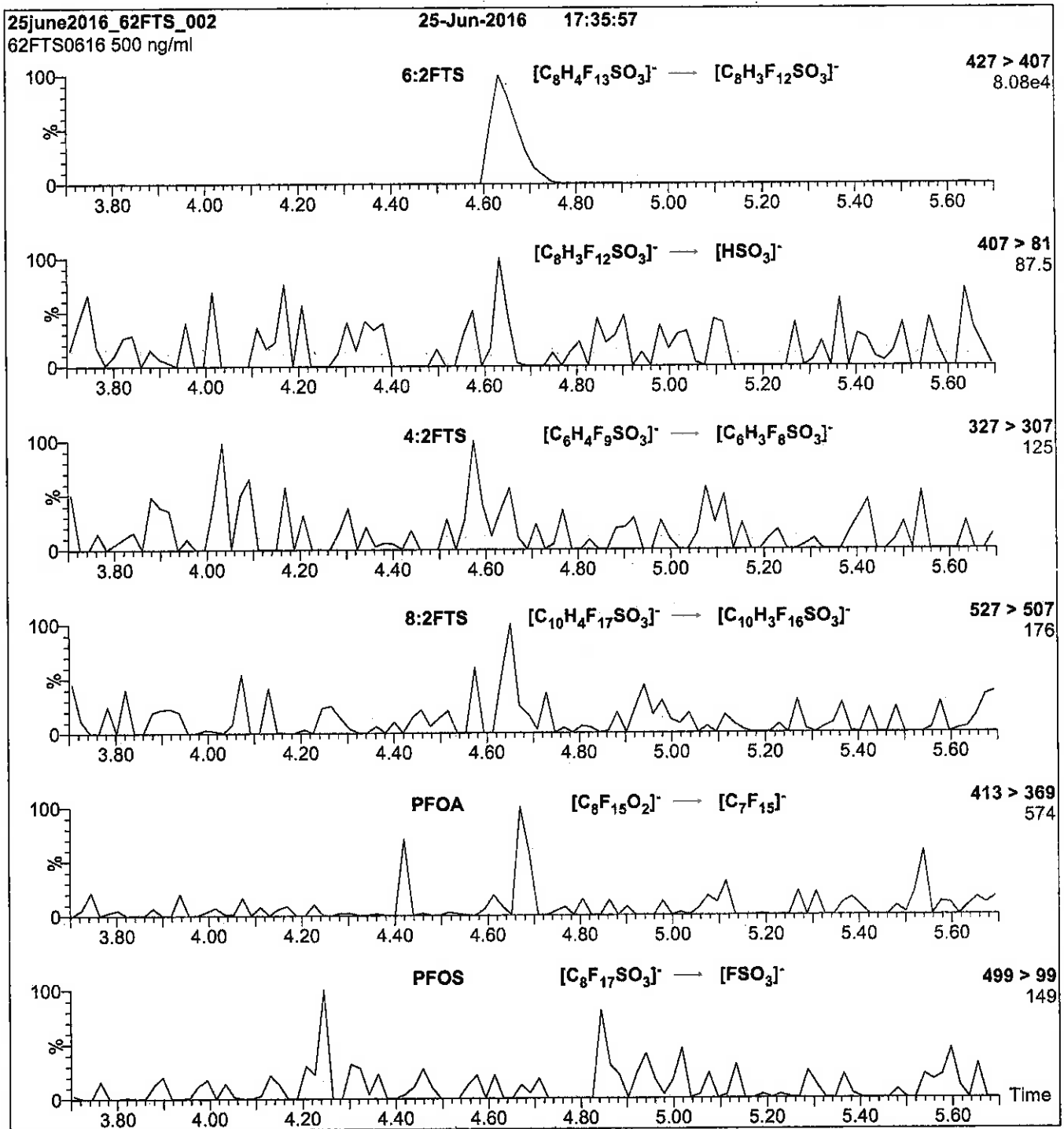
**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 30.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750



**Figure 2: 6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml 6:2FTS)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
Collision Energy (eV) = 25

Reagent

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**LC8 : 2FTS \_ 00002**

R: 8/23/16 SBC

715545  
ID: LC8:2FTS\_00002  
Exp: 10/23/20 Prod: SBC  
8:2FTS

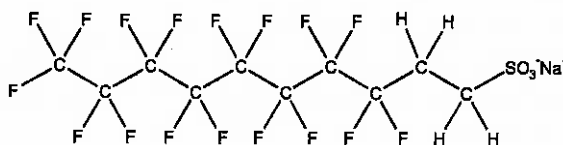


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 8:2FTS **LOT NUMBER:** 82FTS1015  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorodecane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **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) 10/23/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2020  
**RECOMMENDED STORAGE:** Refrigerate ampoule


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 10/27/2015  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

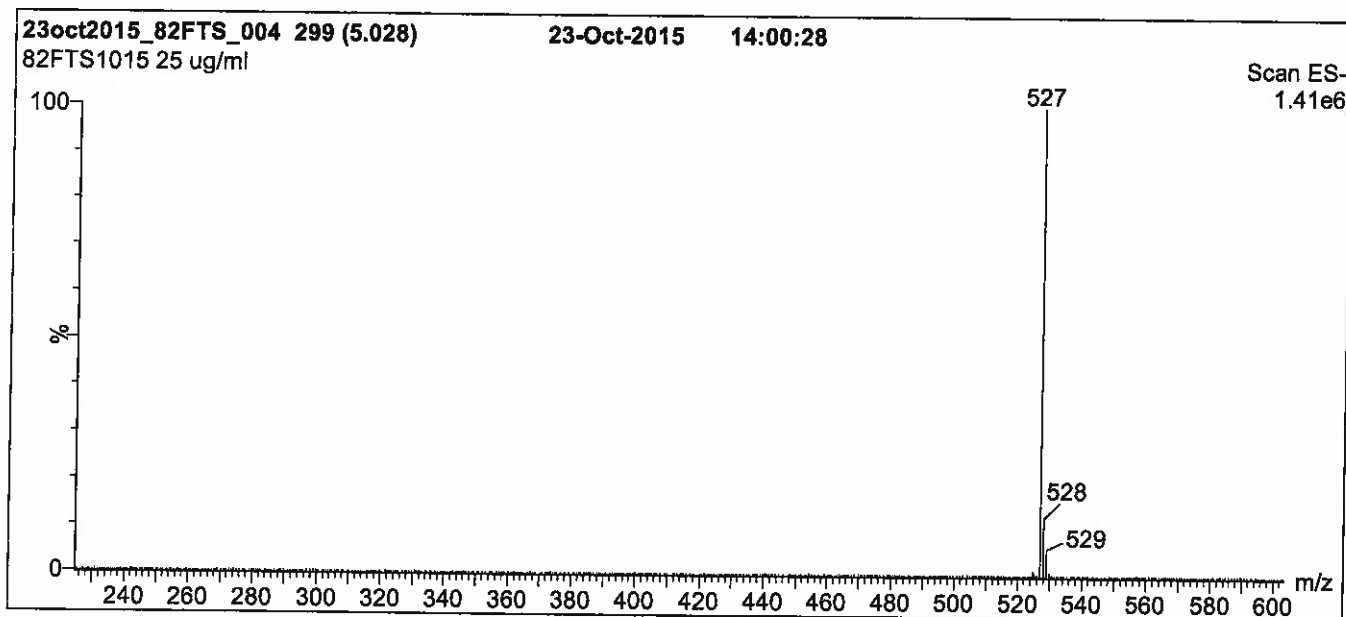
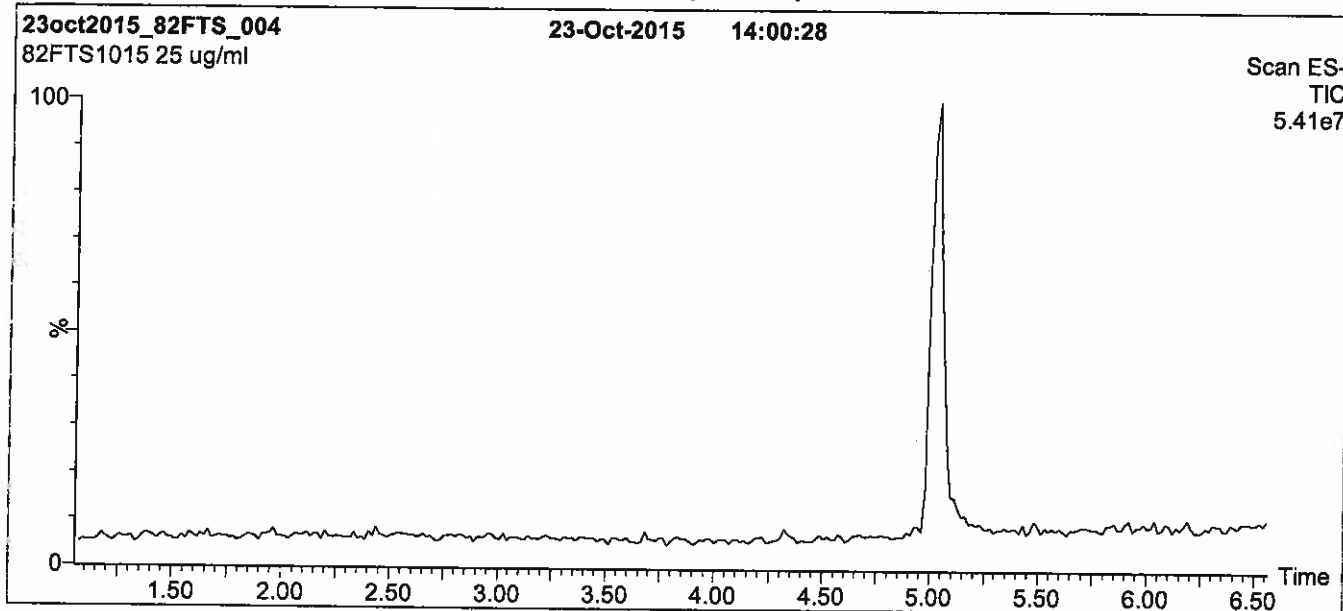
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: 8:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min.  
Return to Initial conditions in 0.5 min.  
Time: 10 min

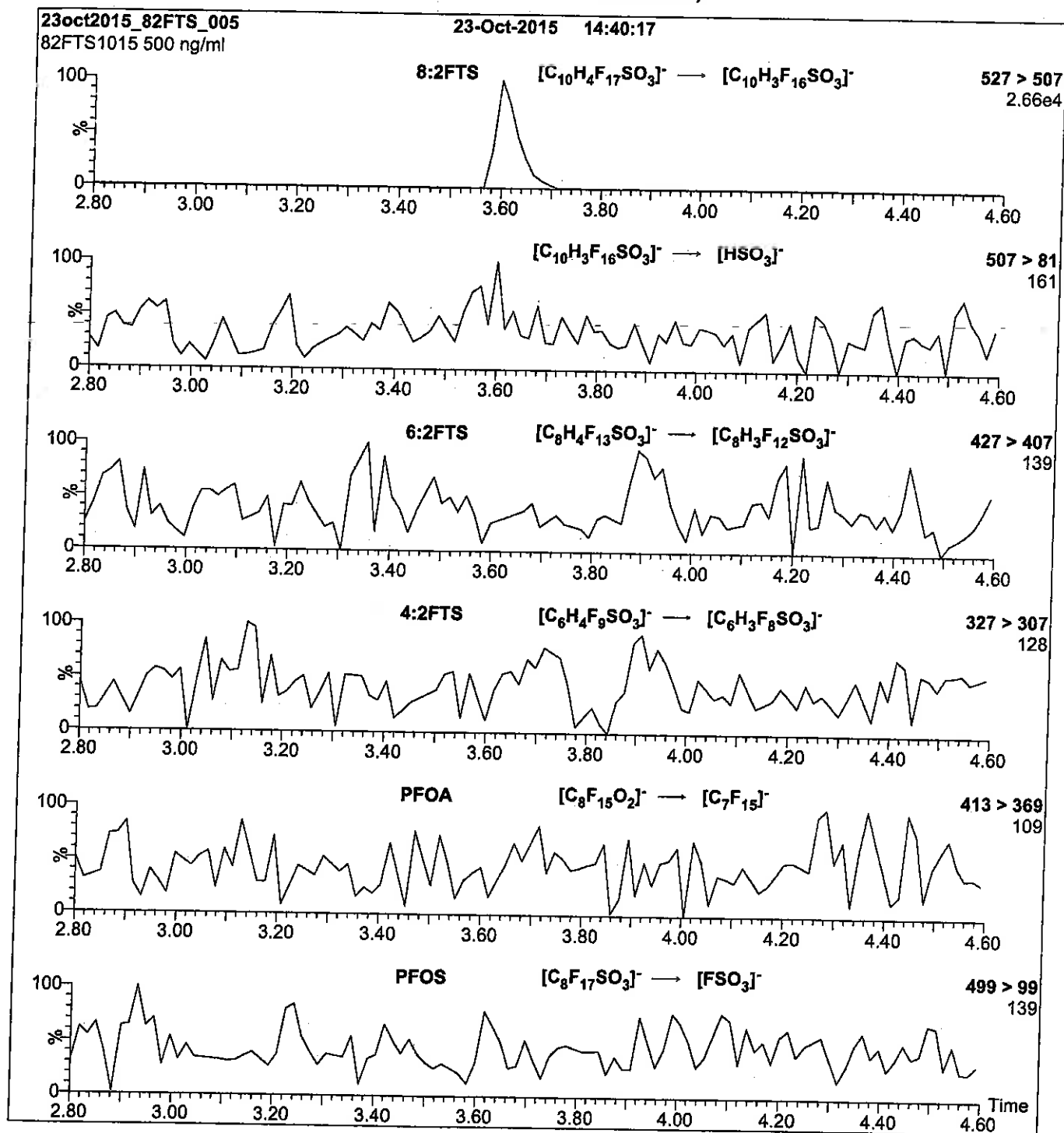
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 30.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: 8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml 8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.28e-3  
Collision Energy (eV) = 30

Reagent

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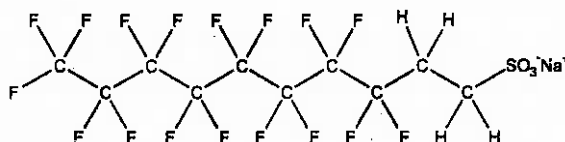
**LC8 : 2FTS\_00003**



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** 8:2FTS **LOT NUMBER:** 82FTS0816  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluorodecane sulfonate  
**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:**  $C_{10}H_4F_{17}SO_3Na$  **MOLECULAR WEIGHT:** 550.16  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/ml}$  (Na salt) **SOLVENT(S):** Methanol  
 $47.9 \pm 2.4 \mu\text{g/ml}$  (8:2FTS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 08/22/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 08/22/2021  
**RECOMMENDED STORAGE:** Refrigerate ampoule


### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim **Date:** 08/25/2016  
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
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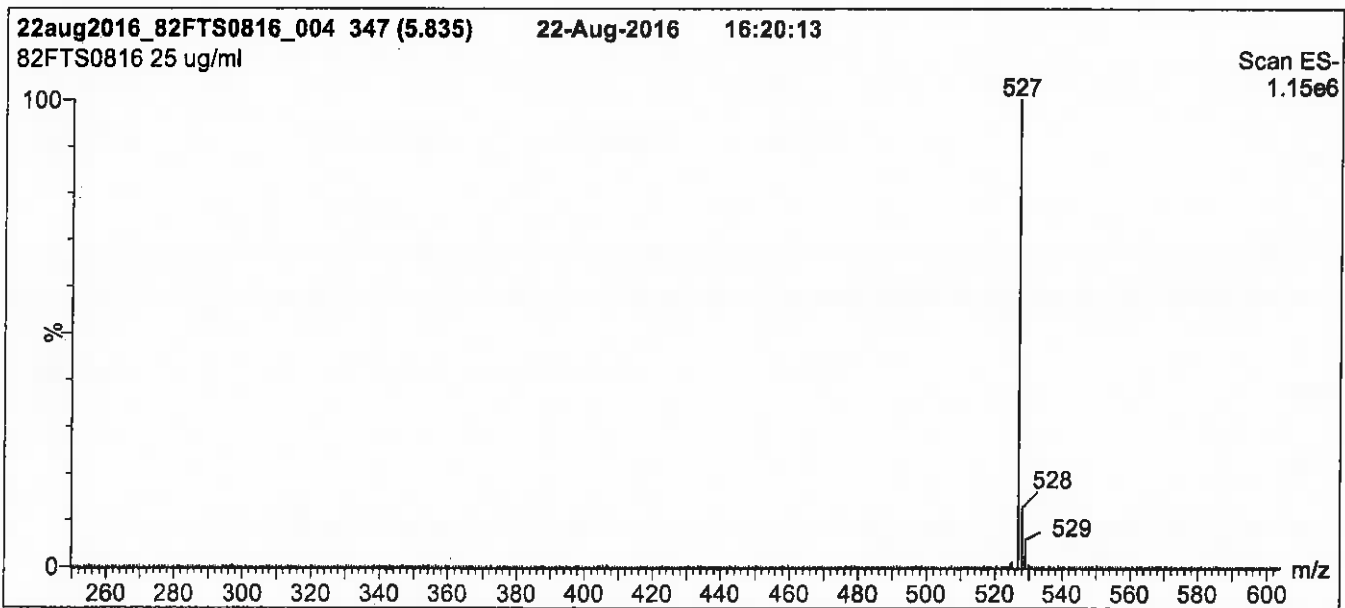
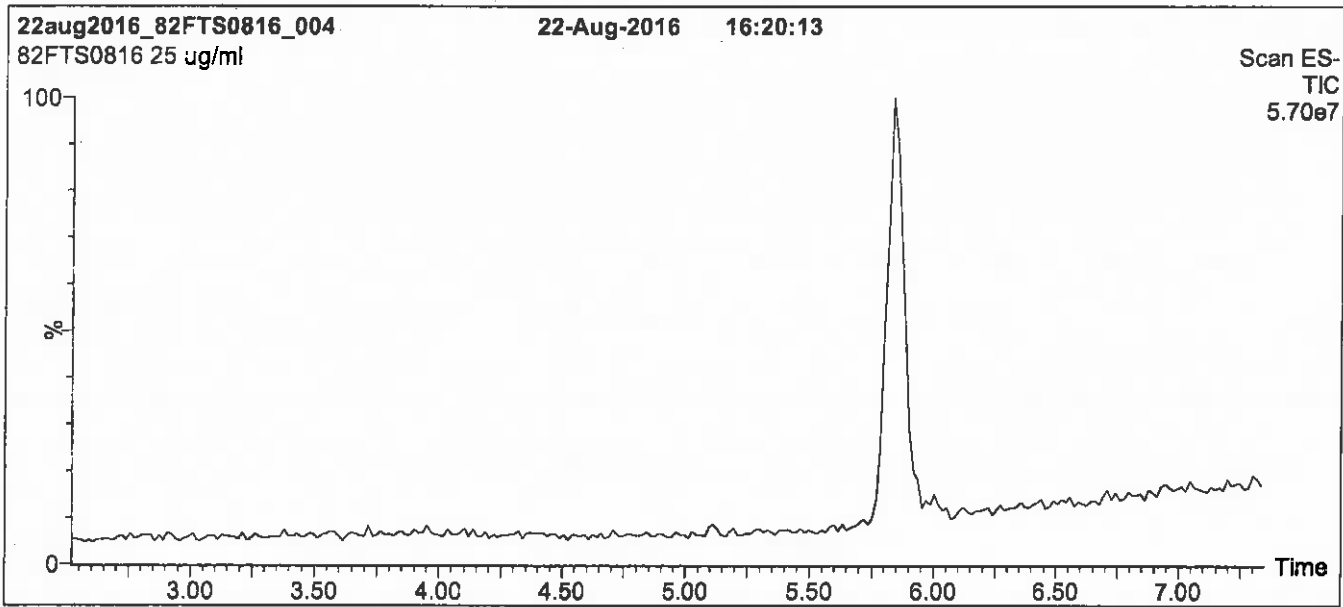
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**Figure 1: 8:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro micro API MS

**Chromatographic Conditions**

Column: Agilent Zorbax Bonus-RP  
1.8  $\mu$ m, 2.1 x 100 mm

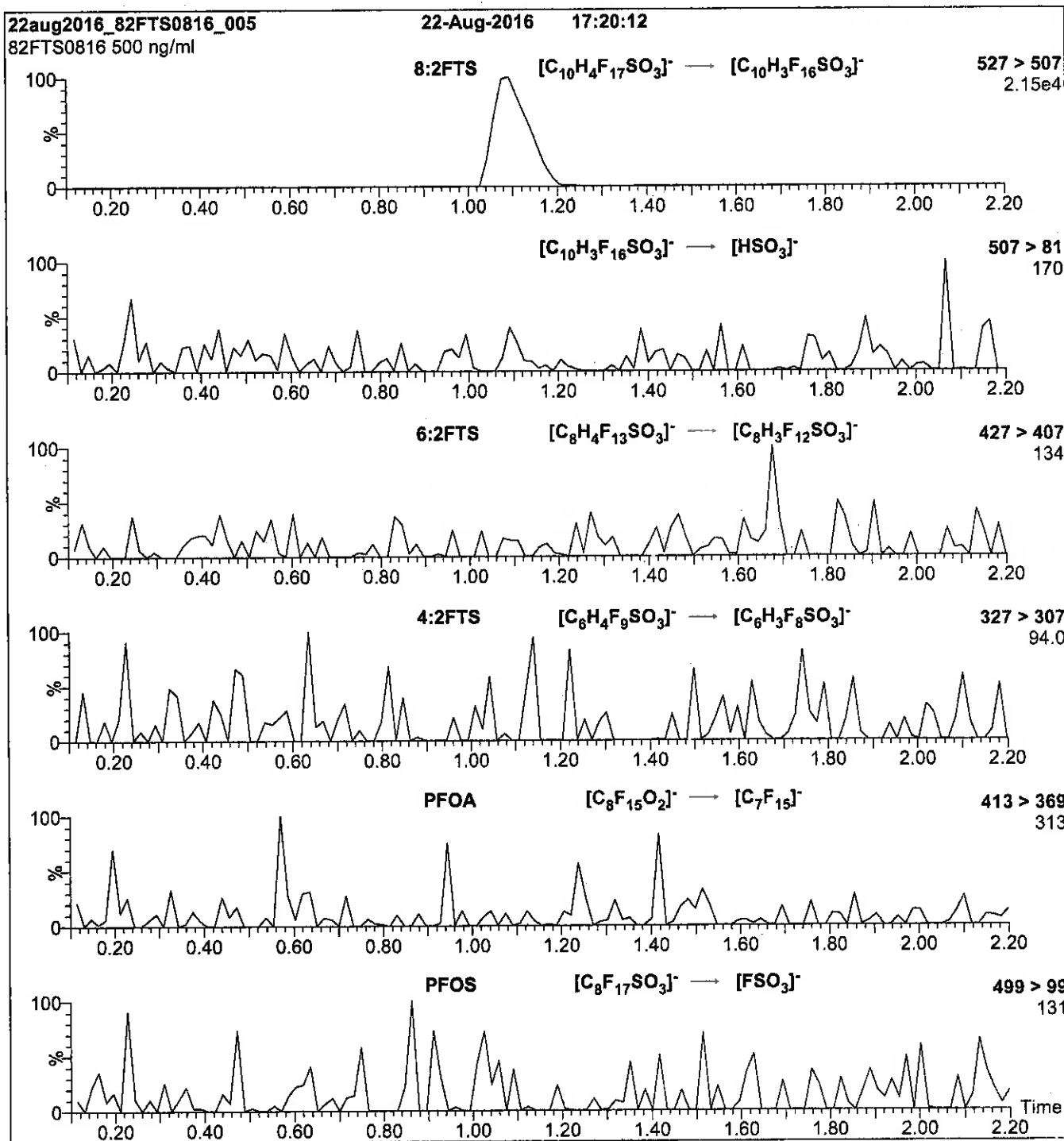
Mobile phase: Gradient  
Start: 55% (80:20 MeOH/ACN) / 45% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (250- 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 30.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: 8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml 8:2FTS)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 30

Reagent

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**LCd-NEtFOSA-M\_00005**

R: 3720/17



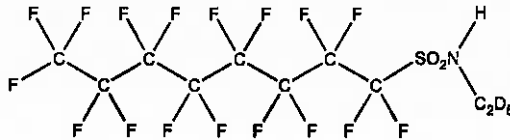
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d-N-EtFOSA-M  
**COMPOUND:** N-ethyl-d<sub>5</sub>-perfluoro-1-octanesulfonamide

**LOT NUMBER:** dNEtFOSA0616M

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>10</sub>D<sub>5</sub>HF<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 06/10/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 06/10/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 532.23  
**SOLVENT(S):** Methanol  
**ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>5</sub>

**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% of N-methyl-d<sub>3</sub>-perfluoro-1-octanesulfonamide (d-N-MeFOSA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim

**Date:** 07/14/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
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### **EXPIRY DATE / PERIOD OF VALIDITY:**

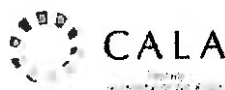
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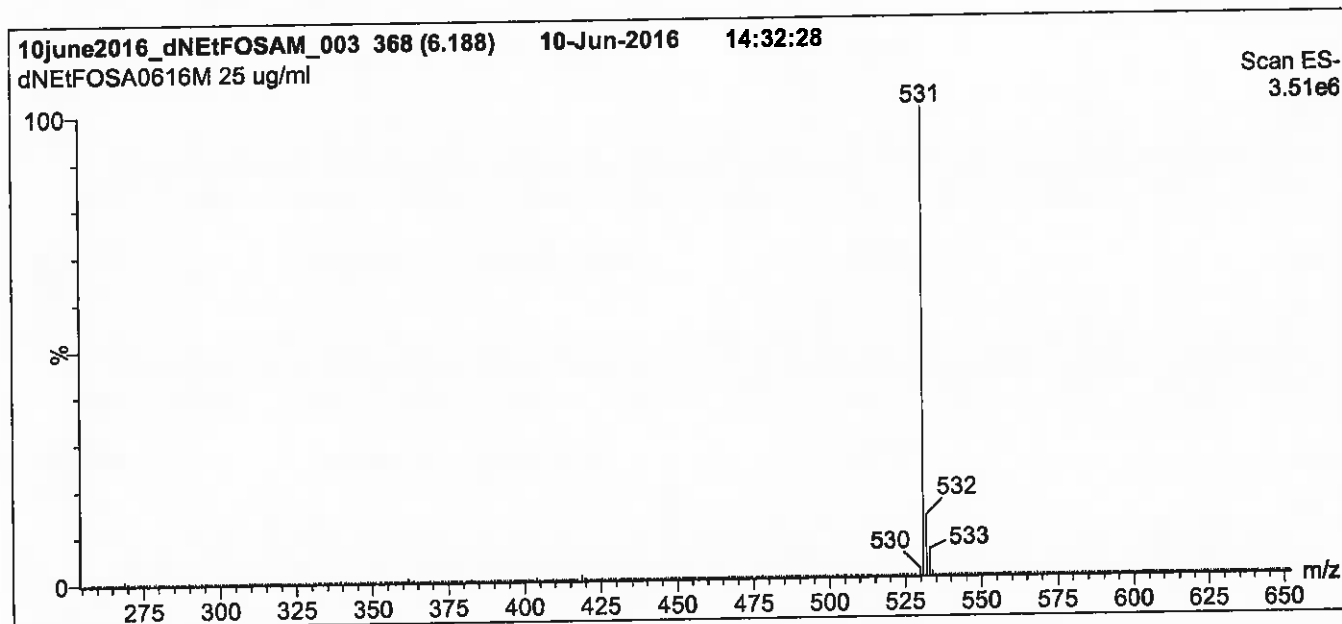
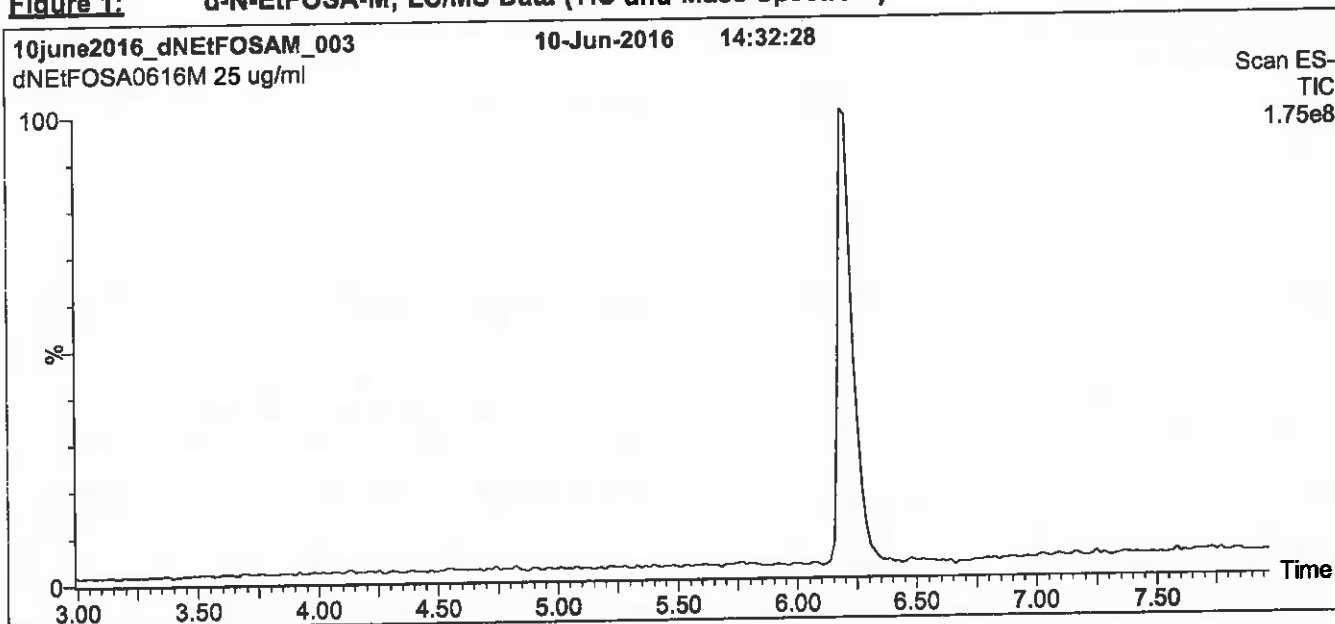
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**Figure 1: d-N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
 (both with 10mM NH<sub>4</sub>OAc 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

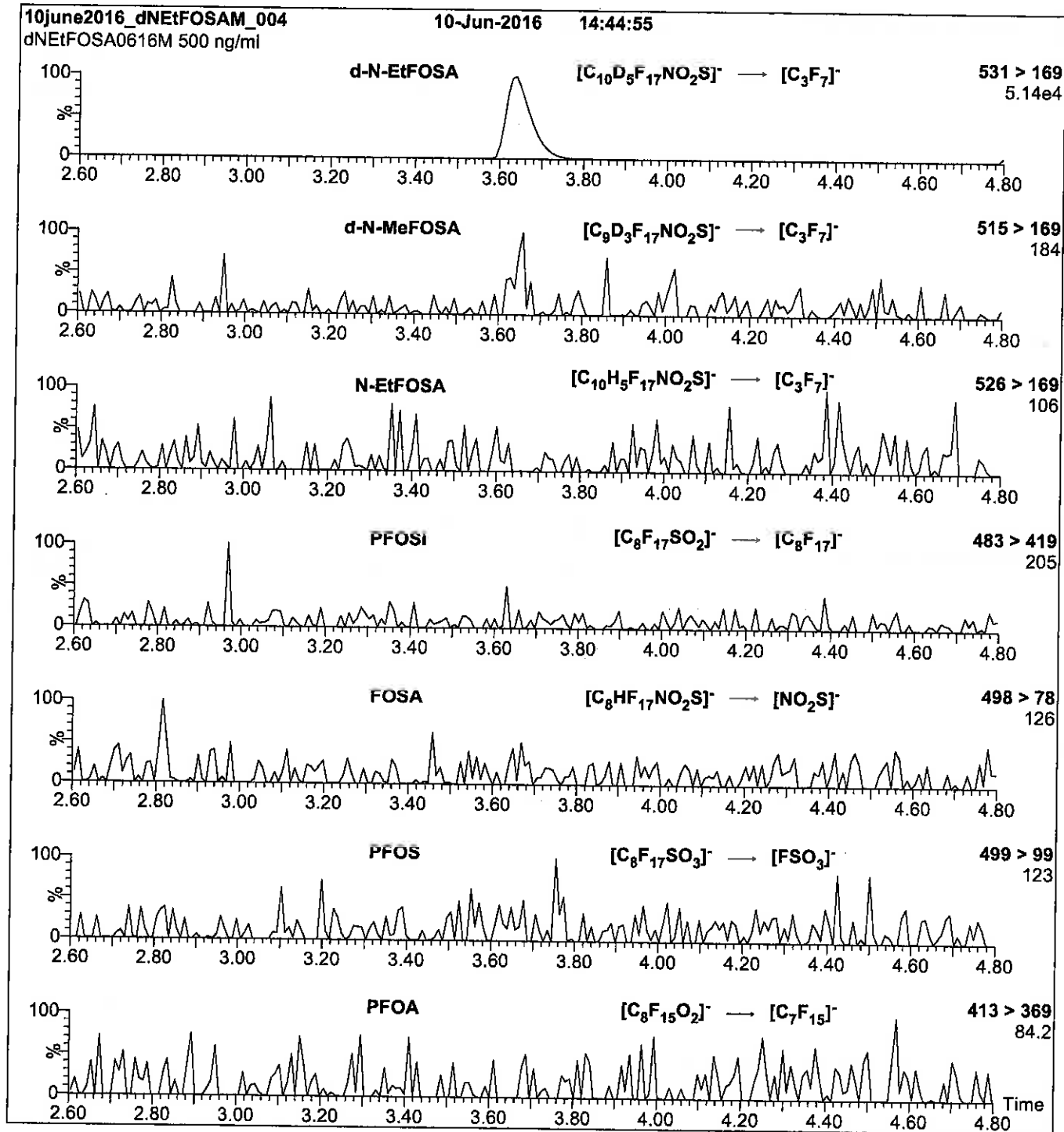
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.50  
 Cone Voltage (V) = 40.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: d-N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml d-N-EtFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 25



Reagent

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**LCd-NMeFOSA-M\_00003**

R: 9/9/16 SBC



728303  
ID: LCd-NMeFOSA-M\_00003  
Exp: 06/10/21 Prep: SBC  
d-N-MeFOSA-M

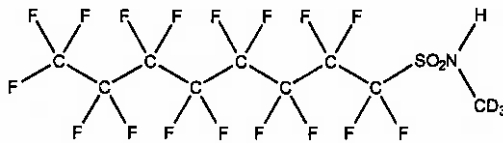


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d-N-MeFOSA-M      **LOT NUMBER:** dNMeFOSA0616M  
**COMPOUND:** N-methyl-d<sub>3</sub>-perfluoro-1-octanesulfonamide

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>8</sub>D<sub>3</sub>HF<sub>17</sub>NO<sub>2</sub>S      **MOLECULAR WEIGHT:** 516.19  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>3</sub>  
**LAST TESTED:** (mm/dd/yyyy) 06/10/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 06/10/2021  
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**Certified By:**  **Date:** 06/16/2016  
B.G. Chittim (mm/dd/yyyy)

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

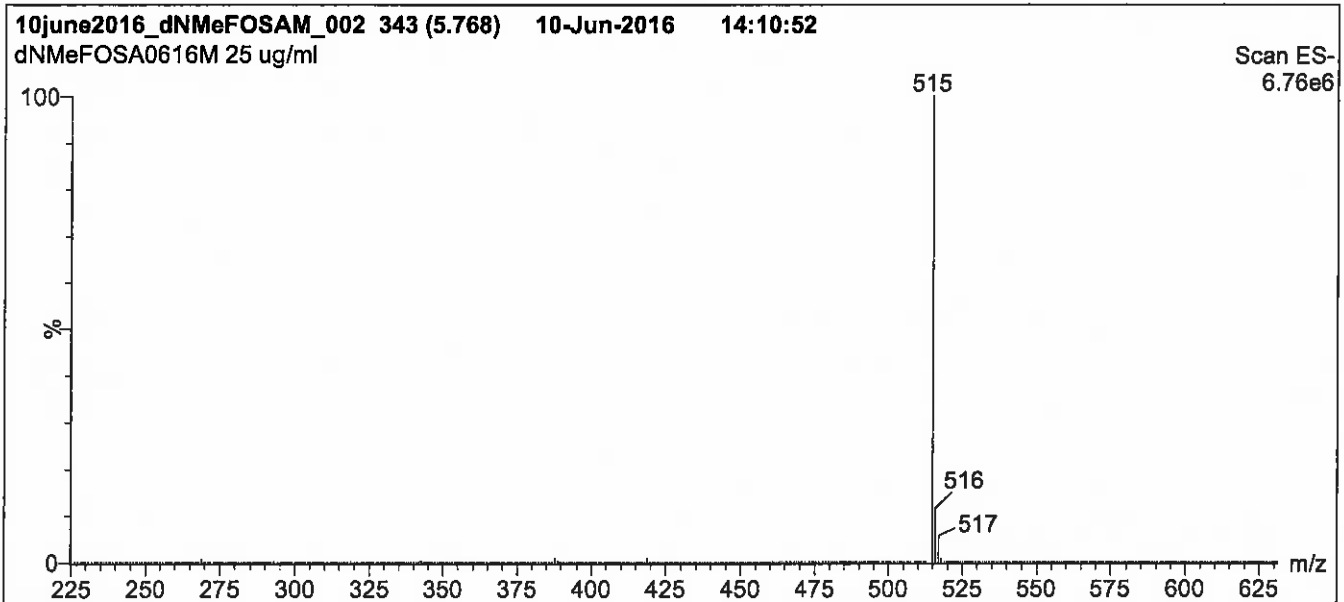
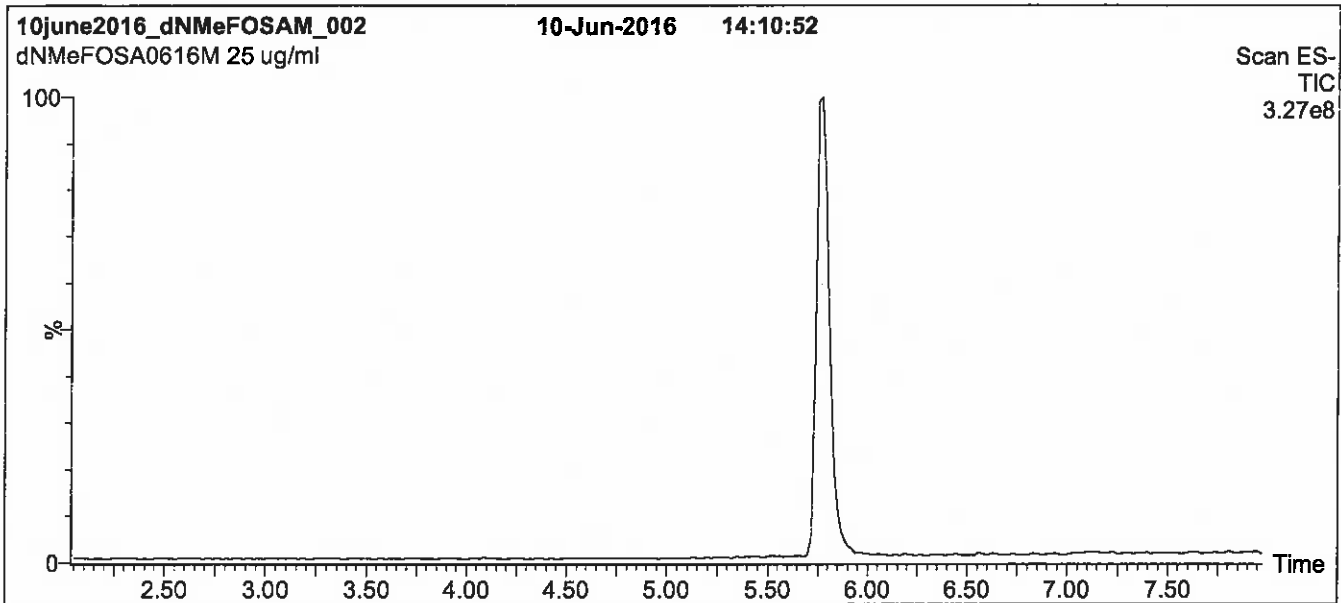
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: d-N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>1a</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
(both with 10mM NH<sub>4</sub>OAc 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

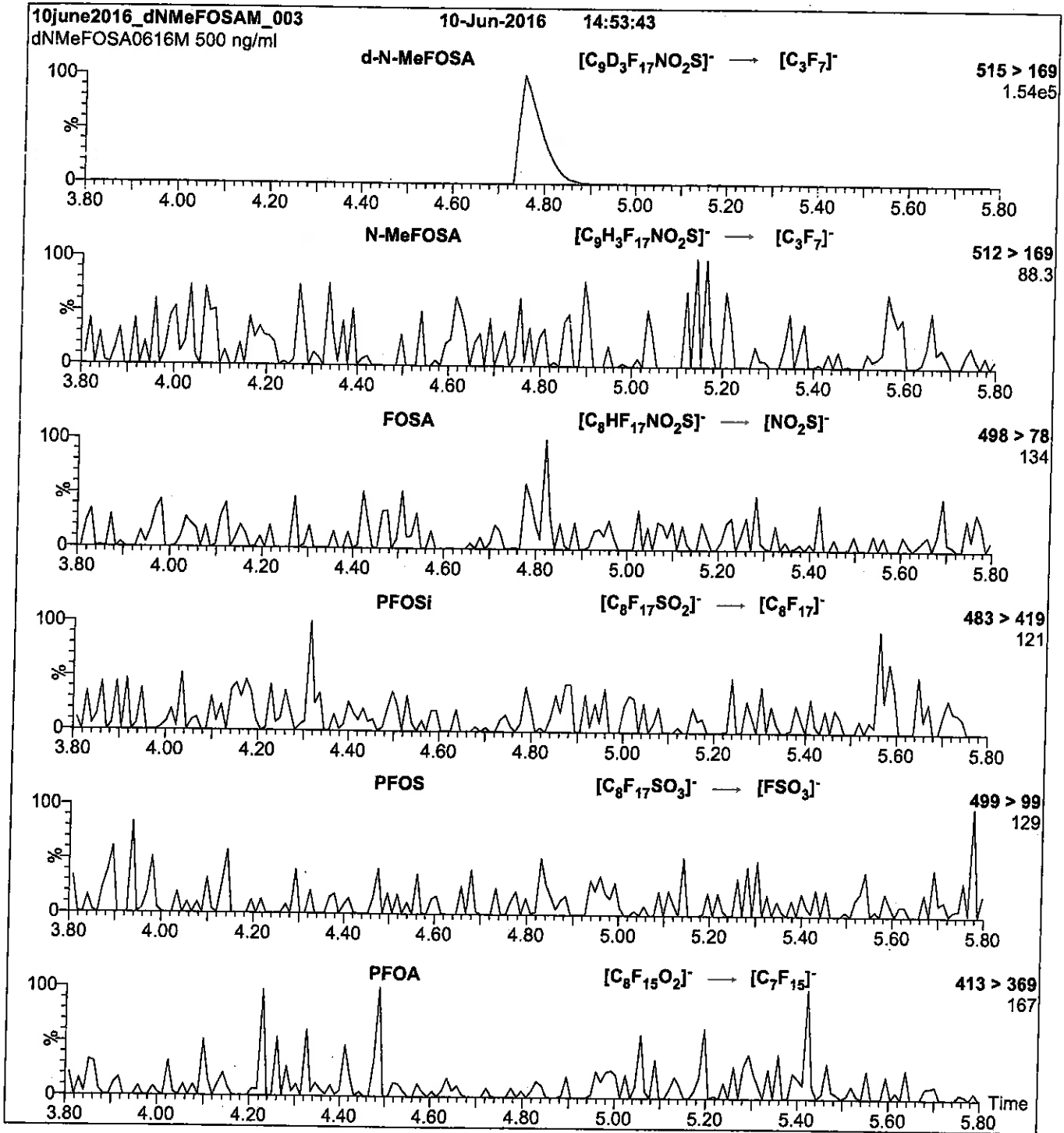
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = 40.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml d-N-MeFOSA-M)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
 Collision Energy (eV) = 25

Reagent

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**LCd-NMeFOSA-M\_00004**

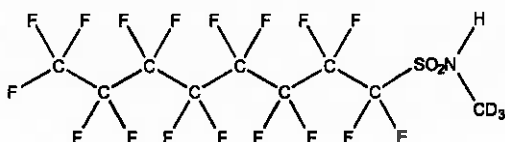


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d-N-MeFOSA-M **LOT NUMBER:** dNMeFOSA0616M  
**COMPOUND:** N-methyl-d<sub>3</sub>-perfluoro-1-octanesulfonamide

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>8</sub>D<sub>3</sub>HF<sub>17</sub>NO<sub>2</sub>S **MOLECULAR WEIGHT:** 516.19  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>3</sub>  
**LAST TESTED:** (mm/dd/yyyy) 06/10/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 06/10/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

• See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 06/16/2016

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • Info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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### **QUALITY MANAGEMENT:**

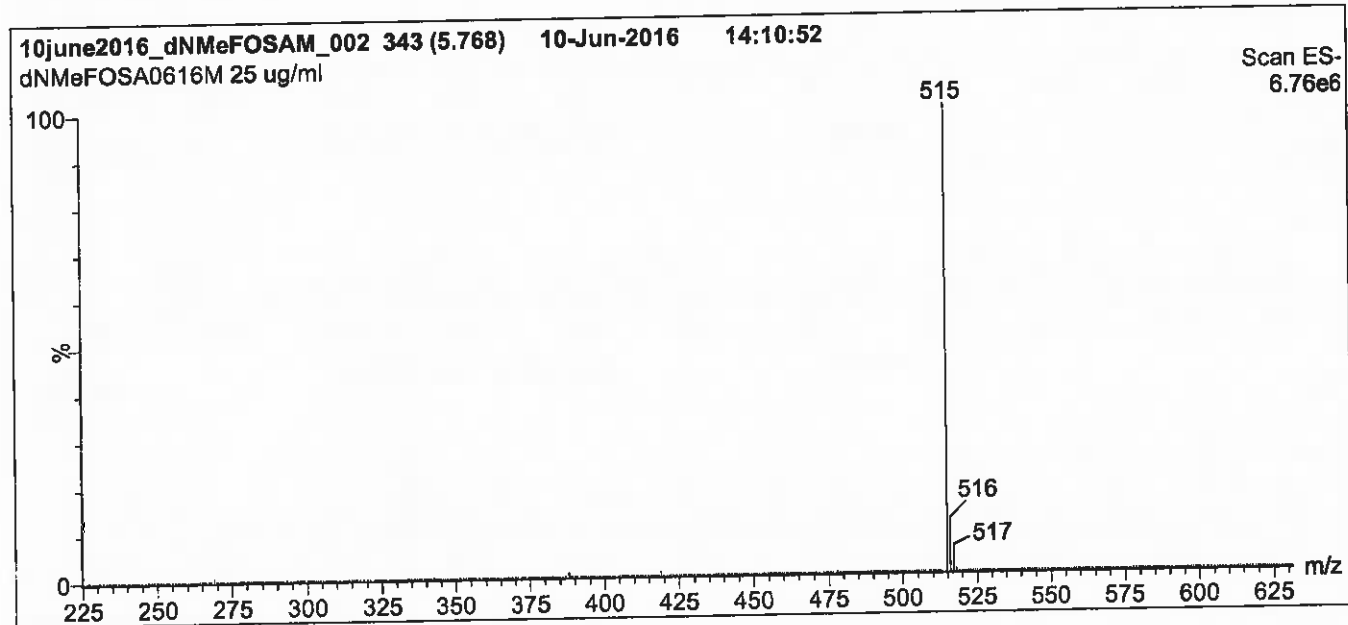
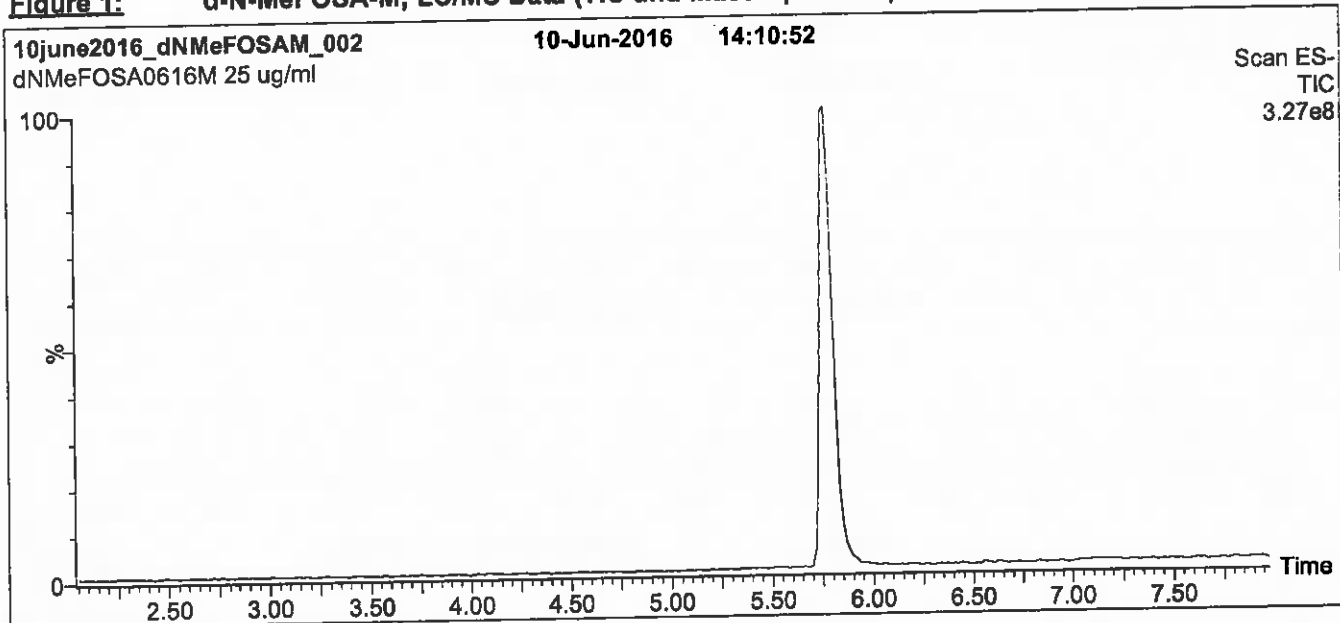
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: d-N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7 μm, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 40% H<sub>2</sub>O / 60% (80:20 MeOH:ACN)  
 (both with 10mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

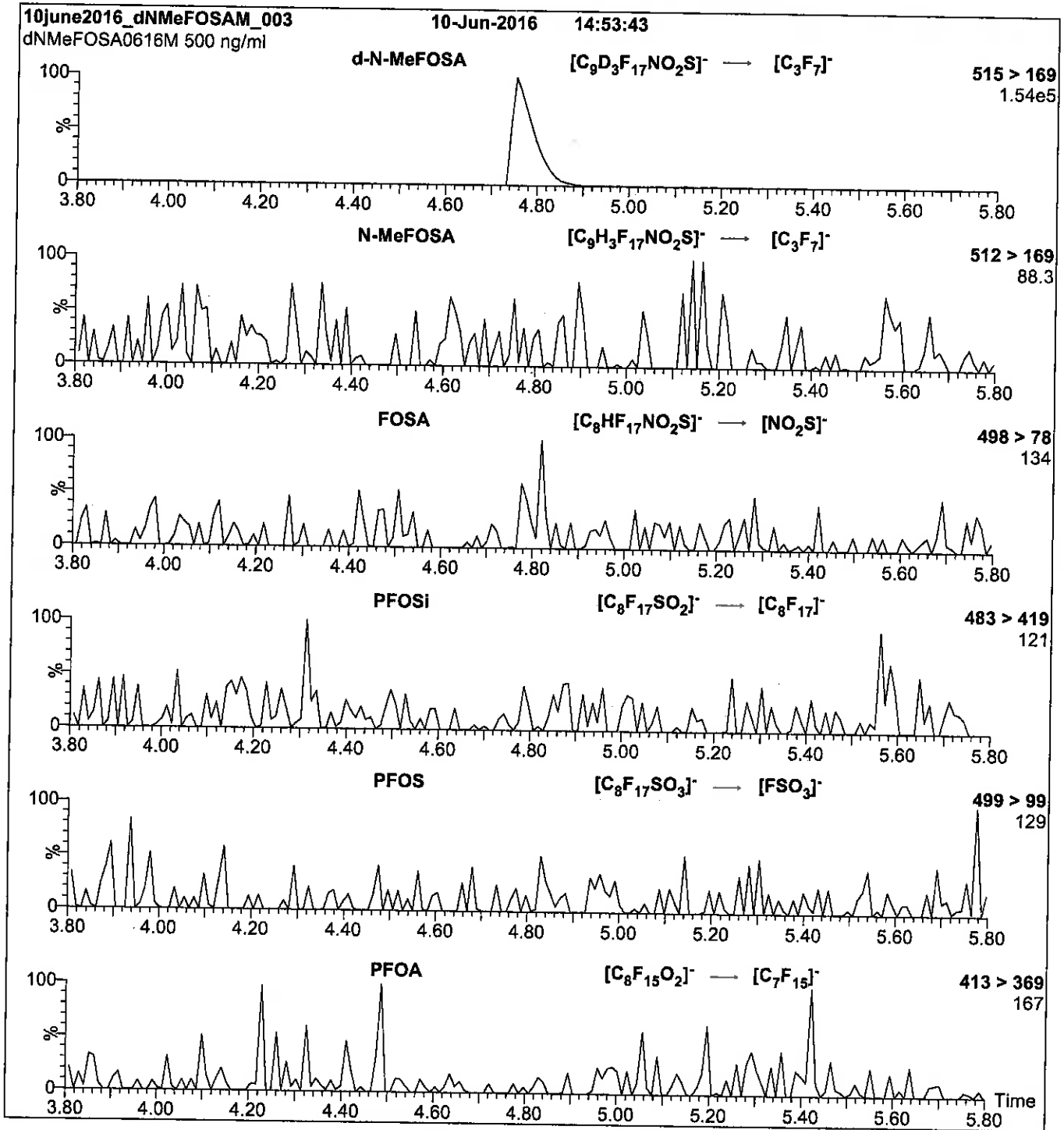
**Flow:** 300 μl/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.50  
 Cone Voltage (V) = 40.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: d-N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml d-N-MeFOSA-M)

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 25

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

Reagent

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**LCd3-NMeFOSAA\_00003**

R: 9/9/16  
SBC



728300  
ID: LCd3-NMeFOSAA\_00003  
Exp: 05/31/21 Prpd: SBC  
d3-N-MeFOSAA

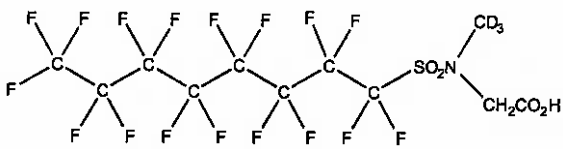


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d3-N-MeFOSAA      **LOT NUMBER:** d3NMeFOSAA0516  
**COMPOUND:** N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>11</sub>D<sub>3</sub>H<sub>3</sub>F<sub>17</sub>NO<sub>4</sub>S      **MOLECULAR WEIGHT:** 574.23  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>3</sub>  
**LAST TESTED:** (mm/dd/yyyy) 05/31/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/31/2021  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.
- Contains ~ 1% of branched isomer.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**       **Date:** 06/01/2016  
B.G. Chittim      (mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

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.

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **TRACEABILITY:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

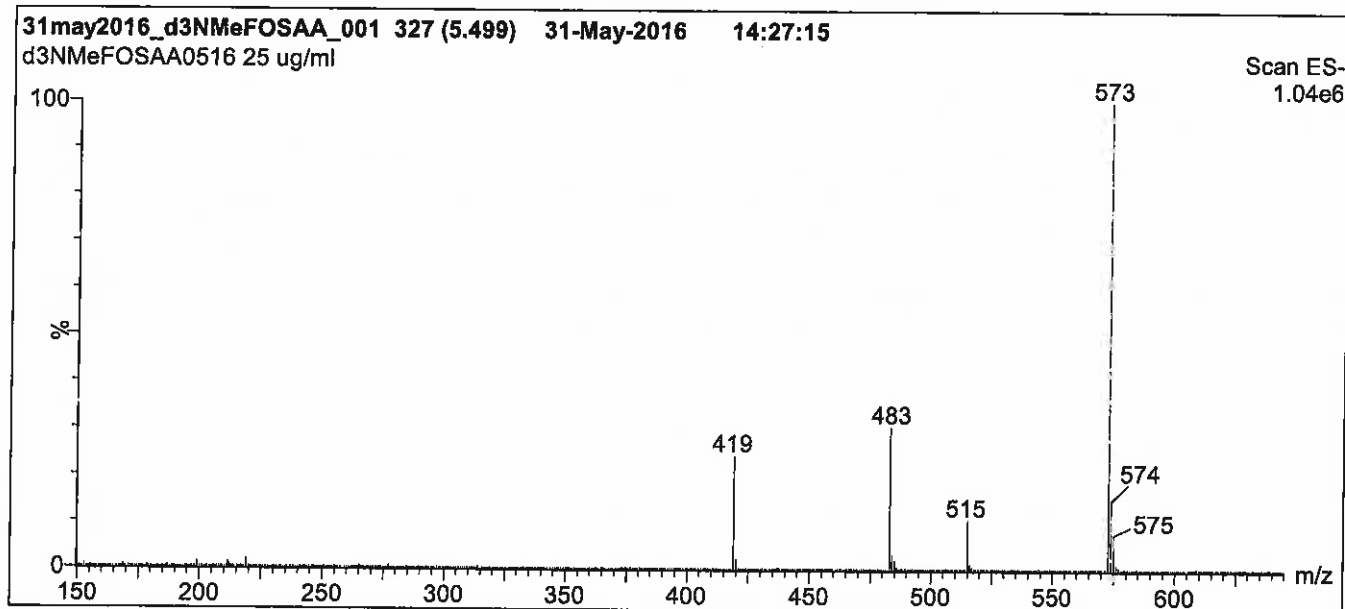
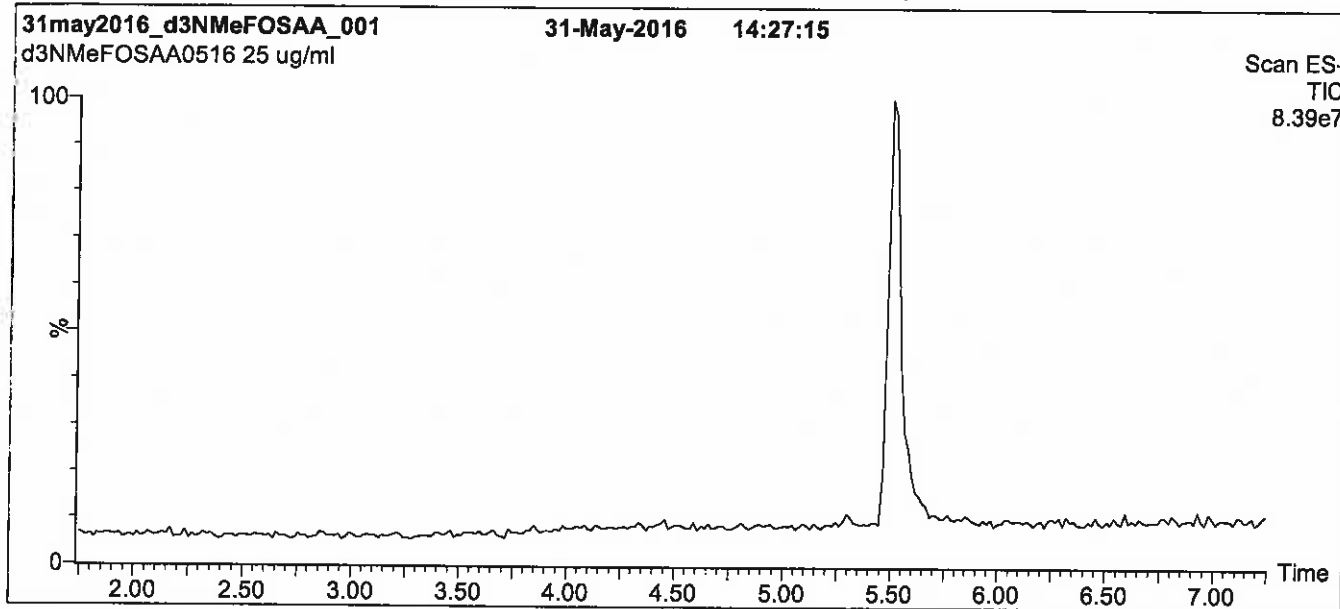
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for 1.5  
min before returning to initial conditions in 0.5 min.  
Time: 10 min

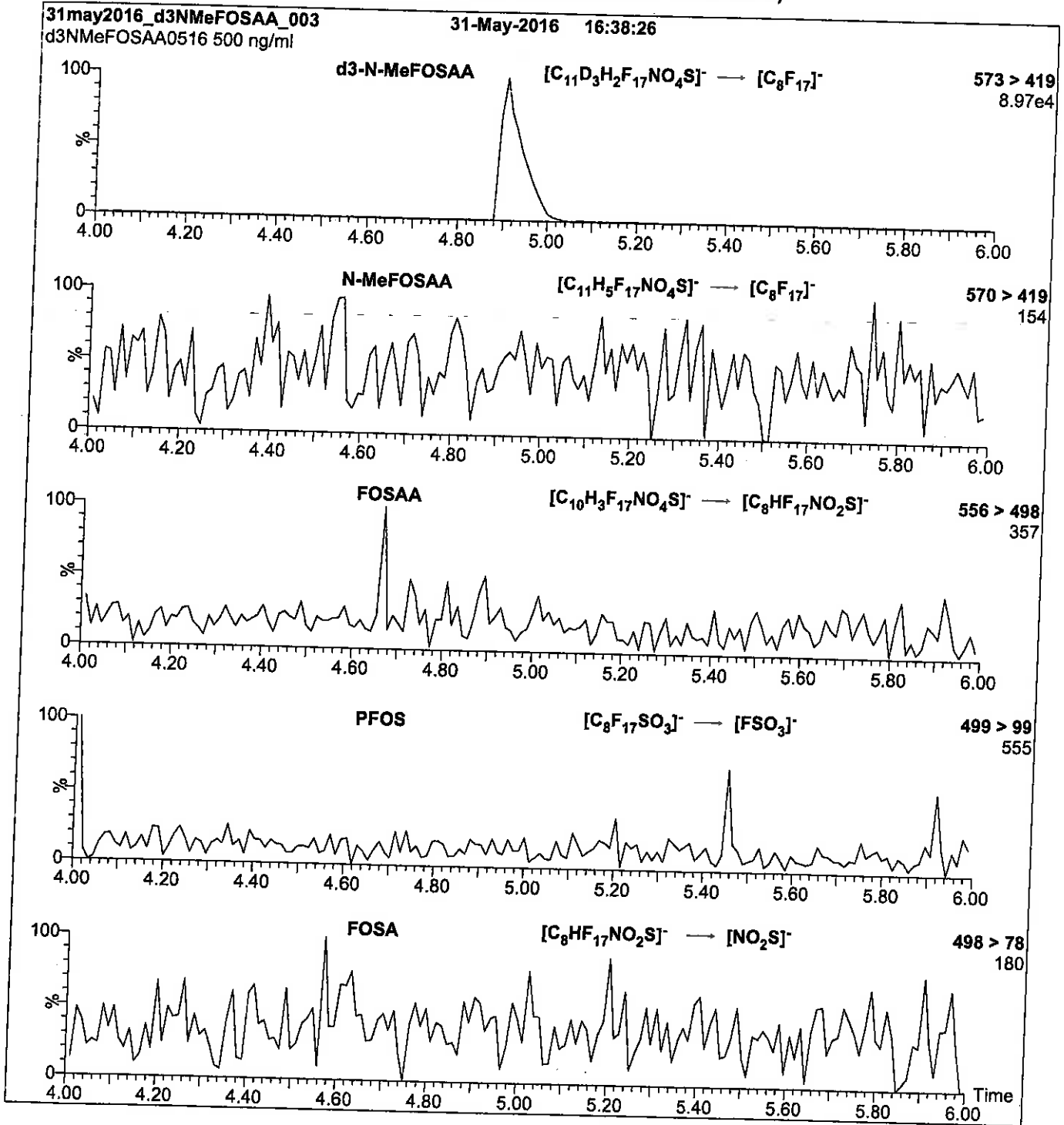
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 35.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml d3-N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
Collision Energy (eV) = 25

Reagent

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**LCd3-NMeFOSAA\_00004**



S: 3/20/17 SKV

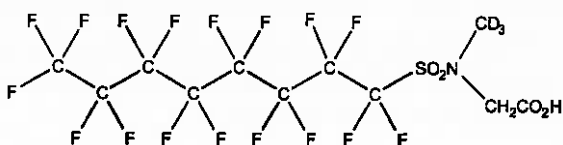


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d3-N-MeFOSAA      **LOT NUMBER:** d3NMeFOSAA1116  
**COMPOUND:** N-methyl-d3-perfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>11</sub>D<sub>3</sub>H<sub>3</sub>F<sub>17</sub>NO<sub>4</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 574.23  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2021  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**ISOTOPIC PURITY:** ≥98% <sup>2</sup>H<sub>3</sub>


**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:** 12/07/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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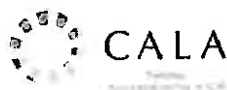
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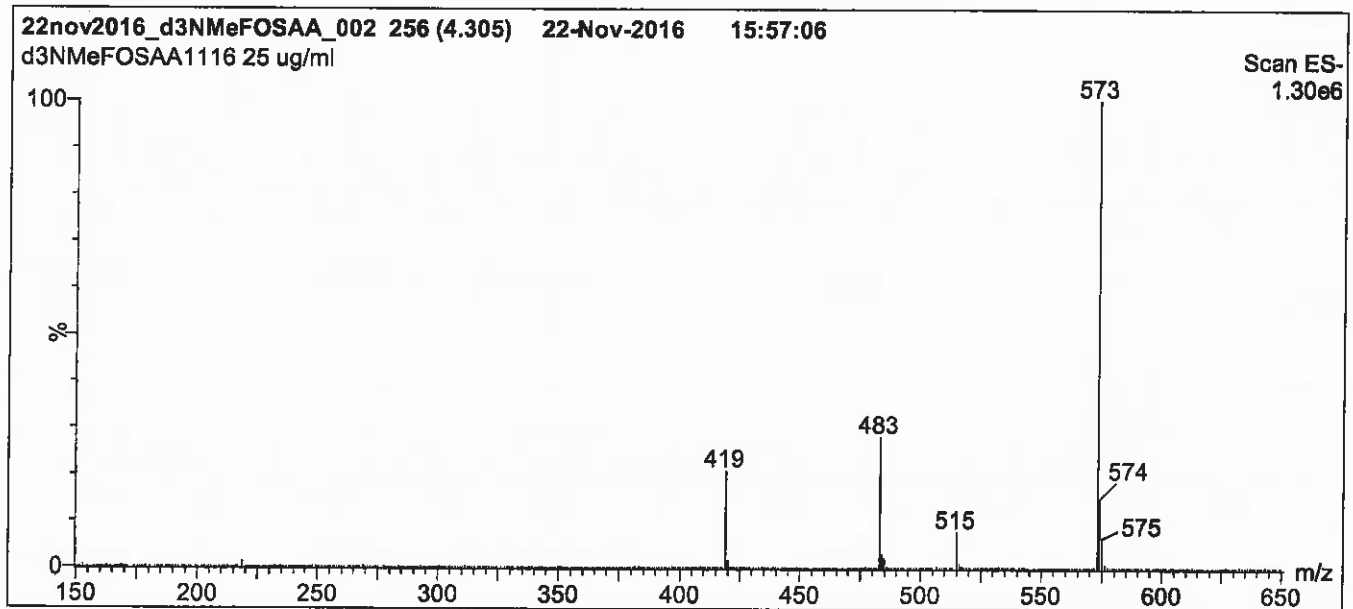
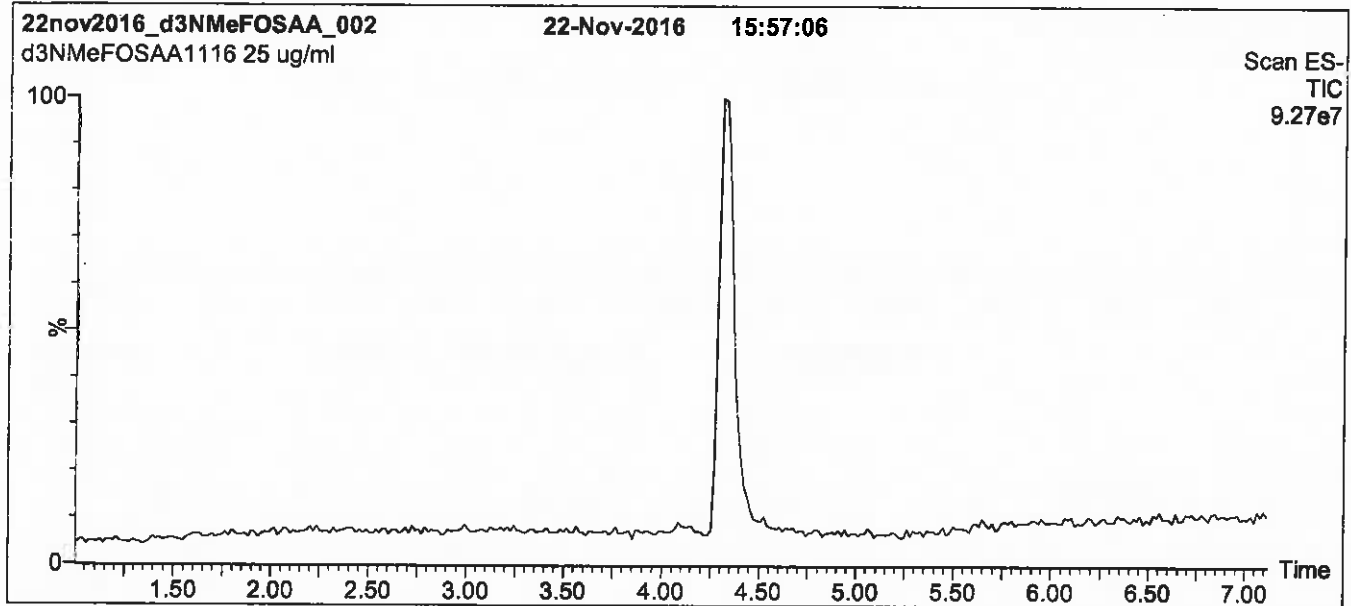
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**Figure 1: d3-N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)**



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**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
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**Mobile phase:** Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for 1.5 min  
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 Time: 10 min

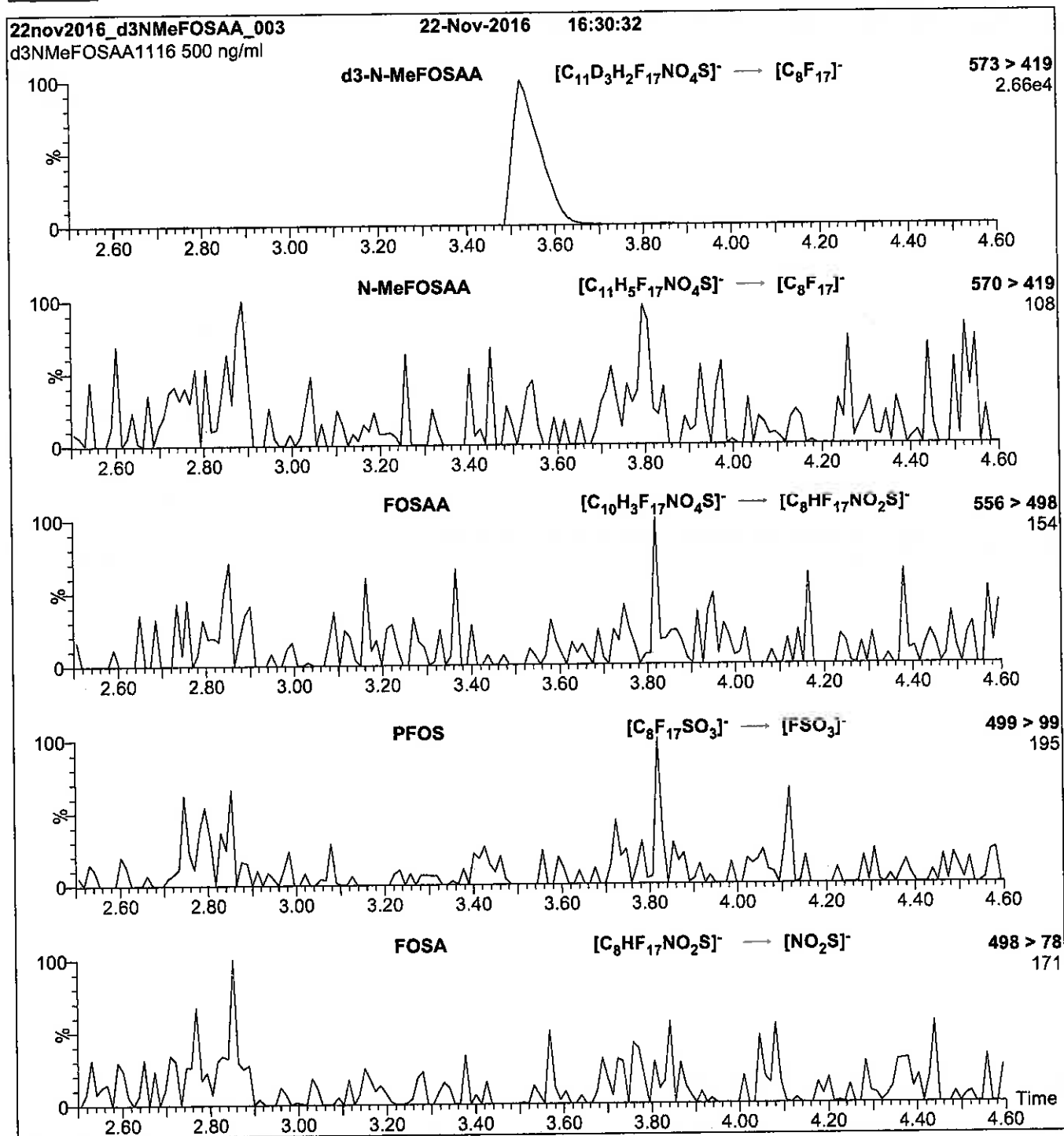
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 35.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: d3-N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop Injection  
10  $\mu$ l (500 ng/ml d3-N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
Collision Energy (eV) = 20

Reagent

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**LCd5-NEtFOSAA\_00003**



**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

**HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

**SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

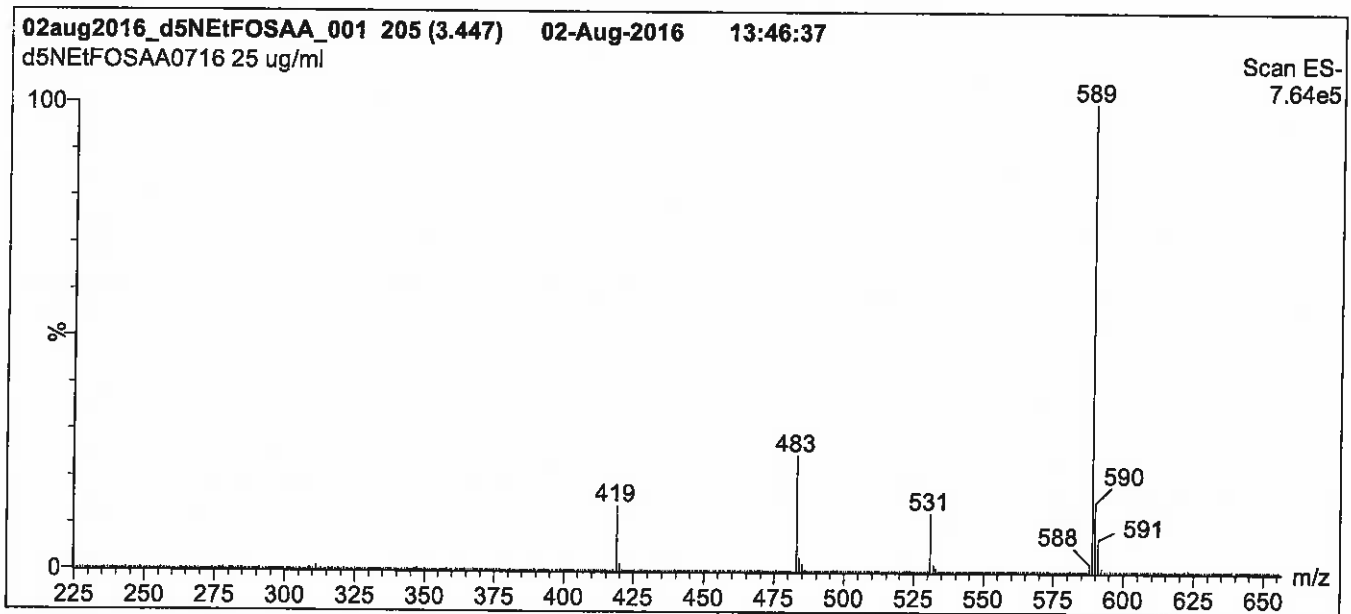
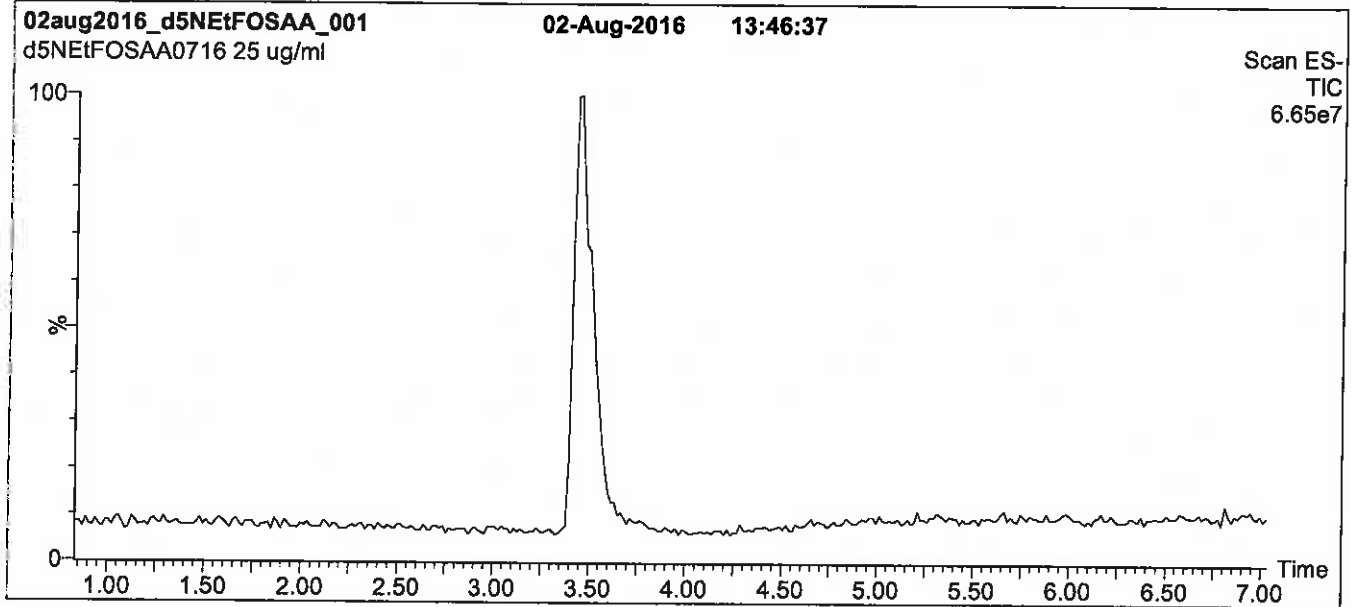
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 65% (80:20 MeOH:ACN) / 35% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

**Flow:** 350  $\mu$ l/min

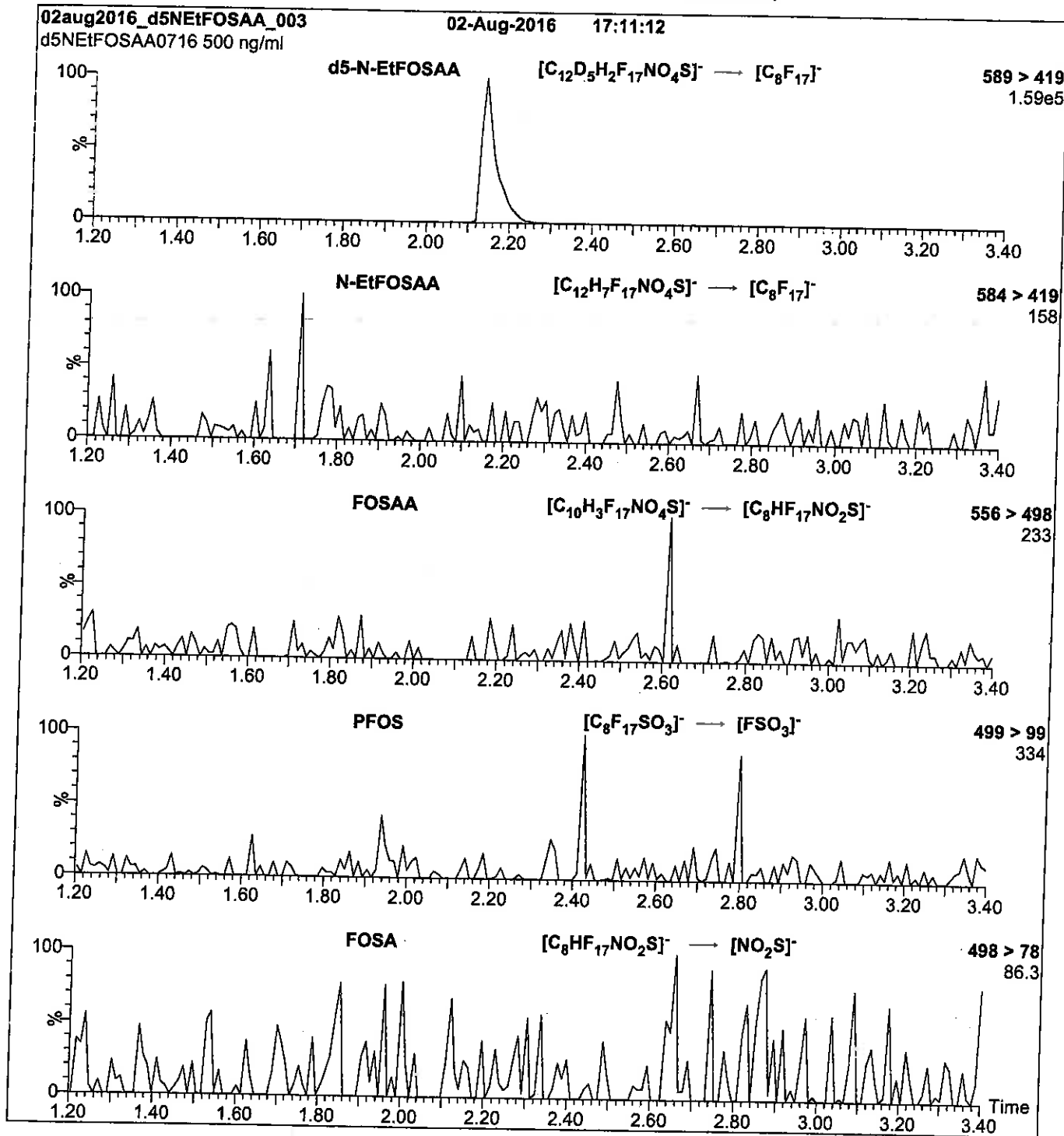
**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 35.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750



**Figure 2: d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml d5-N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
Collision Energy (eV) = 25

Reagent

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**LCd5-NEtFOSAA\_00004**

P: 3/20/17 SW

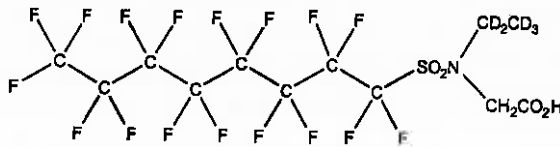


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** d5-N-EtFOSAA      **LOT NUMBER:** d5NEtFOSAA1116  
**COMPOUND:** N-ethyl-d5-perfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:**      **CAS #:** Not available



<b>MOLECULAR FORMULA:</b>	C <sub>12</sub> D <sub>6</sub> H <sub>3</sub> F <sub>17</sub> NO <sub>4</sub> S	<b>MOLECULAR WEIGHT:</b>	590.26
<b>CONCENTRATION:</b>	50 ± 2.5 µg/ml	<b>SOLVENT(S):</b>	Methanol Water (<1%)
<b>CHEMICAL PURITY:</b>	>98%	<b>ISOTOPIC PURITY:</b>	≥98% <sup>2</sup> H <sub>5</sub>
<b>LAST TESTED:</b> (mm/dd/yyyy)	11/22/2016		
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	11/22/2021		
<b>RECOMMENDED STORAGE:</b>	Refrigerate ampoule		


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim      Date: 12/01/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

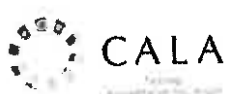
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

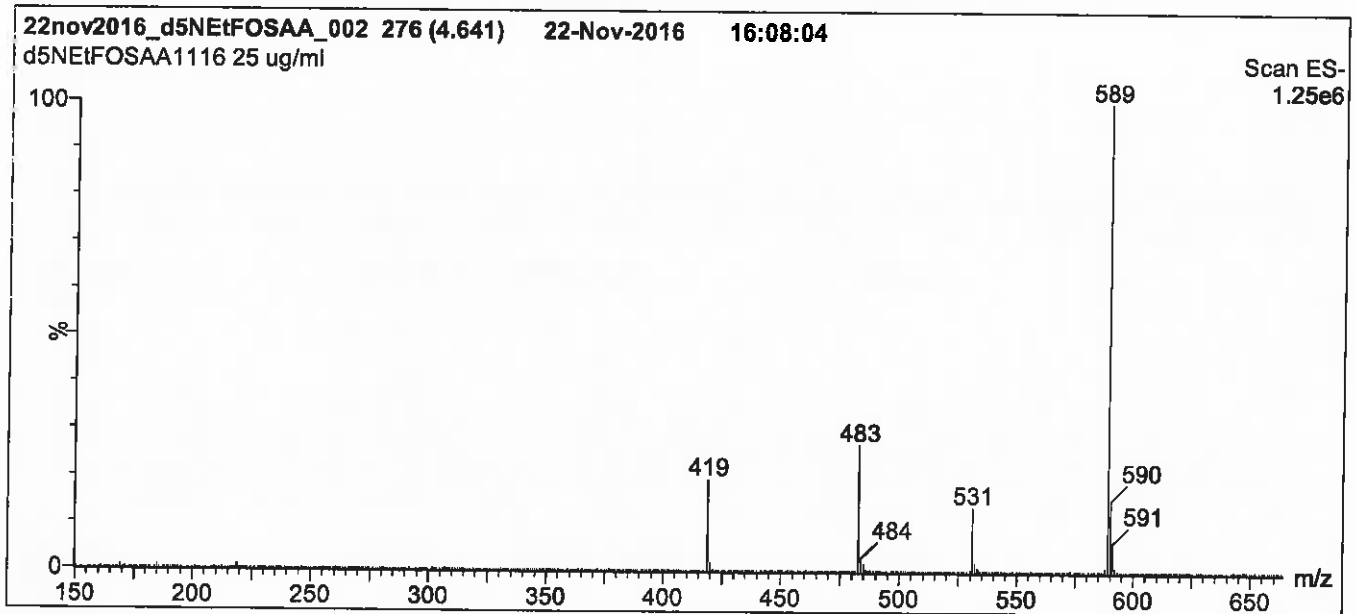
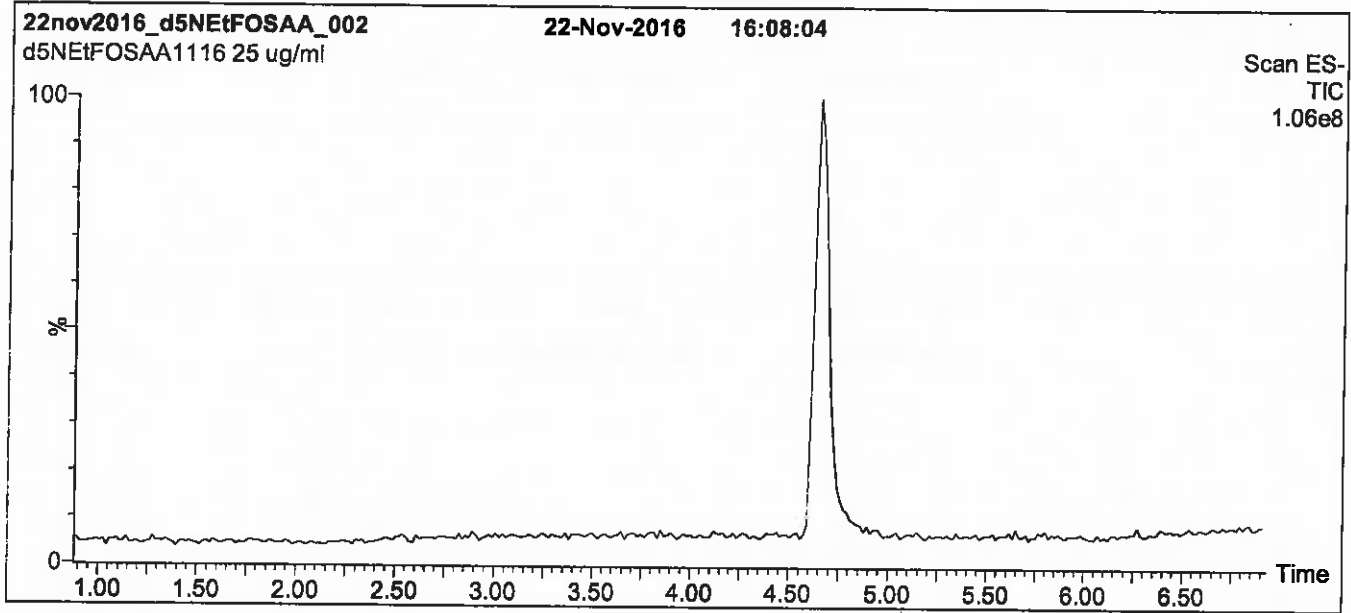
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: d5-N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

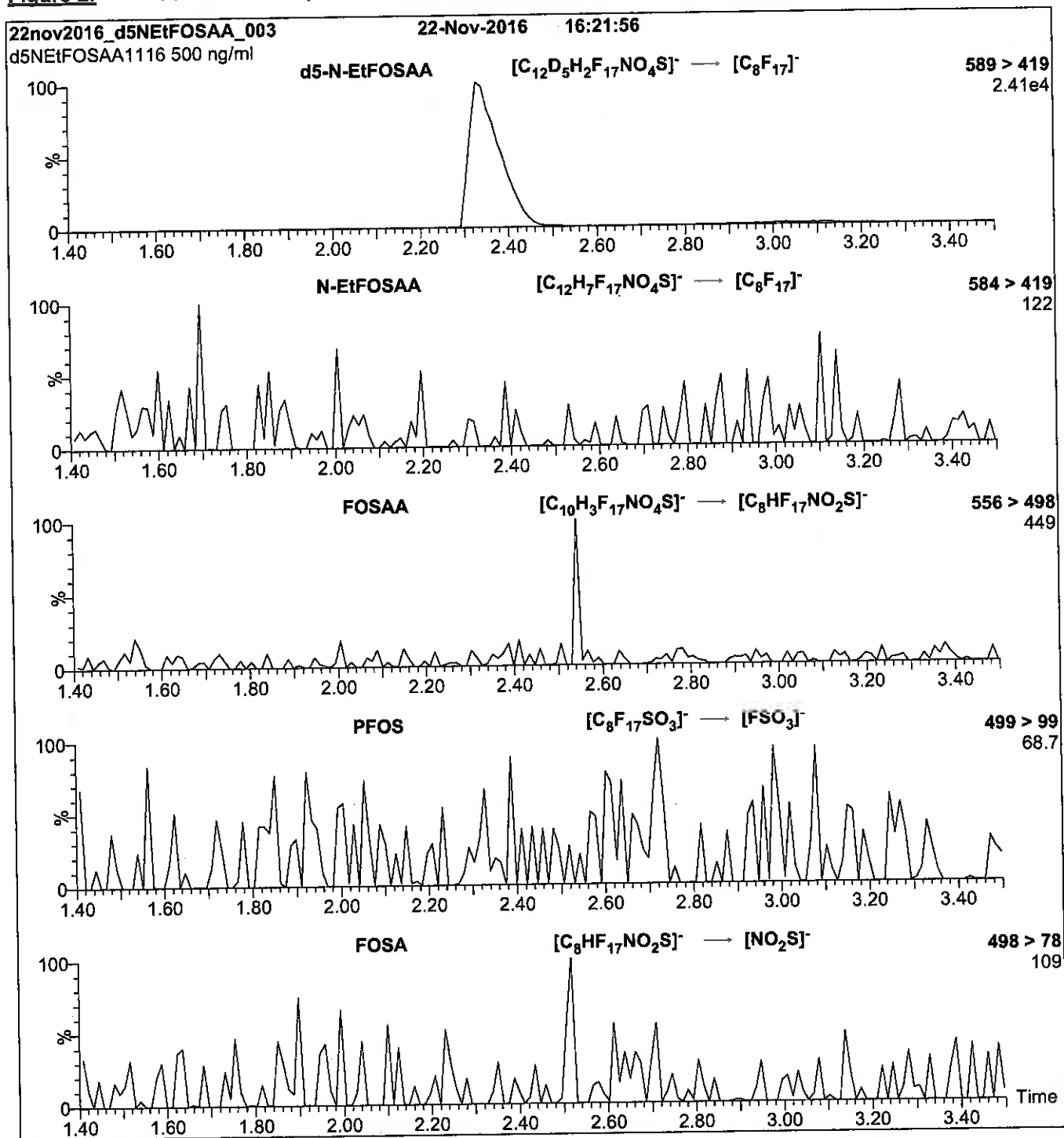
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 35.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: d5-N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
 10  $\mu$ l (500 ng/ml d5-N-EtFOSAA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
 Collision Energy (eV) = 20

Reagent

---

**LCM2-6:FTS\_00003**

R: 9/9/16 SBC



728304  
ID: LCM2-6:FTS\_00003  
Exp: 01/08/21 Prpd: SBC  
M2-6:2FTS

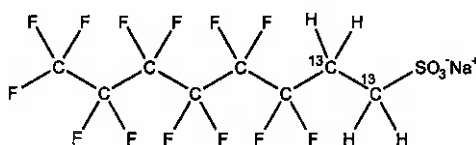


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2-6:2FTS **LOT NUMBER:** M262FTS0116  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluoro-[1,2-<sup>13</sup>C<sub>2</sub>]octane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>6</sub>H<sub>4</sub>F<sub>13</sub>SO<sub>3</sub>Na **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% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 01/08/2016 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 01/08/2021  
**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.
- The native 6:2FTS contains 4.22% of <sup>34</sup>S (due to natural isotopic abundance) therefore both native 6:2FTS and M2-6:2FTS will produce signals in the m/z 429 to m/z 409 channel during SRM analysis. We recommend using the m/z 429 to m/z 81 transition to monitor for M2-6:2FTS during quantitative analysis as it will be free of any native contribution (see Figure 2).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 01/11/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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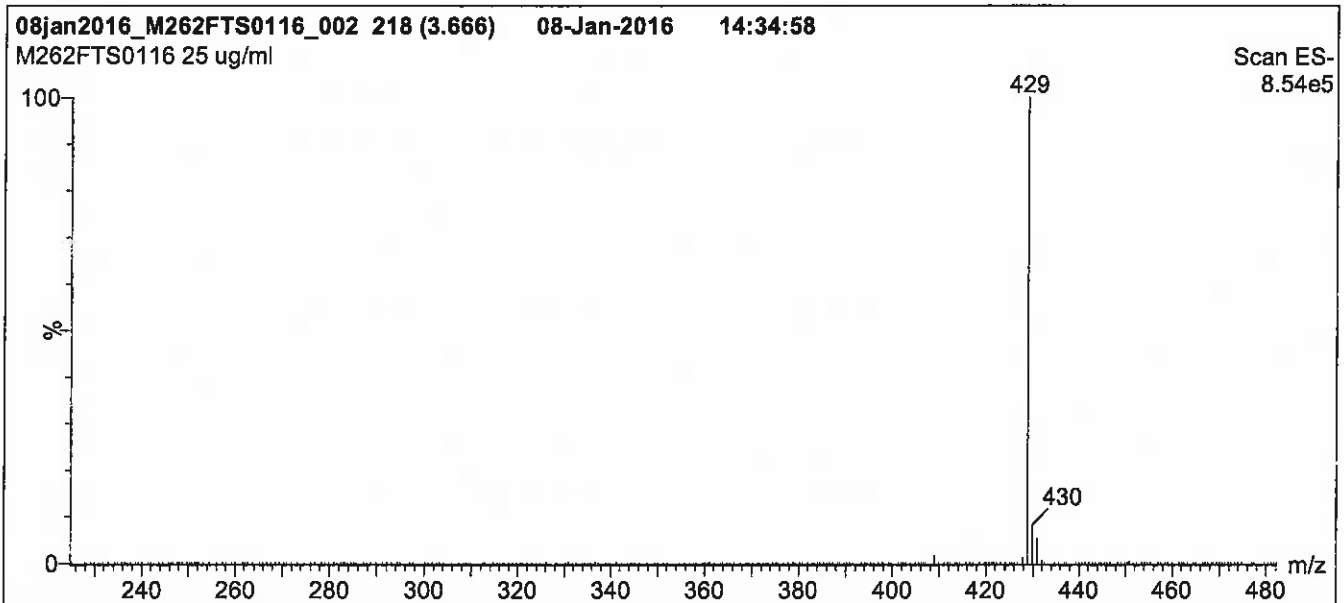
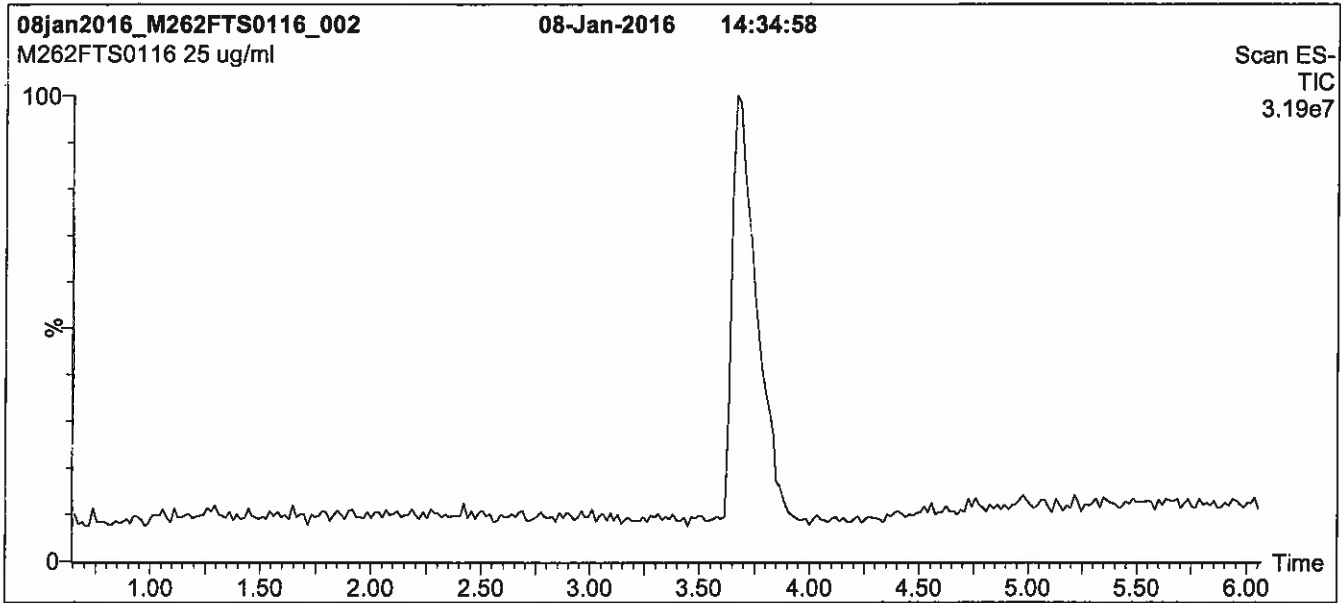
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**Figure 1: M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min  
and hold for 2 min before returning  
to initial conditions in 0.5 min.  
Time: 10 min

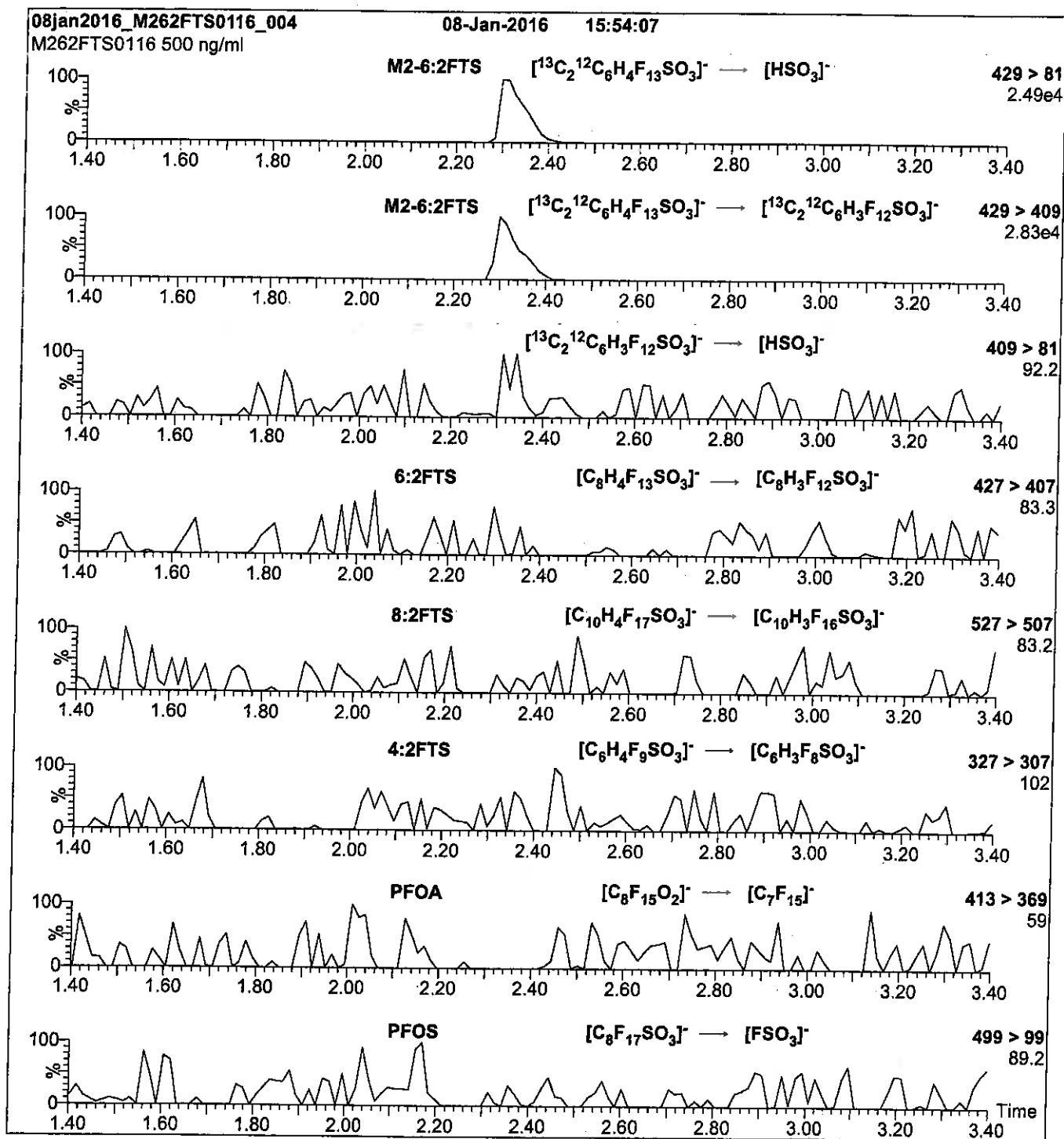
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 30.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2-6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.28e-3  
Collision Energy (eV) = 25

Reagent

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**LCM2-6:FTS\_00004**

N 3/20/17 SKV

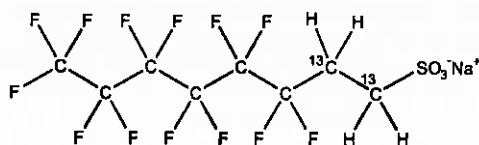


**WELLINGTON  
LABORATORIES**

**CERTIFICATE OF ANALYSIS  
DOCUMENTATION**

**PRODUCT CODE:** M2-6:2FTS **LOT NUMBER:** M262FTS0217  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluoro-[1,2-<sup>13</sup>C<sub>2</sub>]octane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>H<sub>4</sub>F<sub>10</sub>SO<sub>3</sub>Na **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% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 02/17/2017 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 02/17/2022  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
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**Certified By:**   
 B.G. Chittim **Date:** 02/24/2017  
 (mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
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This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

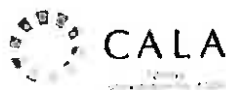
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

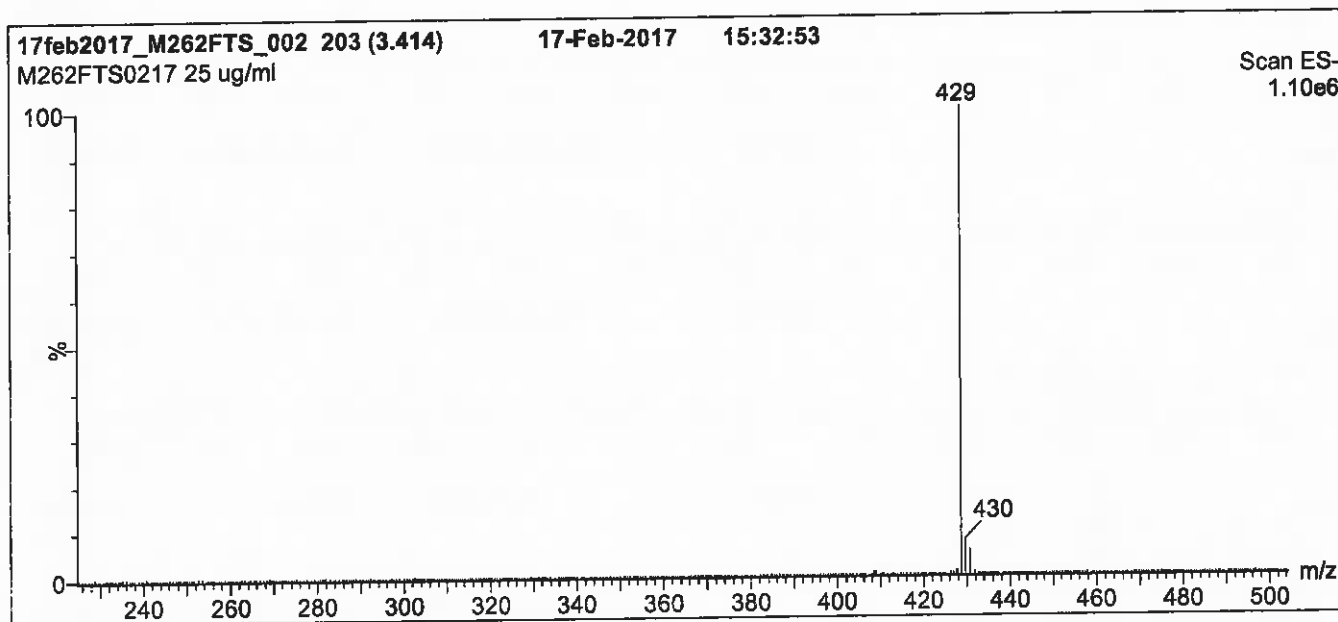
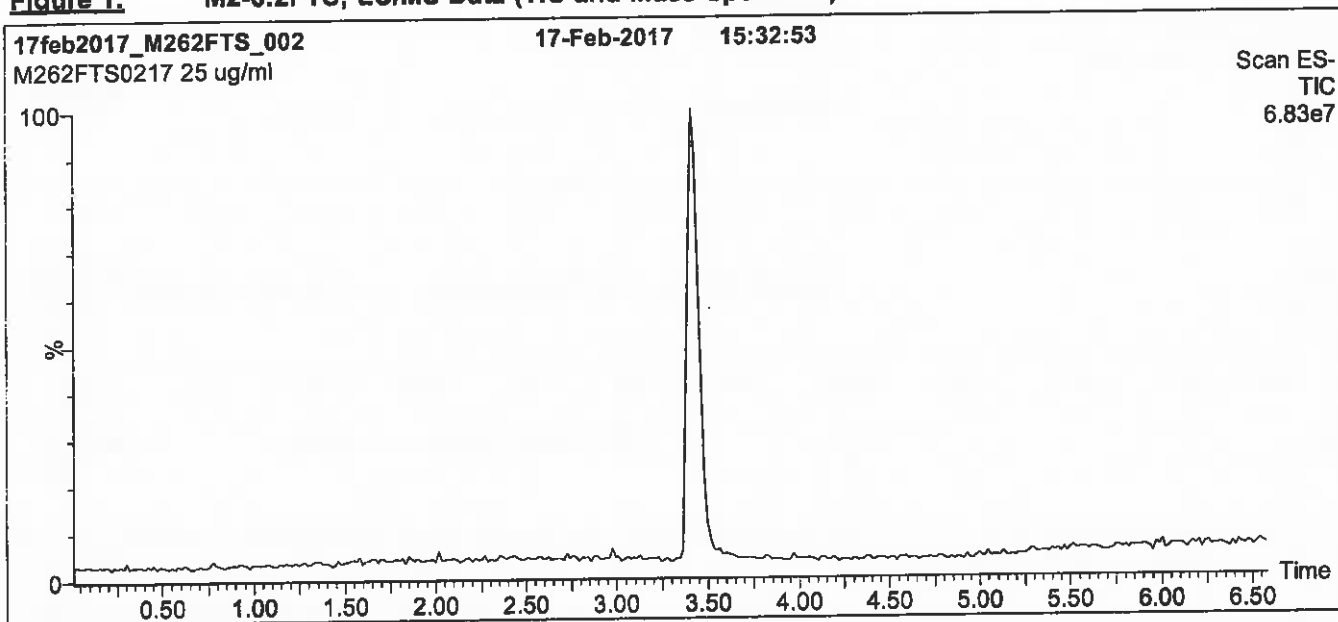
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: M2-6:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>1e</sub>,  
1.7  $\mu$ m, 2.1 x 100 mm

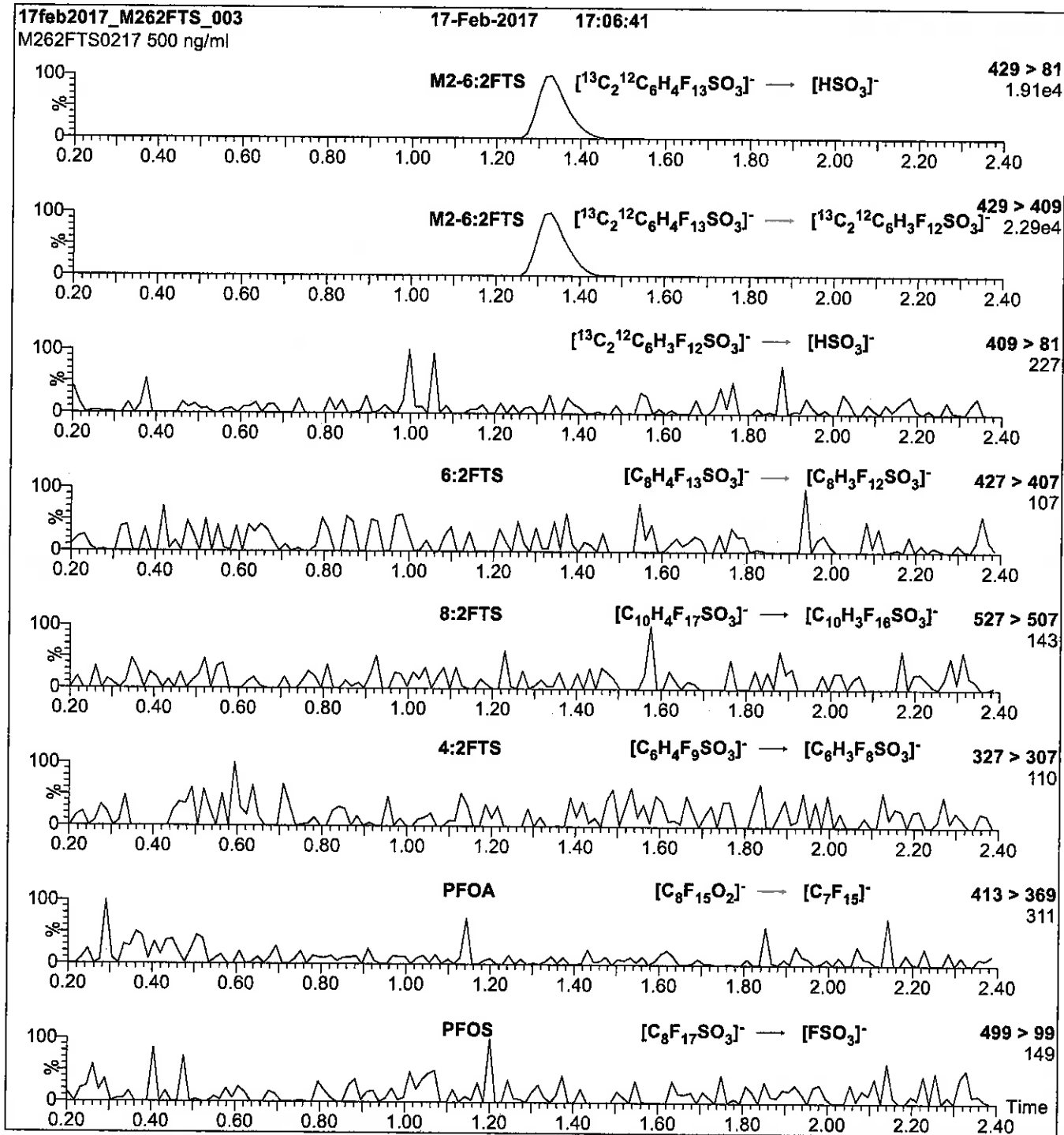
**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 1 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)  
**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 3.00  
**Cone Voltage (V)** = 30.00  
**Cone Gas Flow (l/hr)** = 50  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: M2-6:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2-6:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 25



Reagent

---

**LCM2-8:2FTS\_00004**

r: 3/20/17 sev

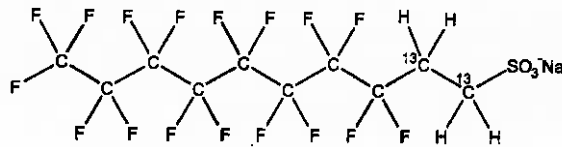


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2-8:2FTS **LOT NUMBER:** M282FTS0816  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluoro-[1,2-<sup>13</sup>C<sub>2</sub>]decane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>H<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 552.15  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
47.9 ± 2.4 µg/ml (M2-8:2FTS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 08/22/2016 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 08/22/2021  
**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.
- The native 8:2FTS contains 4.22% of <sup>34</sup>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:**   
B.G. Chittim **Date:** 09/02/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

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**HAZARDS:**

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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**TRACEABILITY:**

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**EXPIRY DATE / PERIOD OF VALIDITY:**

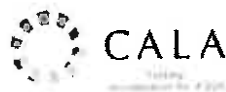
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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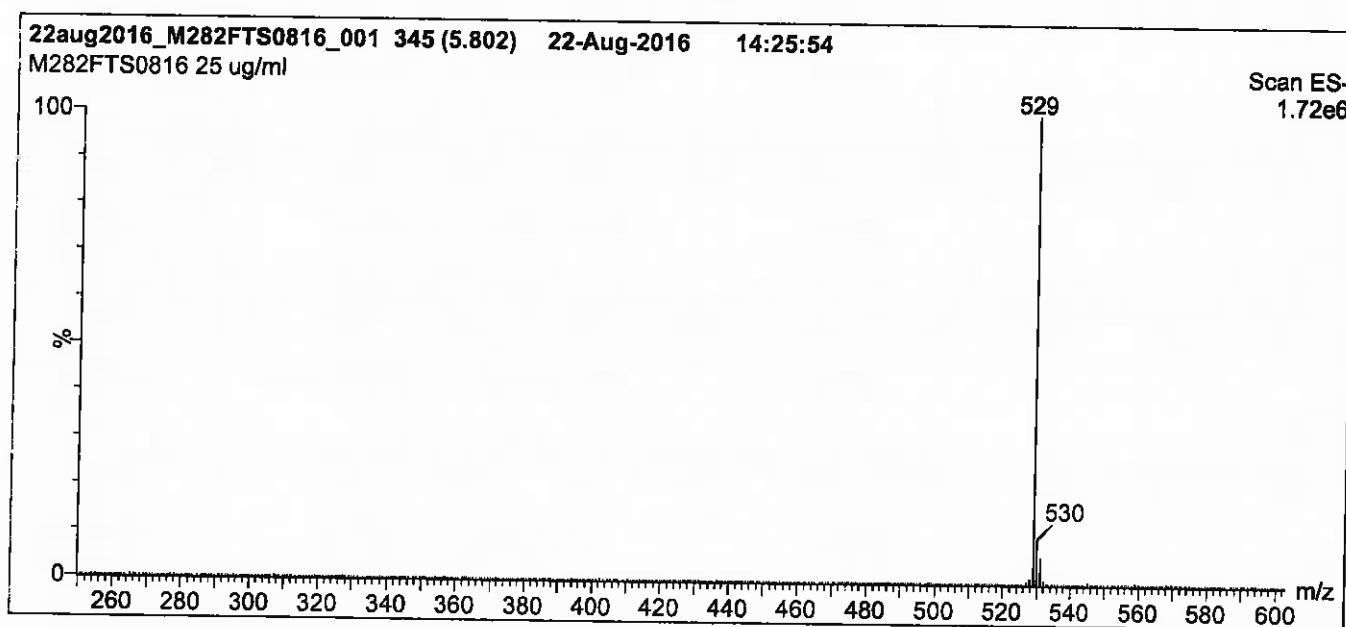
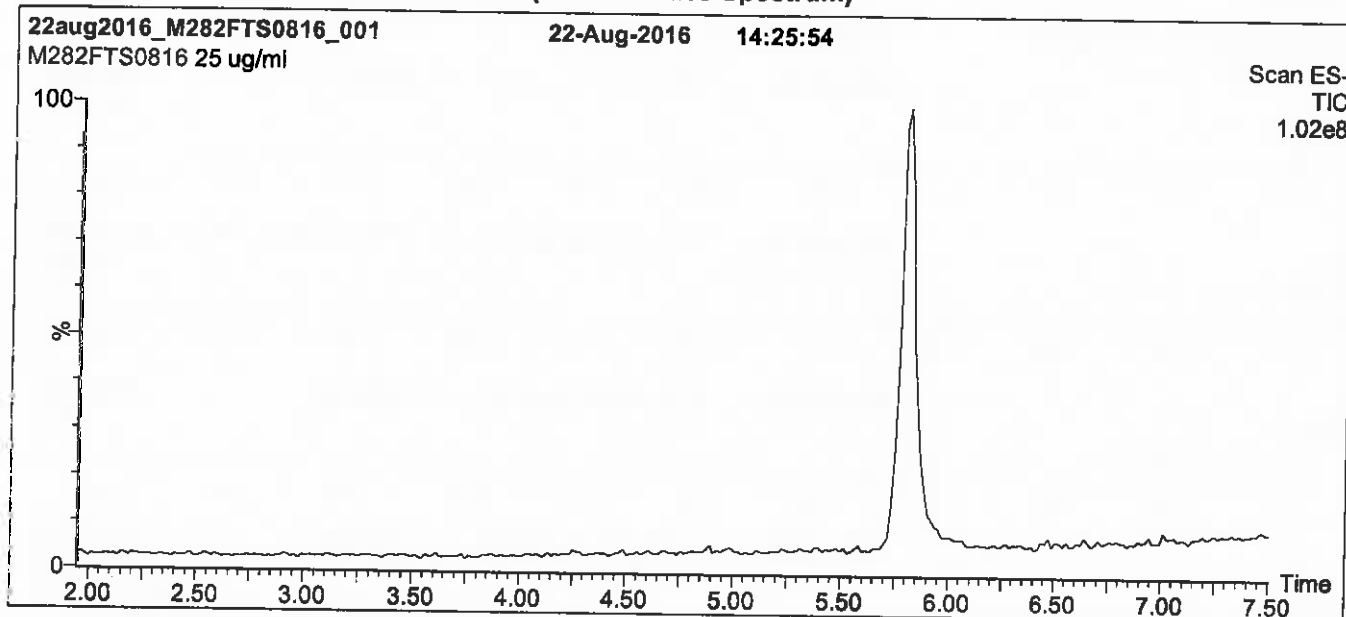
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M2-8:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Agilent Zorbax Bonus-RP  
 1.8  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 55% (80:20 MeOH:ACN) / 45% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

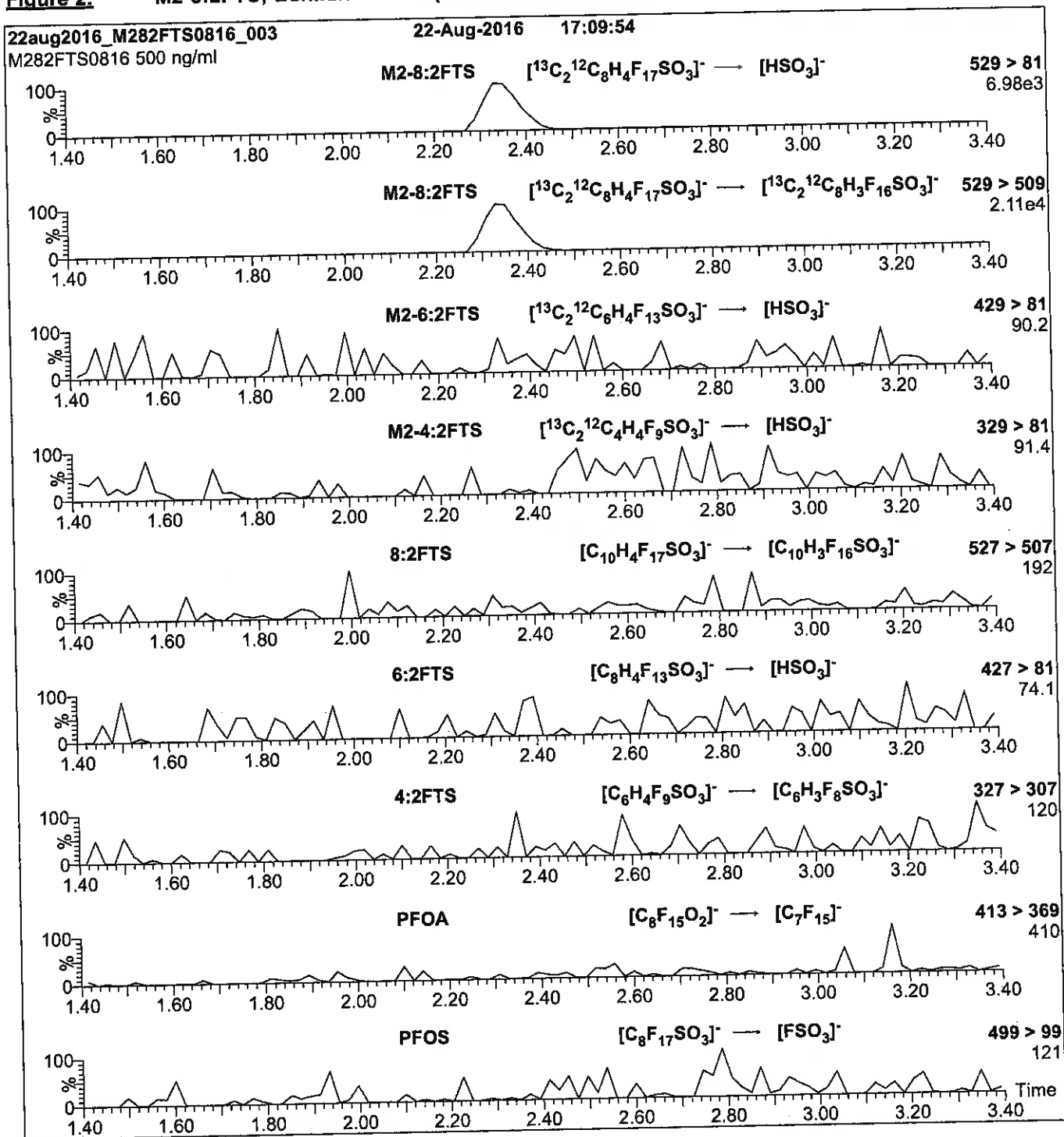
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (250 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 30.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10 µl (500 ng/ml M2-8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300 µl/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
 Collision Energy (eV) = 30

Reagent

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**LCM2PFHxDA\_00008**

R: SBC 9/22/16

739512  
ID: LCM2PFHxDA\_00008  
Exp: 01/07/21 Prod: SBC  
13C2-PFHxDA at 50ug/mL

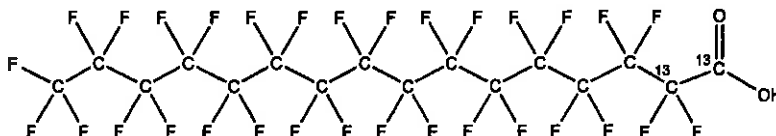


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2PFHxDA      **LOT NUMBER:** M2PFHxDA1112  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]hexadecanoic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>14</sub>HF<sub>31</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 816.11  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 01/07/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 01/07/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of native perfluoro-n-hexadecanoic acid.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 01/11/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **QUALITY MANAGEMENT:**

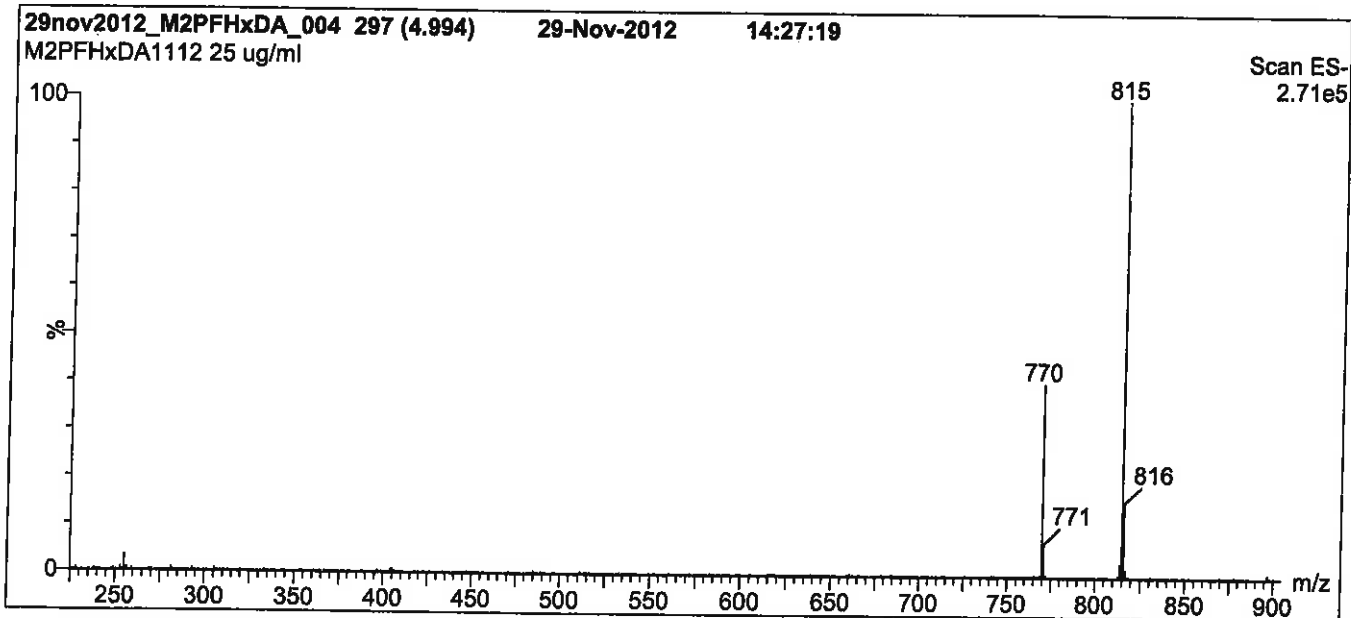
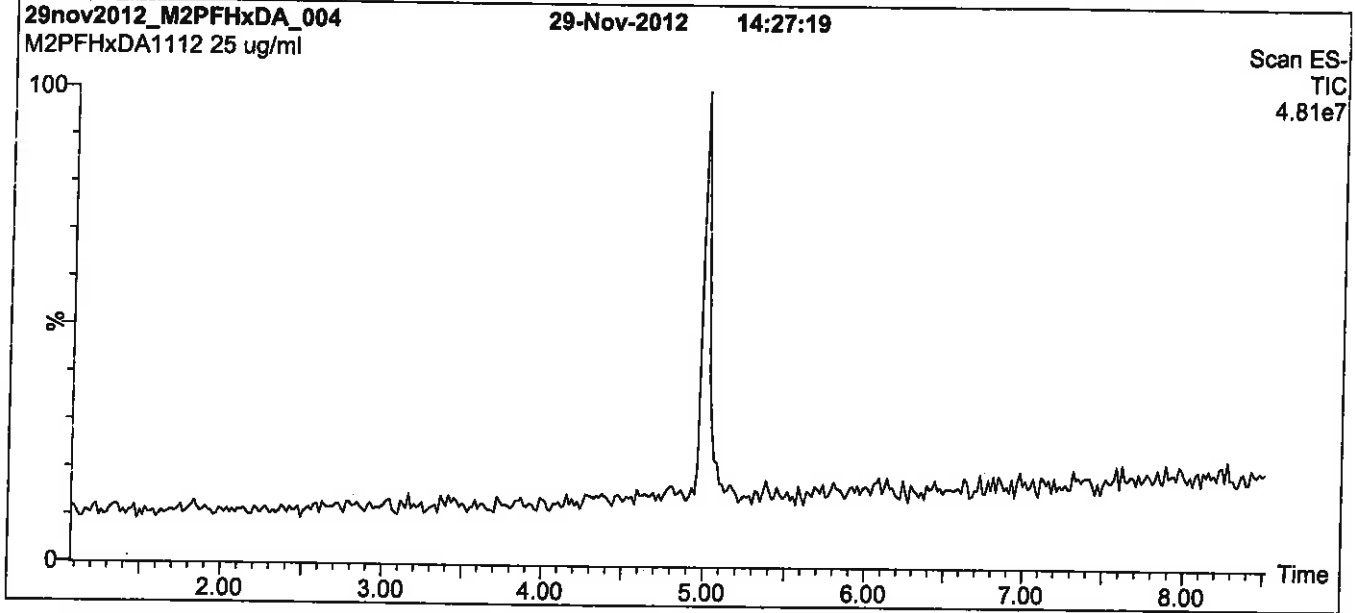
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**Figure 1: M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 100% organic over 7 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

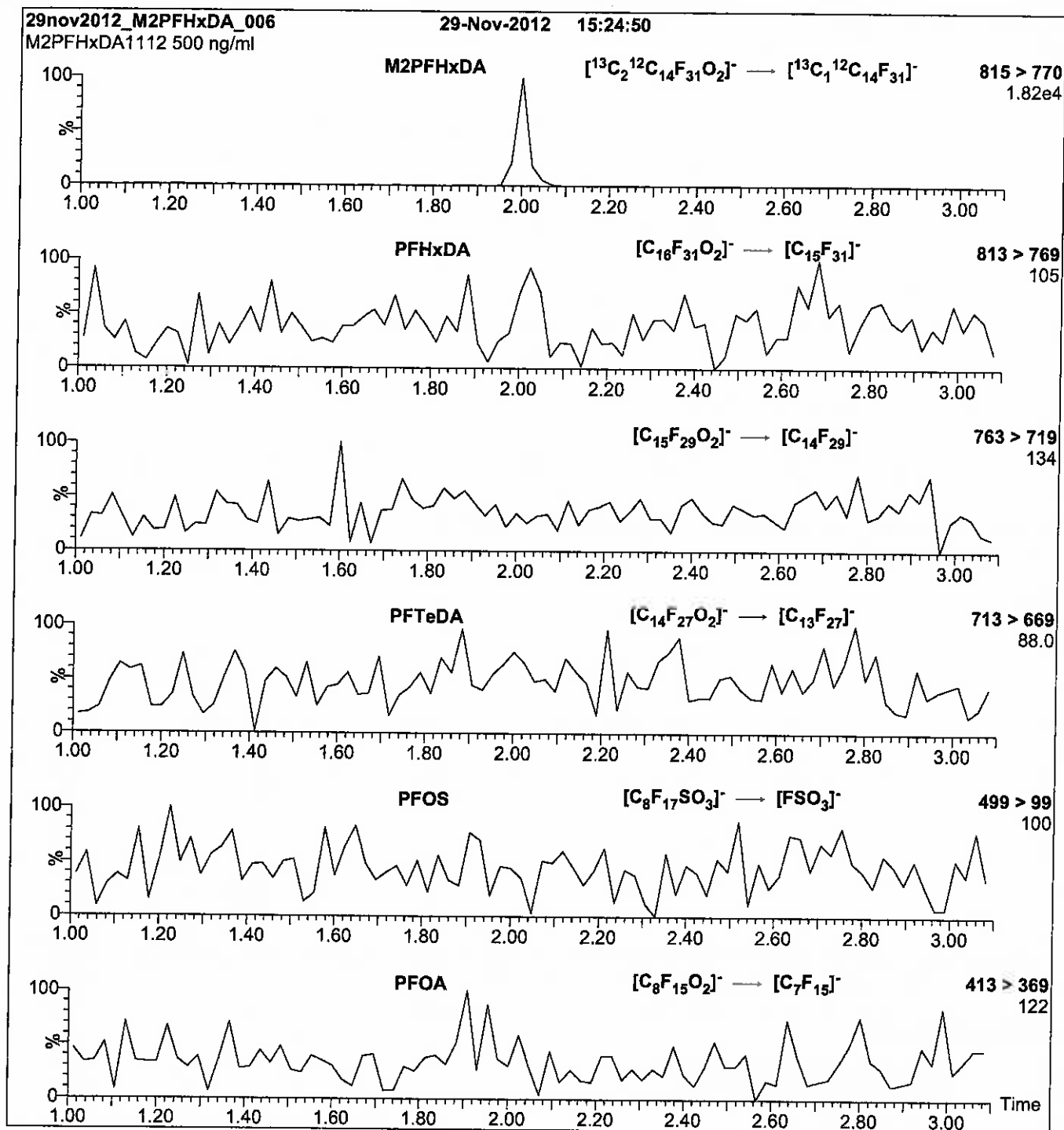
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 1200 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 2.00  
**Cone Voltage (V)** = 25.00  
**Cone Gas Flow (l/hr)** = 60  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 15

Reagent

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**LCM2PFHxDA\_00009**

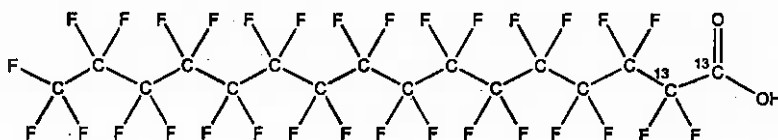


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2PFHxDA      **LOT NUMBER:** M2PFHxDA1112  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]hexadecanoic acid

**STRUCTURE:**      **CAS #:** Not available



<b>MOLECULAR FORMULA:</b>	<sup>13</sup> C <sub>2</sub> <sup>12</sup> C <sub>14</sub> HF <sub>31</sub> O <sub>2</sub>	<b>MOLECULAR WEIGHT:</b>	816.11
<b>CONCENTRATION:</b>	50 ± 2.5 µg/ml	<b>SOLVENT(S):</b>	Methanol Water (<1%)
<b>CHEMICAL PURITY:</b>	>98%	<b>ISOTOPIC PURITY:</b>	≥99% <sup>13</sup> C (1,2- <sup>13</sup> C <sub>2</sub> )
<b>LAST TESTED:</b> (mm/dd/yyyy)	01/07/2016		
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	01/07/2021		
<b>RECOMMENDED STORAGE:</b>	Store ampoule in a cool, dark place		

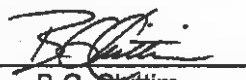
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- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
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### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

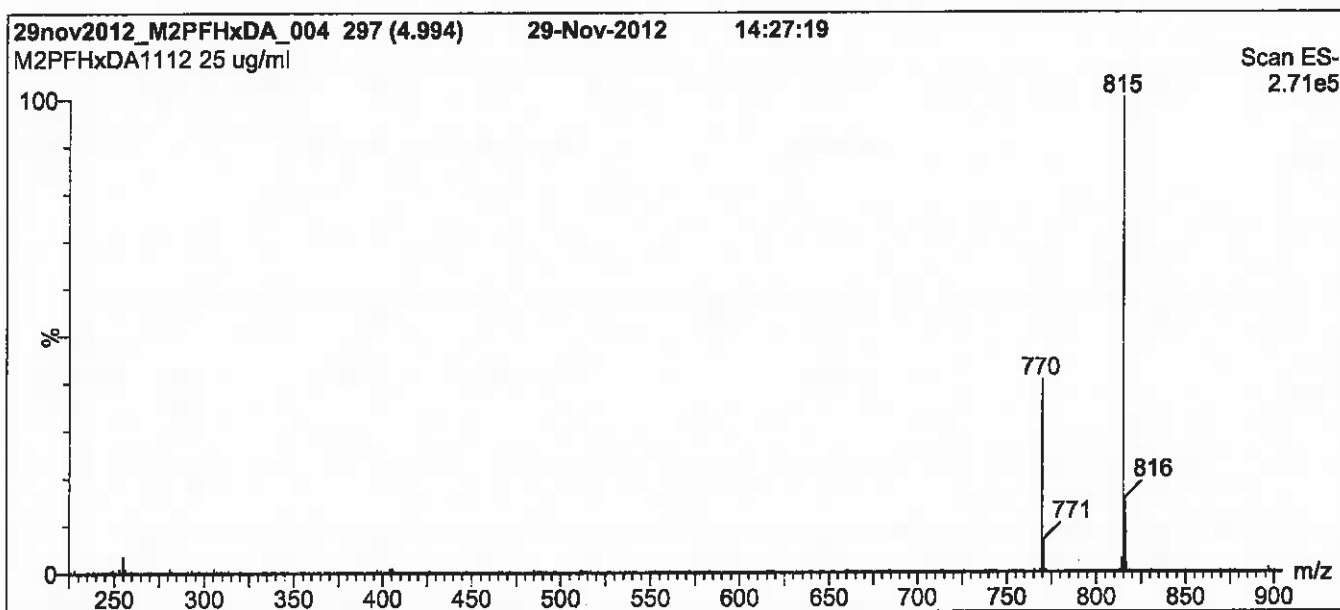
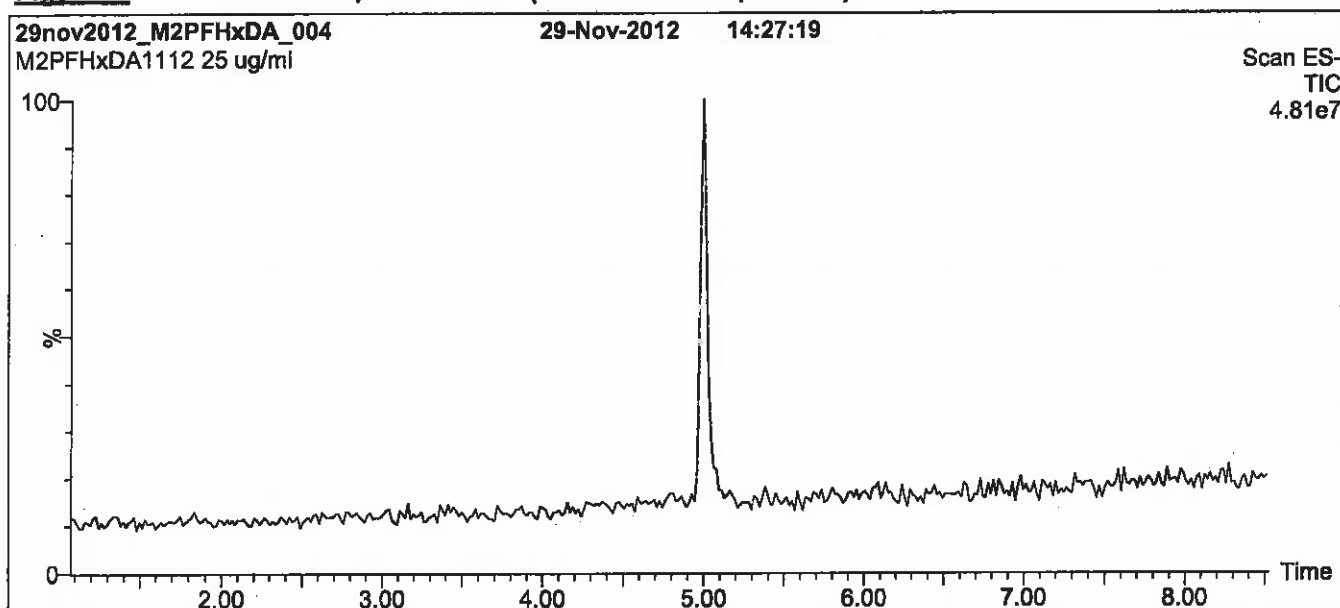
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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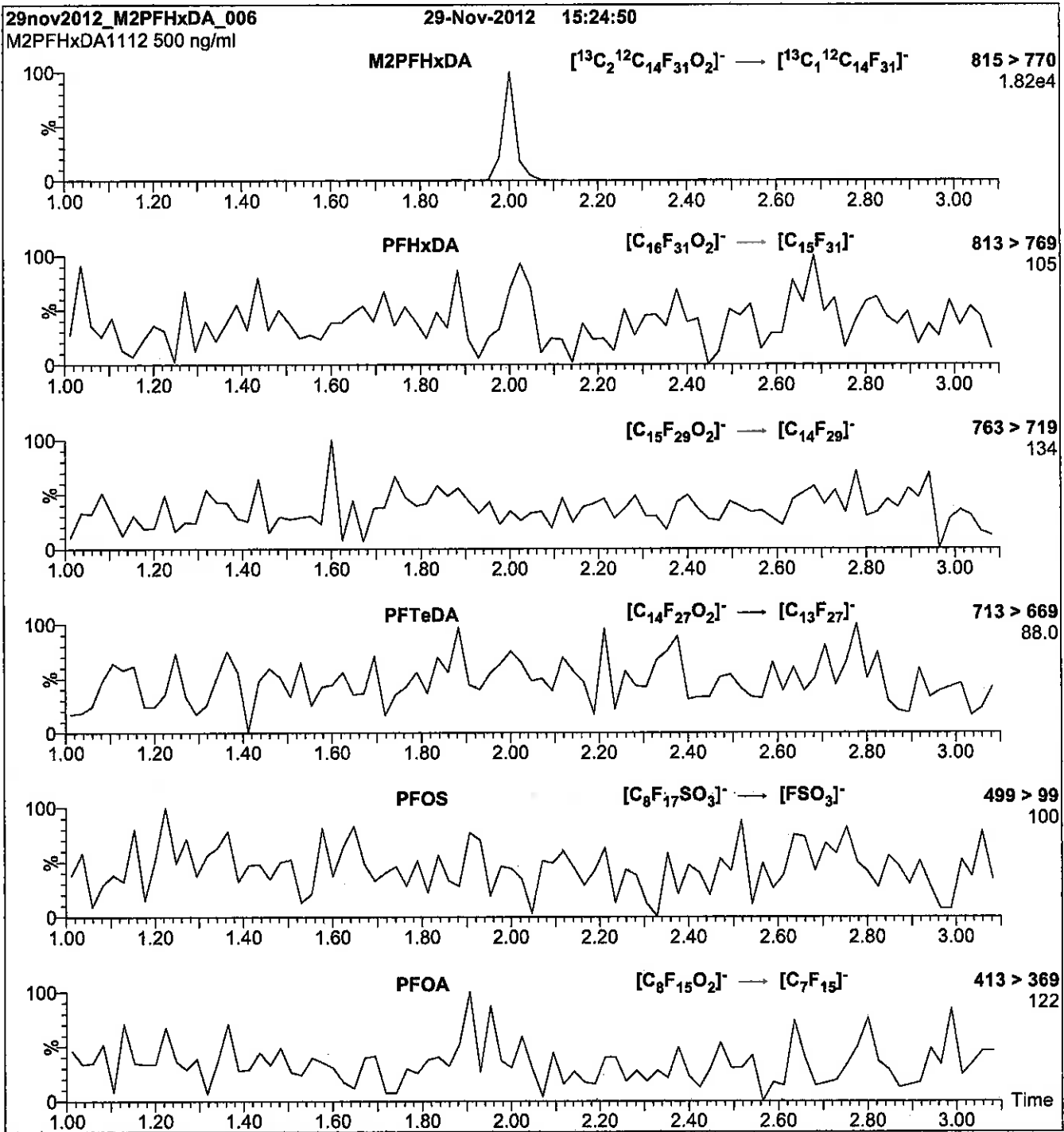
**Figure 1: M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

<b>LC:</b>	Waters Acquity Ultra Performance LC	<b>MS Parameters</b>
<b>MS:</b>	Micromass Quattro <i>micro</i> API MS	Experiment: Full Scan (225 - 1200 amu)
<b>Chromatographic Conditions</b>		Source: Electrospray (negative)
Column:	Acquity UPLC BEH Shield RP <sub>18</sub> 1.7 $\mu$ m, 2.1 x 100 mm	Capillary Voltage (kV) = 2.00
Mobile phase:	Gradient Start: 60% (80:20 MeOH:ACN) / 40% H <sub>2</sub> O (both with 10 mM NH <sub>4</sub> OAc buffer) Ramp to 100% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min. Time: 10 min	Cone Voltage (V) = 25.00
Flow:	300 $\mu$ l/min	Cone Gas Flow (l/hr) = 60
		Desolvation Gas Flow (l/hr) = 750

**Figure 2: M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFHxDA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 15

Reagent

---

**LCM2PFHxDA\_00010**





### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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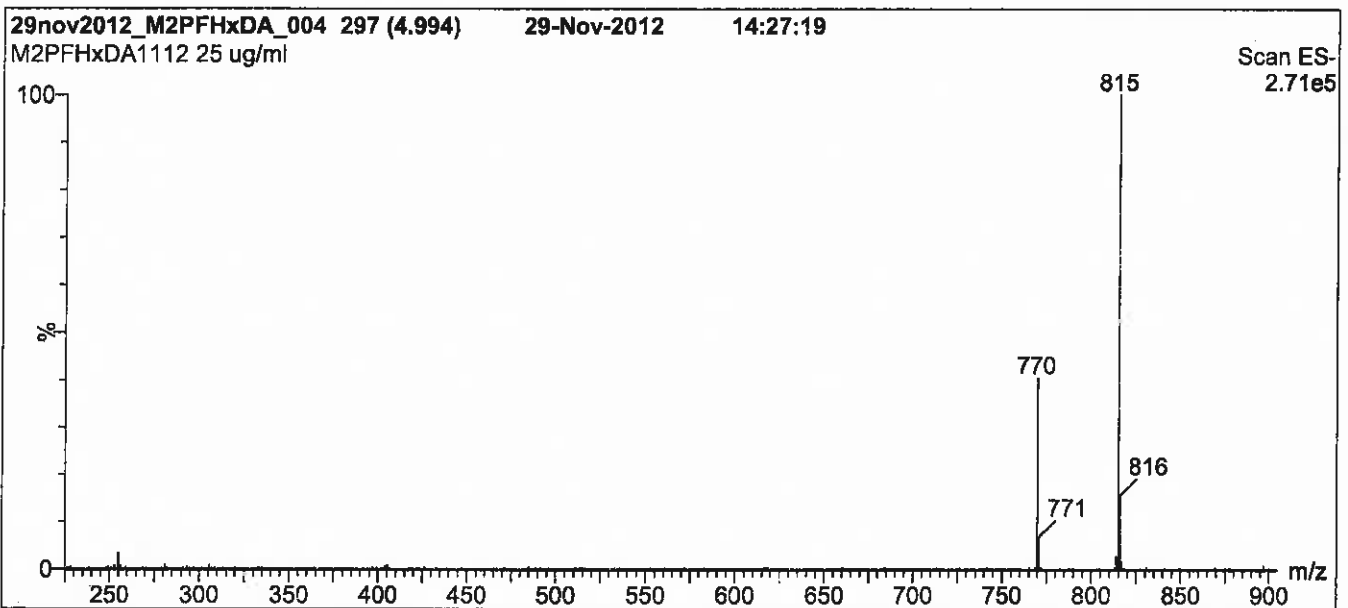
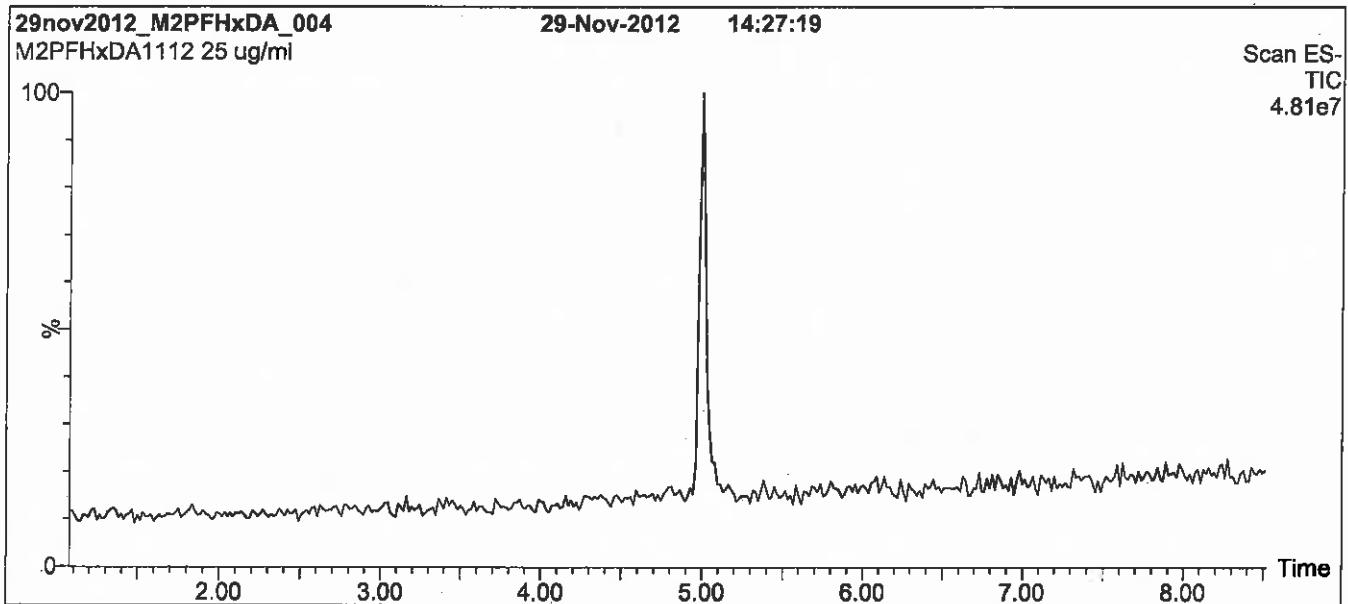
### **QUALITY MANAGEMENT:**

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**Figure 1: M2PFHxDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 100% organic over 7 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

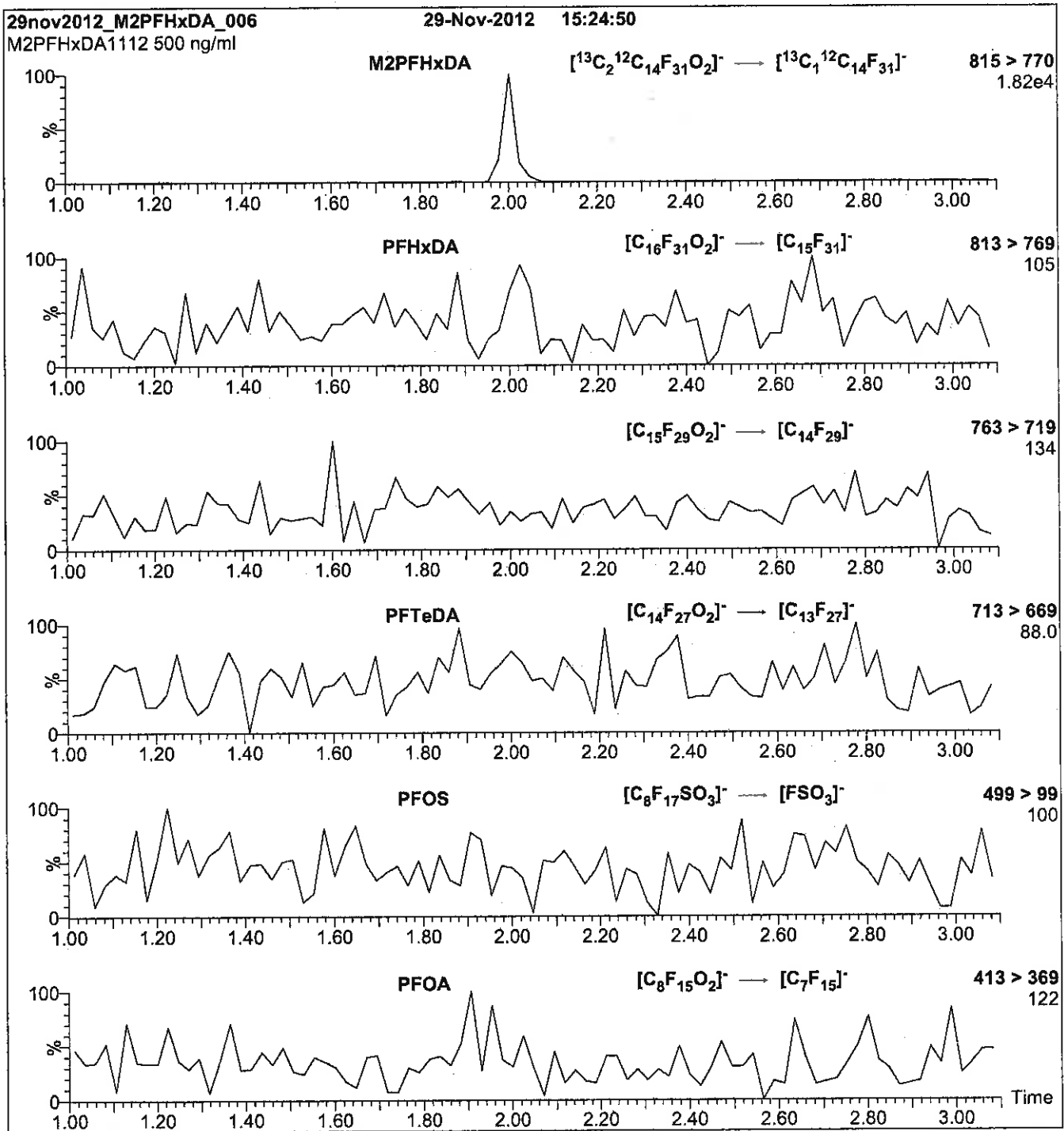
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 1200 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV):** 2.00  
**Cone Voltage (V):** 25.00  
**Cone Gas Flow (l/hr):** 60  
**Desolvation Gas Flow (l/hr):** 750

**Figure 2: M2PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 15

Reagent

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**LCM2PFOA\_00005**

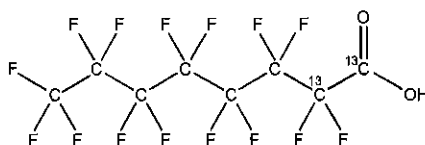


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2PFOA **LOT NUMBER:** M2PFOA0613  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]octanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>6</sub>H<sub>15</sub>F<sub>15</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 416.05  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 06/19/2013  
**EXPIRY DATE:** (mm/dd/yyyy) 06/19/2018  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By: \_\_\_\_\_

  
B.G. Chittim

Date: 07/16/2013  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

**INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. They are designed to be used as reference standards for the identification and/or quantification of specific chemical compound(s).

**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. Material Safety Data Sheets (MSDSs) 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, x-ray crystallography and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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**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 17025:2005 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration for the period of time specified by the expiry date in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

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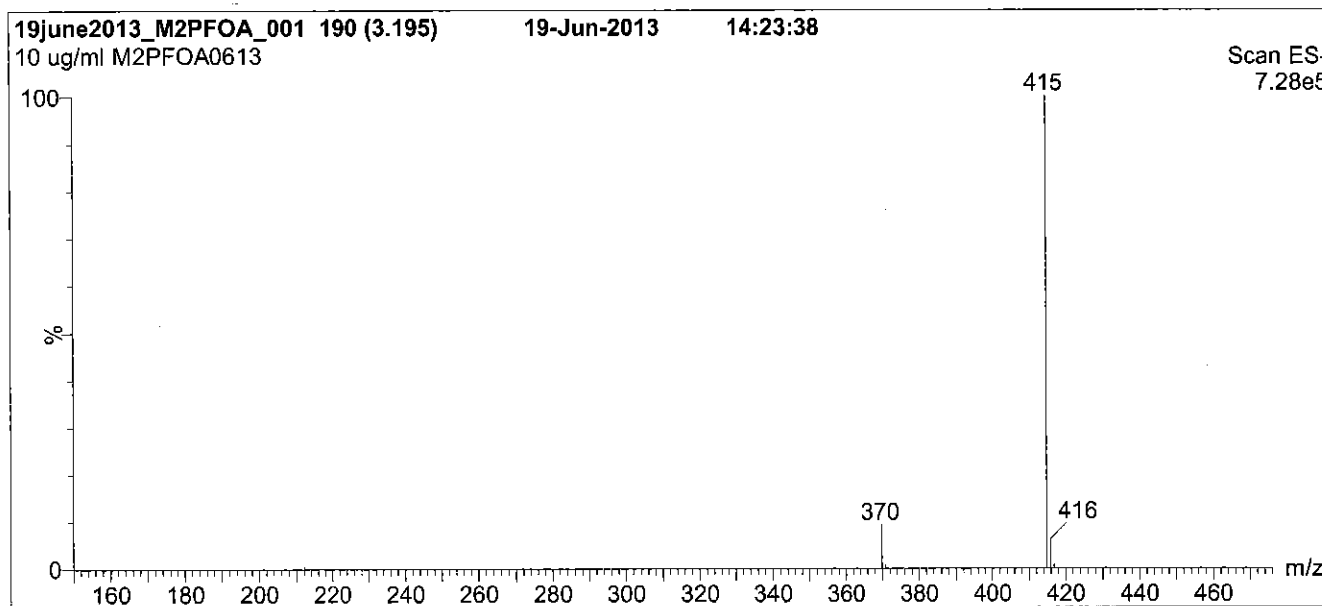
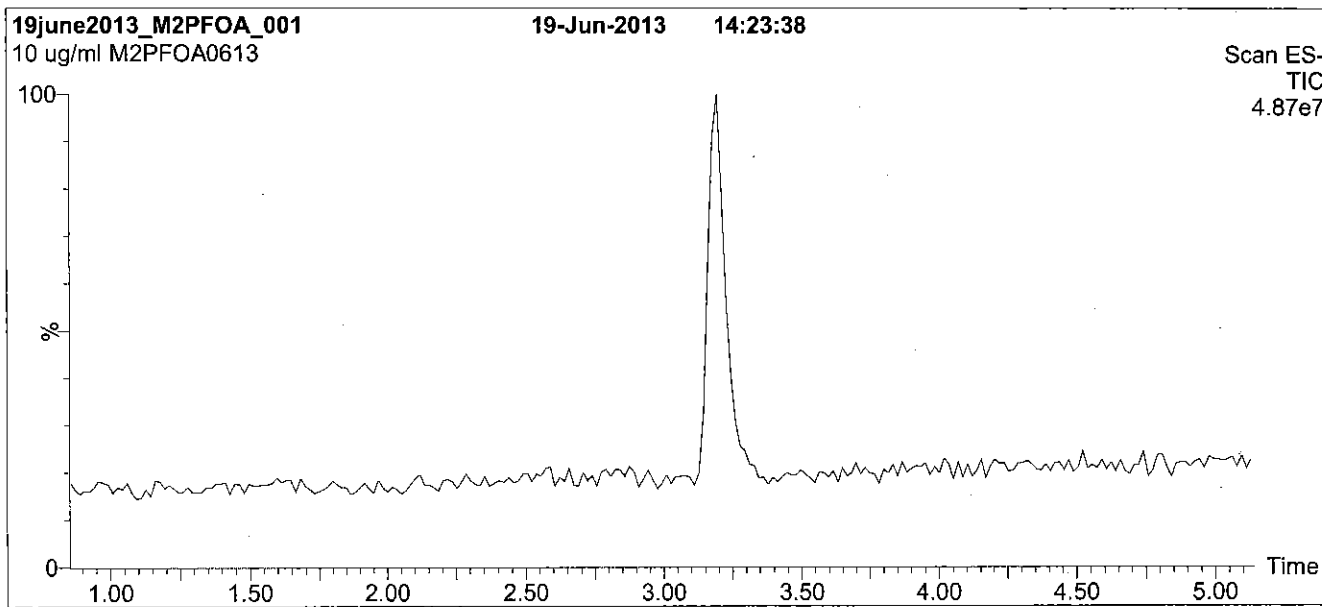
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to ISO 9001:2008 by SAI Global, ISO/IEC 17025:2005 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34:2009 by ACLASS (certificate number AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: M2PFOA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ l/min

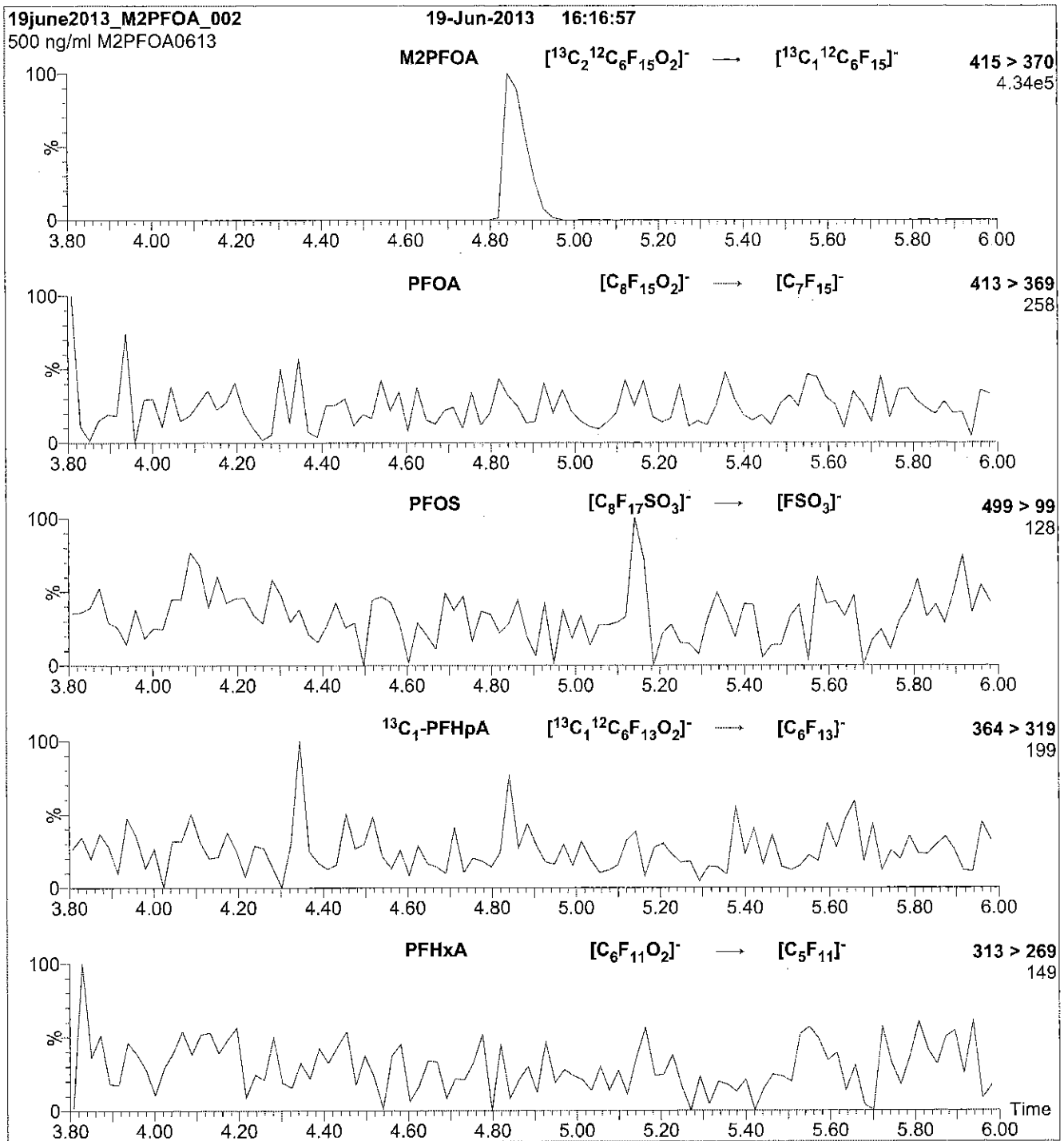
**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750



**Figure 2: M2PFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFOA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.66e-3  
Collision Energy (eV) = 11

Reagent

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**LCM2PFOA\_00006**

R: SBC 12/21/16



814260

ID: LCM2PFOA\_00006

Exp: 02/12/21 Prod: SBC

<sup>13</sup>C2-PFOA Stock 50ug/mL

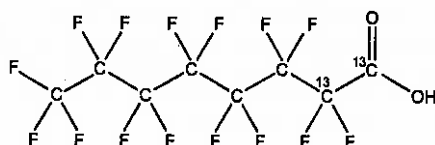


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2PFOA      **LOT NUMBER:** M2PFOA0216  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]octanoic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>6</sub>HF<sub>16</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 416.05  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 02/12/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 02/12/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 02/24/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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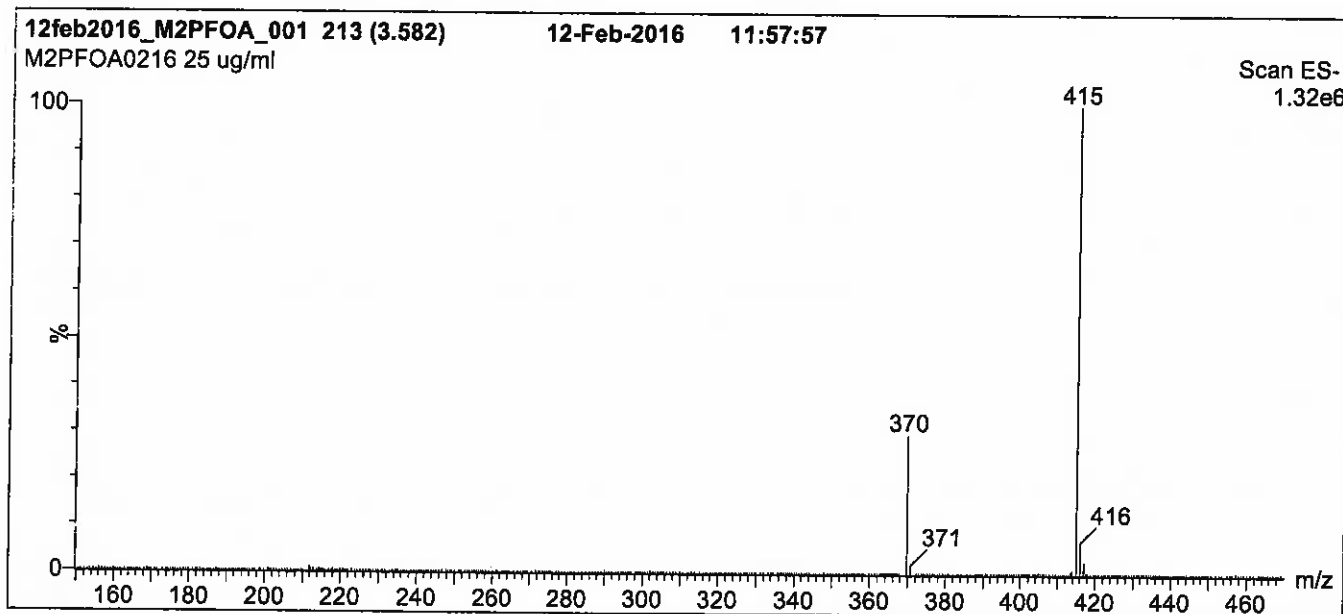
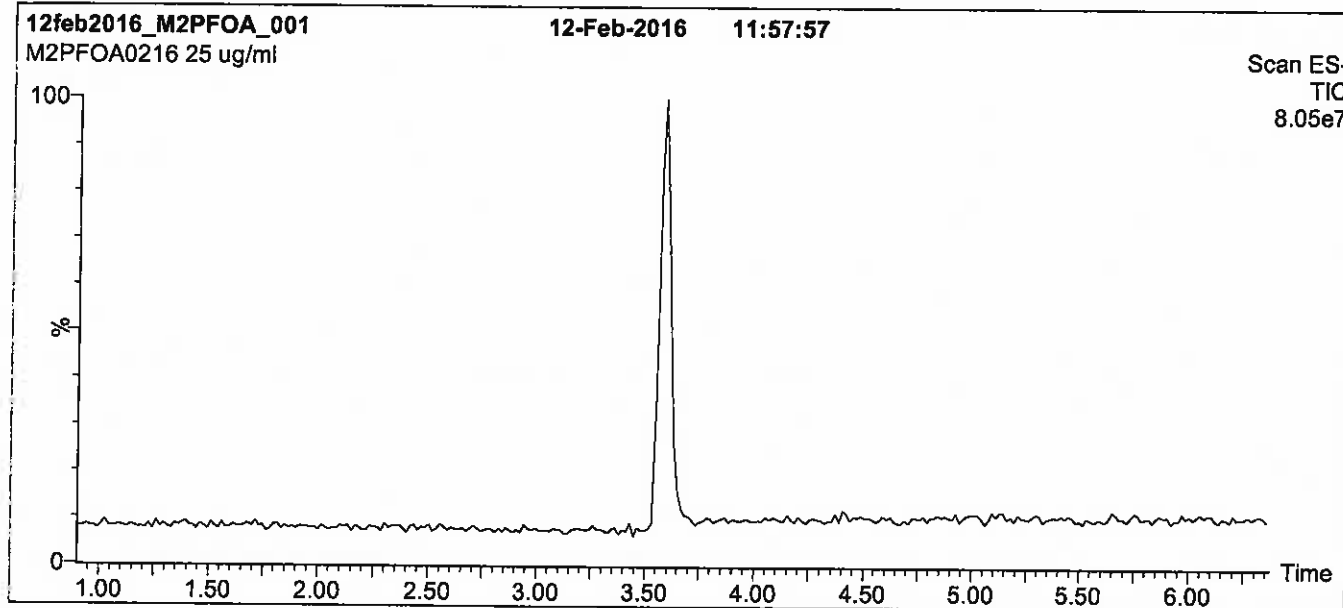
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**Figure 1: M2PFOA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

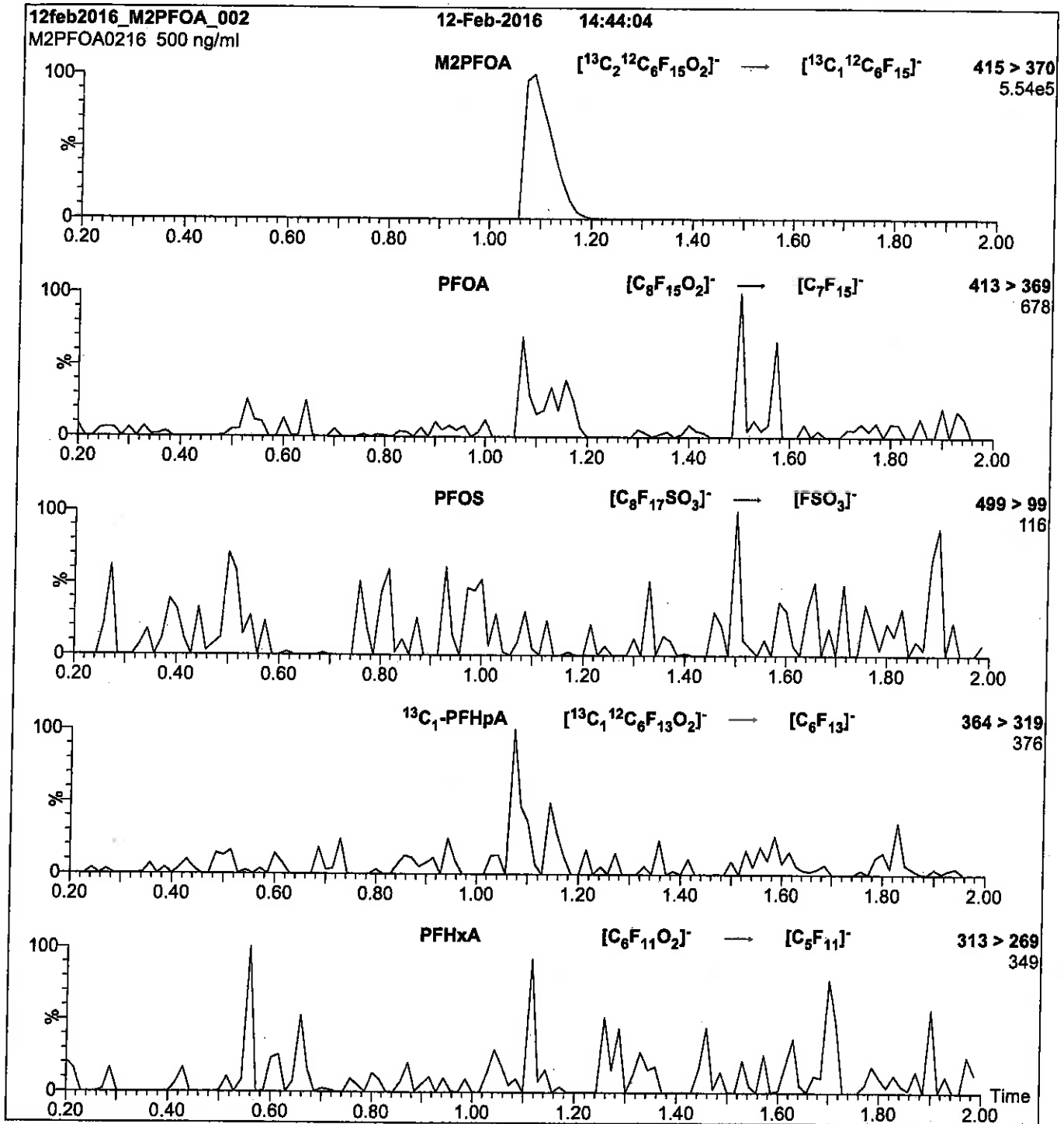
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M2PFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFOA)

Mobile phase: Isocratic 80% MeOH / 20% H<sub>2</sub>O

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 10

Reagent

---

**LCM2PFTeDA\_00007**

Scanned 10/14/16 R: SDC 9/22/16

739563  
ID: LCM2PFTeDA\_00007  
Exp: 12/07/20 Pppl: SBC  
13C2-PFTeDA at 50ug/mL

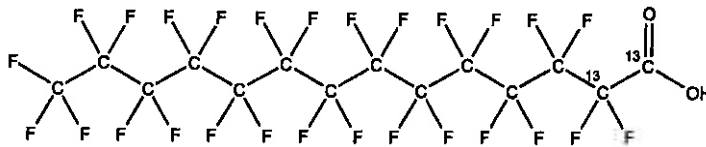


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2PFTeDA **LOT NUMBER:** M2PFTeDA1115  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]tetradecanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>12</sub>HF<sub>27</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 716.10  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 12/07/2015 **Water (<1%)**  
**EXPIRY DATE:** (mm/dd/yyyy) 12/07/2020 **(1,2-<sup>13</sup>C<sub>2</sub>)**  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By: B.G. Chittim Date: 12/08/2015  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • Info@well-labs.com



### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

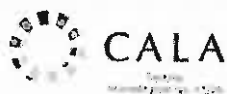
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

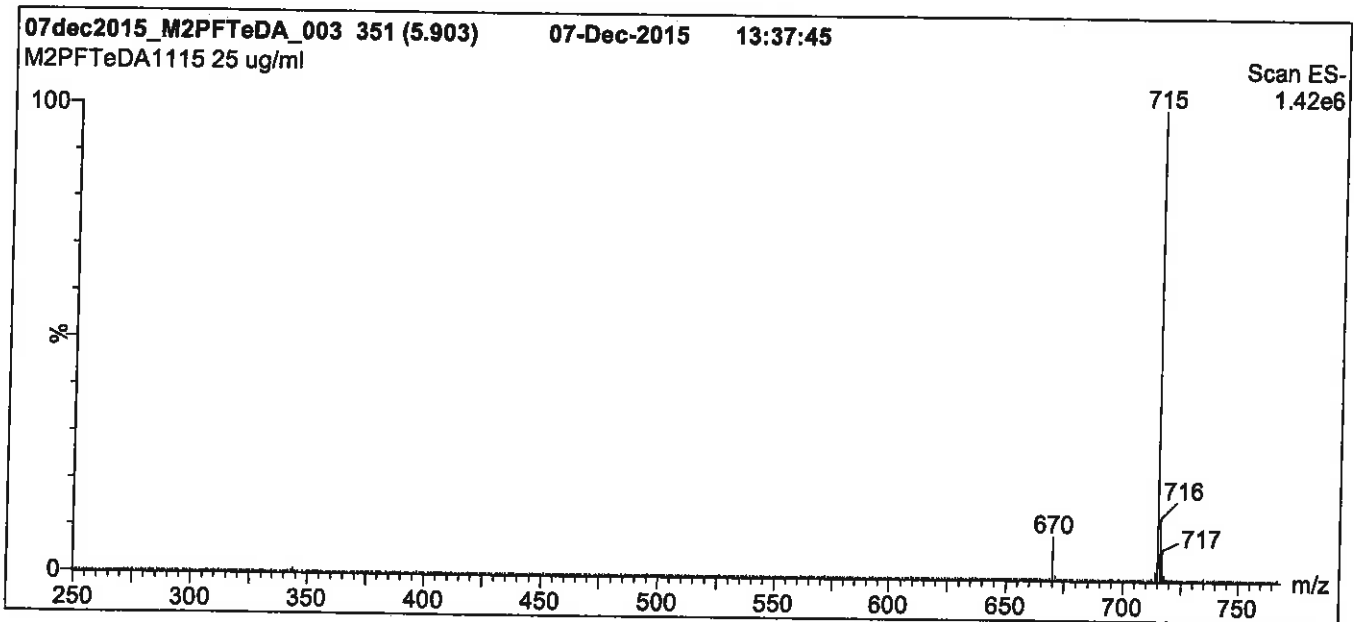
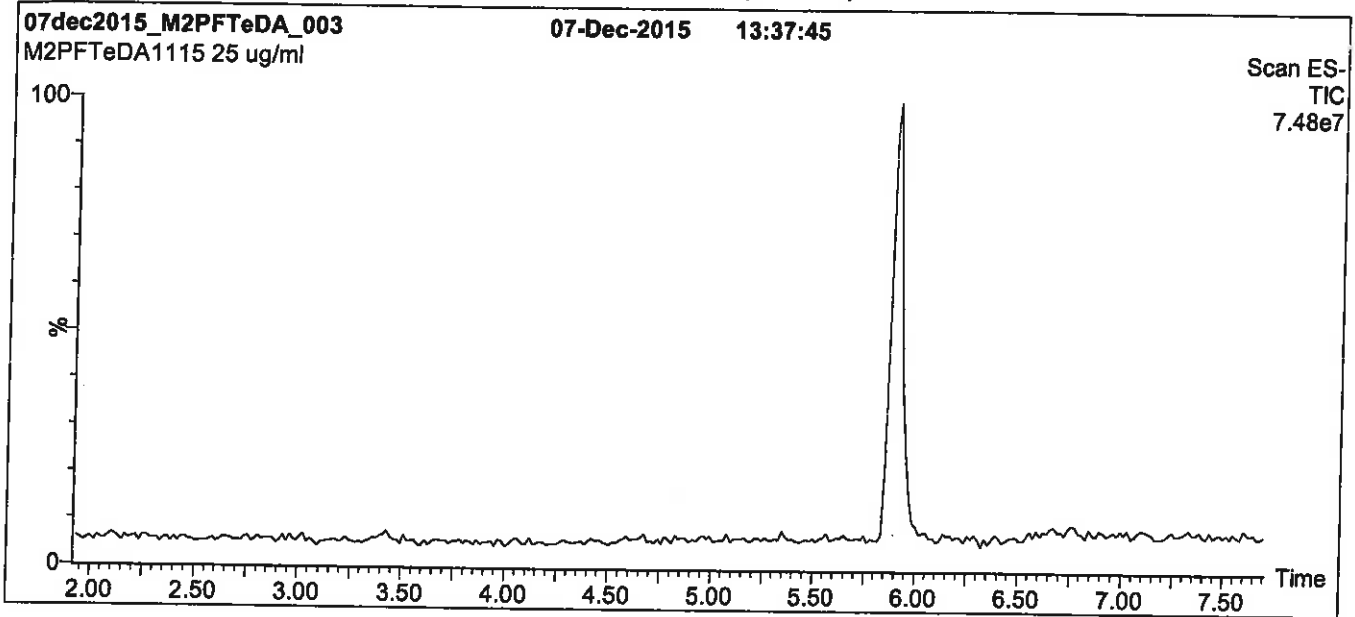
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 65% (80:20 MeOH:ACN) / 35% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

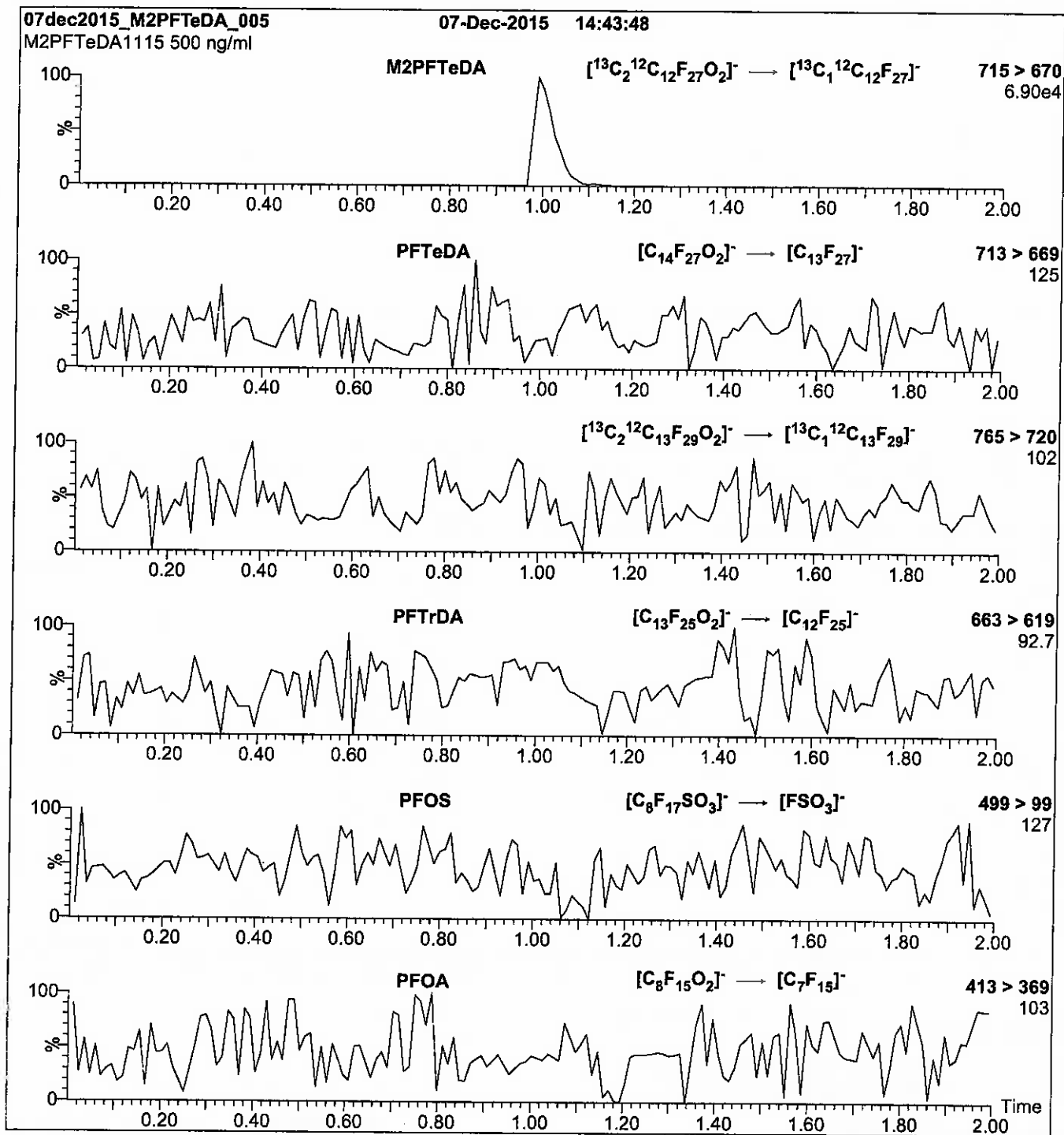
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (250 - 1250 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 3.00  
**Cone Voltage (V)** = 15.00  
**Cone Gas Flow (l/hr)** = 60  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.28e-3  
Collision Energy (eV) = 14

Reagent

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**LCM2PFTeDA\_00008**

r: 3k/17 scv

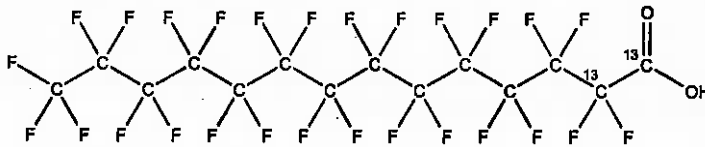


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2PFTeDA **LOT NUMBER:** M2PFTeDA1115  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]tetradecanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>12</sub>HF<sub>27</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 716.10  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 12/07/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 12/07/2020  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

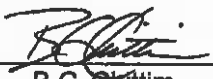
### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim **Date:** 12/08/2015  
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

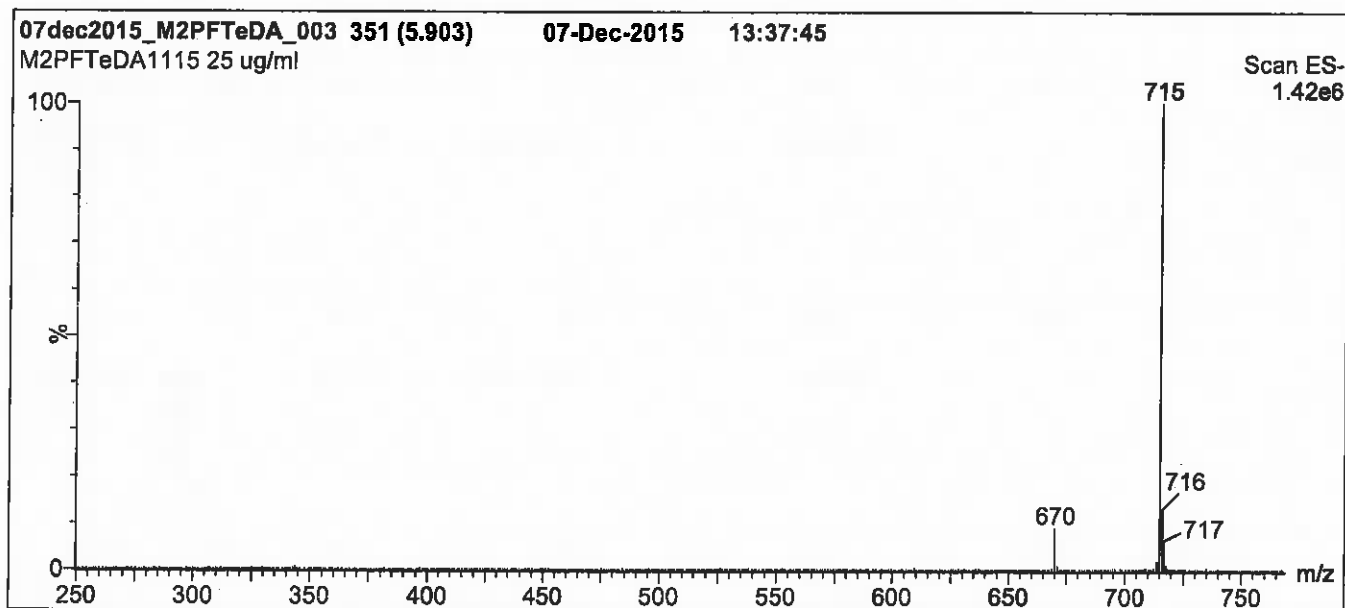
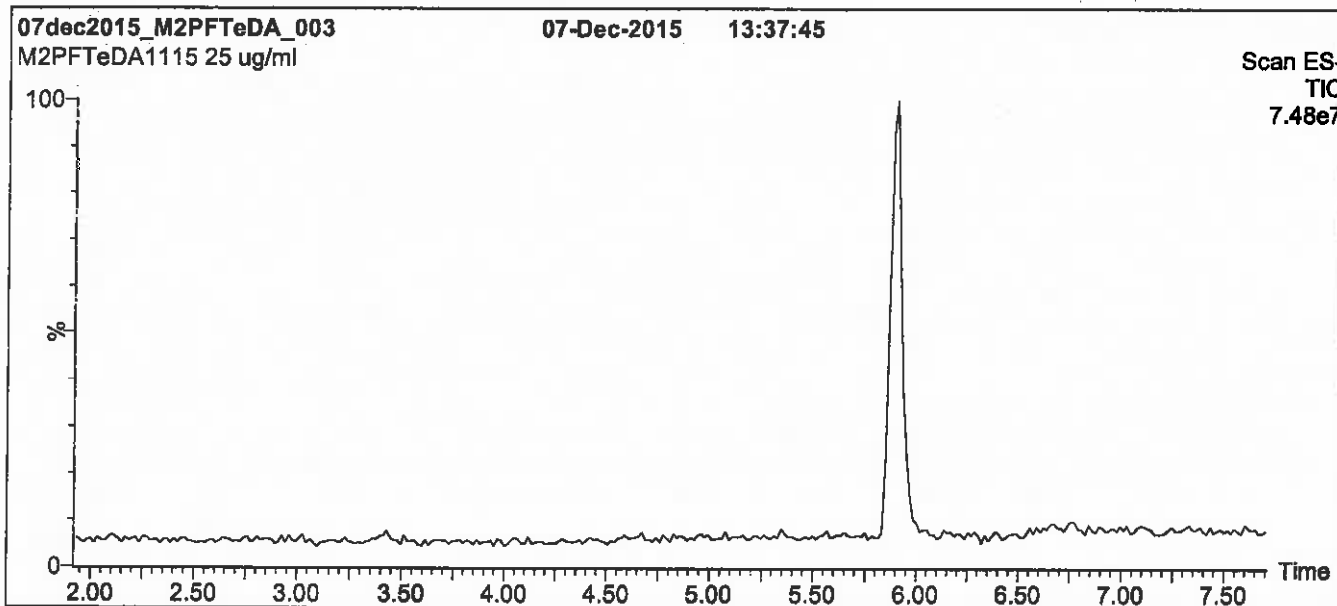
### **QUALITY MANAGEMENT:**

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**Figure 1: M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 65% (80:20 MeOH:ACN) / 35% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 80% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

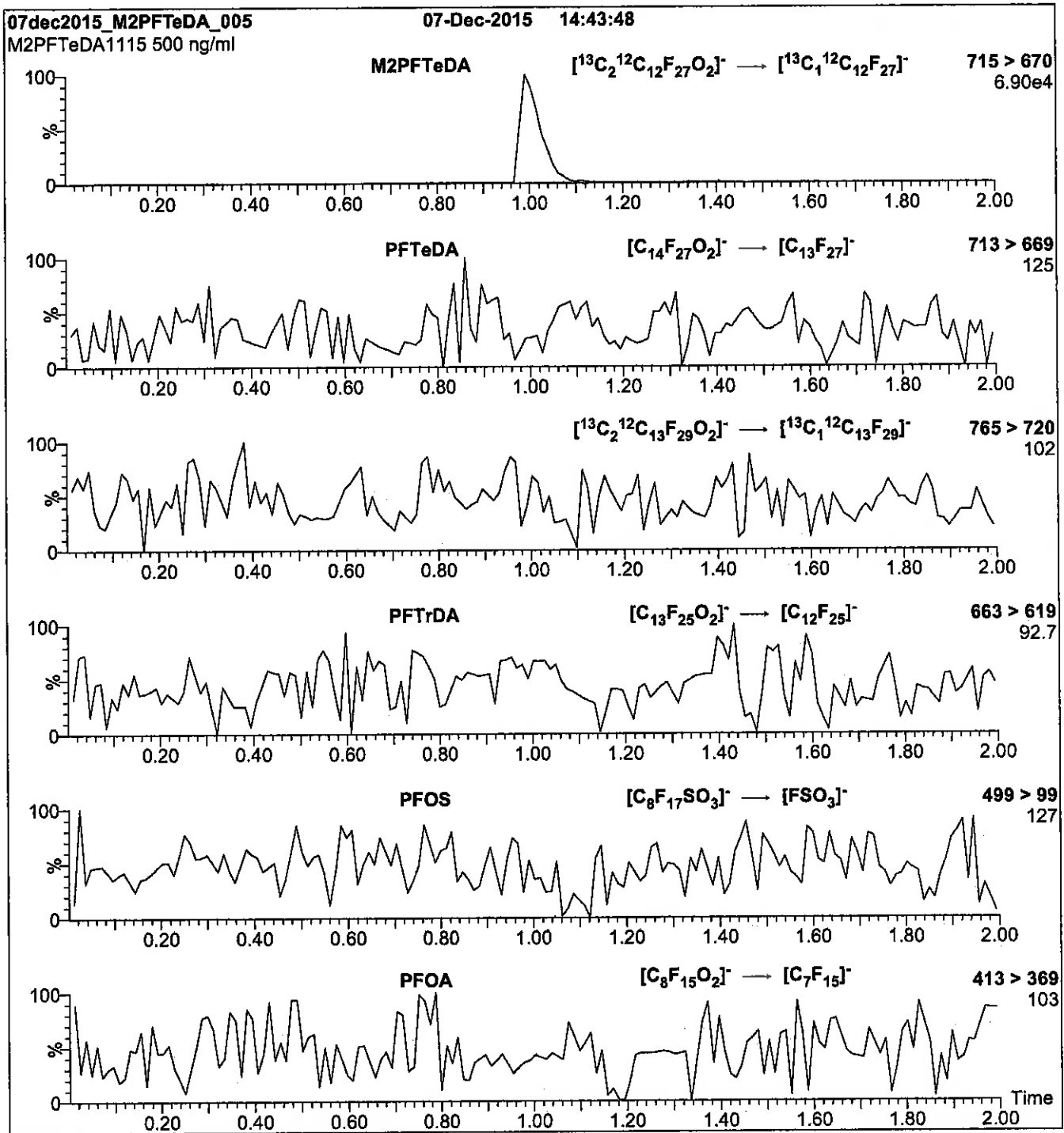
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (250 - 1250 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 3.00  
**Cone Voltage (V)** = 15.00  
**Cone Gas Flow (l/hr)** = 60  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.28e-3  
Collision Energy (eV) = 14



Reagent

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**LCM2PFTeDA\_00009**



### **INTENDED USE:**

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### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

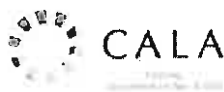
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

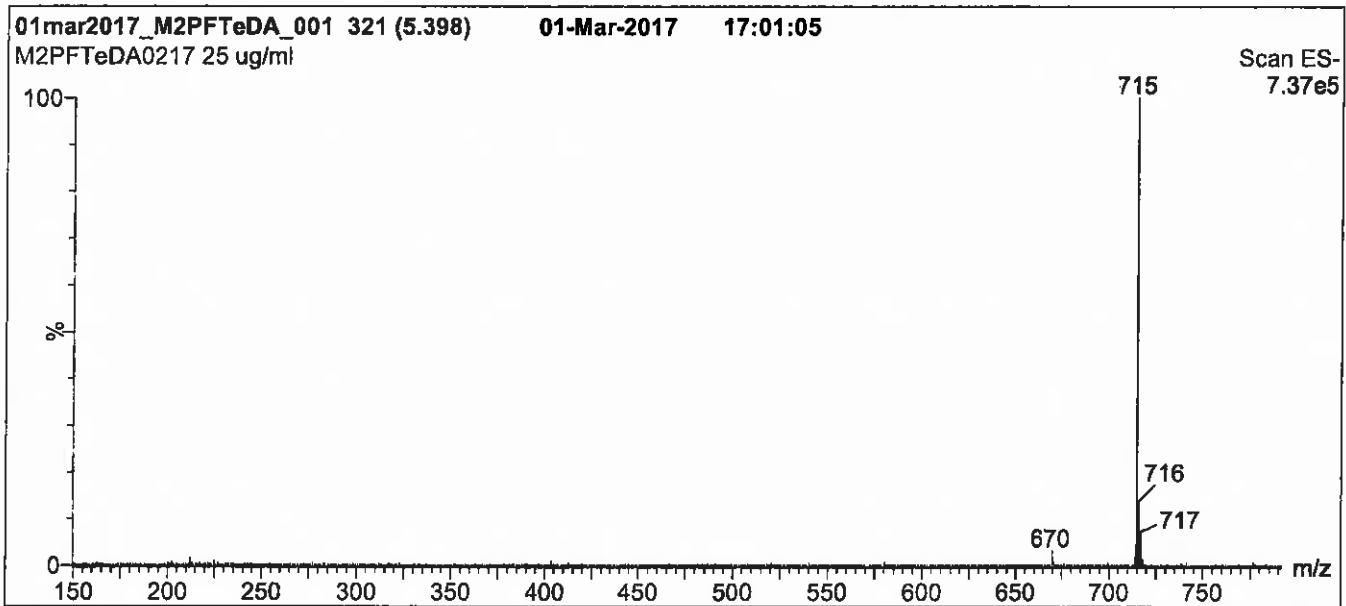
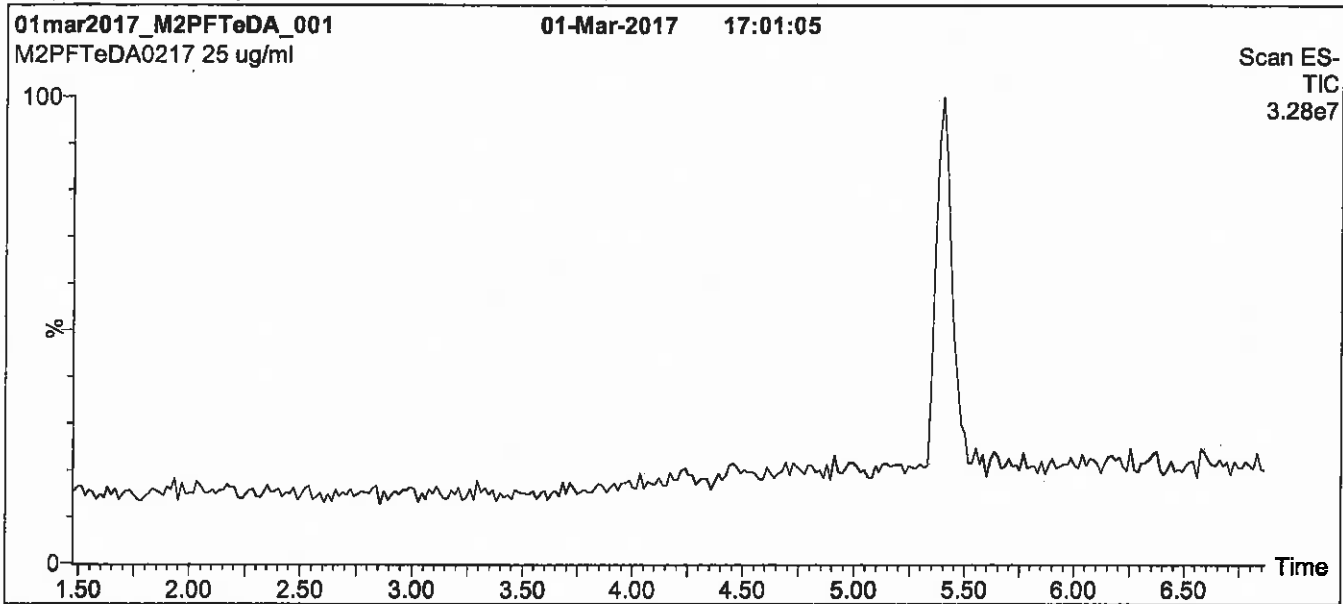
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M2PFTeDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 65% (80:20 MeOH:ACN) / 35% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

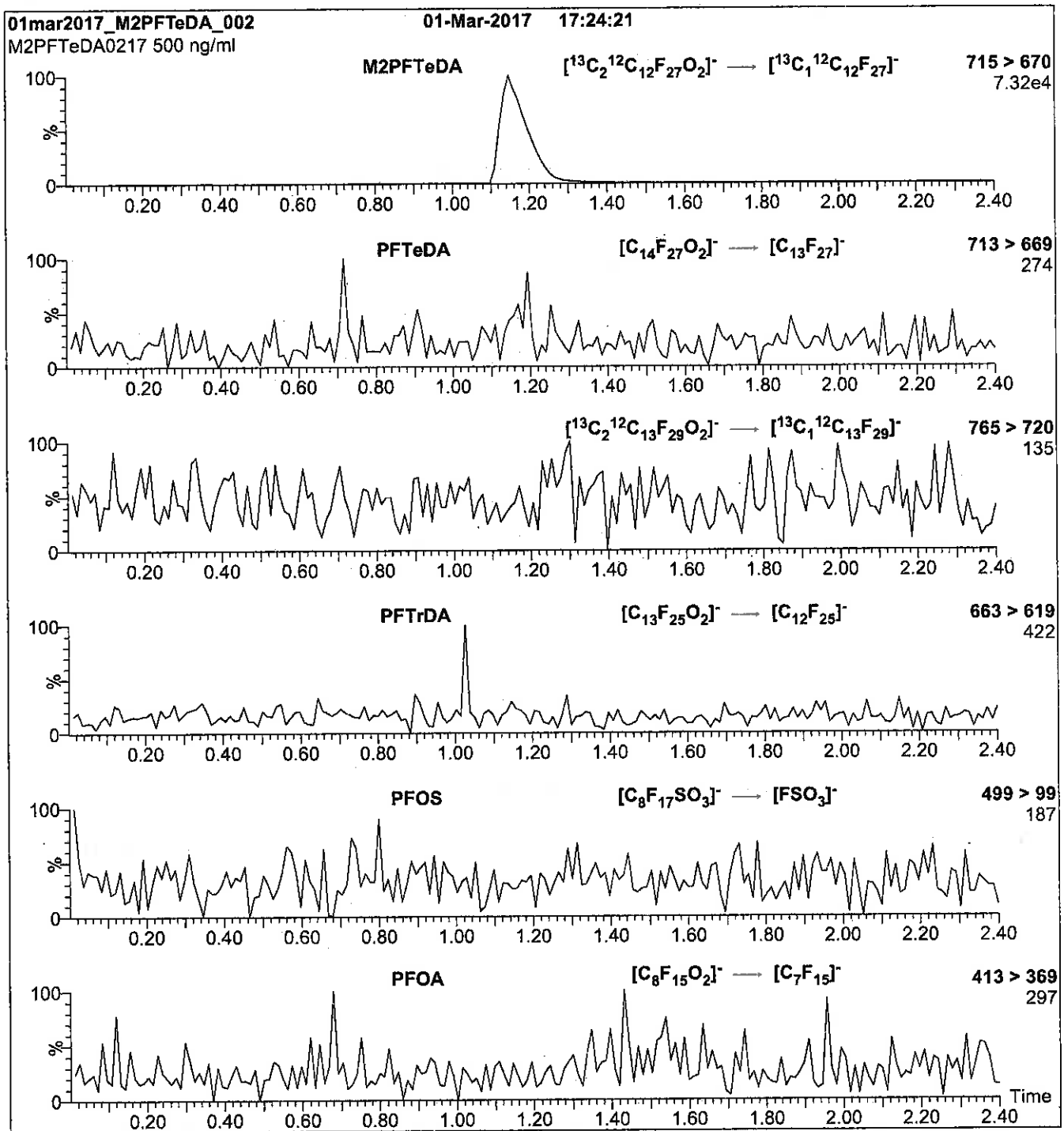
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 3.00  
**Cone Voltage (V)** = 15.00  
**Cone Gas Flow (l/hr)** = 60  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: M2PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2PFTeDA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
Collision Energy (eV) = 14

Reagent

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**LCM4PFHPA\_00007**

f: SBC a/22/16

739567  
ID: LCM4PFHPA\_00007  
Exp: 05/27/21 Prpd: SBC  
13C4-Perfluoroheptanoic a



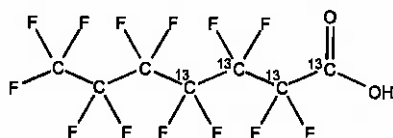
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 SK

**PRODUCT CODE:** M4PFHpA      **LOT NUMBER:** M4PFHpA0516  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]heptanoic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>3</sub>HF<sub>13</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 368.03  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 05/27/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/27/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

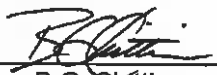
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim      **Date:** 07/05/2016  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

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Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

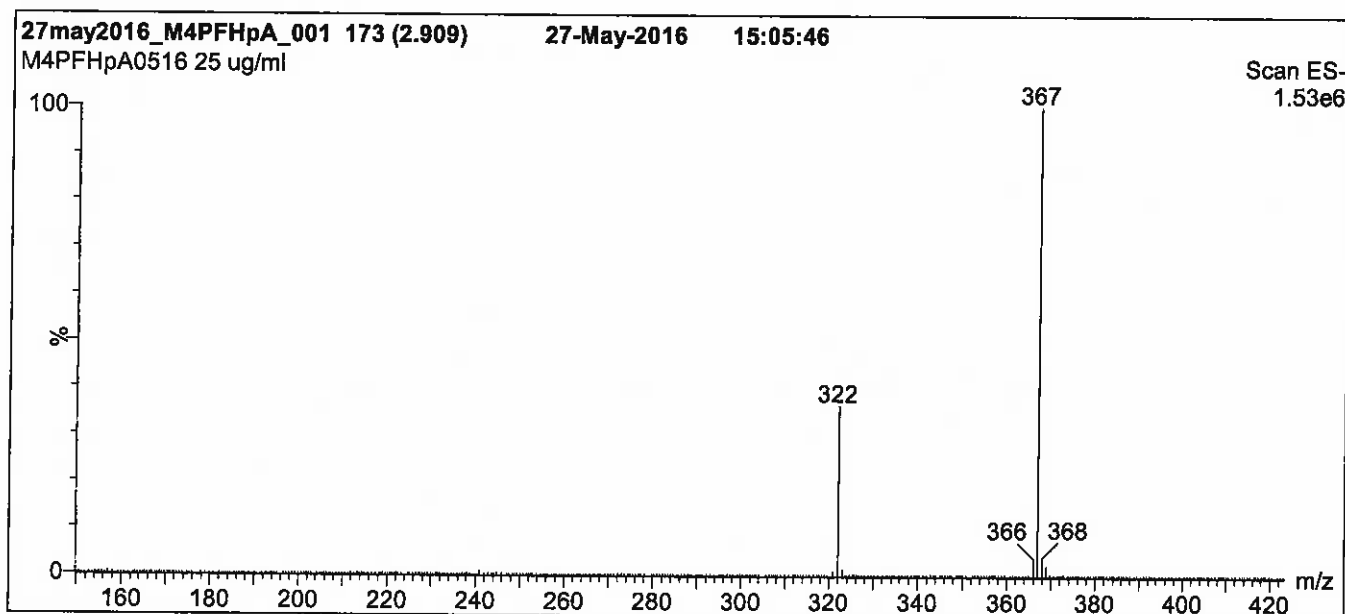
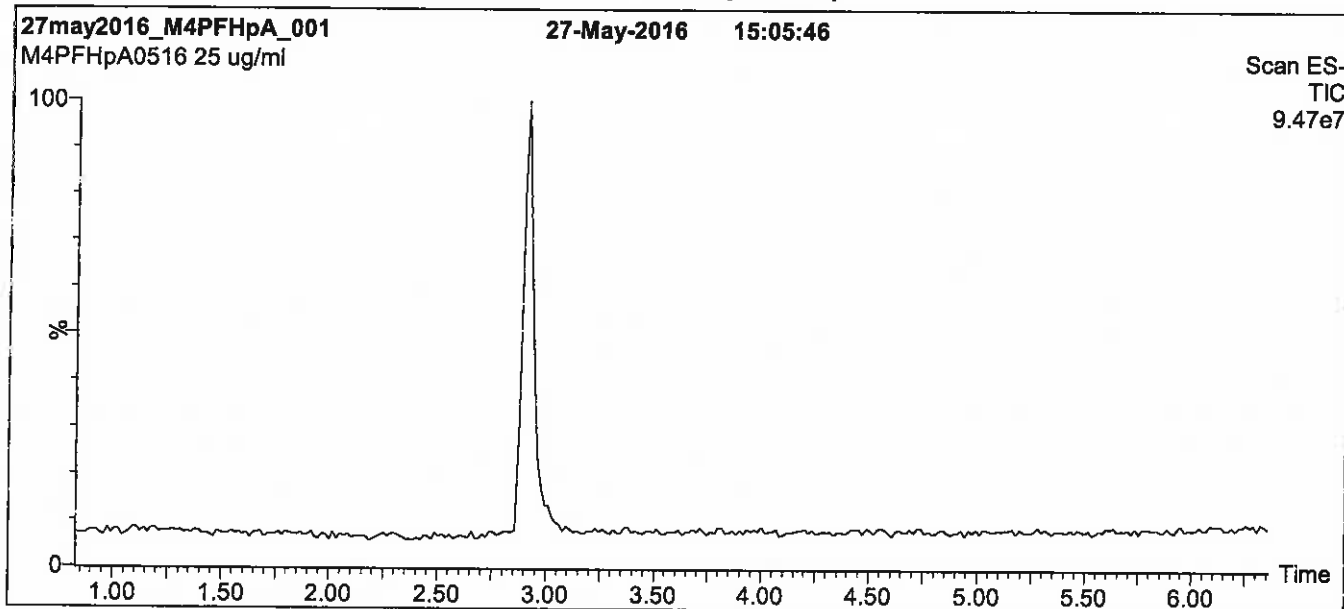
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M4PFHpA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

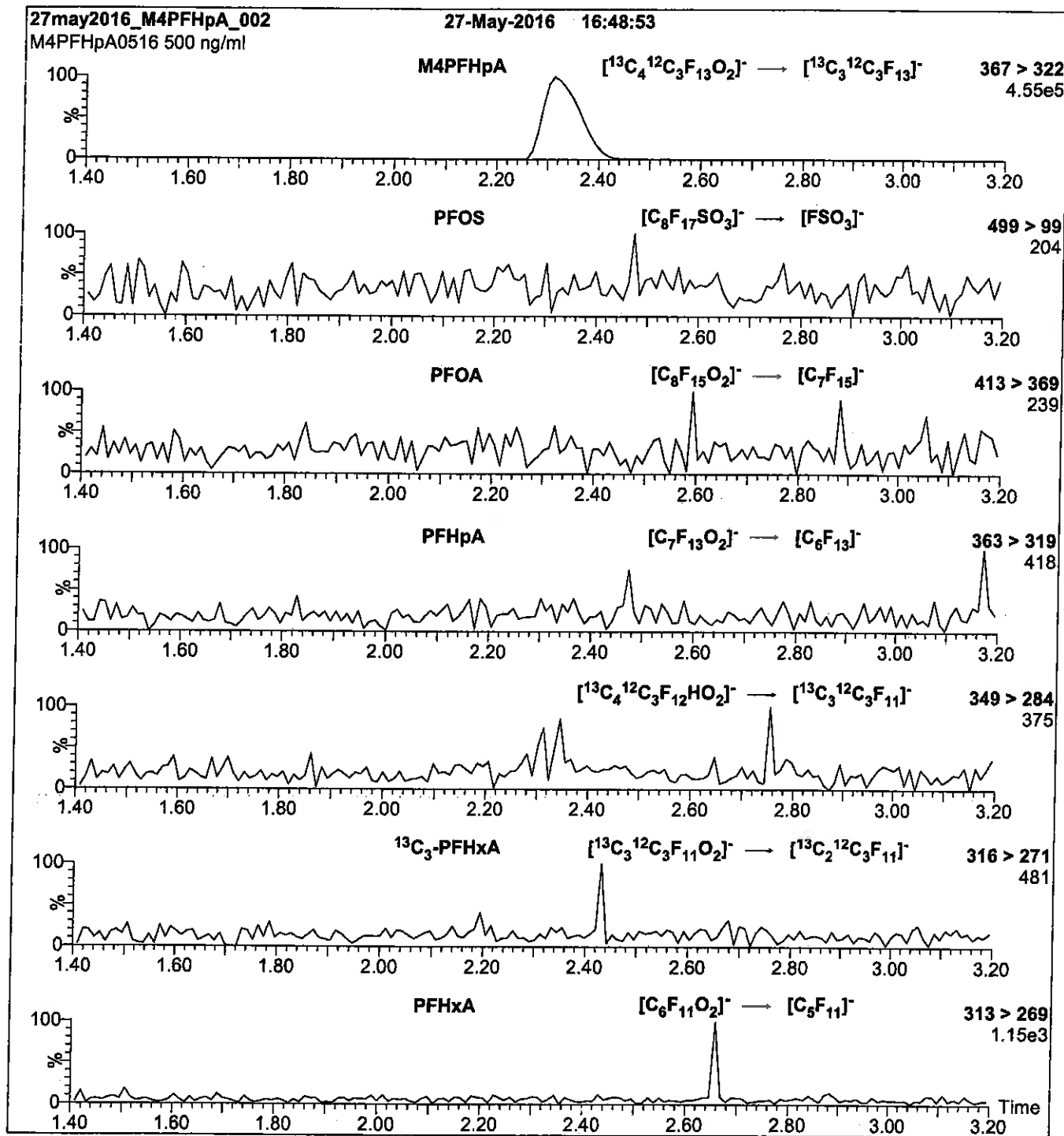
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M4PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 11

Reagent

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**LCM4PFHPA\_00008**

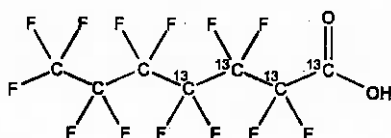


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M4PFHpA **LOT NUMBER:** M4PFHpA0516  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]heptanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>3</sub>HF<sub>13</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 368.03  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
 (1,2,3,4-<sup>13</sup>C<sub>4</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 05/27/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/27/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

  
B.G. Chittim

Date: 07/05/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

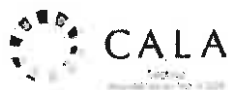
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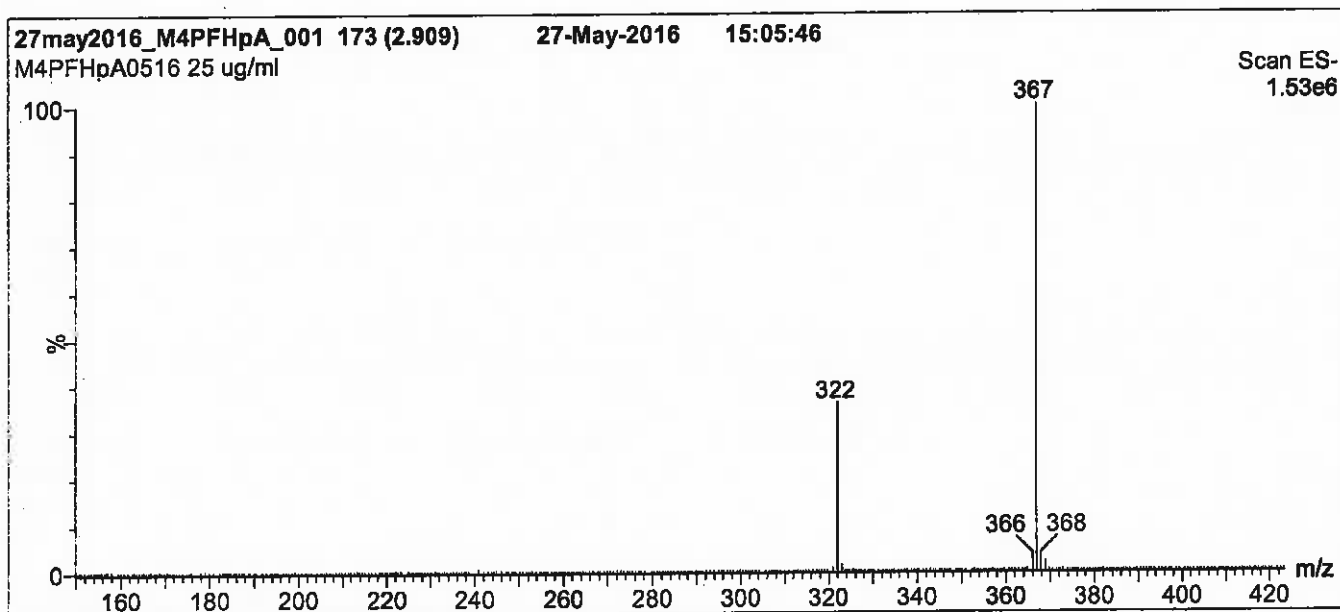
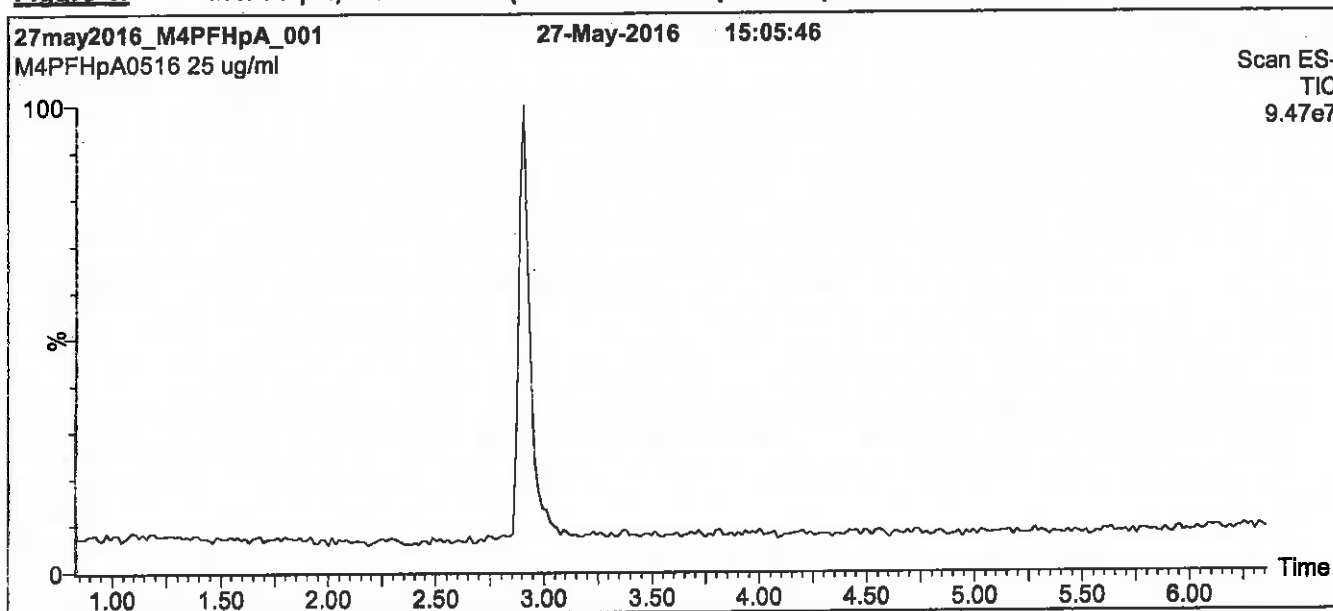
### **QUALITY MANAGEMENT:**

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**Figure 1: M4PFHpA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

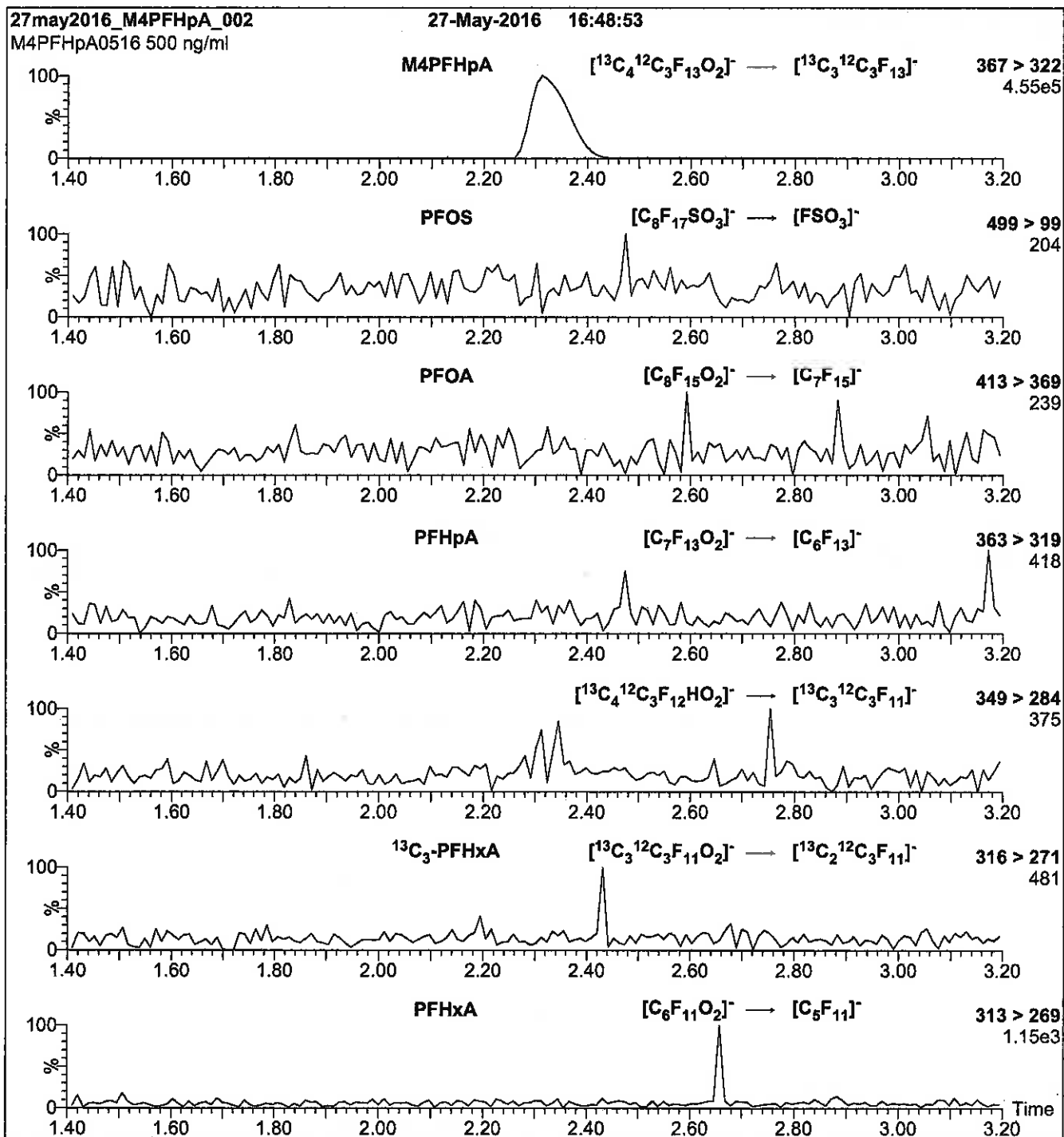
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M4PFHpA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 11

Reagent

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**LCM4PFHPA\_00009**



r: 5/3/17 SKV



# WELLINGTON LABORATORIES

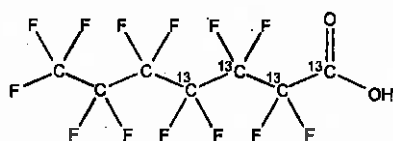
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M4PFHpA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]heptanoic acid

**LOT NUMBER:** M4PFHpA0516

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>3</sub>HF<sub>13</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 368.03  
**SOLVENT(S):** Methanol  
Water (<1%)  
**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/27/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/27/2021

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim  
**Date:** 07/05/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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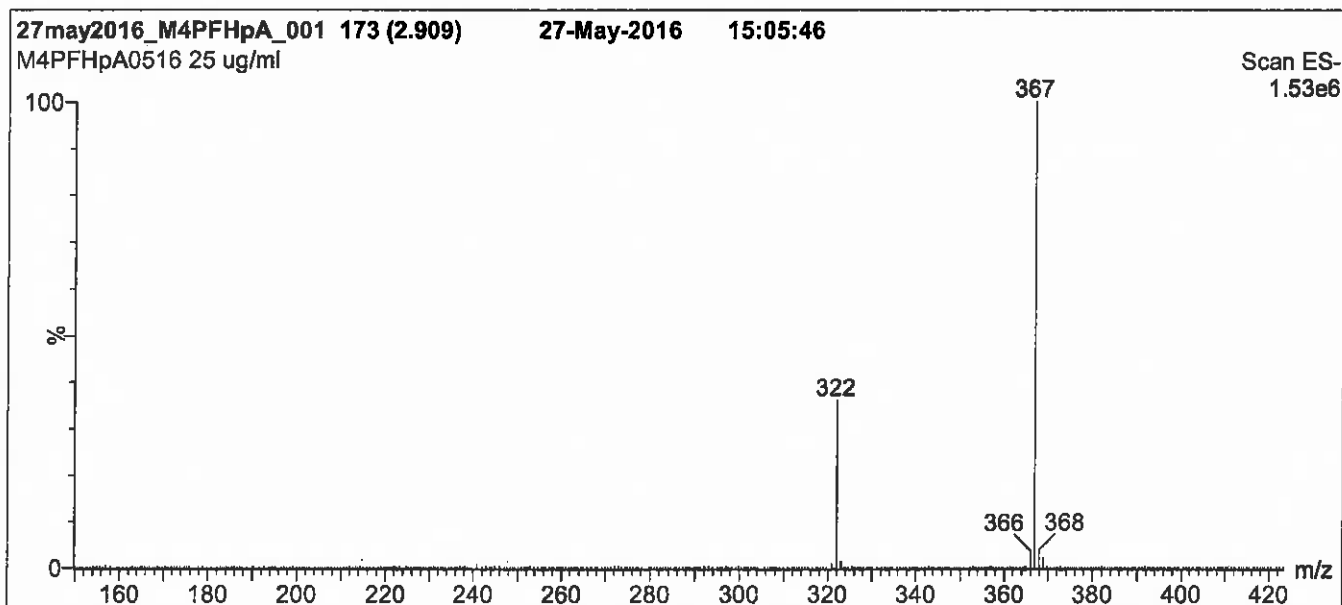
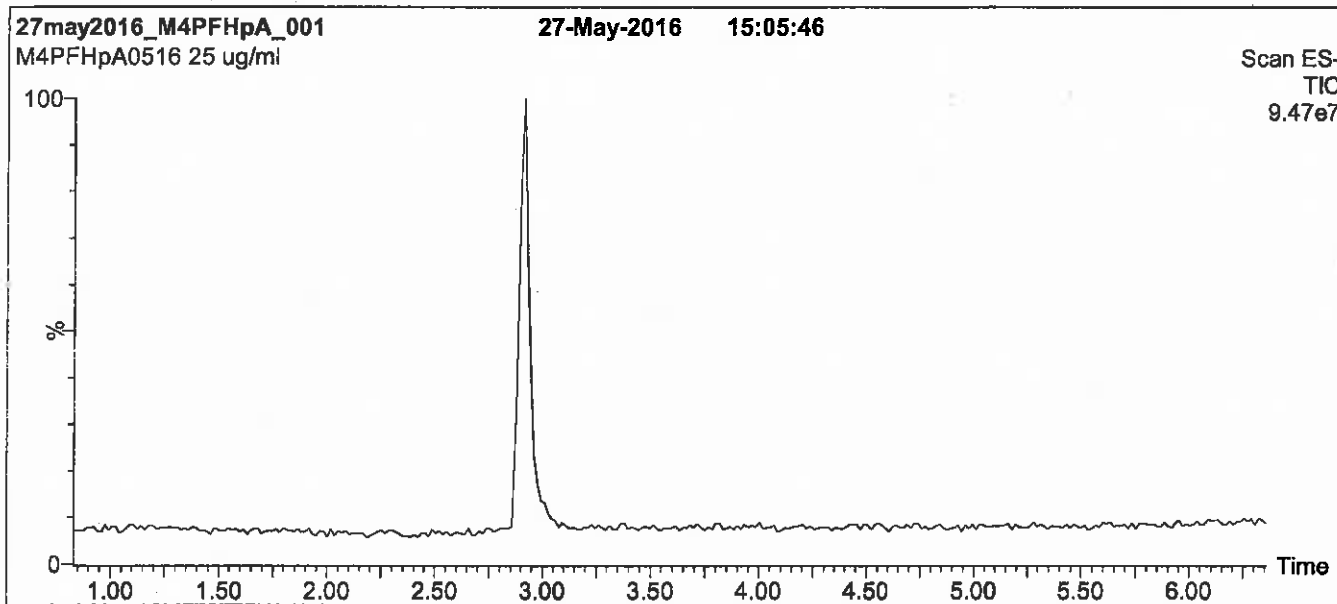
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**Figure 1: M4PFHpA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.  
 Time: 10 min.

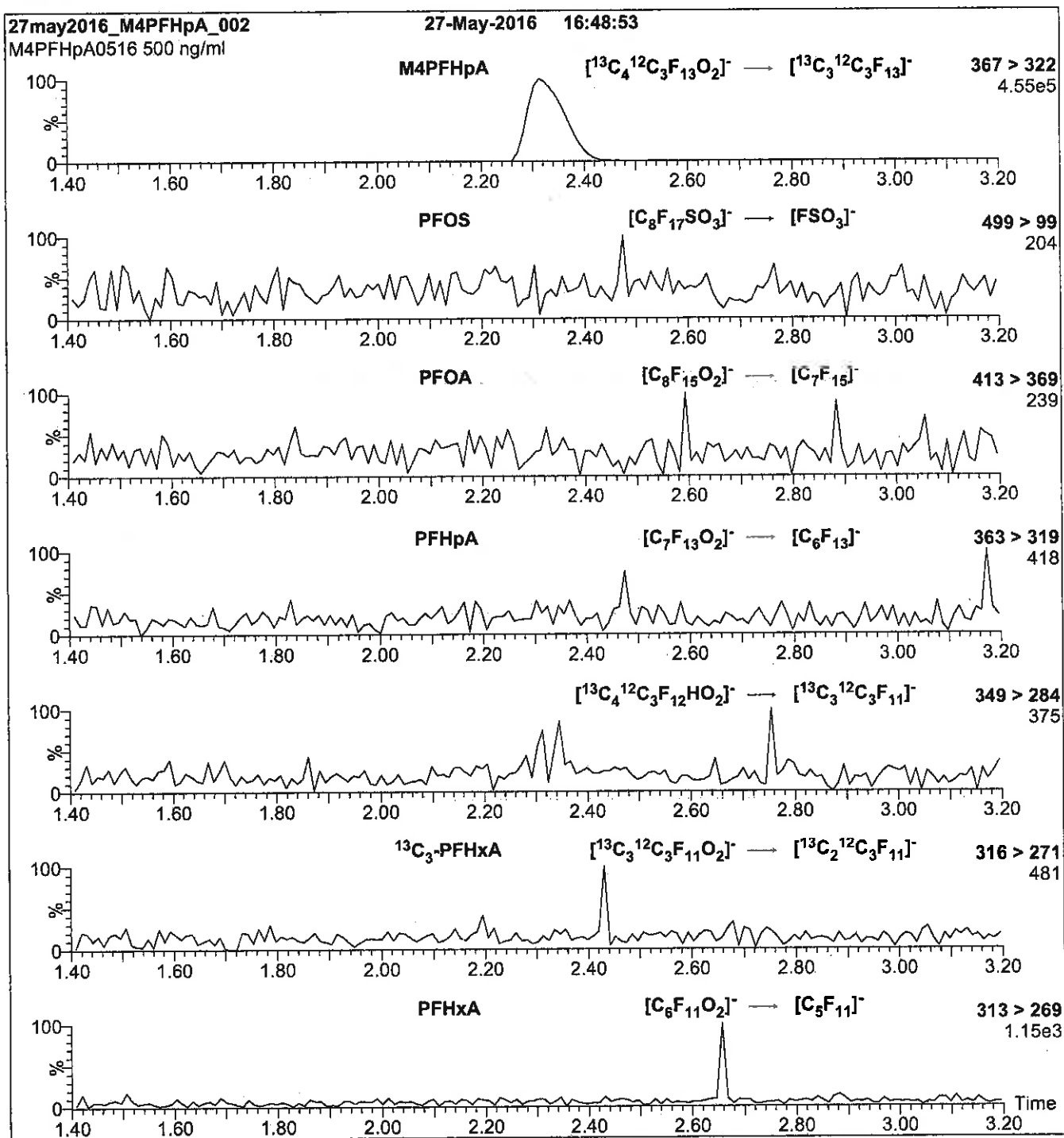
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M4PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M4PFHpA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 11

Reagent

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**LCM5PFPEA\_00008**

R: 8BC 9/22/16



739590  
ID: LCM5PFPEA\_00008  
Exp: 05/22/20 Prpt: SAC  
13C5-Perfluoropentanoic a



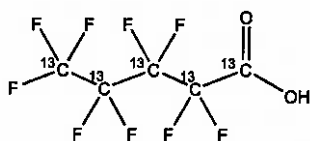
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 LR

**PRODUCT CODE:** M5PFPeA      **LOT NUMBER:** M5PFPeA0515  
**COMPOUND:** Perfluoro-n-[<sup>13</sup>C<sub>5</sub>]pentanoic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>5</sub>HF<sub>9</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 269.01  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(<sup>13</sup>C<sub>5</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 05/22/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 05/22/2020  
**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-pentanoic acid.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 05/25/2015  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

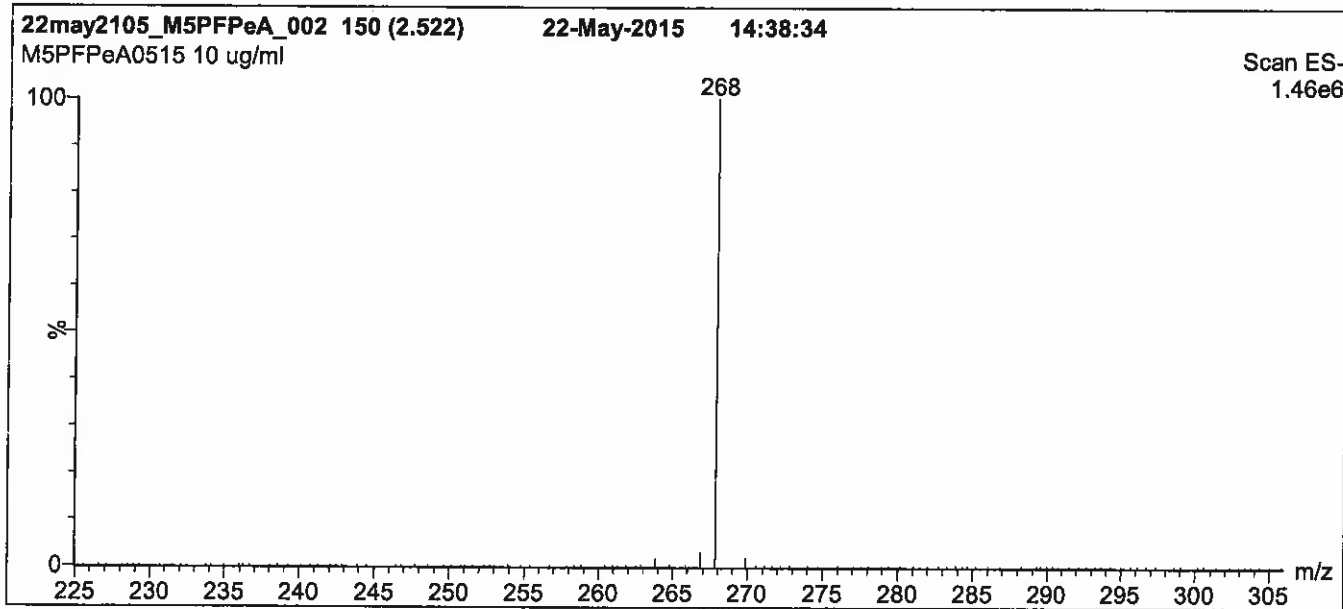
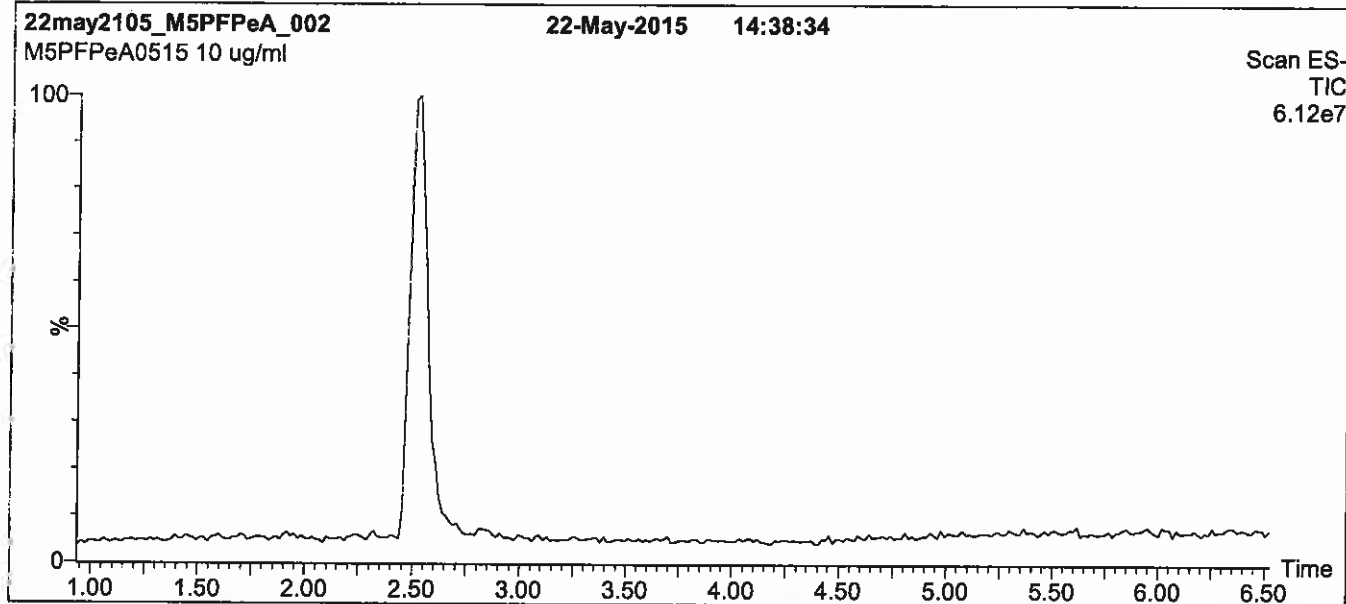
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M5PFPeA; 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<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ l/min

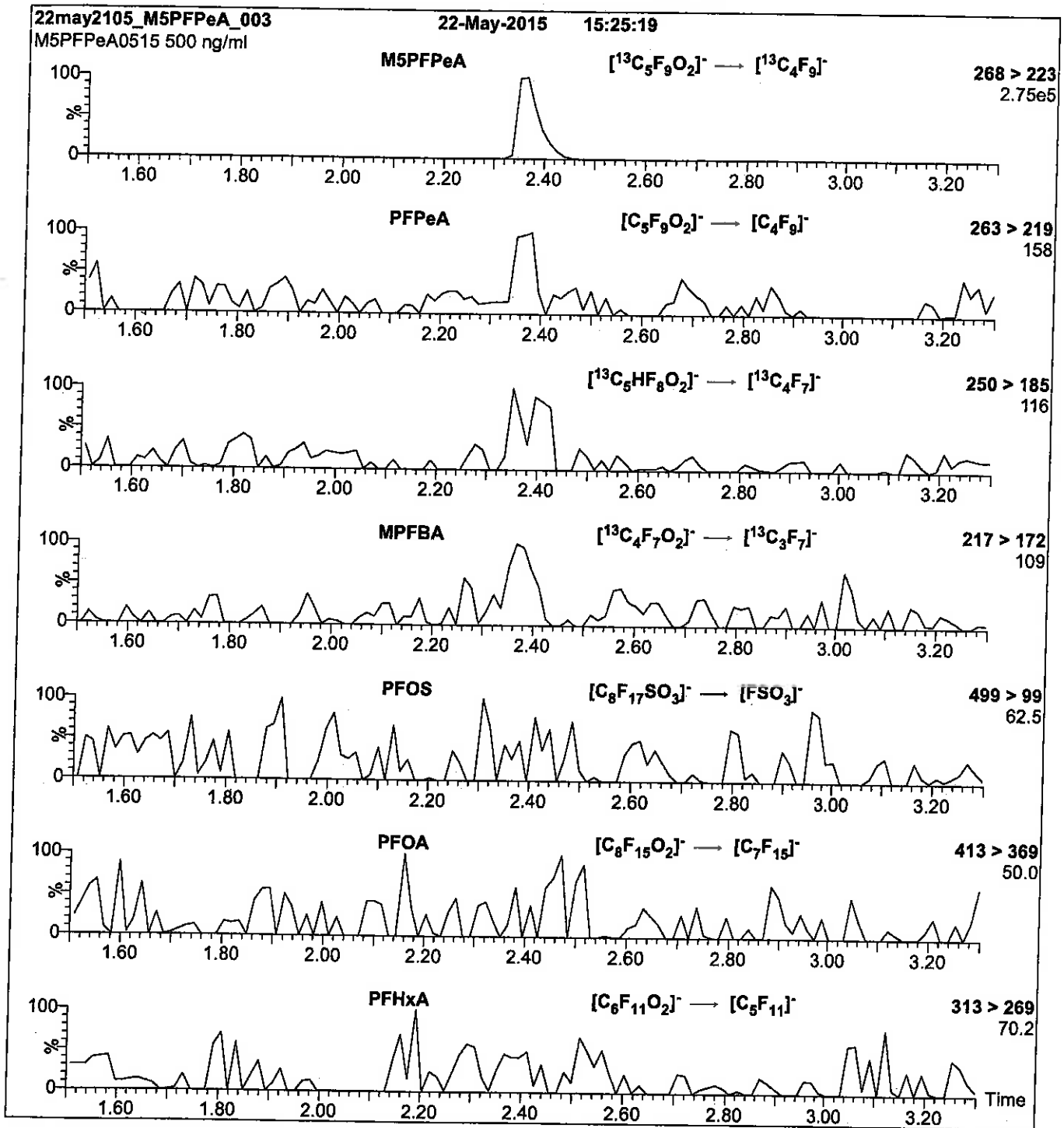
**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750



**Figure 2: M5PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M5PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 9

Reagent

---

**LCM5PFPEA\_00009**



### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

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### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

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### **LIMITED WARRANTY:**

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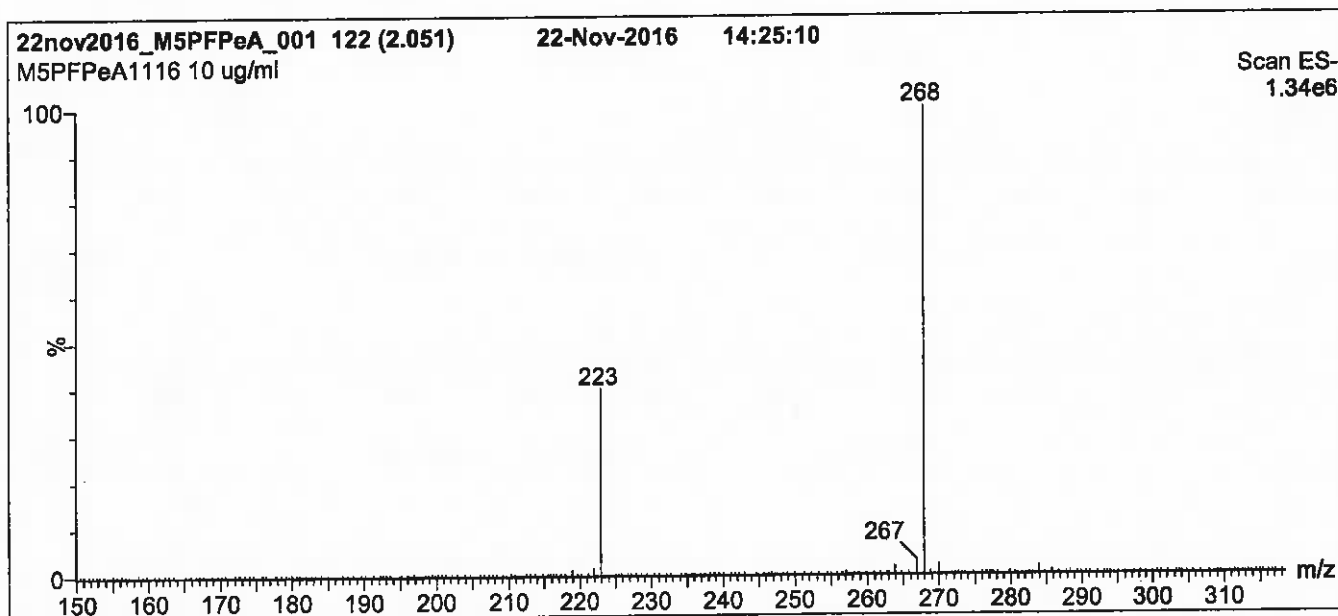
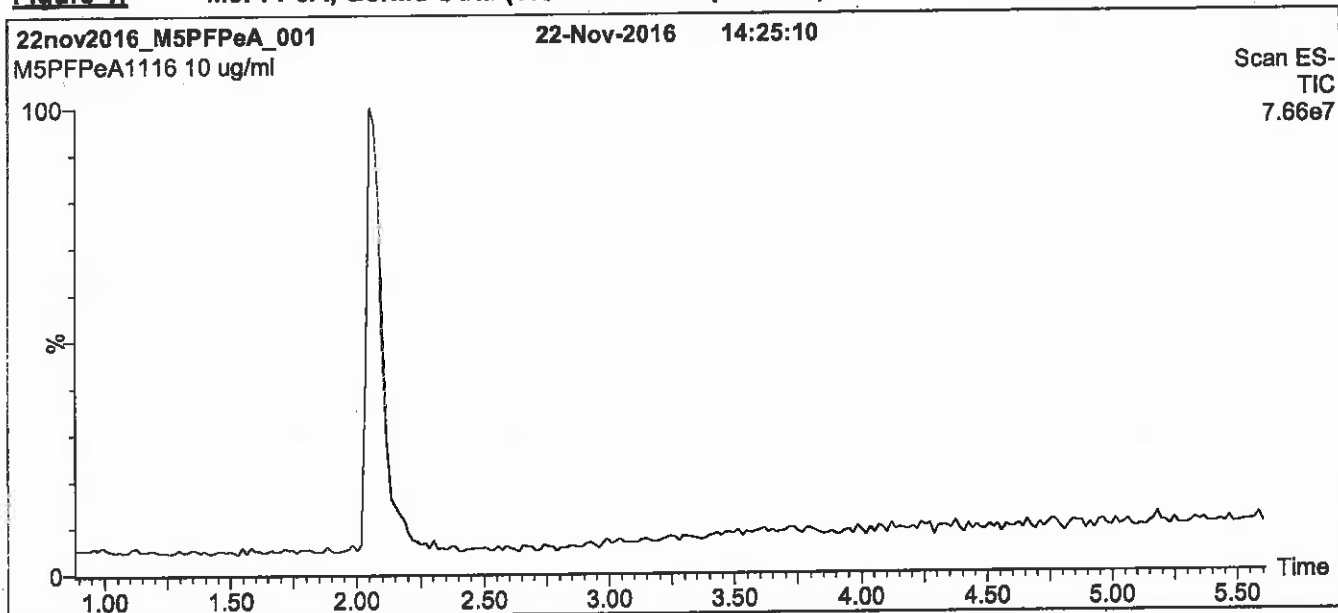
### **QUALITY MANAGEMENT:**

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**Figure 1: M5PFPeA; 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<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for  
 2 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

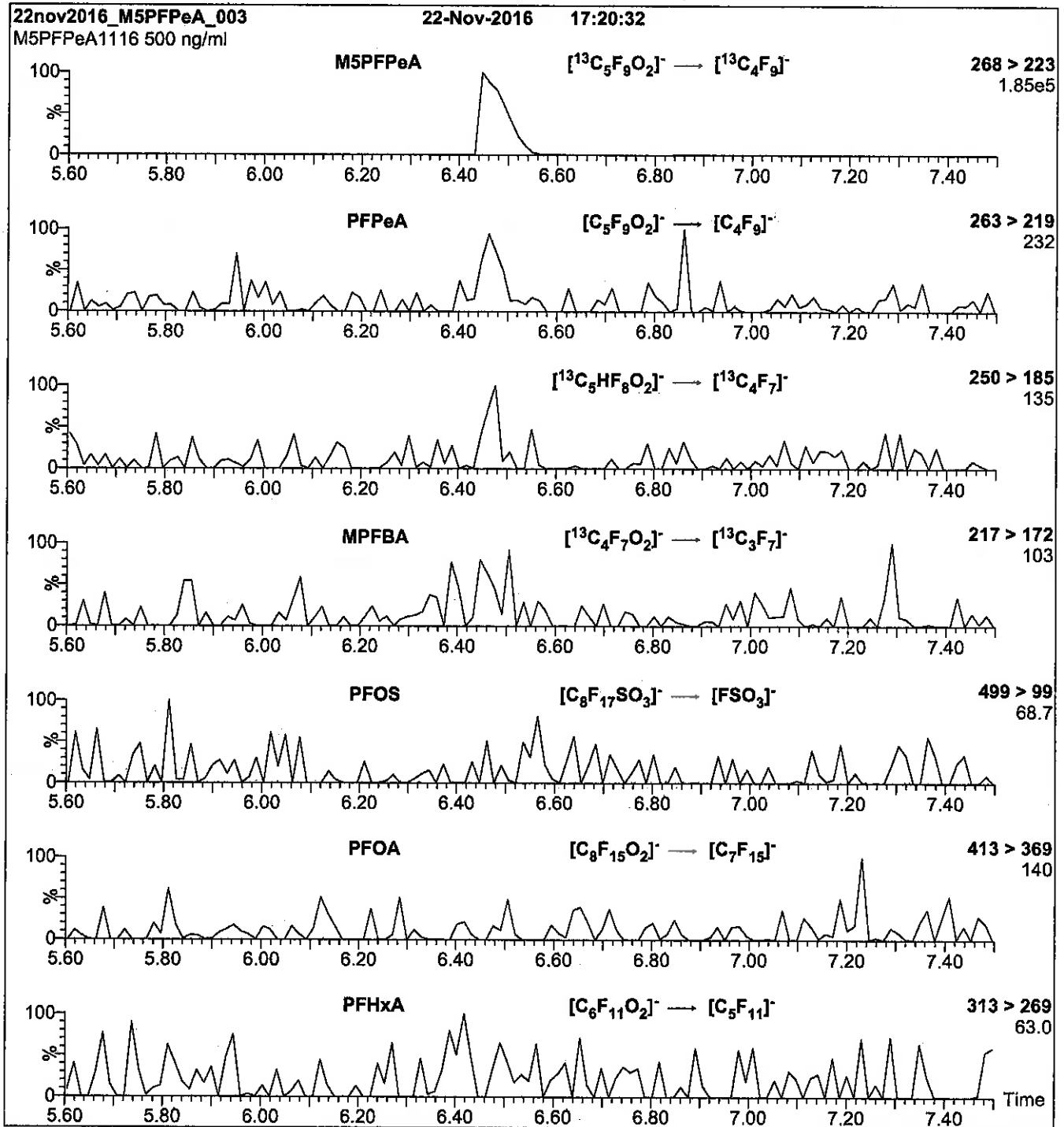
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M5PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M5PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
Collision Energy (eV) = 9

Reagent

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**LCM5PFPEA\_00010**

r: 5/3/19 *sw*



# WELLINGTON LABORATORIES

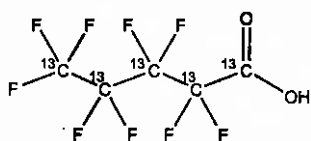
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M5PFPeA  
**COMPOUND:** Perfluoro-n-[<sup>13</sup>C<sub>5</sub>]pentanoic acid

**LOT NUMBER:** M5PFPeA1116

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>5</sub>HF<sub>9</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 269.01  
**SOLVENT(S):** Methanol  
 Water (<1%)  
**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (<sup>13</sup>C<sub>5</sub>)

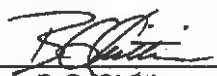
**DOCUMENTATION/ DATA ATTACHED:**

- 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-pentanoic acid.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim  
**Date:** 12/09/2016  
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



**INTENDED USE:**

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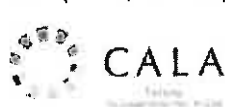
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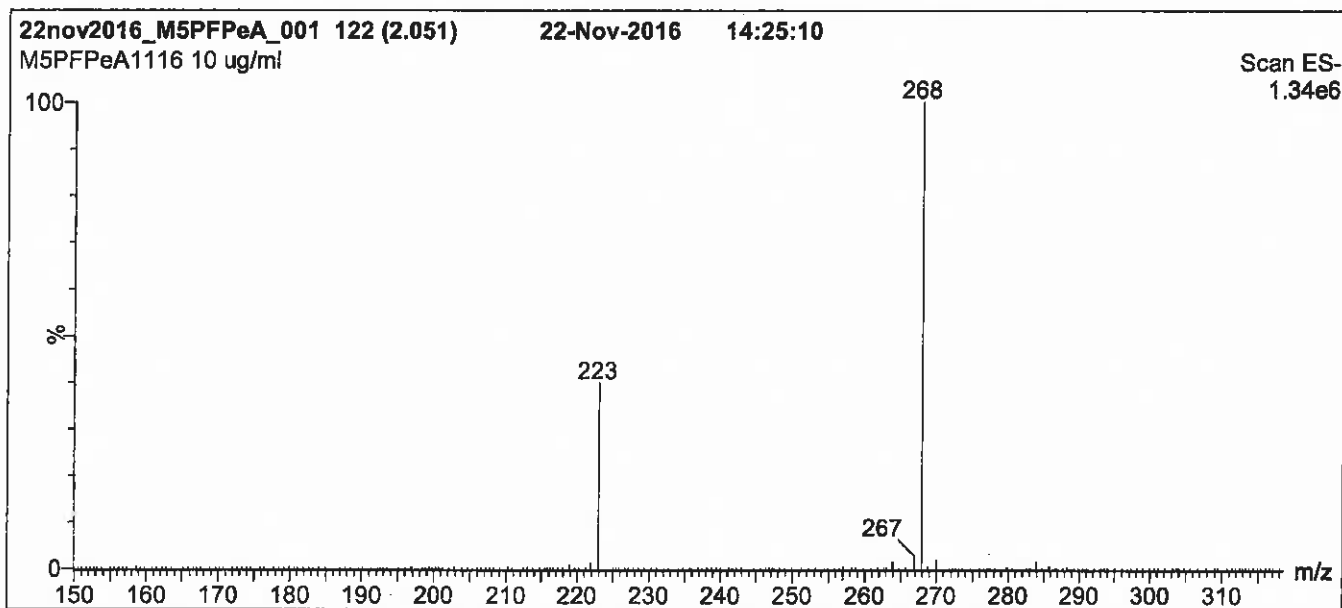
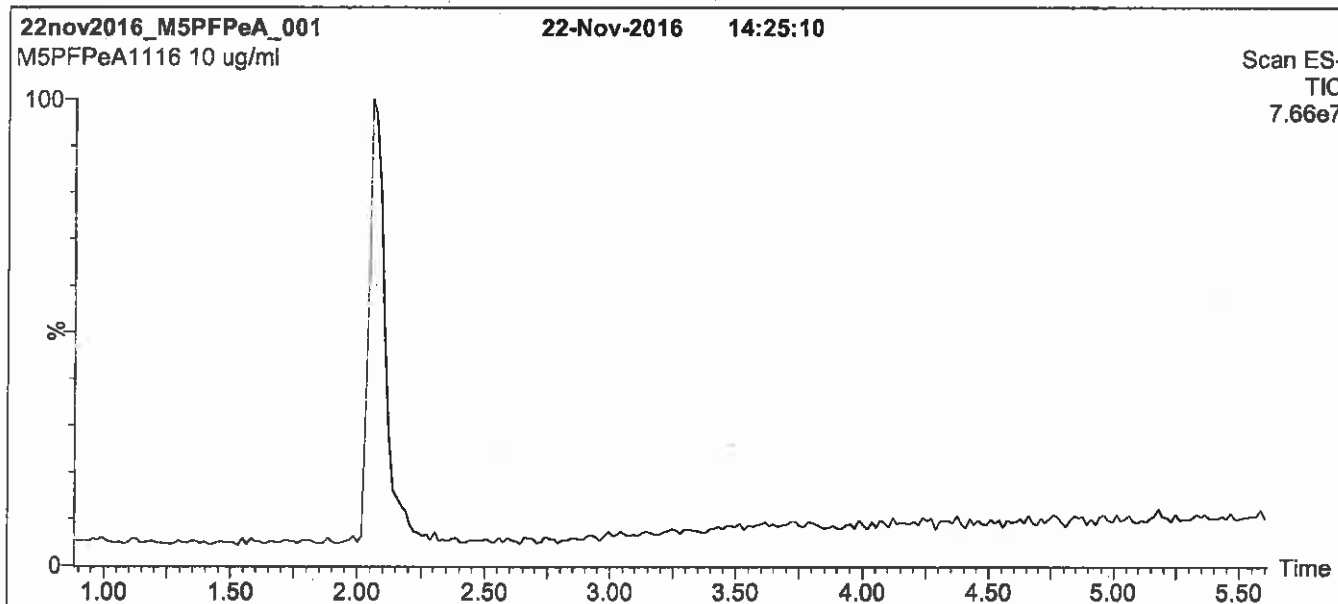
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M5PFPeA; 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<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for  
2 min before returning to initial conditions in 0.5 min.  
Time: 10 min

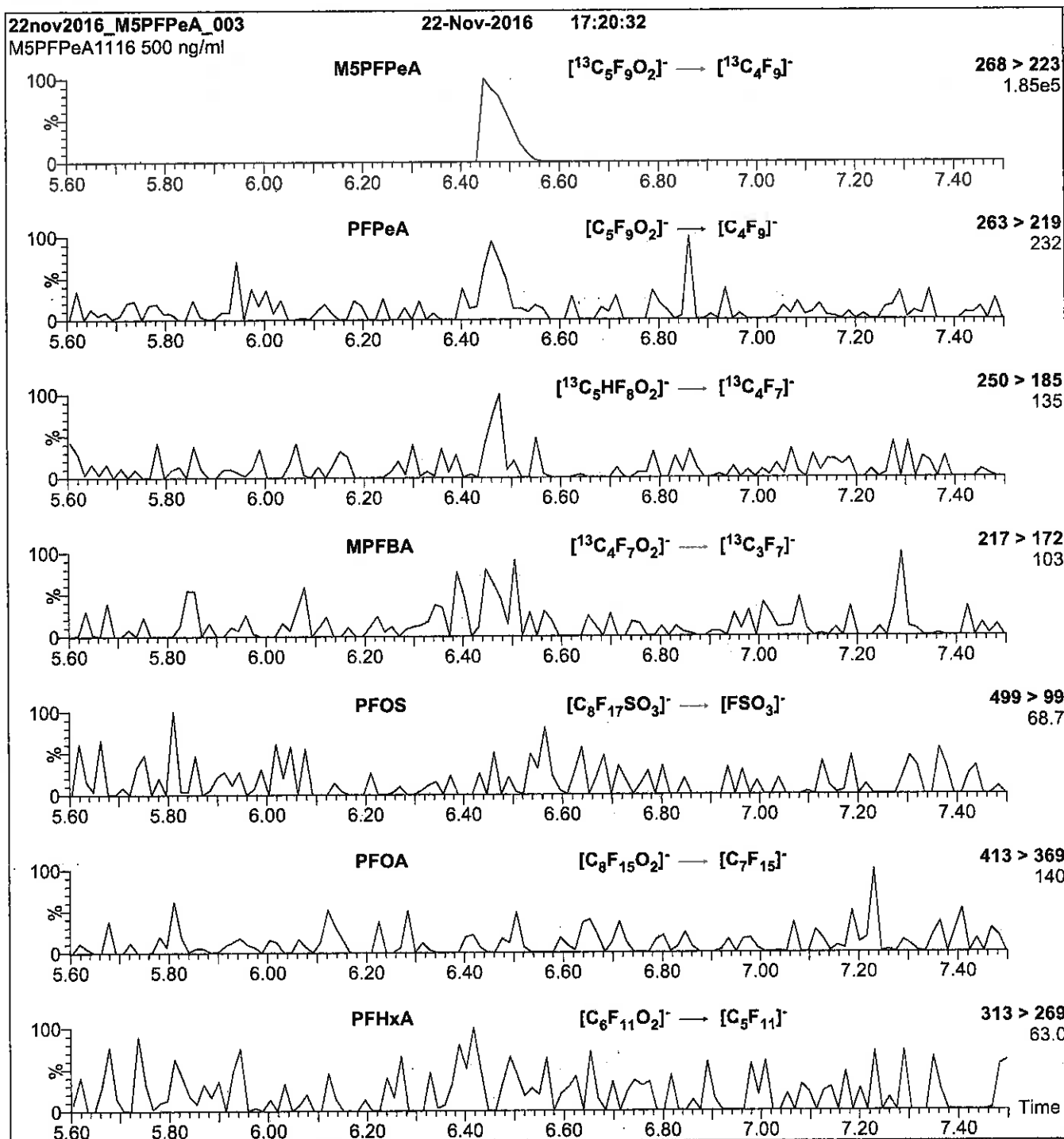
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 60  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: M5PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M5PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) =  $3.46\text{e-}3$   
Collision Energy (eV) = 9

Reagent

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**LCM8FOSA\_00011**

Scanned 10/14/16 R: SBC 9/22/16

739615  
ID: LCM8FOSA\_00011  
Exp: 12/22/17 Prod: SBC  
13C8-Perfluorooctanesulfo

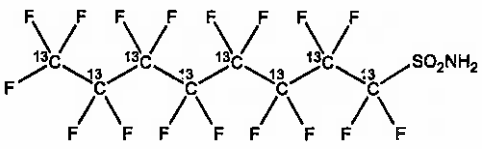


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M8FOSA-I **LOT NUMBER:** M8FOSA1215I  
**COMPOUND:** Perfluoro-1-[<sup>13</sup>C]<sub>8</sub>octanesulfonamide

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>8</sub>H<sub>2</sub>F<sub>17</sub>NO<sub>2</sub>S **MOLECULAR WEIGHT:** 507.09  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Isopropanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 12/22/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 12/22/2017  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 01/14/2016  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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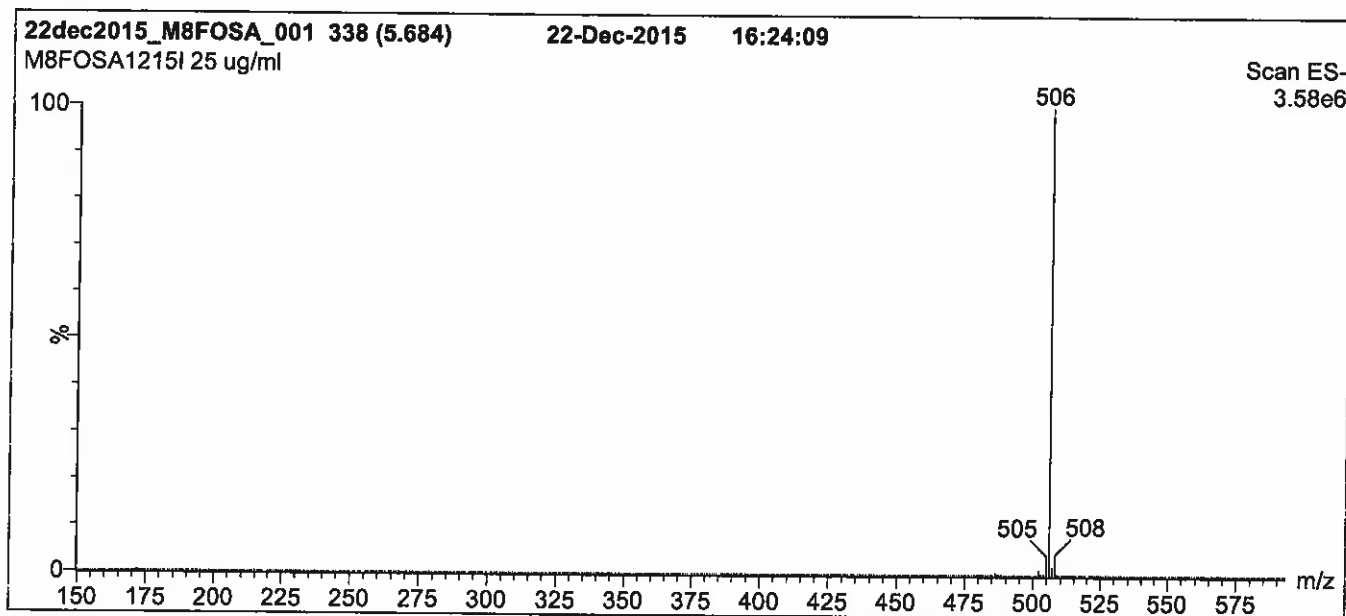
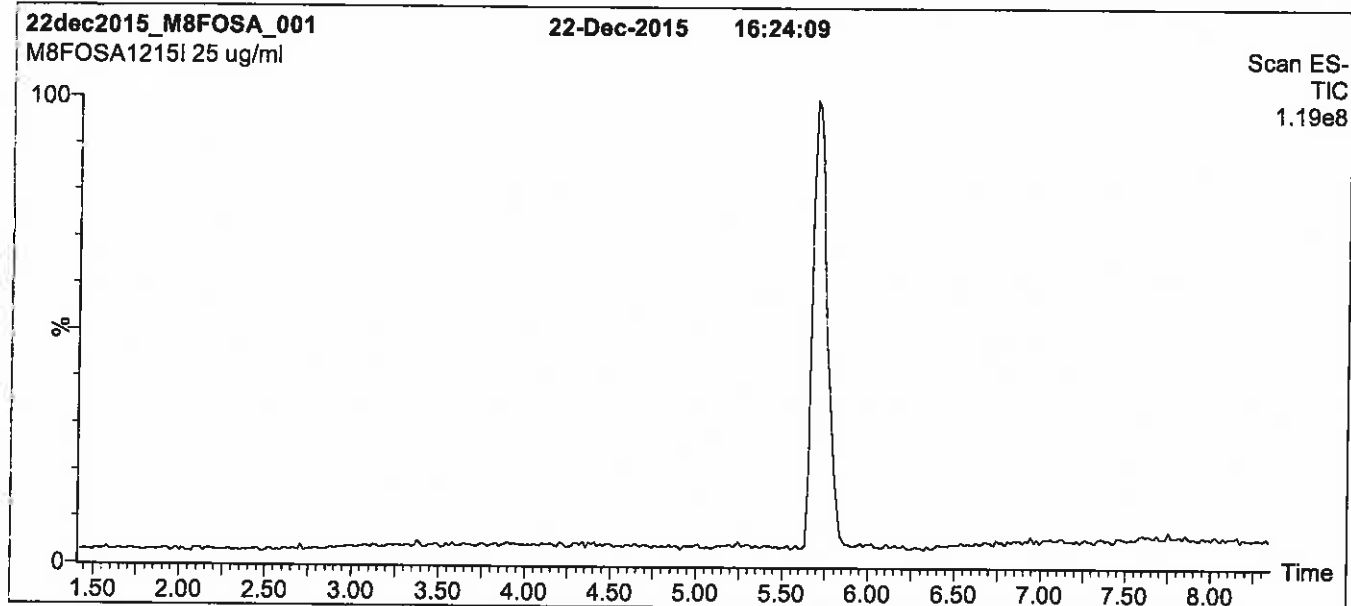
### **QUALITY MANAGEMENT:**

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**Figure 1: M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient

Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

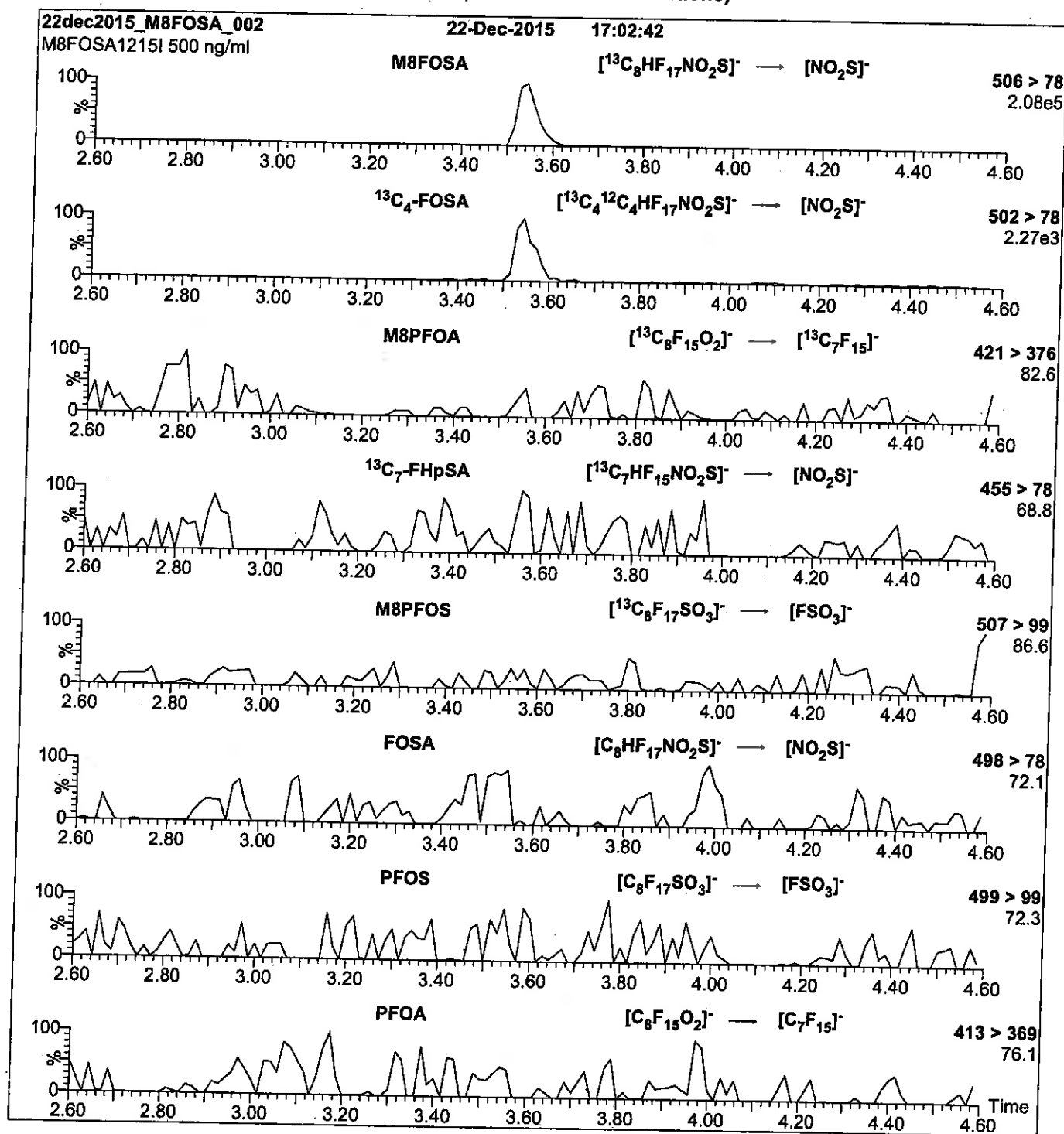
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = 40.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M8FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 30



Reagent

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**LCM8FOSA\_00012**

17: 3/9/17 SKV



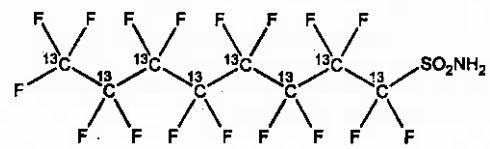
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M8FOSA-I  
**COMPOUND:** Perfluoro-1-[<sup>13</sup>C<sub>8</sub>]octanesulfonamide

**LOT NUMBER:** M8FOSA1215I

**STRUCTURE:**  **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>8</sub>H<sub>2</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/22/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 12/22/2020  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 507.09  
**SOLVENT(S):** Isopropanol  
**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(<sup>13</sup>C<sub>8</sub>)

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 12/13/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

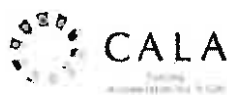
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

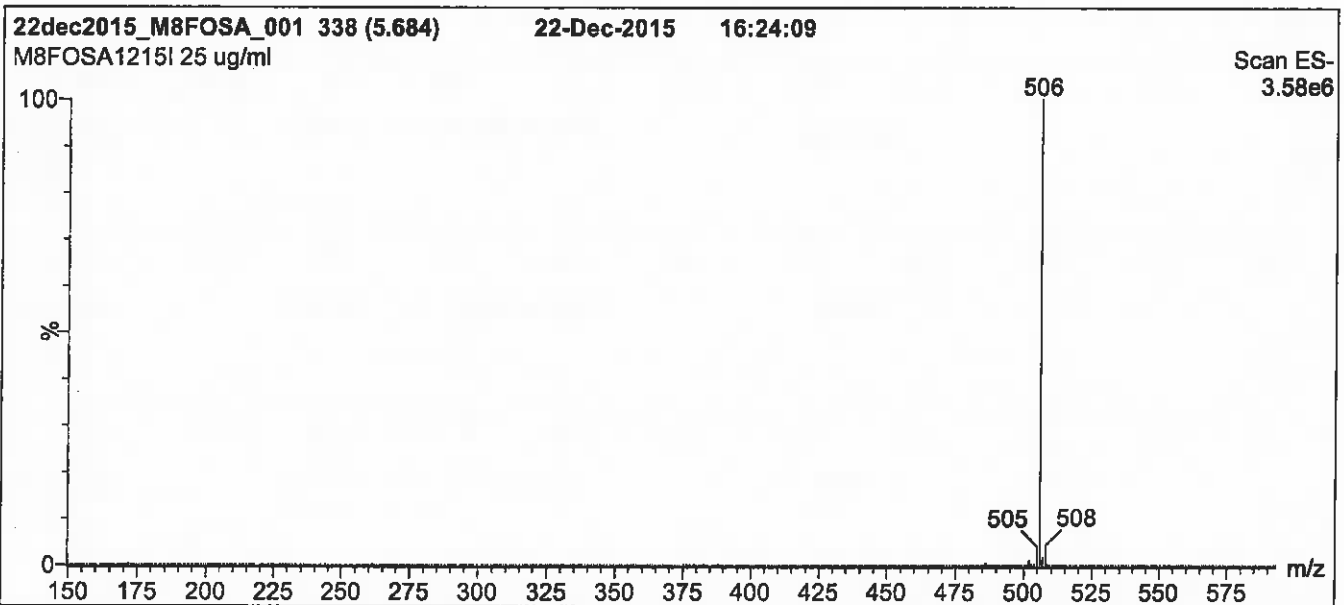
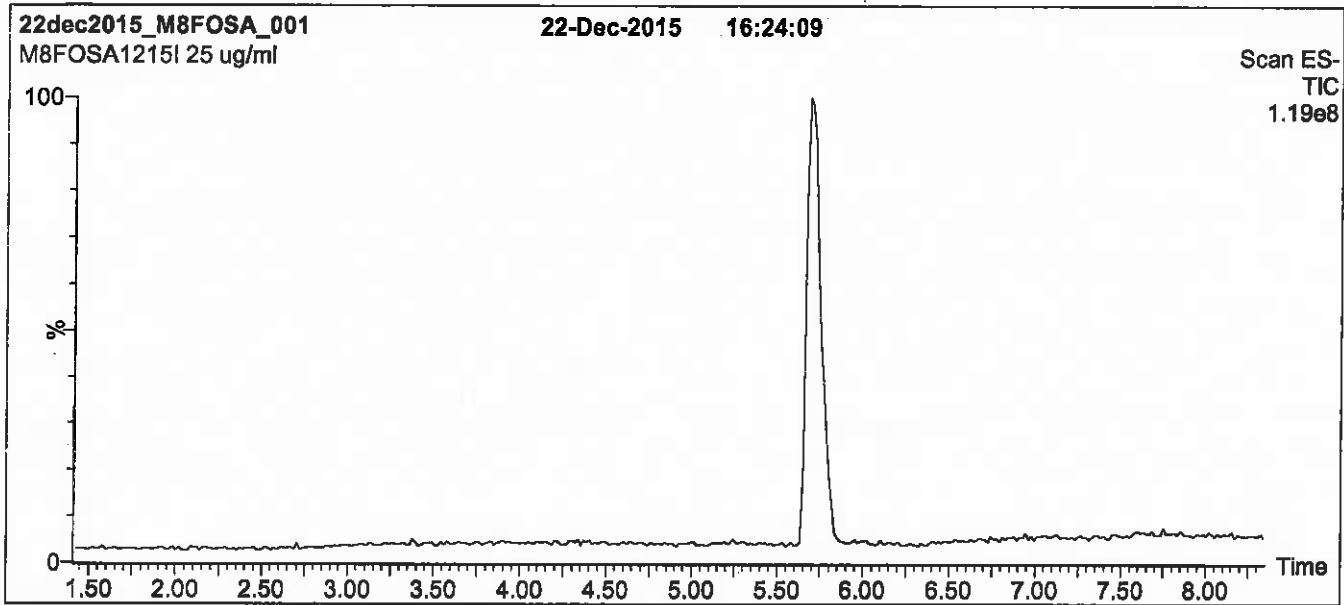
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for 2 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

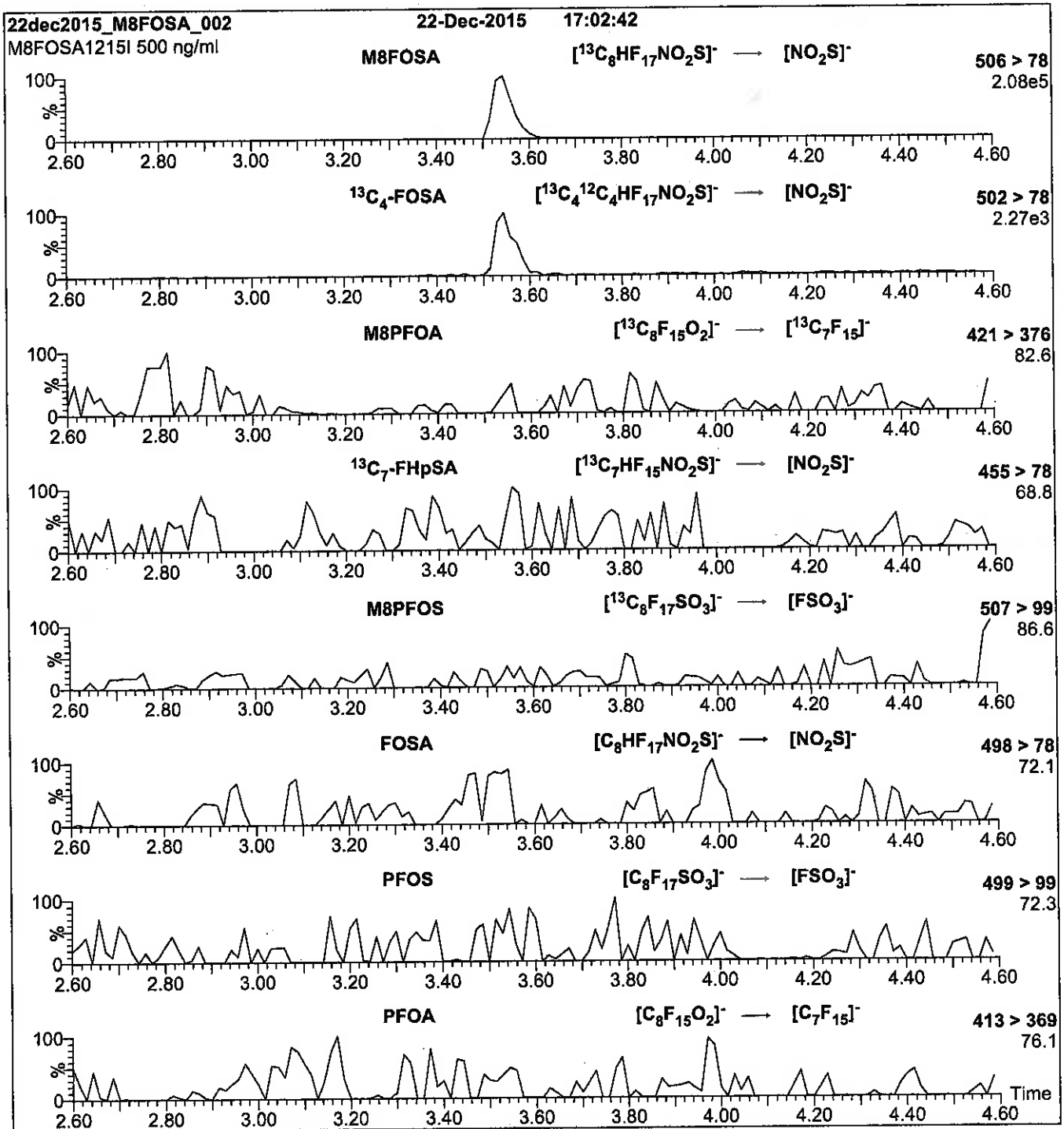
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.50  
 Cone Voltage (V) = 40.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M8FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 30

Reagent

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**LCM8FOSA\_00013**

r: 5/3/17 skv



# WELLINGTON LABORATORIES

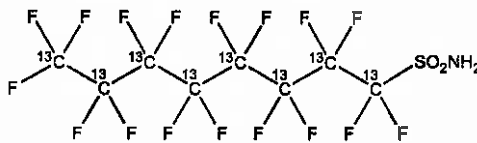
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M8FOSA-I  
**COMPOUND:** Perfluoro-1-[<sup>13</sup>C<sub>8</sub>]octanesulfonamide

**LOT NUMBER:** M8FOSA1215I

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>8</sub>H<sub>2</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/22/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 12/22/2020  
**RECOMMENDED STORAGE:** Refrigerate ampoule

**MOLECULAR WEIGHT:** 507.09  
**SOLVENT(S):** Isopropanol  
**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(<sup>13</sup>C<sub>8</sub>)


**DOCUMENTATION/ DATA ATTACHED:**

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- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

• See page 2 for further details.

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**Certified By:**   
B.G. Chittim  
**Date:** 12/13/2016  
(mm/dd/yyyy)

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### **LIMITED WARRANTY:**

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### **QUALITY MANAGEMENT:**

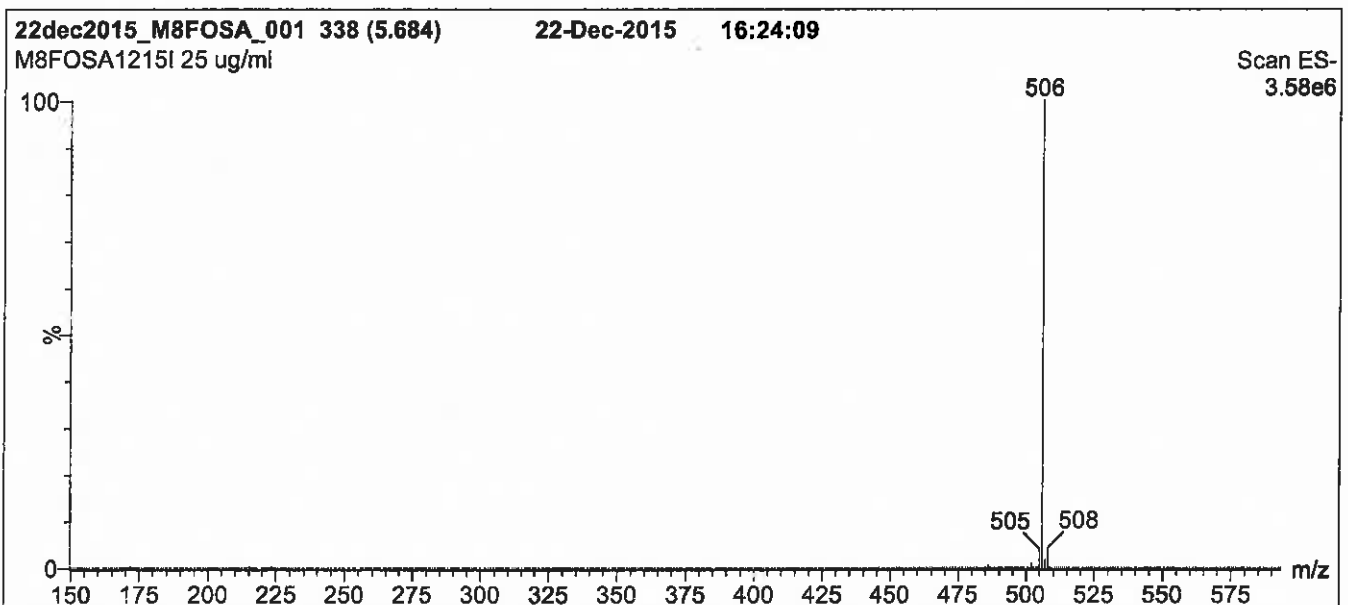
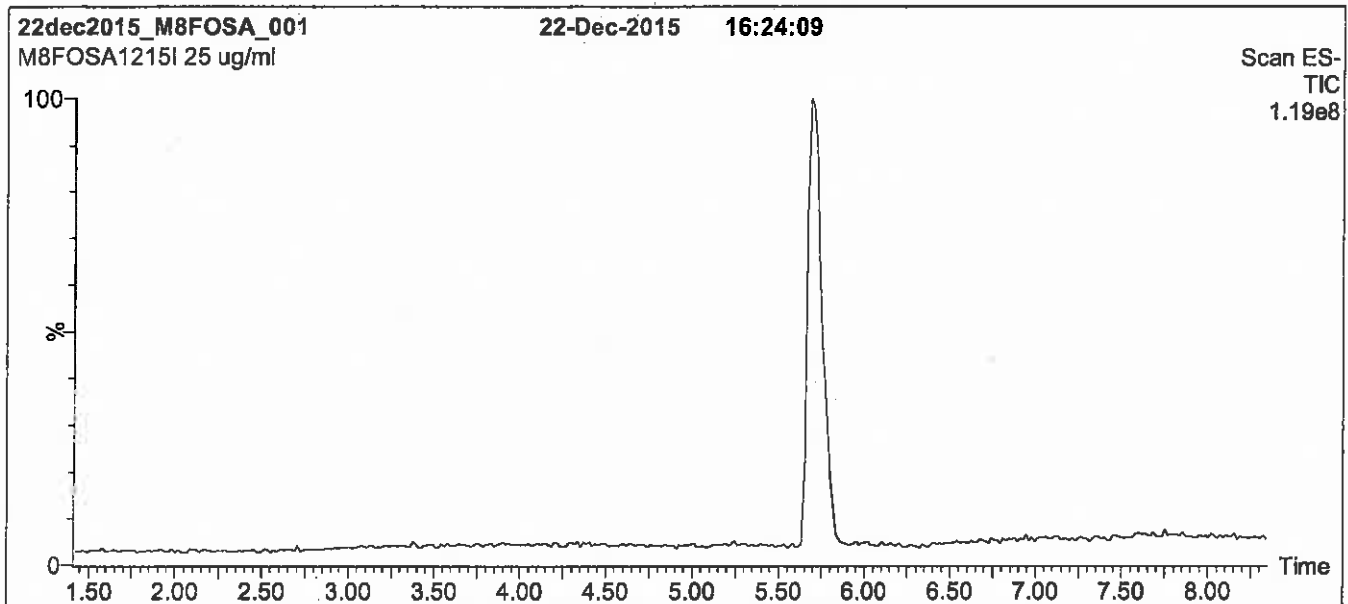
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M8FOSA-I; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

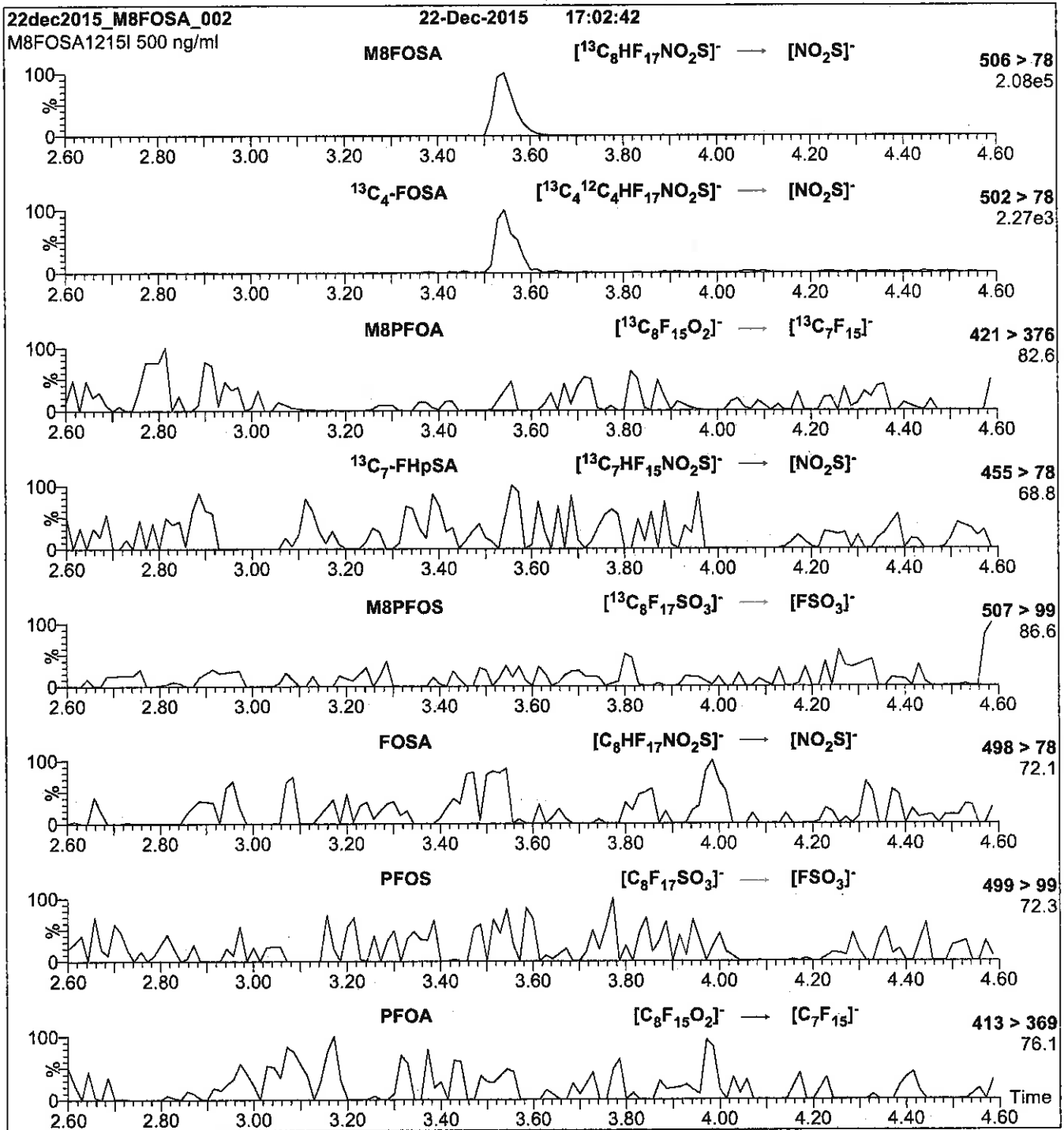
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = 40.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: M8FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10 µl (500 ng/ml M8FOSA-I)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300 µl/min

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 30

Reagent

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**LCMPFBA\_00008**

R: 8BC 9/22/16



739593

ID: LCMFBA\_00008

Exp: 05/24/21 Prep: SEC

<sup>13</sup>C4-Perfluorobutanoic ac



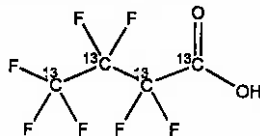
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

*Scanned 10/14/16 SP*

**PRODUCT CODE:** MPFBA **LOT NUMBER:** MPFBA0516  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]butanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub>HF<sub>9</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 218.01  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 05/24/2016 (1,2,3,4-<sup>13</sup>C<sub>4</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 05/24/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 05/30/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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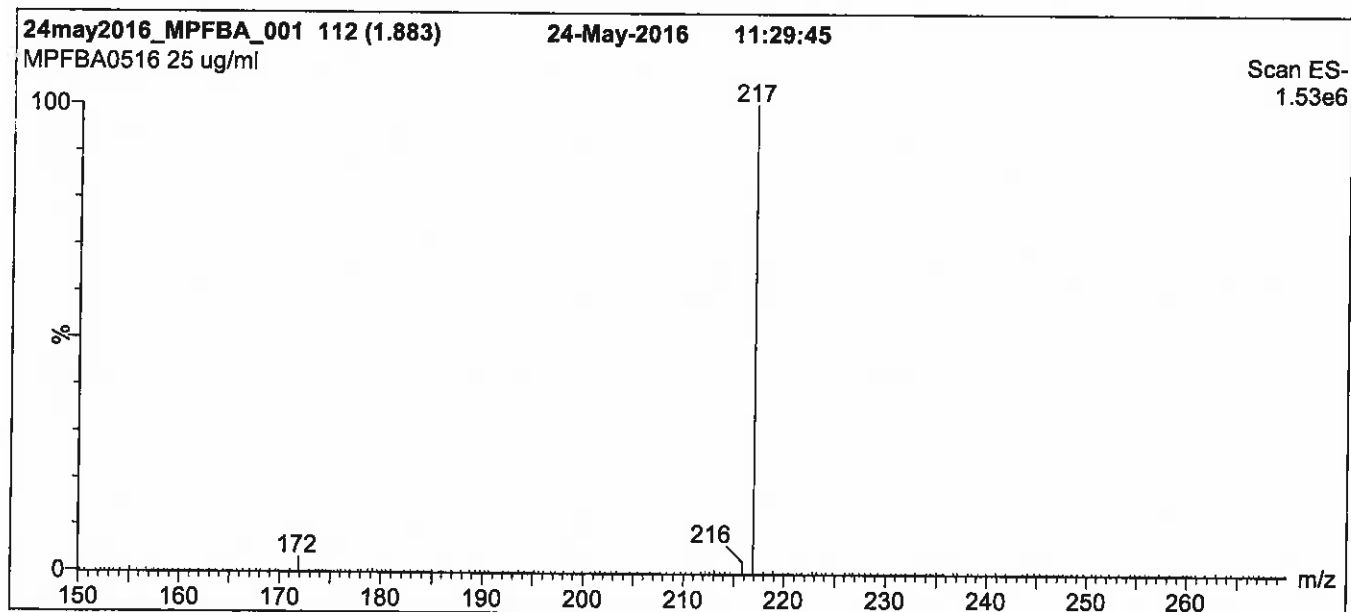
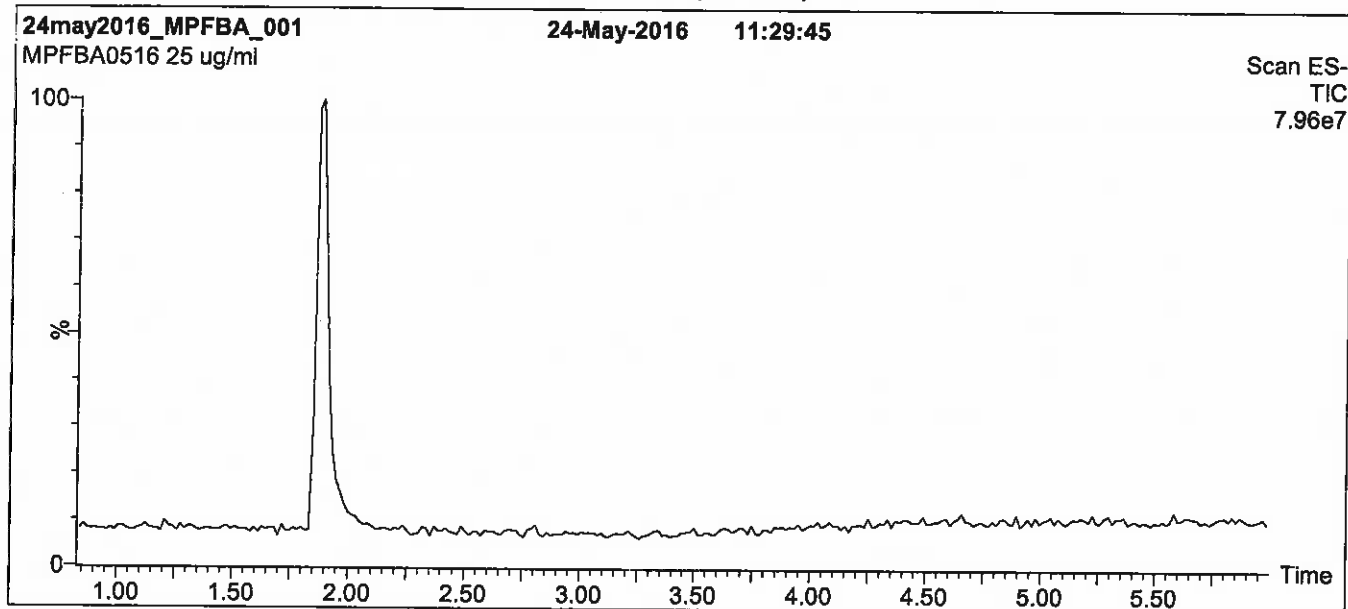
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**Figure 1: MPFBA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 30% (80:20 MeOH:ACN) / 70% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

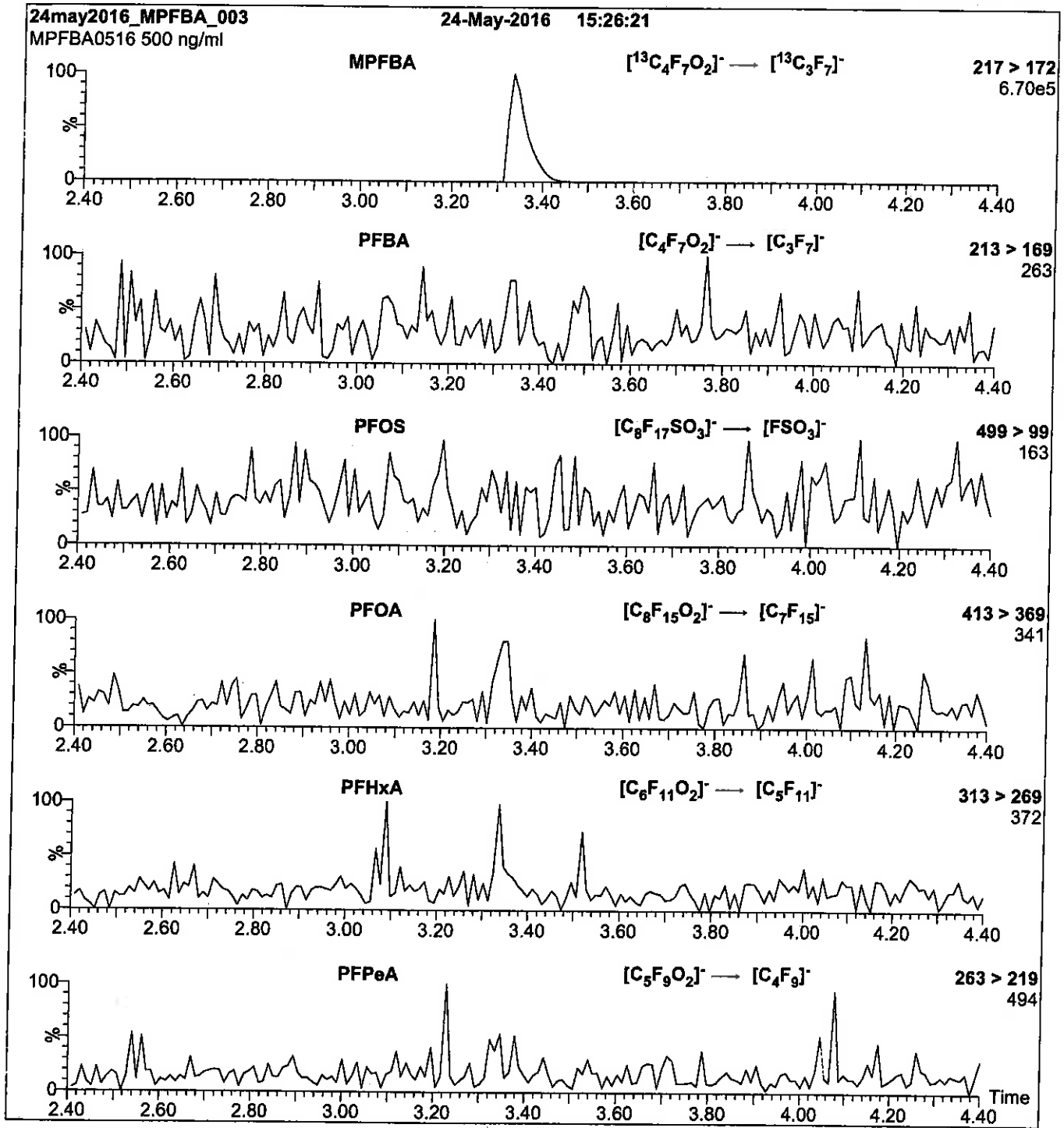
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 10.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop Injection  
10  $\mu\text{l}$  (500 ng/ml MPFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.50e-3  
Collision Energy (eV) = 10

Reagent

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**LCMPFBA\_00009**



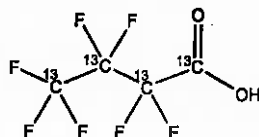


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFBA **LOT NUMBER:** MPFBA0516  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]butanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub>HF<sub>7</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 218.01  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
 (1,2,3,4-<sup>13</sup>C<sub>4</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 05/24/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/24/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

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Certified By:

B.G. Chittim

Date: 05/30/2016  
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The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

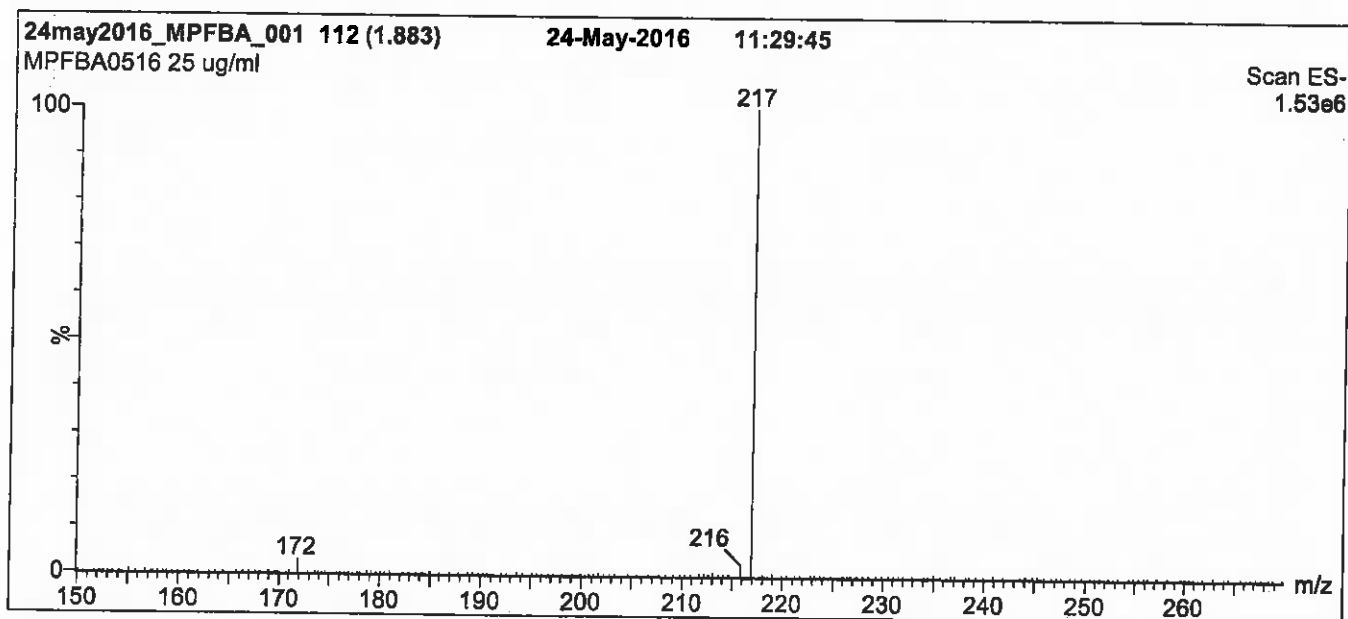
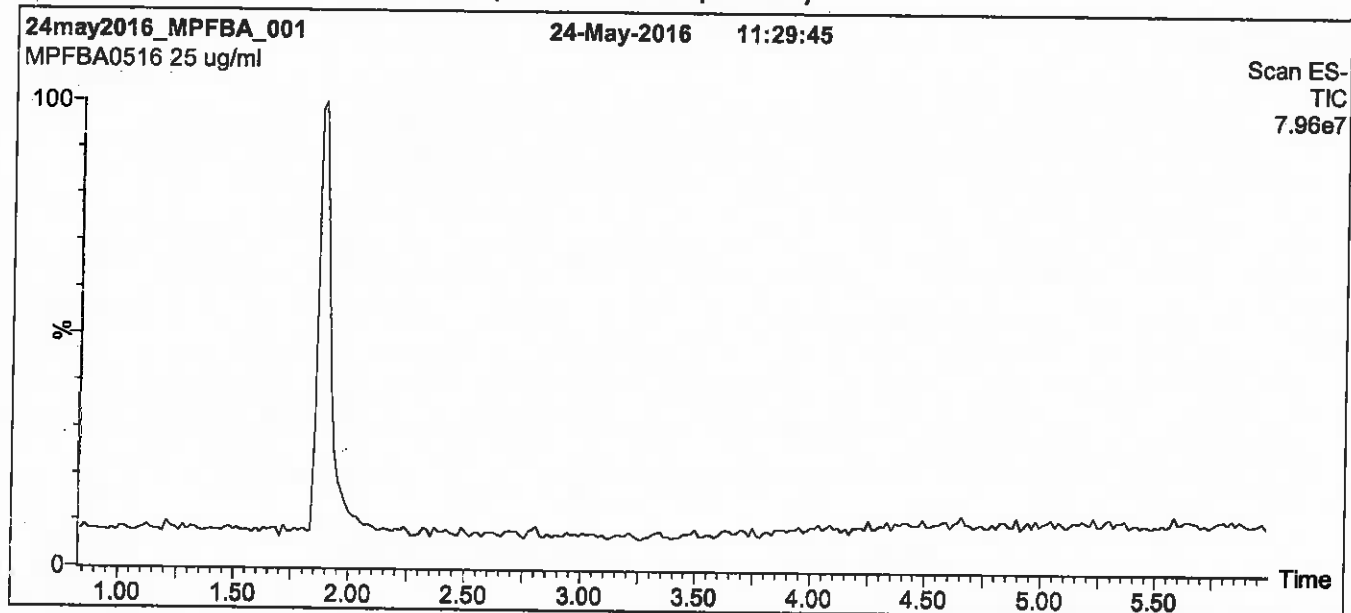
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: MPFBA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 30% (80:20 MeOH:ACN) / 70% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

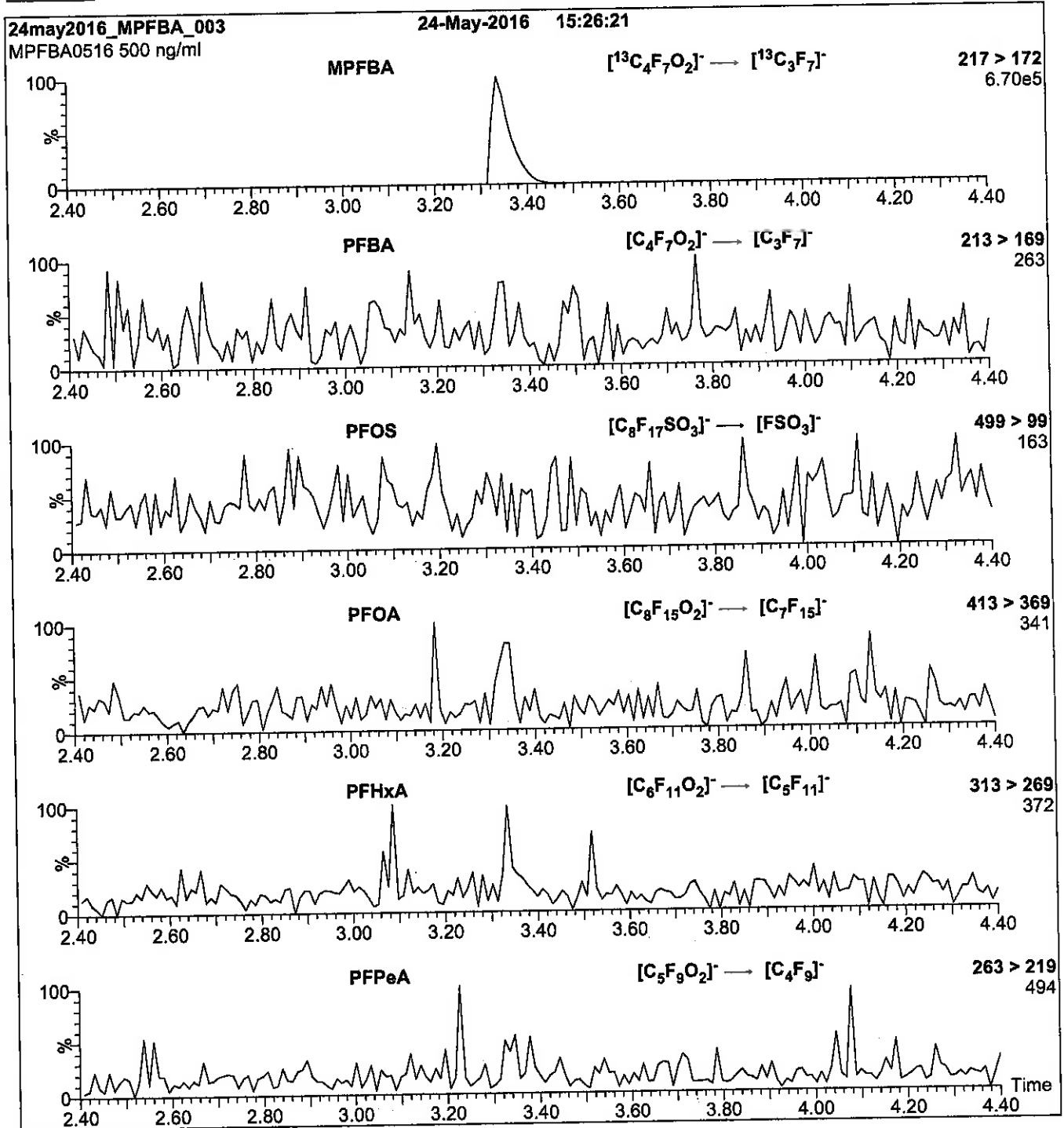
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 10.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.50e-3  
Collision Energy (eV) = 10

Reagent

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**LCMPFBA\_00010**

r: 5/3/17 SPV



# WELLINGTON LABORATORIES

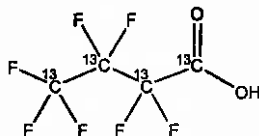
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFBA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]butanoic acid

**LOT NUMBER:** MPFBA0516

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub>HF<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 218.01  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/24/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/24/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

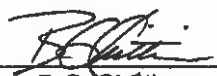
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim  
**Date:** 05/30/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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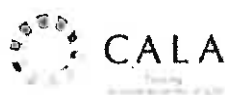
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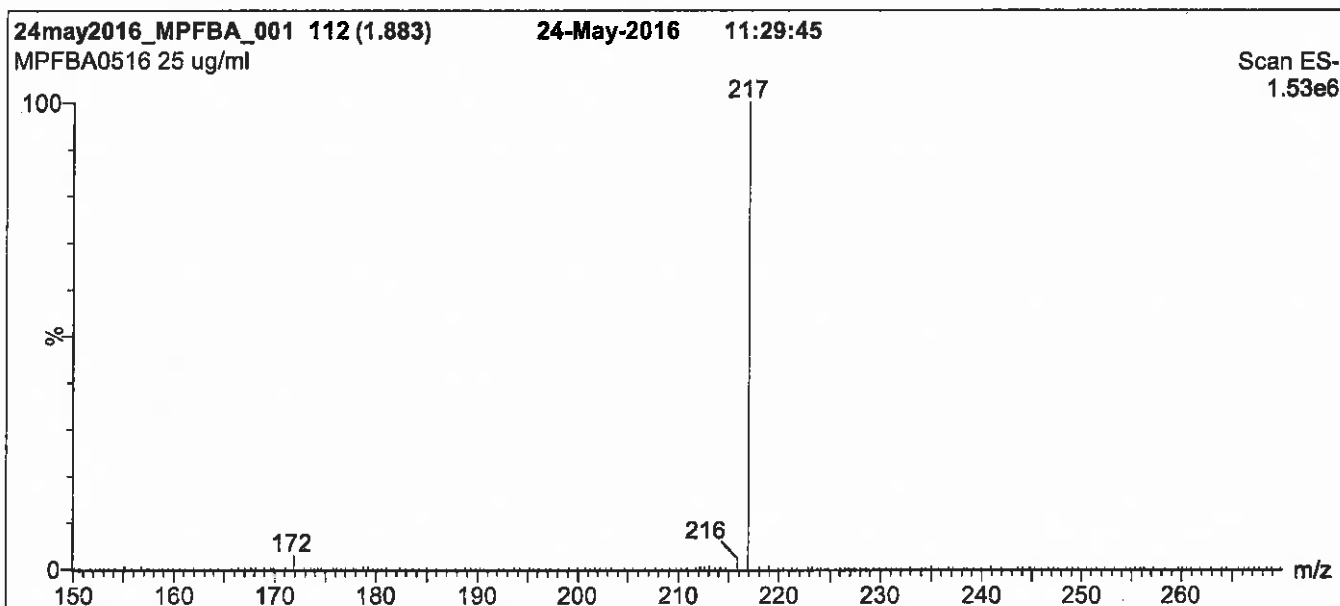
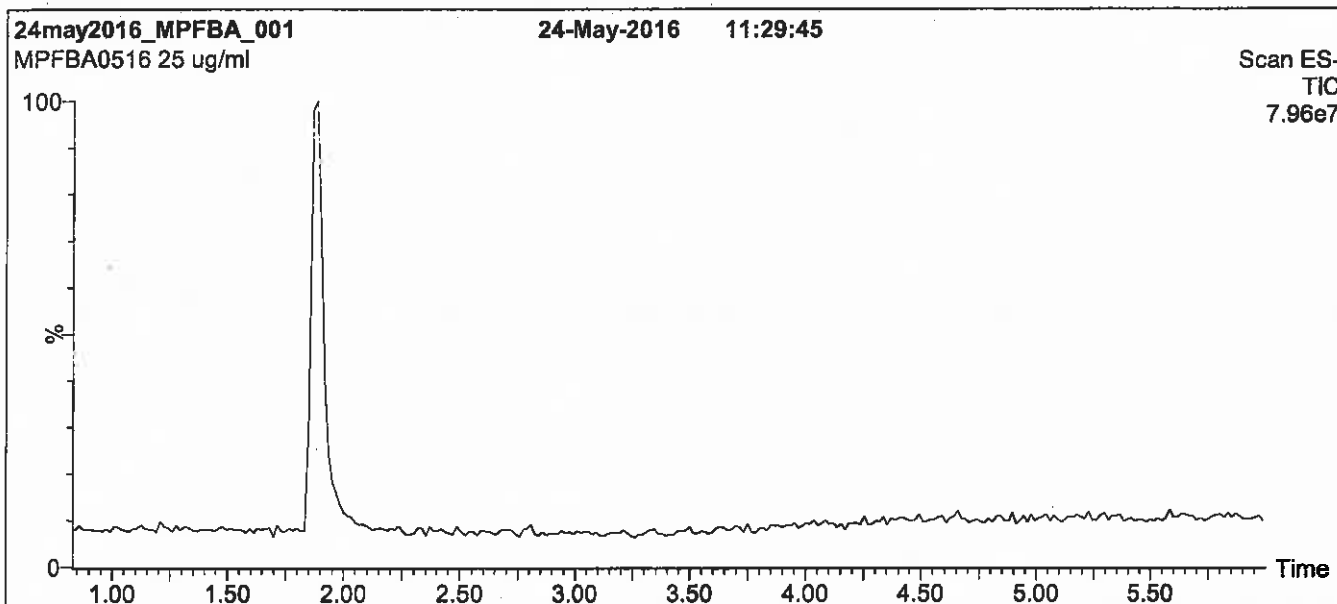
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**Figure 1: MPFBA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH, Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 30% (80:20 MeOH:ACN) / 70% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ l/min

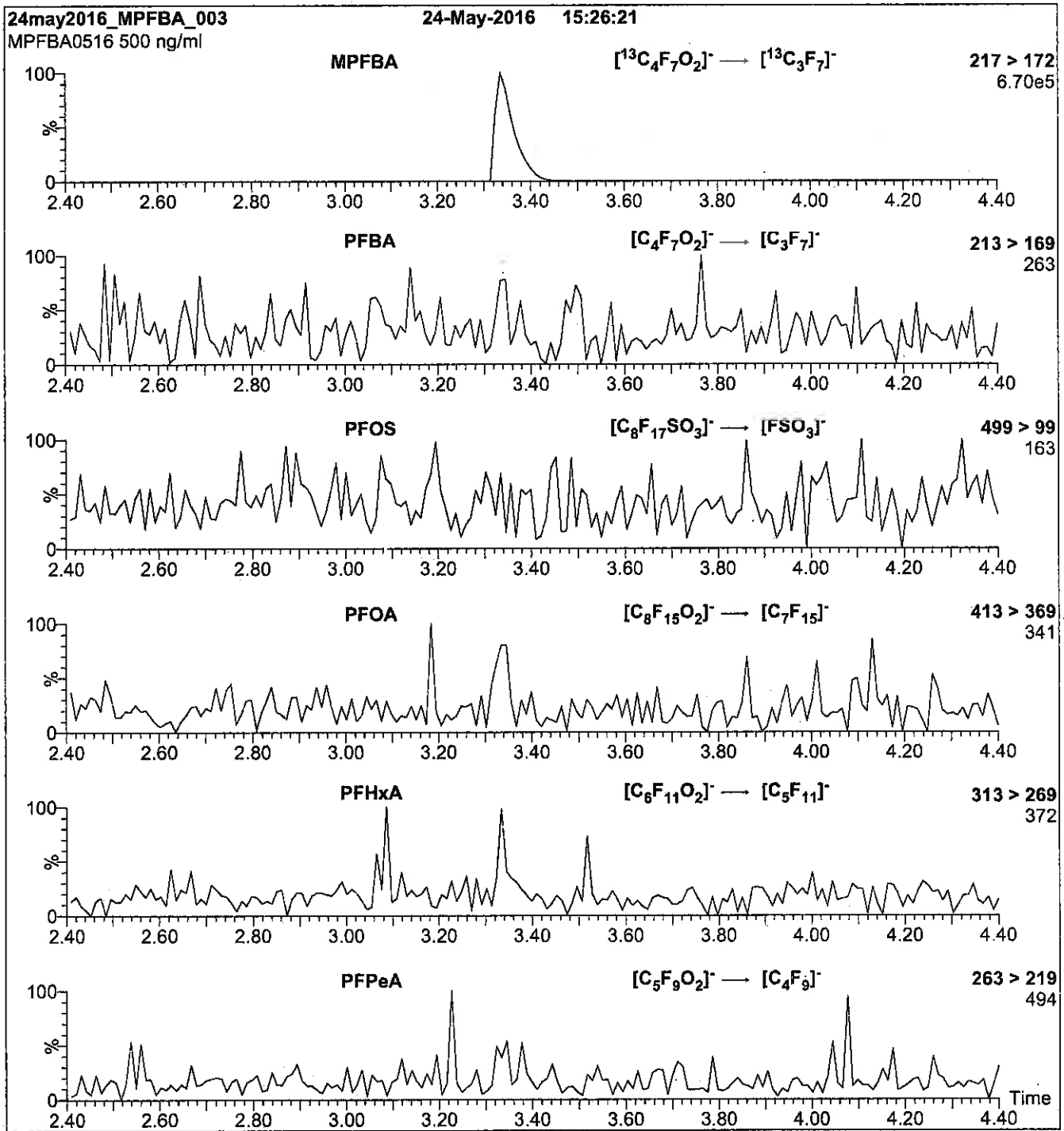
**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 10.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750



**Figure 2: MPFBA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.50e-3  
Collision Energy (eV) = 10

Reagent

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**LCMPFBS\_00002**

Scanned 10/14/16 R: gbc 9/22/16



739640  
ID: LCMFBS\_00002  
Exp: 08/02/21 Prod: 58C  
13C3-Perfluorobutanesulfo

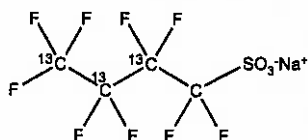


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M3PFBS **LOT NUMBER:** M3PFBS0815  
**COMPOUND:** Sodium perfluoro-1-[2,3,4-<sup>13</sup>C<sub>3</sub>]butanesulfonate

**STRUCTURE:** **CAS #:** Not available



<b>MOLECULAR FORMULA:</b>	<sup>13</sup> C <sub>3</sub> <sup>12</sup> CF <sub>9</sub> SO <sub>3</sub> Na	<b>MOLECULAR WEIGHT:</b>	325.06
<b>CONCENTRATION:</b>	50.0 ± 2.5 µg/ml (Na salt) 46.5 ± 2.3 µg/ml (M3PFBS anion)	<b>SOLVENT(S):</b>	Methanol
<b>CHEMICAL PURITY:</b>	>98%	<b>ISOTOPIC PURITY:</b>	≥99% <sup>13</sup> C (2,3,4- <sup>13</sup> C <sub>3</sub> )
<b>LAST TESTED:</b> (mm/dd/yyyy)	08/02/2016		
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	08/02/2021		
<b>RECOMMENDED STORAGE:</b>	Store ampoule in a cool, dark place		


### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

• See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 08/05/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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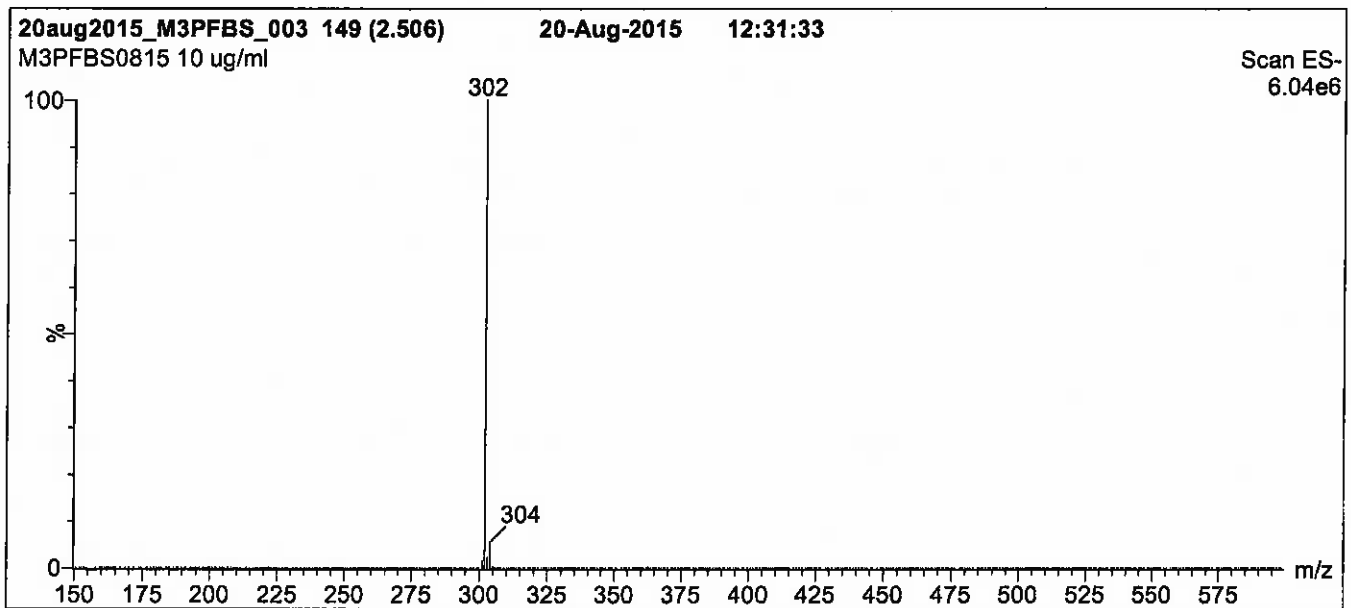
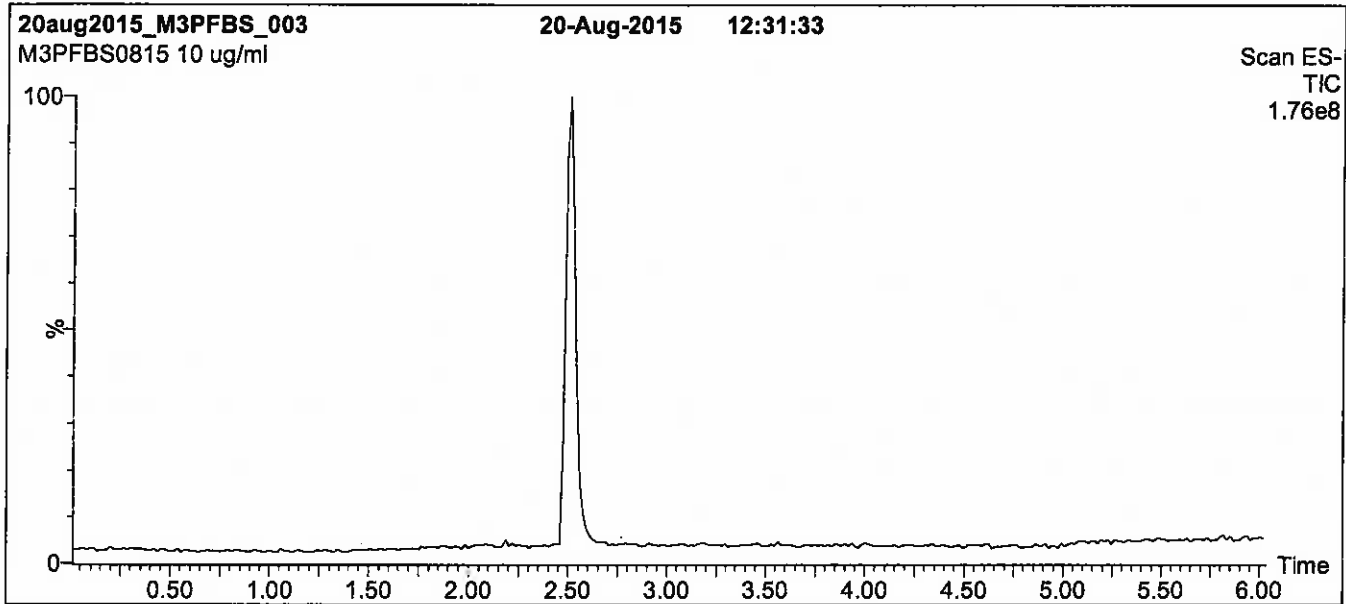
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**Figure 1: M3PFBS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for  
 2 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

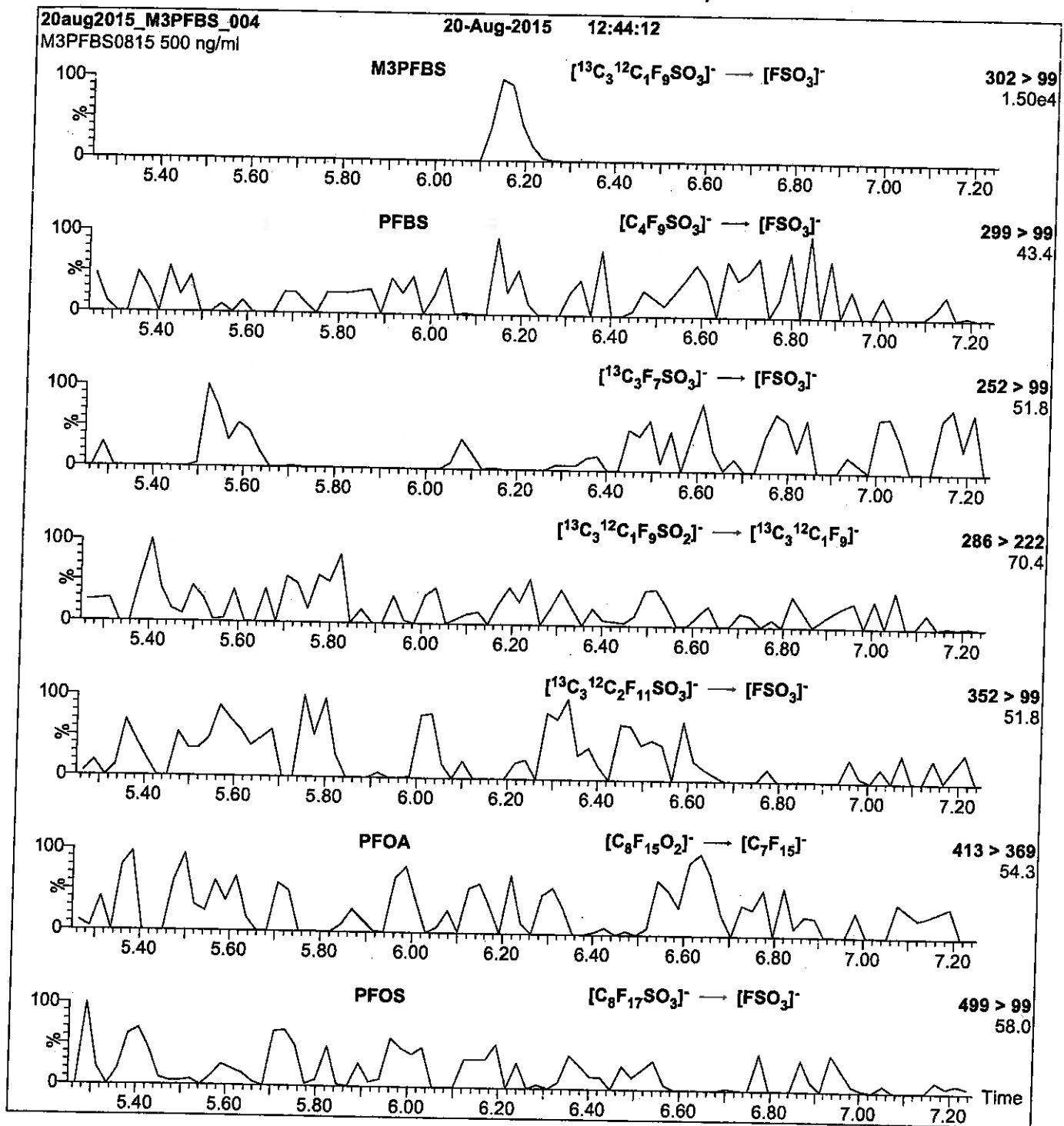
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 40.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M3PFBS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M3PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 25

Reagent

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**LCMPFBS\_00003**

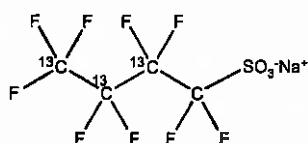


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M3PFBS **LOT NUMBER:** M3PFBS0815  
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**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>3</sub><sup>12</sup>CF<sub>9</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 325.06  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
 46.5 ± 2.3 µg/ml (M3PFBS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 08/02/2016 (2,3,4-<sup>13</sup>C<sub>3</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 08/02/2021  
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### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.

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**Certified By:**   
 B.G. Chittim **Date:** 08/05/2016  
 (mm/dd/yyyy)

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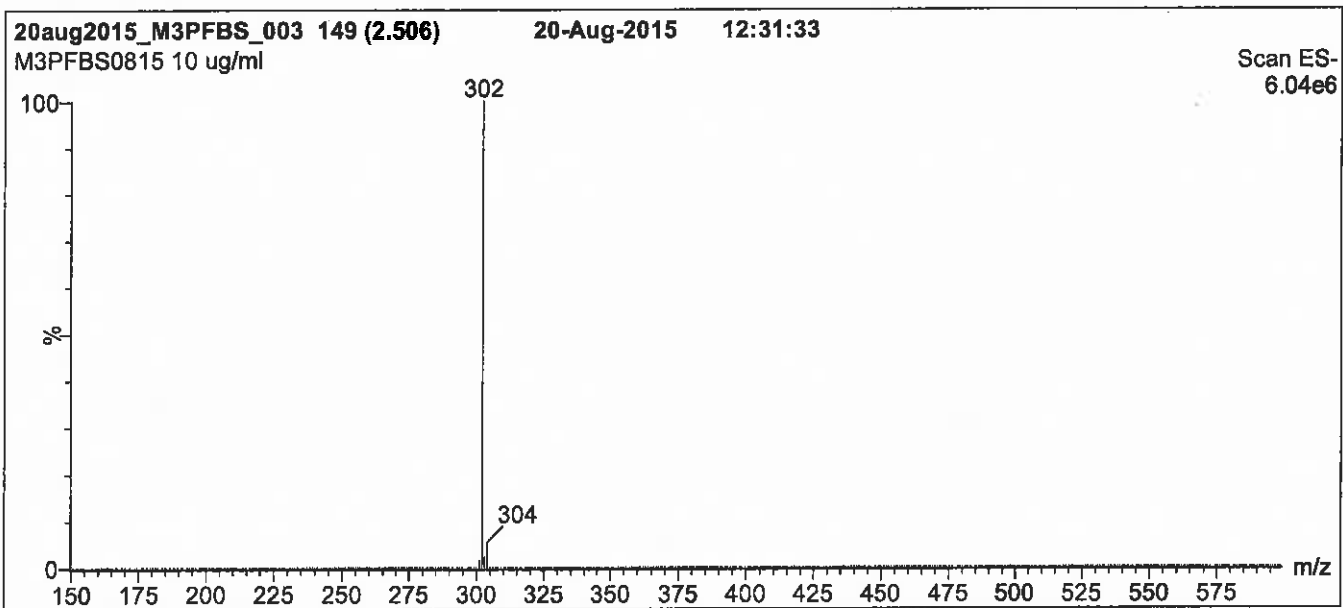
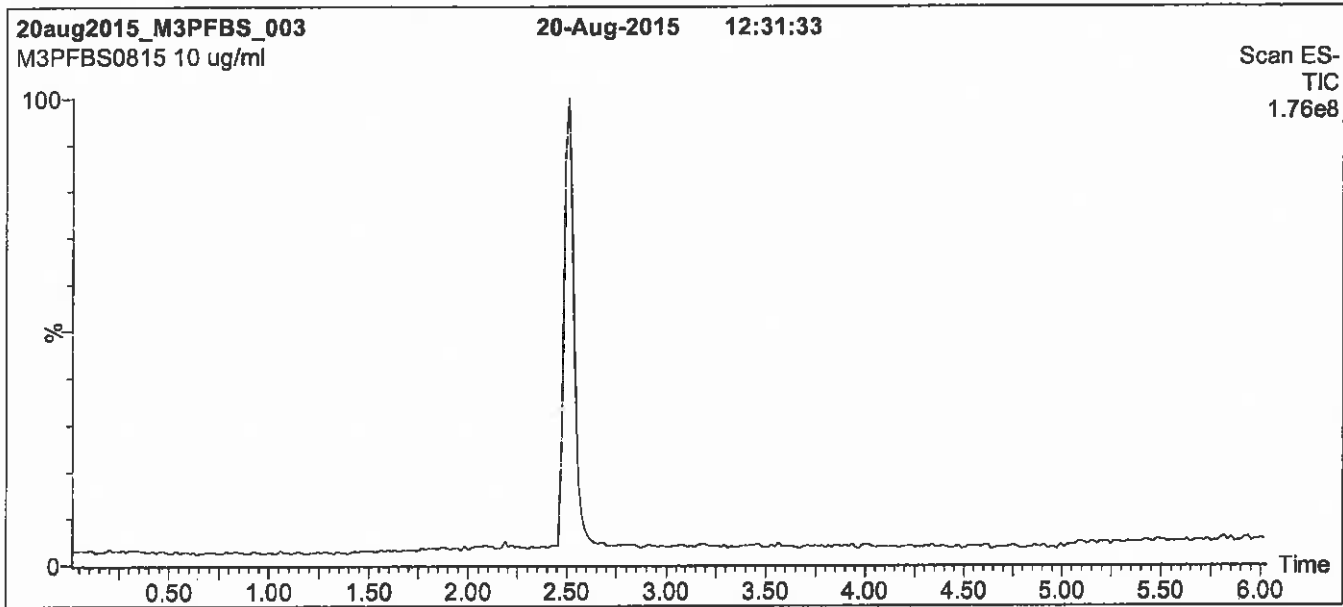
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M3PFBS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for  
 2 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

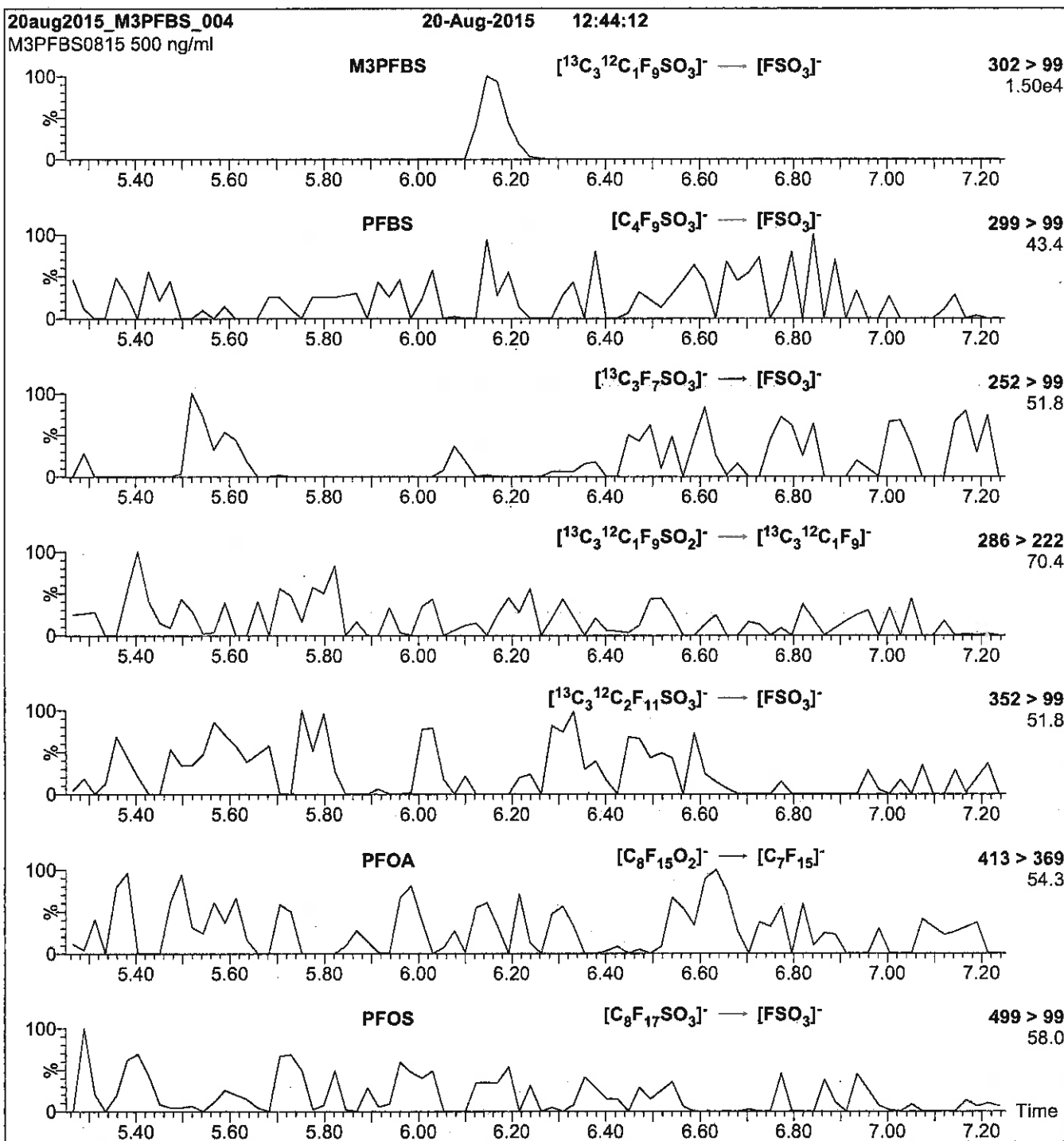
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 40.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: M3PFBS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M3PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 25

Reagent

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**LCMPFDA\_00011**

Scanned 10/14/16 R: SBC 9/22/16

739609  
ID: LCMFDA\_00011  
Exp: 08/19/20 Prep: SBC  
13C2-Perfluorodecanoic a

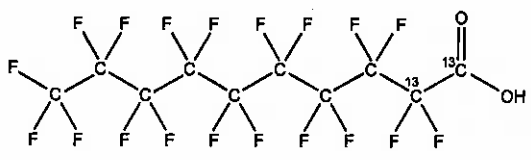


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFDA      **LOT NUMBER:** MPFDA0815  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]decanoic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>HF<sub>18</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 516.07  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 08/19/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 08/19/2020  
**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 <sup>13</sup>C<sub>1</sub>-PFNA.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim      **Date:** 08/21/2015  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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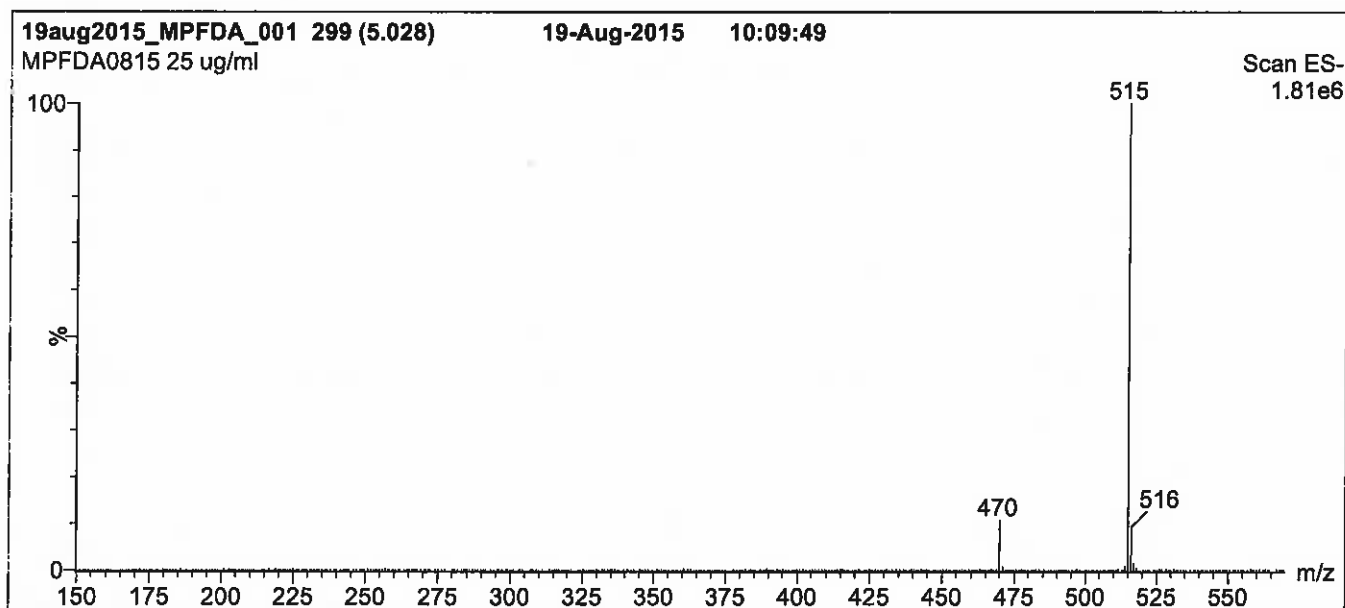
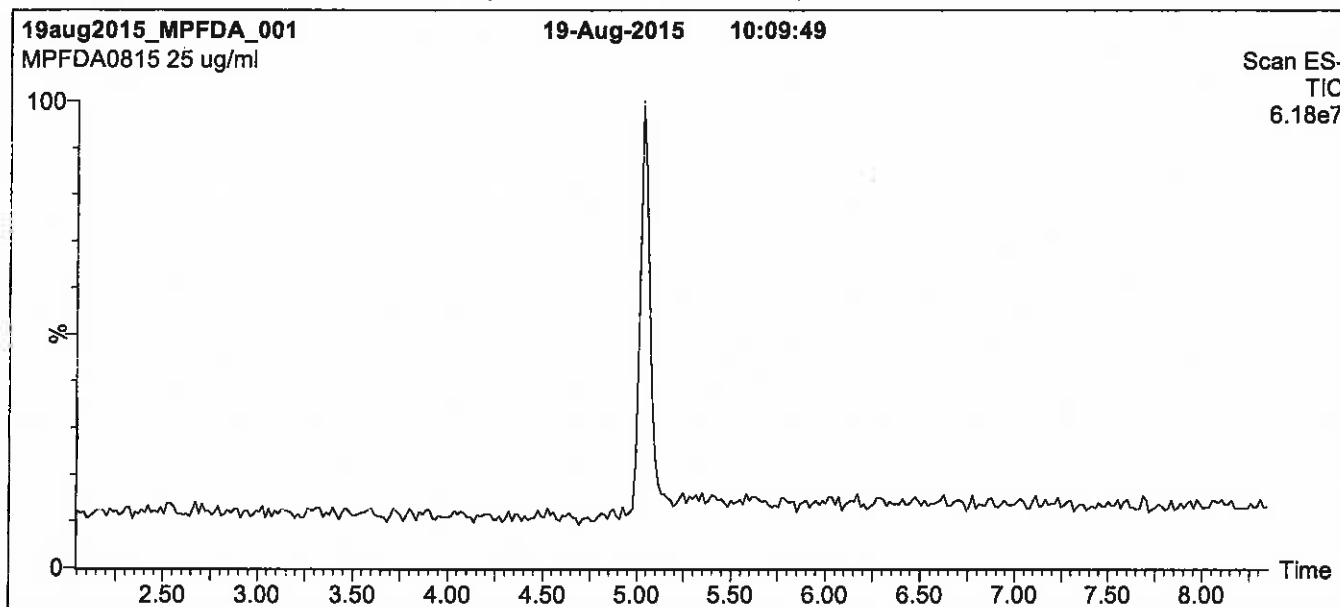
### **QUALITY MANAGEMENT:**

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**Figure 1: MPFDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

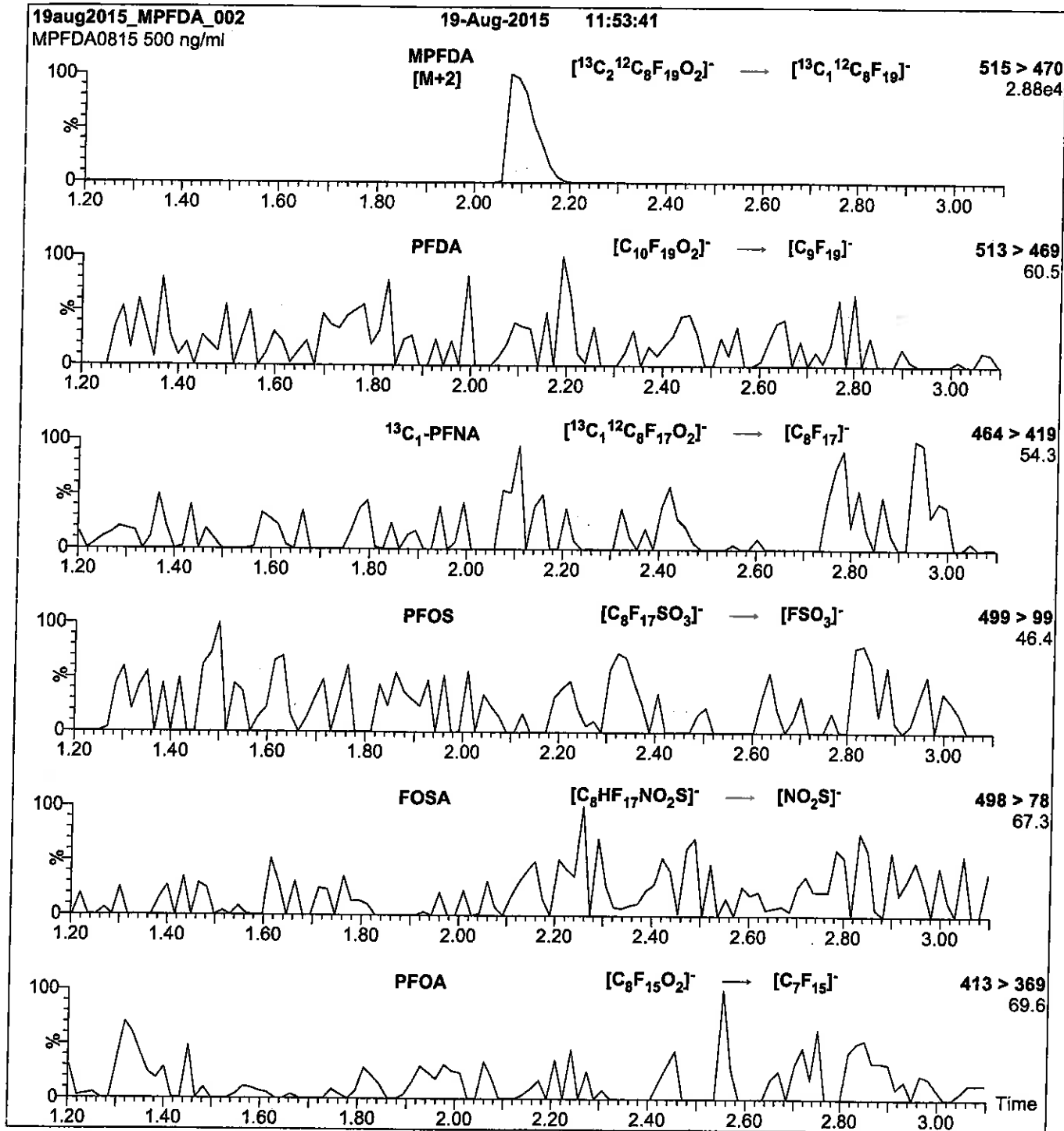
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
 Collision Energy (eV) = 13



Reagent

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**LCMPFDA\_00013**

P: 31917 SKW



# WELLINGTON LABORATORIES

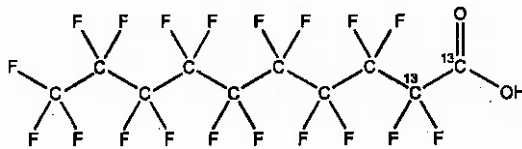
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFDA  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]decanoic acid

**LOT NUMBER:** MPFDA0916

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>HF<sub>18</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 516.07  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)

**LAST TESTED:** (mm/dd/yyyy) 09/30/2016

**EXPIRY DATE:** (mm/dd/yyyy) 09/30/2021

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of <sup>13</sup>C<sub>1</sub>-PFNA.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim

**Date:** 10/07/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

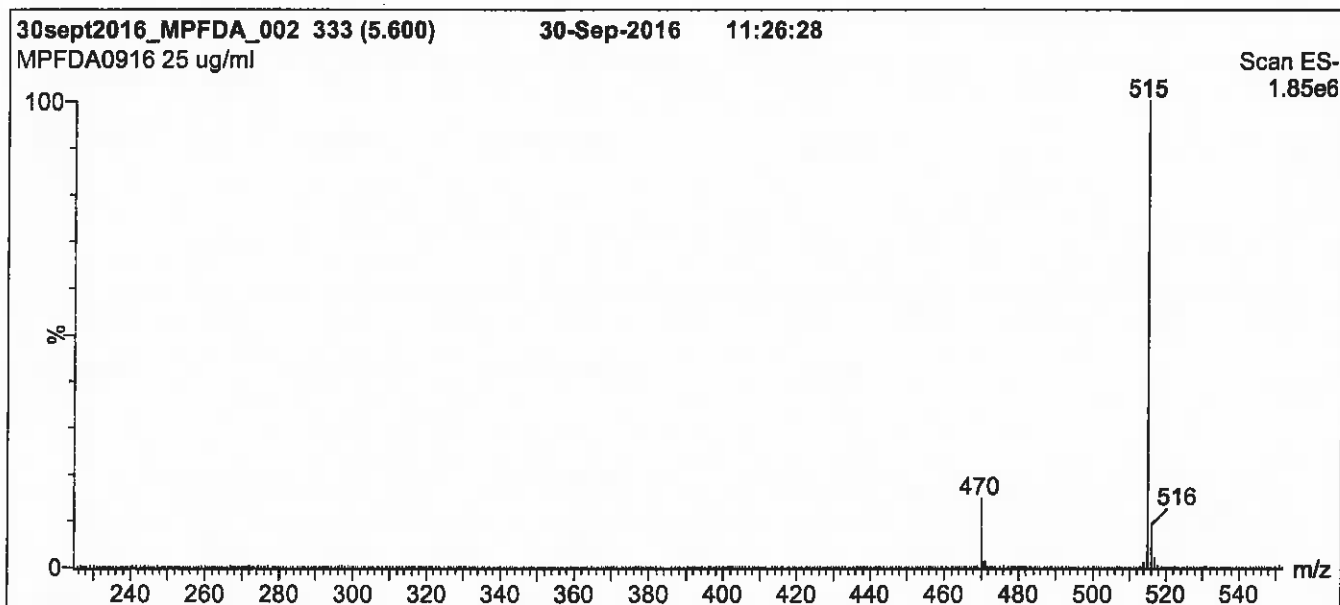
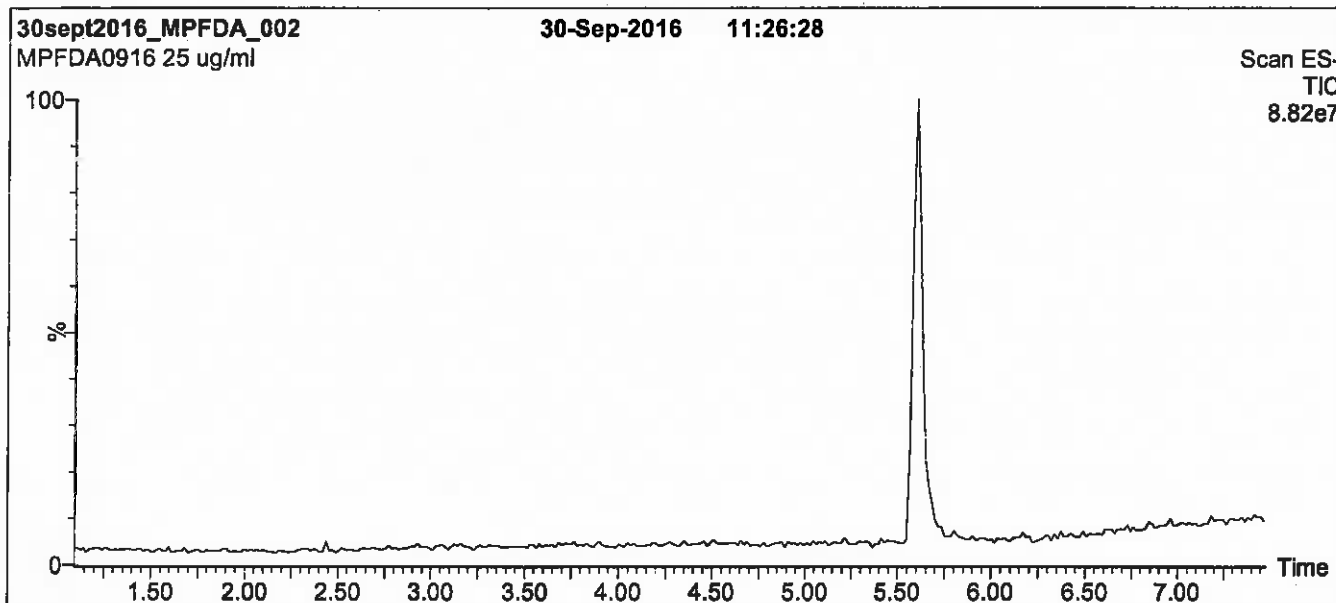
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**Figure 1: MPFDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

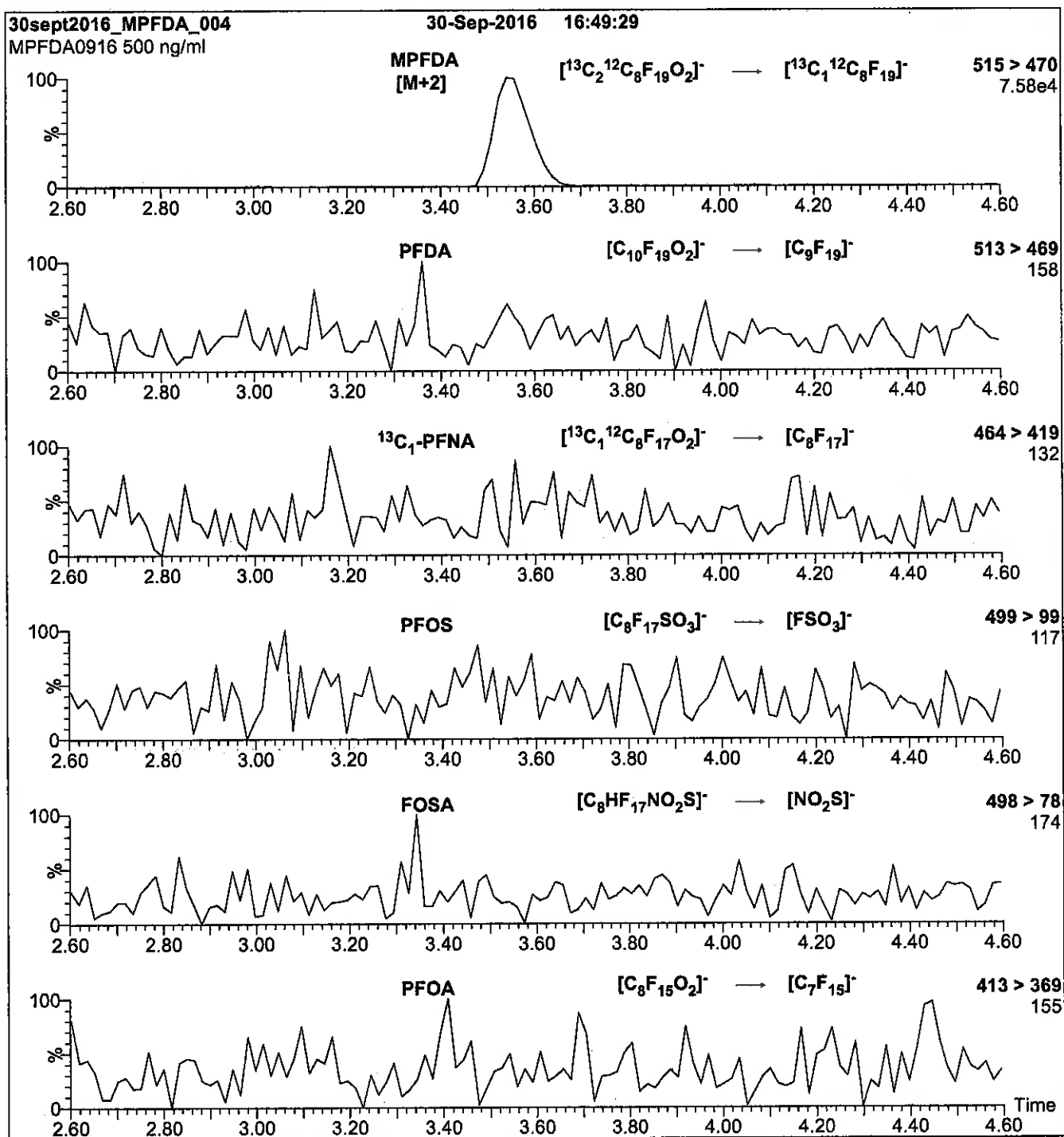
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV) =** 2.00  
**Cone Voltage (V) =** 15.00  
**Cone Gas Flow (l/hr) =** 50  
**Desolvation Gas Flow (l/hr) =** 750

**Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml MPFDA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 13

Reagent

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**LCMPFDA\_00015**

P: 5/31/17-SK  
S: 5/16/17-SK

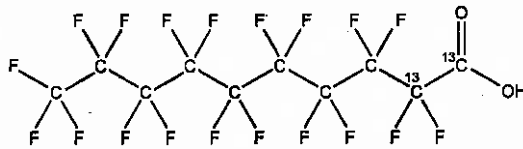


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFDA **LOT NUMBER:** MPFDA0916  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]decanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>HF<sub>18</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 516.07  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 09/30/2016 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 09/30/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of <sup>13</sup>C<sub>1</sub>-PFNA.

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**Certified By:**   
B.G. Chittim **Date:** 10/07/2016  
(mm/dd/yyyy)

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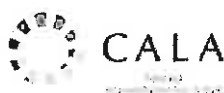
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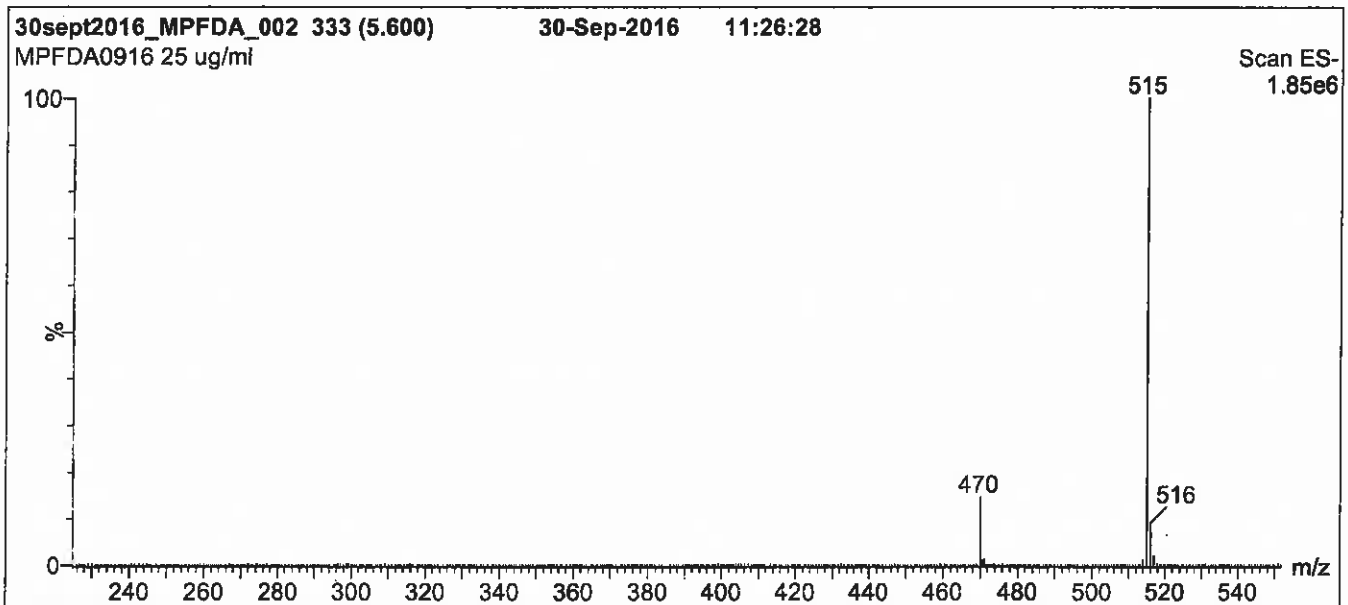
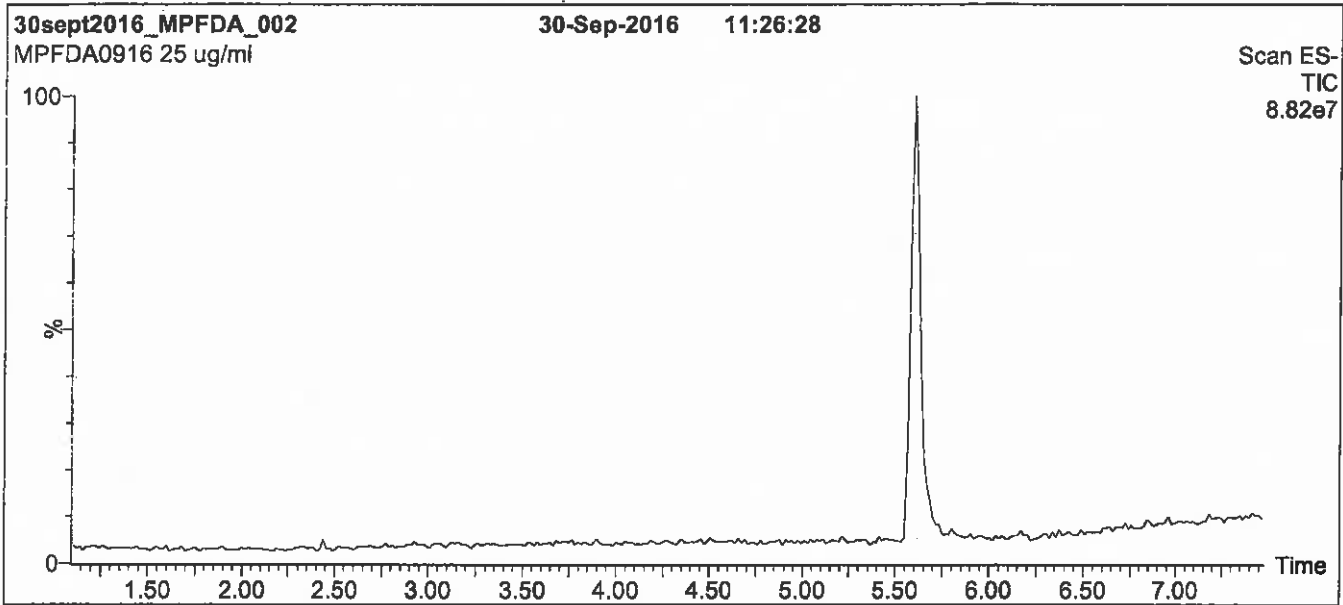
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**Figure 1: MPFDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

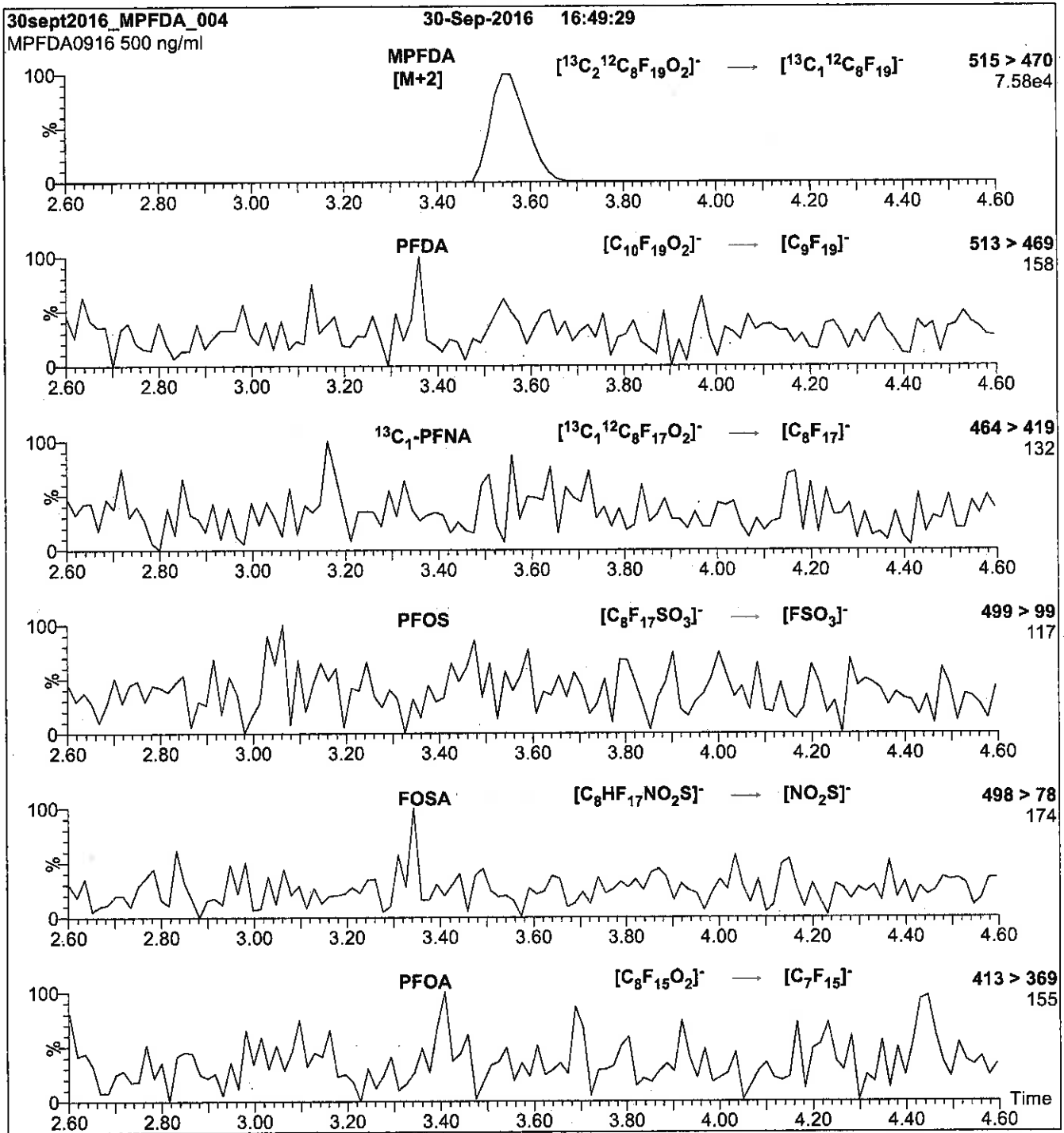
Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

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Experiment: Full Scan (225 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml MPFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 13

Reagent

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**LCMPFD<sub>o</sub>A\_00008**

R: 882 9/22/16



739598  
ID: LCMFDoA\_00008  
Exp: 04/08/21 Prod: SBC  
13C2-Perfluorododecanoic



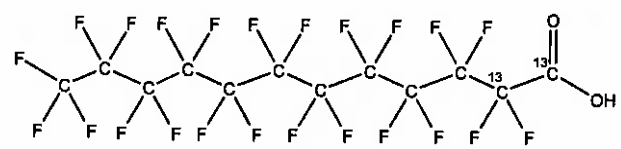
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 SR

**PRODUCT CODE:** MPFDoA      **LOT NUMBER:** MPFDoA0416  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]dodecanoic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>10</sub>HF<sub>23</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 616.08  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 04/08/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 04/08/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim      **Date:** 04/15/2016  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • Info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

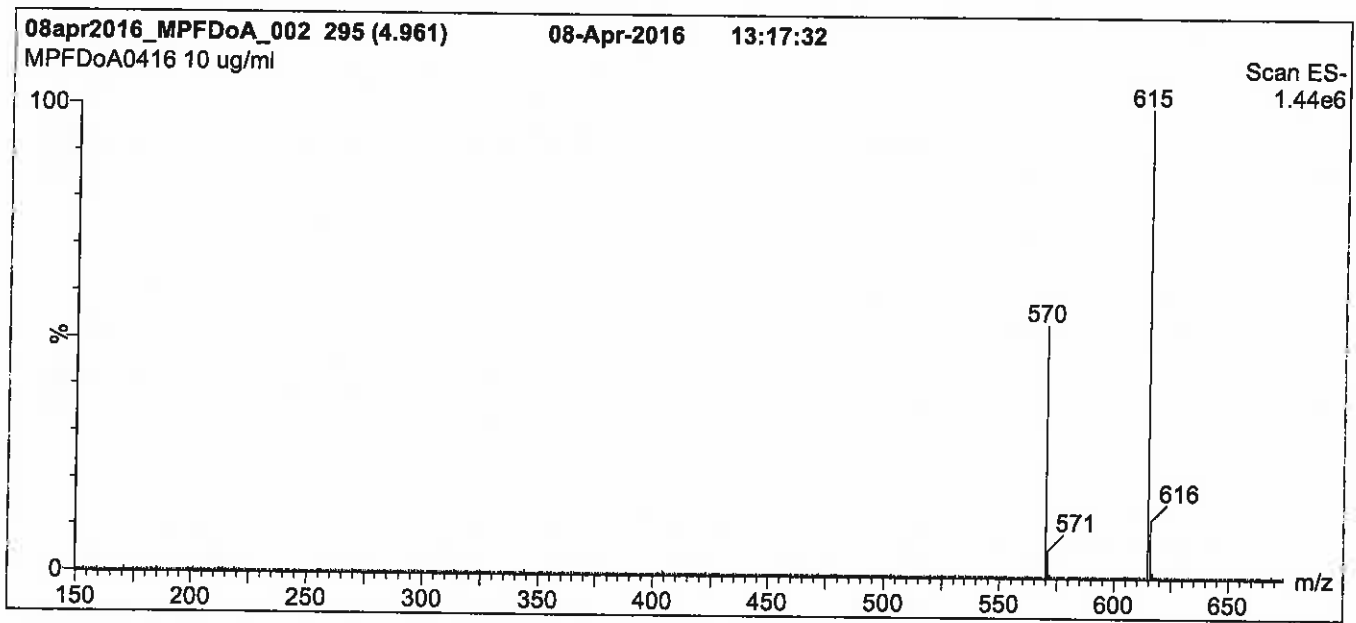
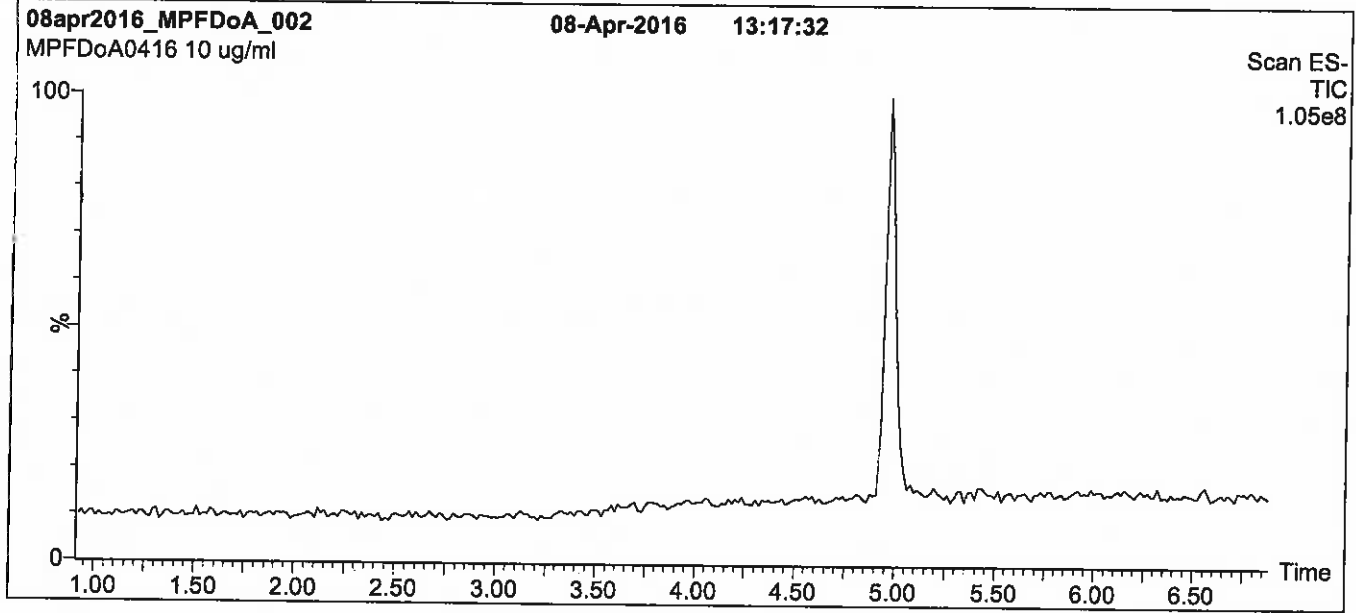
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: MPFDoA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

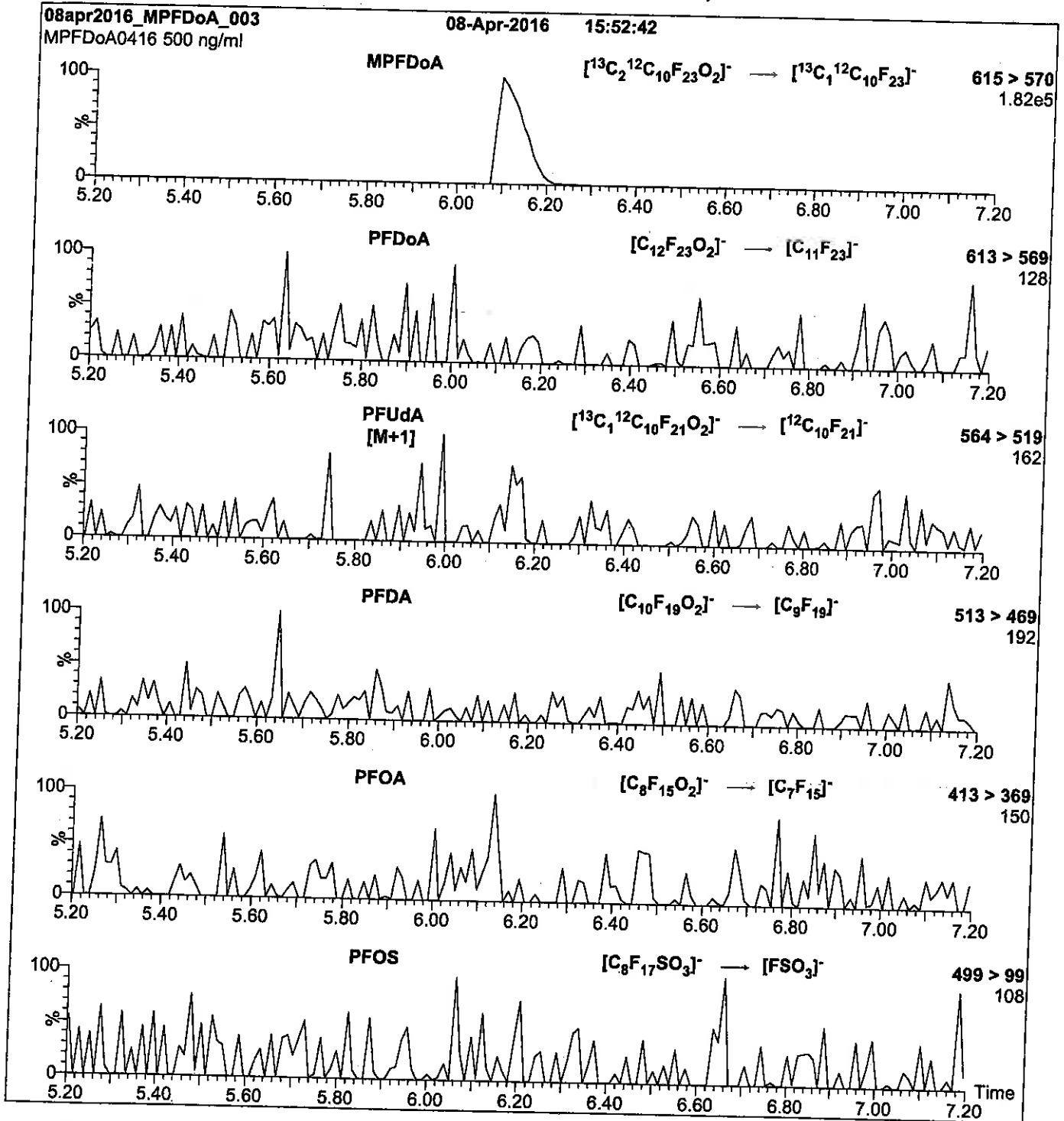
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 20.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFDoA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFDoA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.24e-3  
Collision Energy (eV) = 13

Reagent

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**LCMPFD<sub>o</sub>A\_00009**



P: 3/9/17 SKJ

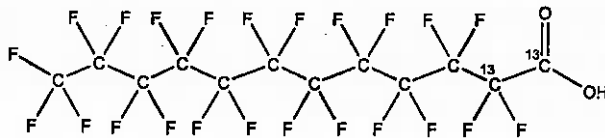


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFDoA      **LOT NUMBER:** MPFDoA0416  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]dodecanolic acid

**STRUCTURE:**      **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>10</sub>HF<sub>23</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 616.08  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%      **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 04/08/2016      (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 04/08/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 04/15/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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### **SYNTHESIS / CHARACTERIZATION:**

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### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

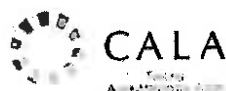
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

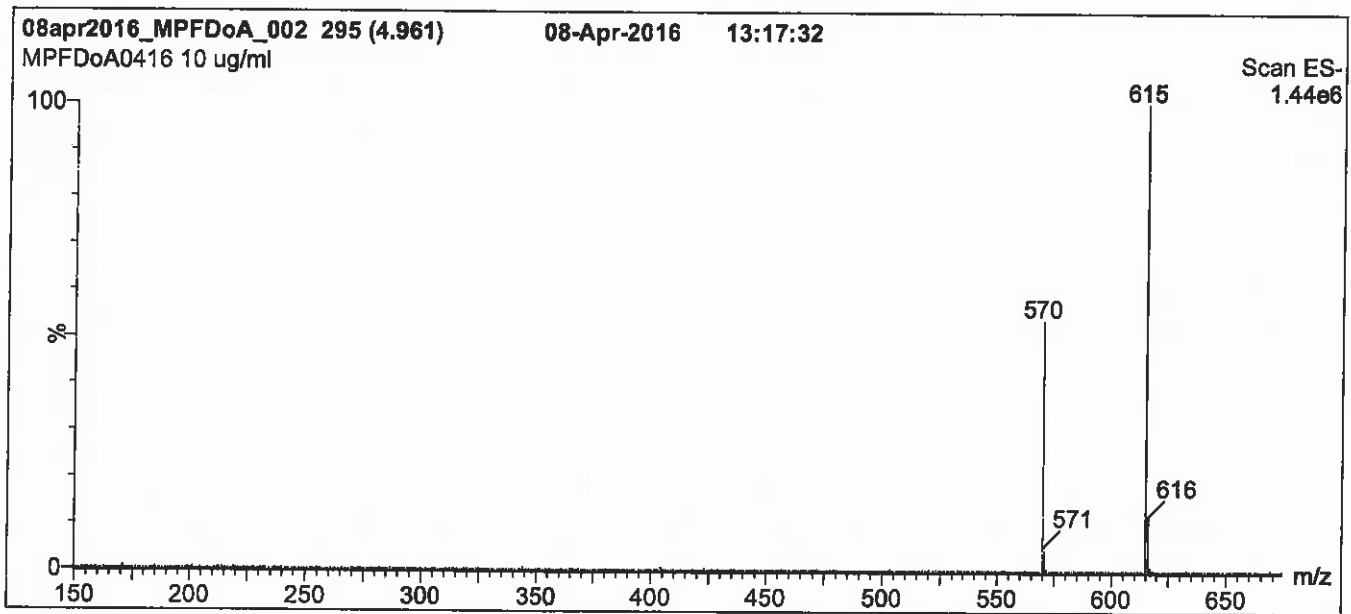
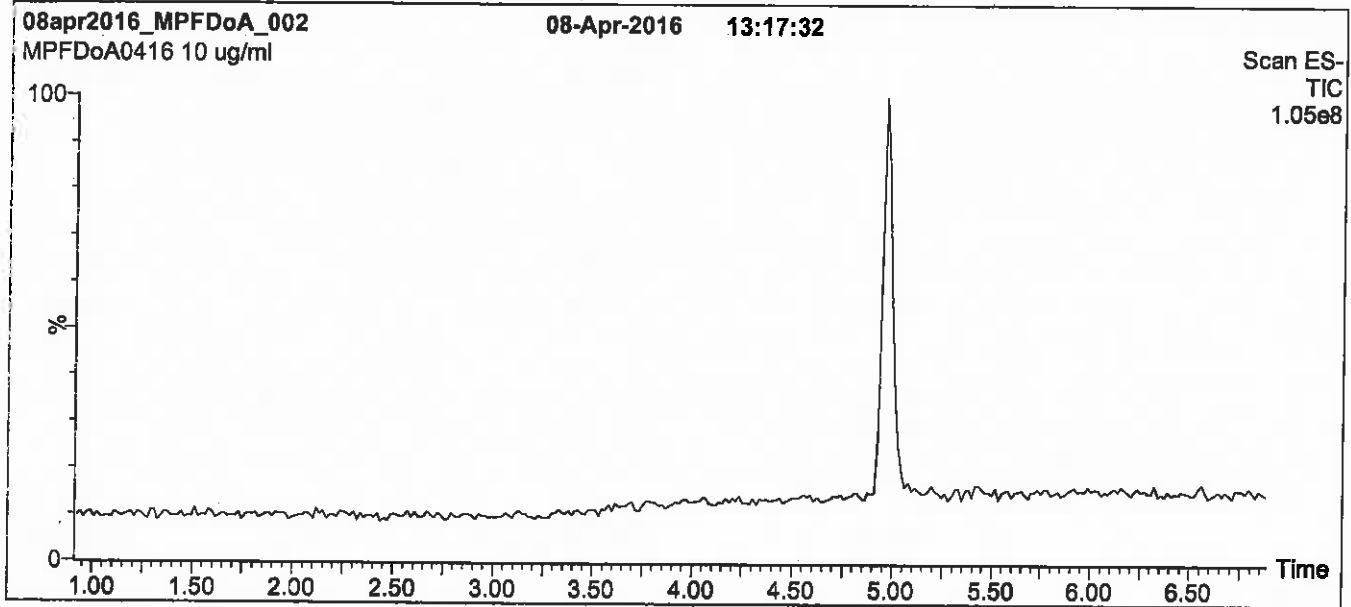
### **QUALITY MANAGEMENT:**

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**Figure 1: MPFDoA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

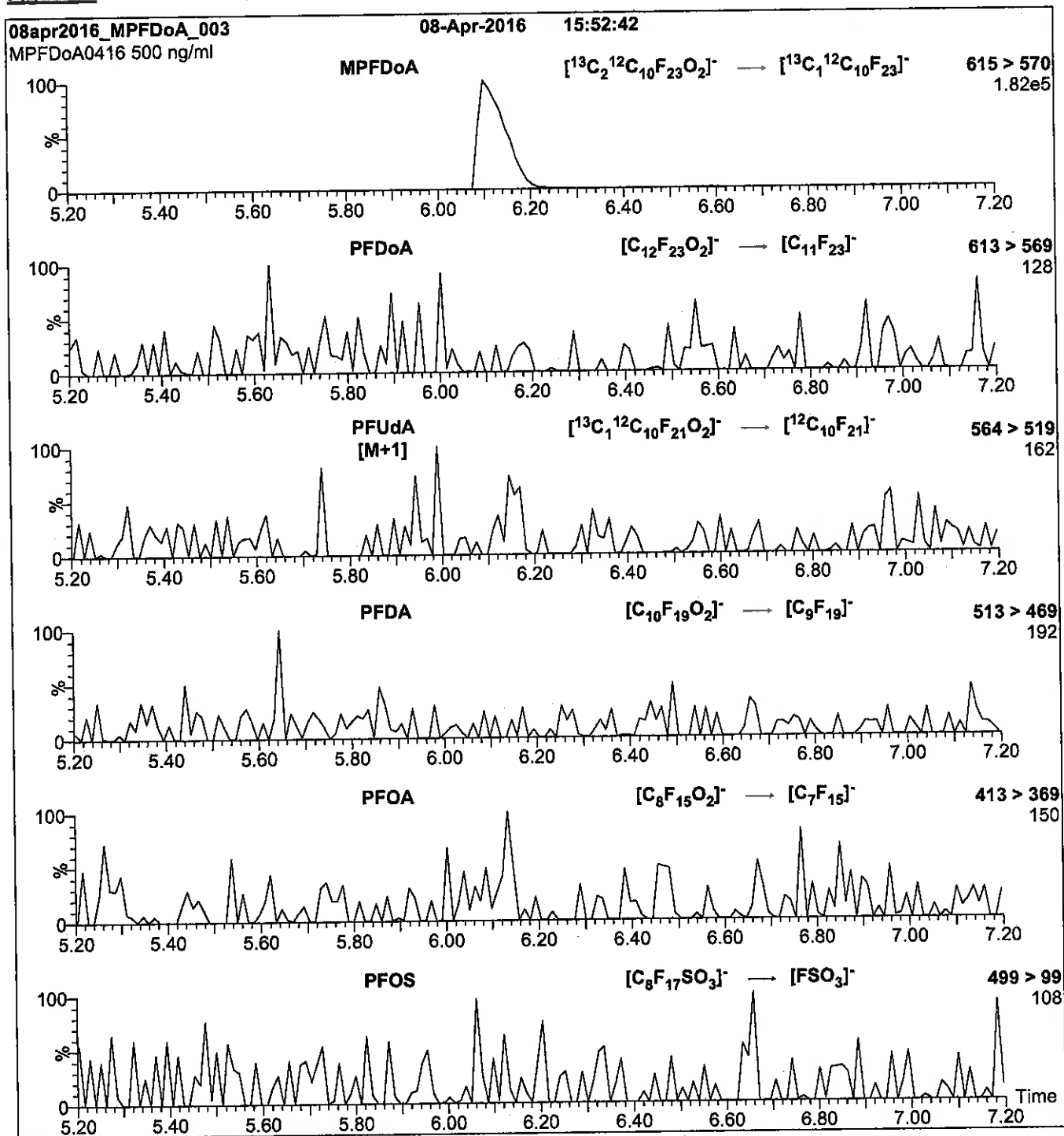
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 2.00  
**Cone Voltage (V)** = 20.00  
**Cone Gas Flow (l/hr)** = 100  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: MPFDoA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFDoA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.24e-3  
Collision Energy (eV) = 13

Reagent

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**LCMPFD<sub>o</sub>A\_00010**



### **INTENDED USE:**

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### **HAZARDS:**

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### **HOMOGENEITY:**

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### **TRACEABILITY:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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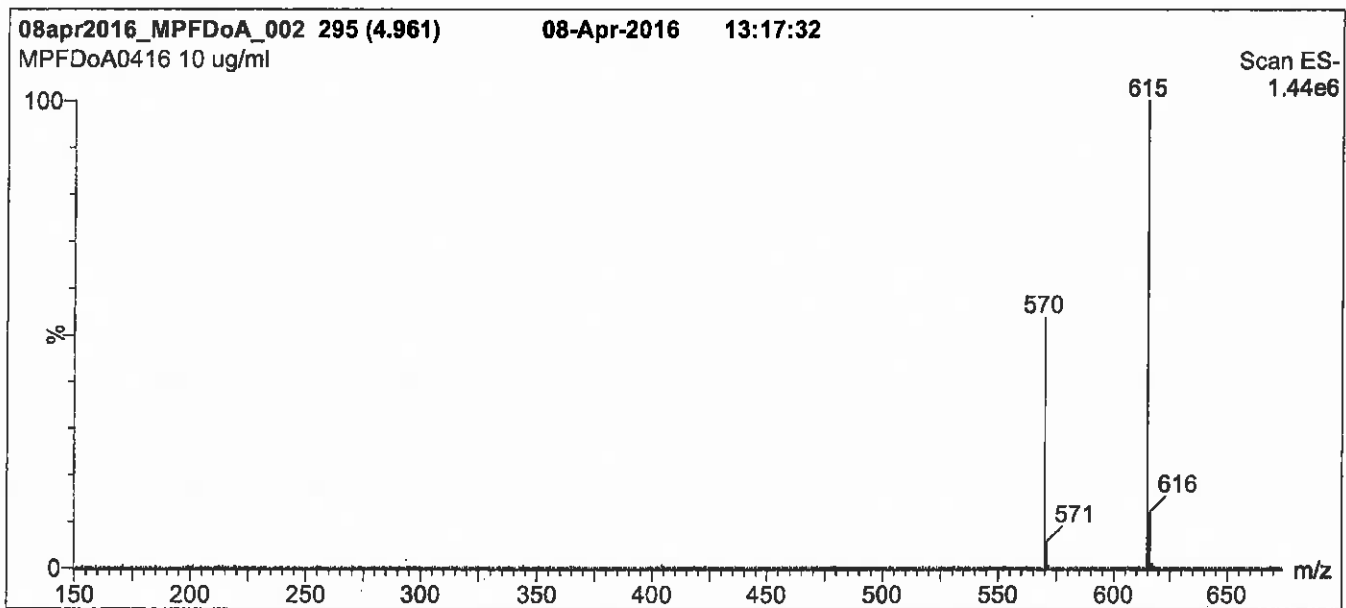
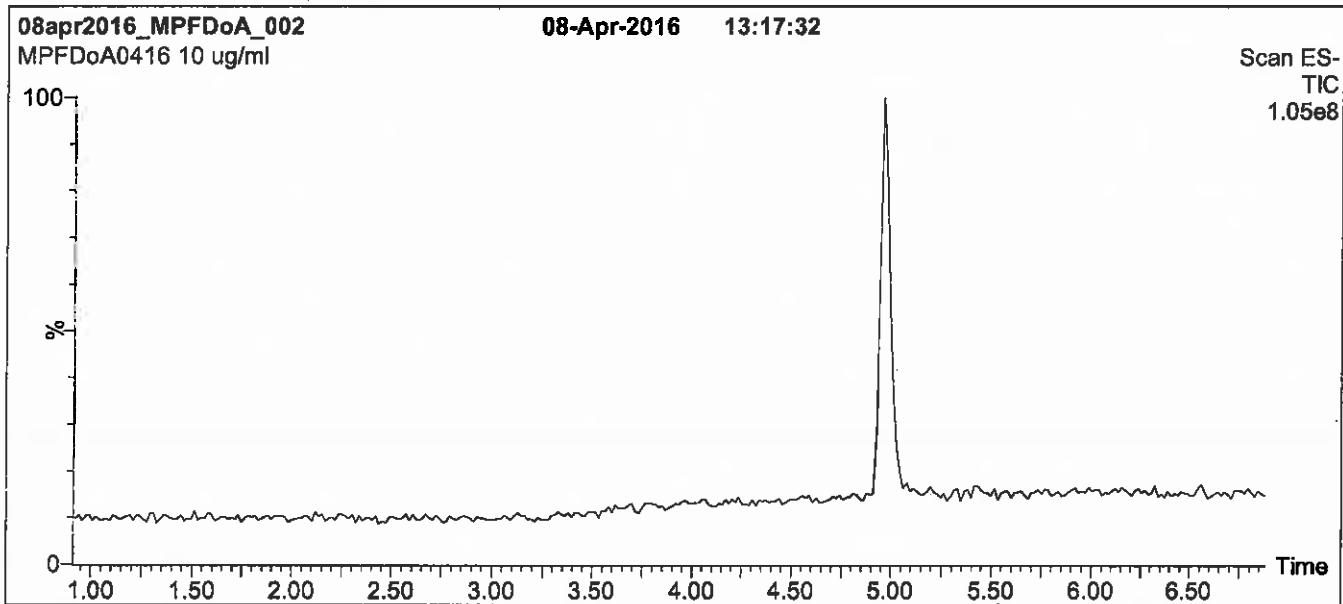
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**Figure 1: MPFDoA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ l/min

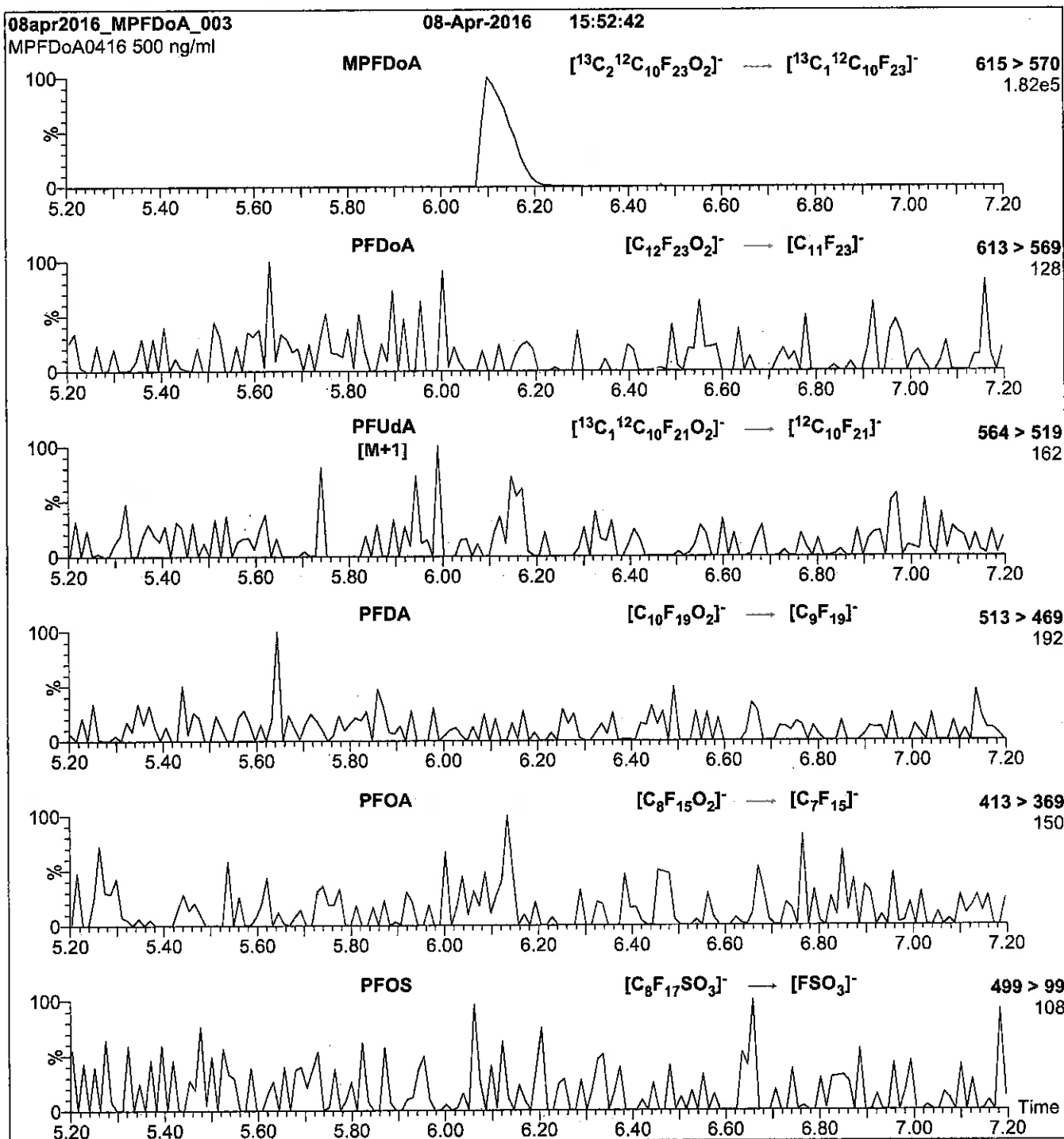
**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 20.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750



**Figure 2: MPFDoA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
 10  $\mu\text{l}$  (500 ng/ml MPFDoA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
 (both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) =  $3.24\text{e-}3$   
 Collision Energy (eV) = 13

Reagent

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**LCMPFHxA\_00012**

Scanned 10/11/16 R: SBC 9/22/16

739612  
ID: LCMPFHxA\_00012  
Exp: 04/08/21 Prpd: SBC  
13C2-Perfluorohexanoic ac



# WELLINGTON LABORATORIES

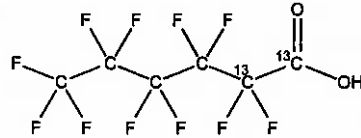
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxA  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]hexanoic acid

**LOT NUMBER:** MPFHxA0416

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>4</sub>HF<sub>11</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 316.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/08/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 04/08/2021

**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-hexanoic acid and ~ 0.3% of perfluoro-n-octanoic acid.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim  
**Date:** 04/29/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

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### **HOMOGENEITY:**

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The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

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### **LIMITED WARRANTY:**

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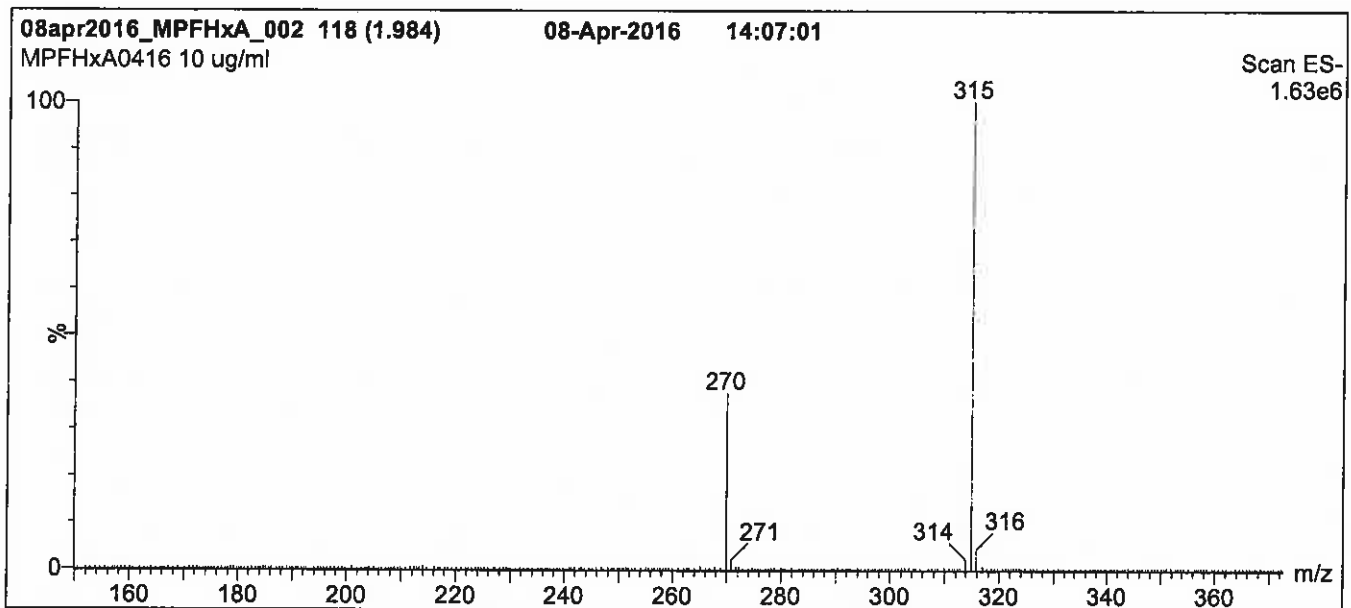
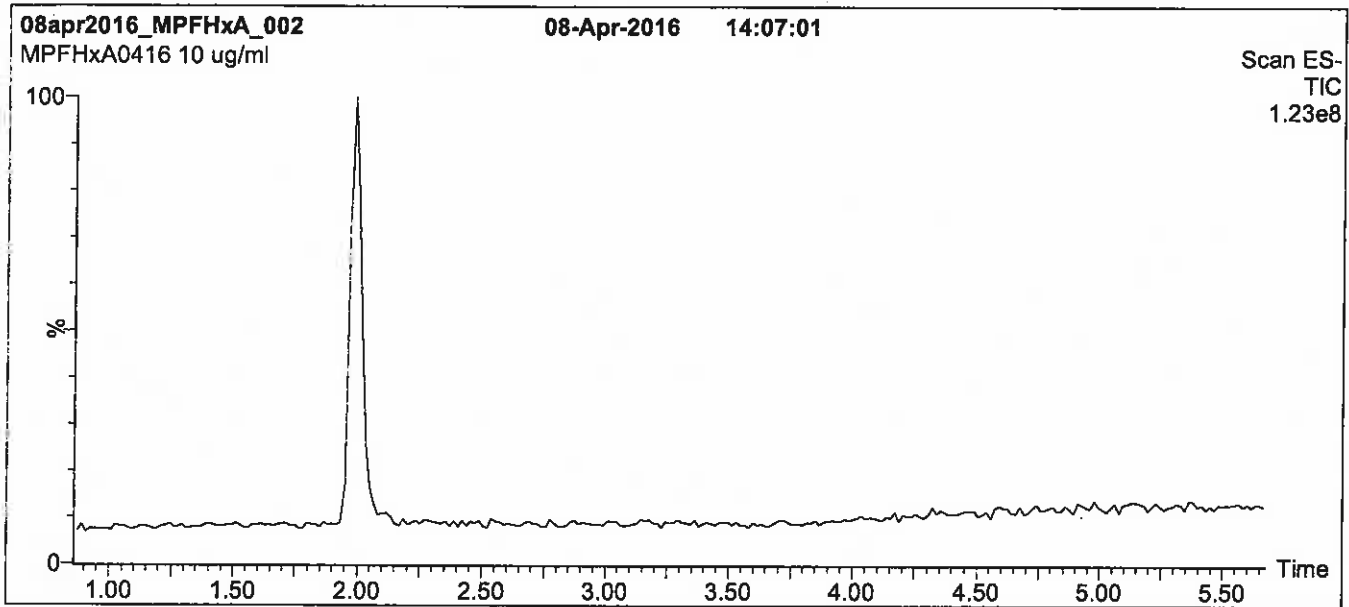
### **QUALITY MANAGEMENT:**

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**Figure 1: MPFHxA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

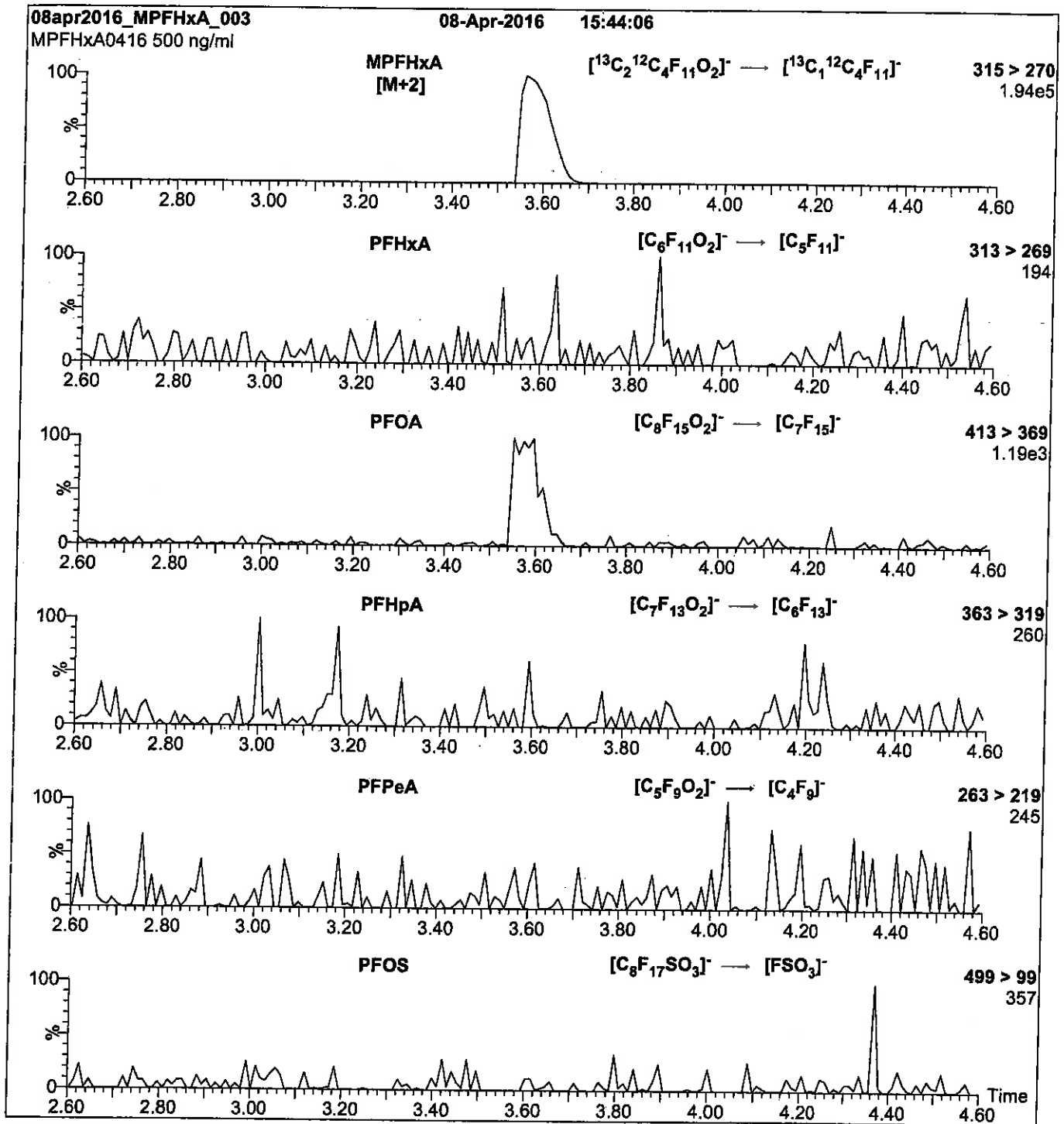
Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for 1.5 min  
before returning to initial conditions over 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 10

Reagent

---

**LCMPFHxA\_00014**





### **INTENDED USE:**

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### **HAZARDS:**

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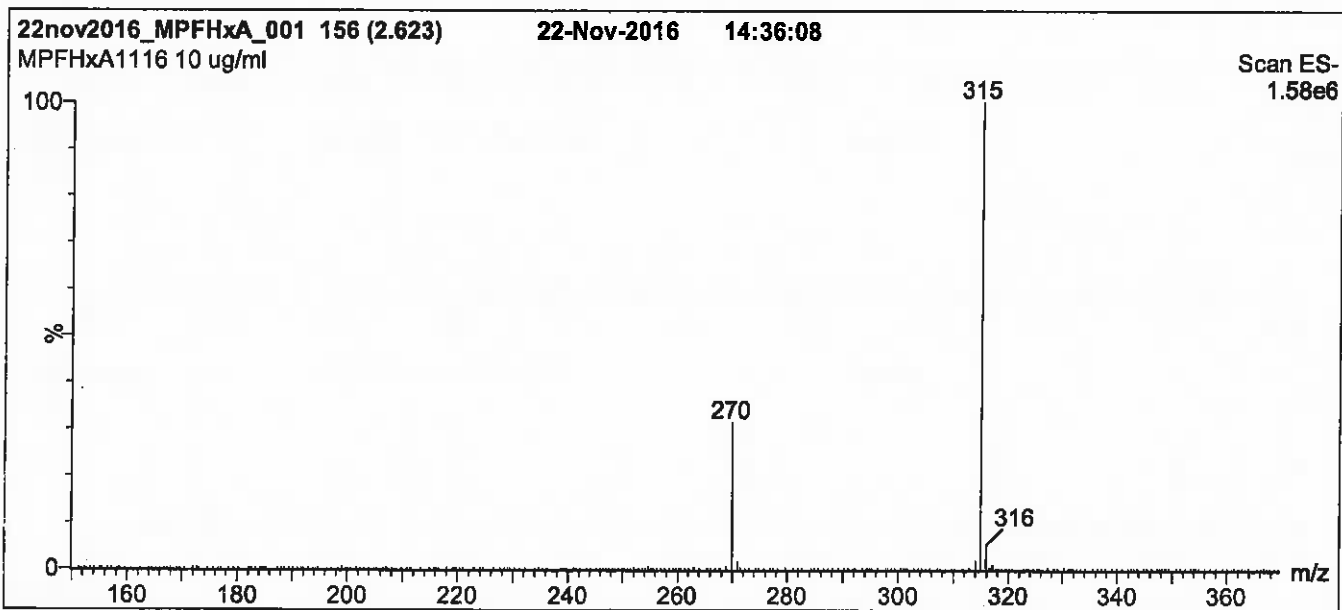
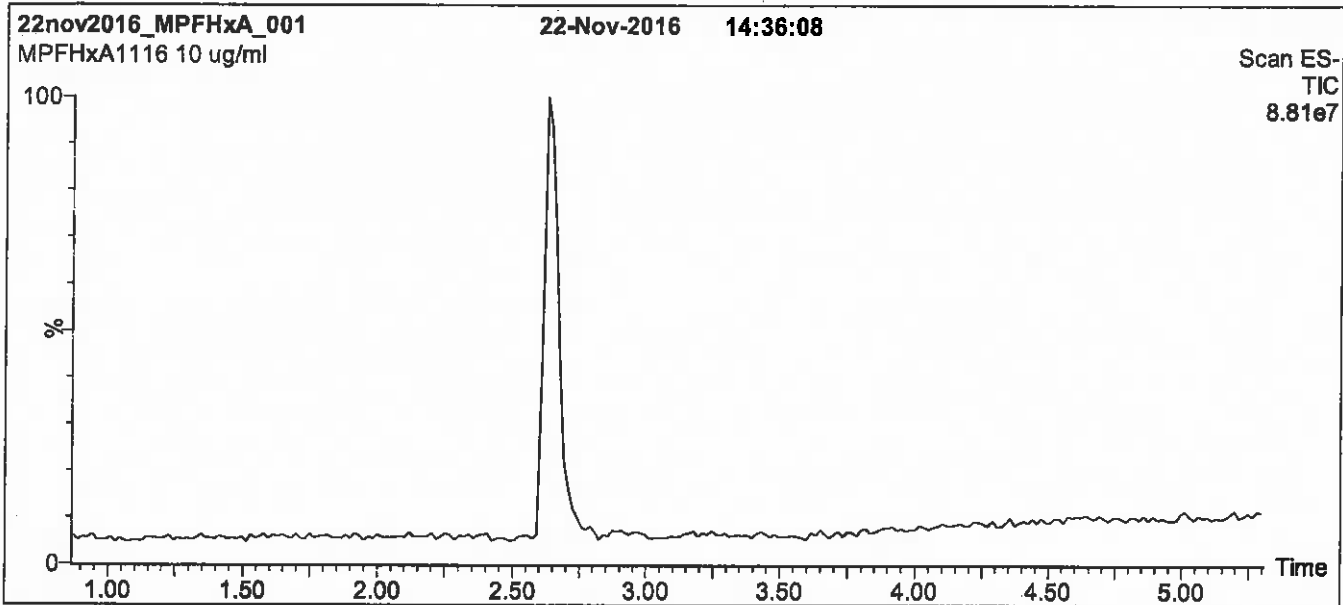
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**Figure 1: MPFHxA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for 2 min  
 before returning to initial conditions over 0.5 min.  
 Time: 10 min

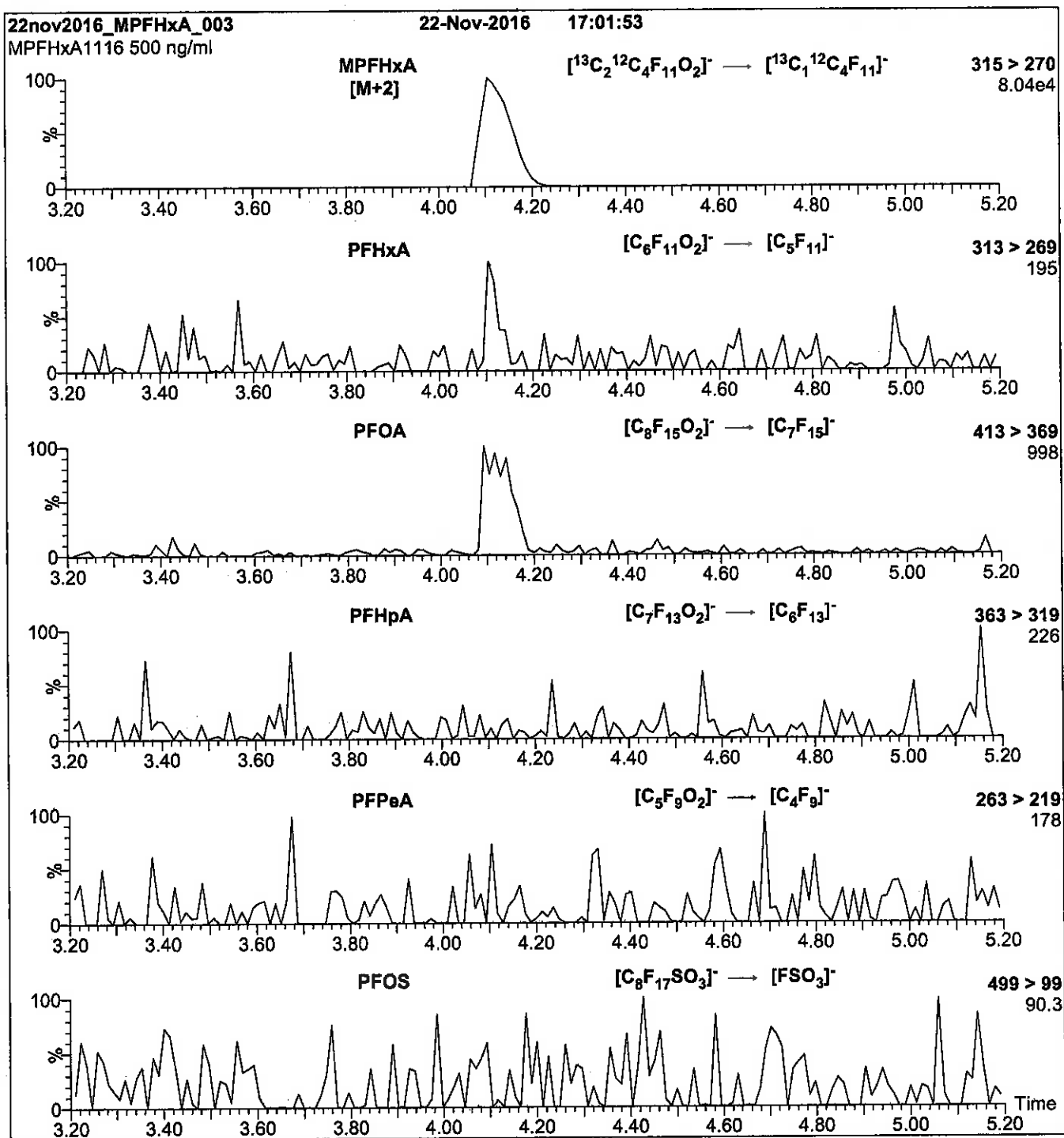
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
Collision Energy (eV) = 10

Reagent

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**LCMPFHxA\_00016**

R: 5/31/17 SKV  
S: 5/31/17 SKV

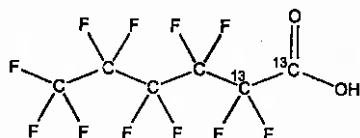


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxA  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]hexanoic acid  
**LOT NUMBER:** MPFHxA1116

**STRUCTURE:**  
**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>4</sub>HF<sub>11</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 316.04  
**SOLVENT(S):** Methanol  
Water (<1%)  
**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2-<sup>13</sup>C<sub>2</sub>)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains < 0.1% of perfluoro-n-hexanoic acid and ~ 0.3% of perfluoro-n-octanoic acid.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 12/13/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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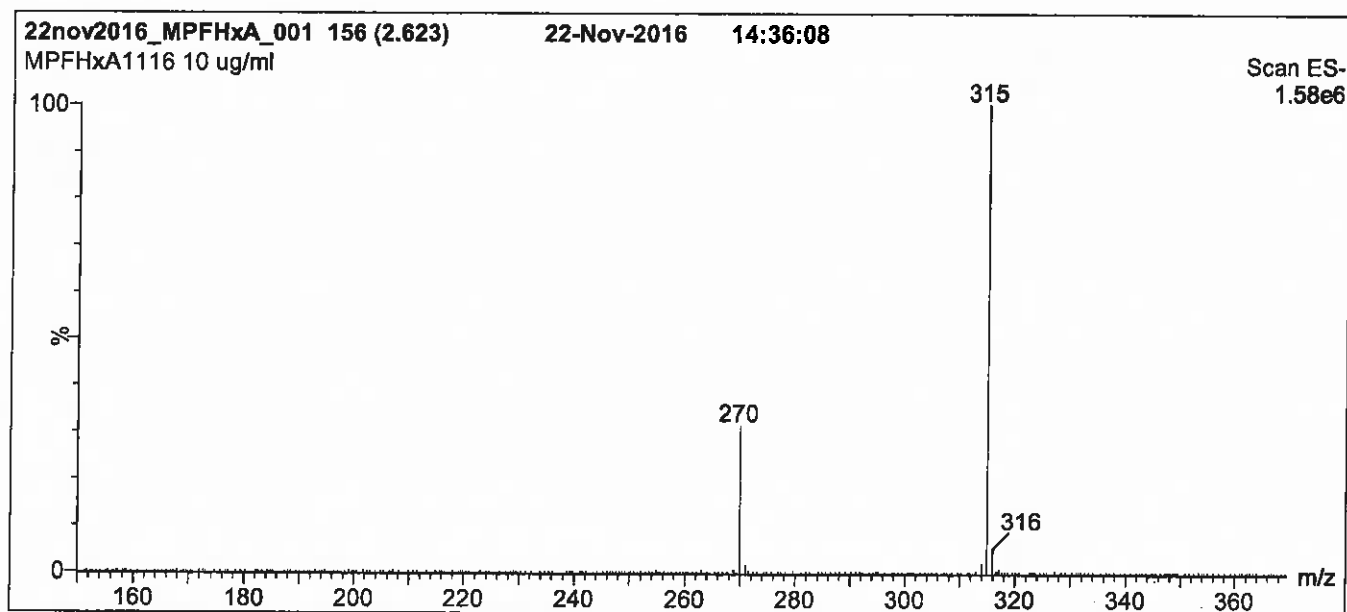
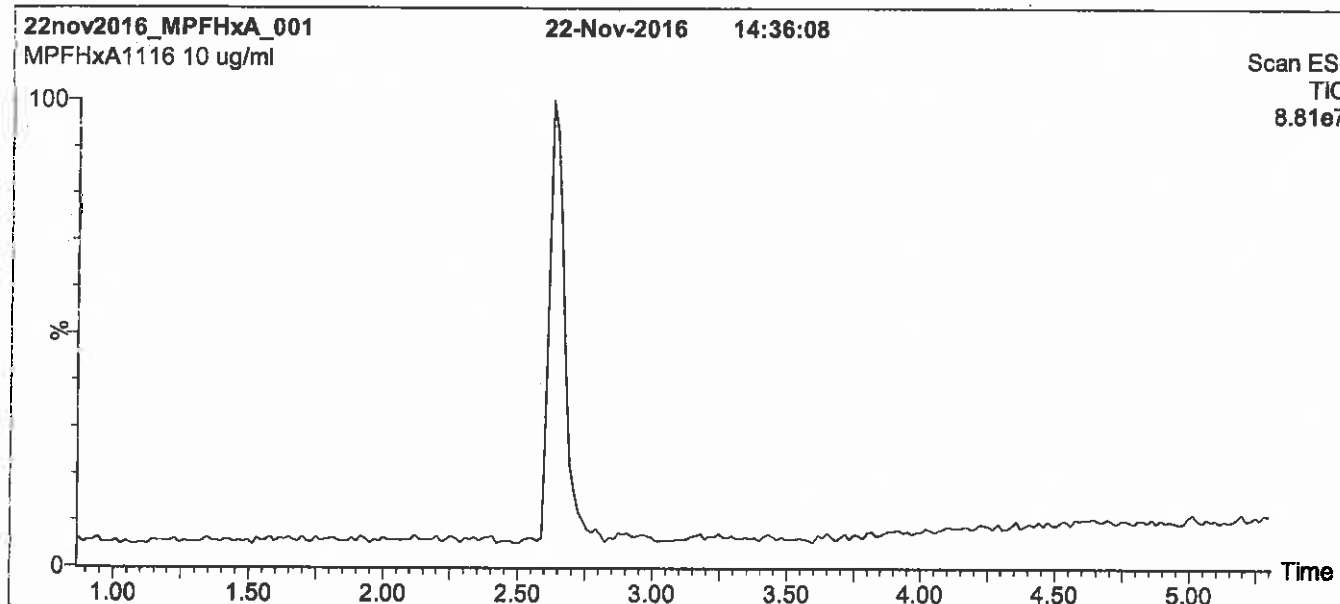
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**Figure 1: MPFHxA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

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**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
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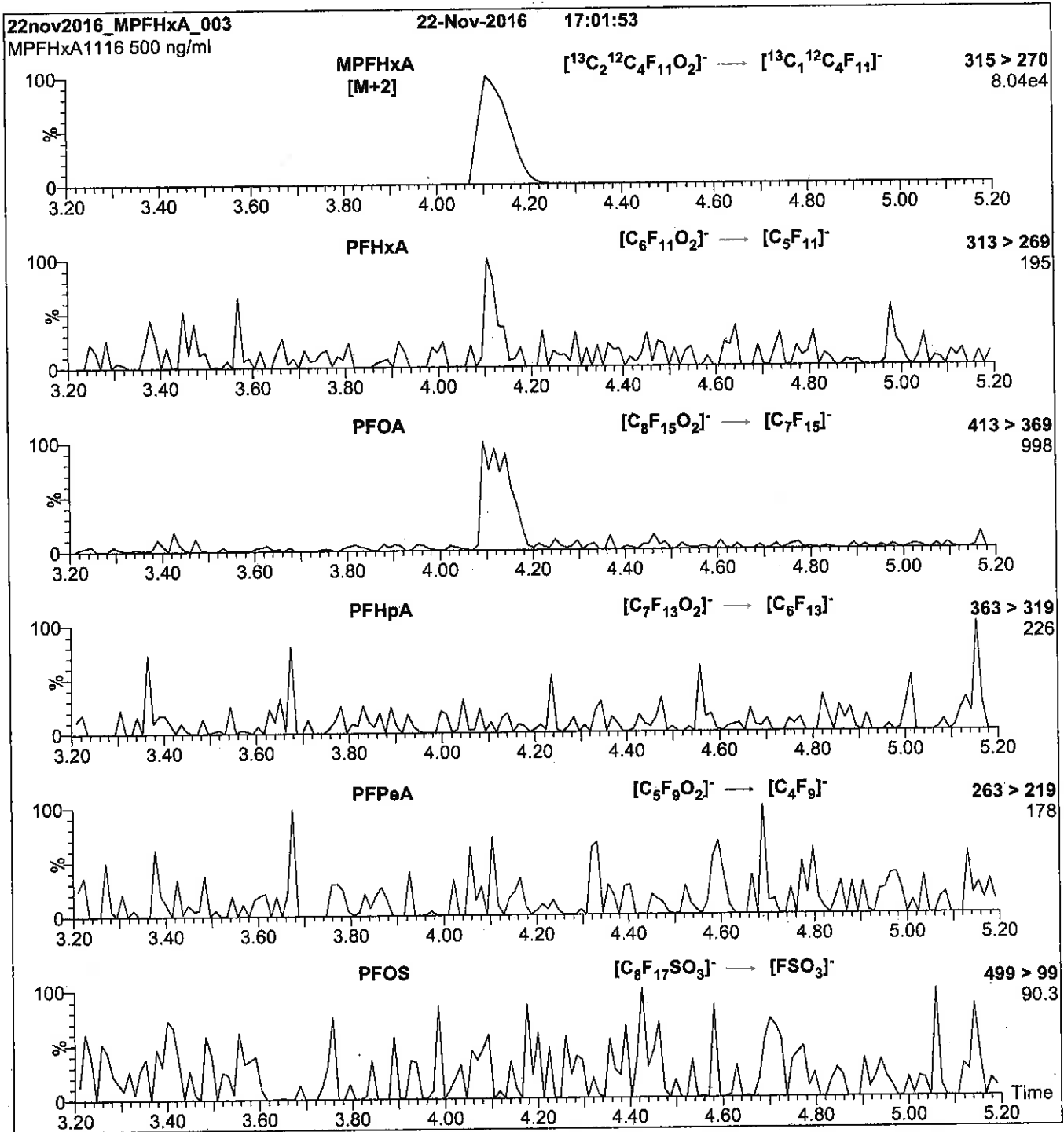
Mobile phase: Gradient  
Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions over 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFHxA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml MPFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
 Collision Energy (eV) = 10



Reagent

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**LCMPFHXS\_00008**

R: 800 9/22/16



739601

ID: LCMPFHxS\_00008

Exp: 10/23/20 Prod: SBC

18O2-Perfluorohexanesulfo



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

Scanned 10/14/16 SK

**PRODUCT CODE:**

MPFHxS

**LOT NUMBER:**

MPFHxS1015

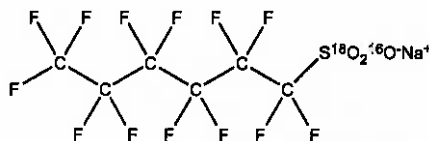
**COMPOUND:**

Sodium perfluoro-1-hexane[<sup>18</sup>O<sub>2</sub>]sulfonate

**STRUCTURE:**

**CAS #:**

Not available



**MOLECULAR FORMULA:**

C<sub>8</sub>F<sub>13</sub>S<sup>18</sup>O<sub>2</sub><sup>16</sup>ONa

**MOLECULAR WEIGHT:**

426.10

**CONCENTRATION:**

50.0 ± 2.5 µg/ml (Na salt)

**SOLVENT(S):**

Methanol

47.3 ± 2.4 µg/ml (MPFHxS anion)

**CHEMICAL PURITY:**

>98%

**ISOTOPIC PURITY:**

>94% (<sup>18</sup>O<sub>2</sub>)

**LAST TESTED:** (mm/dd/yyyy)

10/23/2015

**EXPIRY DATE:** (mm/dd/yyyy)

10/23/2020

**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<sub>8</sub>F<sub>13</sub>S<sup>18</sup>O<sub>2</sub><sup>16</sup>O) has been observed to be up to 10% lower than for PFHxS (C<sub>8</sub>F<sub>13</sub>S<sup>16</sup>O<sub>3</sub>) when both compounds are injected together. This difference may vary between instruments.
- Due to the isotopic purity of the starting material (<sup>18</sup>O<sub>2</sub> >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 10/28/2015

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
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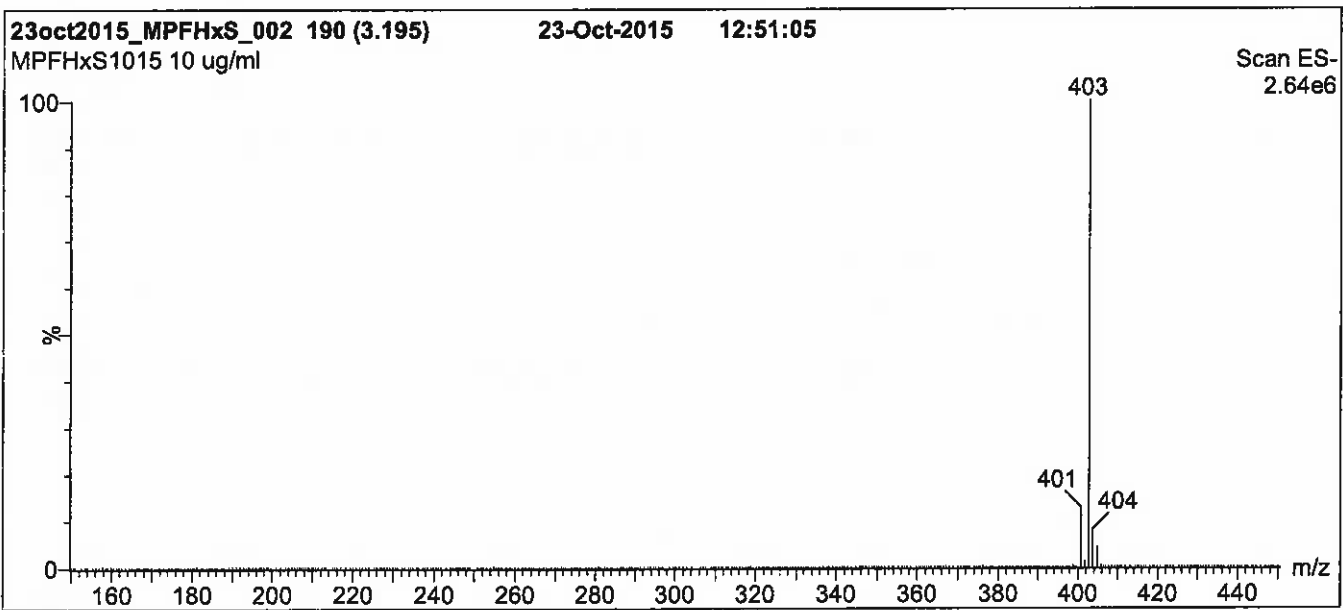
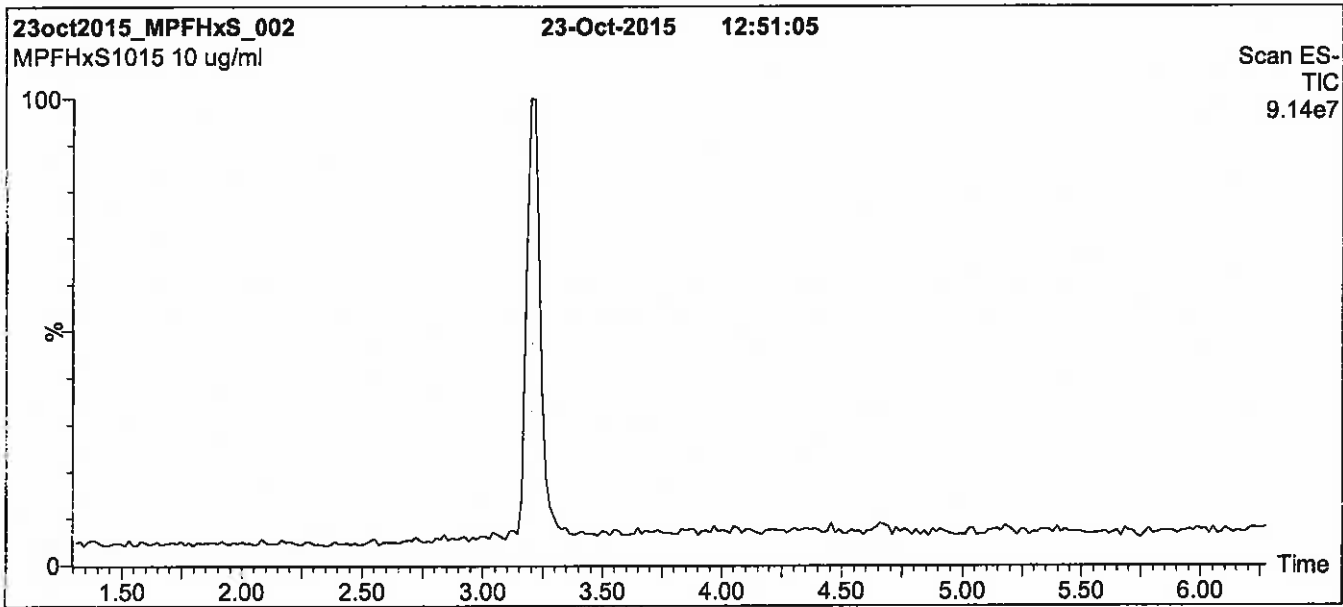
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**Figure 1: MPFHxS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

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**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

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 before returning to initial conditions in 0.5 min.  
 Time: 10 min

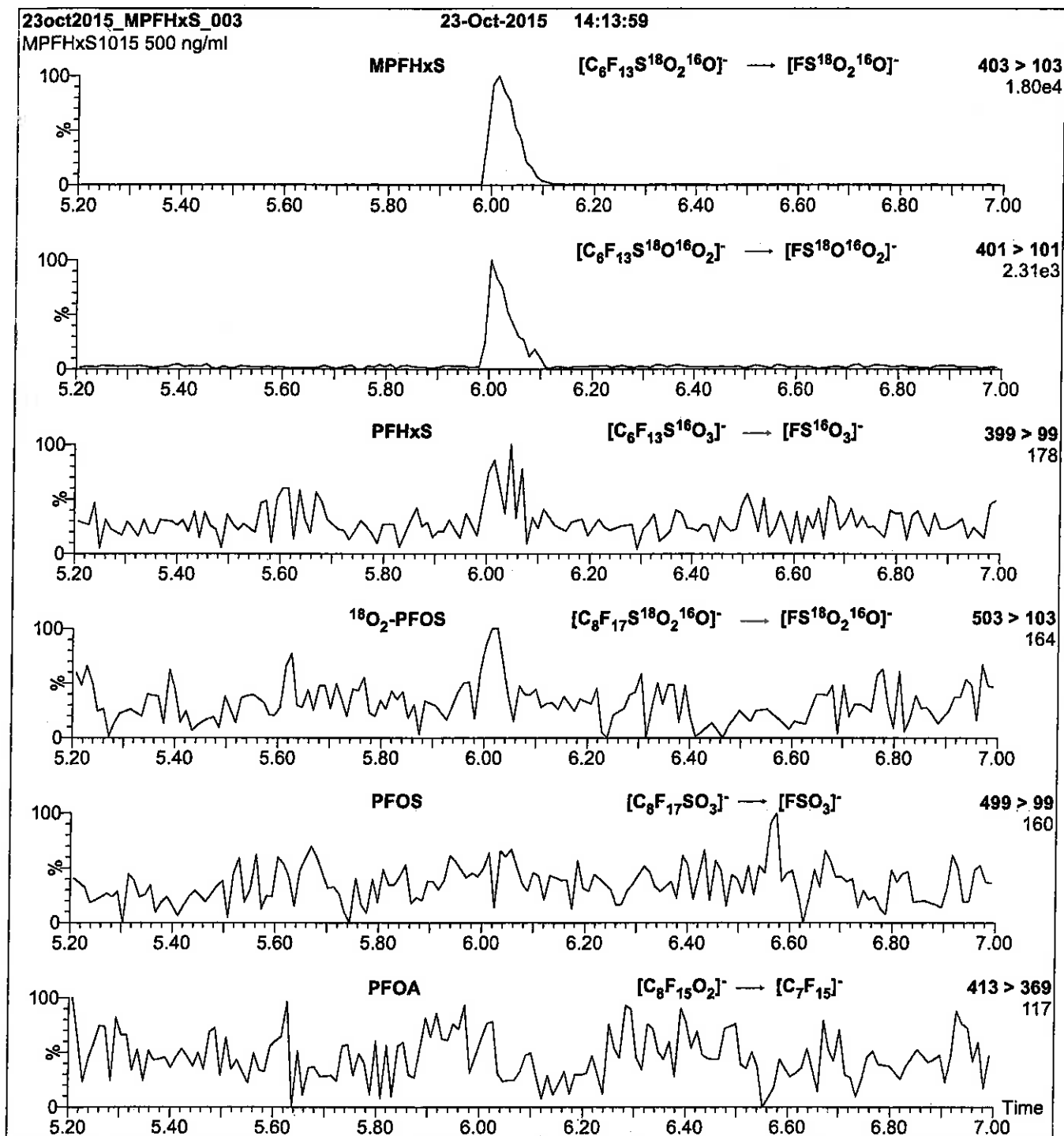
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 50.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10 µl (500 ng/ml MPFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300 µl/min

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
 Collision Energy (eV) = 30

Reagent

---

**LCMPFHXS\_00009**

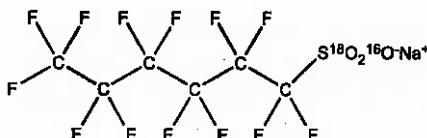


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFHxS **LOT NUMBER:** MPFHxS1015  
**COMPOUND:** Sodium perfluoro-1-hexane [ $^{18}\text{O}_2$ ]sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:**  $\text{C}_6\text{F}_{13}\text{S}^{18}\text{O}_2^{16}\text{ONa}$  **MOLECULAR WEIGHT:** 426.10  
**CONCENTRATION:**  $50.0 \pm 2.5 \mu\text{g/ml}$  (Na salt) **SOLVENT(S):** Methanol  
 $47.3 \pm 2.4 \mu\text{g/ml}$  (MPFHxS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** >94% ( $^{18}\text{O}_2$ )  
**LAST TESTED:** (mm/dd/yyyy) 10/23/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 10/23/2020  
**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 ( $\text{C}_6\text{F}_{13}\text{S}^{18}\text{O}_2^{16}\text{O}$ ) has been observed to be up to 10% lower than for PFHxS ( $\text{C}_6\text{F}_{13}\text{S}^{16}\text{O}_3$ ) when both compounds are injected together. This difference may vary between instruments.
- Due to the isotopic purity of the starting material ( $^{18}\text{O}_2$  >94%), MPFHxS contains ~ 0.3% of PFHxS. This value agrees with the theoretical percent relative abundance that is expected based on the stated isotopic purity.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 10/28/2015  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

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The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

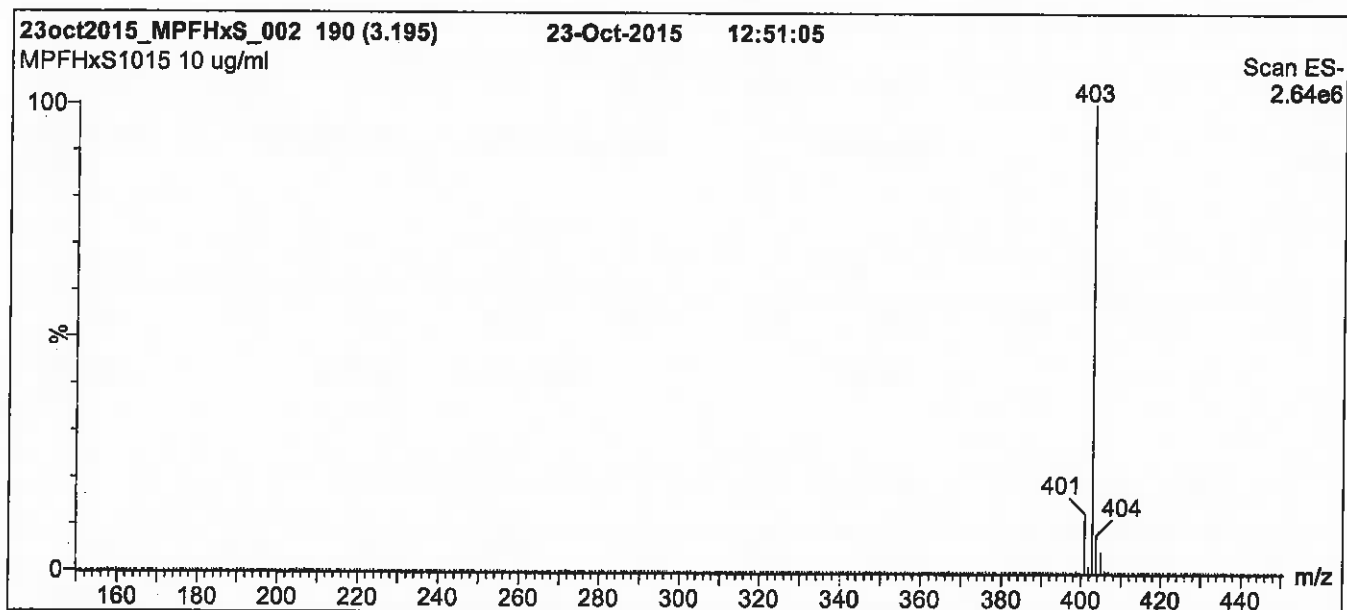
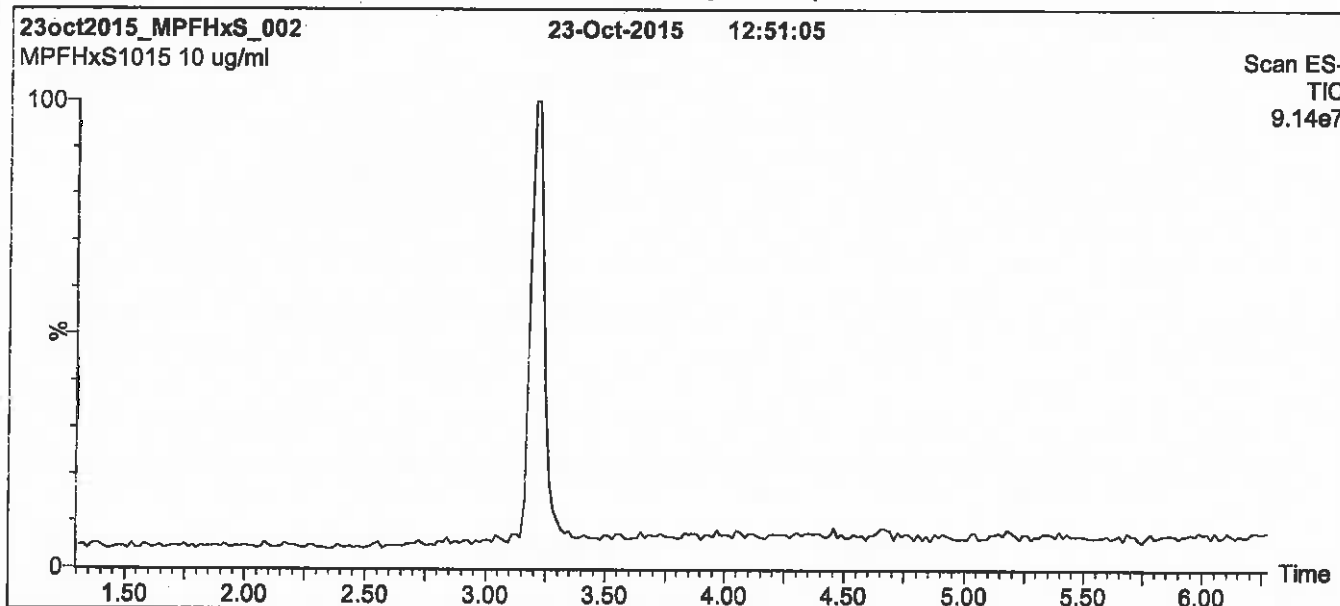
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: MPFHxS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

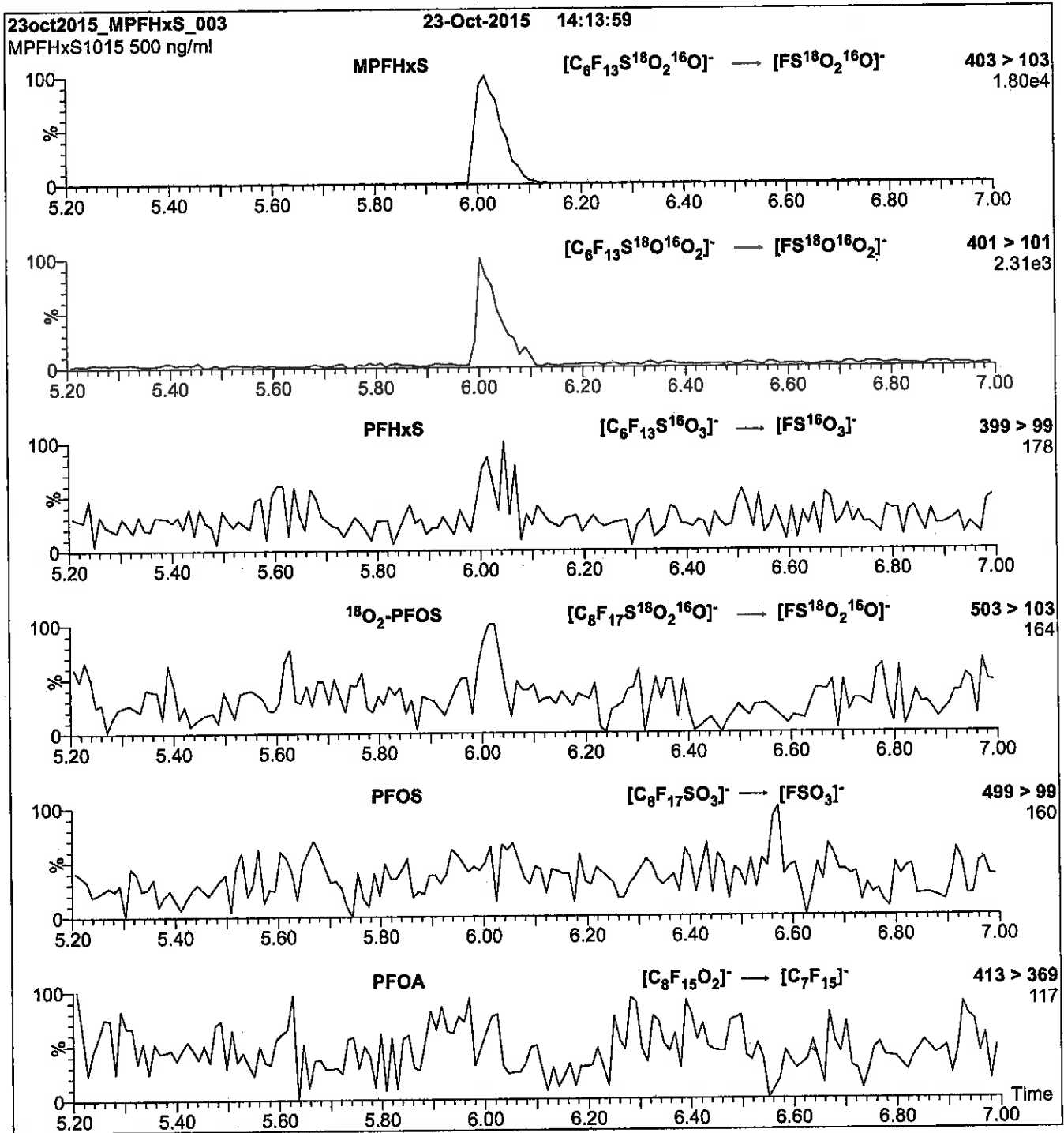
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 50.00  
Cone Gas Flow (l/hr) = 60  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml MPFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 30

Reagent

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**LCMPFHXS\_00010**



### **INTENDED USE:**

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### **SYNTHESIS / CHARACTERIZATION:**

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### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

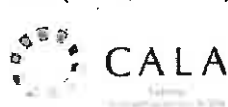
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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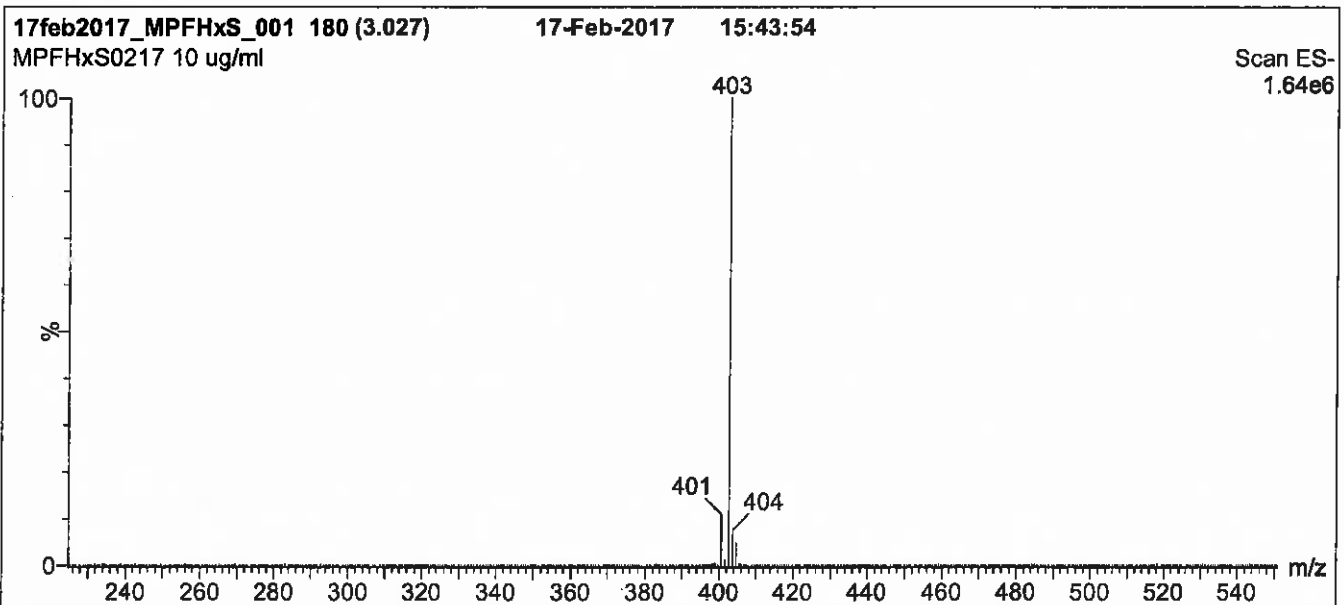
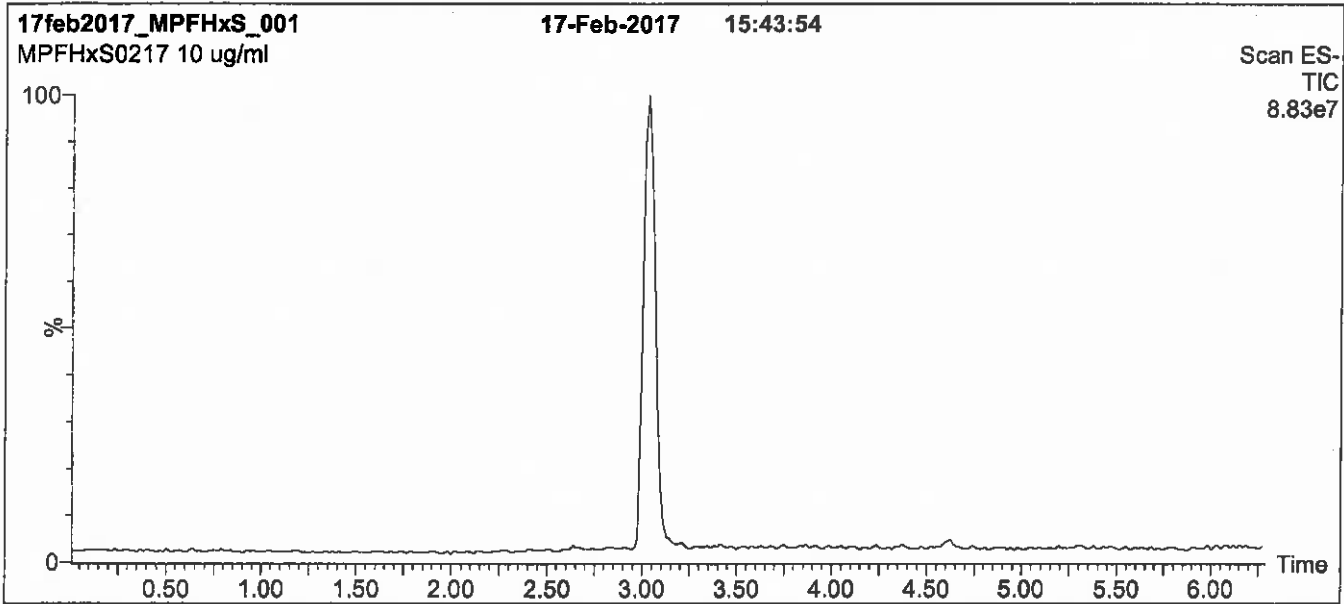
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: MPFHxS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 8 min and hold for 1 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

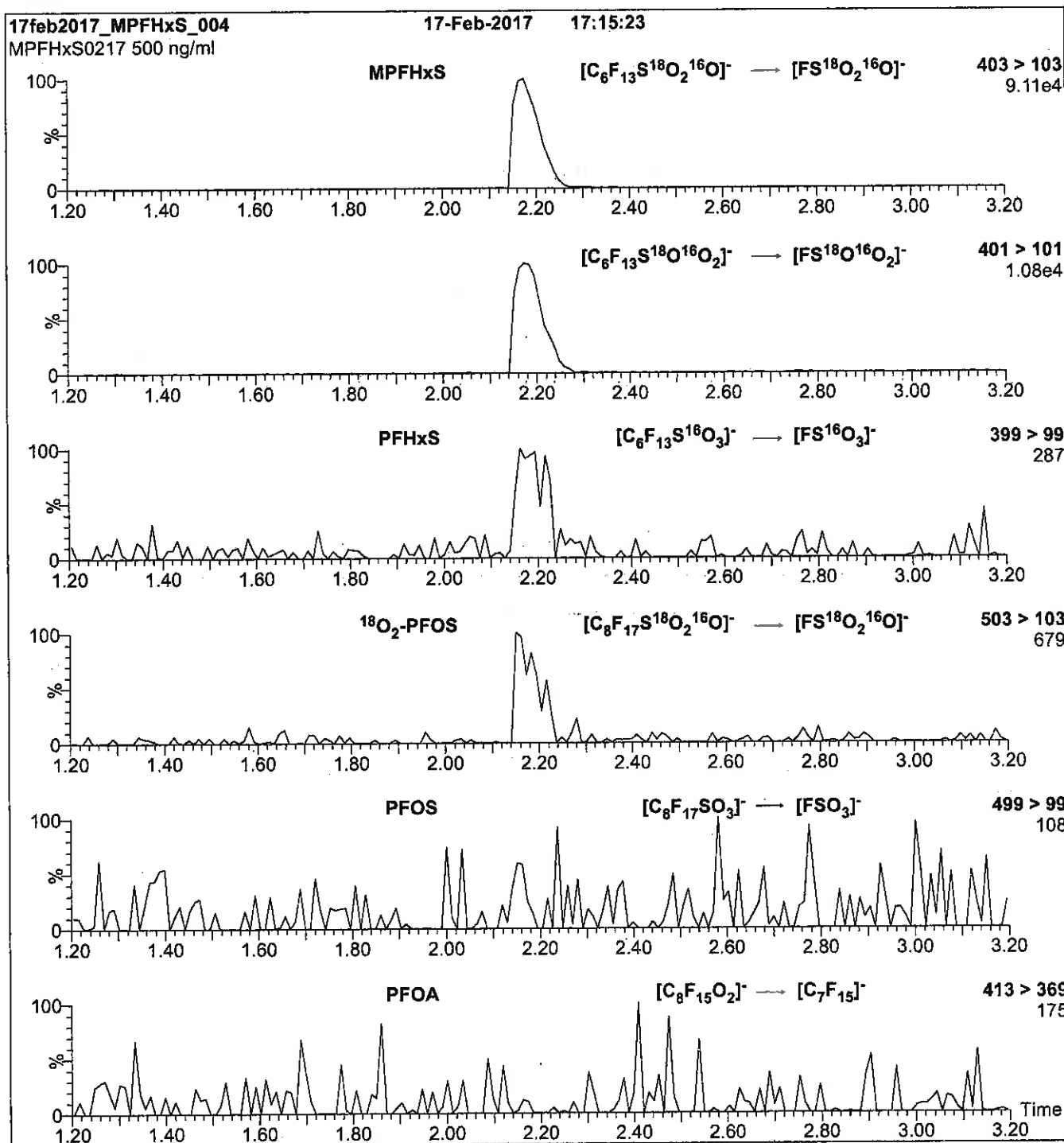
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 50.00  
Cone Gas Flow (l/hr) = 60  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFHxS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml MPFHxS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
 Collision Energy (eV) = 30

Reagent

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**LCMPFNA\_00008**



Scanned 10/14/16 R: SBC 9/22/16



739637  
ID: LCM:PFNA\_0008  
Exp: 04/13/19 Pptd: SBC  
13C5-Perfluoronoic aci

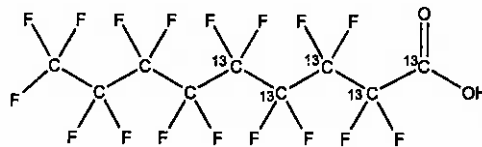


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFNA **LOT NUMBER:** MPFNA0414  
**COMPOUND:** Perfluoro-n-[1,2,3,4,5-<sup>13</sup>C<sub>5</sub>]nonanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>5</sub><sup>12</sup>C<sub>4</sub>HF<sub>17</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 469.04  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4,5-<sup>13</sup>C<sub>5</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 04/13/2014  
**EXPIRY DATE:** (mm/dd/yyyy) 04/13/2019  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 04/01/2015  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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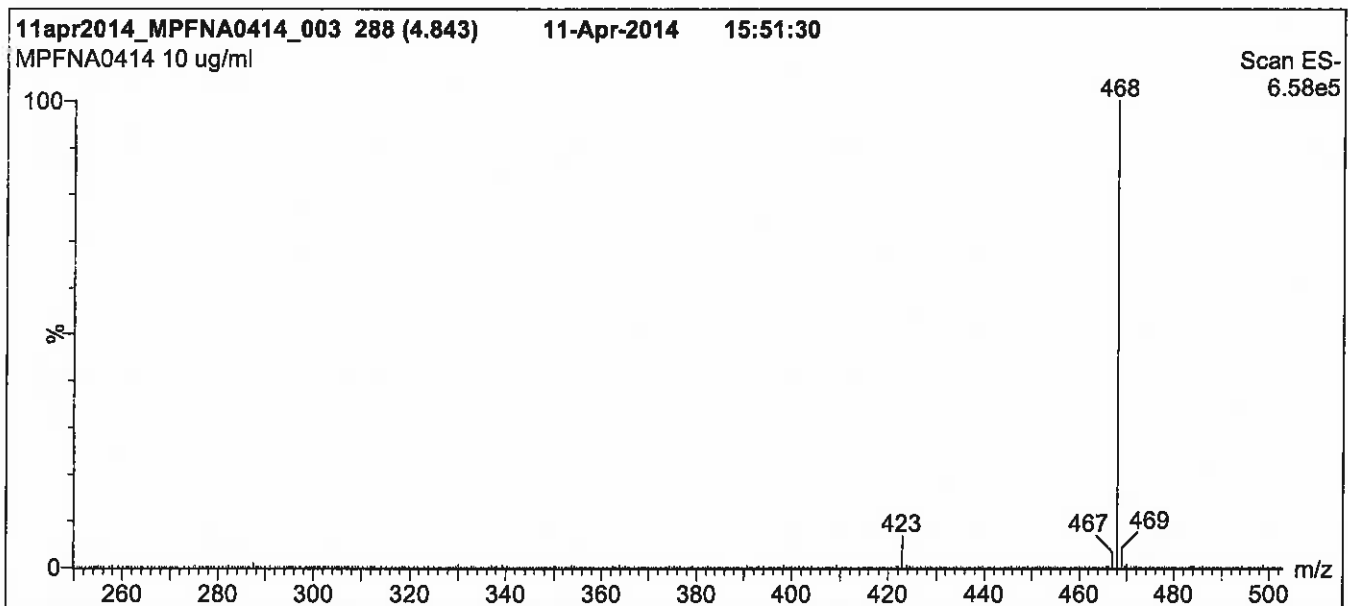
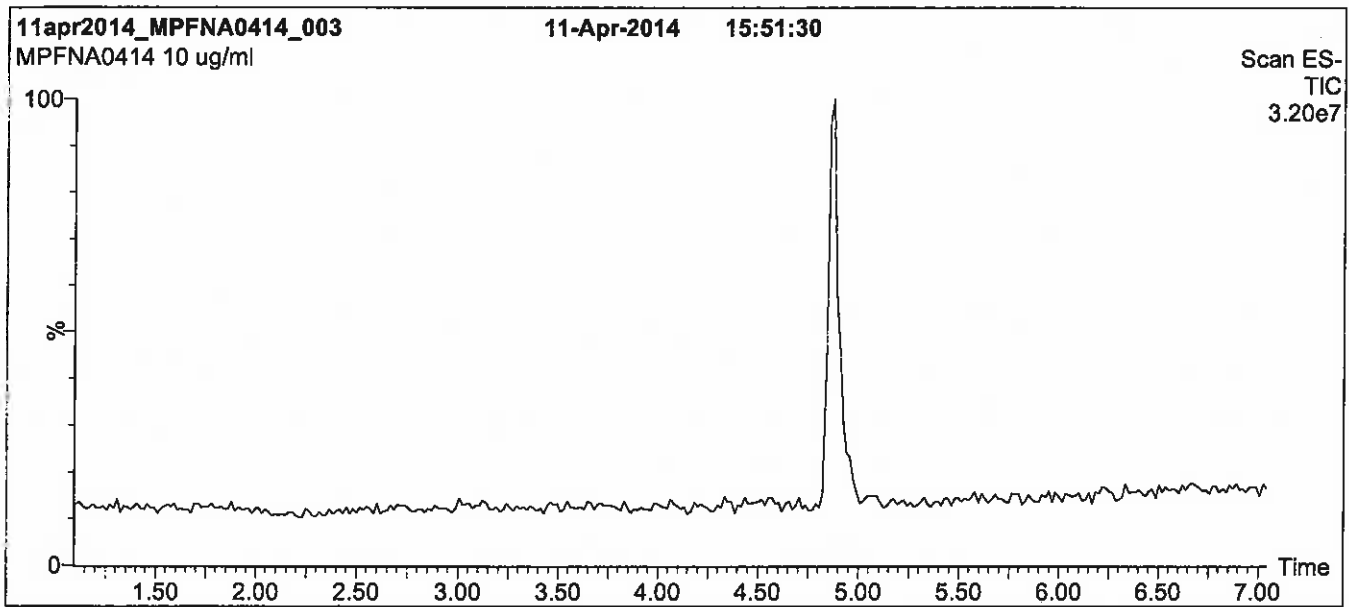
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**Figure 1: MPFNA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

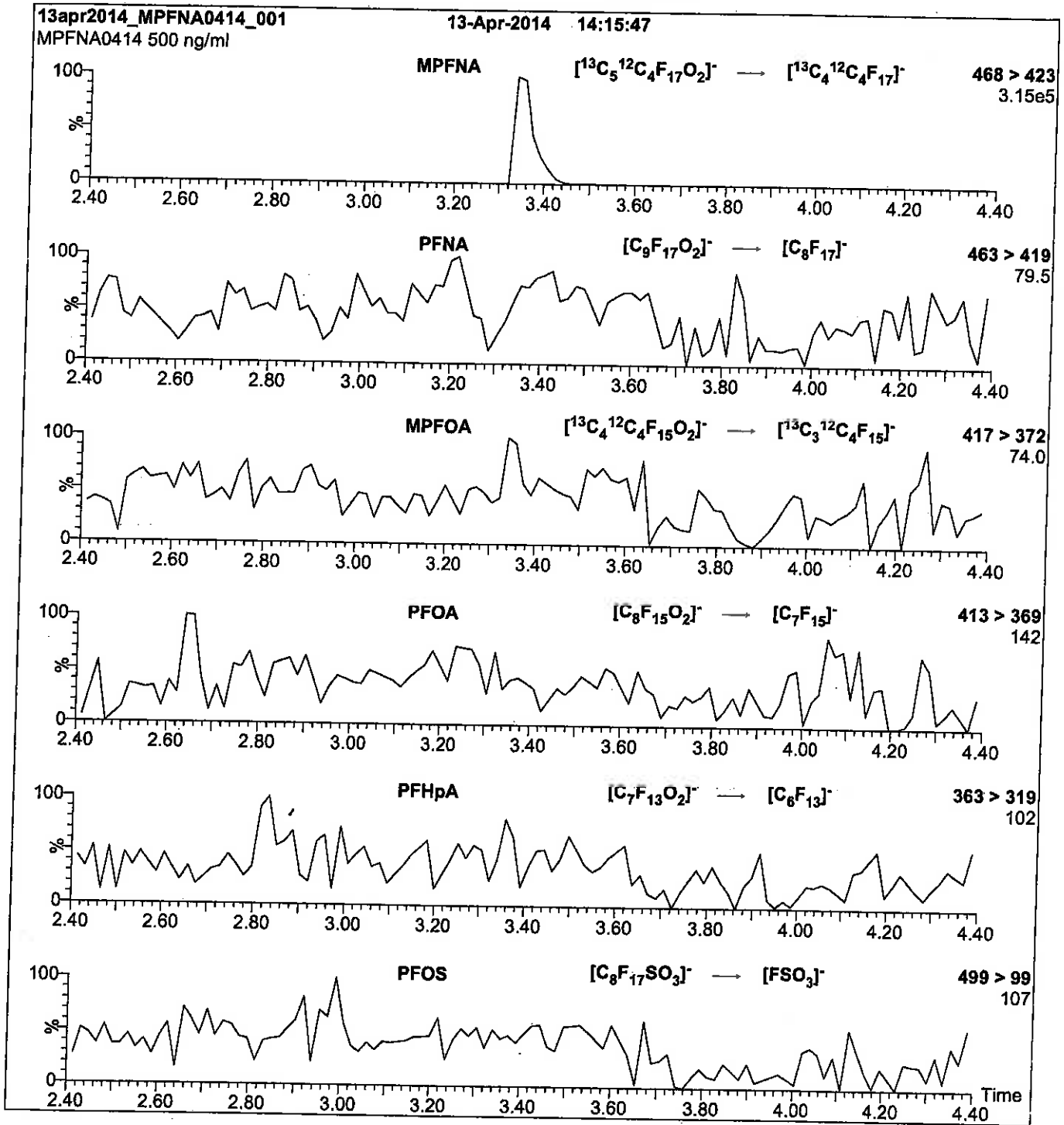
Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm  
Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (250 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.28e-3  
Collision Energy (eV) = 11

Reagent

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**LCMPFNA\_00009**

P: 3/9/17 SKV



# WELLINGTON LABORATORIES

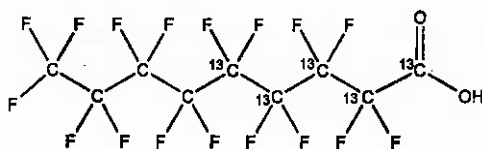
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFNA  
**COMPOUND:** Perfluoro-n-[1,2,3,4,5-<sup>13</sup>C<sub>5</sub>]nonanoic acid

**LOT NUMBER:** MPFNA0916

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>5</sub><sup>12</sup>C<sub>4</sub>HF<sub>17</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 469.04

**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2,3,4,5-<sup>13</sup>C<sub>5</sub>)

**LAST TESTED:** (mm/dd/yyyy) 09/30/2016

**EXPIRY DATE:** (mm/dd/yyyy) 09/30/2021

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim

**Date:** 10/11/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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**HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

**UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

**TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

**EXPIRY DATE / PERIOD OF VALIDITY:**

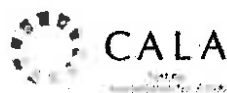
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

**LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

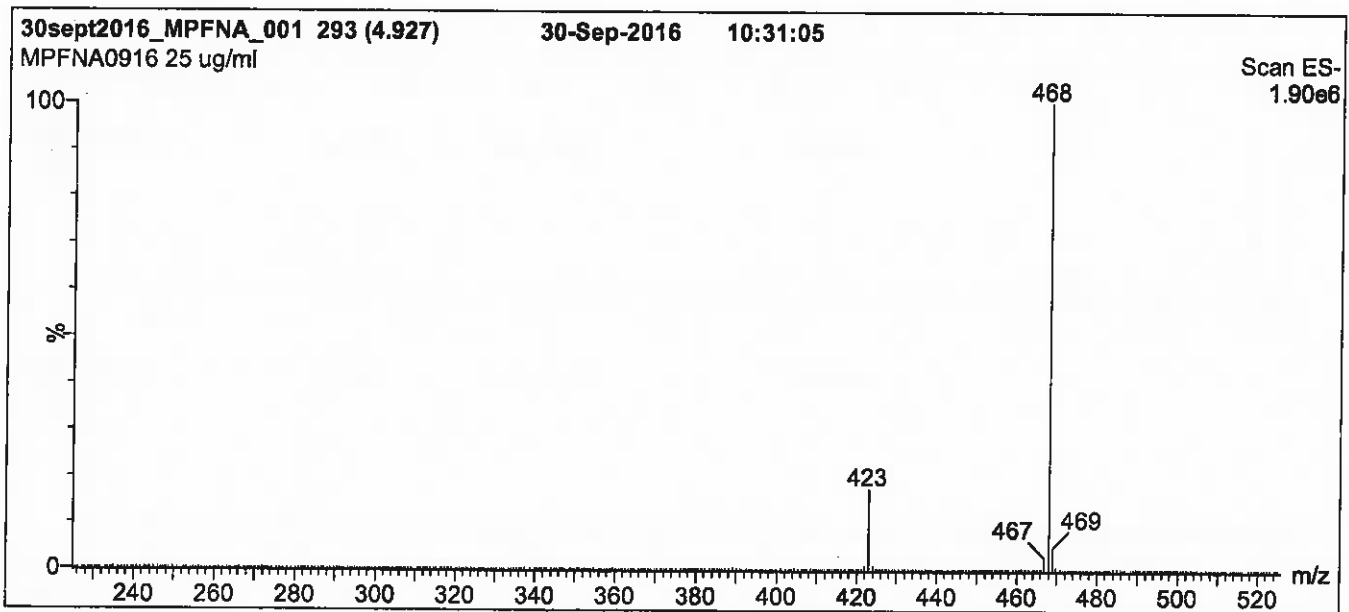
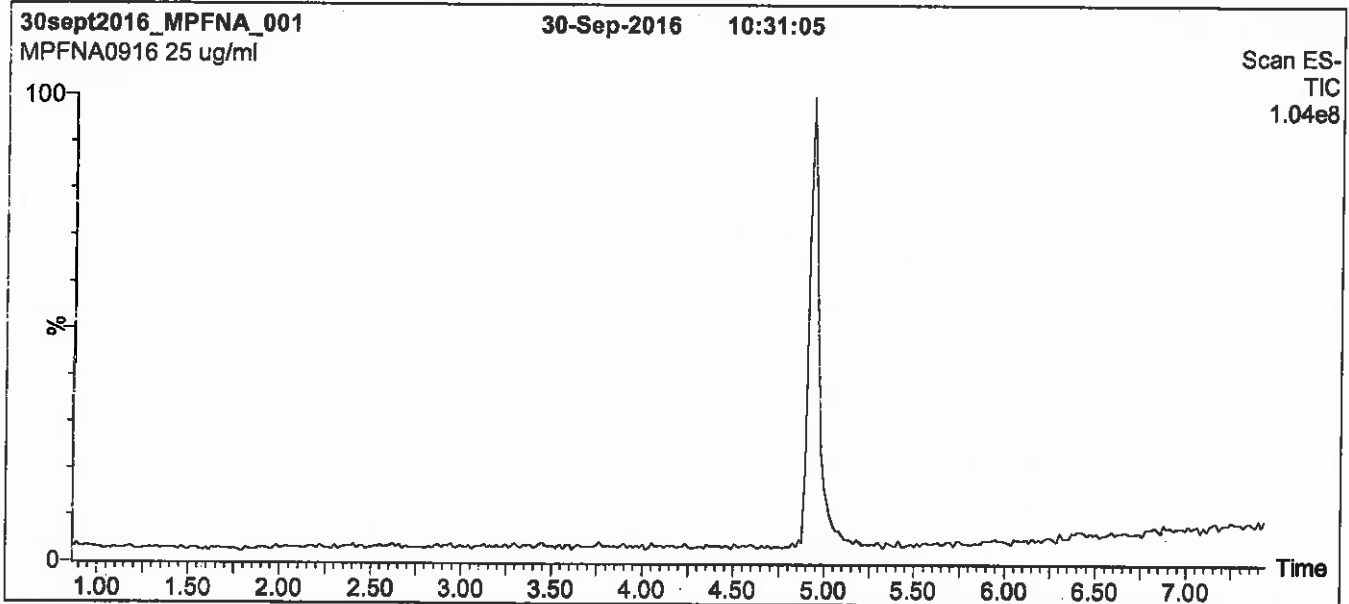
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: MPFNA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro micro API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ l/min

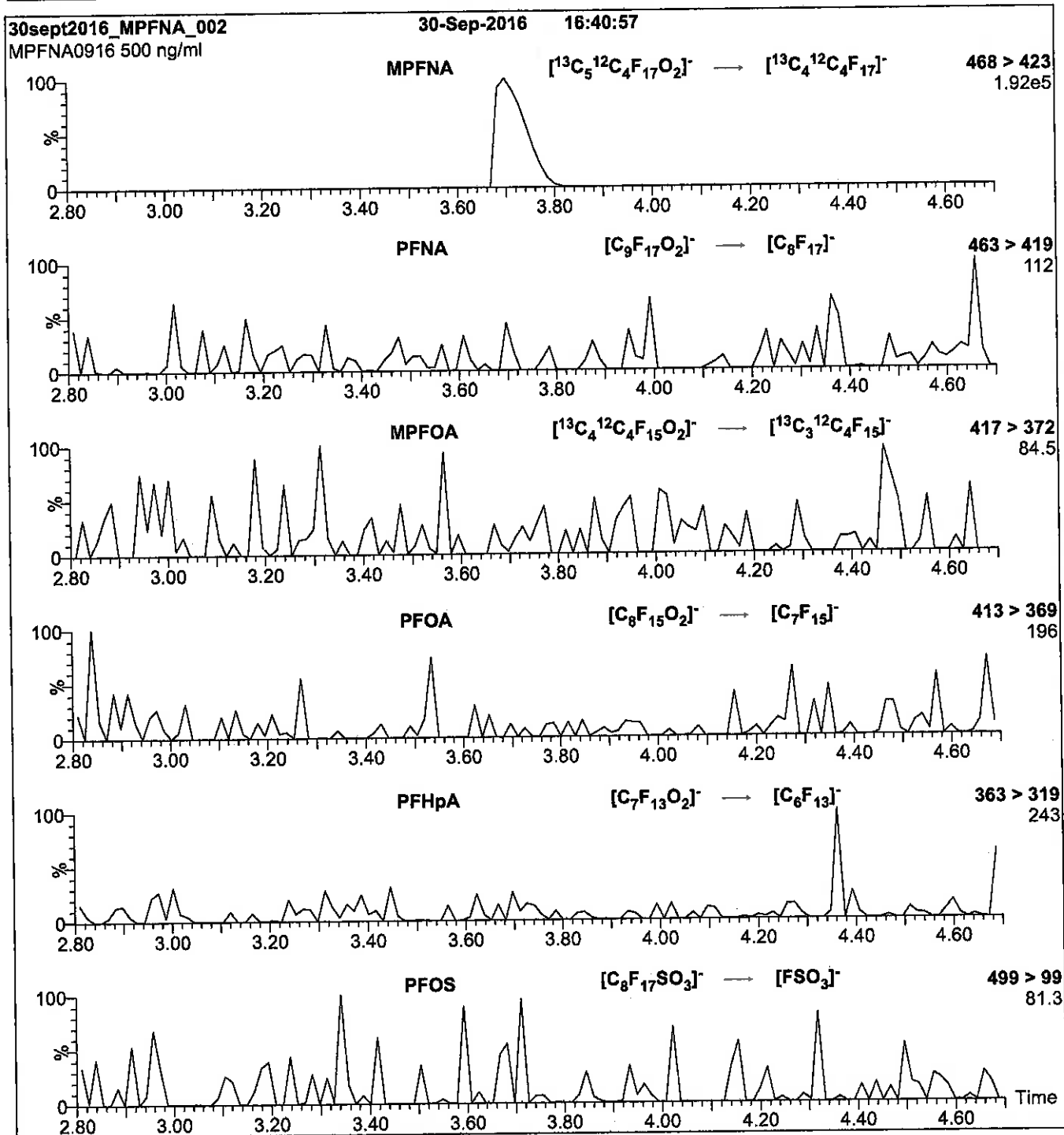
**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV) =** 2.00  
**Cone Voltage (V) =** 15.00  
**Cone Gas Flow (l/hr) =** 50  
**Desolvation Gas Flow (l/hr) =** 750



**Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFNA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 11

Reagent

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**LCMPFNA\_00010**

r: 5/3/19 SA



# WELLINGTON LABORATORIES

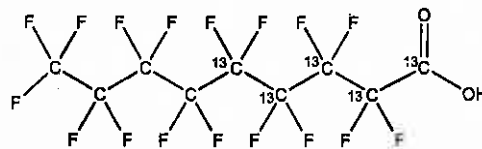
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFNA  
**COMPOUND:** Perfluoro-n-[1,2,3,4,5-<sup>13</sup>C<sub>5</sub>]nonanoic acid

**LOT NUMBER:** MPFNA0916

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>5</sub><sup>12</sup>C<sub>4</sub>HF<sub>17</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 469.04  
**SOLVENT(S):** Methanol  
Water (<1%)  
**ISOTOPIC PURITY:** ≥99%<sup>13</sup>C  
(1,2,3,4,5-<sup>13</sup>C<sub>5</sub>)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 09/30/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 09/30/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim  
**Date:** 10/11/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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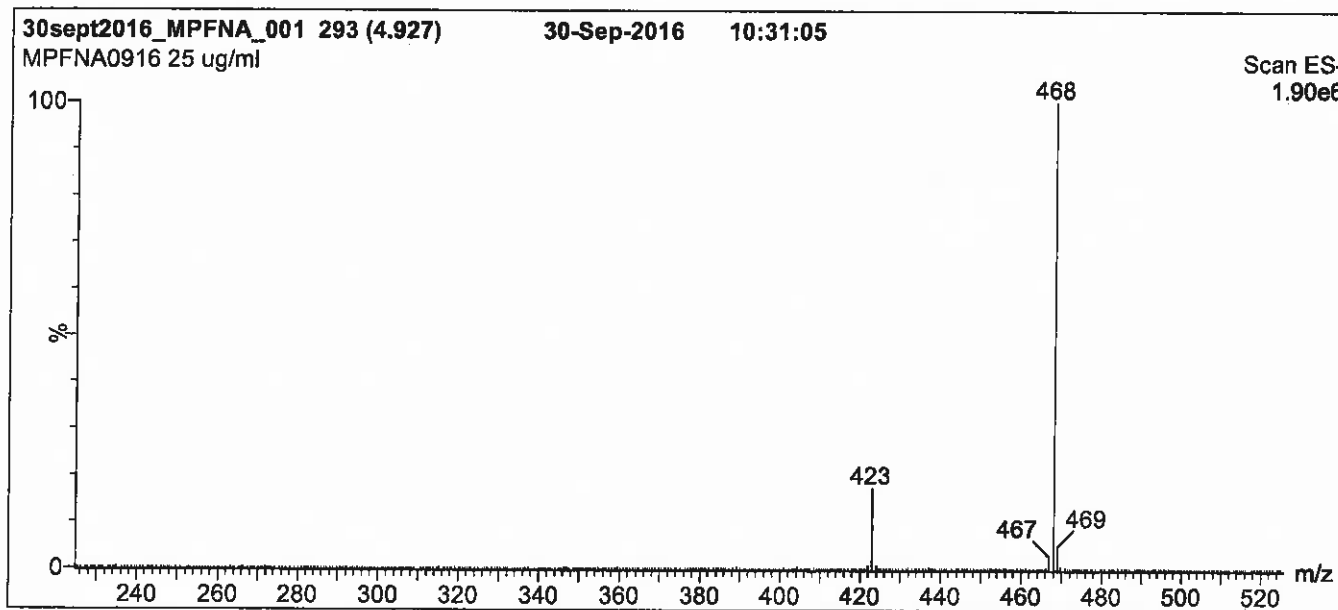
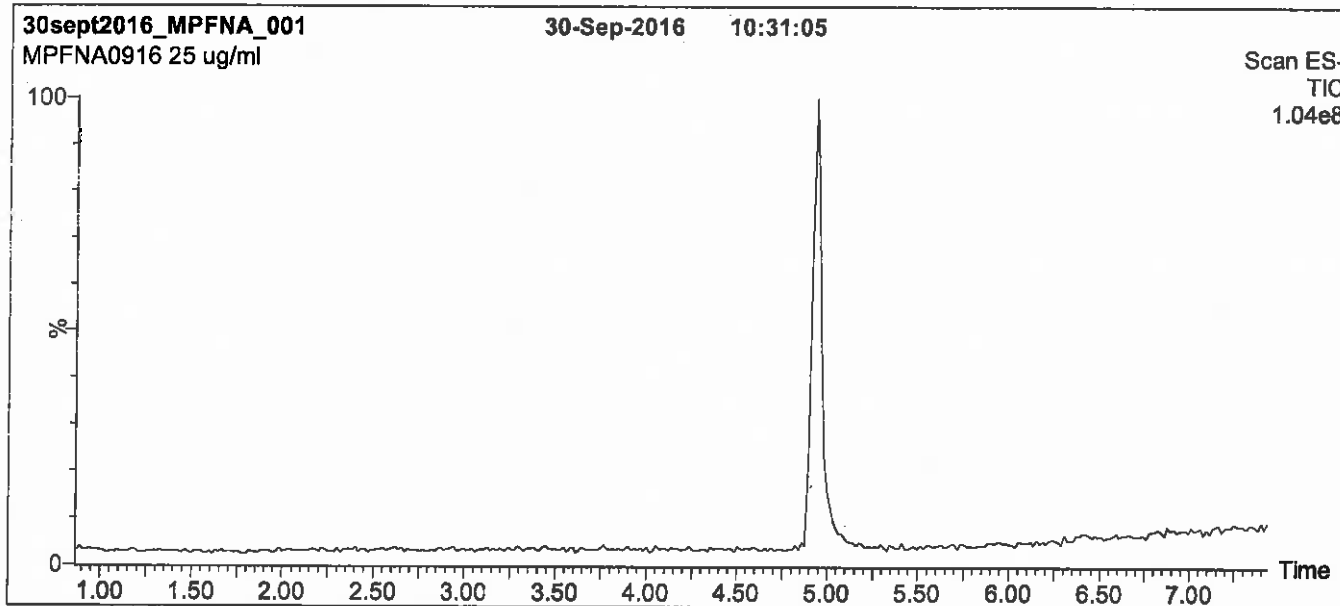
### **QUALITY MANAGEMENT:**

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**Figure 1: MPFNA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro micro API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

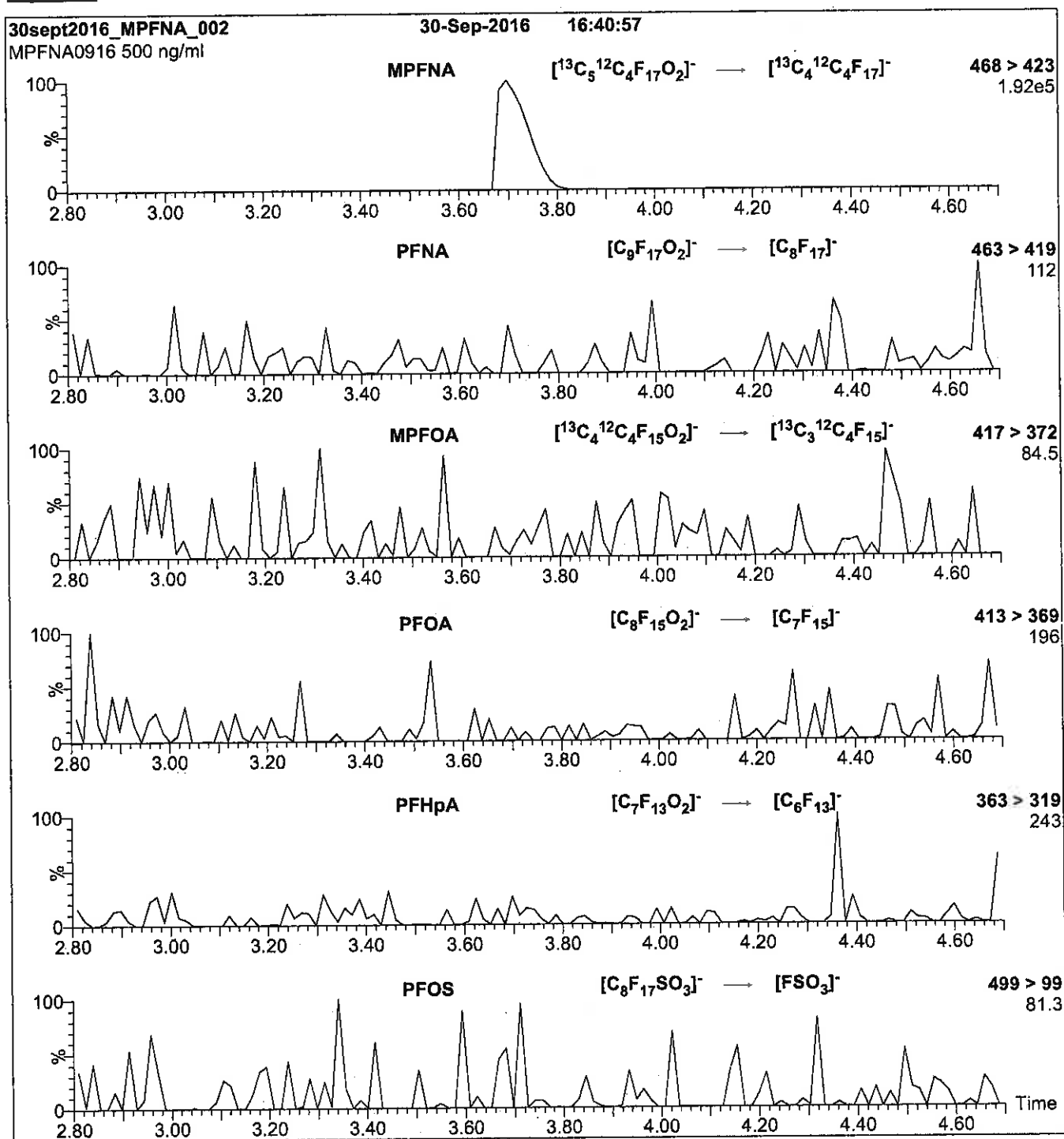
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFNA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 11

Reagent

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**LCMPFOA\_00012**

R: SBC 9/22/16



738683  
ID: LCMFOA\_00012  
Exp: 01/22/21 Prep: SBC  
13C4-Perfluorooctanoic ac



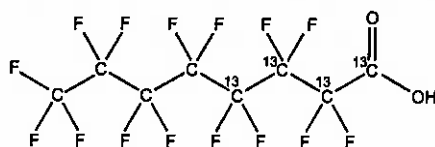
# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]octanoic acid

**LOT NUMBER:** MPFOA0116

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>HF<sub>15</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 418.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**LAST TESTED:** (mm/dd/yyyy) 01/22/2016

**EXPIRY DATE:** (mm/dd/yyyy) 01/22/2021

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of native perfluoro-n-octanoic acid (PFOA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim

**Date:** 02/01/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



### **INTENDED USE:**

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### **HOMOGENEITY:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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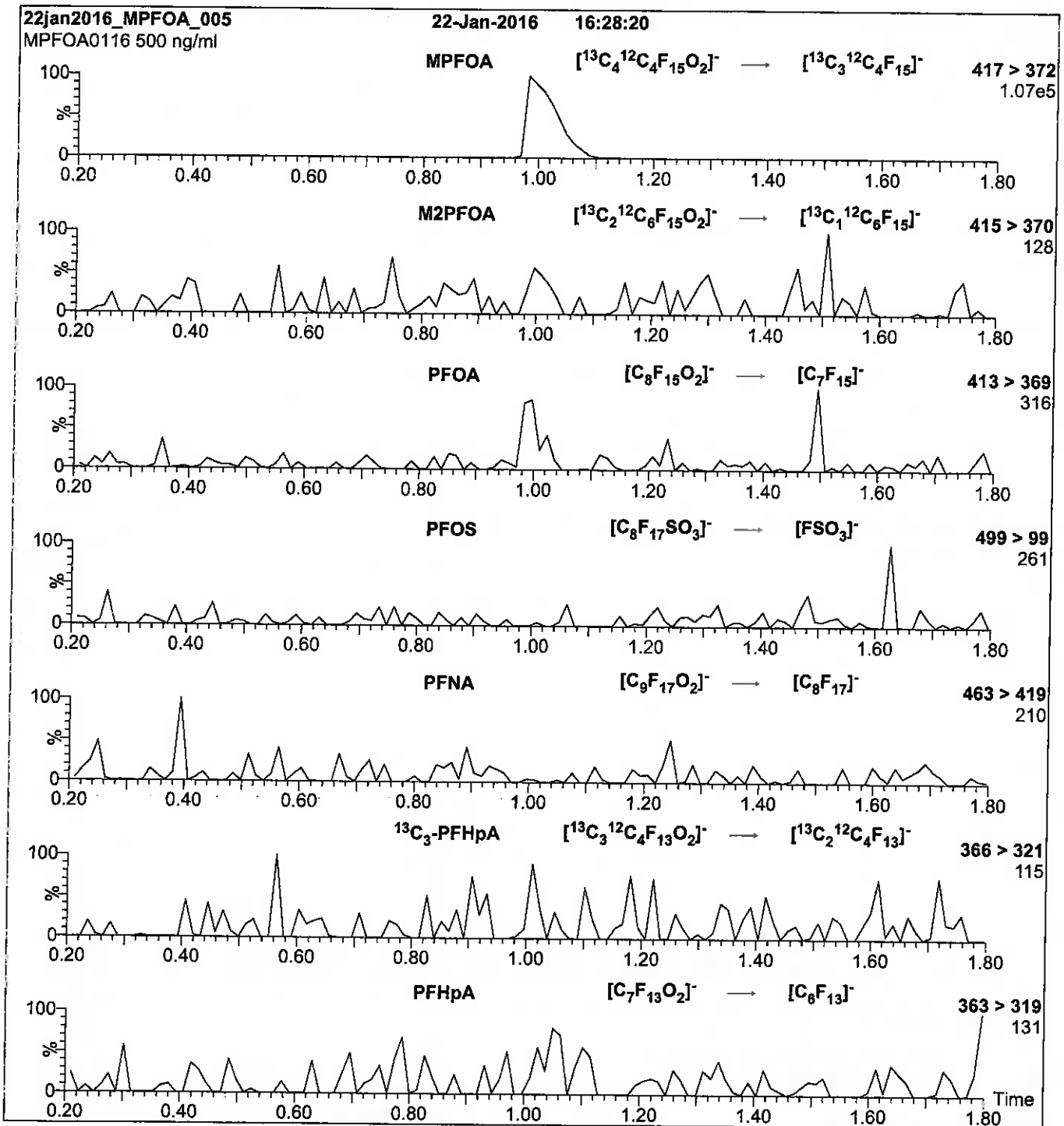
### **QUALITY MANAGEMENT:**

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**Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFOA)

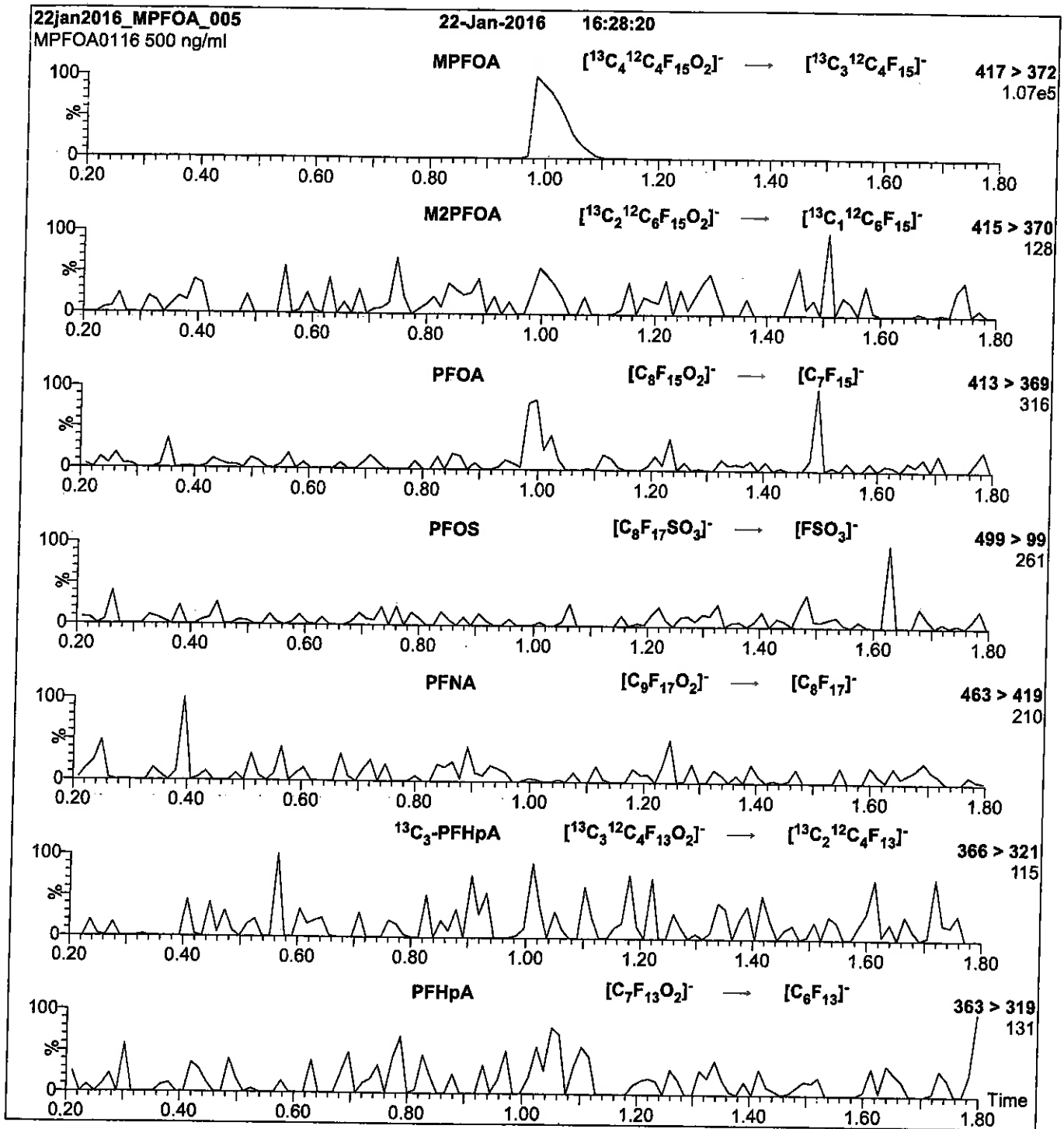
Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) =  $3.58\text{e-}3$   
Collision Energy (eV) = 10

**Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFOA)

MS Parameters

Collision Gas (mbar) = 3.58e-3  
Collision Energy (eV) = 10

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

Reagent

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**LCMPFOA\_00013**



# WELLINGTON LABORATORIES

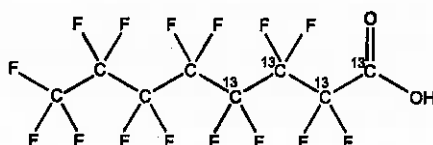
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]octanoic acid

**LOT NUMBER:** MPFOA1016

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>HF<sub>16</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 418.04

**SOLVENT(S):** Methanol  
Water (<1%)  
**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**CHEMICAL PURITY:** >98%

**LAST TESTED:** (mm/dd/yyyy) 10/18/2016

**EXPIRY DATE:** (mm/dd/yyyy) 10/18/2021

**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of native perfluoro-n-octanoic acid (PFOA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim

**Date:** 10/19/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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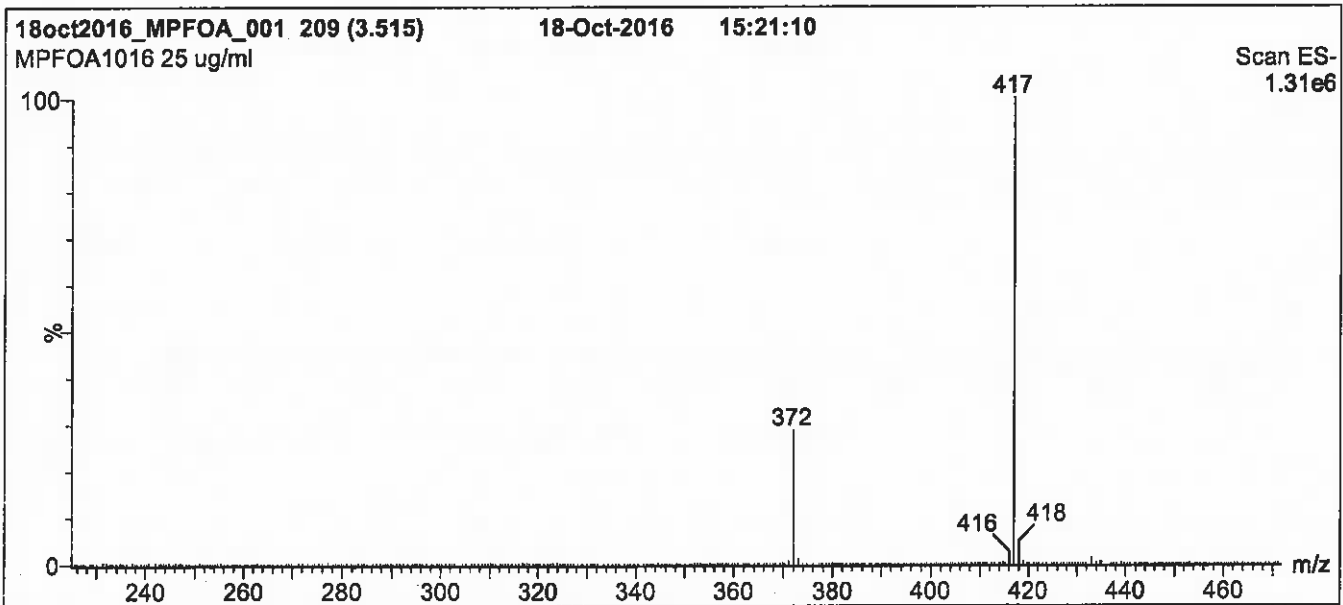
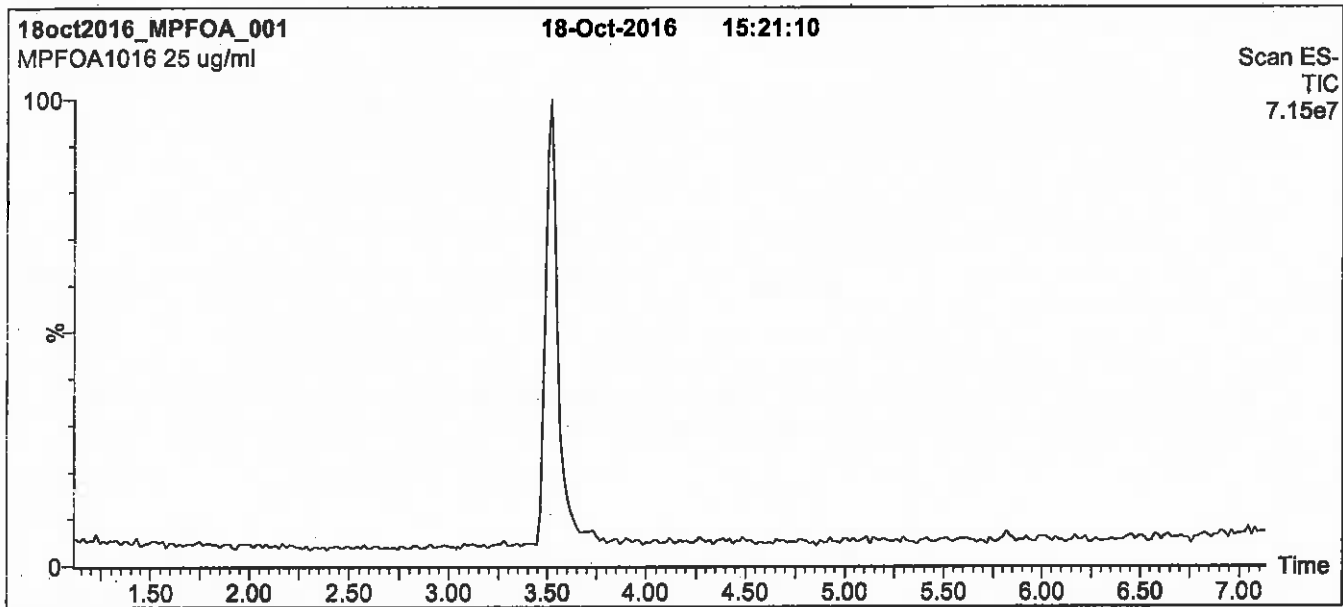
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: MPFOA; 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<sub>18</sub>  
1.7 μm, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 55% (80:20 MeOH:ACN) / 45% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

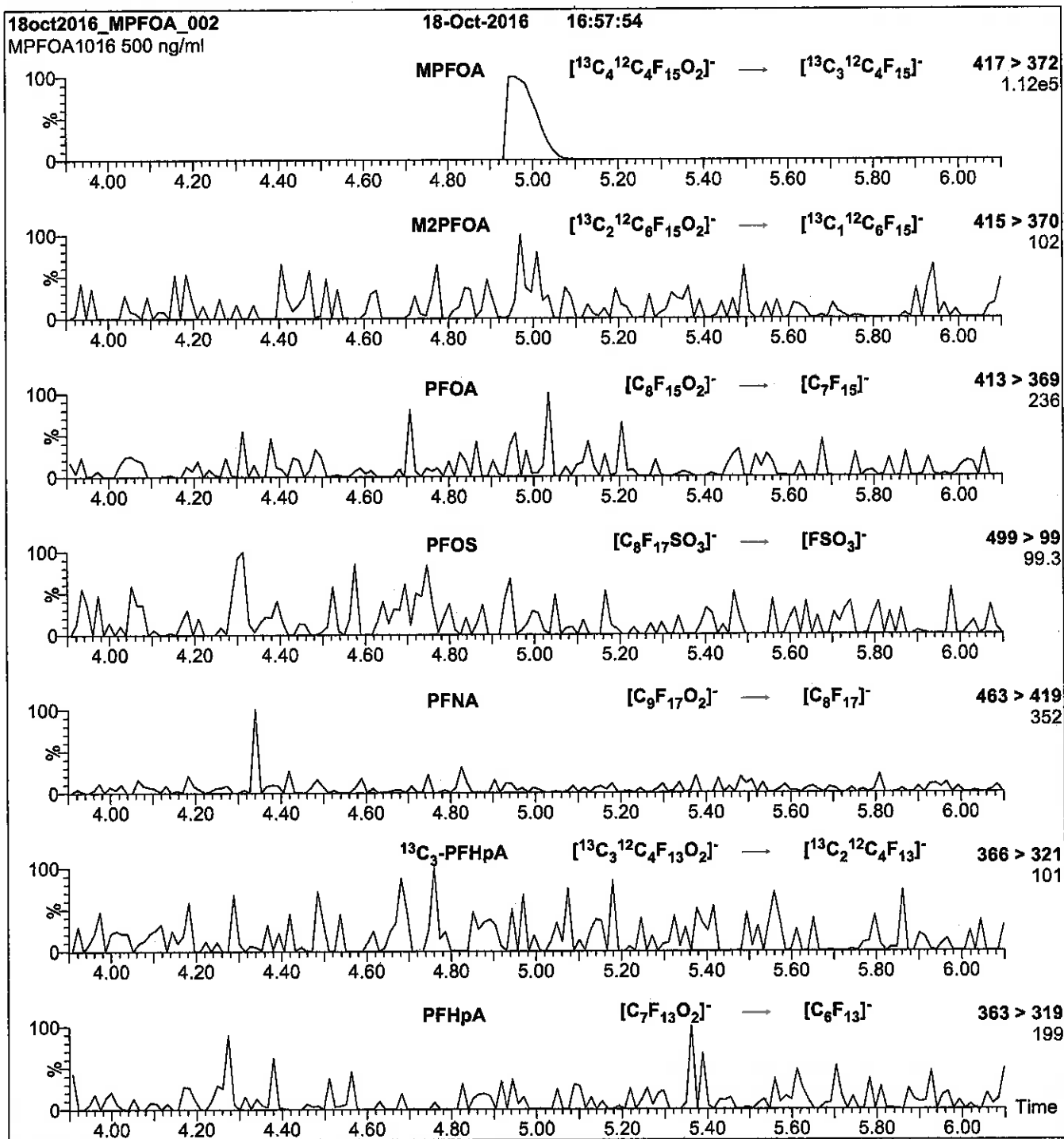
**Flow:** 300 μl/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 3.00  
**Cone Voltage (V)** = 15.00  
**Cone Gas Flow (l/hr)** = 100  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 10



Reagent

---

**LCMPFOA\_00014**



# WELLINGTON LABORATORIES

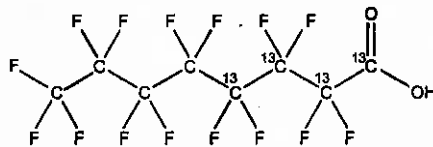
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOA  
**COMPOUND:** Perfluoro-n-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]octanoic acid

**LOT NUMBER:** MPFOA0417

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>4</sub><sup>12</sup>C<sub>4</sub>HF<sub>16</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 418.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 04/12/2017  
**EXPIRY DATE:** (mm/dd/yyyy) 04/12/2022

**ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
(1,2,3,4-<sup>13</sup>C<sub>4</sub>)

**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).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim, General Manager

**Date:** 04/28/2017  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

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### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers. In order to maintain the integrity of the assigned value(s), and associated uncertainty, the dilution or injection of a subsample of this product should be performed using calibrated measuring equipment.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters

$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using calibrated NIST and/or NRC traceable external weights. All volumetric glassware used is calibrated, of Class A tolerance, and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

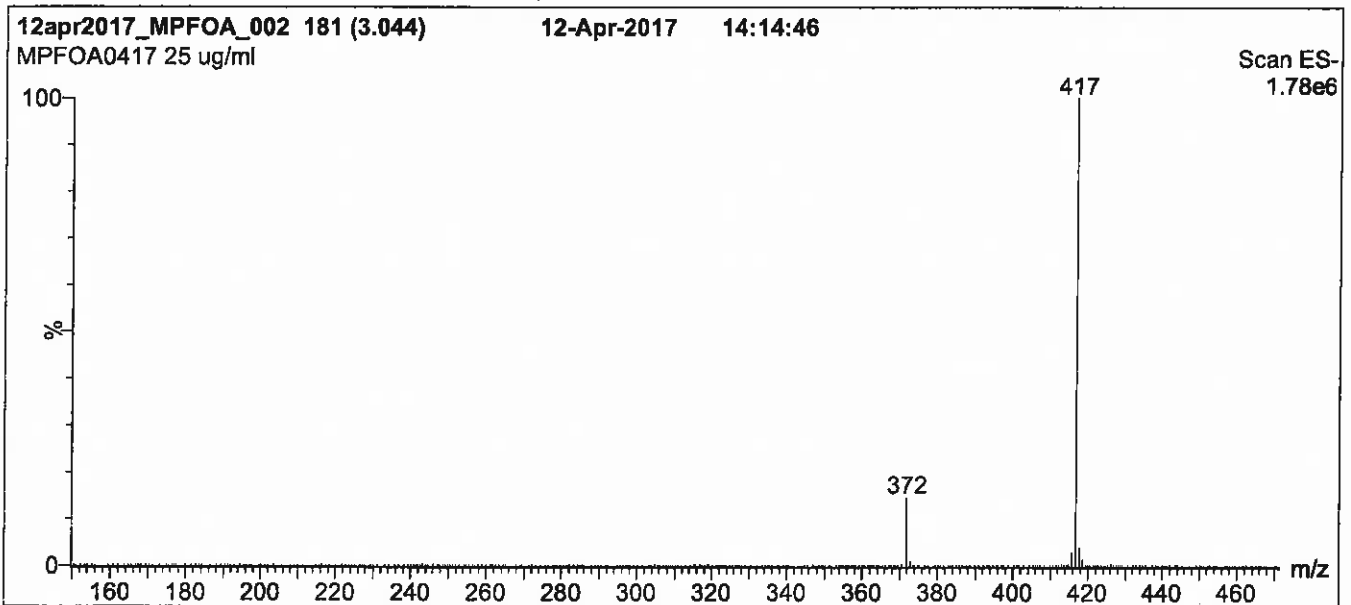
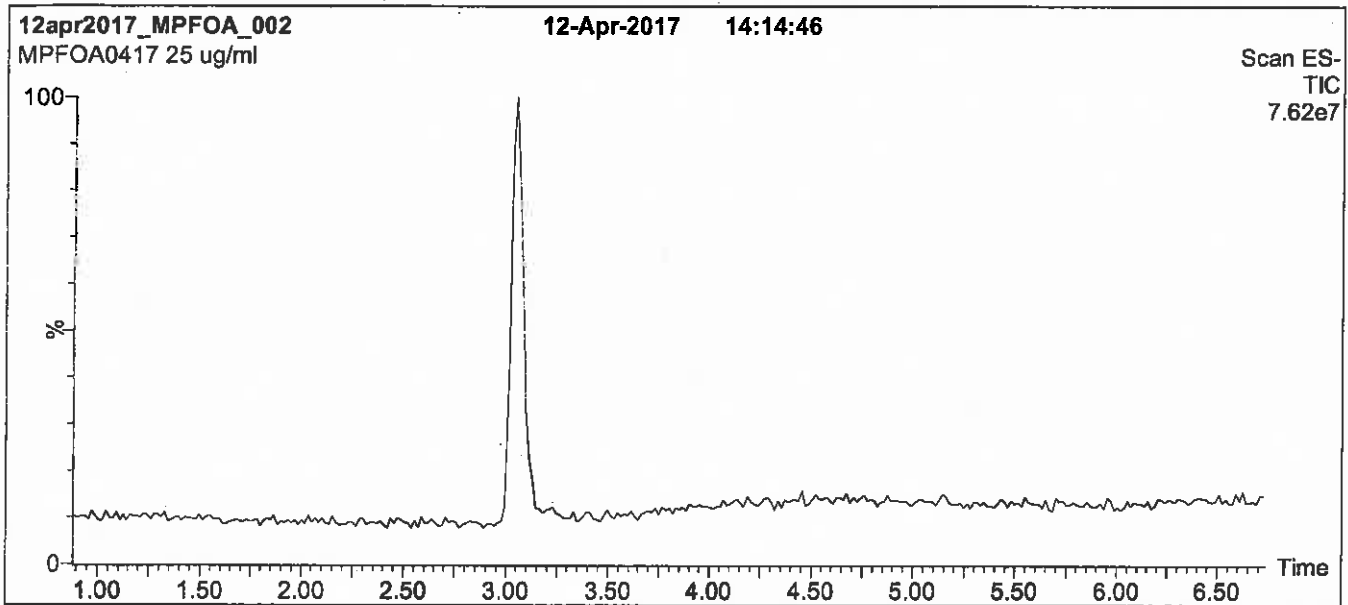
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: MPFOA; 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<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 55% (80:20 MeOH:ACN) / 45% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

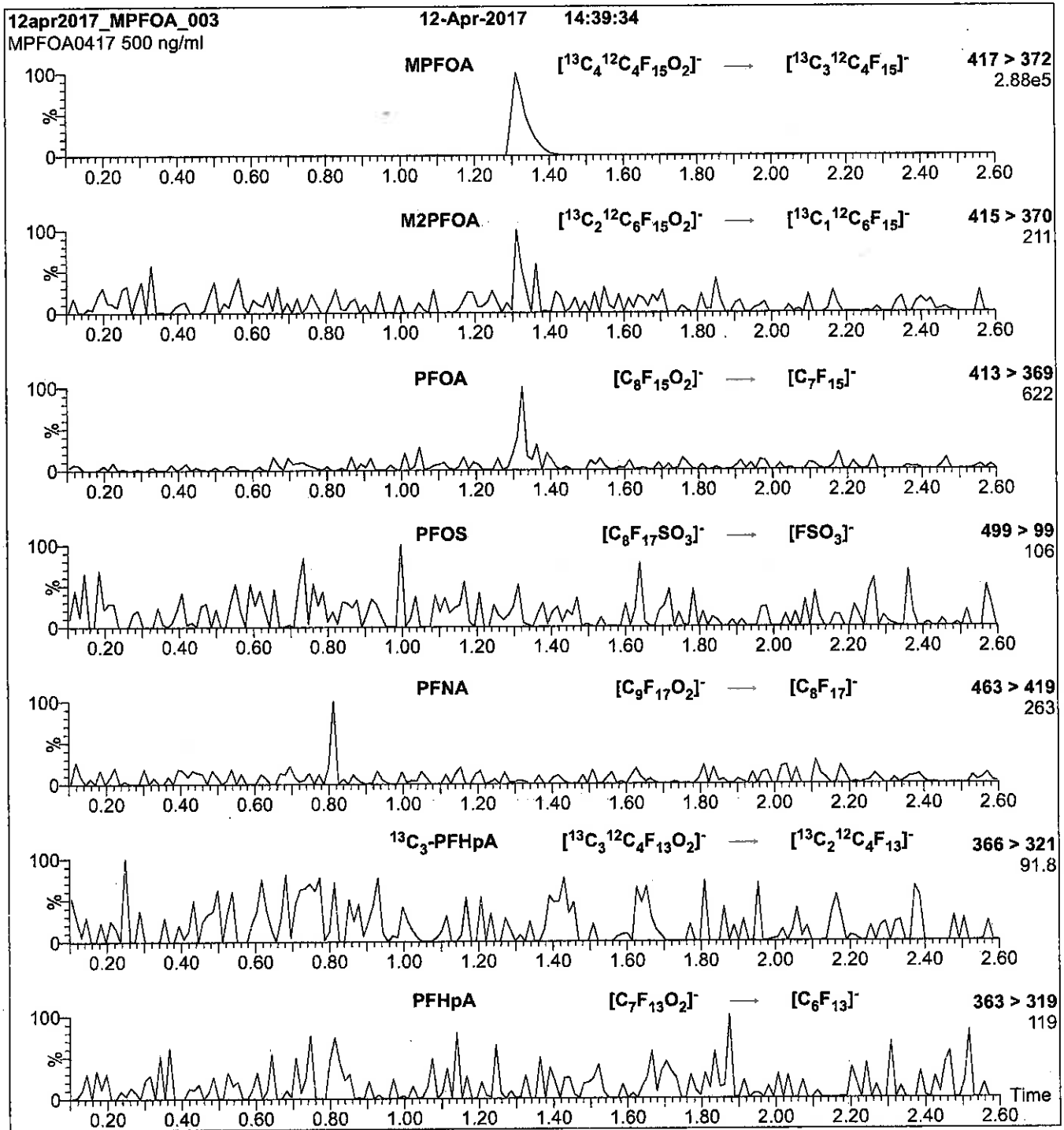
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFOA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) =  $3.46\text{e-}3$   
Collision Energy (eV) = 10

Reagent

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**LCMPFOS\_00018**

R: SBC 9/22/16



738686  
ID: LCMFOS\_00018  
Exp: 08/03/21 Papi: SBC  
13C4-Perfluorooctanesulfo

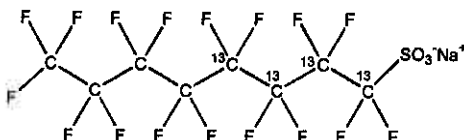


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOS **LOT NUMBER:** MPFOS0816  
**COMPOUND:** Sodium perfluoro-1-[1,2,3,4-<sup>13</sup>C]<sub>4</sub>octanesulfonate

**STRUCTURE:** **CAS #:** Not available



<b>MOLECULAR FORMULA:</b>	<sup>13</sup> C <sub>4</sub> <sup>12</sup> C <sub>4</sub> F <sub>17</sub> SO <sub>3</sub> Na	<b>MOLECULAR WEIGHT:</b>	526.08
<b>CONCENTRATION:</b>	50.0 ± 2.5 µg/ml (Na salt)	<b>SOLVENT(S):</b>	Methanol
	47.8 ± 2.4 µg/ml (MPFOS anion)	<b>ISOTOPIC PURITY:</b>	≥99% <sup>13</sup> C (1,2,3,4- <sup>13</sup> C <sub>4</sub> )
<b>CHEMICAL PURITY:</b>	>98%		
<b>LAST TESTED:</b> (mm/dd/yyyy)	08/03/2016		
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	08/03/2021		
<b>RECOMMENDED STORAGE:</b>	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 ~ 0.8% Sodium perfluoro-1-[1,2,3-<sup>13</sup>C]<sub>3</sub>heptanesulfonate.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 08/05/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

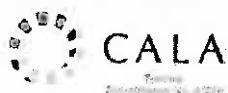
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

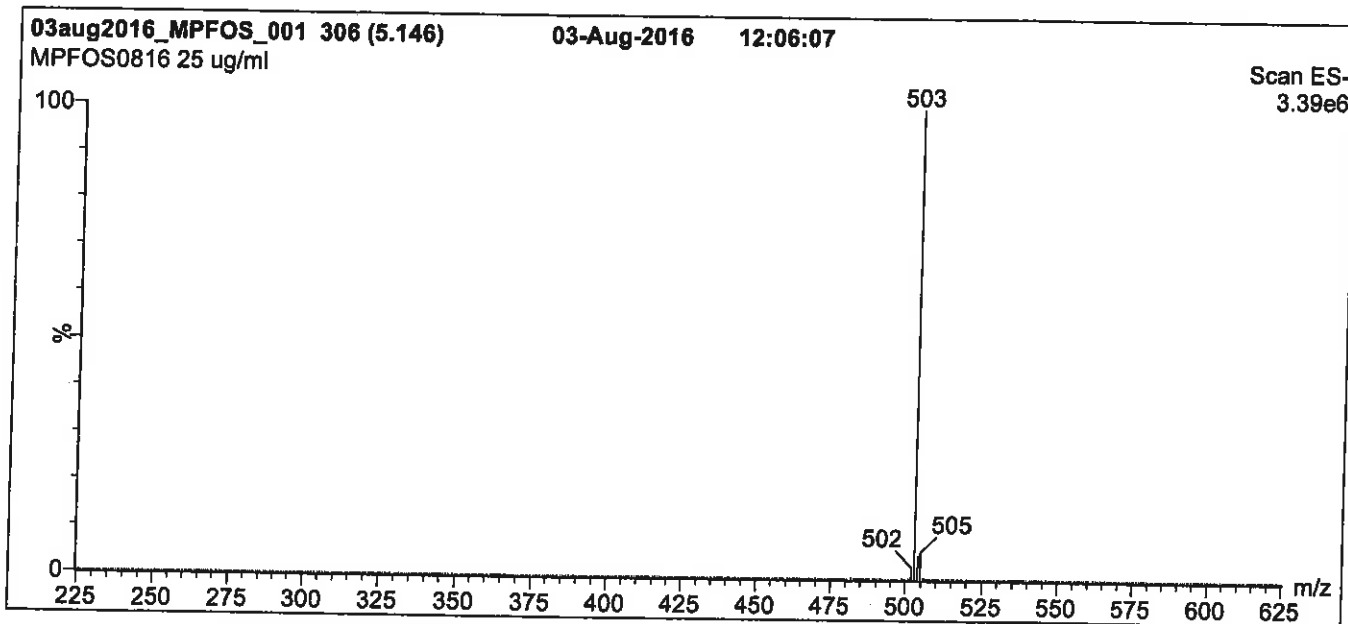
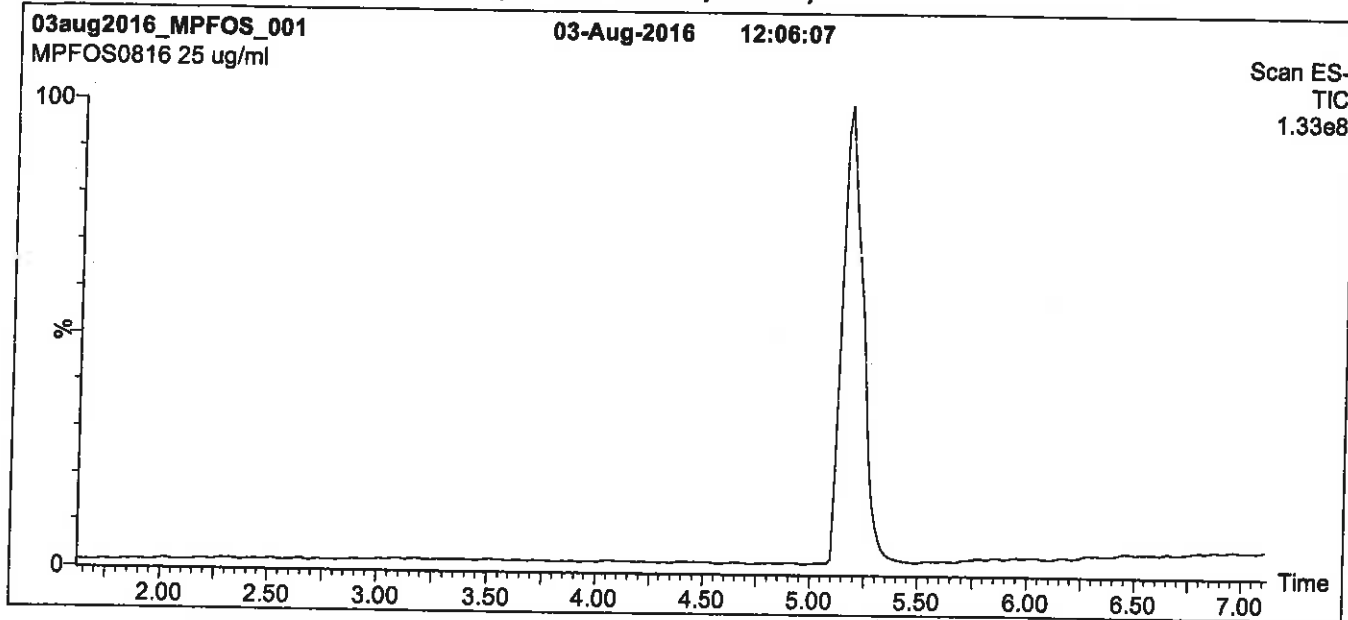
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 45% (80:20 MeOH:ACN) / 55% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

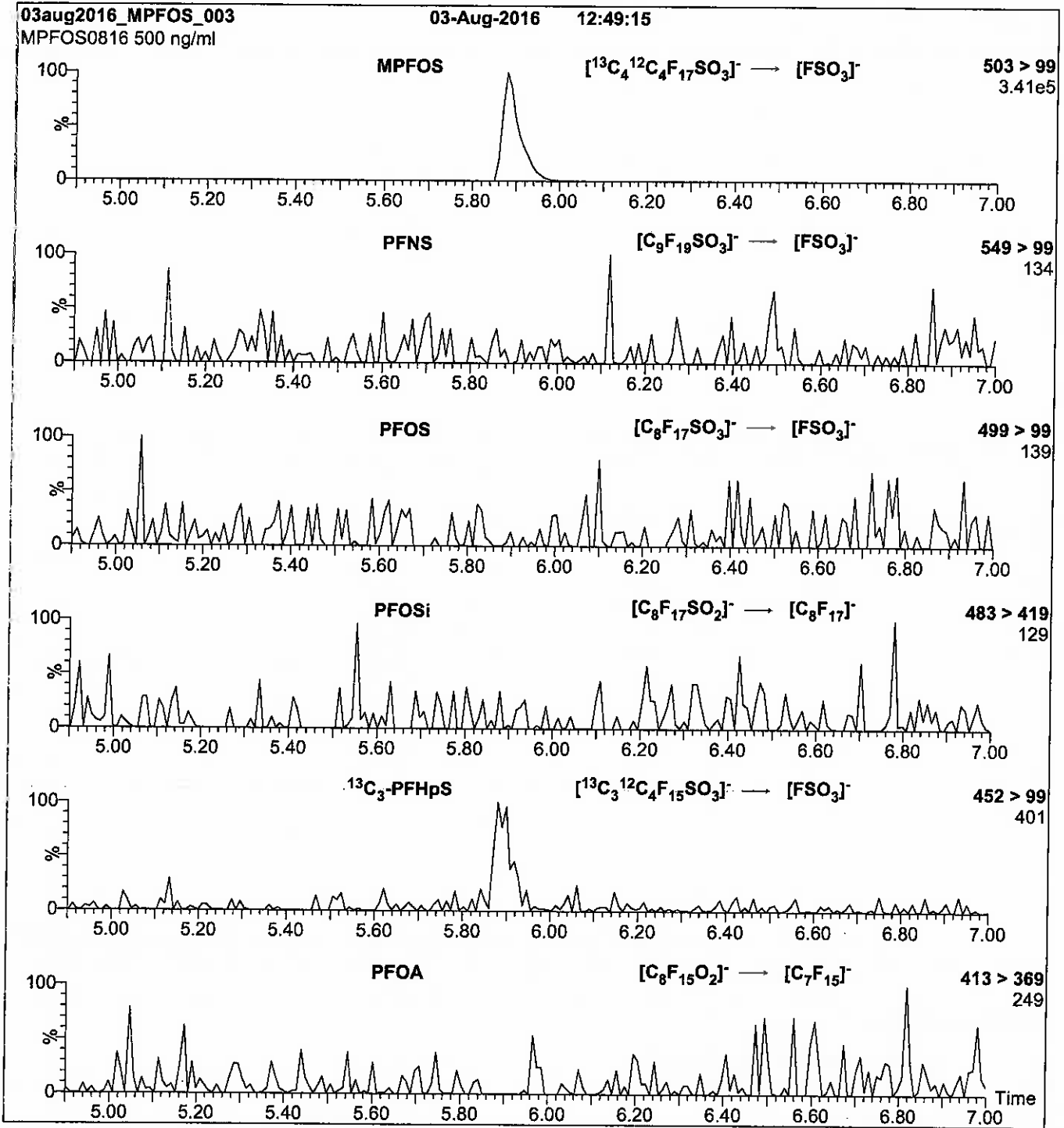
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 60.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
Collision Energy (eV) = 40

Reagent

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**LCMPFOS\_00020**

n: 3k117 stv

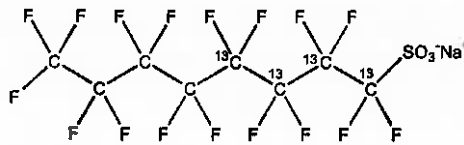


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFOS **LOT NUMBER:** MPFOS1216  
**COMPOUND:** Sodium perfluoro-1-[1,2,3,4-<sup>13</sup>C<sub>4</sub>]octanesulfonate

**STRUCTURE:** **CAS #:** Not available



<b>MOLECULAR FORMULA:</b>	<sup>13</sup> C <sub>4</sub> <sup>12</sup> C <sub>4</sub> F <sub>17</sub> SO <sub>3</sub> Na	<b>MOLECULAR WEIGHT:</b>	526.08
<b>CONCENTRATION:</b>	50.0 ± 2.5 µg/ml (Na salt) 47.8 ± 2.4 µg/ml (MPFOS anion)	<b>SOLVENT(S):</b>	Methanol
<b>CHEMICAL PURITY:</b>	>98%	<b>ISOTOPIC PURITY:</b>	≥99% <sup>13</sup> C (1,2,3,4- <sup>13</sup> C <sub>4</sub> )
<b>LAST TESTED:</b> (mm/dd/yyyy)	12/12/2016		
<b>EXPIRY DATE:</b> (mm/dd/yyyy)	12/12/2021		
<b>RECOMMENDED STORAGE:</b>	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 ~ 0.8% Sodium perfluoro-1-[1,2,3-<sup>13</sup>C<sub>3</sub>]heptanesulfonate.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:  Date: 12/14/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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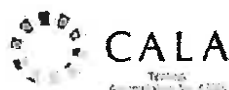
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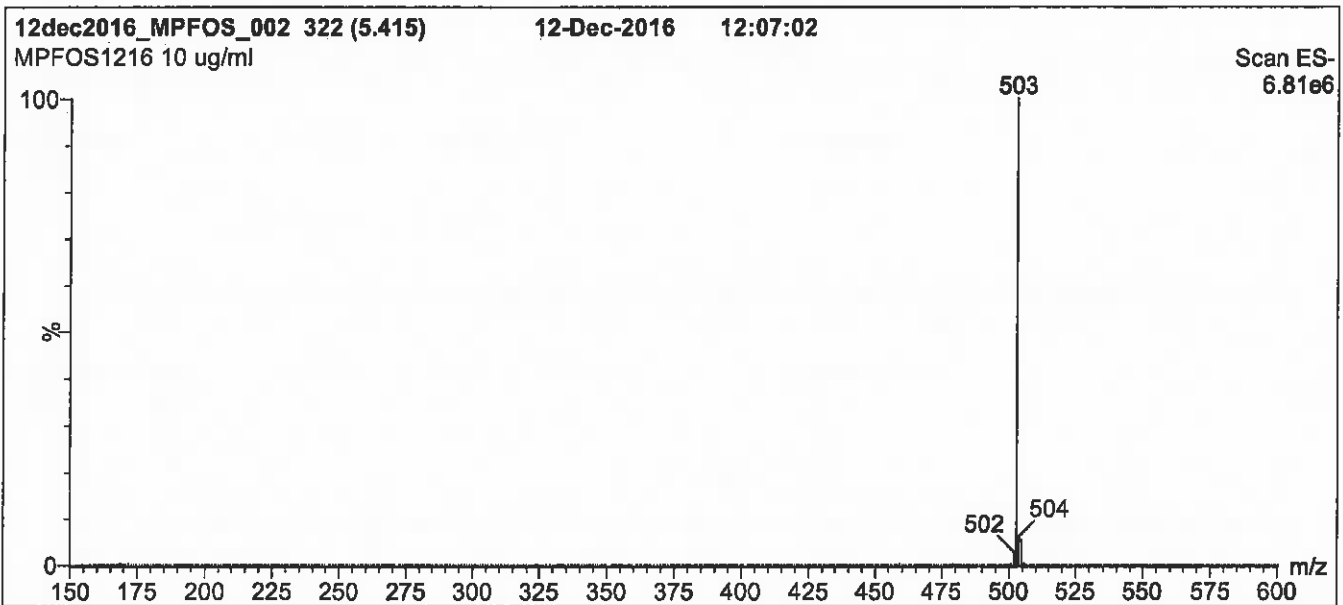
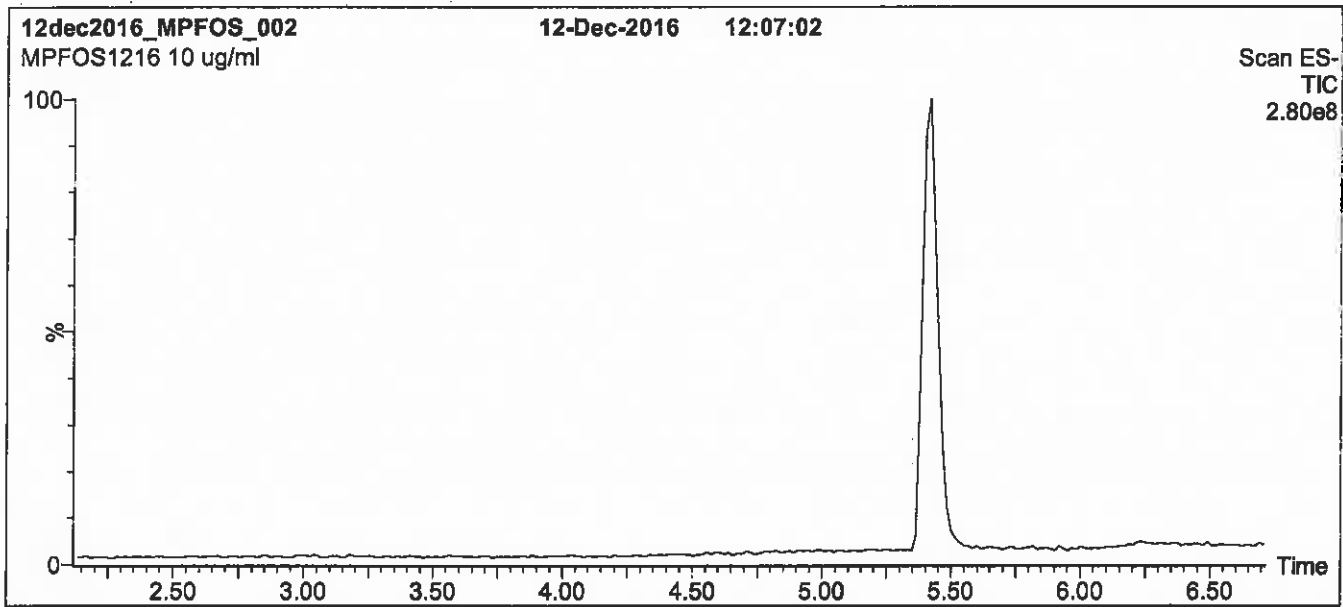
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**Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
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**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
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 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 85% organic over 7.5 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

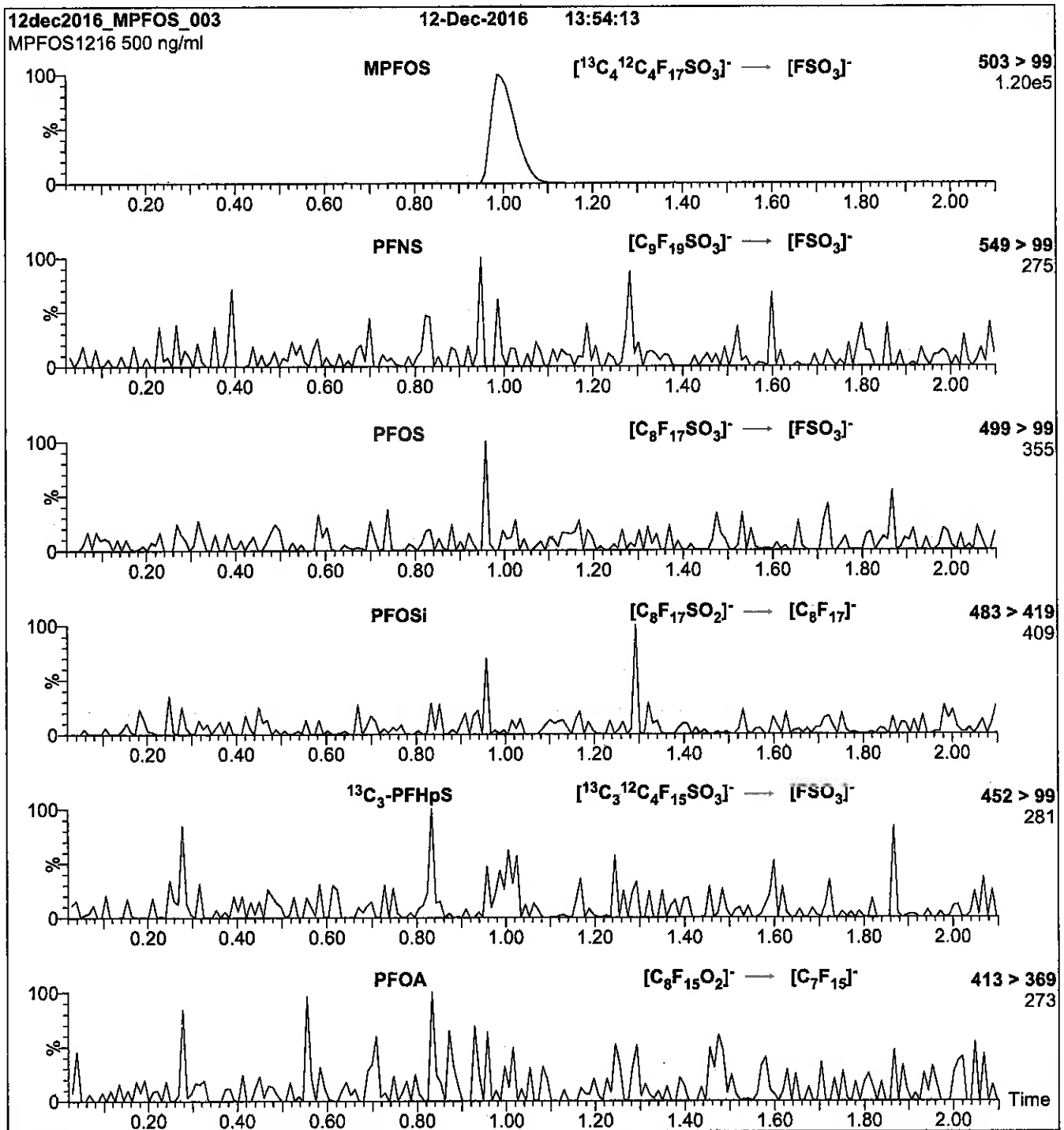
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 60.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 40

Reagent

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**LCMPFOS\_00022**





### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

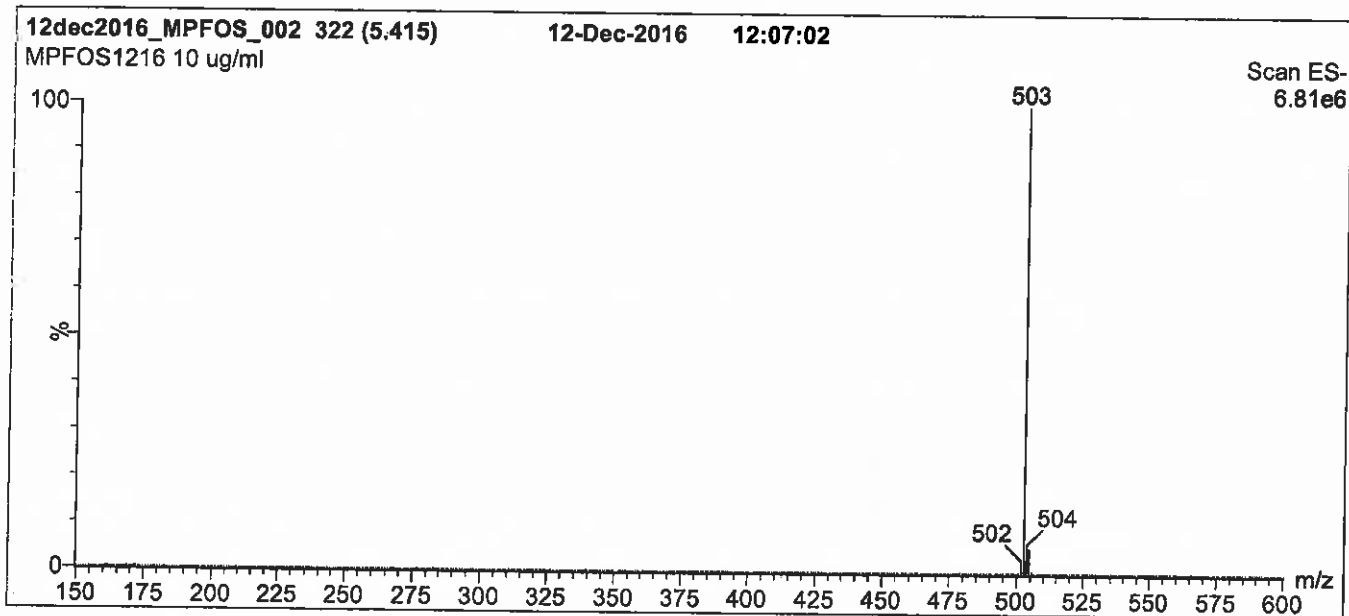
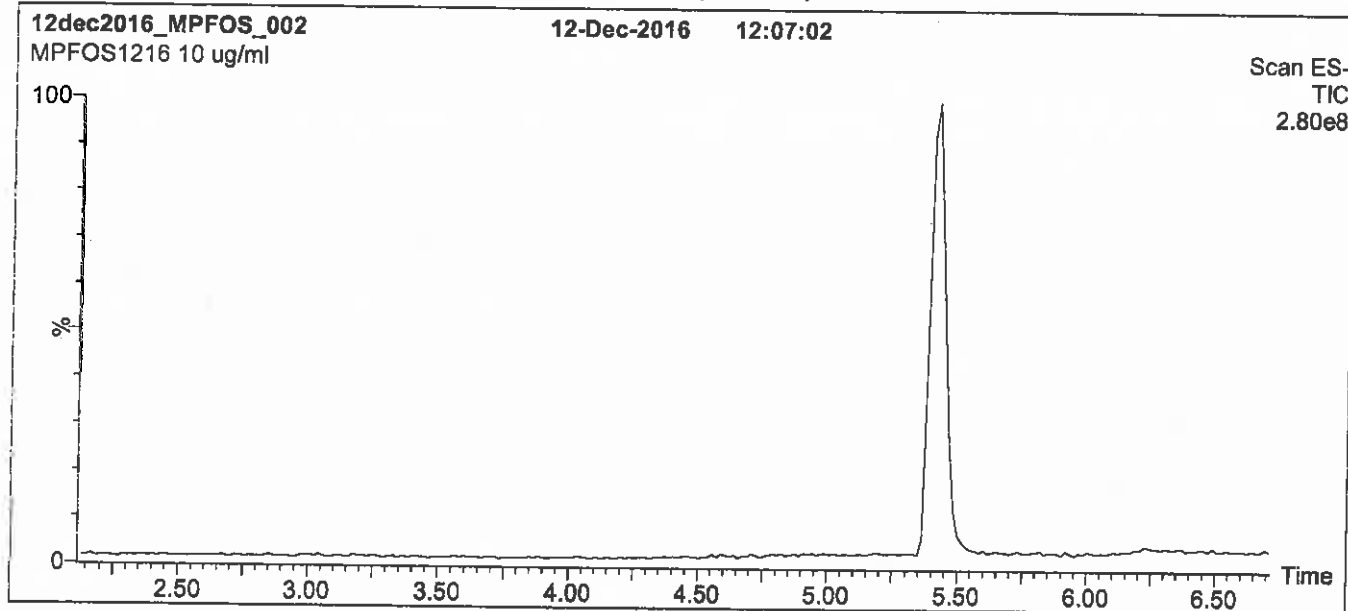
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: MPFOS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 85% organic over 7.5 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

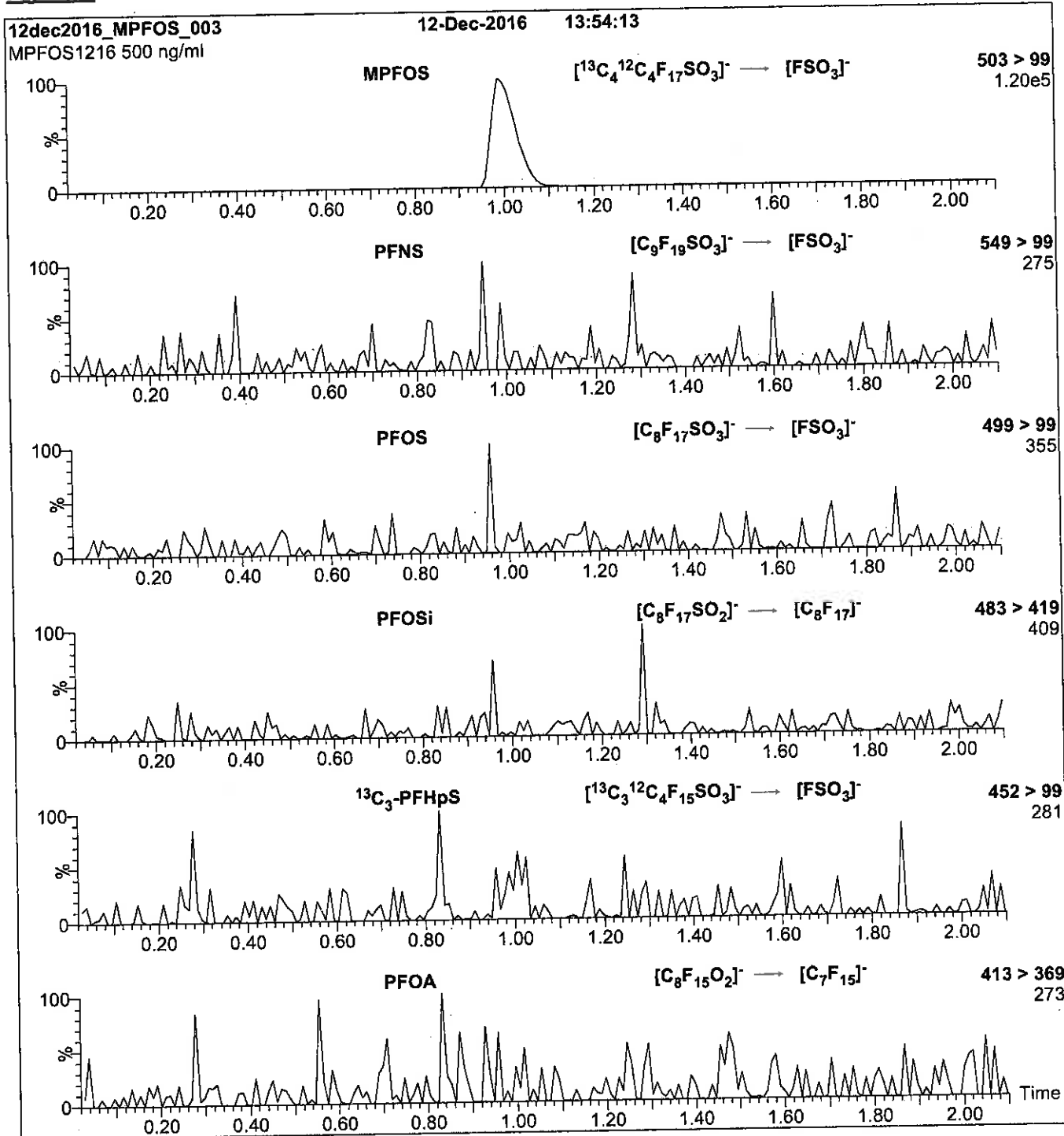
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 60.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFOS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFOS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 40

Reagent

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**LCMPFUdA\_00009**



### **INTENDED USE:**

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### **SYNTHESIS / CHARACTERIZATION:**

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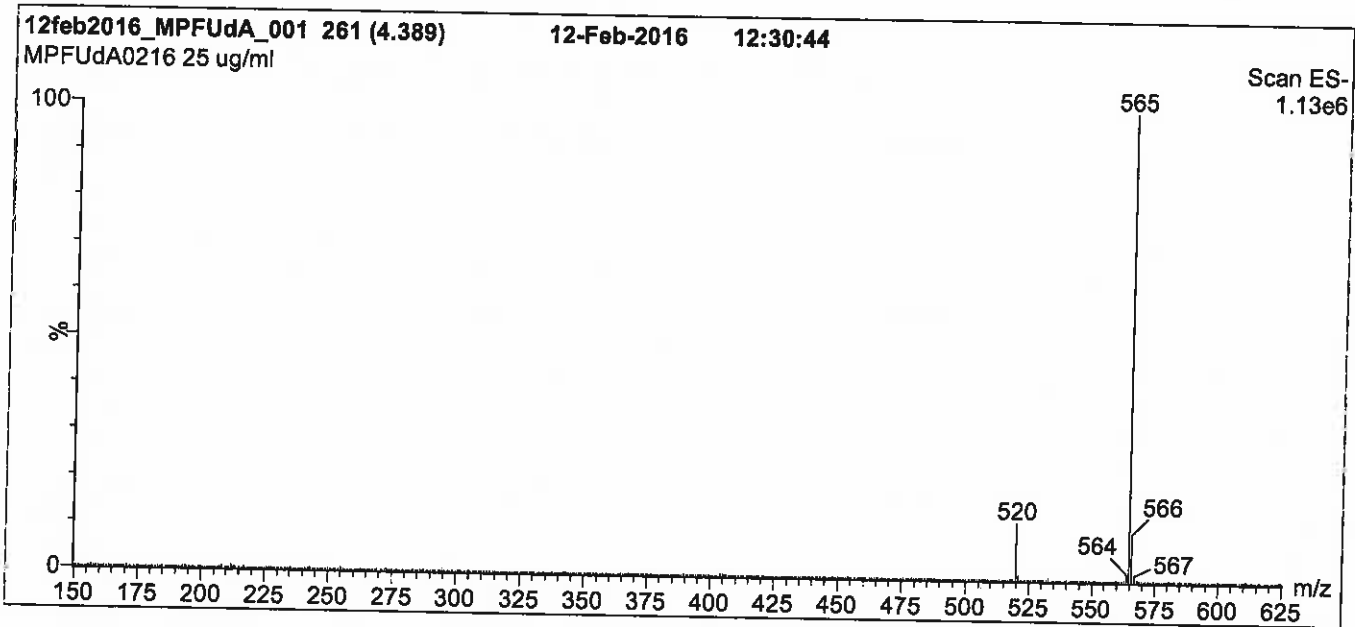
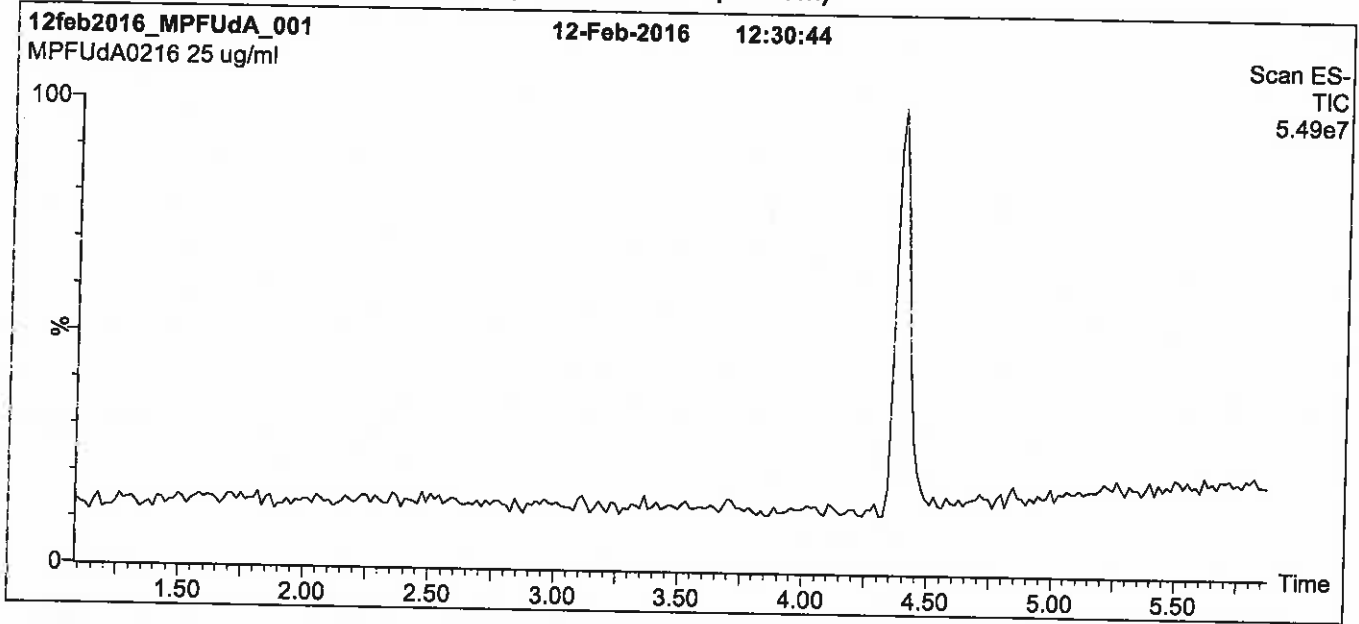
### **QUALITY MANAGEMENT:**

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**Figure 1: MPFUdA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ l/min

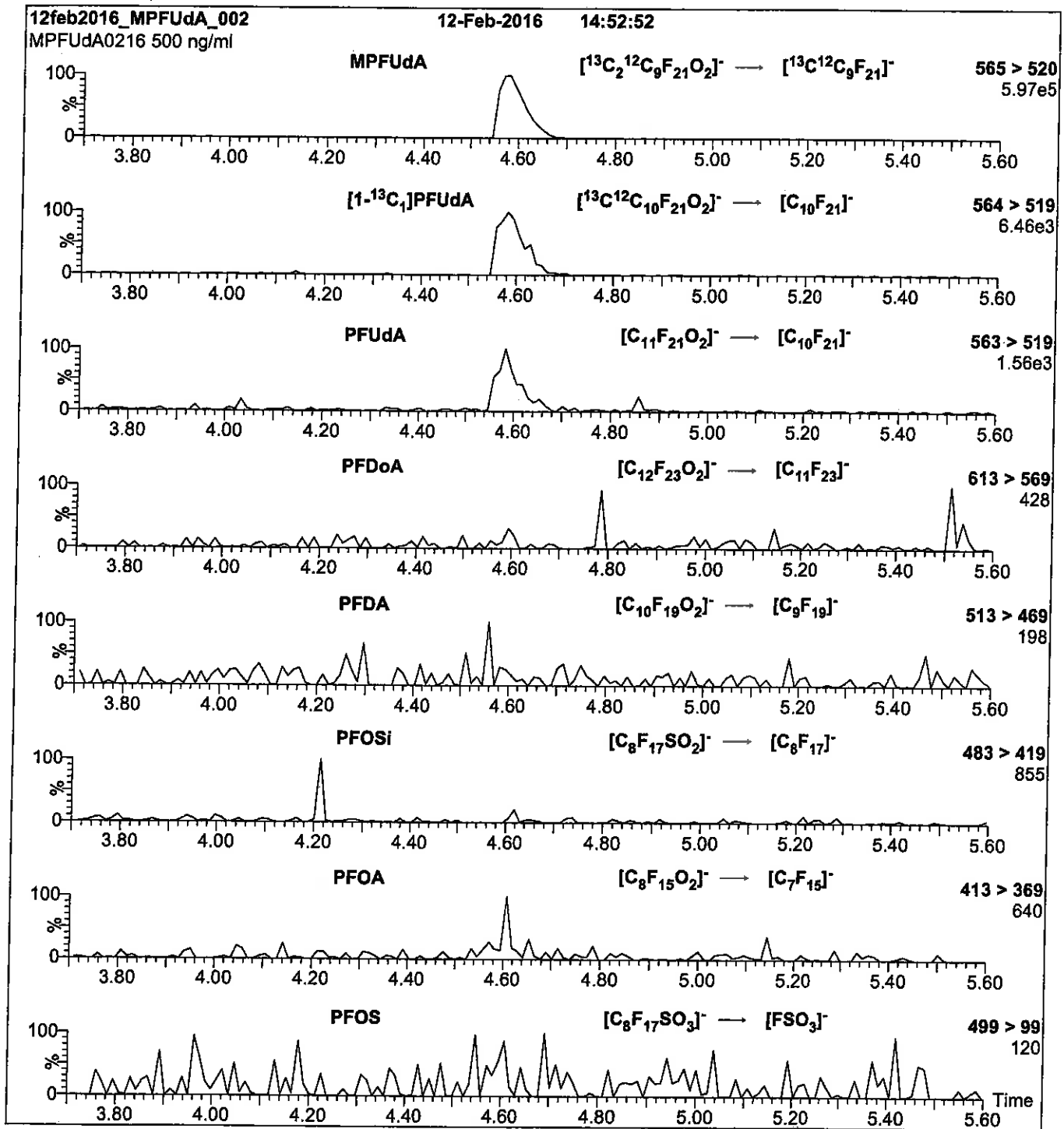
**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 65  
 Desolvation Gas Flow (l/hr) = 750



**Figure 2: MPFUdA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml MPFUdA)  
 Mobile phase: Isocratic 80% MeOH / 20% H<sub>2</sub>O  
 Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
 Collision Energy (eV) = 11

Reagent

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**LCMPFUdA\_00010**

r: 3/9/17 sd

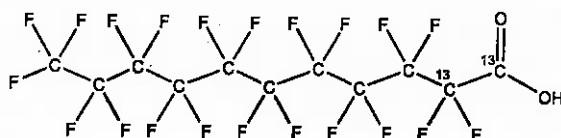


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFUdA **LOT NUMBER:** MPFUdA1116  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]undecanoic acid

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>9</sub>HF<sub>21</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 566.08  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** Water (<1%)  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2016 **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2021 **ISOTOPIC PURITY:** (1,2-<sup>13</sup>C<sub>2</sub>)  
**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-<sup>13</sup>C<sub>1</sub>-PFUdA (~1%; see Figure 2), 2-<sup>13</sup>C<sub>1</sub>-PFUdA (~1%), and PFUdA (~0.2%; see Figure 2) are due to the isotopic purity of the <sup>13</sup>C-precursor.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 12/07/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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### **HOMOGENEITY:**

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Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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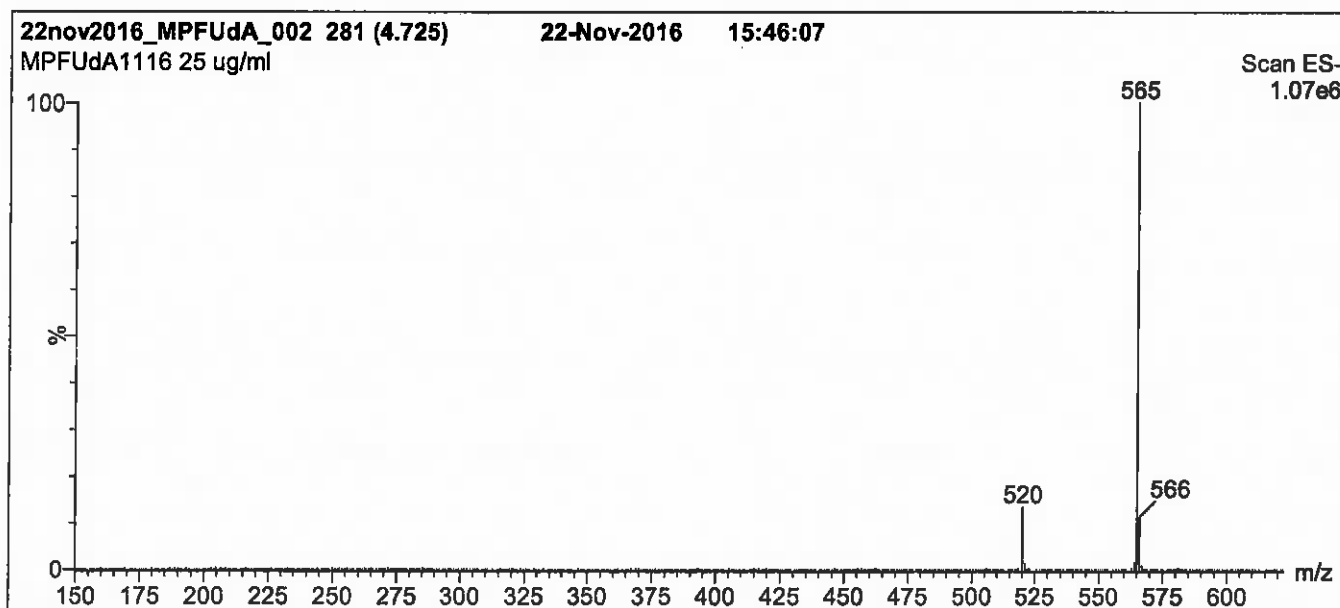
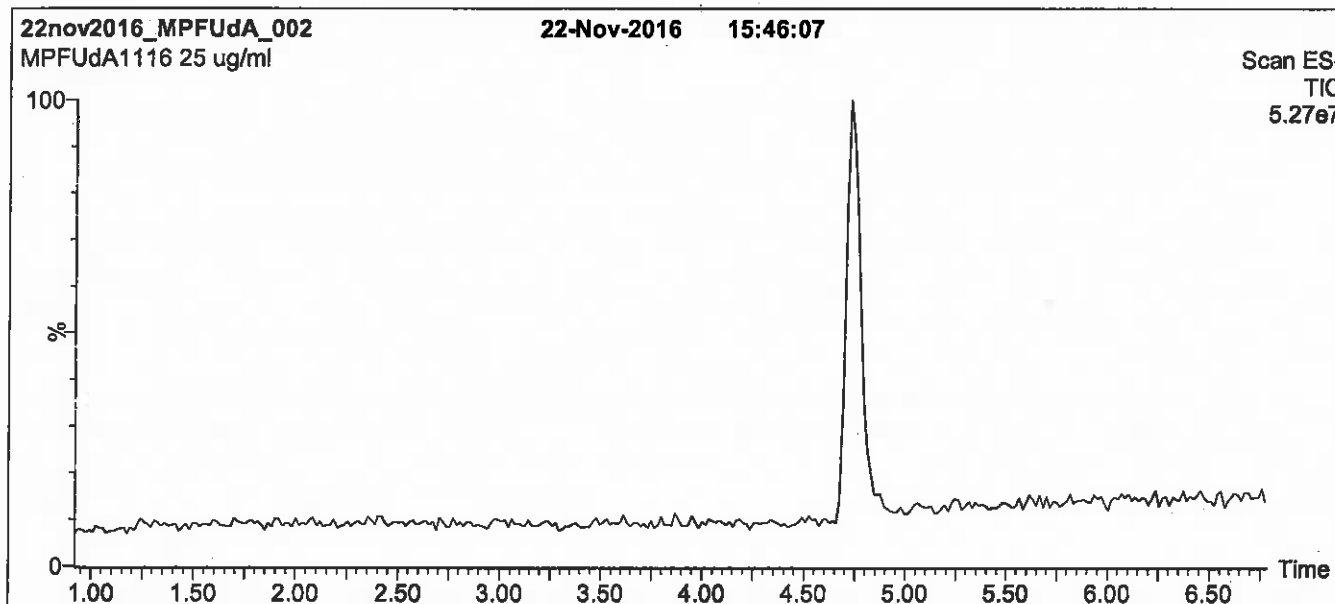
### **QUALITY MANAGEMENT:**

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**Figure 1: MPFUdA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

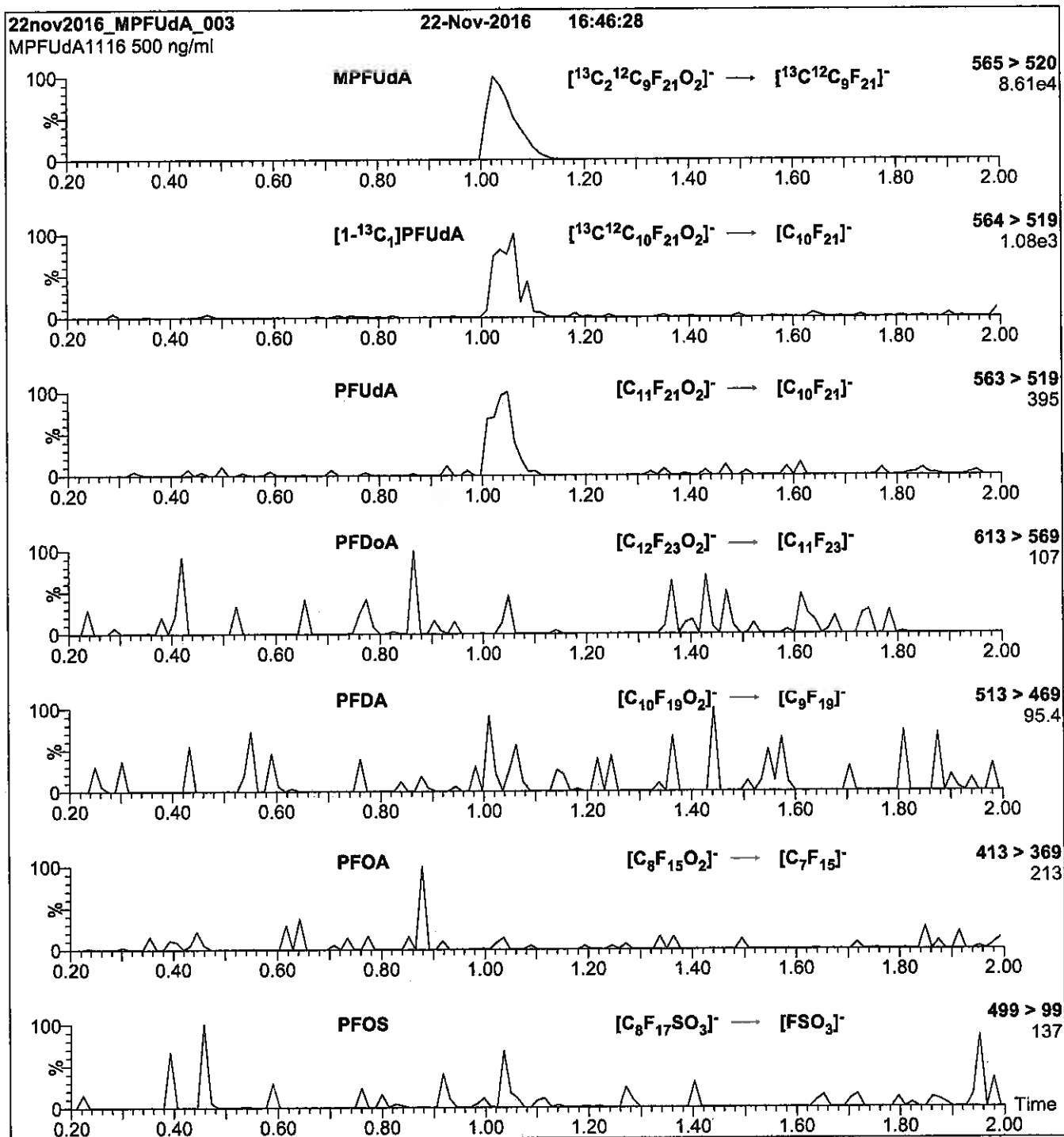
Mobile phase: Gradient  
Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for  
1.5 min before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 65  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFUdA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
 10  $\mu\text{l}$  (500 ng/ml MPFUdA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
 (both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

**Flow:** 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
 Collision Energy (eV) = 11

Reagent

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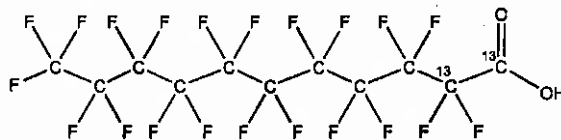
**LCMPFUdA\_00011**



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** MPFUdA **LOT NUMBER:** MPFUdA1116  
**COMPOUND:** Perfluoro-n-[1,2-<sup>13</sup>C<sub>2</sub>]undecanoic acid  
**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>9</sub>HF<sub>21</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 566.08  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
 Water (<1%)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
 (1,2-<sup>13</sup>C<sub>2</sub>)  
**LAST TESTED:** (mm/dd/yyyy) 11/22/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 11/22/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

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**Certified By:**

  
B.G. Chittim

**Date:** 12/07/2016

(mm/dd/yyyy)

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**EXPIRY DATE / PERIOD OF VALIDITY:**

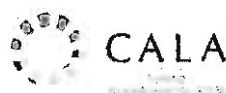
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**LIMITED WARRANTY:**

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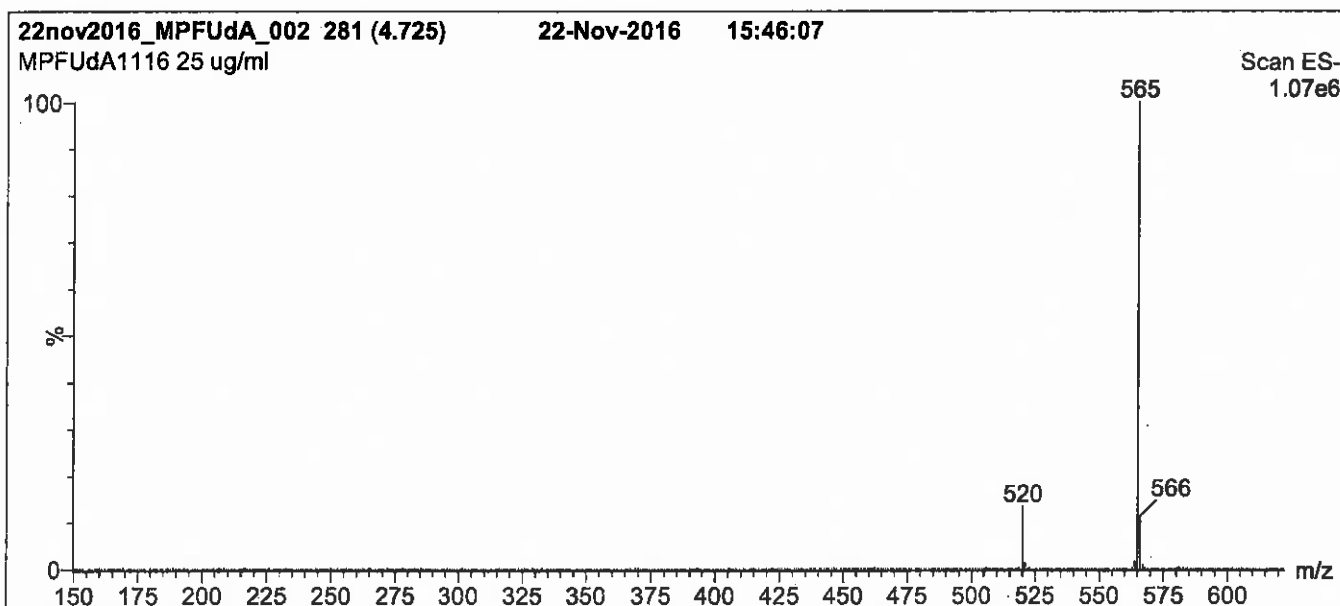
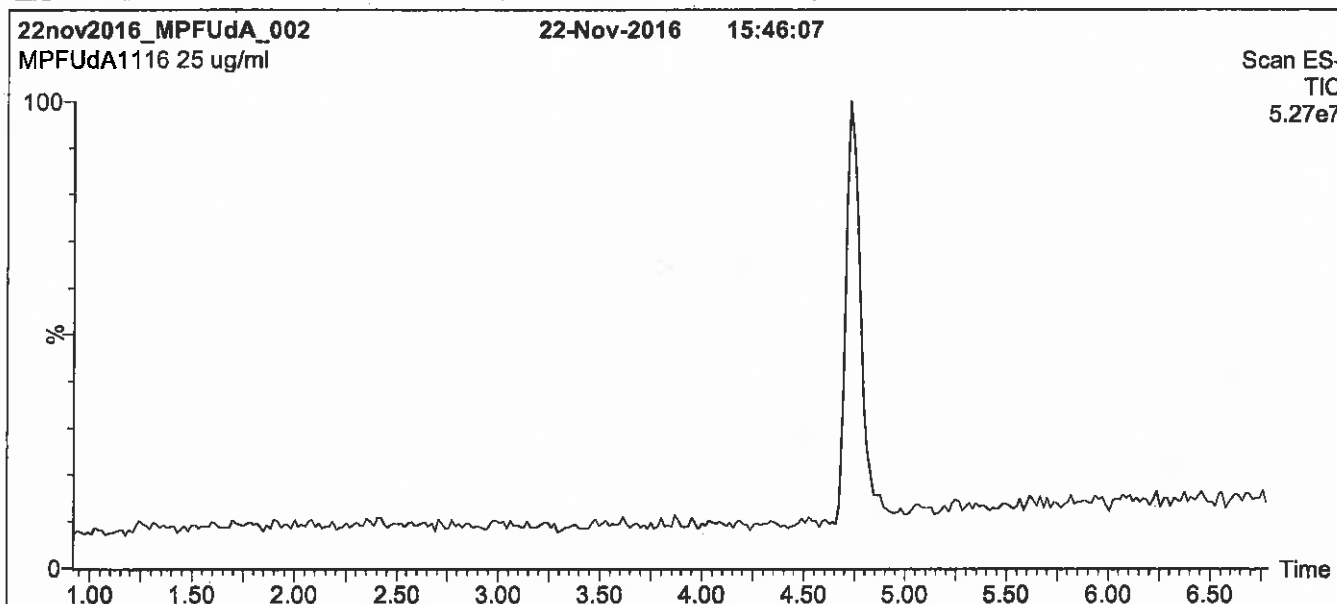
**QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: MPFUdA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

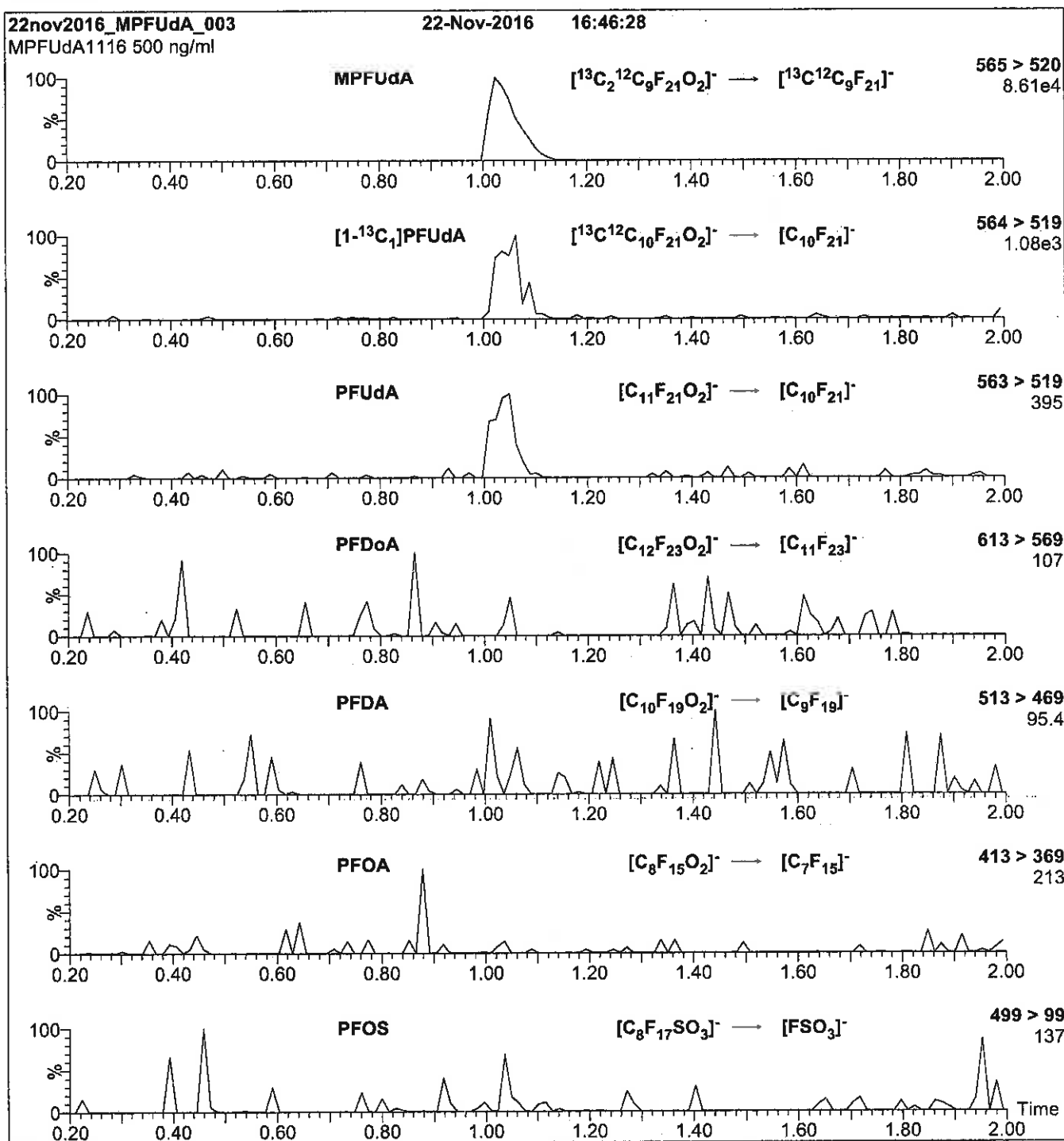
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 65  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: MPFUdA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml MPFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.46e-3  
Collision Energy (eV) = 11

Reagent

---

**LCN-EtFOSA-M\_00003**

R: 8/23/16 SBC



715563  
ID: LCN-EtFOSA-M\_00003  
Exp: 05/24/21 Prod: SBC  
N-EtFOSA-M

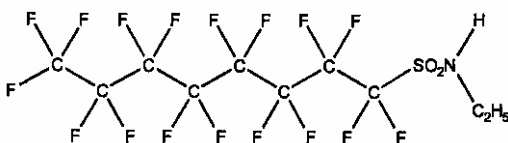


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSA-M      **LOT NUMBER:** NEtFOSA0516M  
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide

**STRUCTURE:**      **CAS #:** 4151-50-2



**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>2</sub>S      **MOLECULAR WEIGHT:** 527.20  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/24/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/24/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 05/27/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

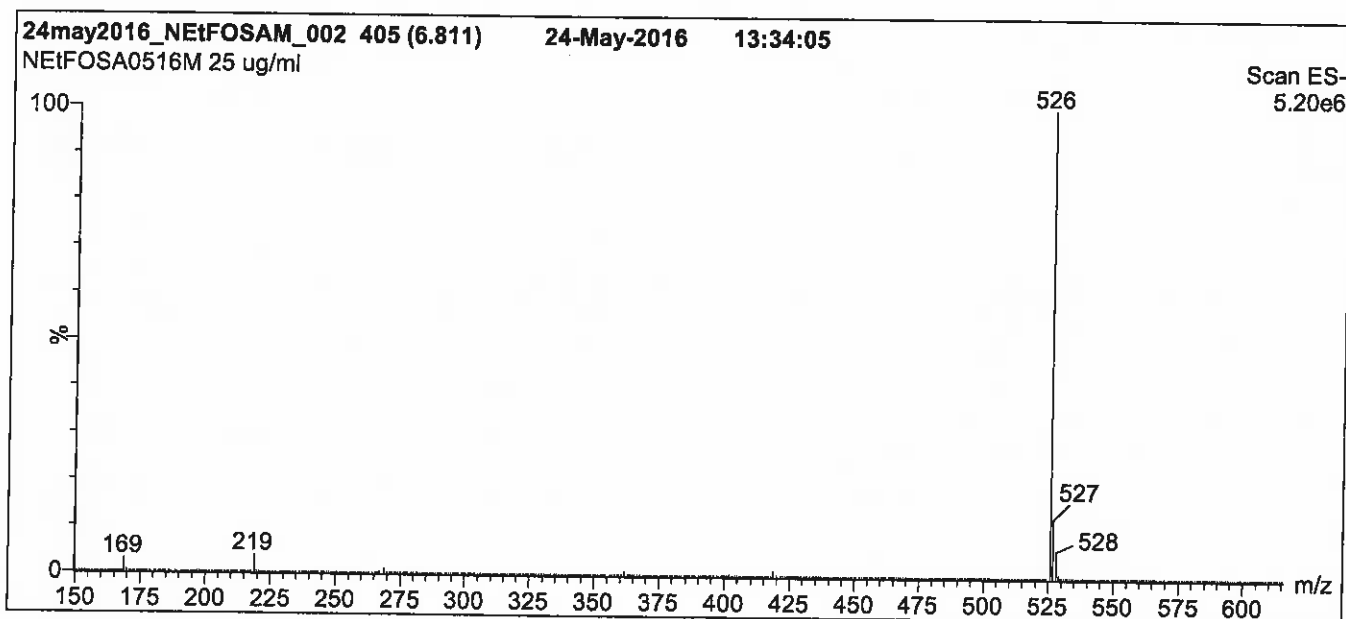
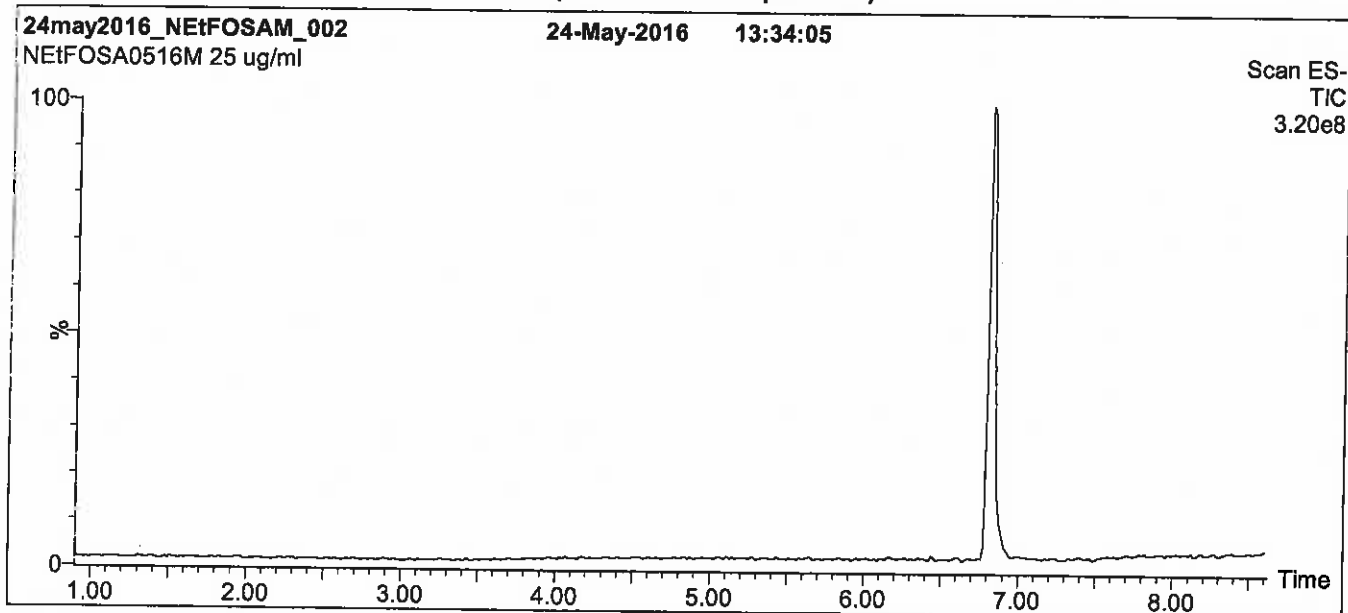
### **QUALITY MANAGEMENT:**

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**Figure 1: N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

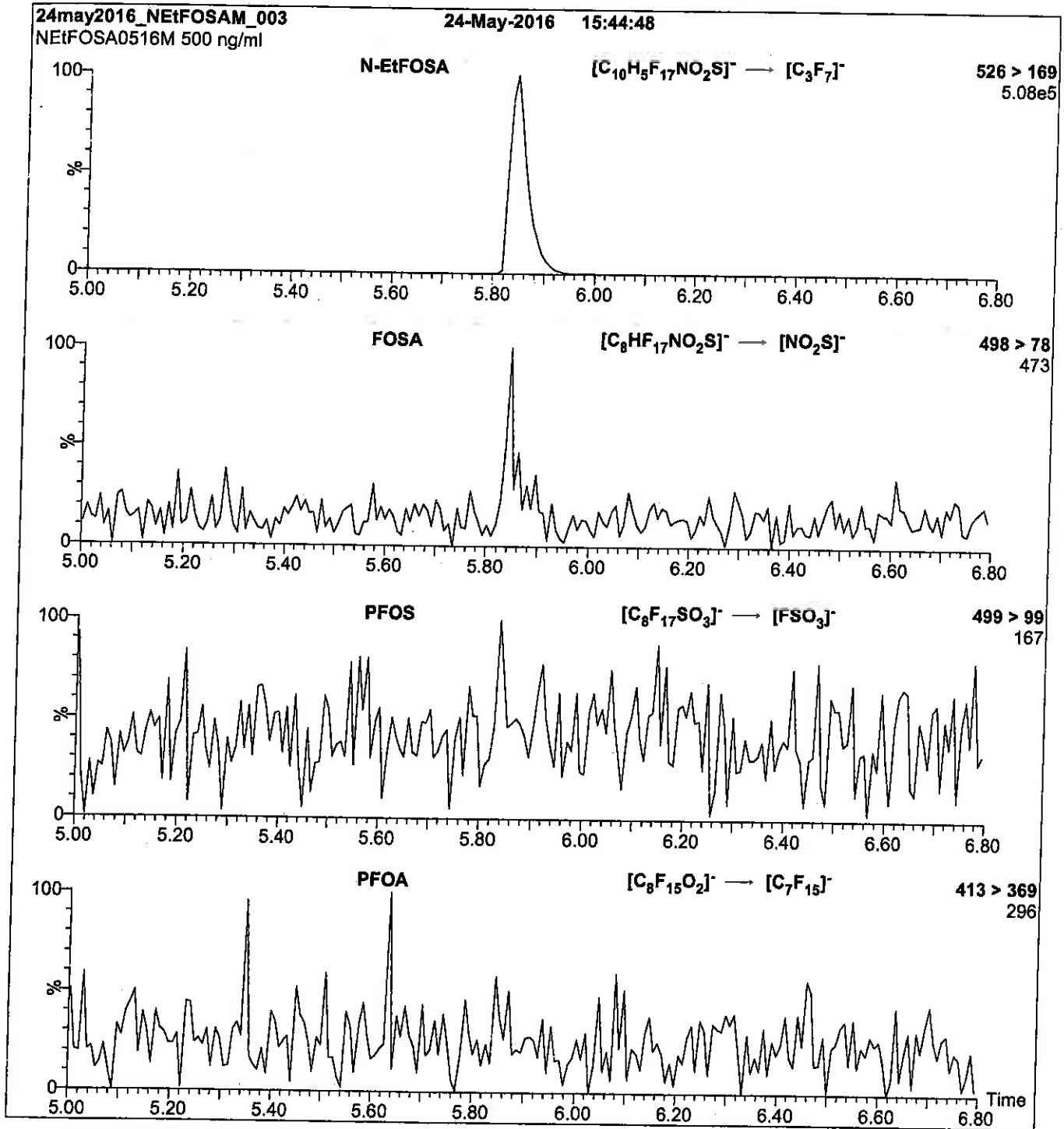
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.50  
 Cone Voltage (V) = 40.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml N-EtFOSA-M)

MS Parameters

Collision Gas (mbar) = 3.54e-3  
Collision Energy (eV) = 30

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min



Reagent

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**LCN-EtFOSA-M\_00004**

R: 12/29/16 SKV



# WELLINGTON LABORATORIES

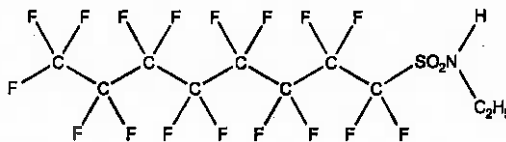
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSA-M  
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamide

**LOT NUMBER:** NEtFOSA0516M

**STRUCTURE:**

**CAS #:** 4151-50-2



**MOLECULAR FORMULA:** C<sub>10</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>2</sub>S  
**CONCENTRATION:** 50 ± 2.5 µg/ml  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/24/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/24/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 527.20  
**SOLVENT(S):** Methanol

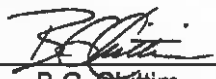
**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim  
**Date:** 05/27/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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### **HOMOGENEITY:**

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The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

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All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

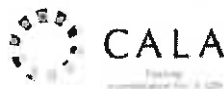
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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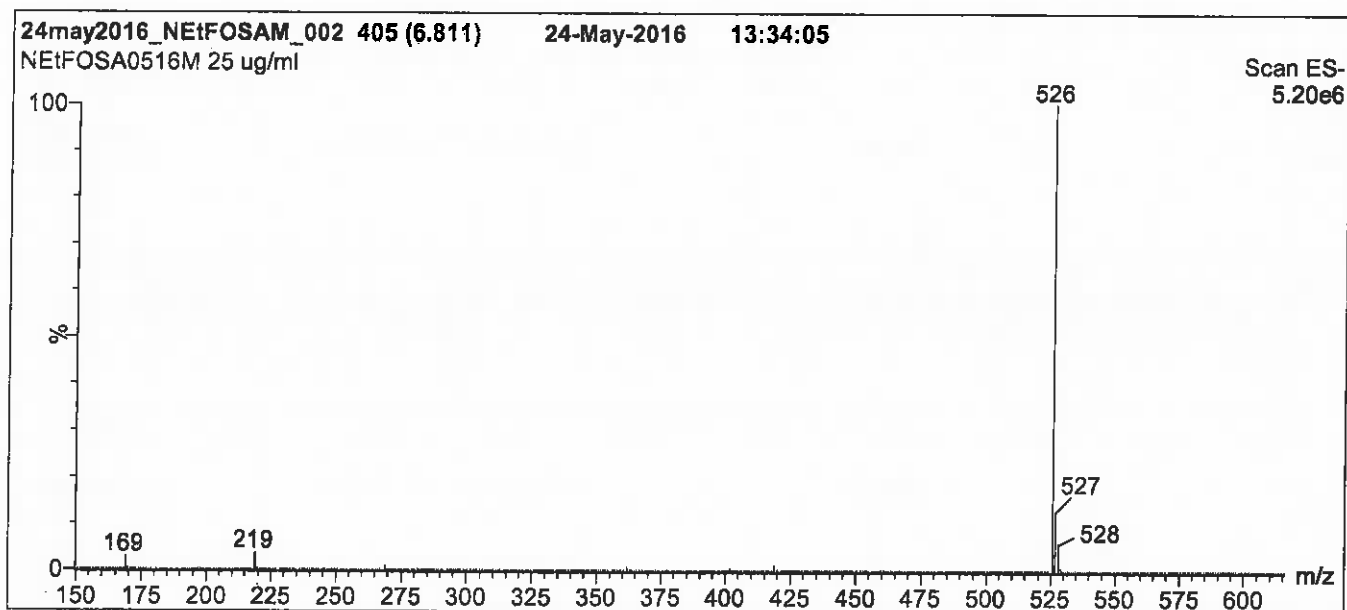
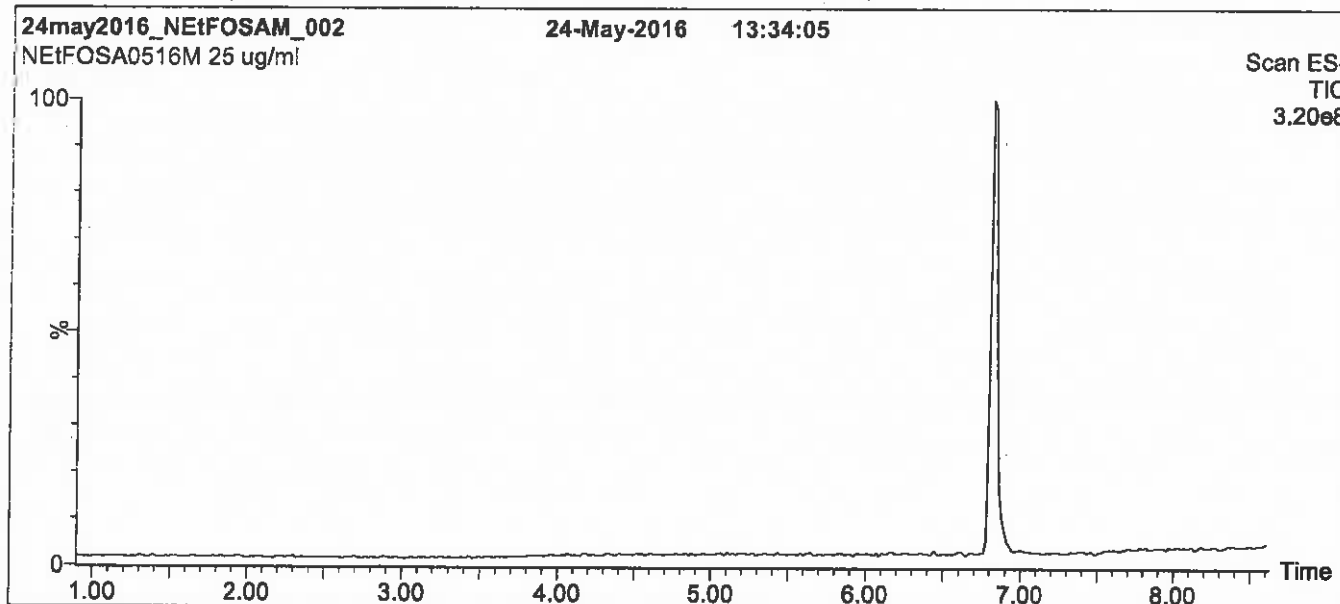
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**Figure 1: N-EtFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for 1.5  
min before returning to initial conditions in 0.5 min.  
Time: 10 min

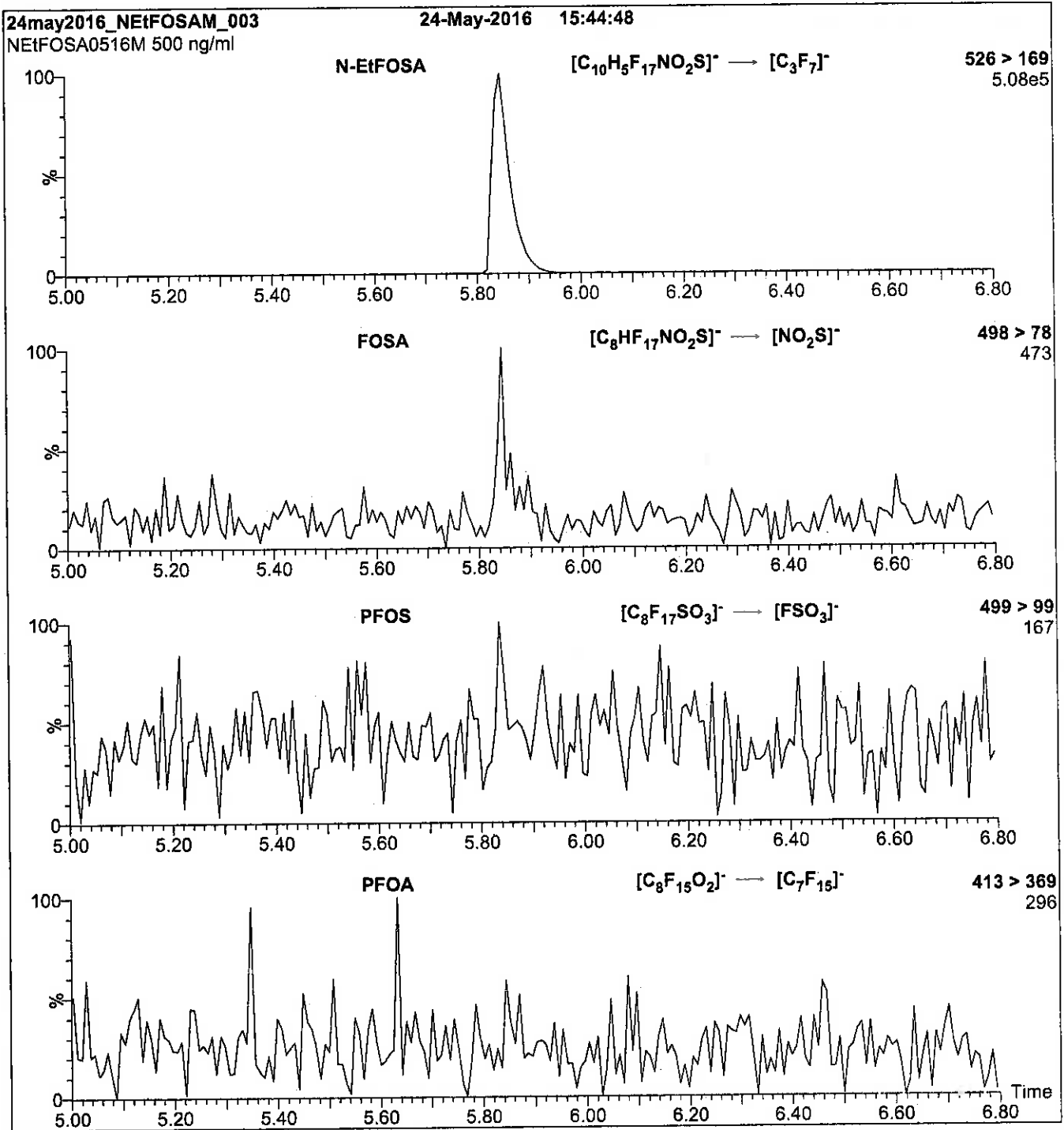
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = 40.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: N-EtFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml N-EtFOSA-M)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.54e-3  
Collision Energy (eV) = 30

Reagent

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**LCN-ETFOSAA\_00002**

R: 8/23/16 SBC



715561  
ID: LCN-EiFOSAA\_00002  
Exp: 01/2021 Pp# 98C  
N-EiFOSAA

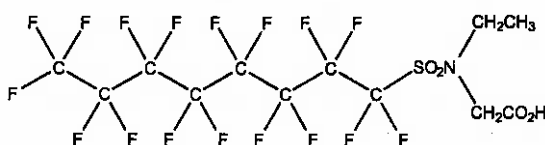


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-EtFOSAA **LOT NUMBER:** NEiFOSAA0116  
**COMPOUND:** N-ethylperfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:** **CAS #:** 2991-50-6



**MOLECULAR FORMULA:** C<sub>12</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>4</sub>S **MOLECULAR WEIGHT:** 585.23  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/20/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 01/20/2021  
**RECOMMENDED STORAGE:** Refrigerate ampoule


### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 01/21/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • Info@well-labs.com

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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### **QUALITY MANAGEMENT:**

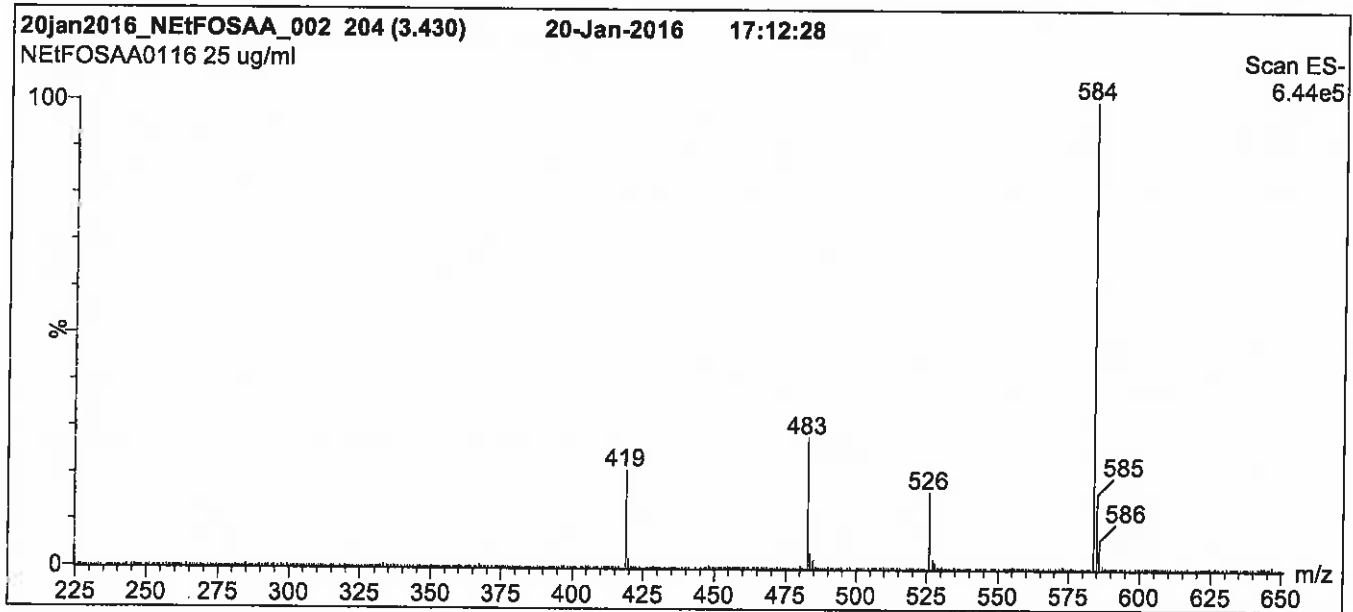
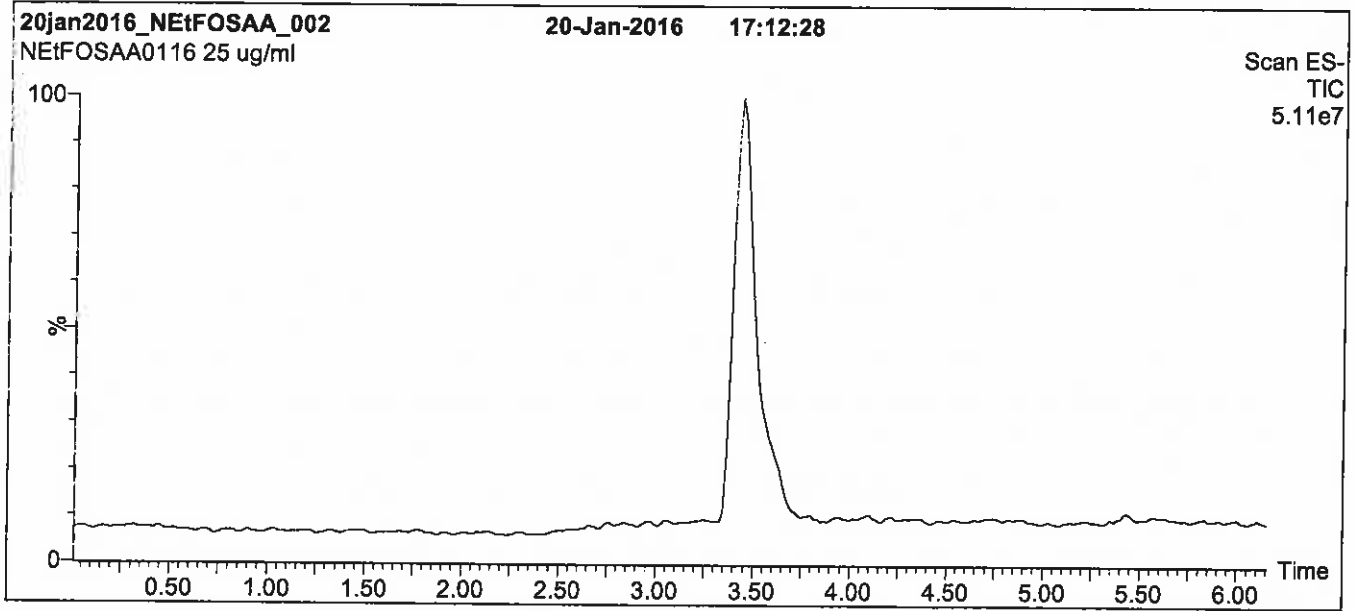
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**Figure 1: N-EtFOSAA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

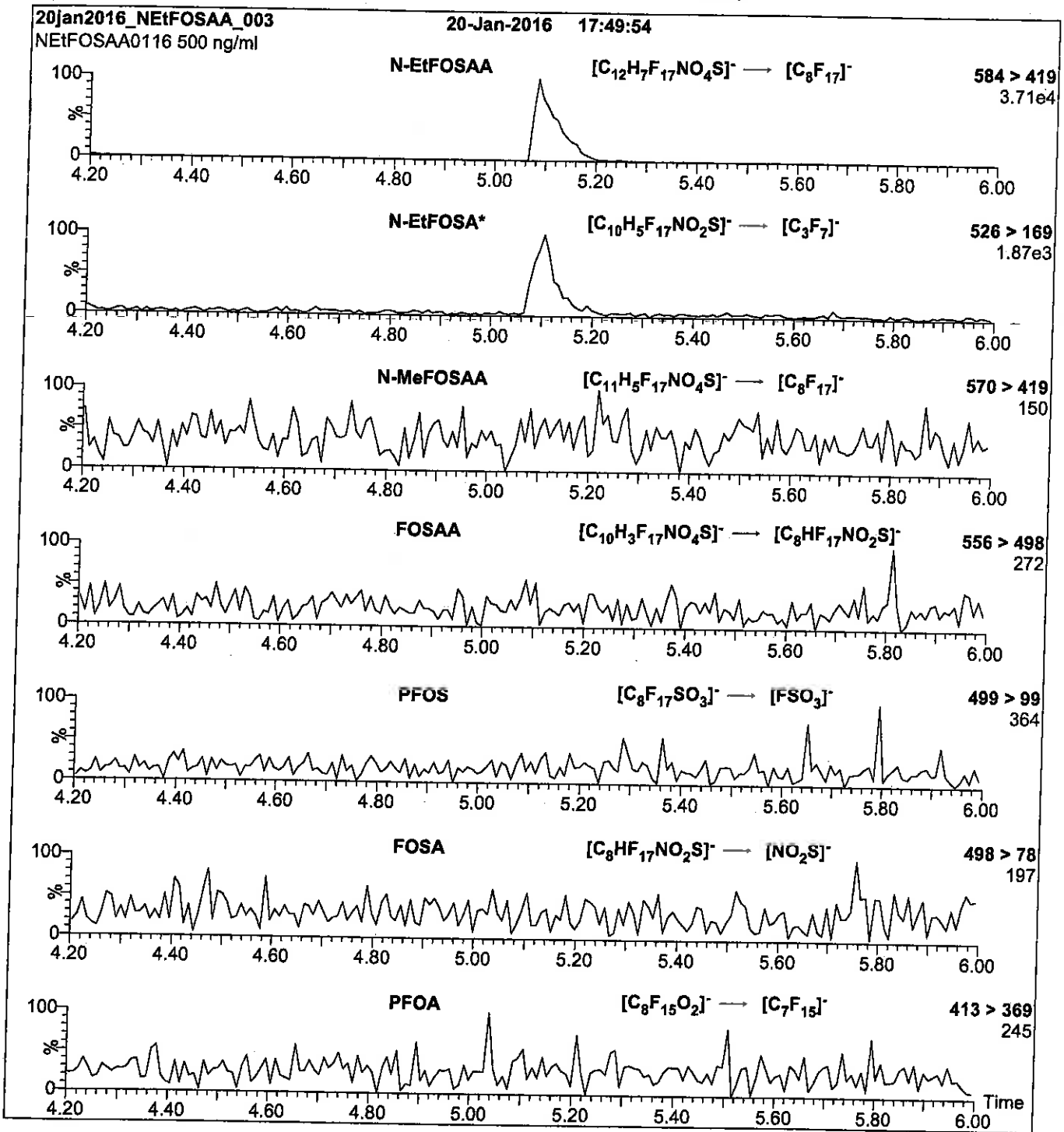
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 35.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: N-EtFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



**Note:** N-EtFOSA is formed by fragmentation of N-EtFOSAA.

**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml N-EtFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.66e-3  
Collision Energy (eV) = 25

Reagent

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**LCN-MeFOSA-M\_00002**

R: 8/23/16 SBC



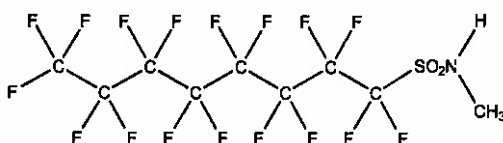
715564  
ID: LCN-MeFOSA-M\_00002  
Exp: 05/24/21 Pppl: SBC  
N-MeFOSA-M



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M      **LOT NUMBER:** NMeFOSA0516M  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide  
**STRUCTURE:**      **CAS #:** 31506-32-8



**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>4</sub>F<sub>17</sub>NO<sub>2</sub>S      **MOLECULAR WEIGHT:** 513.17  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/24/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/24/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 05/26/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

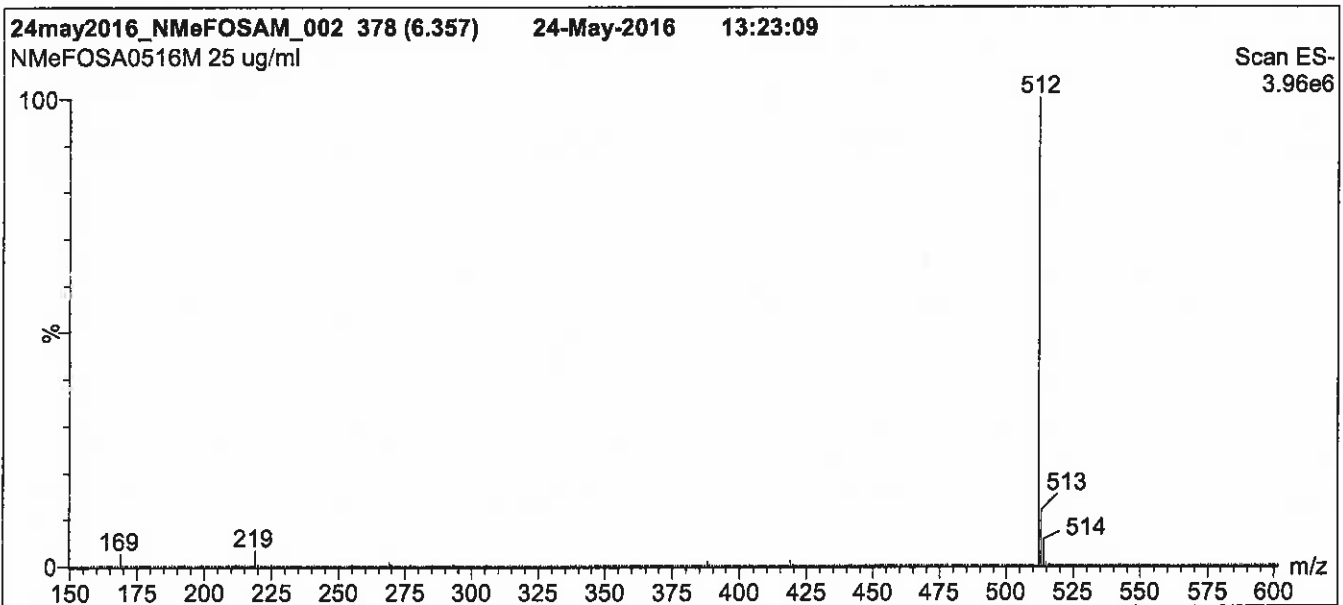
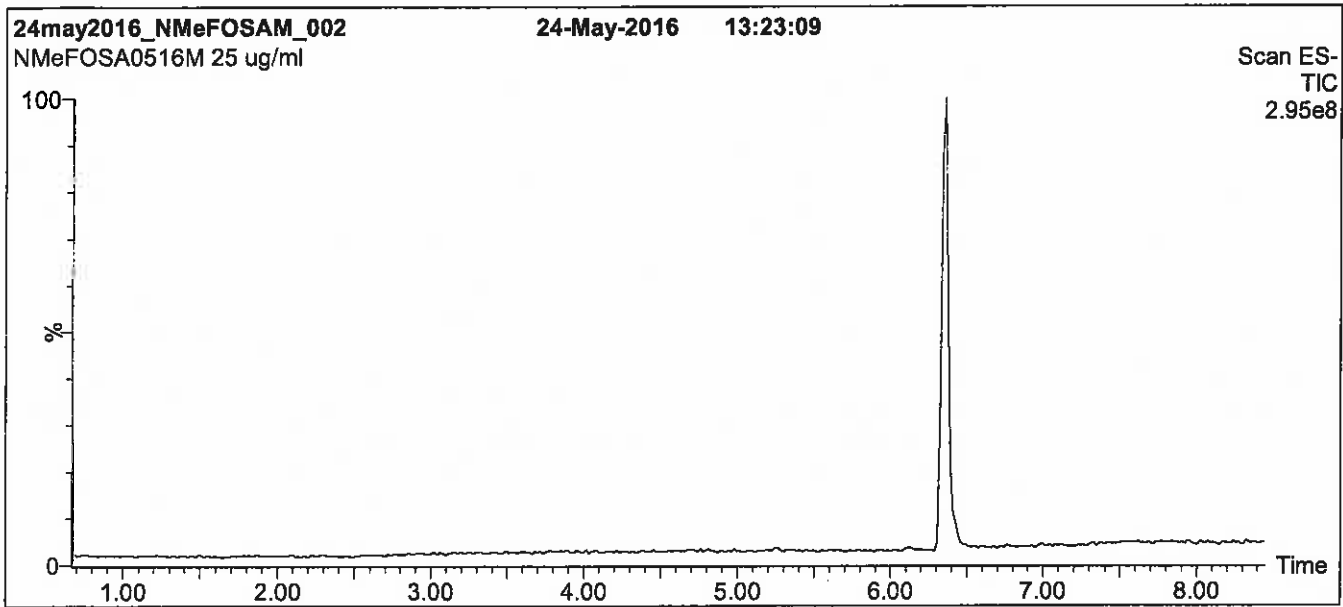
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for  
1.5 min before returning to initial conditions in 0.5 min.  
Time: 10 min

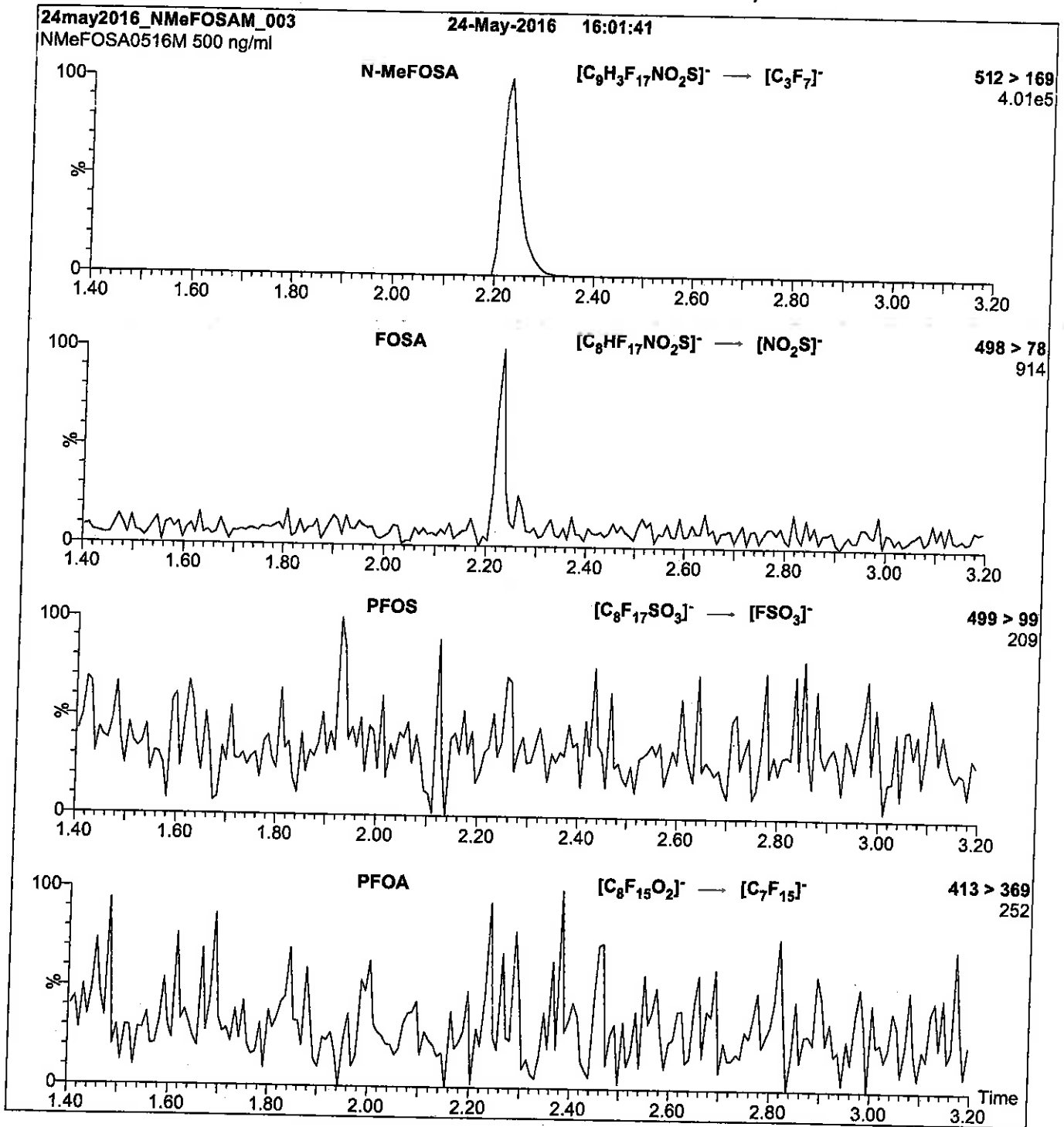
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = 40.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml N-MeFOSA-M)

**MS Parameters**

Collision Gas (mbar) = 3.54e-3  
Collision Energy (eV) = 30

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

Reagent

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**LCN-MeFOSA-M\_00003**



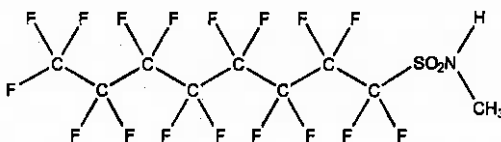


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSA-M **LOT NUMBER:** NMeFOSA0516M  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamide

**STRUCTURE:** **CAS #:** 31506-32-8



**MOLECULAR FORMULA:** C<sub>8</sub>H<sub>4</sub>F<sub>17</sub>NO<sub>2</sub>S **MOLECULAR WEIGHT:** 513.17  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/24/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/24/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

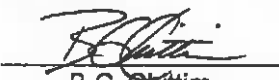
### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

See page 2 for further details.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
 B.G. Chittim **Date:** 05/26/2016  
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **TRACEABILITY:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

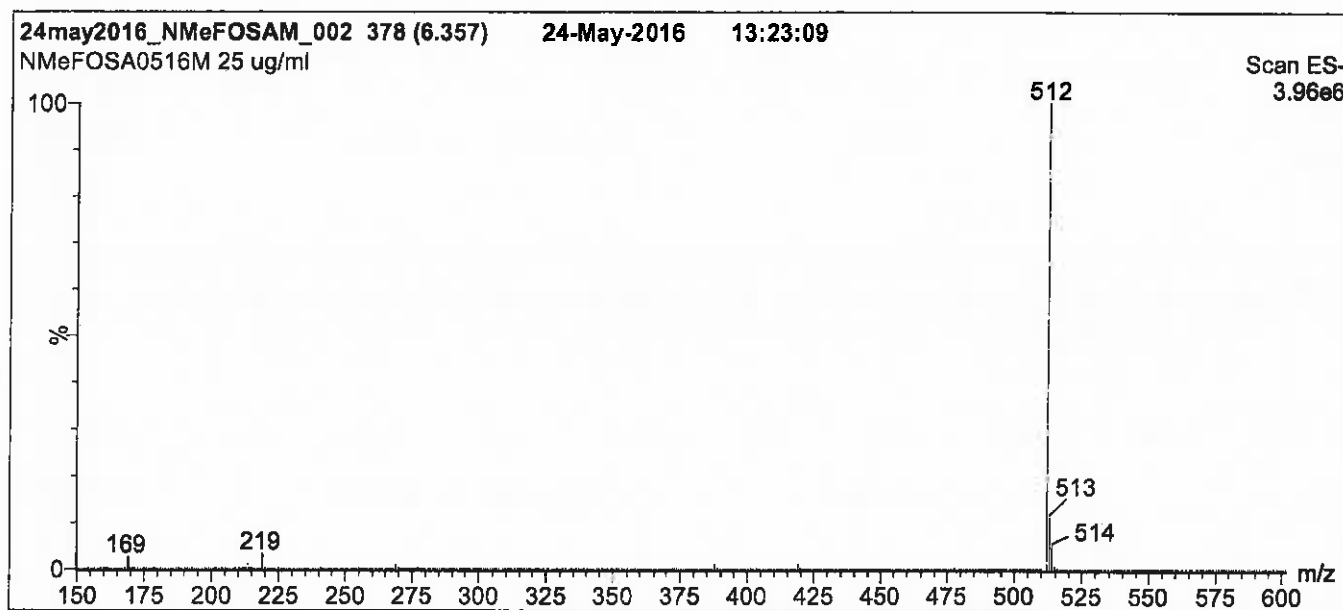
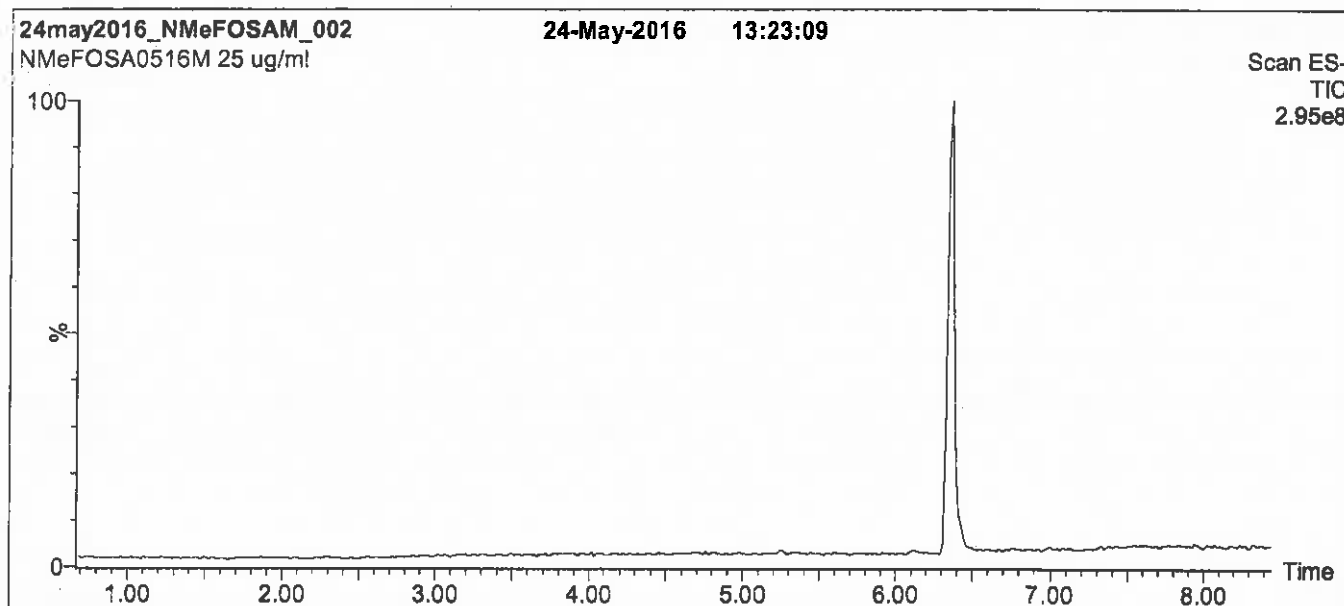
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: N-MeFOSA-M; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>,  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 45% H<sub>2</sub>O / 55% (80:20 MeOH:ACN)  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7.5 min and hold for  
1.5 min before returning to initial conditions in 0.5 min.  
Time: 10 min

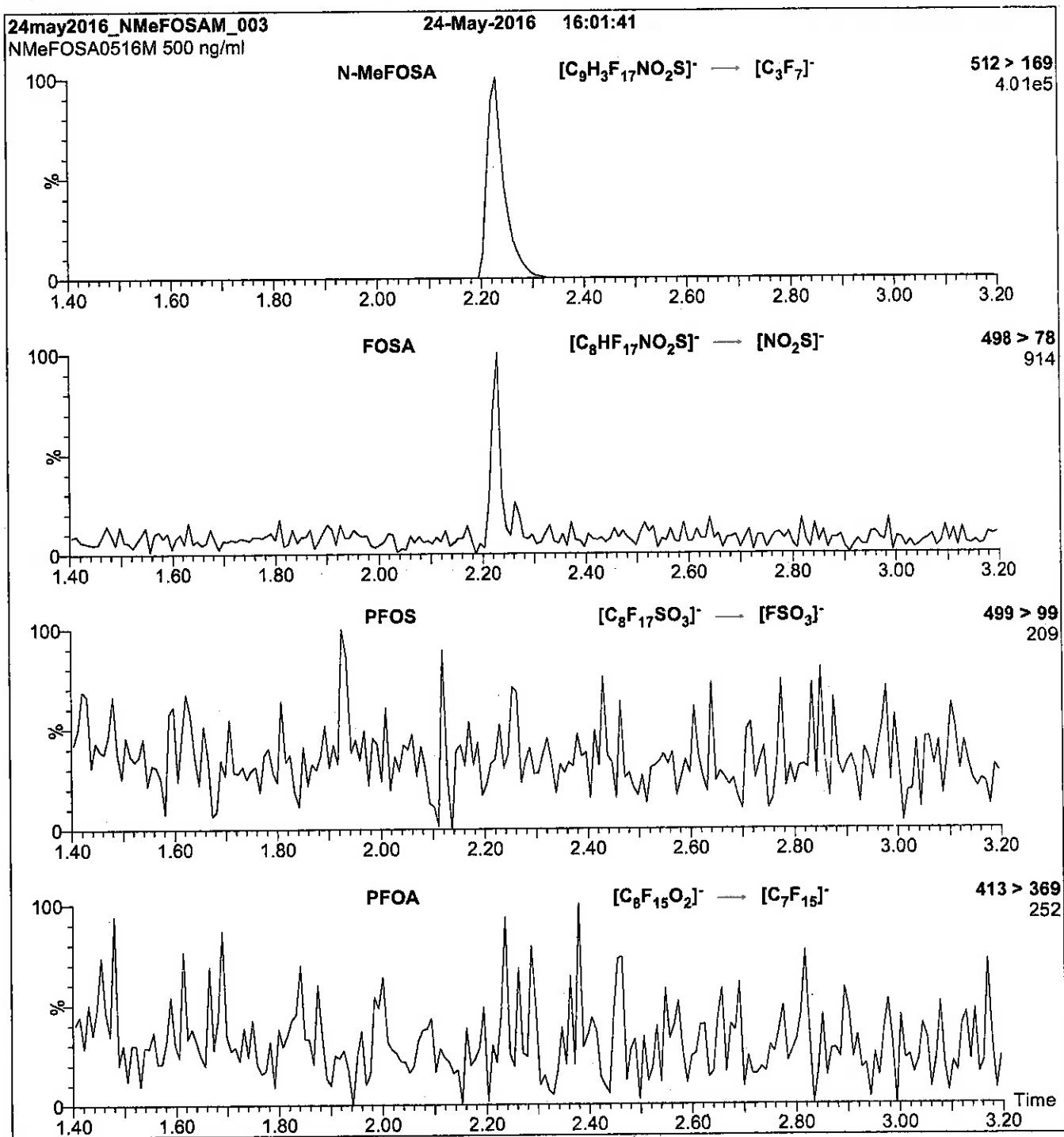
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.50  
Cone Voltage (V) = 40.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: N-MeFOSA-M; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml N-MeFOSA-M)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.54e-3  
Collision Energy (eV) = 30

Reagent

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**LCN-MeFOSAA\_00003**

R: 8/23/16 SAE

715562  
ID: LCN-MeFOSAA\_00003  
Exp: 01/20/21 Prod. SEC  
N-MeFOSAA

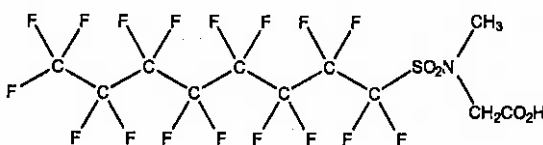


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** N-MeFOSAA      **LOT NUMBER:** NMeFOSAA0116  
**COMPOUND:** N-methylperfluoro-1-octanesulfonamidoacetic acid

**STRUCTURE:**      **CAS #:** 2355-31-9



**MOLECULAR FORMULA:** C<sub>11</sub>H<sub>8</sub>F<sub>17</sub>NO<sub>4</sub>S      **MOLECULAR WEIGHT:** 571.21  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/20/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 01/20/2021  
**RECOMMENDED STORAGE:** Refrigerate ampoule


### DOCUMENTATION/ DATA ATTACHED:

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent the conversion of the acetic acid moiety to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 01/21/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

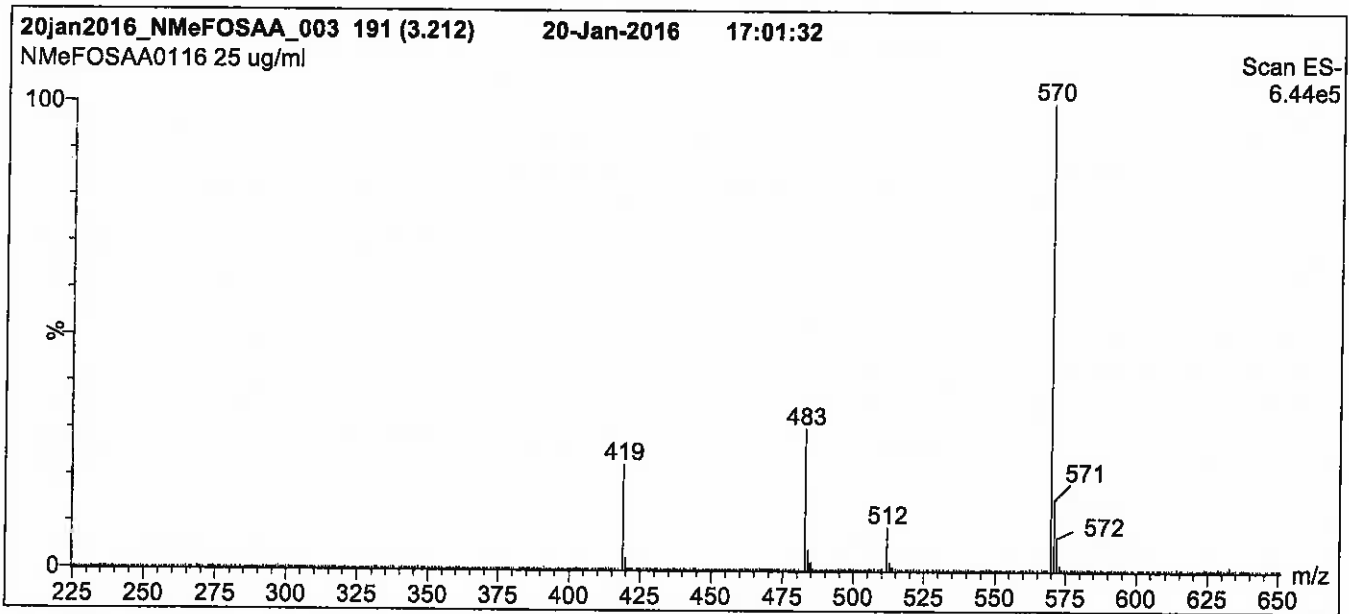
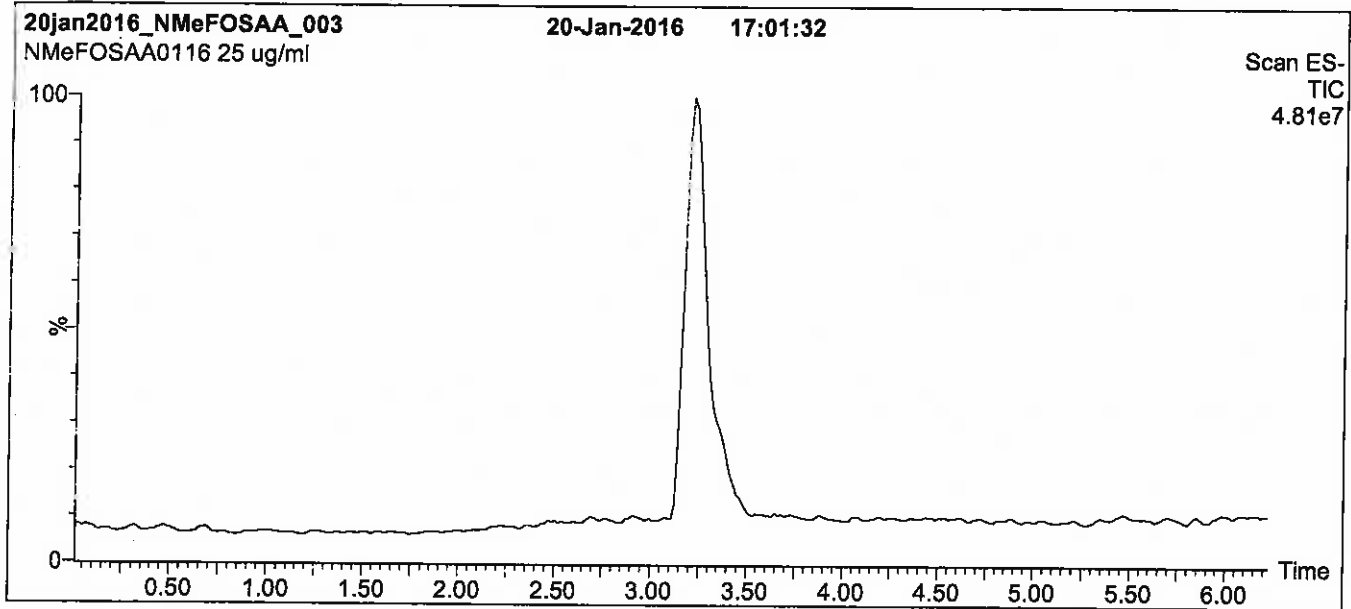
### **QUALITY MANAGEMENT:**

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**Figure 1: N-MeFOSAA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

**MS Parameters**

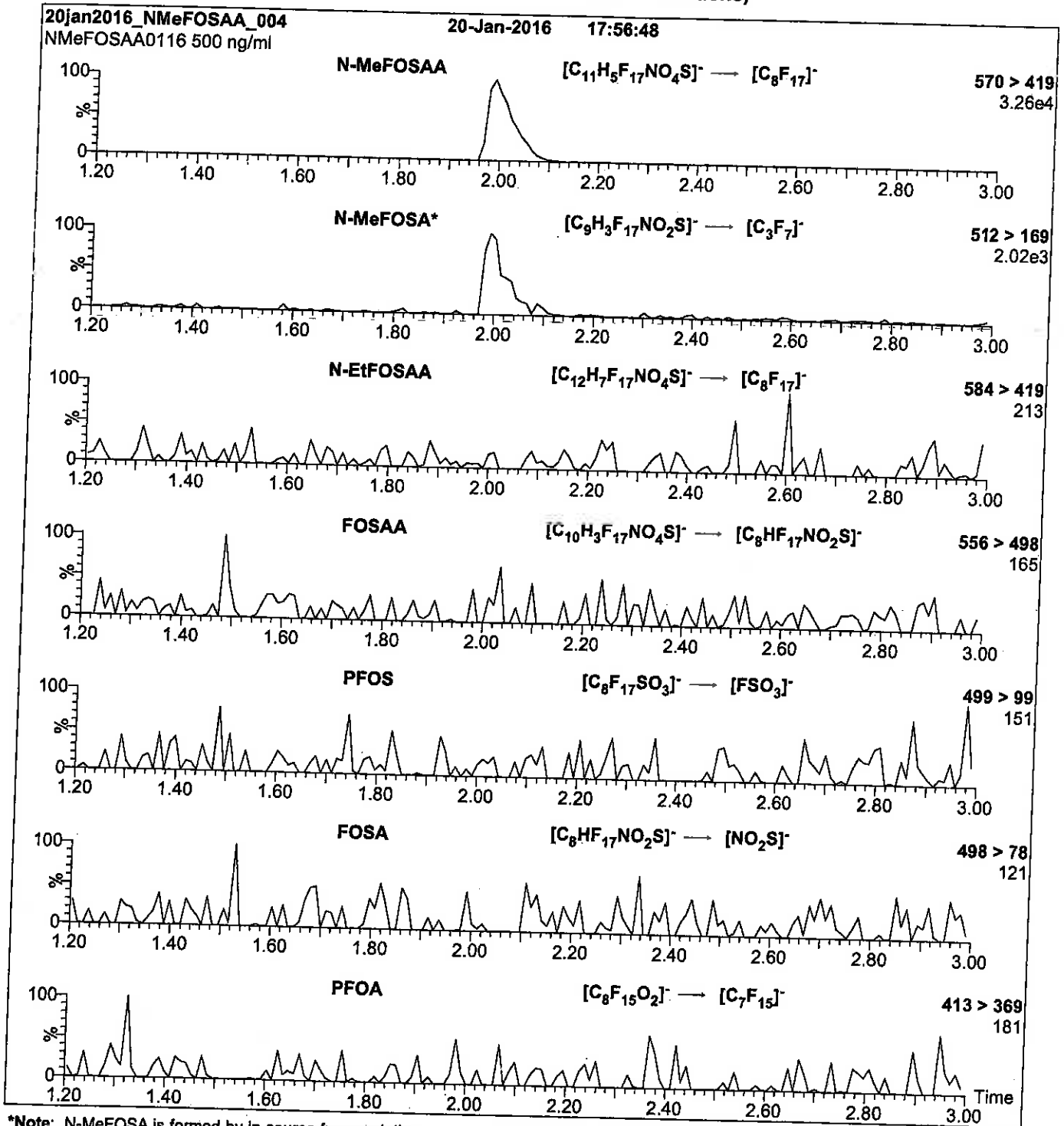
Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 35.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

Flow: 300  $\mu$ l/min



**Figure 2: N-MeFOSAA; LC/MS/MS Data (Selected MRM Transitions)**



\*Note: N-MeFOSA is formed by in-source fragmentation.

**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml N-MeFOSAA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.66e-3  
Collision Energy (eV) = 25

Reagent

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**LCPFACMXB\_00007**



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PFAC-MXB**

**Solution/Mixture of Native  
Perfluoroalkylcarboxylic Acids and  
Native Perfluoroalkylsulfonates**

**PRODUCT CODE:** PFAC-MXB  
**LOT NUMBER:** PFACMXB1115  
**SOLVENT(S):** Methanol / Water (<1%)  
**DATE PREPARED:** (mm/dd/yyyy) 11/04/2015  
**LAST TESTED:** (mm/dd/yyyy) 11/06/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 11/06/2020  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

PFAC-MXB is a solution/mixture of thirteen native perfluoroalkylcarboxylic acids (C<sub>4</sub>-C<sub>14</sub>, C<sub>16</sub>, and C<sub>18</sub>) and four native perfluoroalkylsulfonates (C<sub>4</sub>, C<sub>6</sub>, C<sub>8</sub> and C<sub>10</sub>). The full name, abbreviation and concentration for each of the components are given in Table A.

The individual perfluoroalkylcarboxylic acids and perfluoroalkylsulfonates all have chemical purities of >98%.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Components and Concentrations of the Solution/Mixture  
 Figure 1: LC/MS Data (SiR)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)  
 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 carboxylic acids to their respective methyl esters.

**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**

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### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**


This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

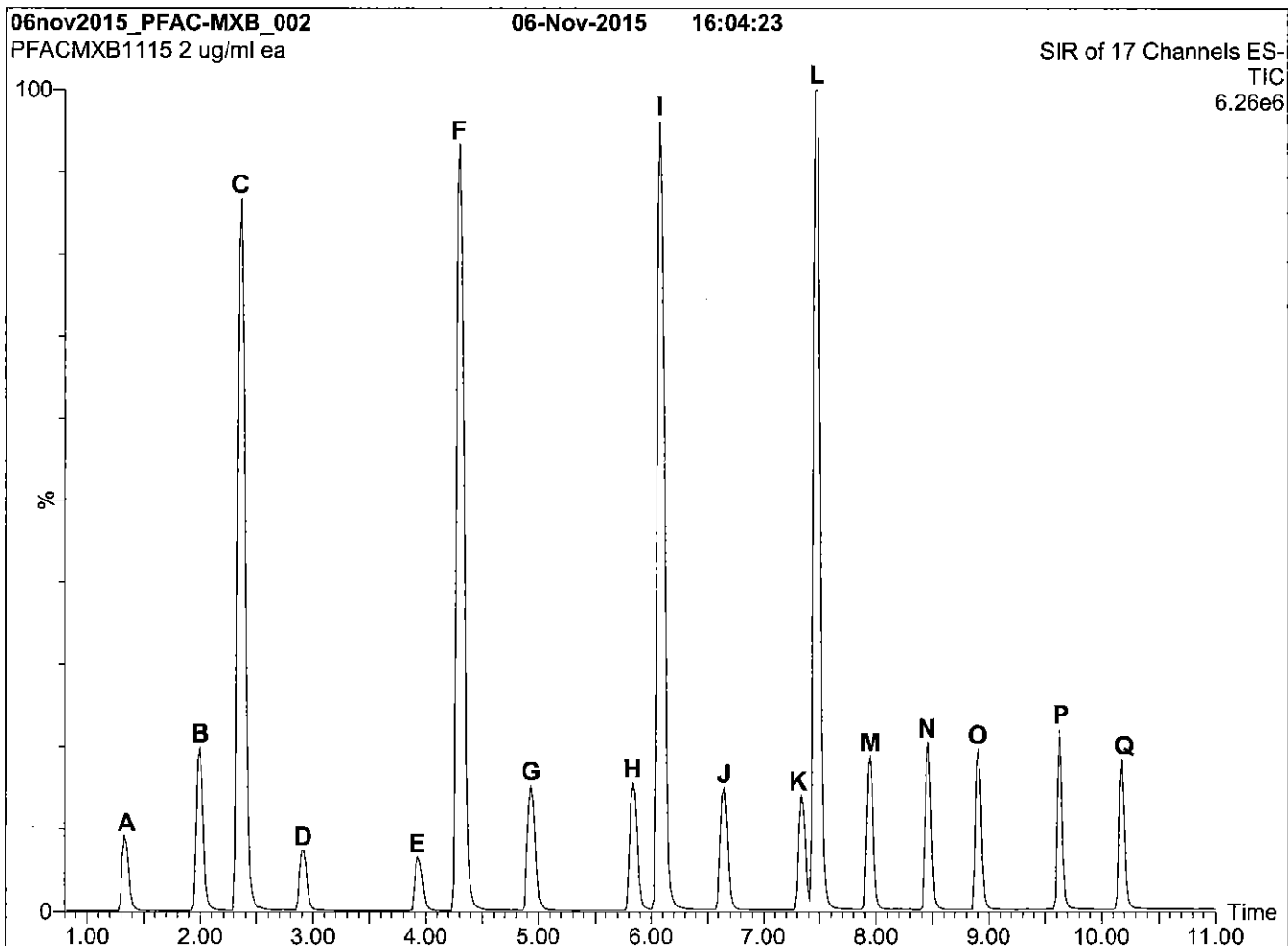
**Table A: PFAC-MXB; Components and Concentrations (ng/ml, ± 5% in Methanol / Water (<1%))**

Name	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Perfluoro-n-butanoic acid	PFBA	2000		A
Perfluoro-n-pentanoic acid	PFPeA	2000		B
Perfluoro-n-hexanoic acid	PFHxA	2000		D
Perfluoro-n-heptanoic acid	PFHpA	2000		E
Perfluoro-n-octanoic acid	PFOA	2000		G
Perfluoro-n-nonanoic acid	PFNA	2000		H
Perfluoro-n-decanoic acid	PFDA	2000		J
Perfluoro-n-undecanoic acid	PFUdA	2000		K
Perfluoro-n-dodecanoic acid	PFDoA	2000		M
Perfluoro-n-tridecanoic acid	PFTrDA	2000		N
Perfluoro-n-tetradecanoic acid	PFTeDA	2000		O
Perfluoro-n-hexadecanoic acid	PFHxDA	2000		P
Perfluoro-n-octadecanoic acid	PFODA	2000		Q
Name	Abbreviation	Concentration (ng/ml)		Peak Assignment in Figure 1
		as the salt	as the anion	
Potassium perfluoro-1-butanesulfonate	L-PFBS	2000	1770	C
Sodium perfluoro-1-hexanesulfonate	L-PFHxS	2000	1890	F
Sodium perfluoro-1-octanesulfonate	L-PFOS	2000	1910	I
Sodium perfluoro-1-decanesulfonate	L-PFDS	2000	1930	L

Certified By:   
B.G. Chittim

Date: 11/11/2015  
(mm/dd/yyyy)

**Figure 1: PFAC-MXB; LC/MS Data (Total Ion Current Chromatogram; SIR)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 55% H<sub>2</sub>O / 45% (80:20 MeOH:ACN)  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 95% organic over 10 min and hold for 1 min  
 before returning to initial conditions in 0.5 min.

Time: 12 min

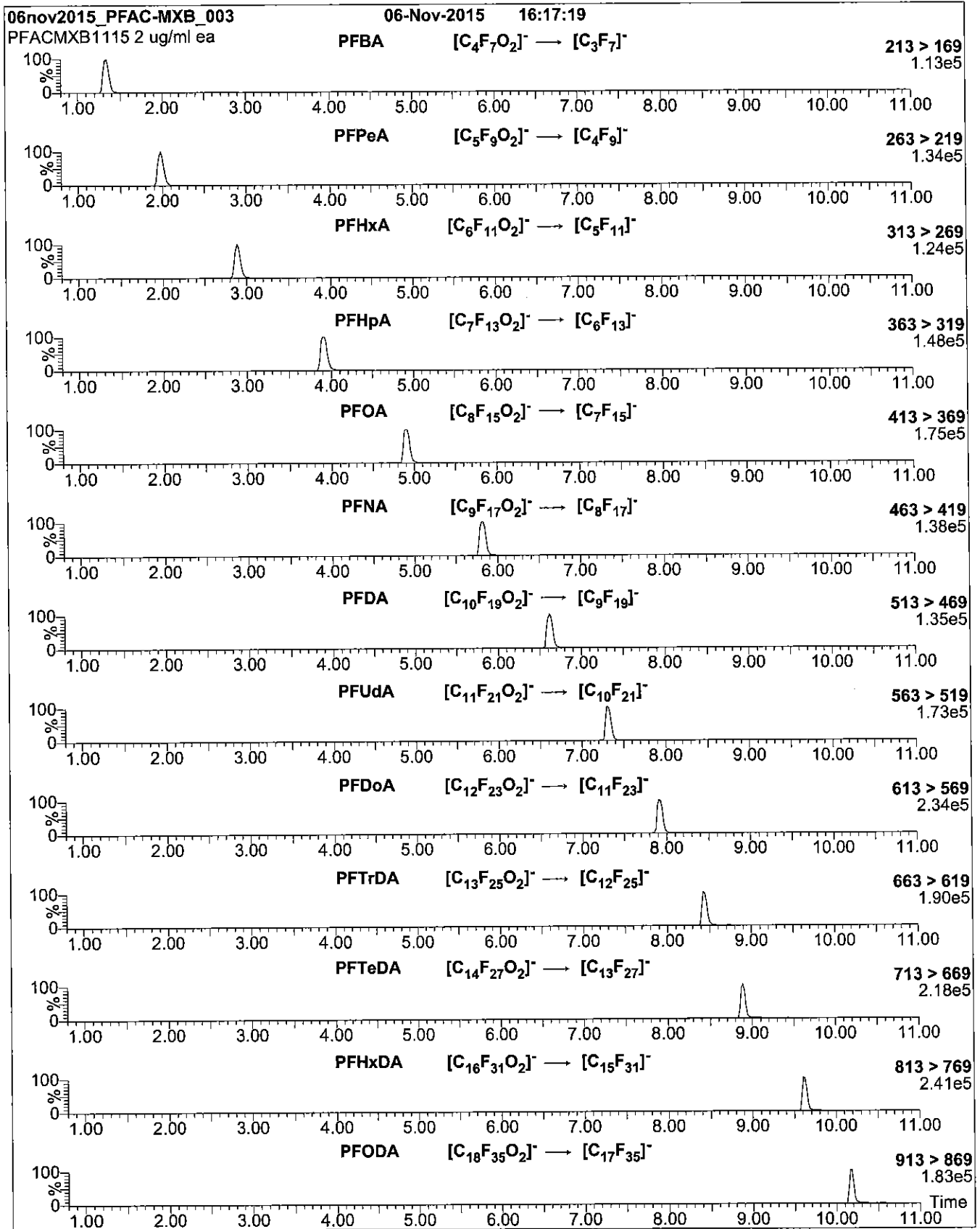
**Flow:** 300  $\mu$ l/min

**MS Parameters**

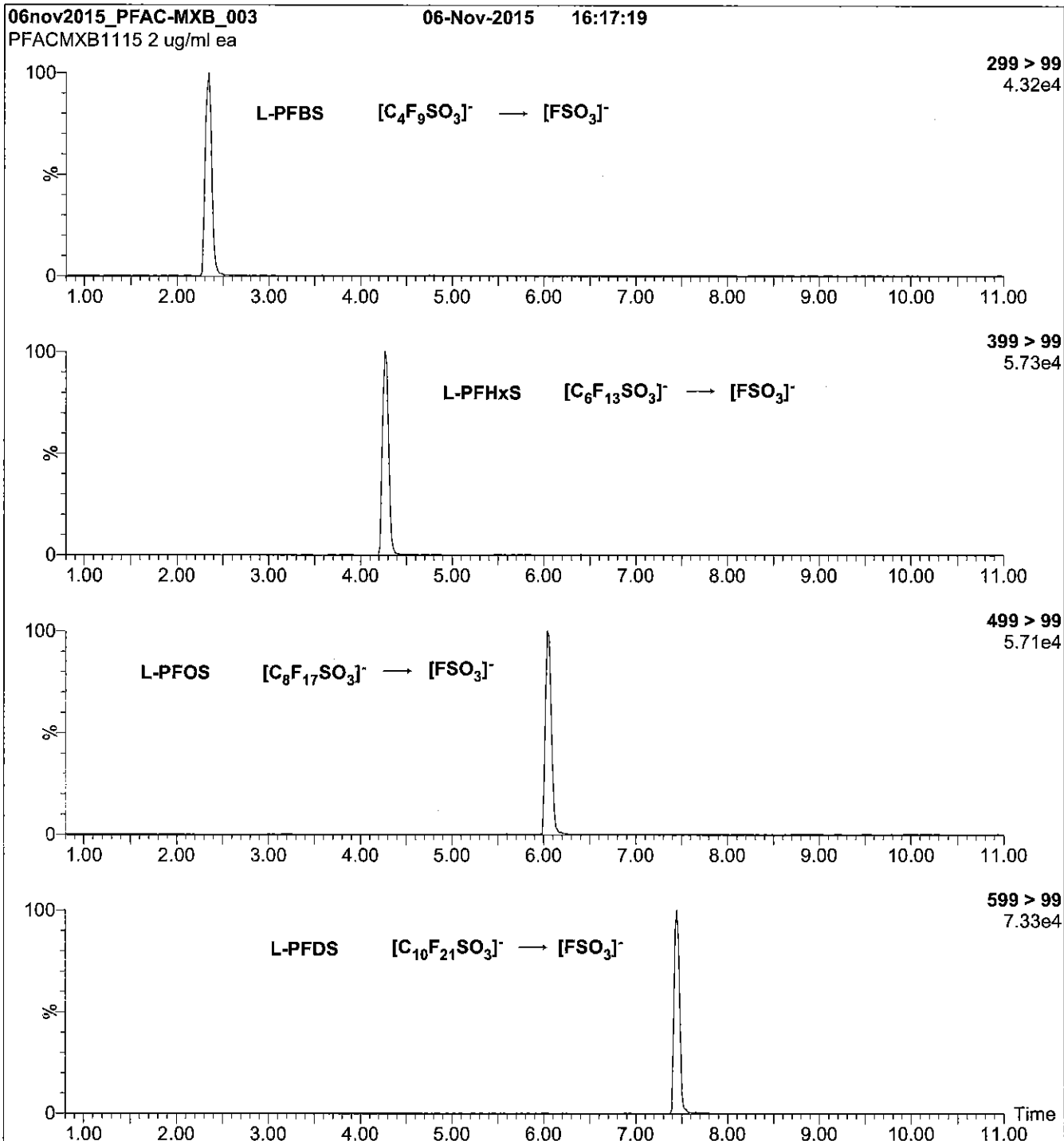
Experiment: SIR of 17 Channels

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = variable (10-70)  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFAC-MXB; LC/MS/MS Data (Selected MRM Transitions)**



**Figure 3: PFAC-MXB; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figures 2 and 3:**

Injection:    on-column (PFAC-MXB)  
 Mobile phase: Same as Figure 1  
 Flow:        300  $\mu$ /min

**MS Parameters**  
 Collision Gas (mbar) = 3.24e-3  
 Collision Energy (eV) = 8-50 (variable)



Reagent

---

**LCPFBA\_00005**

Scanned  
10/16/14

R: SBC 9/13/16



730531  
ID: LCPFBA\_00005  
Exp: 05/27/21 Prpd: SBC  
PF-n-butanolic acid



730532  
ID: LCPFBA\_00006  
Exp: 05/27/21 Prpd: SBC  
PF-n-butanolic acid



# WELLINGTON LABORATORIES

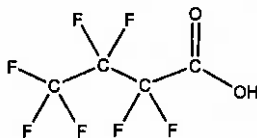
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFBA  
**COMPOUND:** Perfluoro-n-butanolic acid

**LOT NUMBER:** PFBA0516

**STRUCTURE:**

**CAS #:** 375-22-4



**MOLECULAR FORMULA:** C<sub>4</sub>HF<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 214.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/27/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/27/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole.eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim  
**Date:** 05/31/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

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### **HAZARDS:**

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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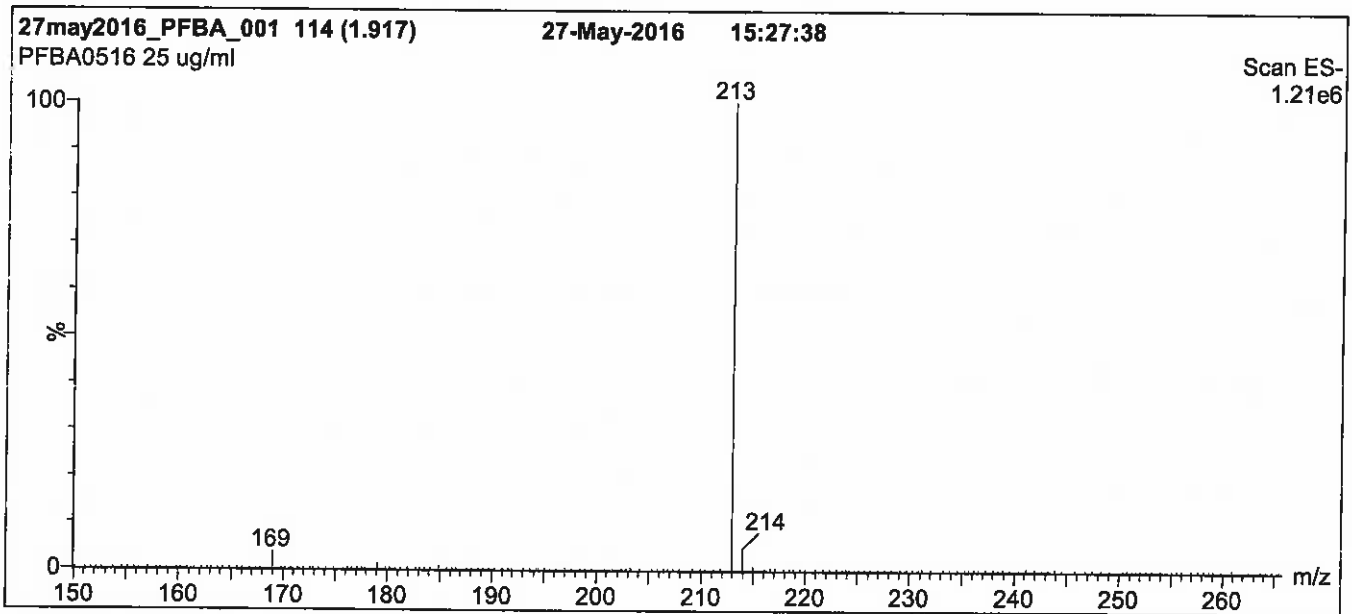
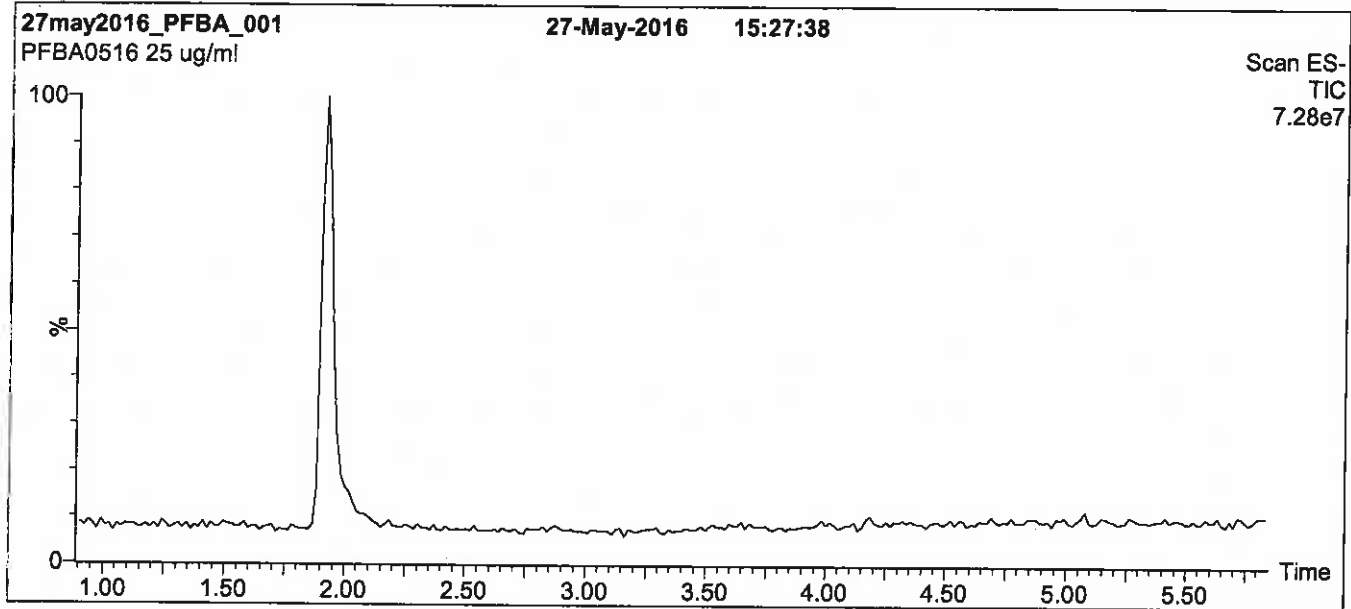
### **QUALITY MANAGEMENT:**

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**Figure 1: PFBA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 30% (80:20 MeOH:ACN) / 70% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

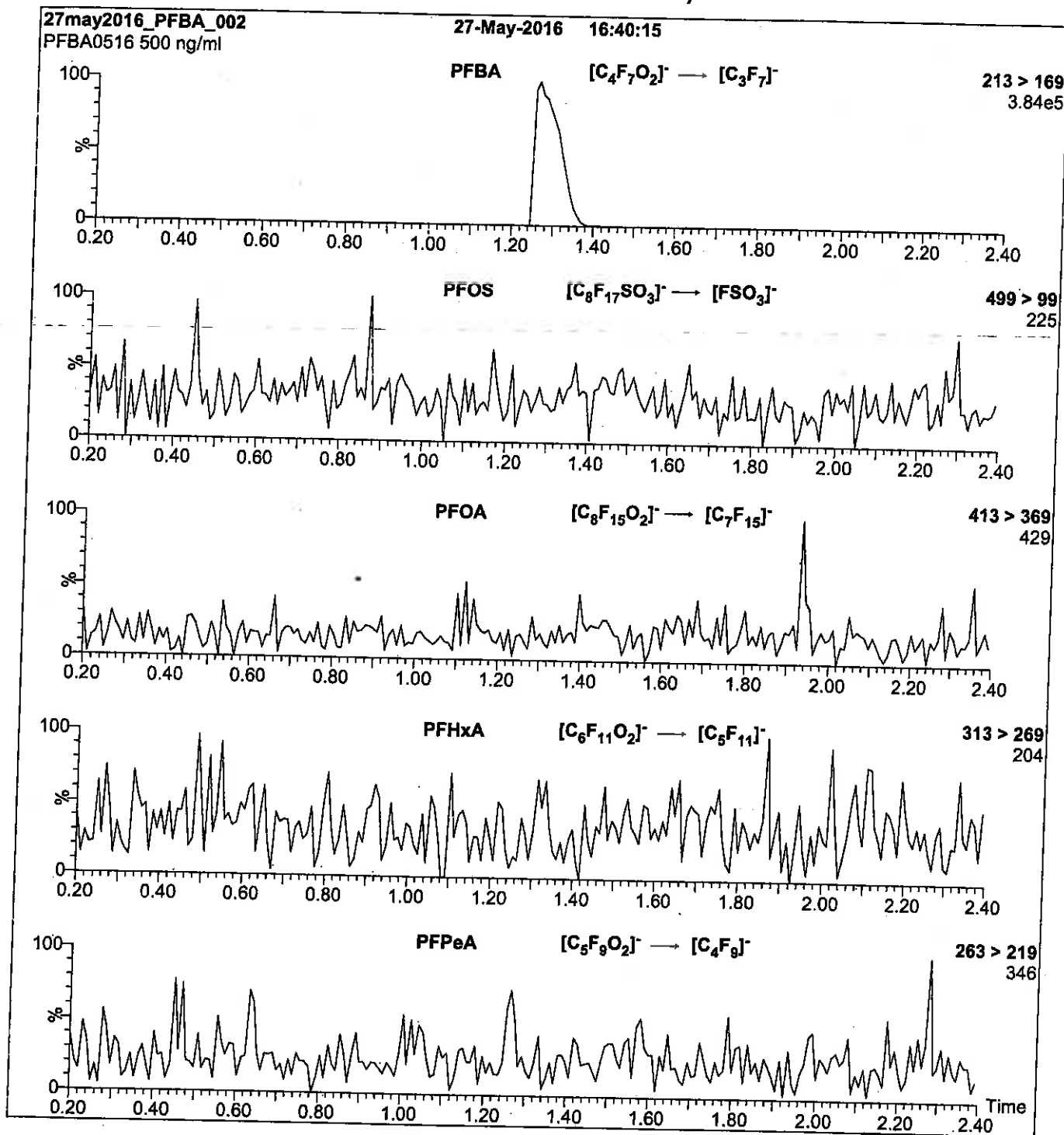
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 10.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFBA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml PFBA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.62e-3  
Collision Energy (eV) = 10

Reagent

---

**LCPFBA\_00006**

Scanned  
10/16/14

R: SBC 9/13/16



730531  
ID: LCPFBA\_00005  
Exp: 05/27/21 Prpd: SBC  
PF-n-butanolic acid



730532  
ID: LCPFBA\_00006  
Exp: 05/27/21 Prpd: SBC  
PF-n-butanolic acid



# WELLINGTON LABORATORIES

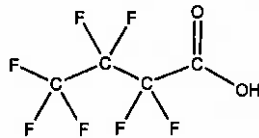
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFBA  
**COMPOUND:** Perfluoro-n-butanolic acid

**LOT NUMBER:** PFBA0516

**STRUCTURE:**

**CAS #:** 375-22-4



**MOLECULAR FORMULA:** C<sub>4</sub>HF<sub>7</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 214.04  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/27/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/27/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole.eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim

**Date:** 05/31/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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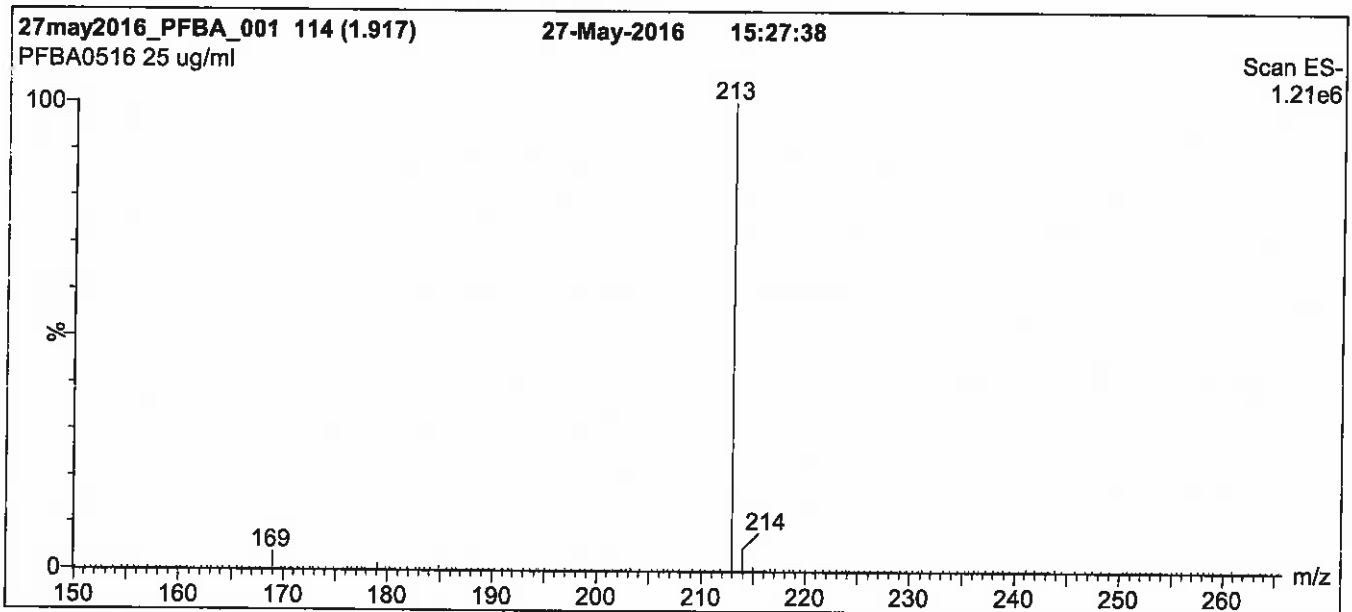
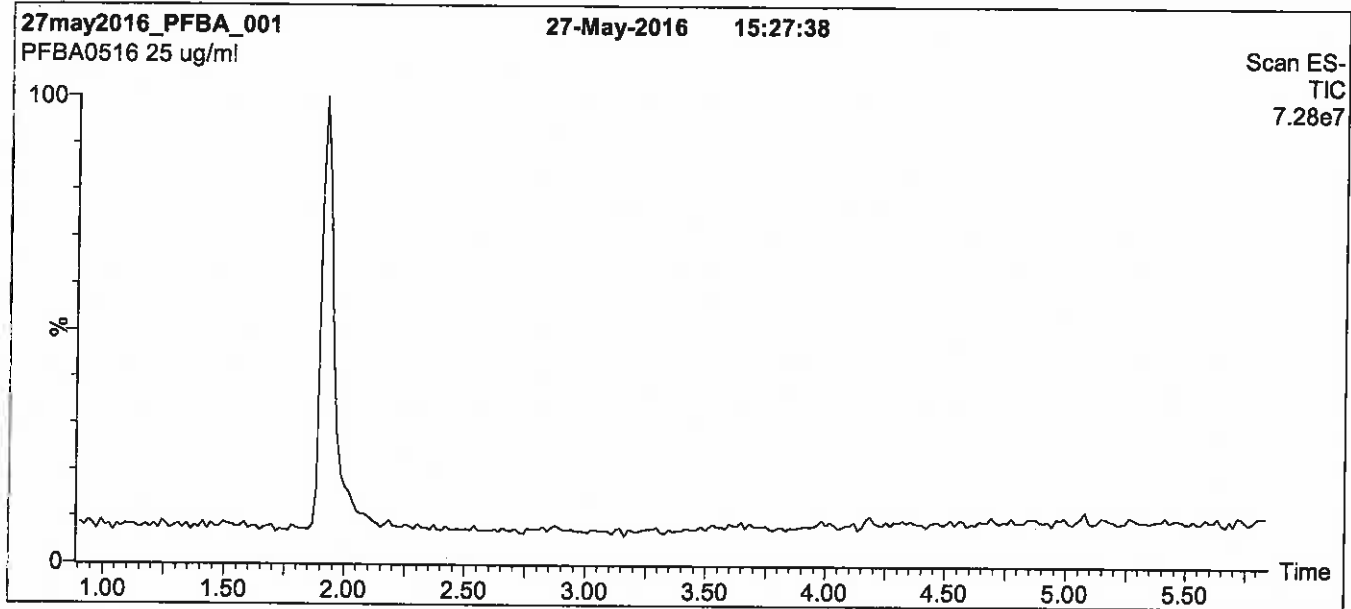
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: PFBA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 30% (80:20 MeOH:ACN) / 70% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

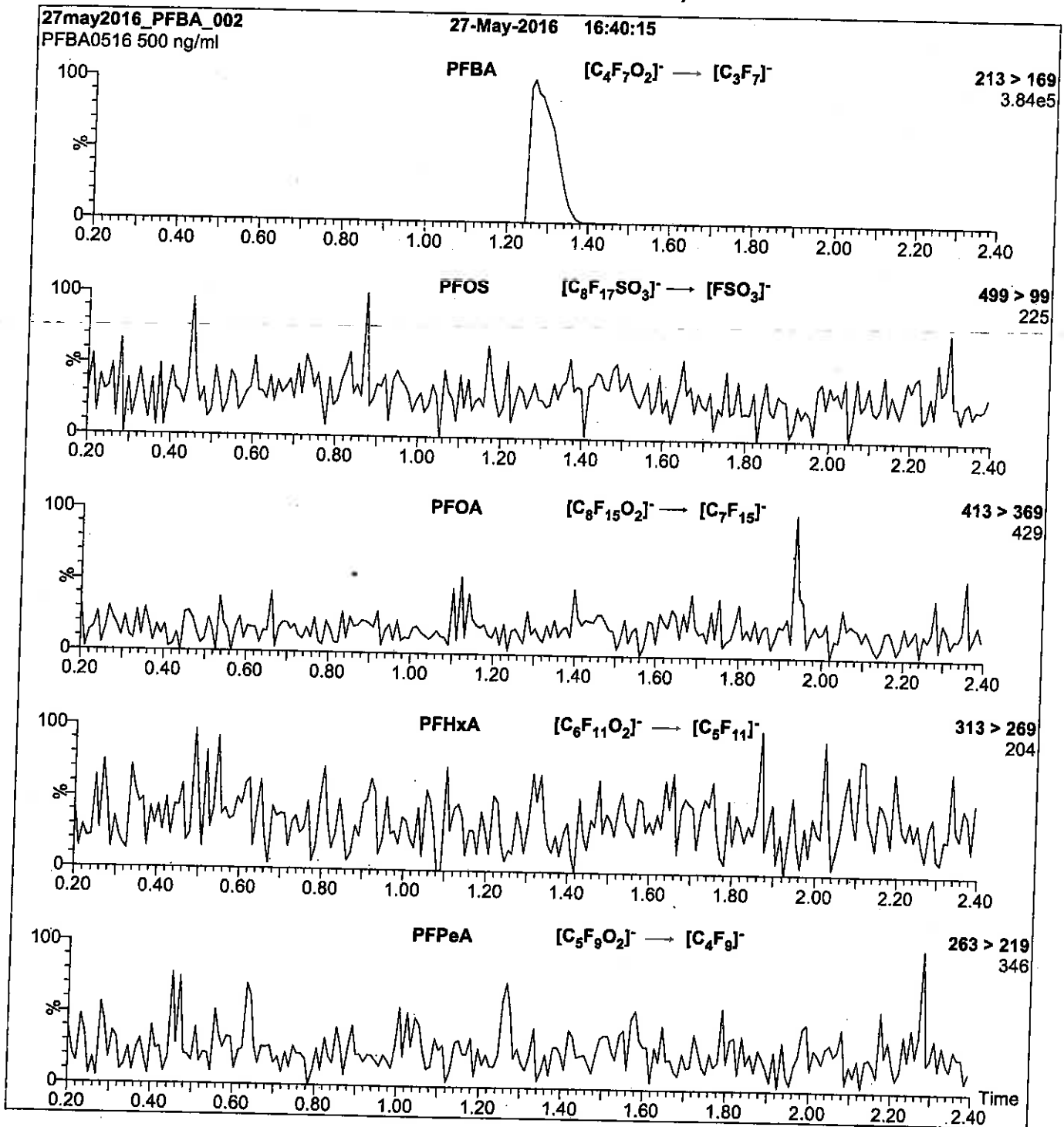
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 10.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFBA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFBA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.62e-3  
Collision Energy (eV) = 10

Reagent

---

**LCPFBS\_00005**

R: 9/9/16 gbe



728306  
ID: LCM2-8:2FTS\_00003  
Exp: 01/08/21 Prpd: SBC  
M2-8:2FTS

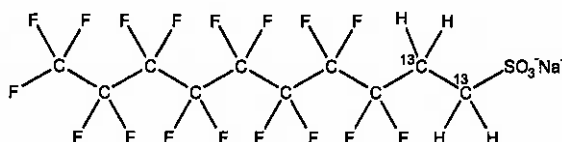


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** M2-8:2FTS **LOT NUMBER:** M282FTS0116  
**COMPOUND:** Sodium 1H,1H,2H,2H-perfluoro-[1,2-<sup>13</sup>C<sub>2</sub>]decane sulfonate

**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** <sup>13</sup>C<sub>2</sub><sup>12</sup>C<sub>8</sub>H<sub>4</sub>F<sub>17</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 552.15  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
47.9 ± 2.4 µg/ml (M2-8:2FTS anion)  
**CHEMICAL PURITY:** >98% **ISOTOPIC PURITY:** ≥99% <sup>13</sup>C  
**LAST TESTED:** (mm/dd/yyyy) 01/08/2016 (1,2-<sup>13</sup>C<sub>2</sub>)  
**EXPIRY DATE:** (mm/dd/yyyy) 01/08/2021  
**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.
- The native 8:2FTS contains 4.22% of <sup>34</sup>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:**   
B.G. Chittim **Date:** 01/18/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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### **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.

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The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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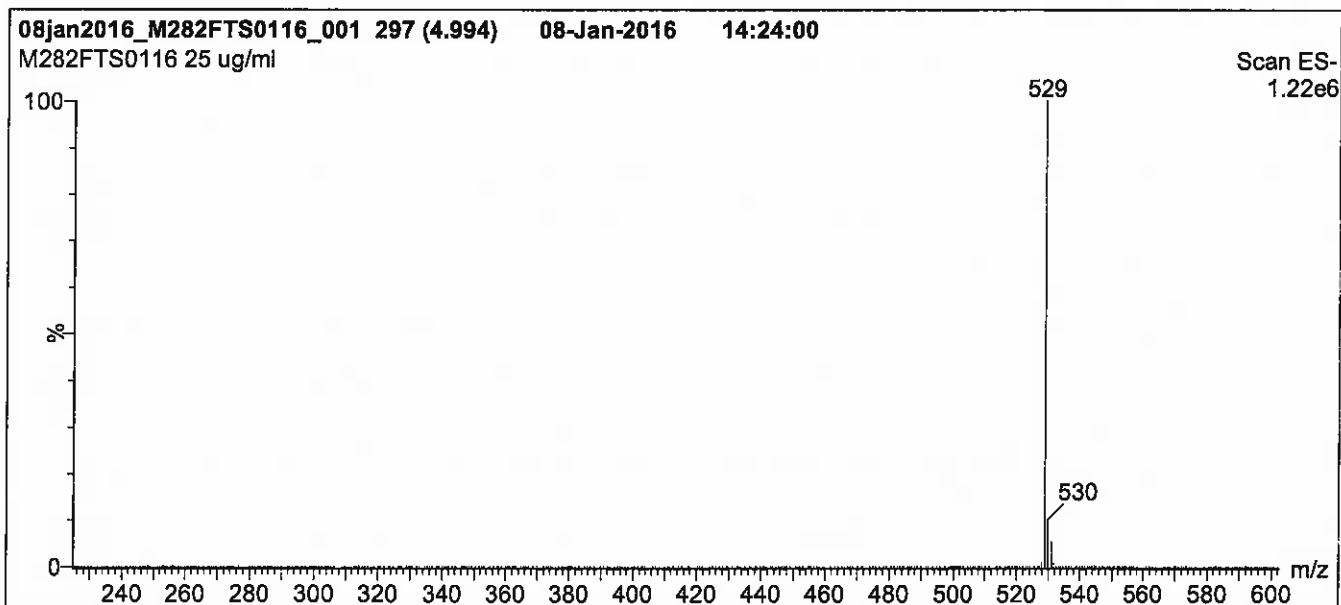
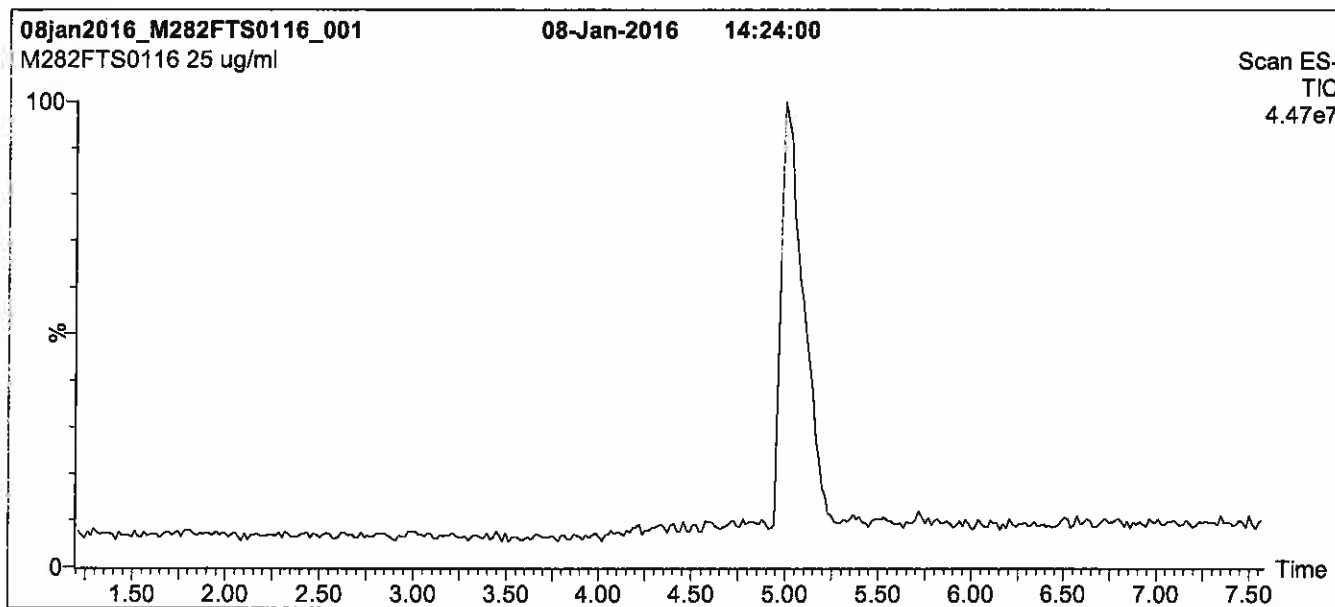
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This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: M2-8:2FTS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro micro API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

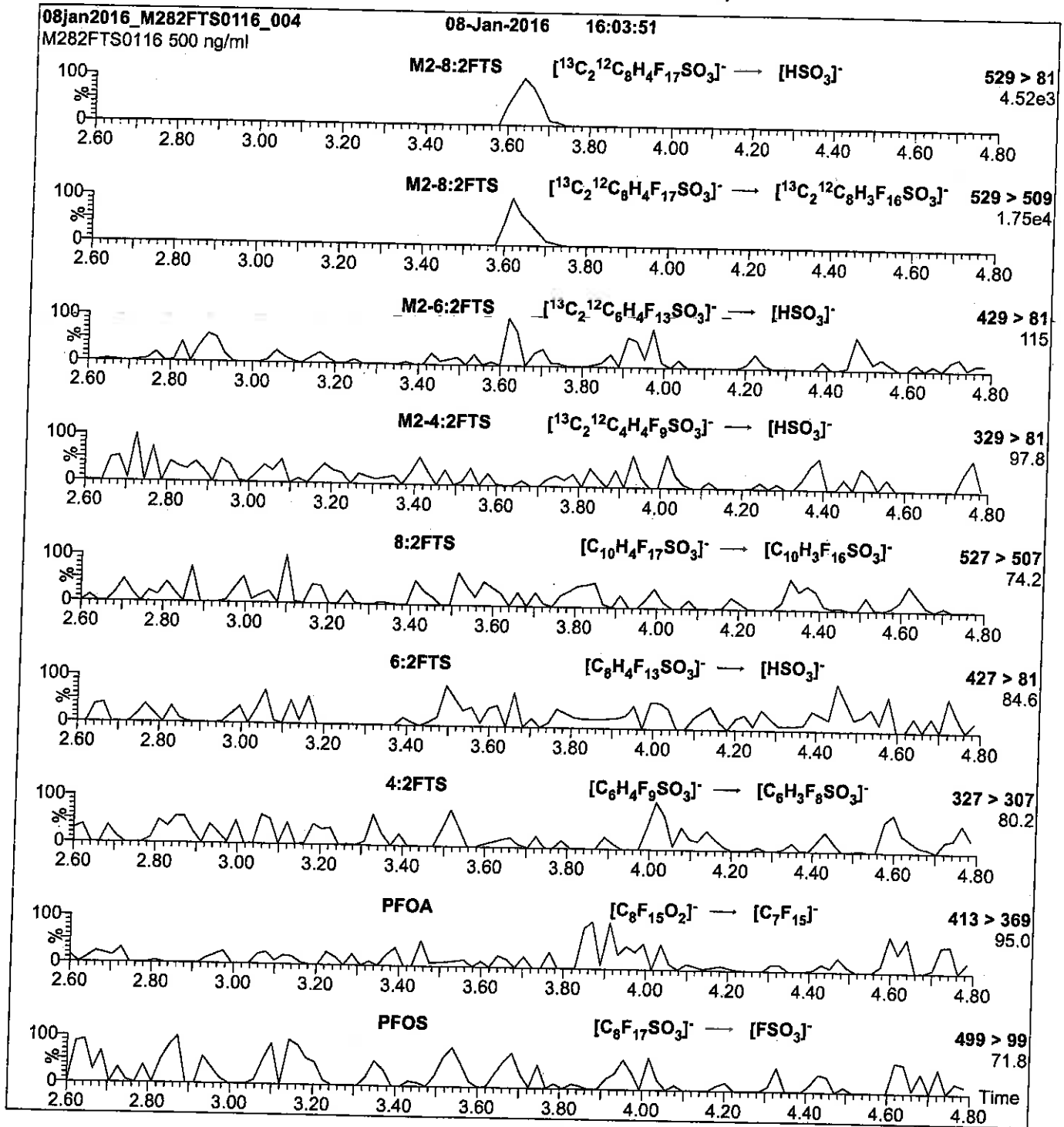
**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min  
and hold for 2 min before returning  
to initial conditions in 0.5 min.  
Time: 10 min

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 30.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: M2-8:2FTS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu\text{l}$  (500 ng/ml M2-8:2FTS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20%  $\text{H}_2\text{O}$   
(both with 10 mM  $\text{NH}_4\text{OAc}$  buffer)

Flow: 300  $\mu\text{l}/\text{min}$

**MS Parameters**

Collision Gas (mbar) = 3.20e-3  
Collision Energy (eV) = 30





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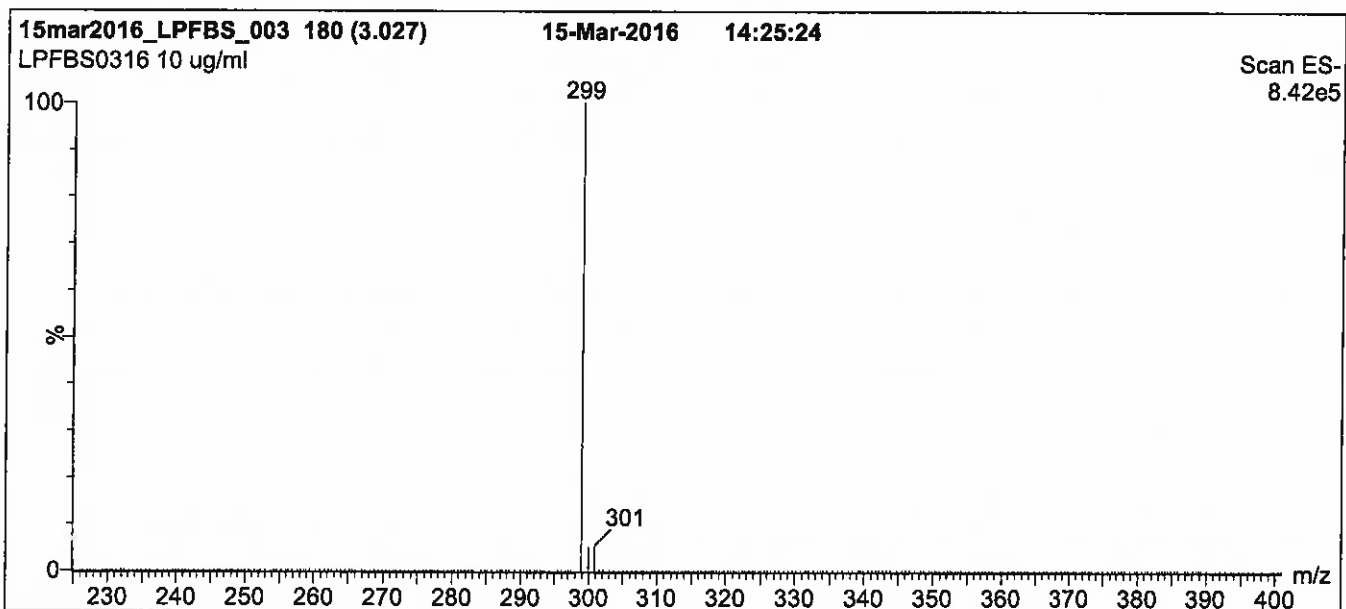
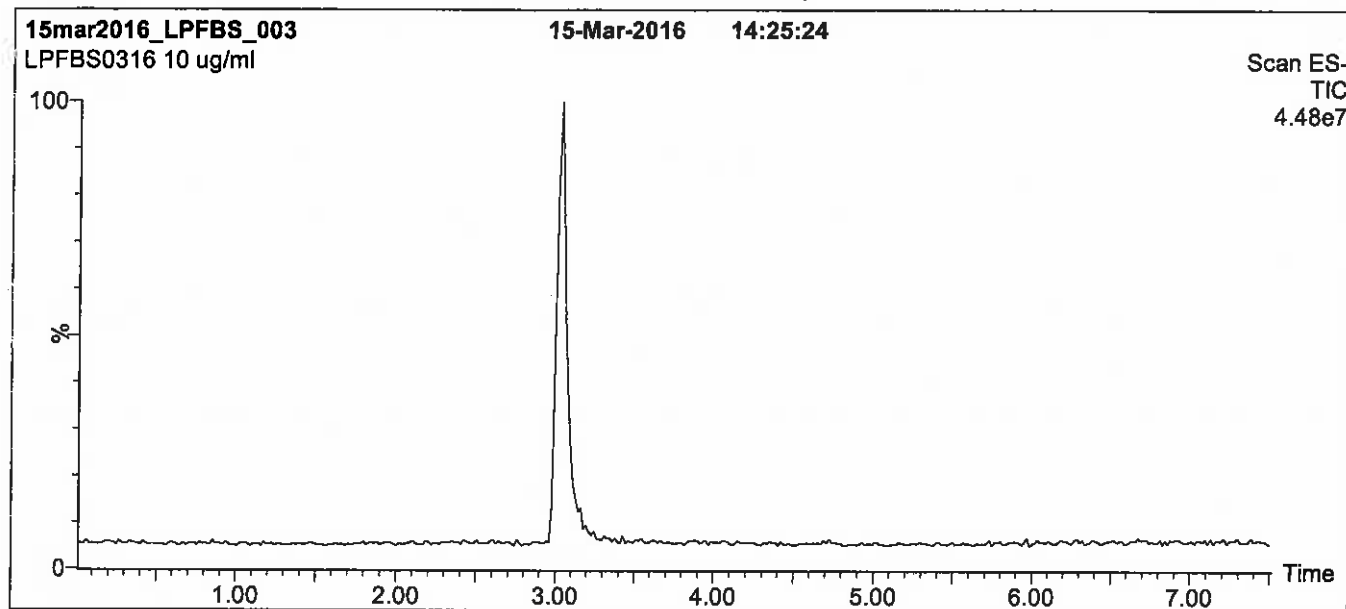
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**Figure 1: L-PFBS; LC/MS Data (TIC and Mass Spectrum)**



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**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
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Mobile phase: Gradient  
Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc 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

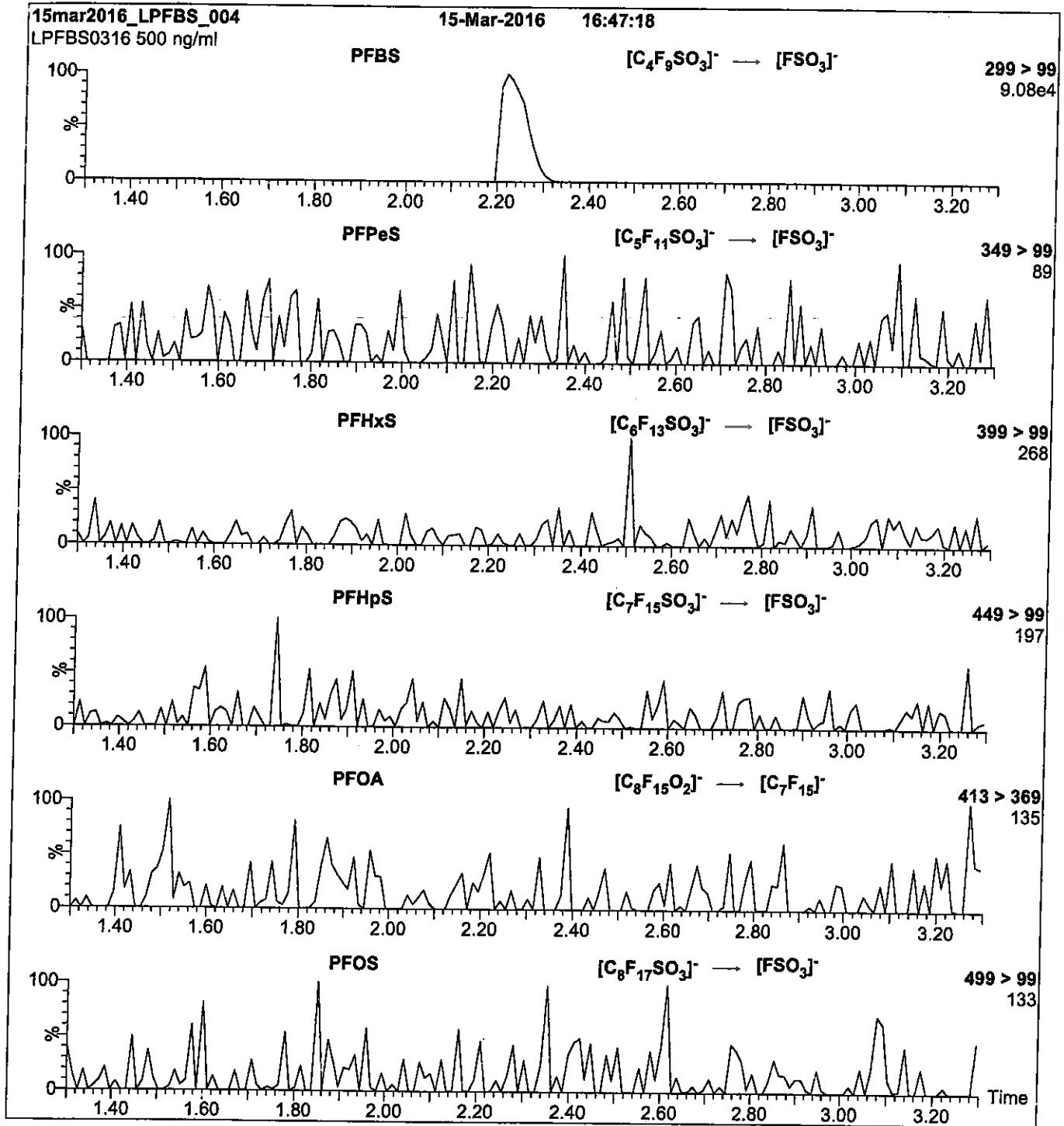
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 40.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: L-PFBS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml L-PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.20e-3  
 Collision Energy (eV) = 25

Reagent

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**LCPFBS\_00006**



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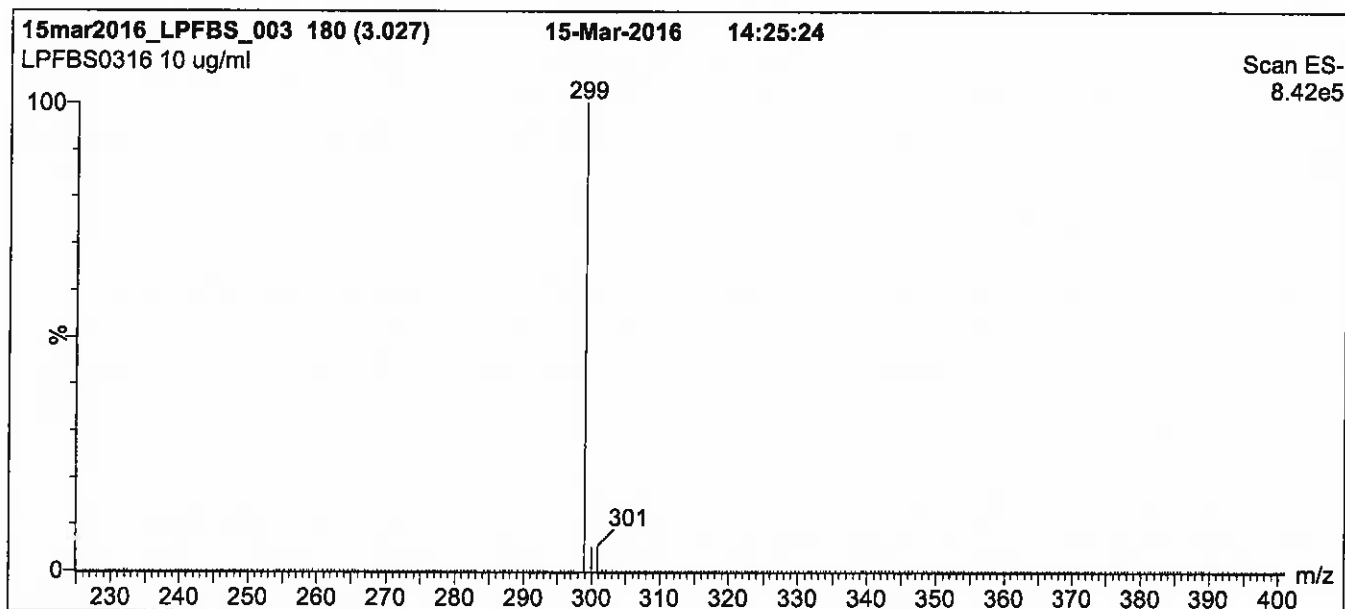
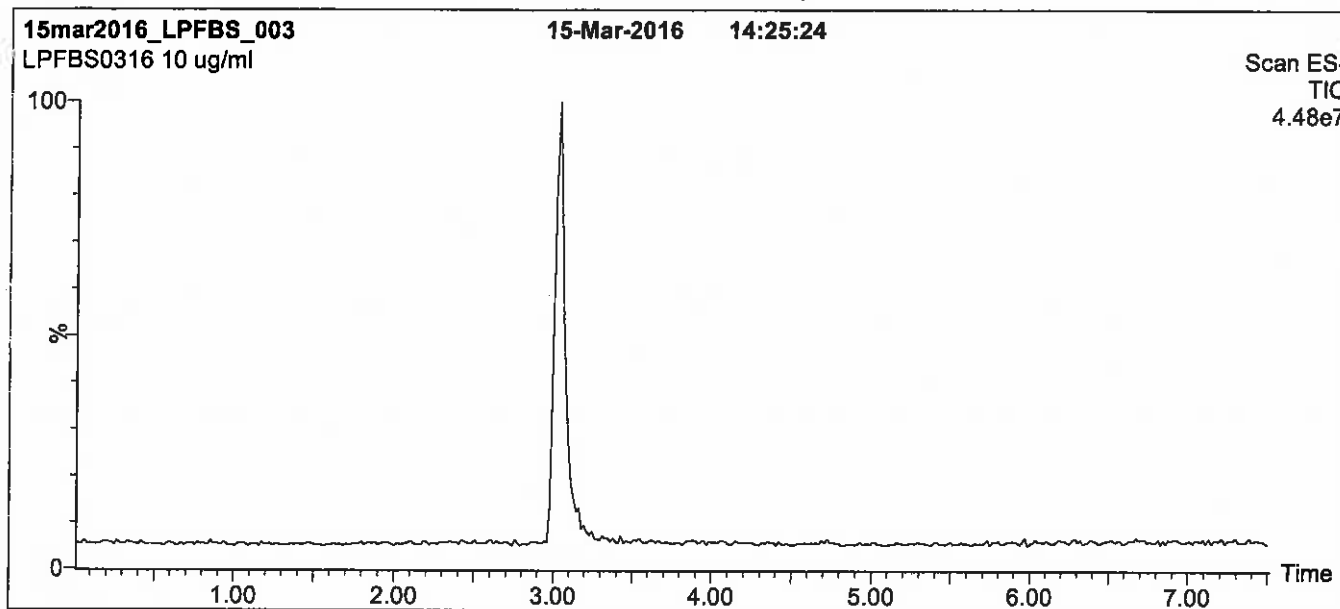
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**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 40% (80:20 MeOH:ACN) / 60% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

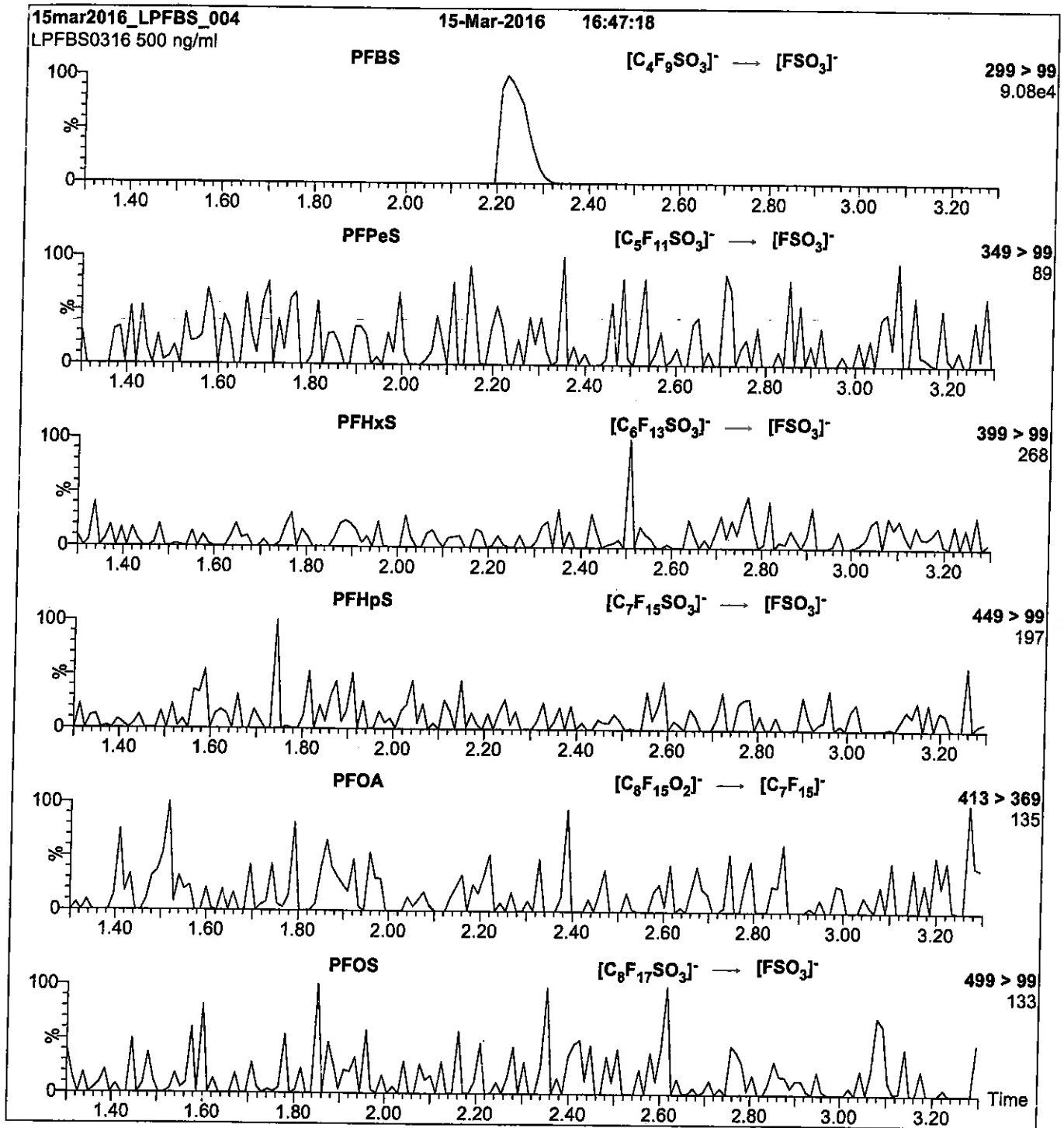
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 40.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: L-PFBS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml L-PFBS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.20e-3  
 Collision Energy (eV) = 25



Reagent

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**LCPFDA\_00006**

R: SBC 9/13/16  
Scanned 10/14/16 SR



730620  
ID: LCPFDA\_00006  
Exp: 05/31/21 Prod: SBC  
PF-n-decanoic acid



730621  
ID: LCPFDA\_00007  
Exp: 05/31/21 Prod: SBC  
PF-n-decanoic acid

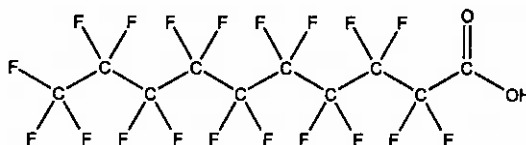


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFDA **LOT NUMBER:** PFDA0516  
**COMPOUND:** Perfluoro-n-decanoic acid

**STRUCTURE:** **CAS #:** 335-76-2



**MOLECULAR FORMULA:** C<sub>10</sub>HF<sub>19</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 514.08  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/31/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/31/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of Perfluoro-n-nonanoic acid (PFNA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 06/13/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

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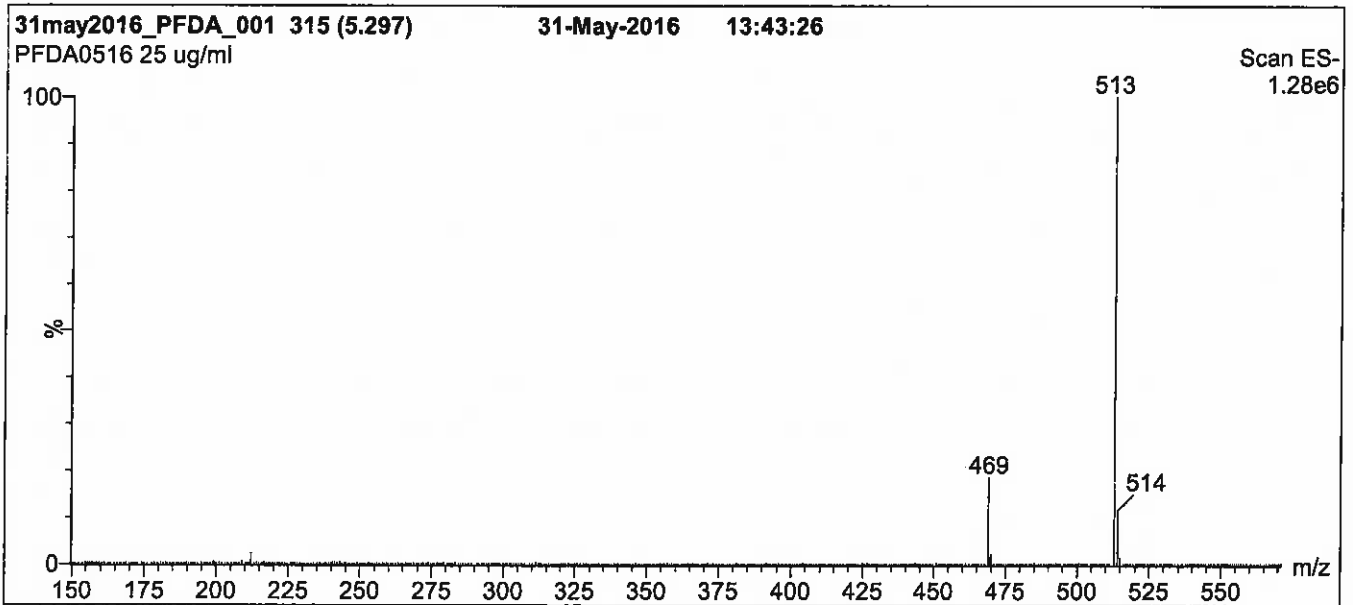
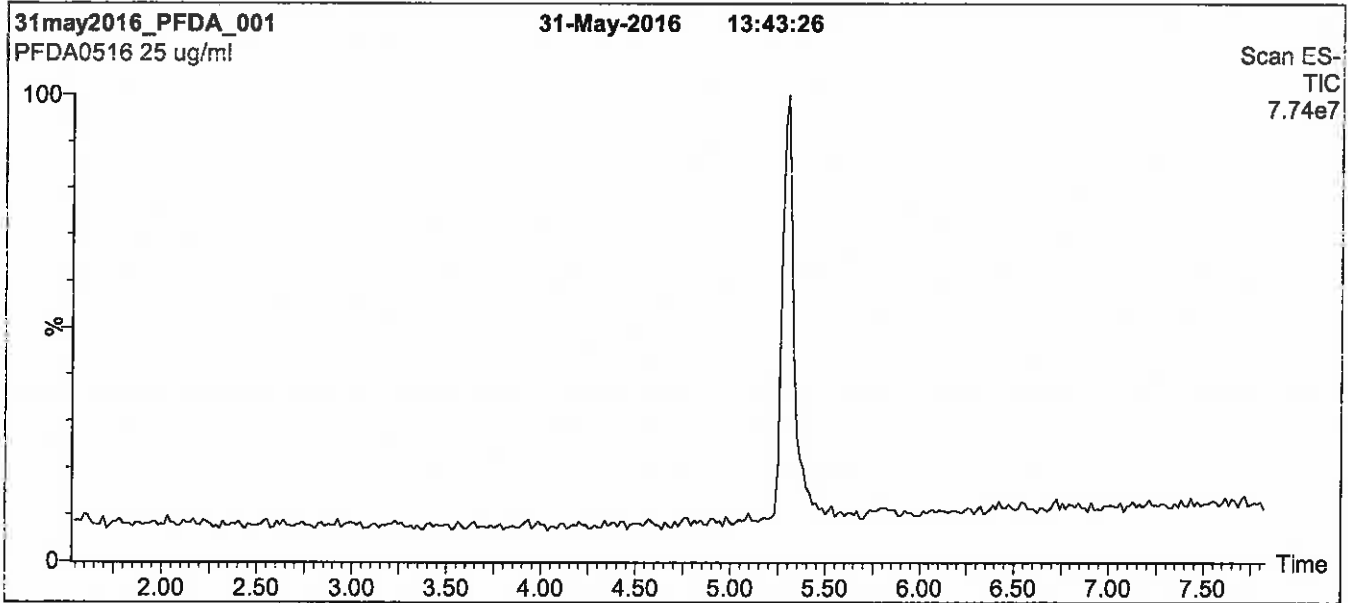
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 1.7  $\mu$ m, 2.1 x 100 mm

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 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
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 Ramp to 90% organic over 7.5 min and hold for  
 1.5 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

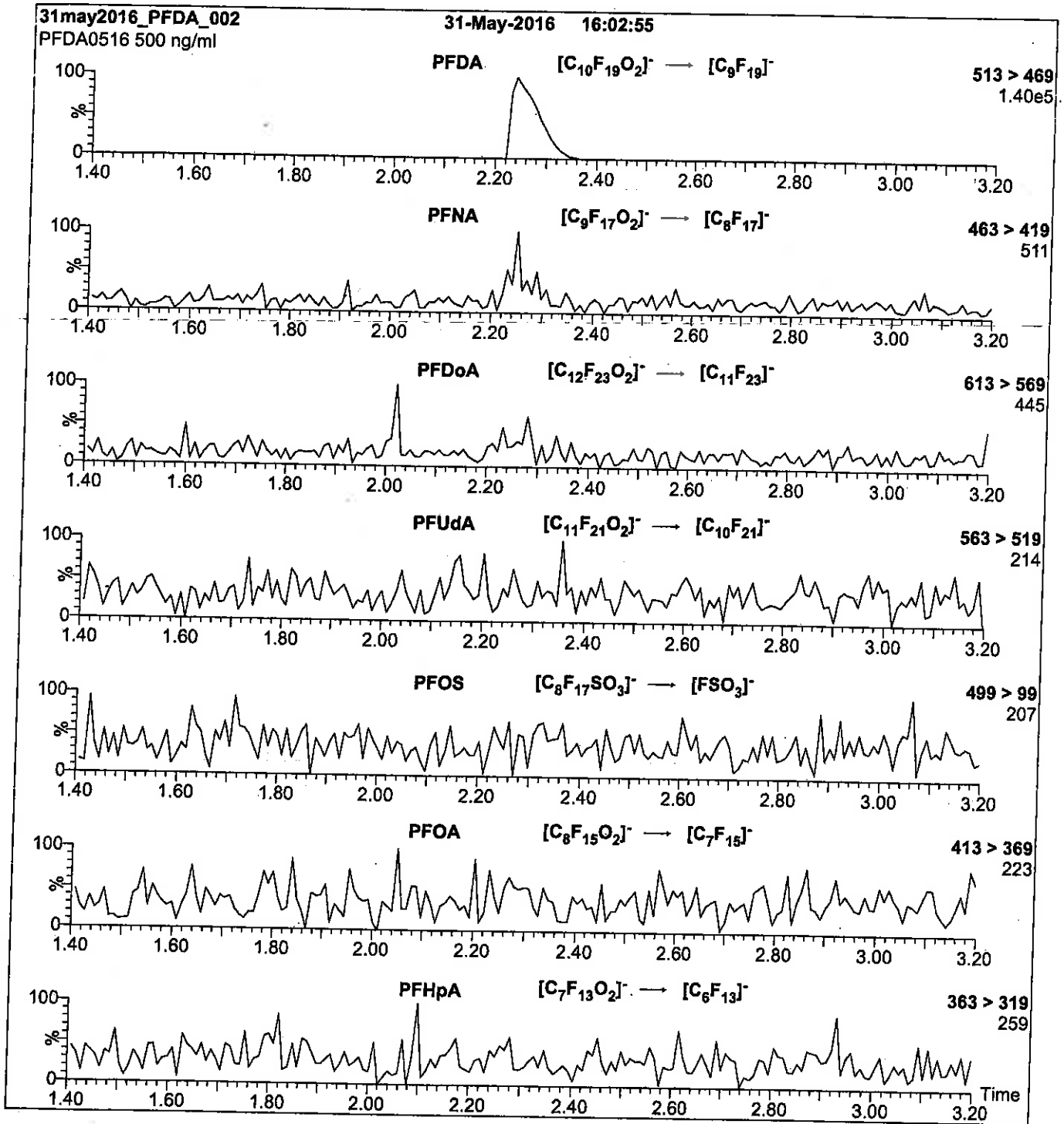
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 13

Reagent

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**LCPFDoA\_00006**



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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

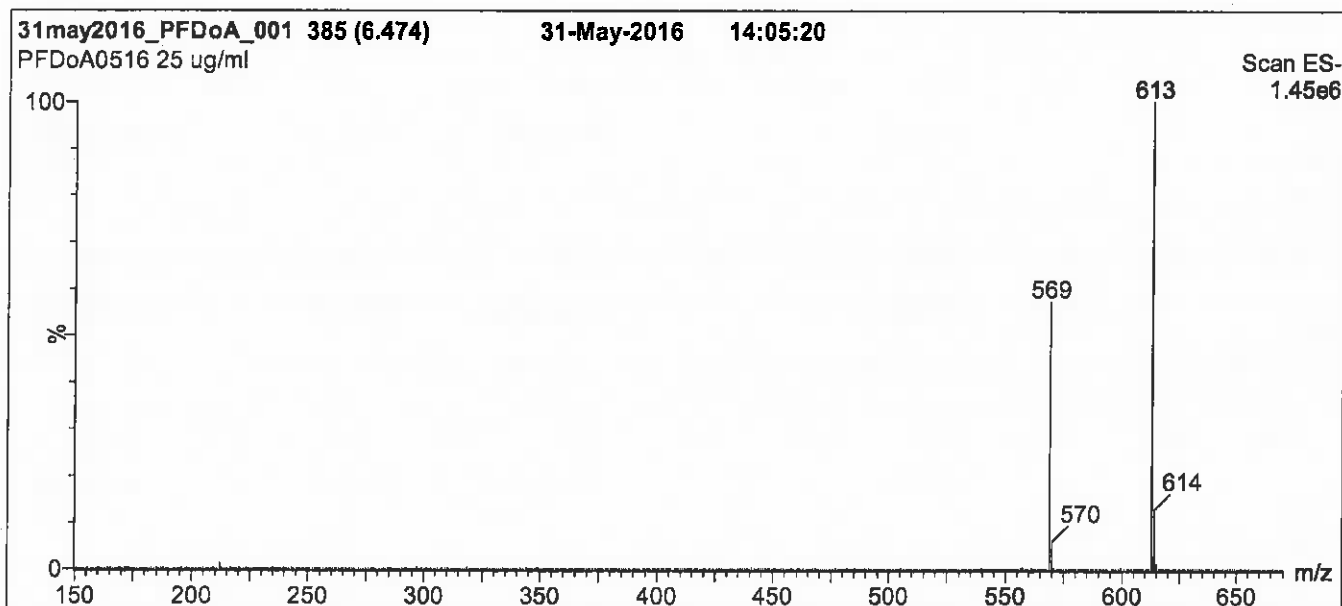
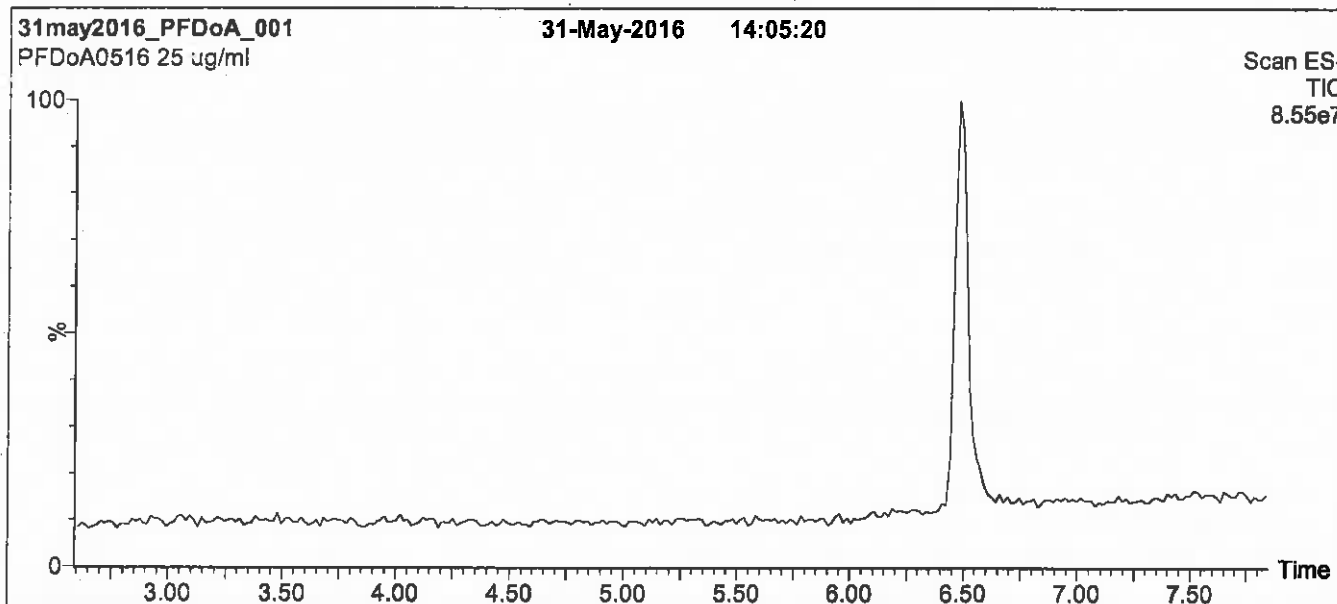
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*



**Figure 1: PFDoA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for  
 1.5 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

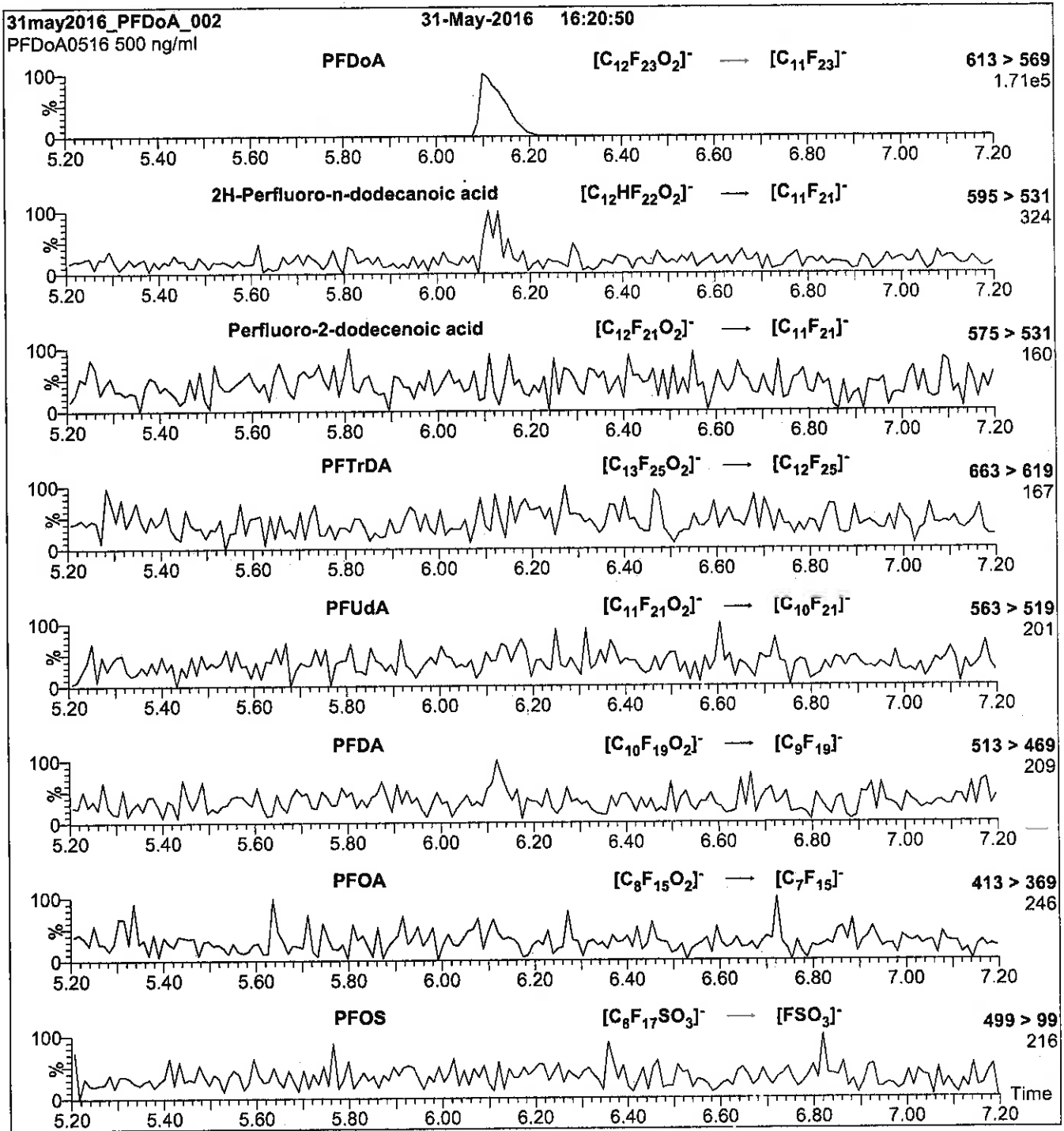
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 20.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFDoA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
 10  $\mu$ l (500 ng/ml PFDa)

**MS Parameters**

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Collision Gas (mbar) = 3.39e-3  
 Collision Energy (eV) = 13

**Flow:** 300  $\mu$ l/min

Reagent

---

**LCPFDS\_00005**



605240  
 ID: LCPFDS\_00005  
 Exp: 07/02/20 Prep: CBW  
 PF-1-decanesulfonate sodi

Rec. 3/29/16 JRB

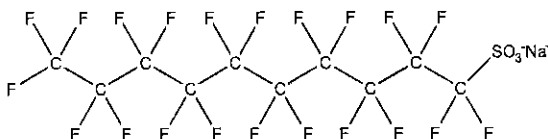


**WELLINGTON**  
 LABORATORIES

**CERTIFICATE OF ANALYSIS**  
 DOCUMENTATION

**PRODUCT CODE:** L-PFDS **LOT NUMBER:** LPFDS0615  
**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) **SOLVENT(S):** Methanol  
 48.2 ± 2.4 µg/ml (PFDS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 07/02/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 07/02/2020  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

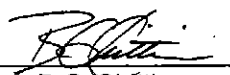
**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
 Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.9% of sodium perfluoro-1-dodecanesulfonate (L-PFDoS).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:   
 B.G. Chittim **Date:** 12/07/2015  
 (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

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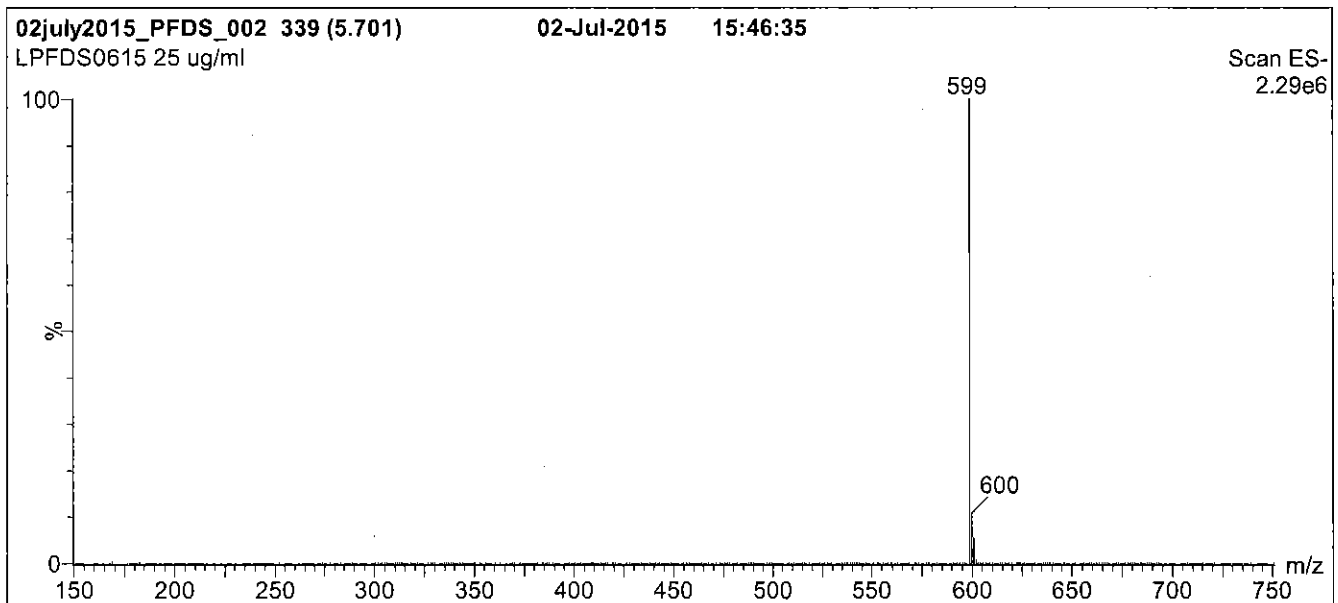
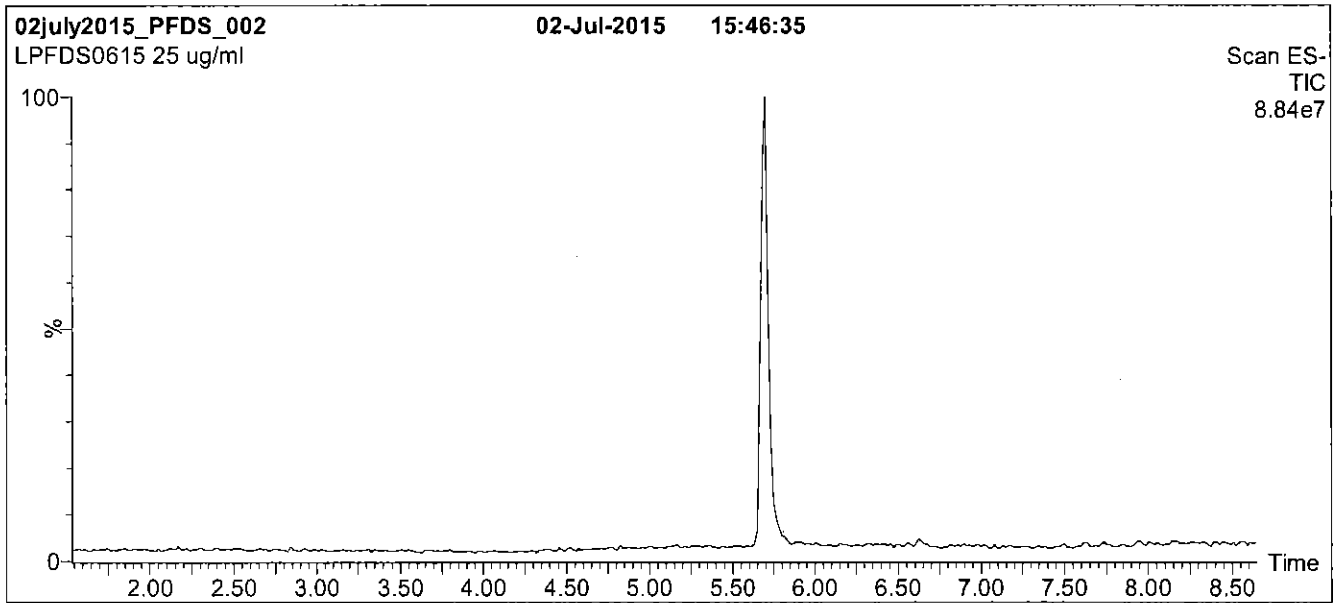
### **QUALITY MANAGEMENT:**

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**Figure 1: L-PFDS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for  
2 min before returning to initial conditions in 0.5 min.  
Time: 10 min

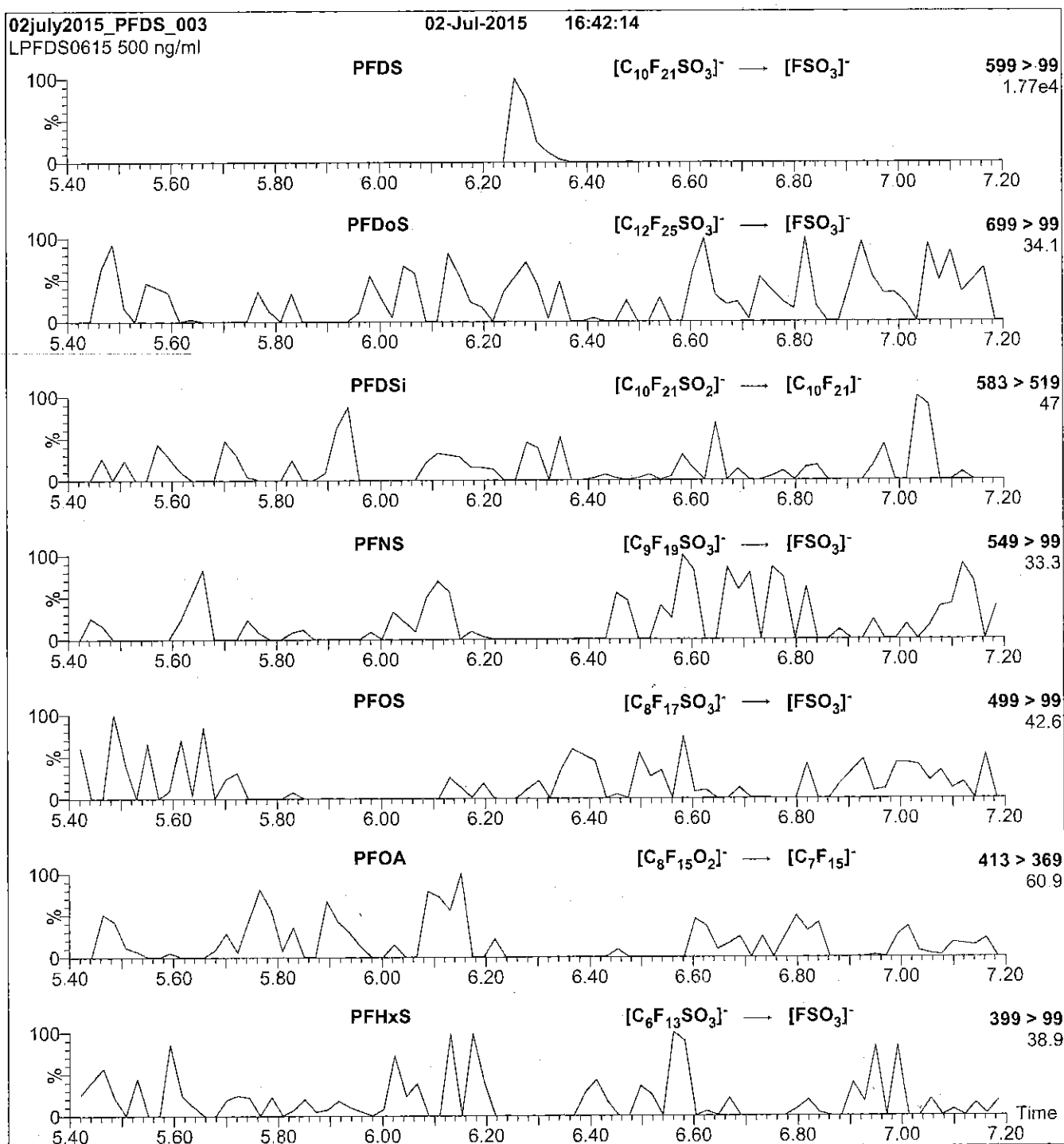
**Flow:** 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 70.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: L-PFDS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml L-PFDS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.54e-3  
Collision Energy (eV) = 50

Reagent

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**LCPFHpA\_00006**



Scanned R: SBC 9/13/16  
10/14/16 JK



730517  
ID: LCPFHpa\_00006  
Exp: 01/22/21 Prpd: SBC  
PF-n-heptanoic acid



730518  
ID: LCPFHpa\_00007  
Exp: 01/22/21 Prpd: SBC  
PF-n-heptanoic acid



# WELLINGTON LABORATORIES

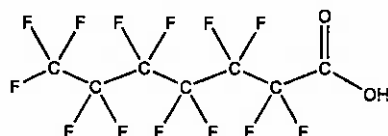
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHpA  
**COMPOUND:** Perfluoro-n-heptanoic acid

**LOT NUMBER:** PFHpA0116

**STRUCTURE:**

**CAS #:** 375-85-9



**MOLECULAR FORMULA:** C<sub>7</sub>HF<sub>13</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 364.06  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 01/22/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 01/22/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim

**Date:** 02/02/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

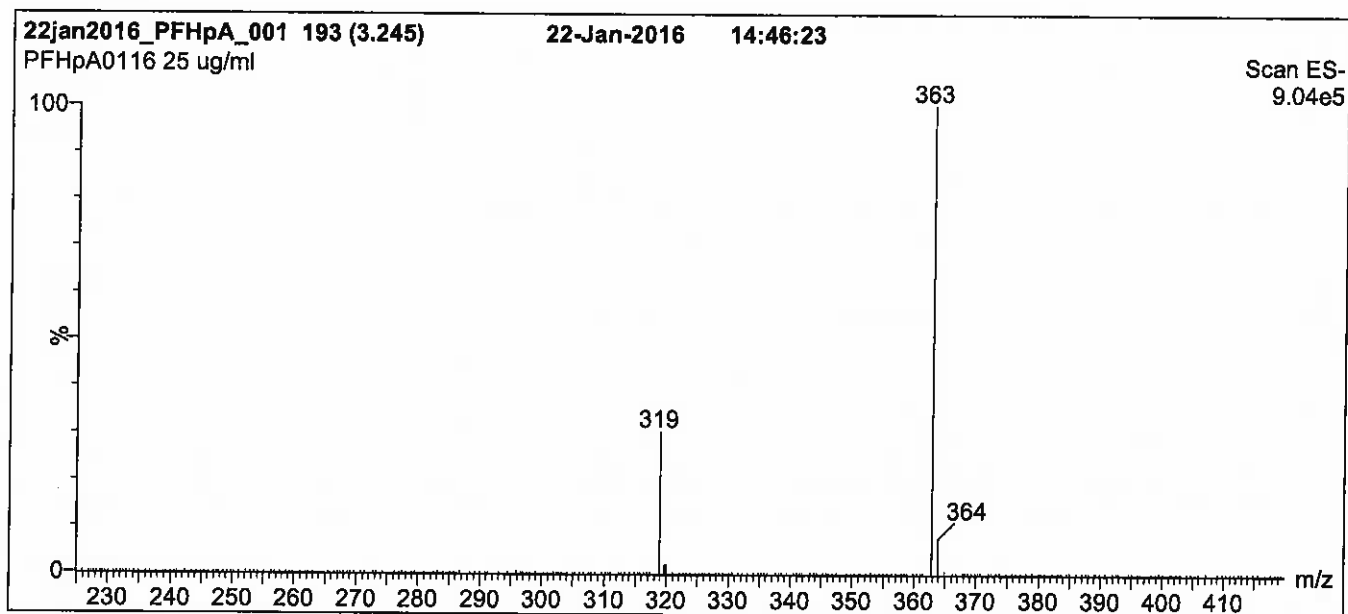
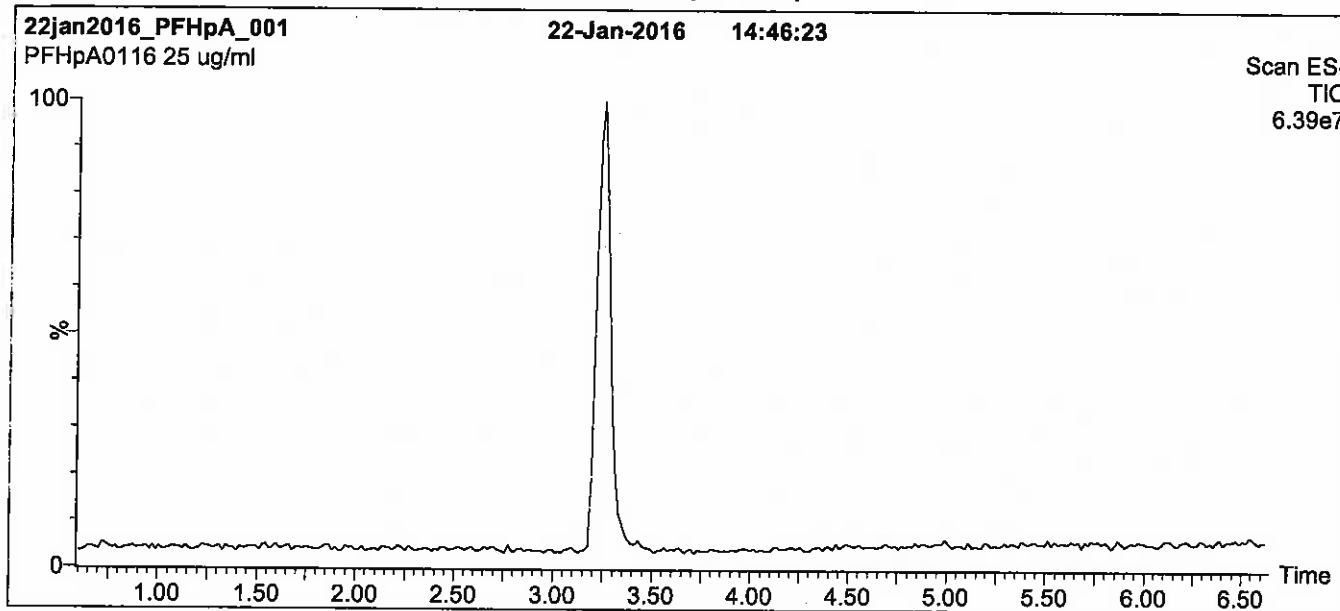
### **QUALITY MANAGEMENT:**

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**Figure 1: PFHpA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 55% (80:20 MeOH:ACN) / 45% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for  
2 min before returning to initial conditions in 0.5 min.  
Time: 10 min

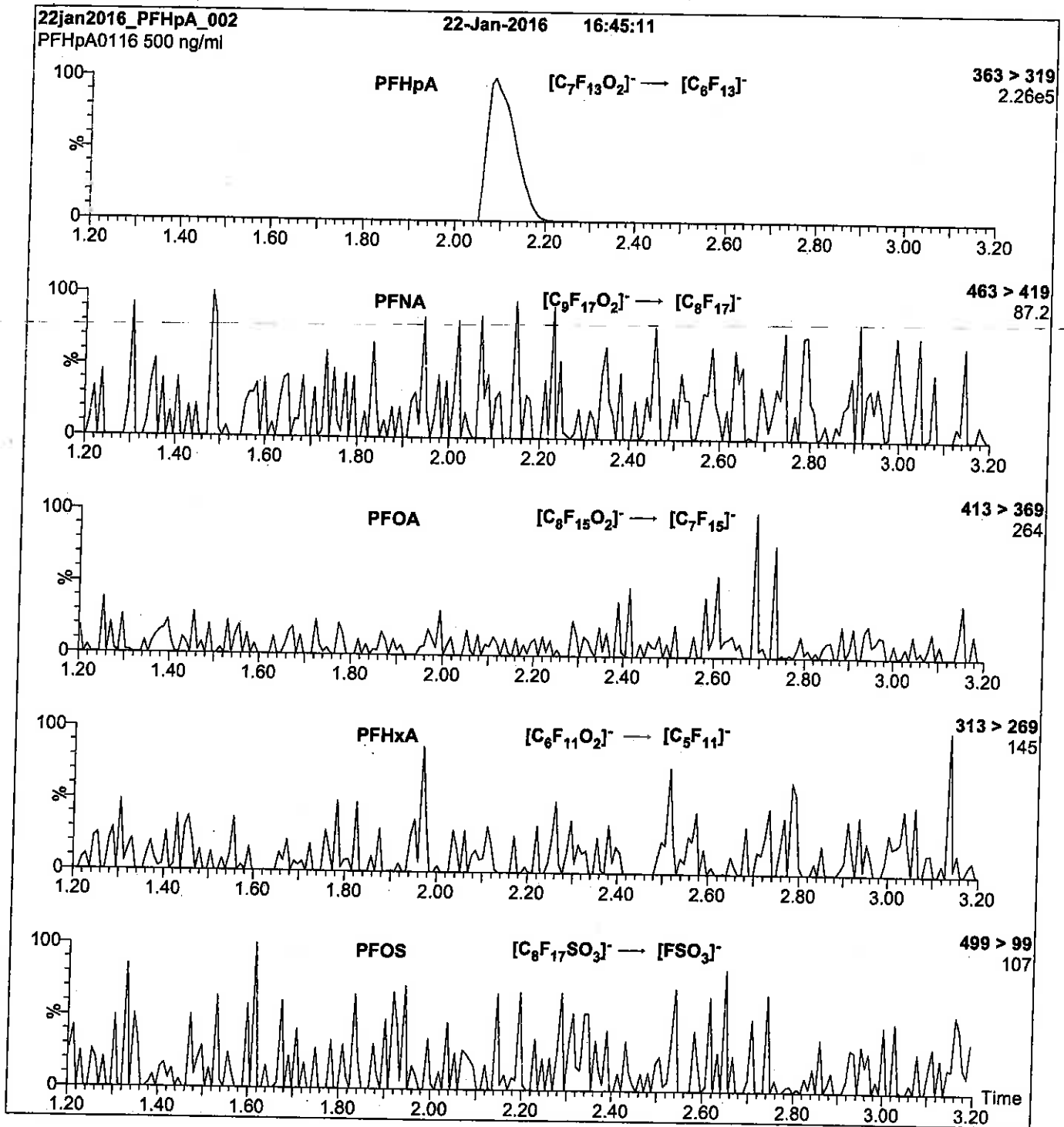
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFHpA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml PFHpA)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.50e-3  
Collision Energy (eV) = 11

Reagent

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**LCPFHpS\_00009**

Scanned  
10/14/16 SP  
R: 8BC 9/13/16



730635  
ID: LCPFHpS\_00009  
Exp: 11/06/20 Prpd: SBC  
PFHpS at 47.6ug/mL



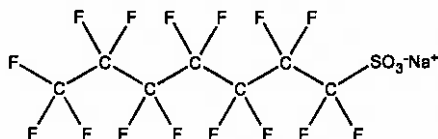
730639  
ID: LCPFHpS\_00010  
Exp: 11/06/20 Prpd: SBC  
PFHpS at 47.6ug/mL



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFHpS **LOT NUMBER:** LPFHpS1115  
**COMPOUND:** Sodium perfluoro-1-heptanesulfonate  
**STRUCTURE:** **CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>7</sub>F<sub>15</sub>SO<sub>3</sub>Na **MOLECULAR WEIGHT:** 472.10  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt) **SOLVENT(S):** Methanol  
47.6 ± 2.4 µg/ml (PFHpS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/06/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 11/06/2020  
**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 L-PFHxS (C<sub>6</sub>F<sub>13</sub>SO<sub>3</sub>Na) and ~ 0.2% of L-PFOS (C<sub>8</sub>F<sub>17</sub>SO<sub>3</sub>Na).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 11/09/2015  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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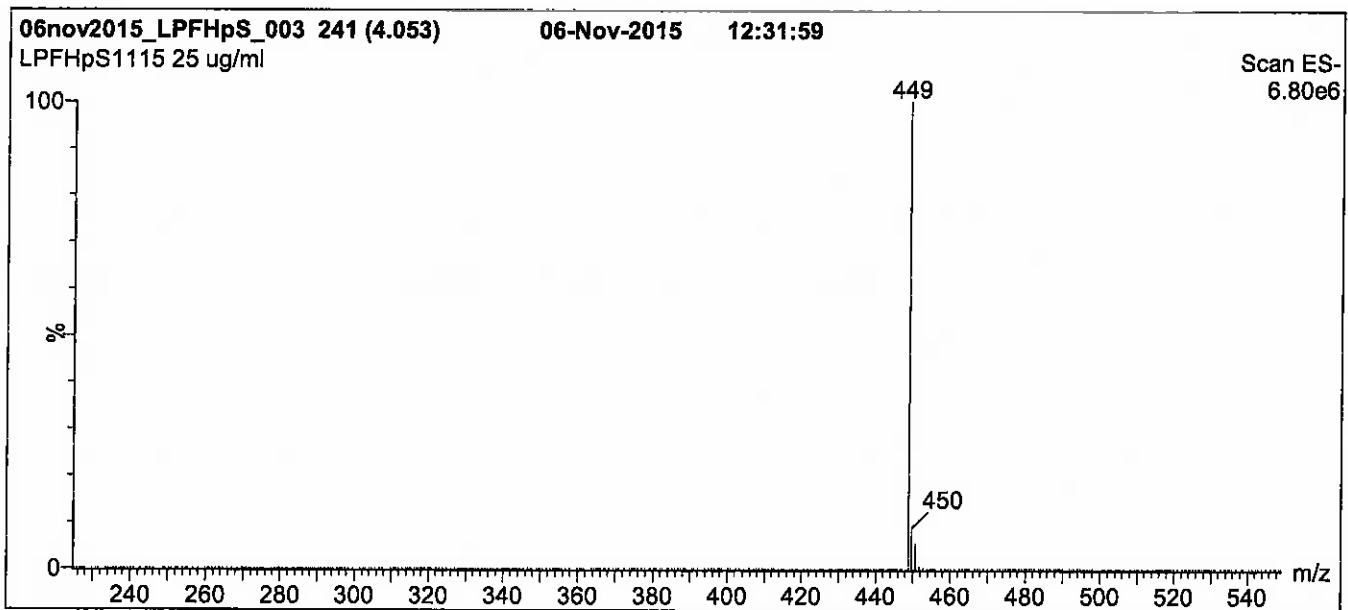
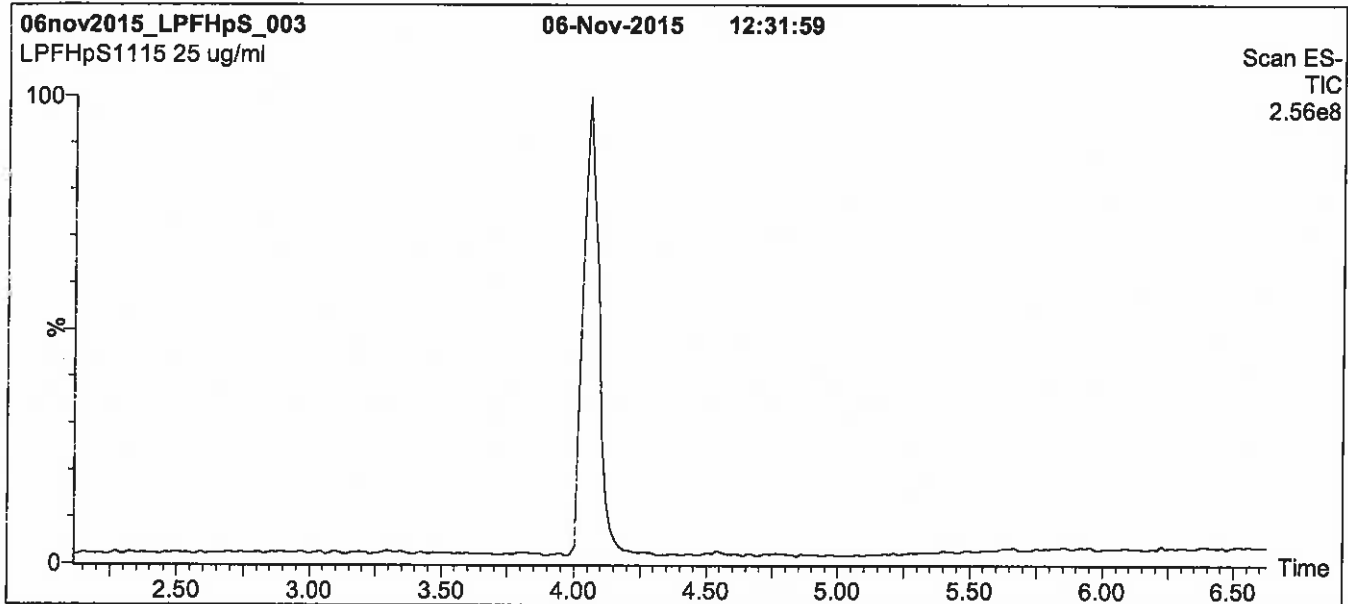
### **QUALITY MANAGEMENT:**

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\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: L-PFHpS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold  
 for 2 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

**Flow:** 300  $\mu$ l/min

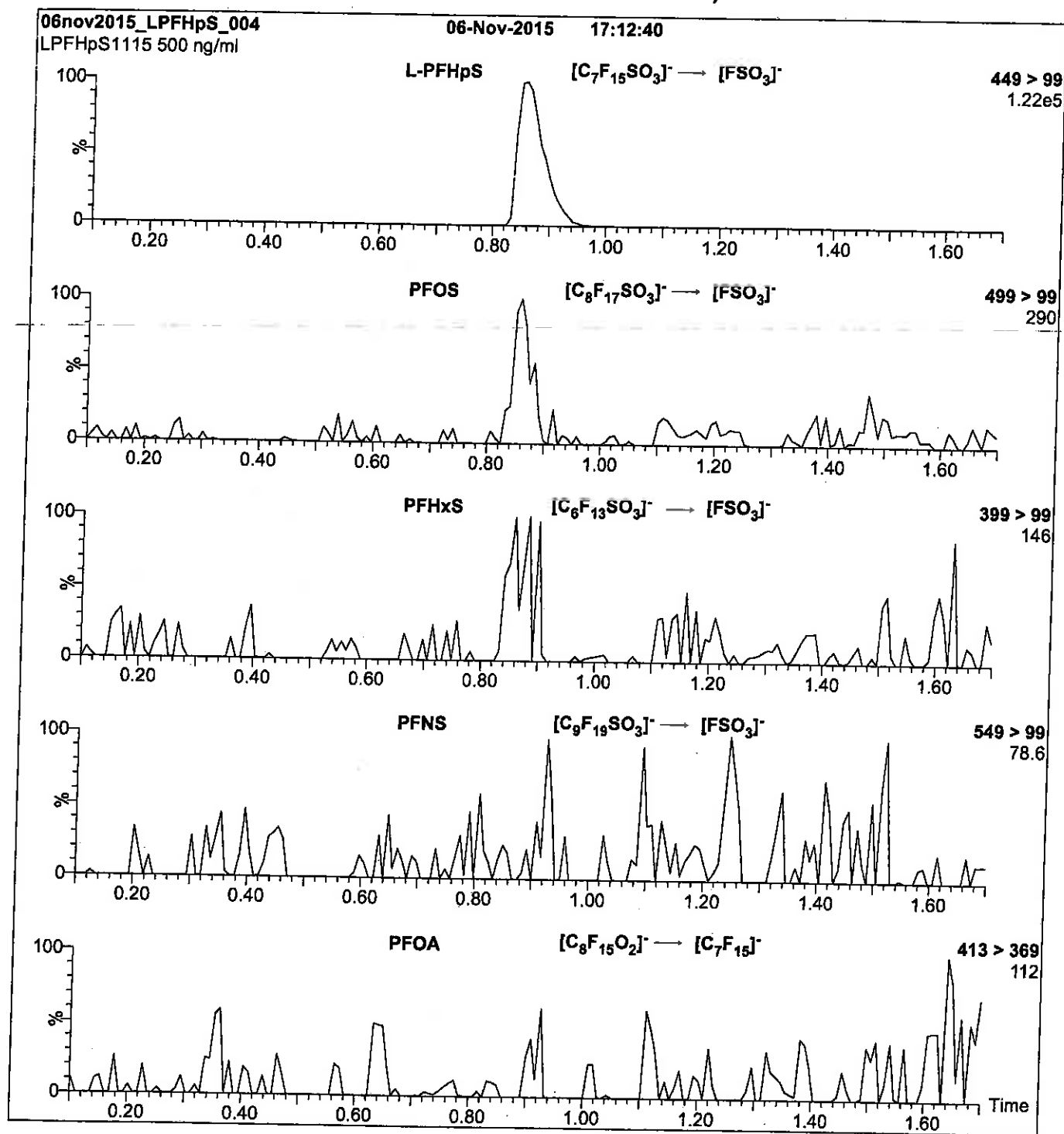
**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 60.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750



**Figure 2: L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml L-PFHpS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 35

Reagent

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**LCPFHpS\_00010**

Scanned  
10/14/16 SP  
R: 8BC 9/13/16



730635  
ID: LCPFHpS\_00009  
Exp: 11/06/20 Prpd: SBC  
PFHpS at 47.6ug/mL



730639  
ID: LCPFHpS\_00010  
Exp: 11/06/20 Prpd: SBC  
PFHpS at 47.6ug/mL



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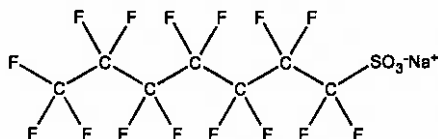
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** L-PFHpS  
**COMPOUND:** Sodium perfluoro-1-heptanesulfonate

**LOT NUMBER:** LPFHpS1115

**STRUCTURE:**

**CAS #:** Not available



**MOLECULAR FORMULA:** C<sub>7</sub>F<sub>15</sub>SO<sub>3</sub>Na  
**CONCENTRATION:** 50.0 ± 2.5 µg/ml (Na salt)  
47.6 ± 2.4 µg/ml (PFHpS anion)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 11/06/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 11/06/2020  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**MOLECULAR WEIGHT:** 472.10  
**SOLVENT(S):** Methanol

**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 L-PFHxS (C<sub>6</sub>F<sub>13</sub>SO<sub>3</sub>Na) and ~ 0.2% of L-PFOS (C<sub>8</sub>F<sub>17</sub>SO<sub>3</sub>Na).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim

**Date:** 11/09/2015  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to International Interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

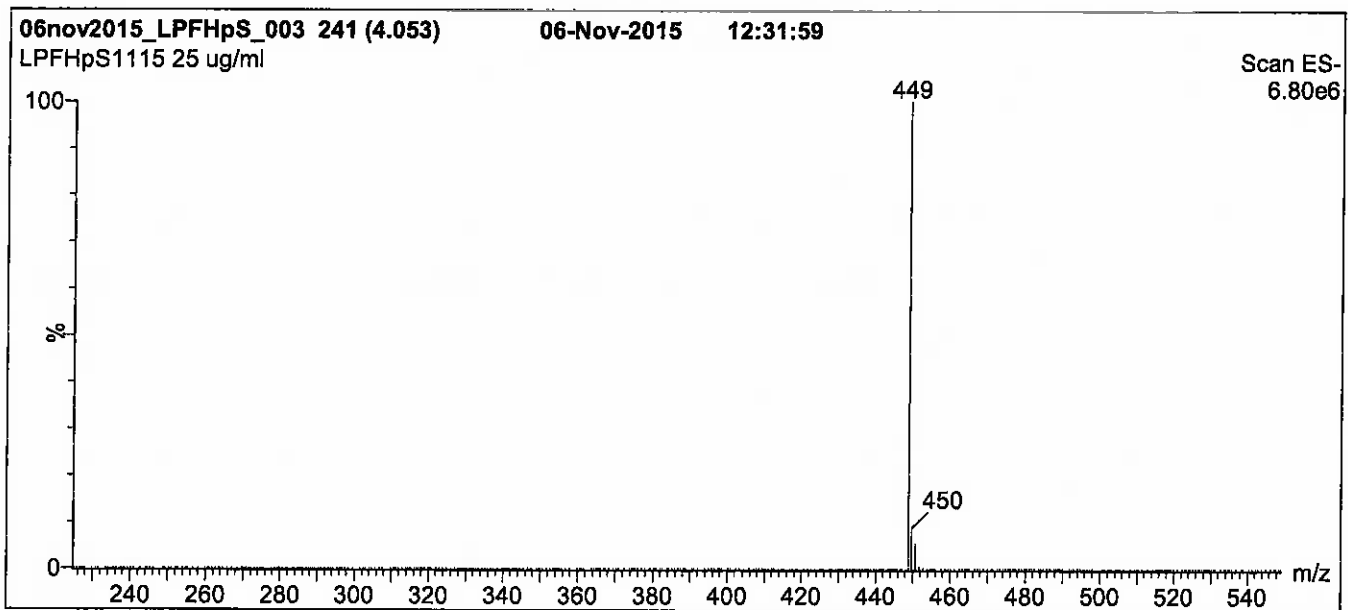
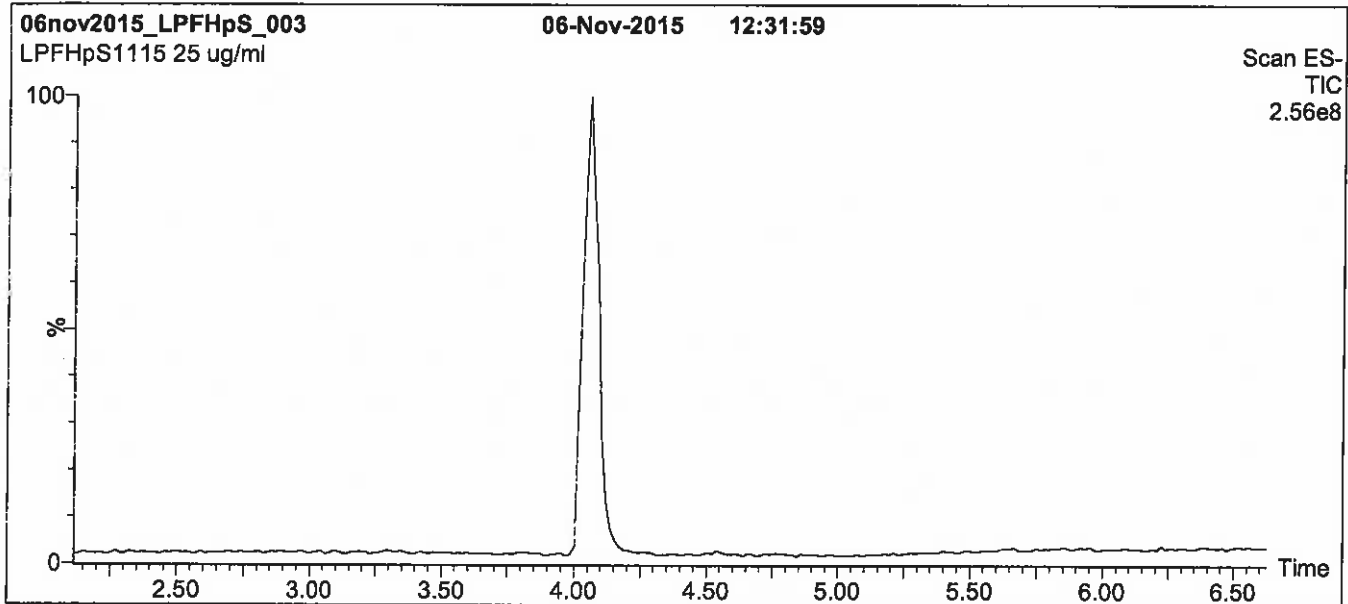
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**Figure 1: L-PFHpS; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold  
 for 2 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

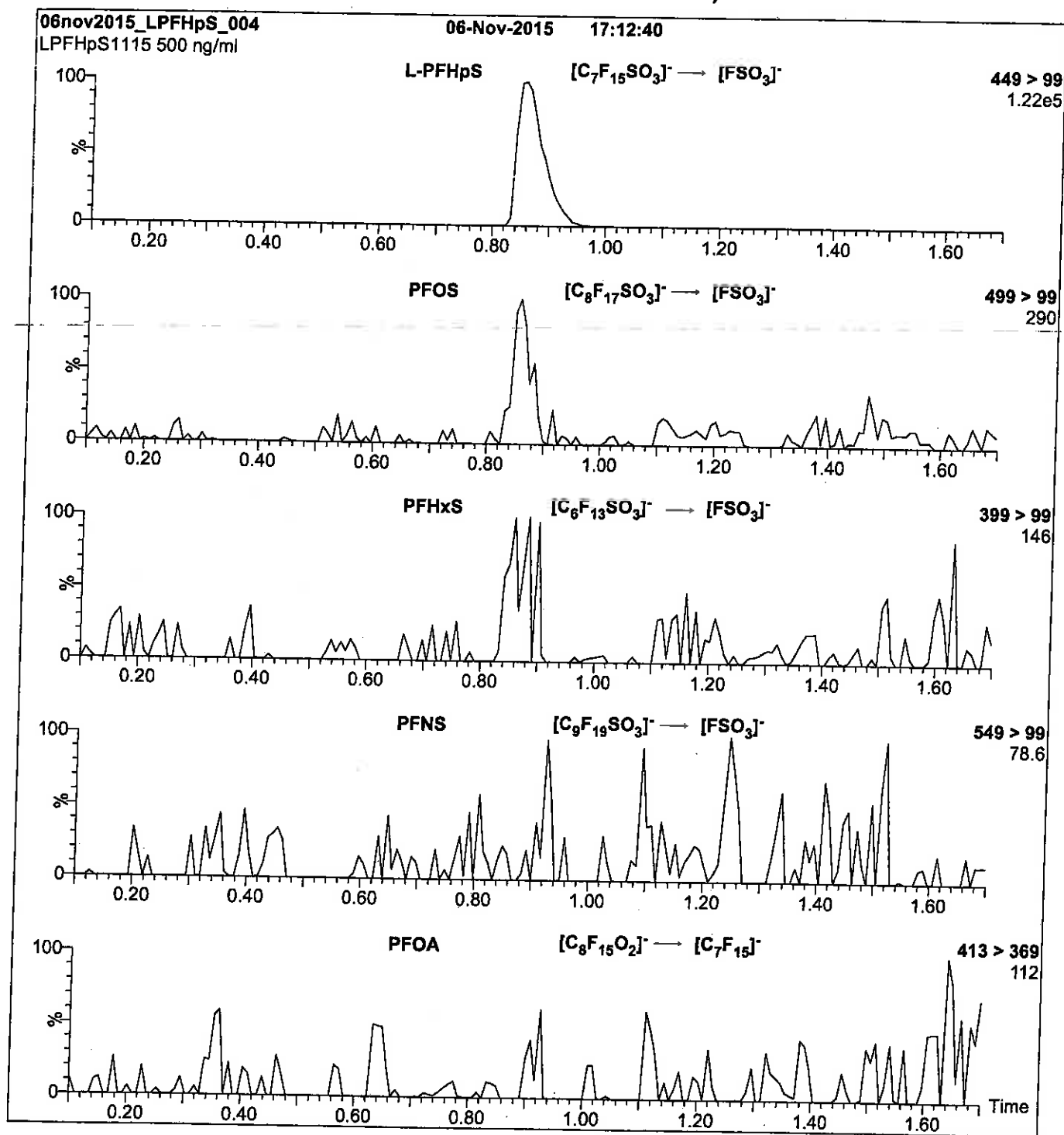
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (225 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 60.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: L-PFHpS; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml L-PFHpS)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
Collision Energy (eV) = 35

Reagent

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**LCPFHxA\_00005**

R: 832 9/13/16



730551  
ID: LCPFHxA\_00005  
Exp: 12/22/20 Prod: SBC  
PF-n-hexanoic acid



730552  
ID: LCPFHxA\_00006  
Exp: 12/22/20 Prod: SBC  
PF-n-hexanoic acid

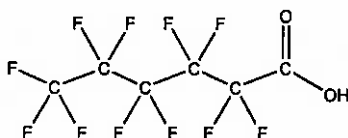


**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
**DOCUMENTATION**

**PRODUCT CODE:** PFHxA **LOT NUMBER:** PFHxA1215  
**COMPOUND:** Perfluoro-n-hexanoic acid

**STRUCTURE:** **CAS #:** 307-24-4



**MOLECULAR FORMULA:** C<sub>6</sub>H<sub>11</sub>F<sub>11</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 314.05  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/22/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 12/22/2020  
**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-pentanoic acid (PFPeA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 12/23/2015  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



### **INTENDED USE:**

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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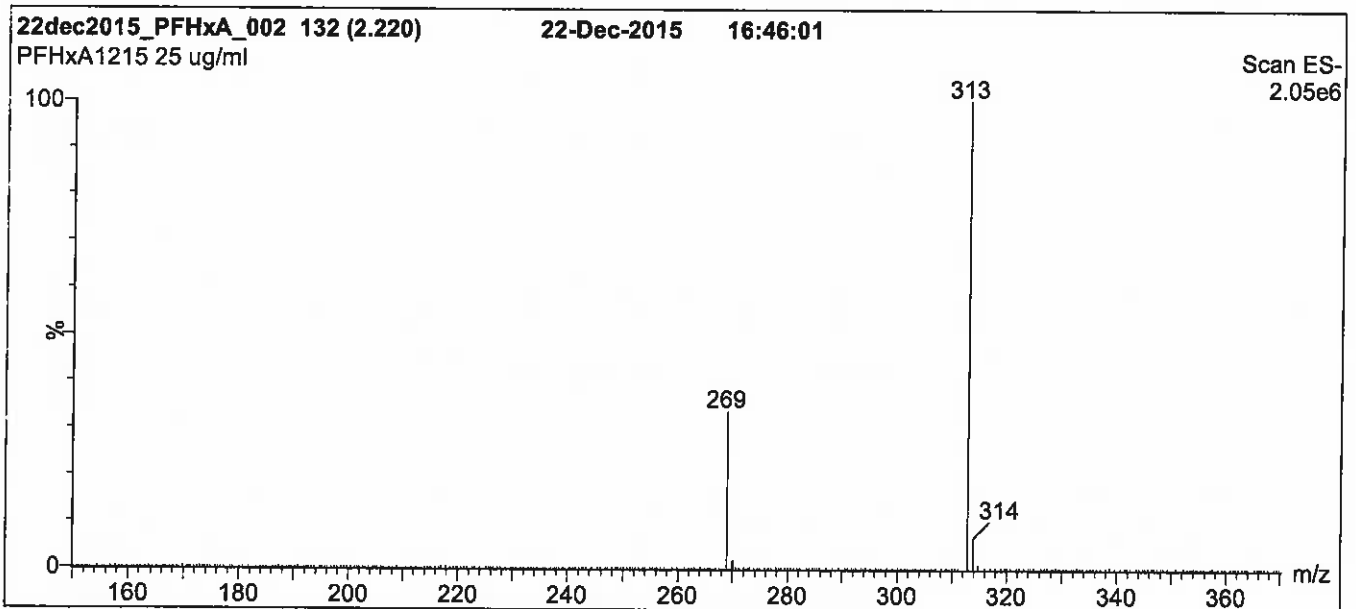
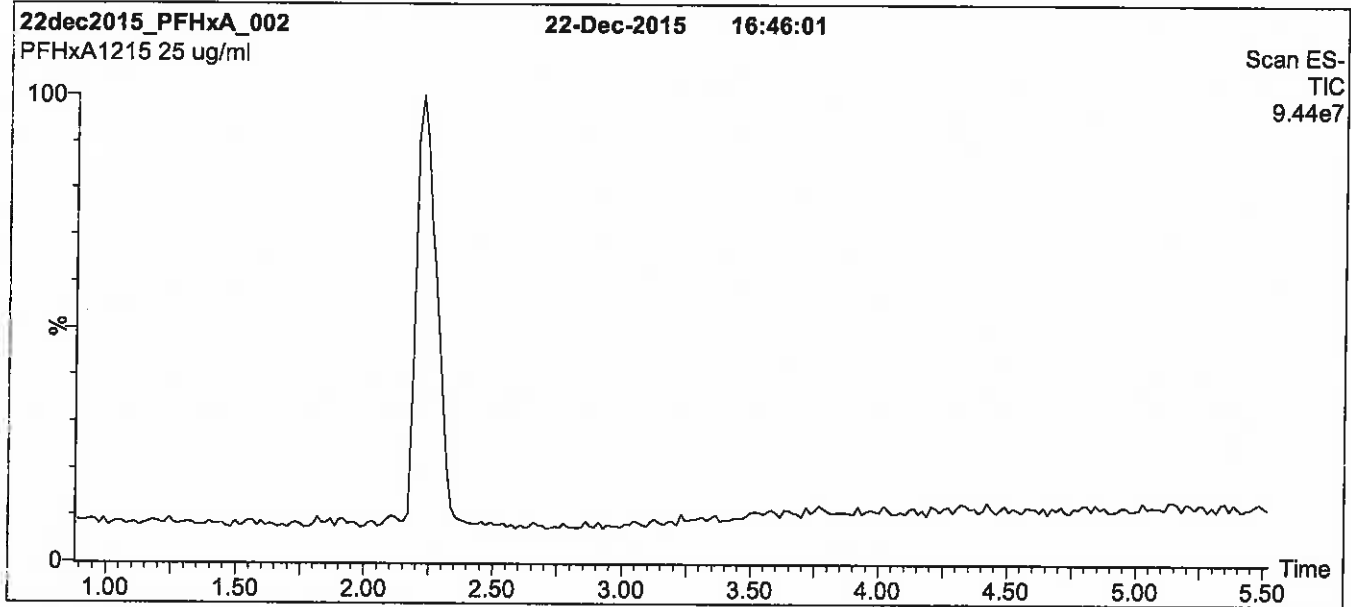
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**Figure 1: PFHxA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

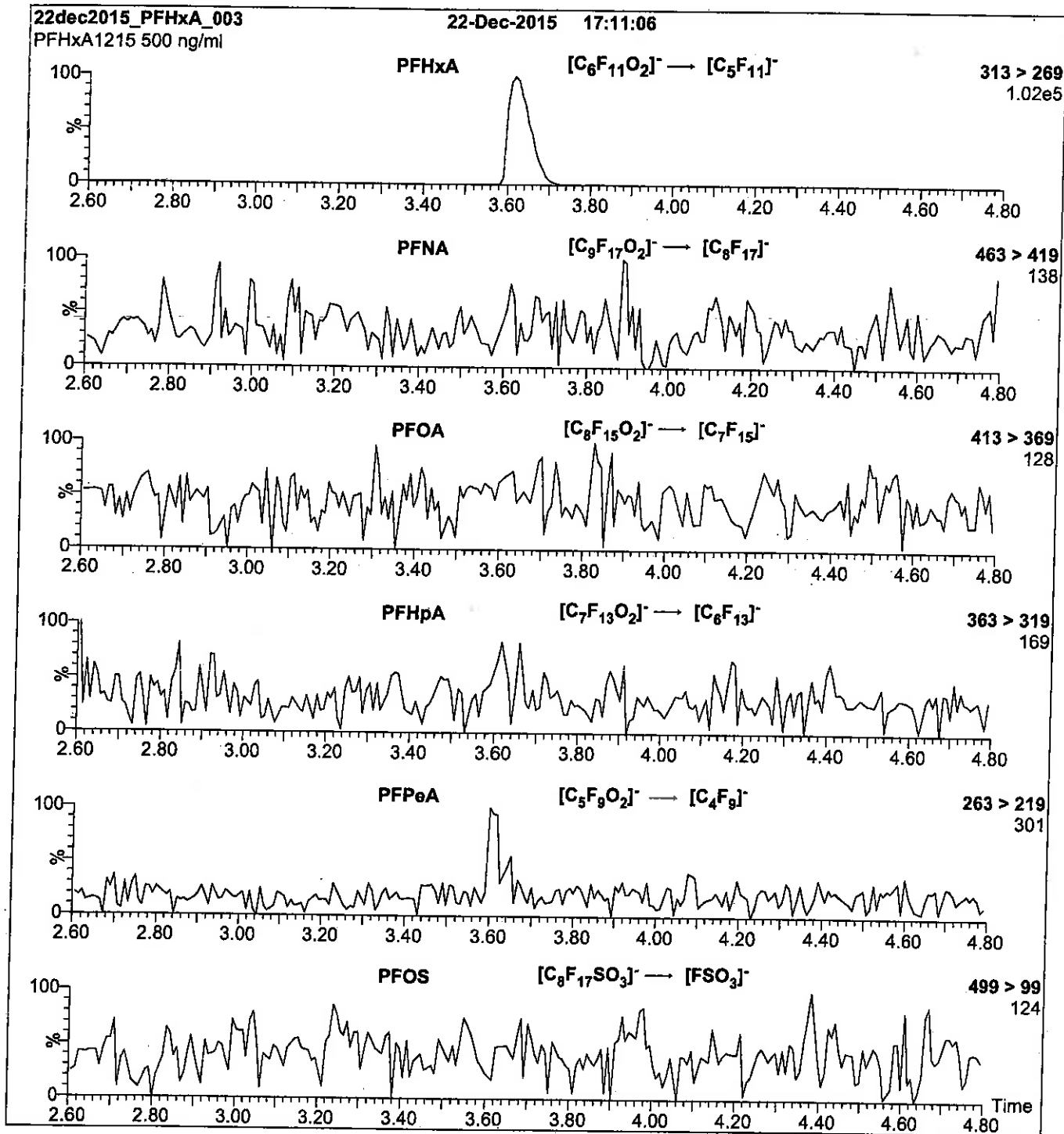
Mobile phase: Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 100  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFHxA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFHxA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
Collision Energy (eV) = 10

Reagent

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**LCPFHxDA\_00006**

R: SBC 9/13/16

Scanned 10/14/16



# WELLINGTON LABORATORIES

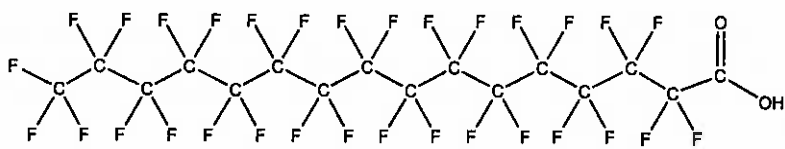
730630  
ID: LCPFHxDA\_00006  
Exp: 05/25/21 Prpd: SBC  
PFHxDA stock 50ug/mL

730631  
ID: LCPFHxDA\_00007  
Exp: 05/25/21 Prpd: SBC  
PFHxDA stock 50ug/mL

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxDA      **LOT NUMBER:** PFHxDA0516  
**COMPOUND:** Perfluoro-n-hexadecanoic acid

**STRUCTURE:**      **CAS #:** 67905-19-5



**MOLECULAR FORMULA:** C<sub>16</sub>H<sub>31</sub>O<sub>2</sub>      **MOLECULAR WEIGHT:** 814.13  
**CONCENTRATION:** 50 ± 2.5 µg/ml      **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/25/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/25/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.4% of PFODA.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 05/27/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

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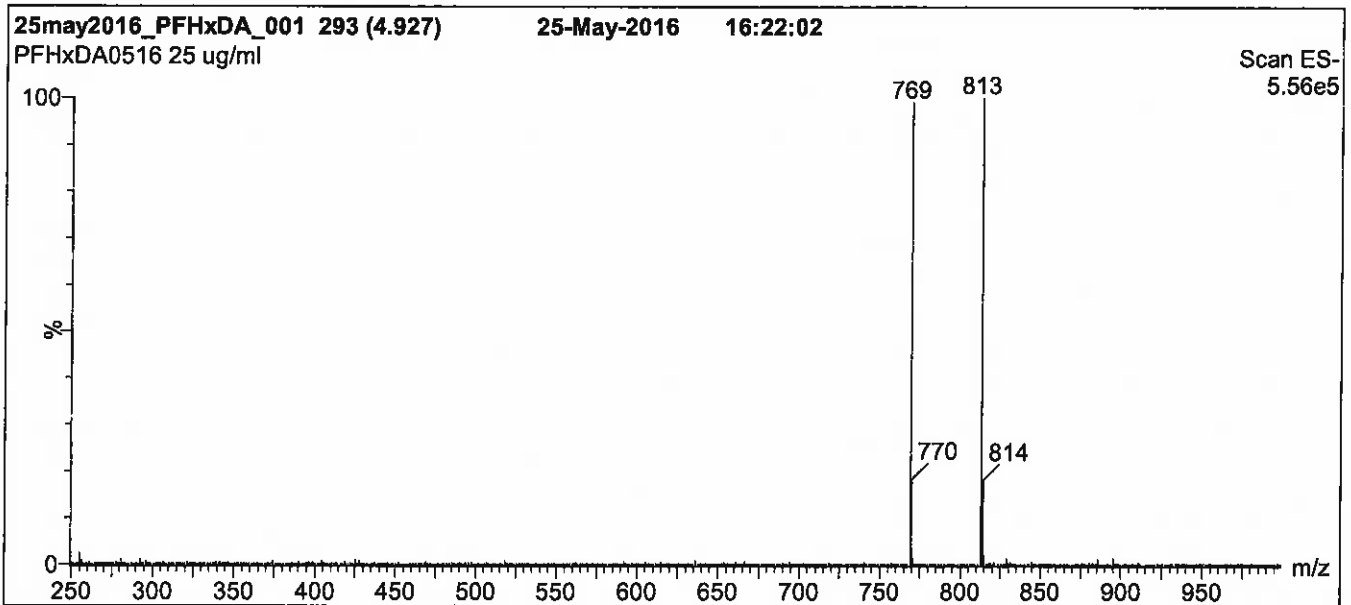
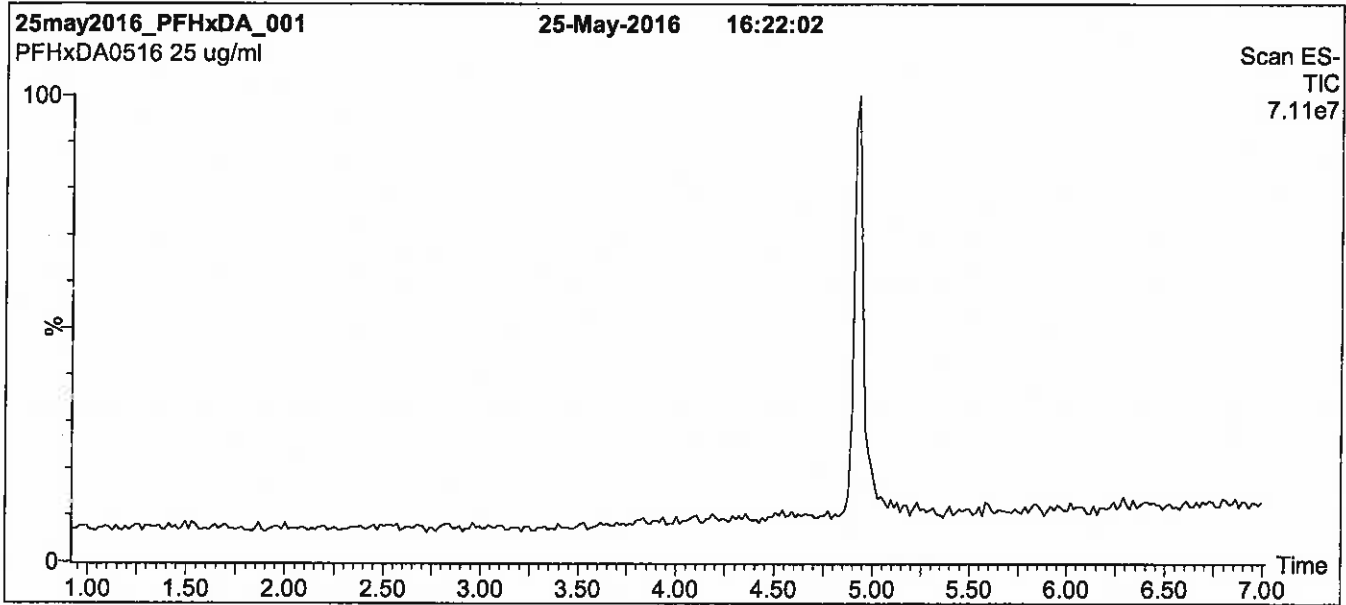
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**Figure 1: PFHxDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 70% (80:20 MeOH:ACN) / 30% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 95% organic over 6 min and hold for 2.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

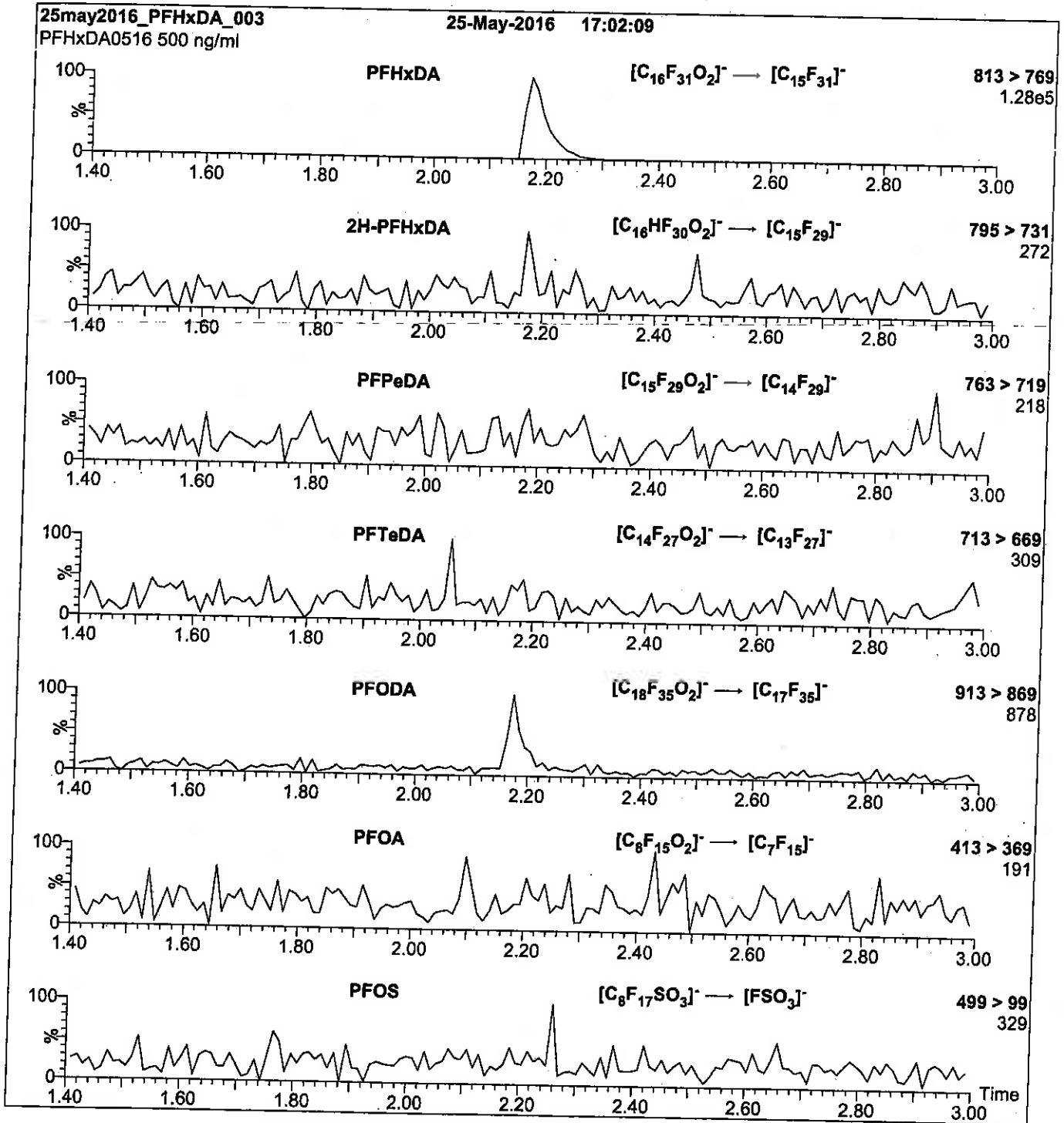
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (250 - 1250 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 3.00  
**Cone Voltage (V)** = 25.00  
**Cone Gas Flow (l/hr)** = 60  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.66e-3  
 Collision Energy (eV) = 15



Reagent

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**LCPFHxDA\_00007**

R: SBC 9/13/16

Scanned 10/14/16



# WELLINGTON LABORATORIES



730630  
ID: LCPFHxDA\_00006  
Exp: 05/25/21 Prpd: SBC  
PFHxDA stock 50ug/mL

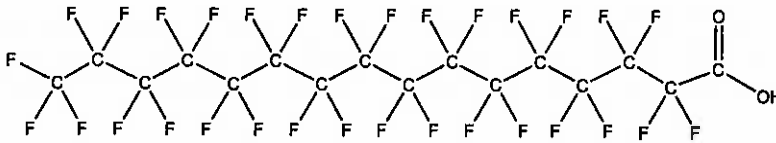


730631  
ID: LCPFHxDA\_00007  
Exp: 05/25/21 Prpd: SBC  
PFHxDA stock 50ug/mL

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFHxDA **LOT NUMBER:** PFHxDA0516  
**COMPOUND:** Perfluoro-n-hexadecanoic acid

**STRUCTURE:** **CAS #:** 67905-19-5



**MOLECULAR FORMULA:** C<sub>16</sub>H<sub>31</sub>O<sub>2</sub> **MOLECULAR WEIGHT:** 814.13  
**CONCENTRATION:** 50 ± 2.5 µg/ml **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/25/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/25/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.4% of PFODA.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim **Date:** 05/27/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

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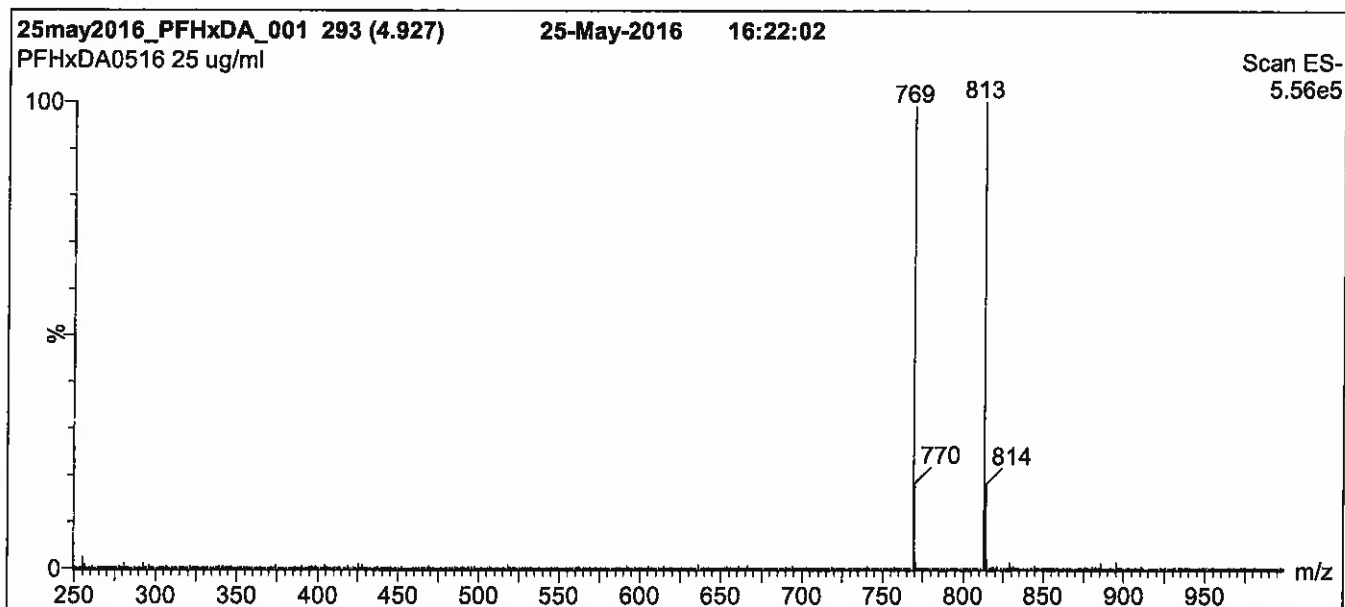
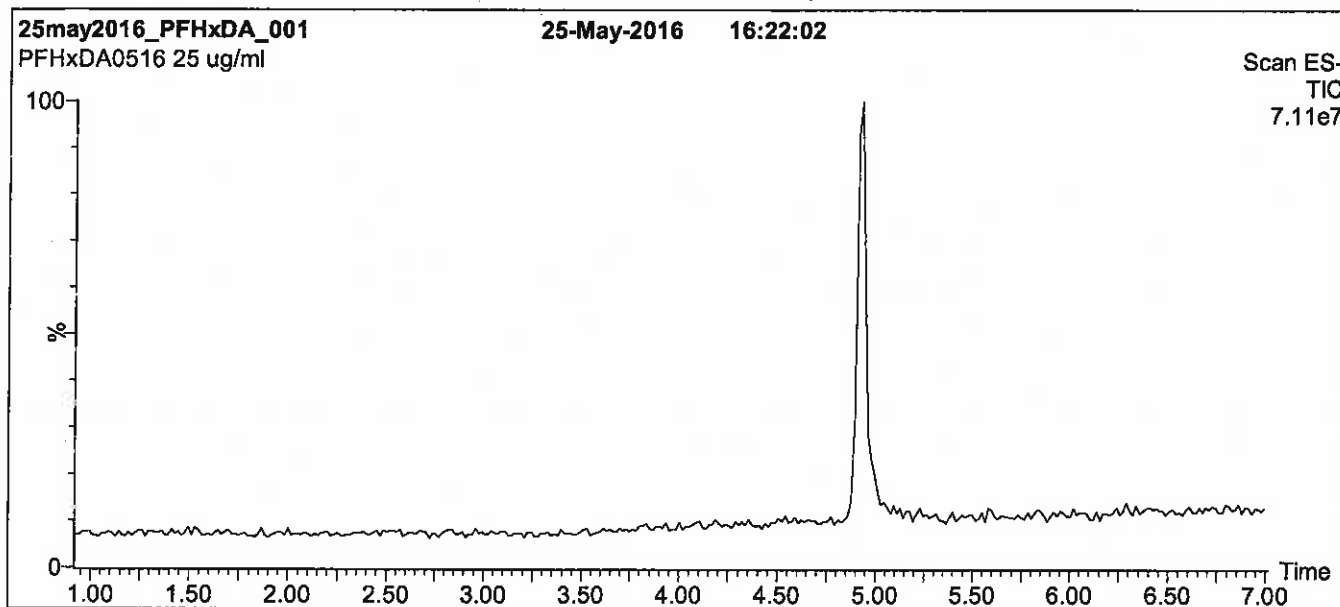
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**Figure 1: PFHxDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 70% (80:20 MeOH:ACN) / 30% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 95% organic over 6 min and hold for 2.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

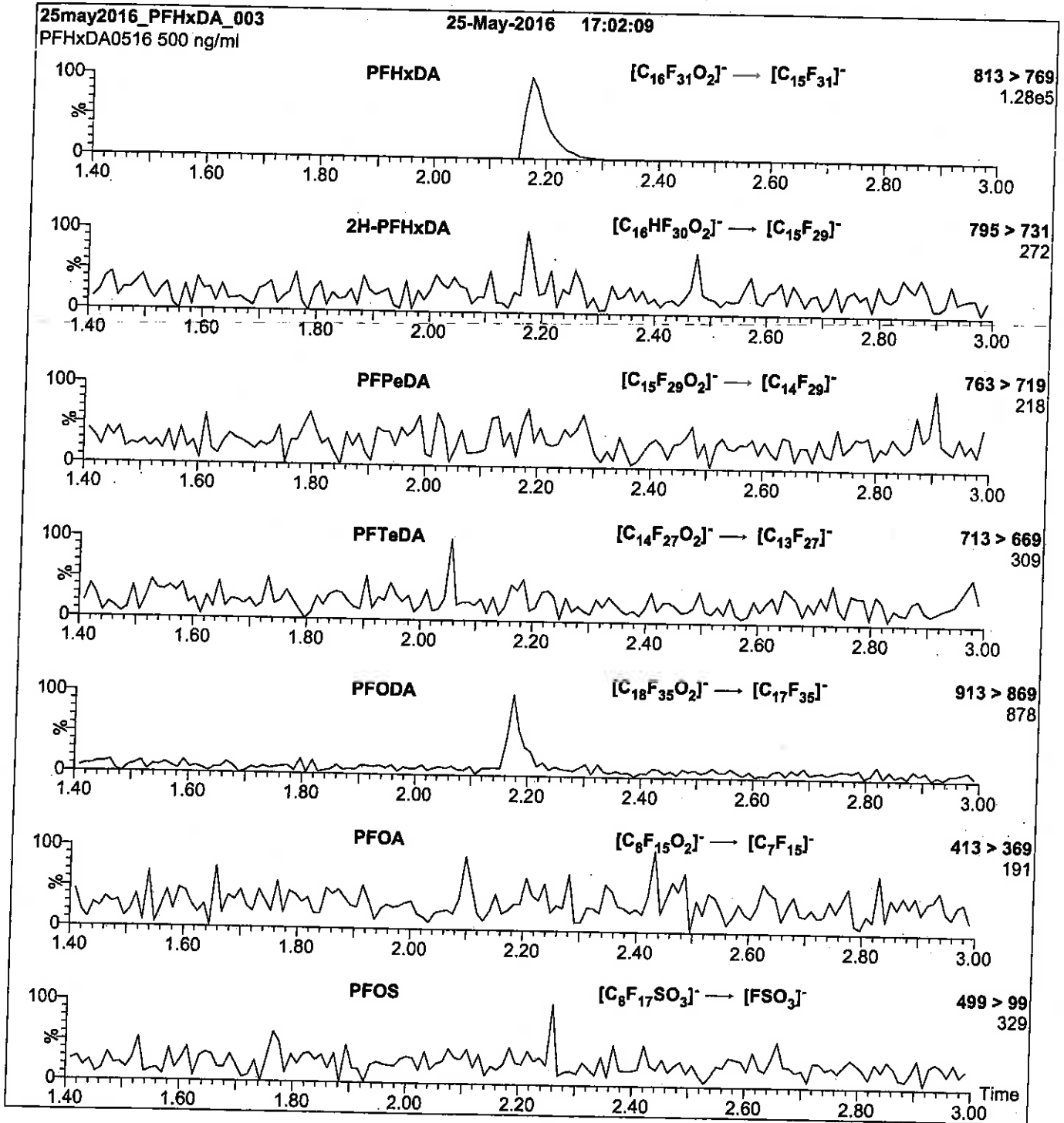
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (250 - 1250 amu)

**Source:** Electrospray (negative)  
**Capillary Voltage (kV)** = 3.00  
**Cone Voltage (V)** = 25.00  
**Cone Gas Flow (l/hr)** = 60  
**Desolvation Gas Flow (l/hr)** = 750

**Figure 2: PFHxDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml PFHxDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.66e-3  
 Collision Energy (eV) = 15

Reagent

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**LCPFHxS-br\_00002**

SBC  
R: 9/13/16



730513  
ID: LCPFHxS-br\_00002  
Exp: 07/03/20 Ppfd: SBC  
Potassium Perfluorohexane



730514  
ID: LCPFHxS-br\_00003  
Exp: 07/03/20 Ppfd: SBC  
Potassium Perfluorohexane



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
**DOCUMENTATION**

**br-PFHxSK**

**Potassium Perfluorohexanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-PFHxSK  
**LOT NUMBER:** brPFHxSK0615  
**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) 06/29/2015  
**LAST TESTED:** (mm/dd/yyyy) 07/03/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 07/03/2020  
**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 <sup>19</sup>F-NMR  
Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS Data  
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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**Table A: br-PFHxSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

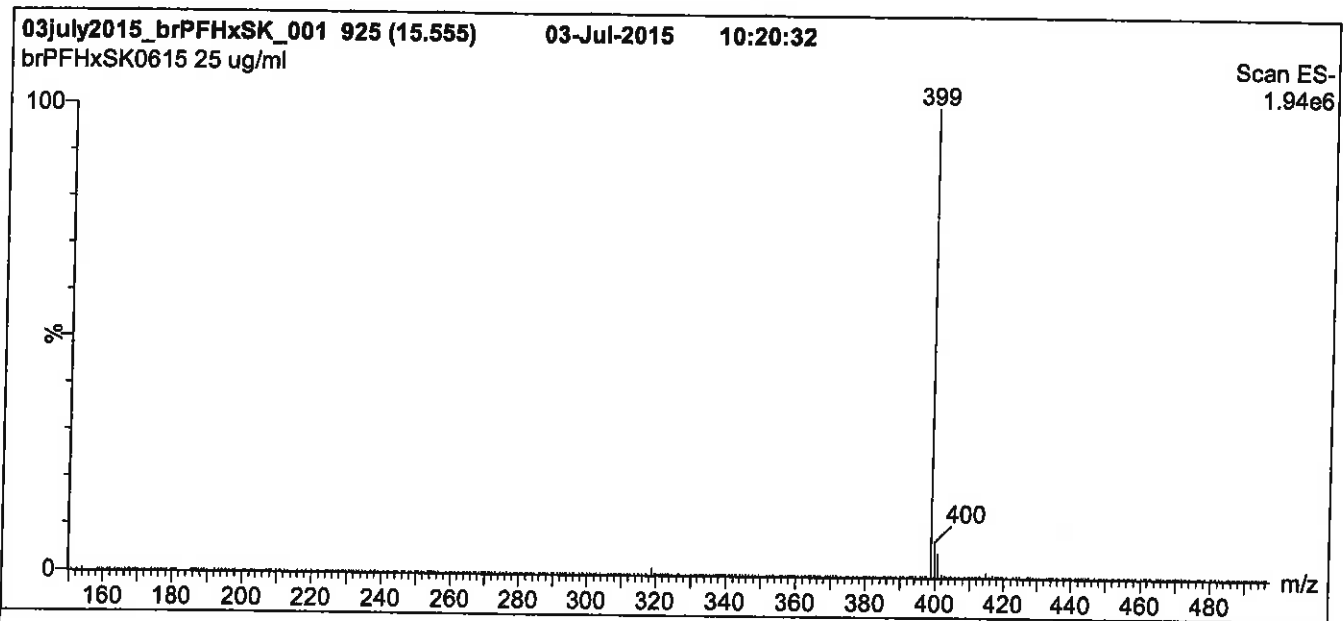
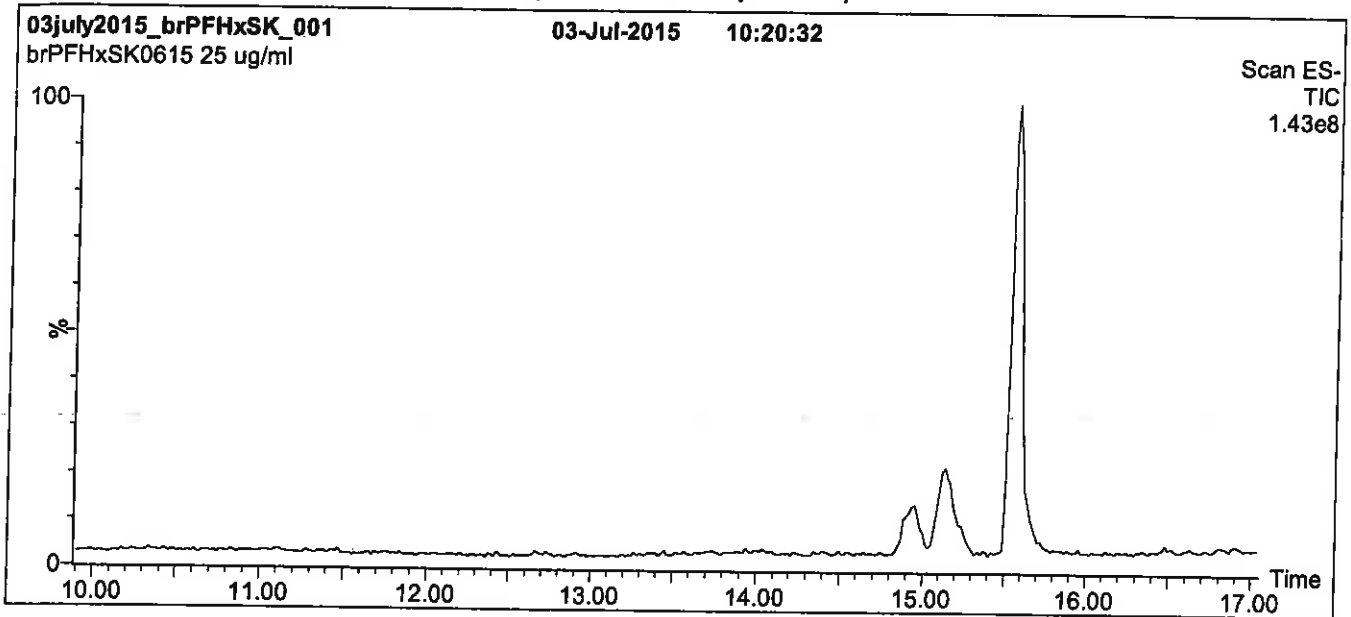
Isomer	Name	Structure	Percent Composition by <sup>19</sup> F-NMR
1	Potassium perfluoro-1-hexanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{CCF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	0.2
7	Other Unidentified Isomers		0.5

\* Percent of total perfluorohexanesulfonate isomers only.  
 \*\* Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By:   
 B.G. Chittim

Date: 07/15/2015  
(mm/dd/yyyy)

**Figure 1: br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 20% (80:20 MeOH:ACN) / 80% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 50% organic over 14 min. Ramp to  
90% organic over 3 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 20 min

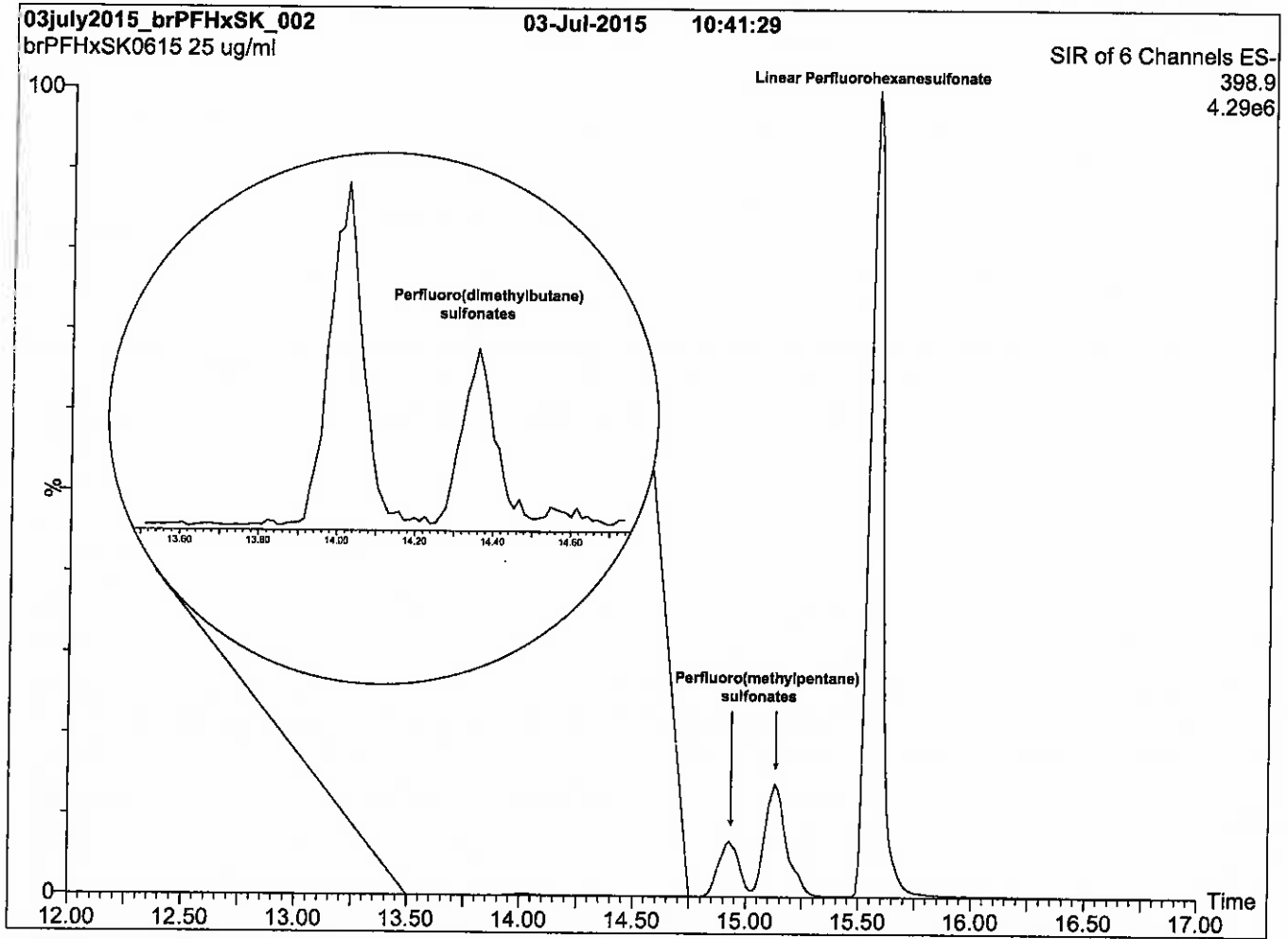
**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 50.00  
Cone Gas Flow (l/hr) = 60  
Desolvation Gas Flow (l/hr) = 750

Flow: 300  $\mu$ l/min

**Figure 2: br-PFHxSK; LC/MS Data**



**Conditions for Figure 2:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 20% (80:20 MeOH:ACN) / 80% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 50% organic over 14 min. Ramp to  
 90% organic over 3 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 20 min

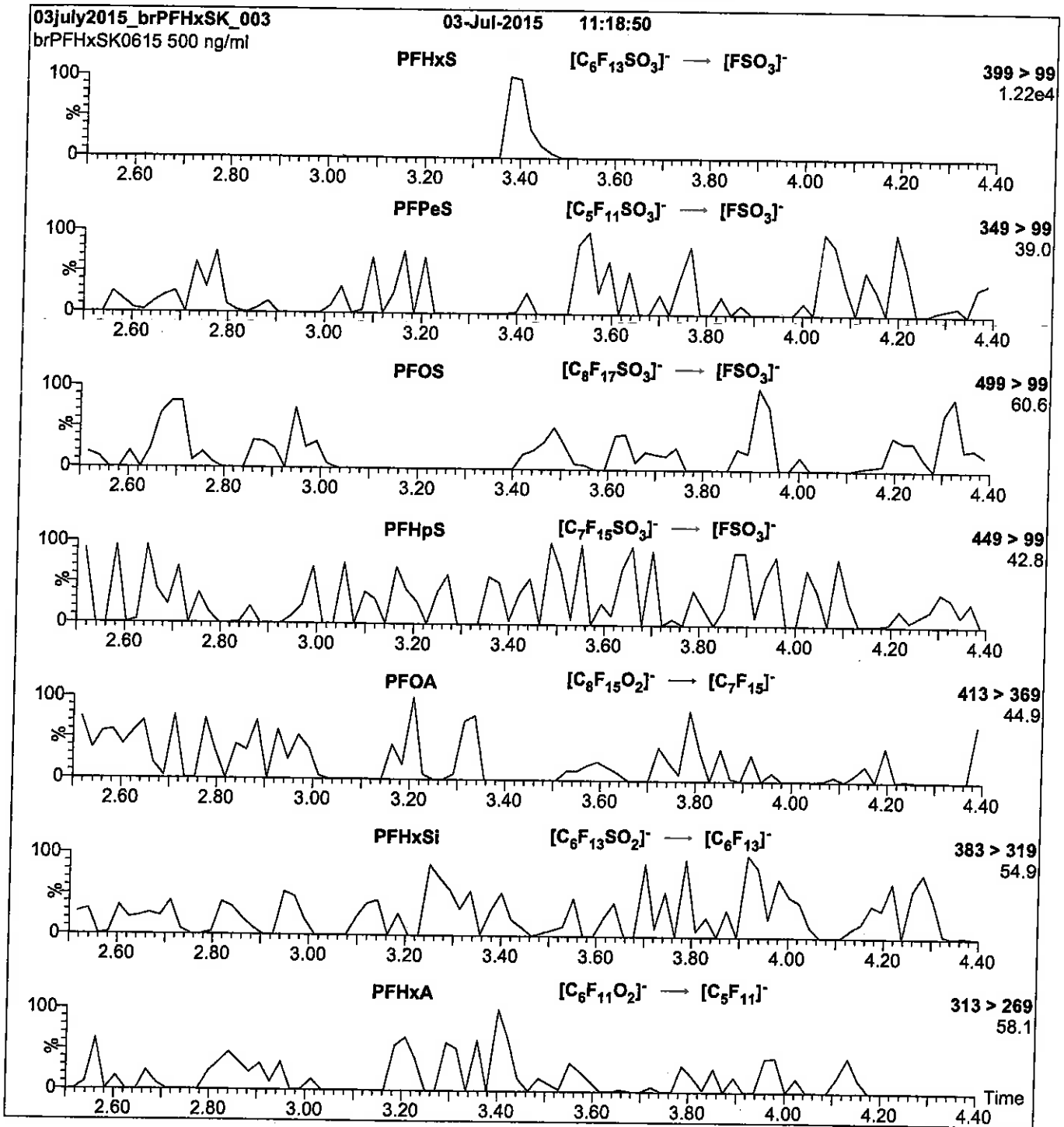
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** SIR (6 channels)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 50.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750

**Figure 3: br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 3:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.54e-3  
Collision Energy (eV) = 30

Reagent

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**LCPFHxS-br\_00003**

SBC  
R: 9/13/16



730513  
ID: LCPFHxS-br\_00002  
Exp: 07/03/20 Ppfd: SBC  
Potassium Perfluorohexane



730514  
ID: LCPFHxS-br\_00003  
Exp: 07/03/20 Ppfd: SBC  
Potassium Perfluorohexane



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**CERTIFICATE OF ANALYSIS**  
**DOCUMENTATION**

**br-PFHxSK**

**Potassium Perfluorohexanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-PFHxSK  
**LOT NUMBER:** brPFHxSK0615  
**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) 06/29/2015  
**LAST TESTED:** (mm/dd/yyyy) 07/03/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 07/03/2020  
**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.

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Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS Data  
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains ~ 0.5% of perfluoro-1-pentanesulfonate and ~ 0.2% of perfluoro-1-octanesulfonate.
- CAS#: 3871-99-6 (for linear isomer; potassium salt).

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**Table A: br-PFHxSK; Isomeric Components and Percent Composition (by <sup>19</sup>F-NMR)\***

Isomer	Name	Structure	Percent Composition by <sup>19</sup> F-NMR
1	Potassium perfluoro-1-hexanesulfonate	CF <sub>3</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> CF <sub>2</sub> SO <sub>3</sub> <sup>-</sup> K <sup>+</sup>	81.1
2	Potassium 1-trifluoromethylperfluoropentanesulfonate**	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	2.9
3	Potassium 2-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	1.4
4	Potassium 3-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	5.0
5	Potassium 4-trifluoromethylperfluoropentanesulfonate	$\begin{array}{c} \text{CF}_3\text{CF}_2\text{CF}_2\text{CF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	8.9
6	Potassium 3,3-di(trifluoromethyl)perfluorobutanesulfonate	$\begin{array}{c} \text{CF}_3 \\   \\ \text{CF}_3\text{CCF}_2\text{CF}_2\text{SO}_3^-\text{K}^+ \\   \\ \text{CF}_3 \end{array}$	0.2
7	Other Unidentified Isomers		0.5

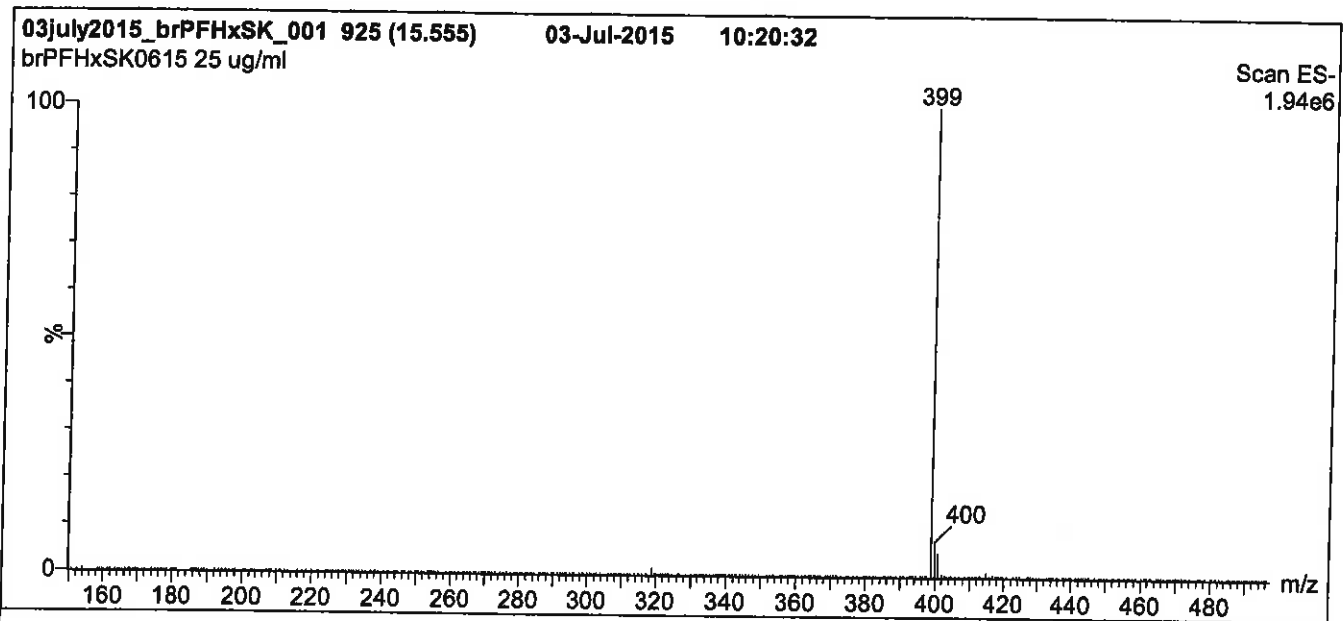
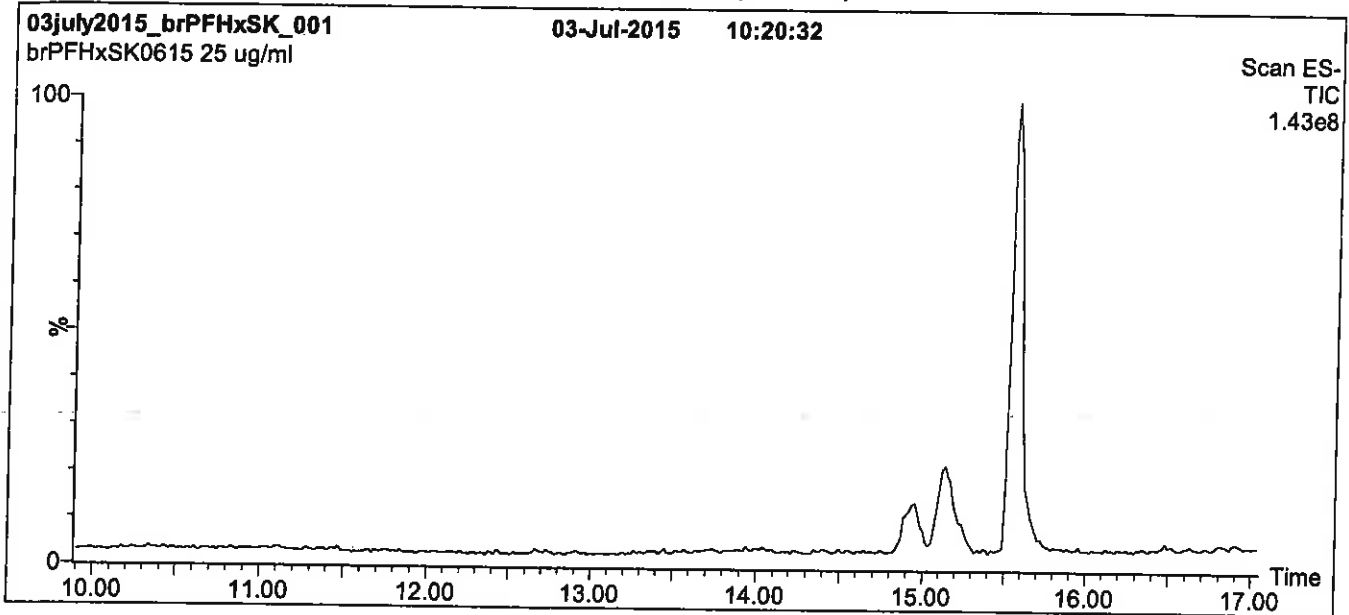
\* Percent of total perfluorohexanesulfonate isomers only.  
 \*\* Systematic Name: Potassium perfluorohexane-2-sulfonate.

Certified By:   
 B.G. Chittim

Date: 07/15/2015  
(mm/dd/yyyy)



**Figure 1: br-PFHxSK; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 20% (80:20 MeOH:ACN) / 80% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 50% organic over 14 min. Ramp to  
90% organic over 3 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 20 min

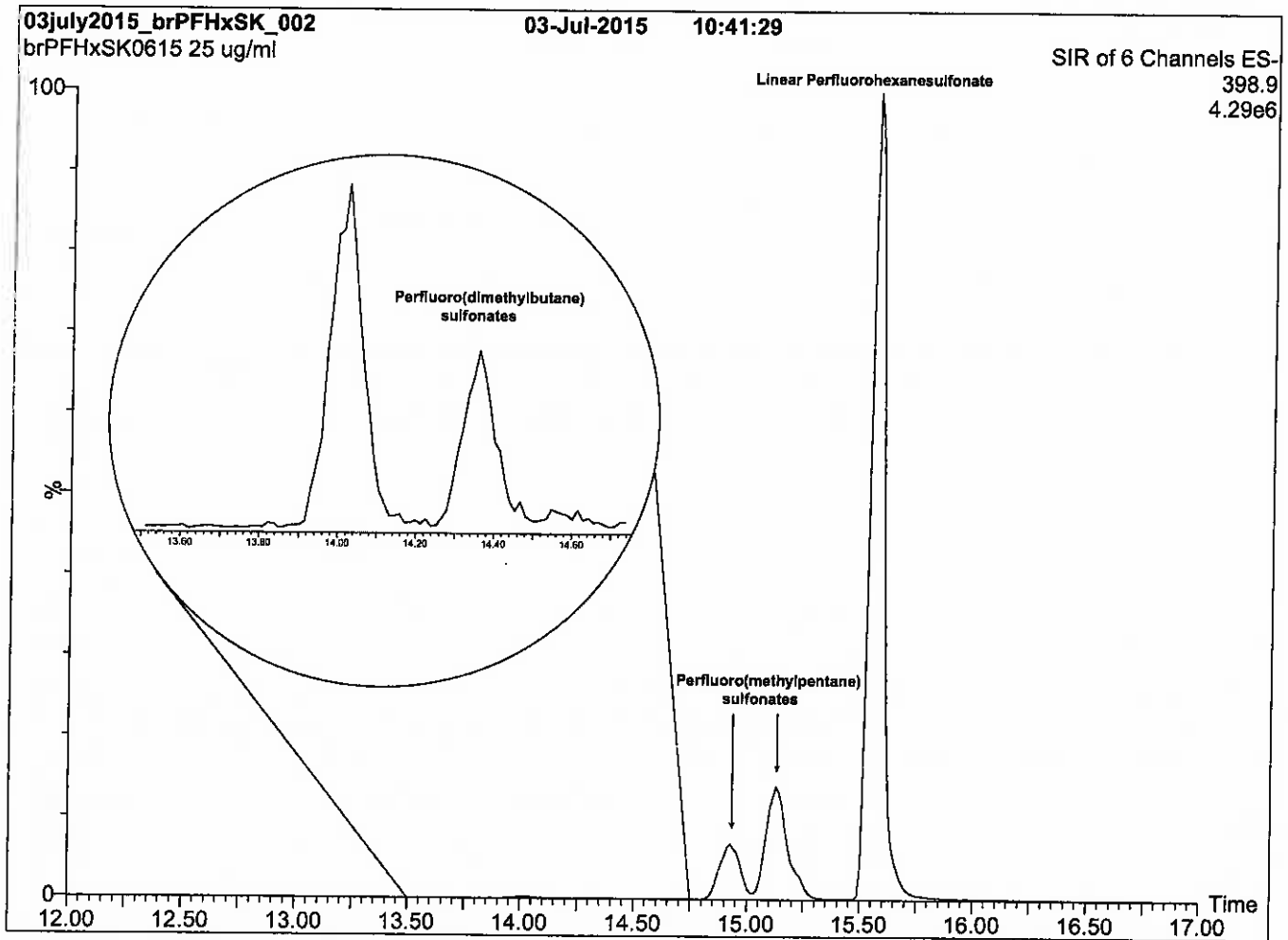
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 50.00  
Cone Gas Flow (l/hr) = 60  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: br-PFHxSK; LC/MS Data**



**Conditions for Figure 2:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

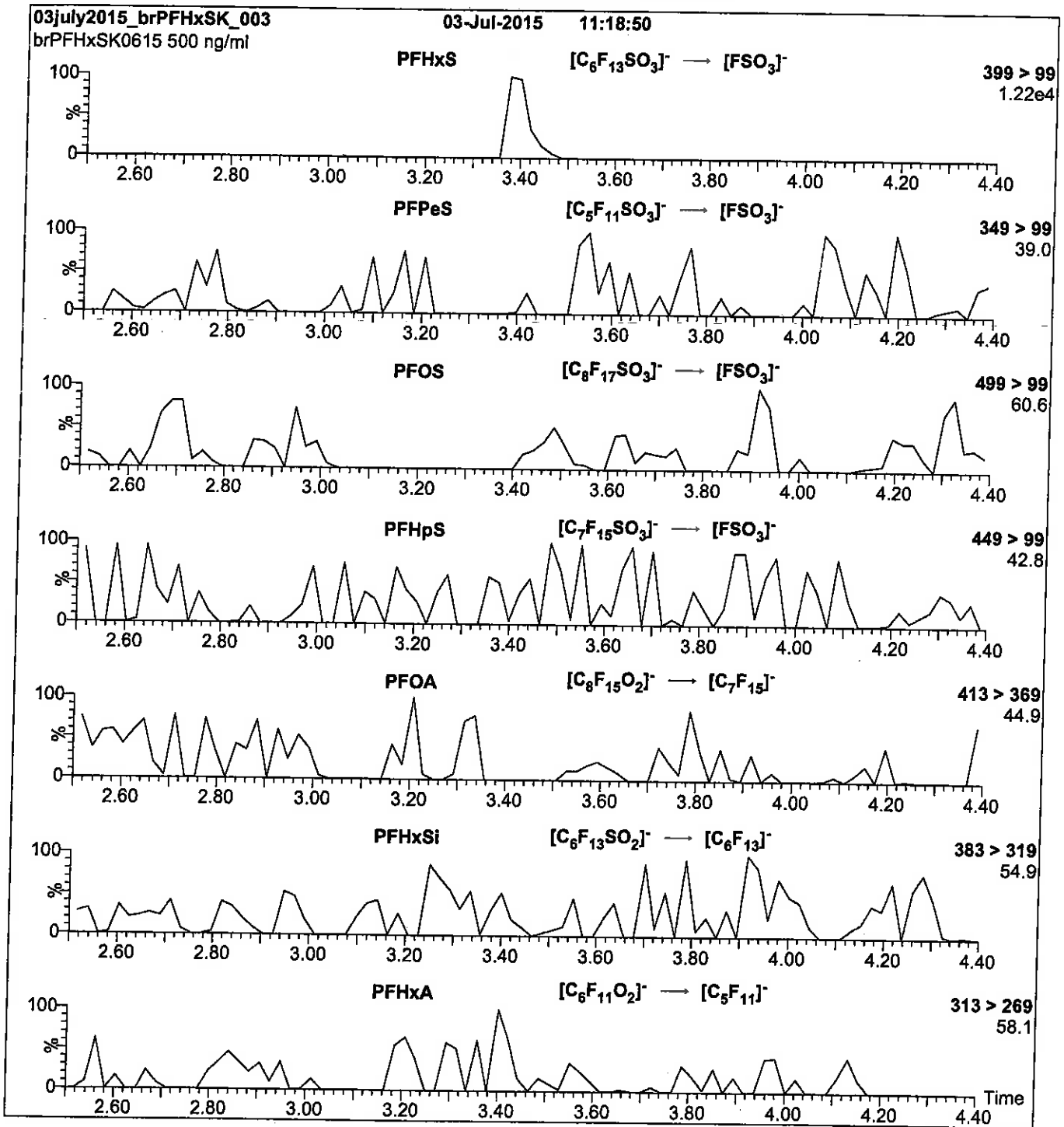
**Mobile phase:** Gradient  
Start: 20% (80:20 MeOH:ACN) / 80% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 50% organic over 14 min. Ramp to  
90% organic over 3 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 20 min

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Experiment: SIR (6 channels)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 50.00  
Cone Gas Flow (l/hr) = 60  
Desolvation Gas Flow (l/hr) = 750

**Figure 3: br-PFHxSK; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 3:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml br-PFHxSK)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.54e-3  
Collision Energy (eV) = 30

Reagent

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**LCPFNA\_00006**

R: SBC 9/13/16  
Scanned 10/14/16



730559  
ID: LCPFNA\_00006  
Exp: 10/23/20 Ppfd: SBC  
PF-n-nonanoic acid



730560  
ID: LCPFNA\_00007  
Exp: 10/23/20 Ppfd: SBC  
PF-n-nonanoic acid



**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
**DOCUMENTATION**

**PRODUCT CODE:**

PFNA

**LOT NUMBER:**

PFNA1015

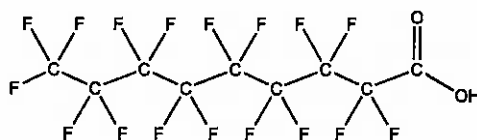
**COMPOUND:**

Perfluoro-n-nonanoic acid

**STRUCTURE:**

**CAS #:**

375-95-1



**MOLECULAR FORMULA:**

C<sub>9</sub>H<sub>F</sub><sub>17</sub>O<sub>2</sub>

**MOLECULAR WEIGHT:**

464.08

**CONCENTRATION:**

50 ± 2.5 µg/ml

**SOLVENT(S):**

Methanol

Water (<1%)

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

10/23/2015

**EXPIRY DATE:** (mm/dd/yyyy)

10/23/2020

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of perfluoro-n-octanoic acid (PFOA) and < 0.1% of perfluoro-n-heptanoic acid (PFHpA).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 10/30/2015

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

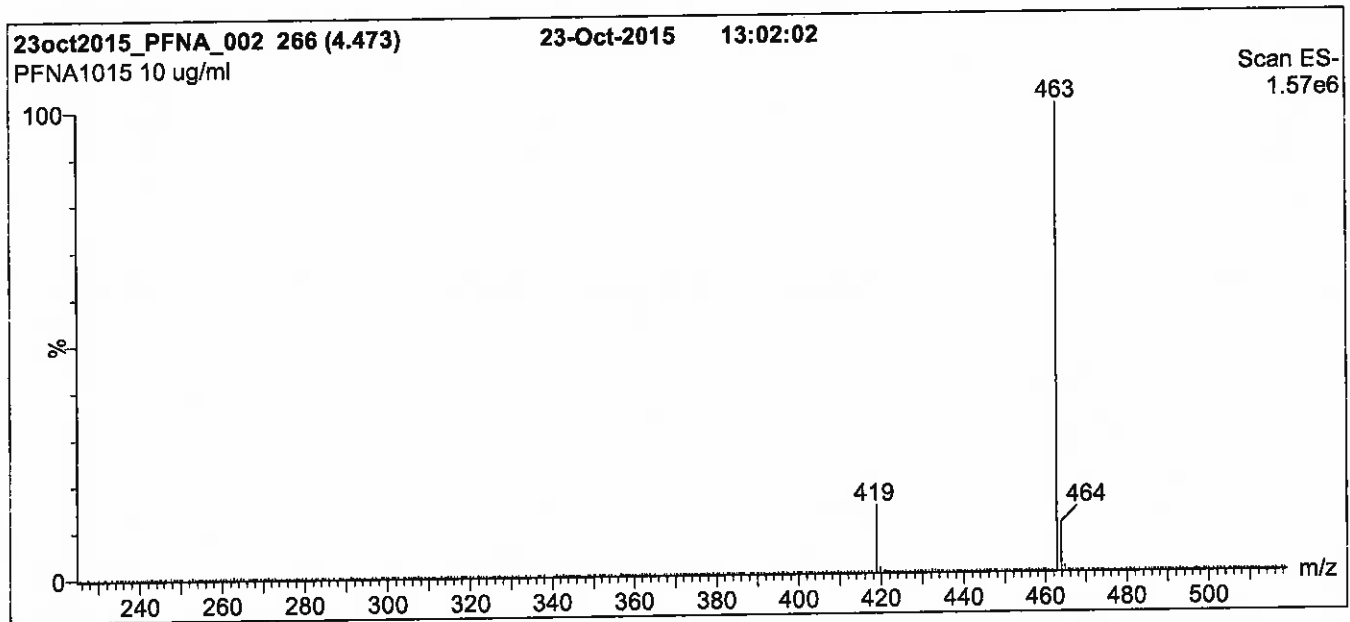
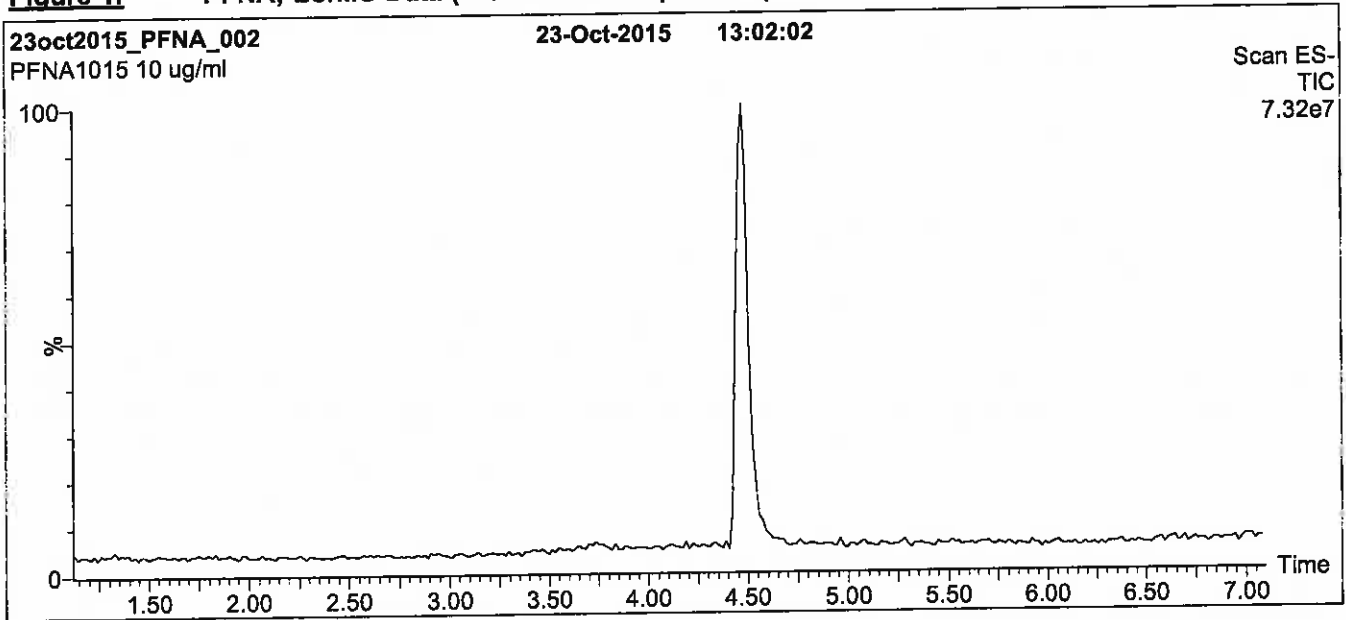
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



\*\*For additional information or assistance concerning this or any other products from Wellington Laboratories Inc., please visit our website at [www.well-labs.com](http://www.well-labs.com) or contact us directly at [info@well-labs.com](mailto:info@well-labs.com)\*\*

**Figure 1: PFNA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for 2 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

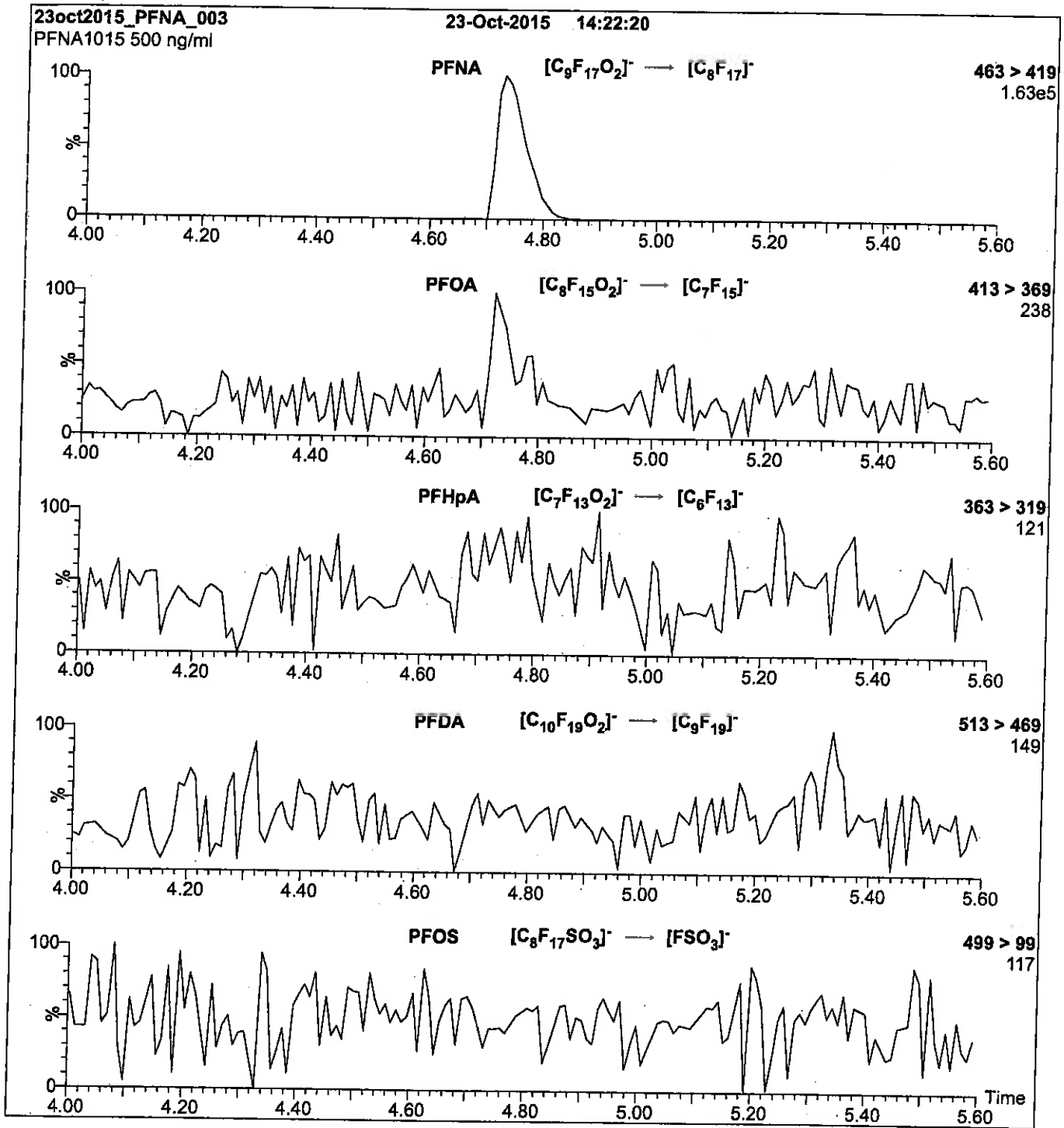
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFNA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.28e-3  
 Collision Energy (eV) = 11



Reagent

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**LCPFNA\_00007**



### **INTENDED USE:**

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### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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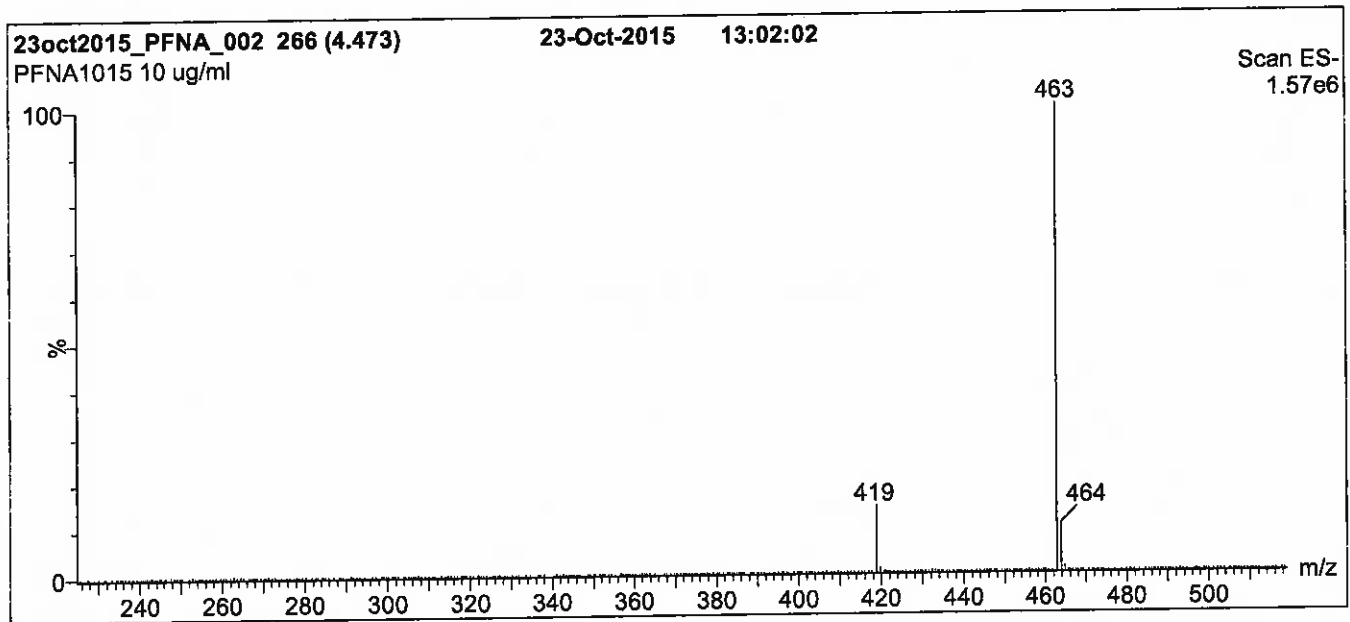
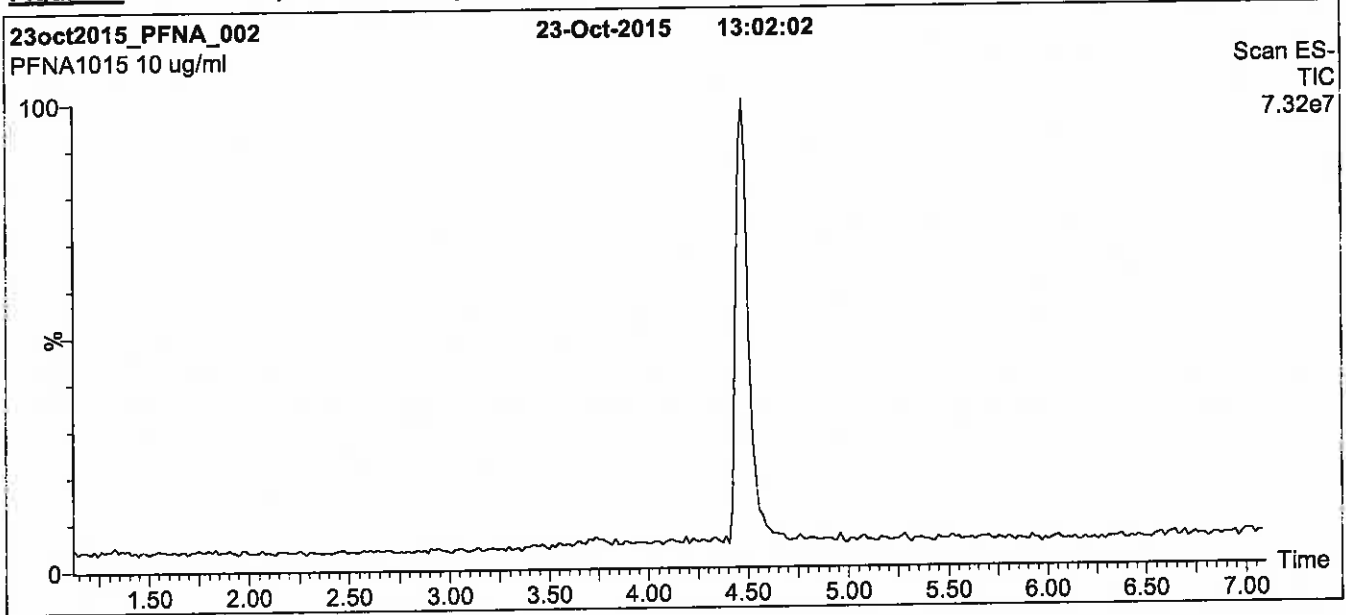
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: PFNA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 2 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

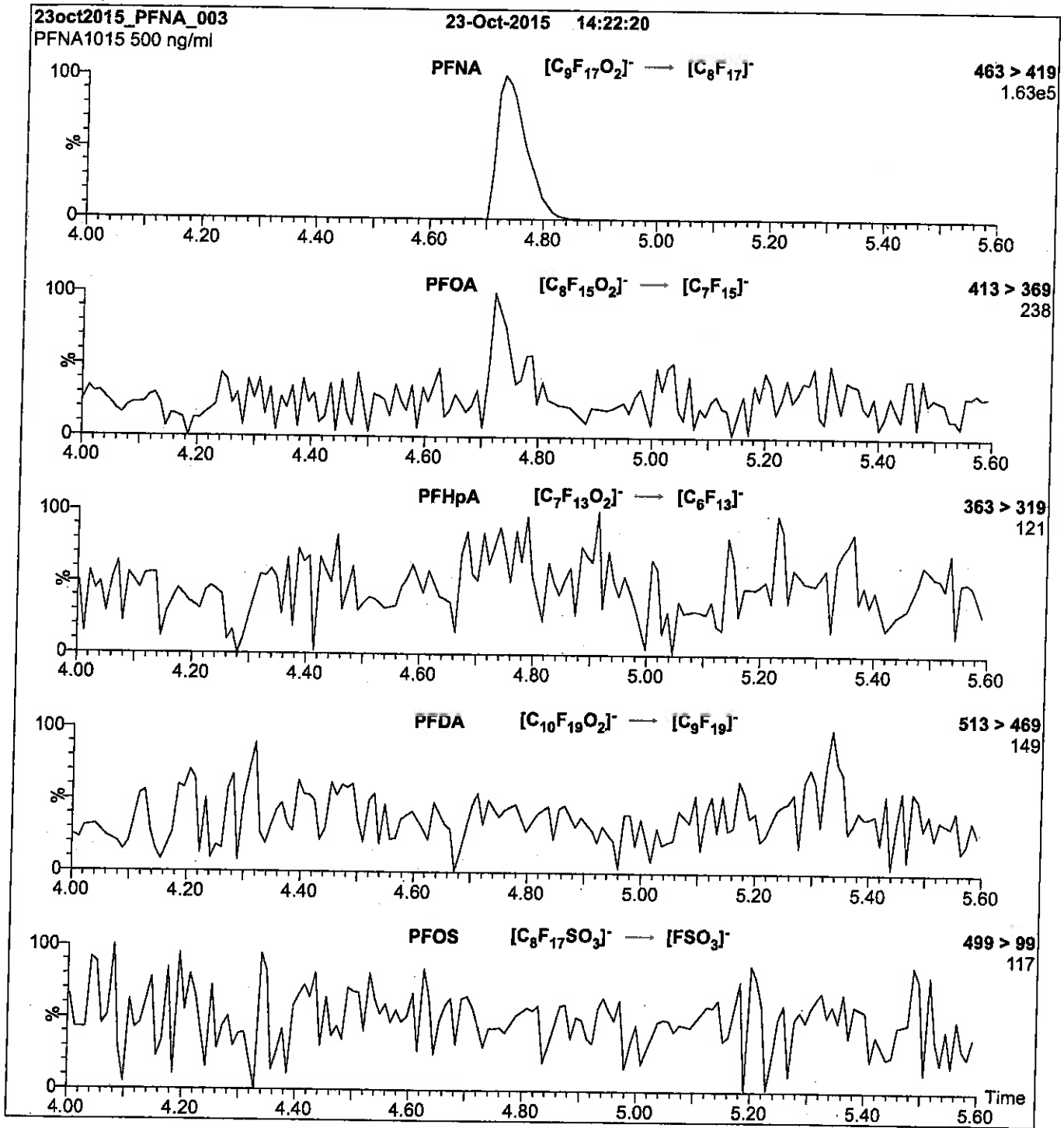
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 15.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFNA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml PFNA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.28e-3  
 Collision Energy (eV) = 11

Reagent

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**LCPFOA\_00006**



### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

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### **HOMOGENEITY:**

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### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

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$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

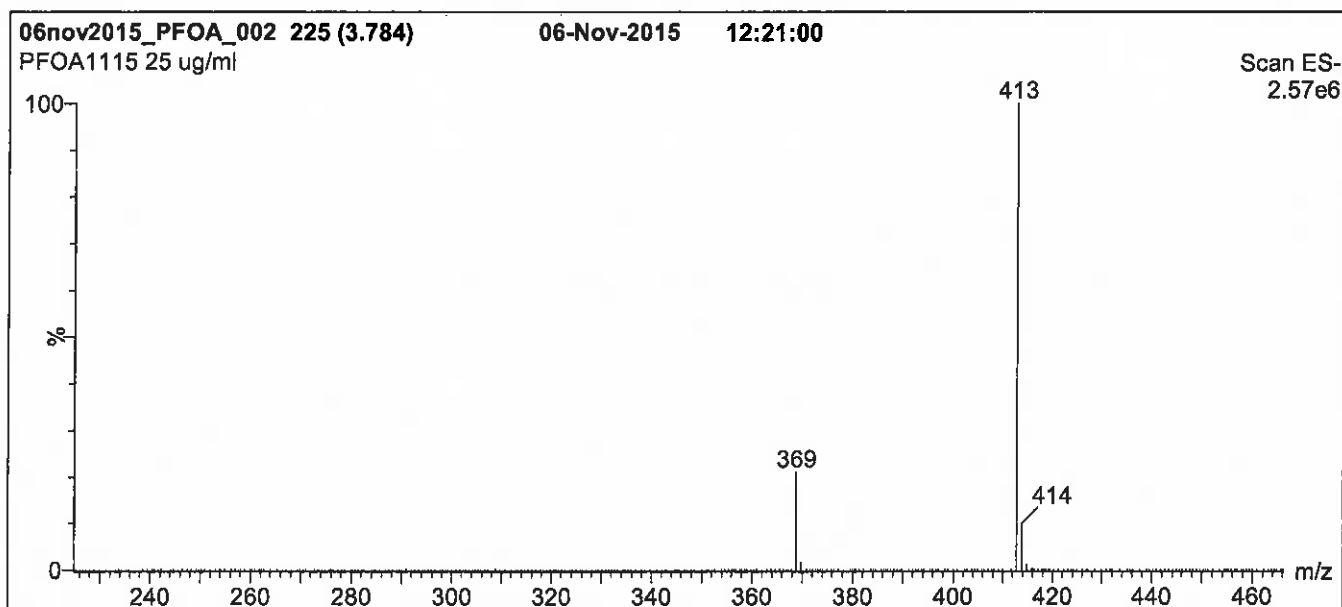
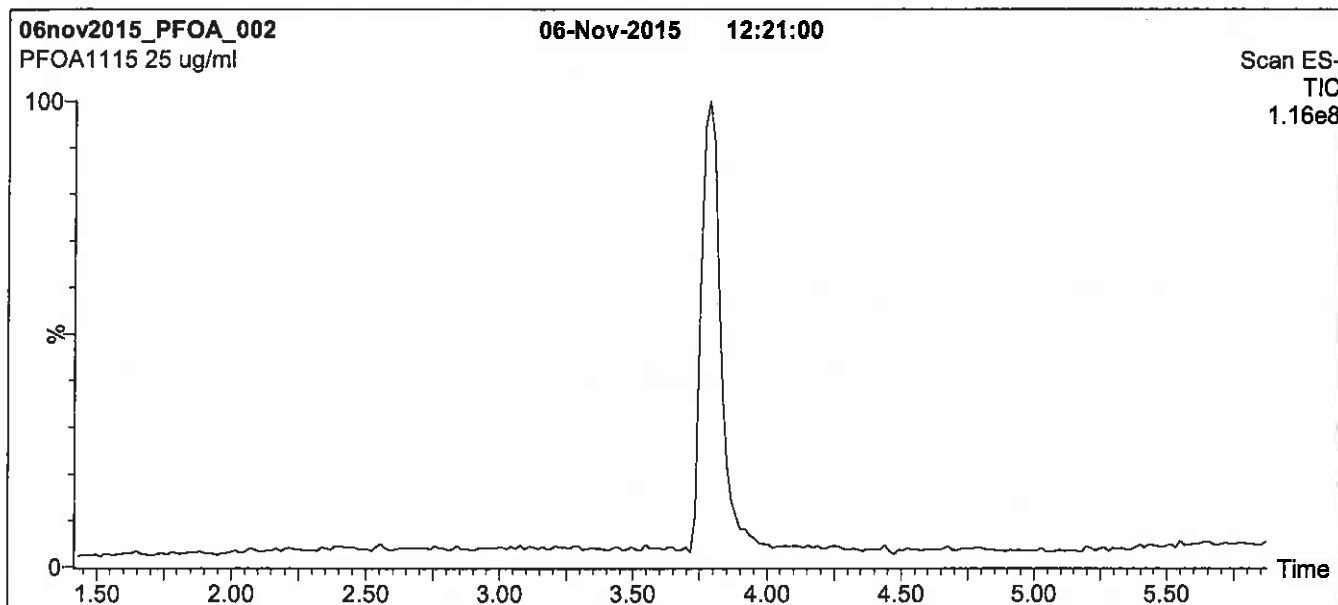
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: PFOA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for  
 2 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

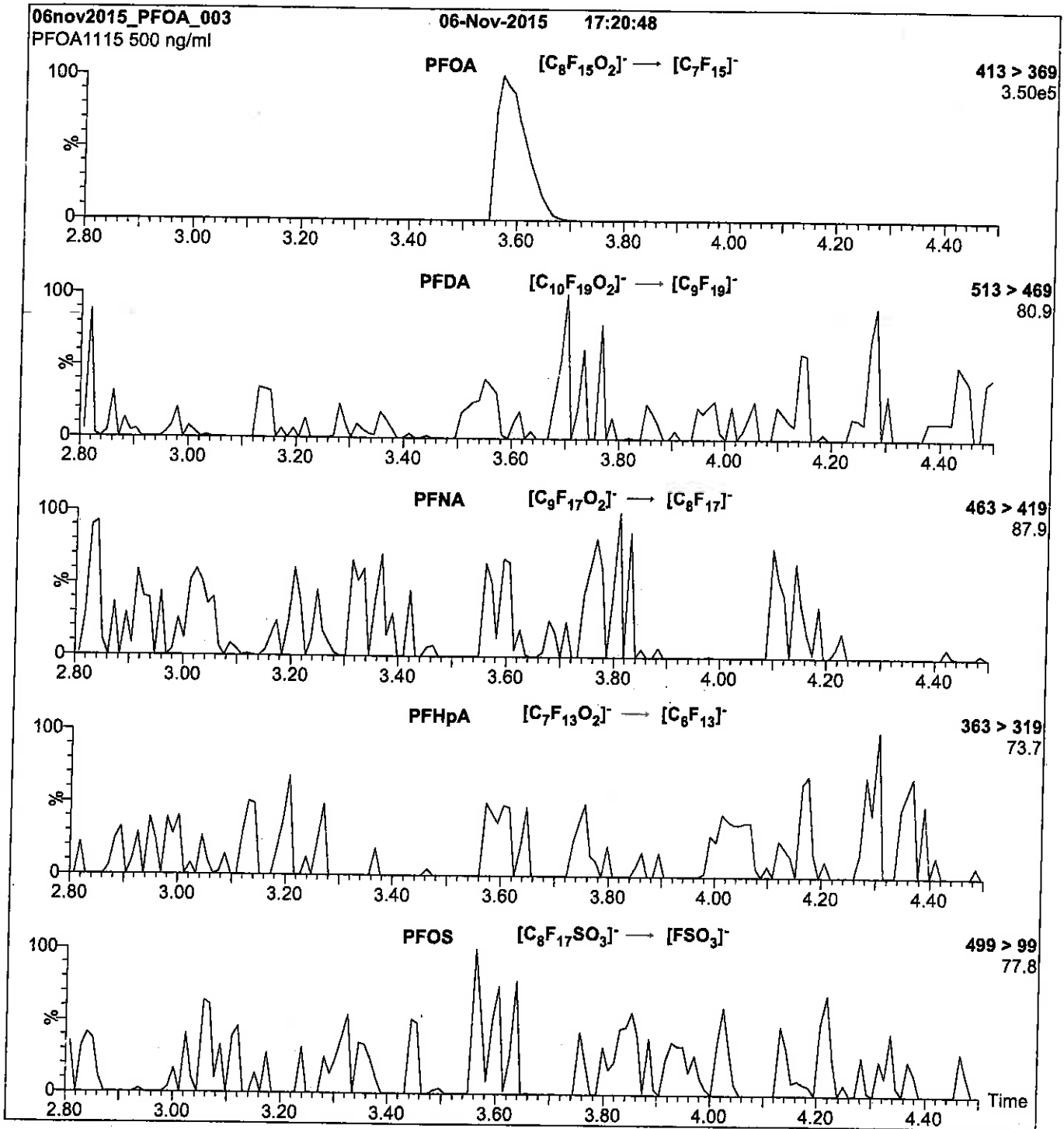
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.17e-3  
Collision Energy (eV) = 10

Reagent

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**LCPFOA\_00007**

n: 12/24/16 Spd



# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:**

PFOA

**LOT NUMBER:**

PFOA0716

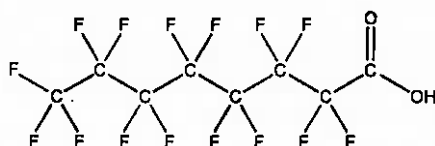
**COMPOUND:**

Perfluoro-n-octanoic acid

**STRUCTURE:**

**CAS #:**

335-67-1



**MOLECULAR FORMULA:**

$C_8HF_{16}O_2$

**MOLECULAR WEIGHT:**

414.07

**CONCENTRATION:**

$50 \pm 2.5 \mu\text{g/ml}$

**SOLVENT(S):**

Methanol

Water (<1%)

**CHEMICAL PURITY:**

>98%

**LAST TESTED:** (mm/dd/yyyy)

08/02/2016

**EXPIRY DATE:** (mm/dd/yyyy)

08/02/2021

**RECOMMENDED STORAGE:**

Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)

Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

Certified By:

B.G. Chittim

Date: 08/05/2016

(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
 519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

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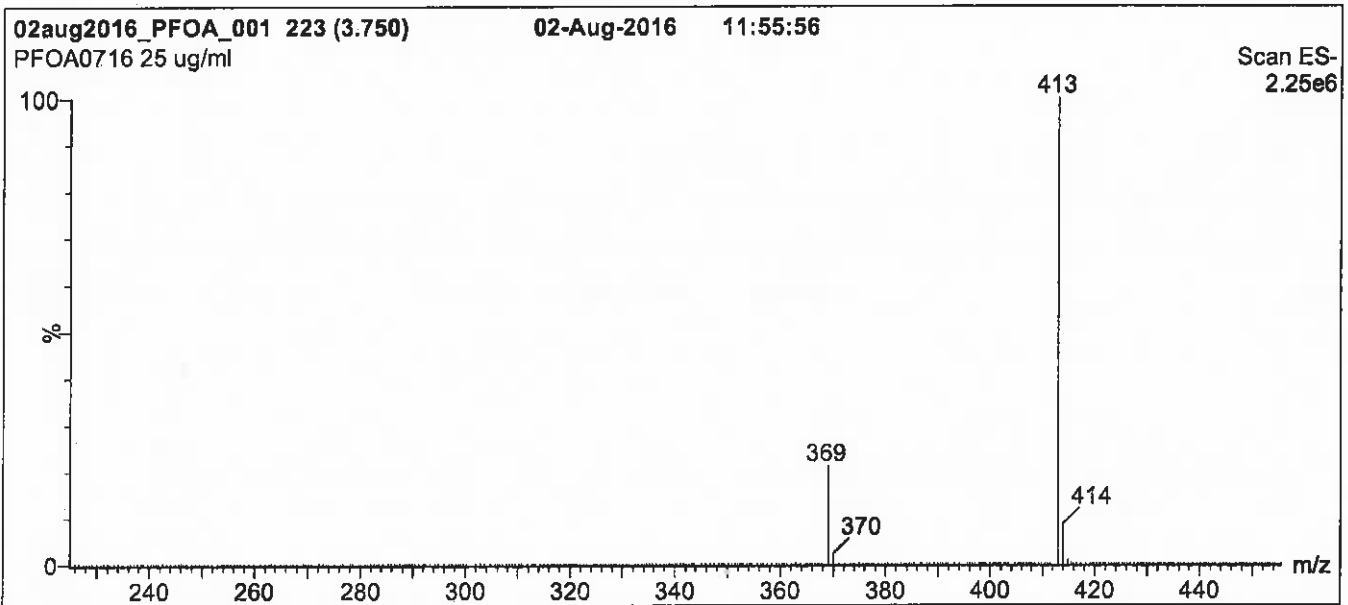
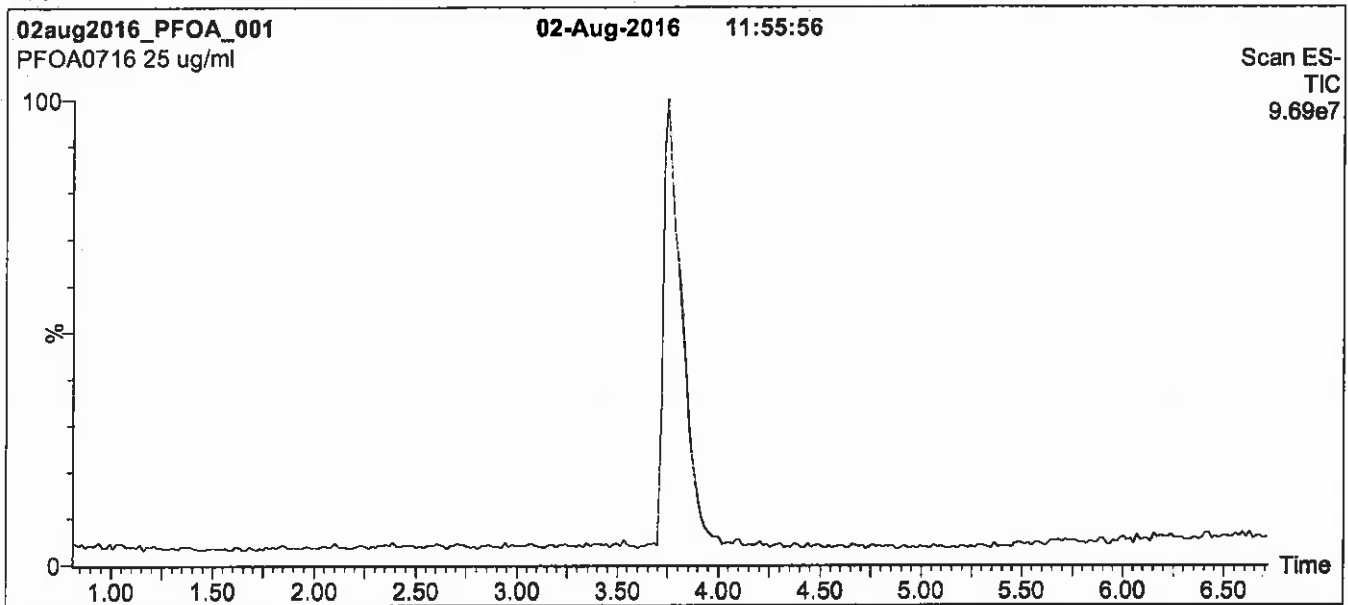
### **QUALITY MANAGEMENT:**

This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: PFOA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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

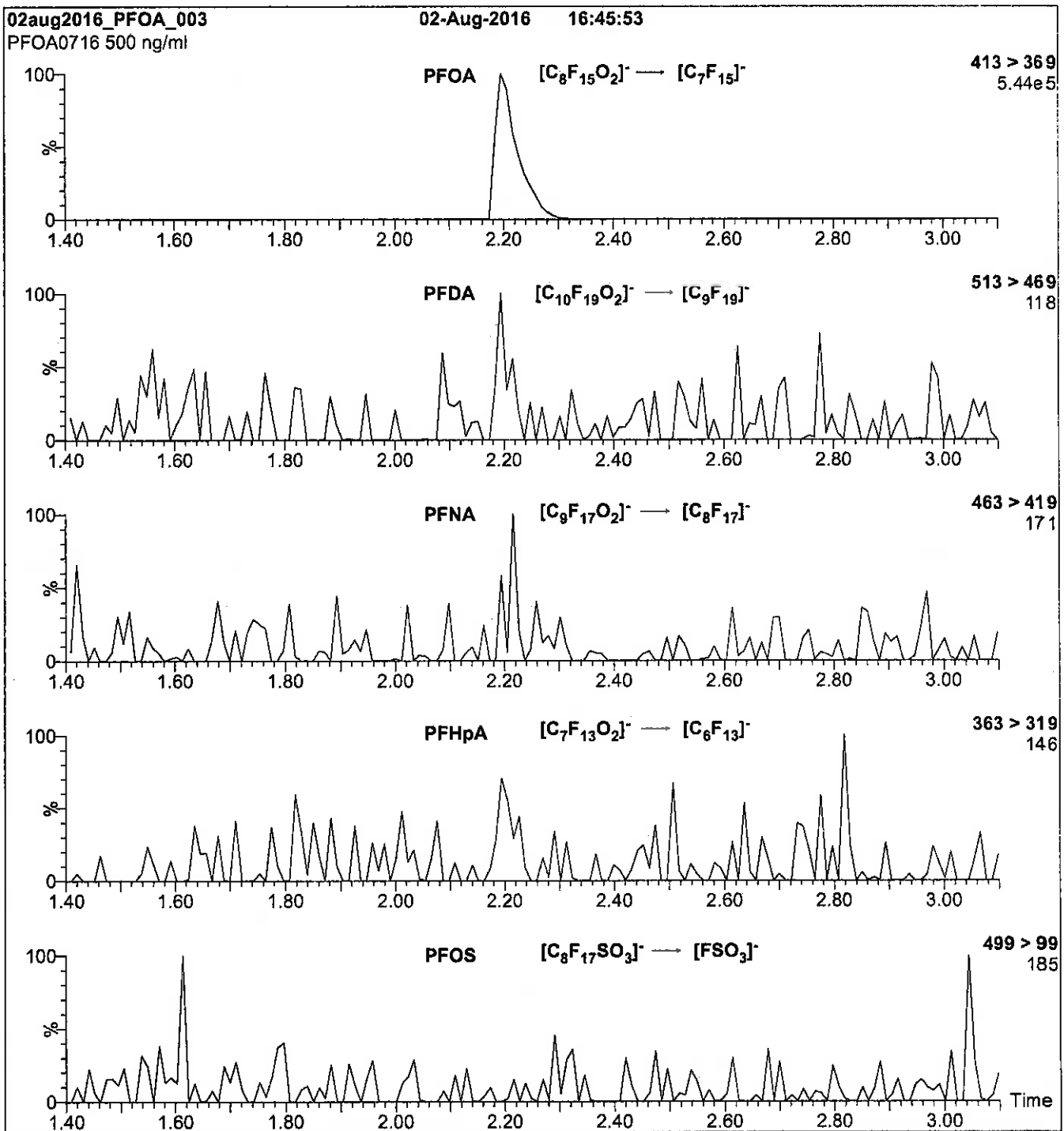
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 100  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFOA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFOA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
Collision Energy (eV) = 10

Reagent

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**LCPFODA\_00006**





### **INTENDED USE:**

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### **HAZARDS:**

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Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

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The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

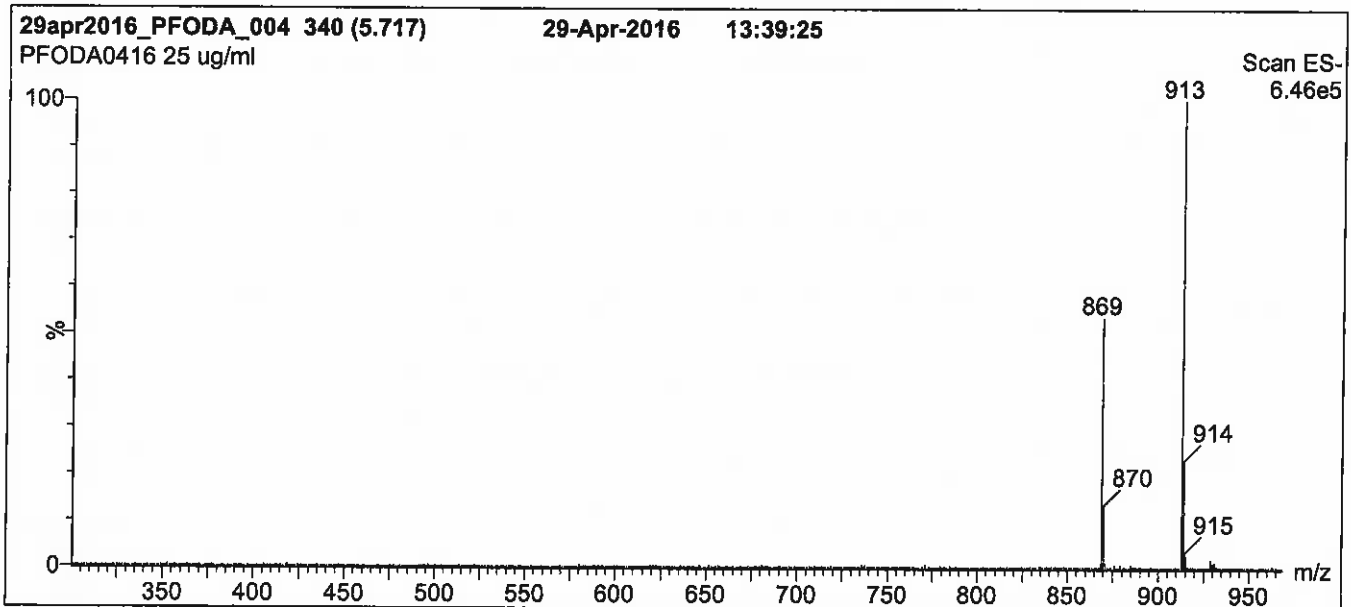
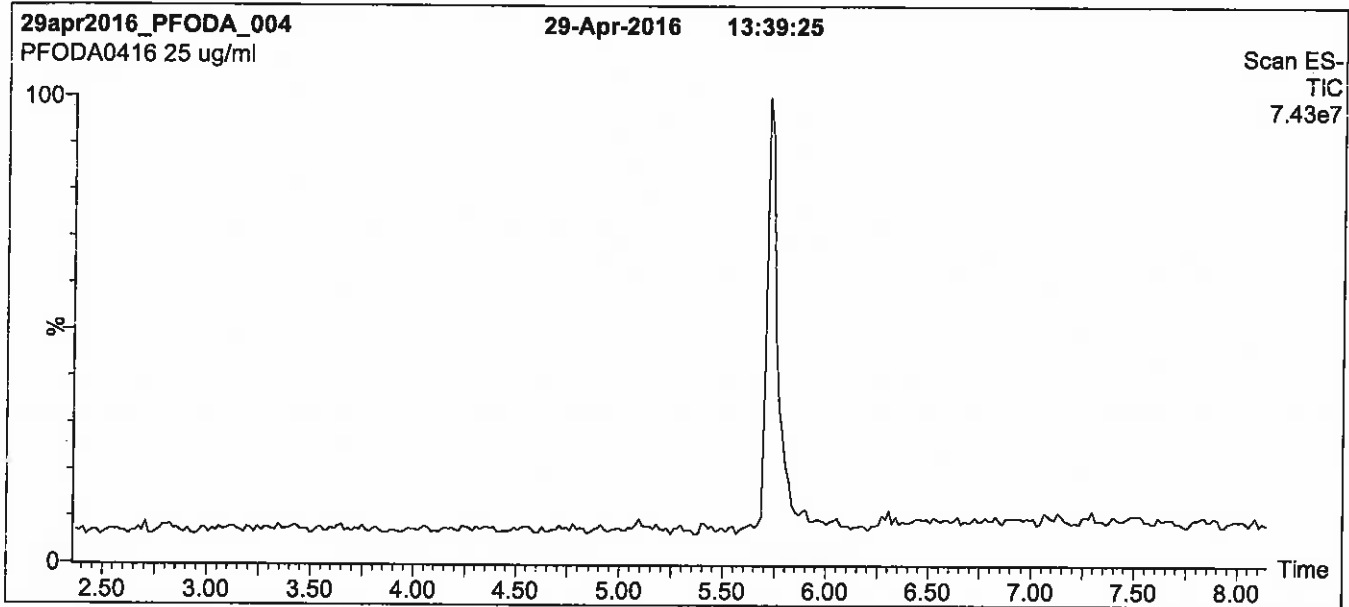
### **QUALITY MANAGEMENT:**

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**Figure 1: PFODA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 70% (80:20 MeOH:ACN) / 30% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 95% organic over 6 min and hold for  
2.5 min before returning to initial conditions in 0.5 min.  
Time: 10 min

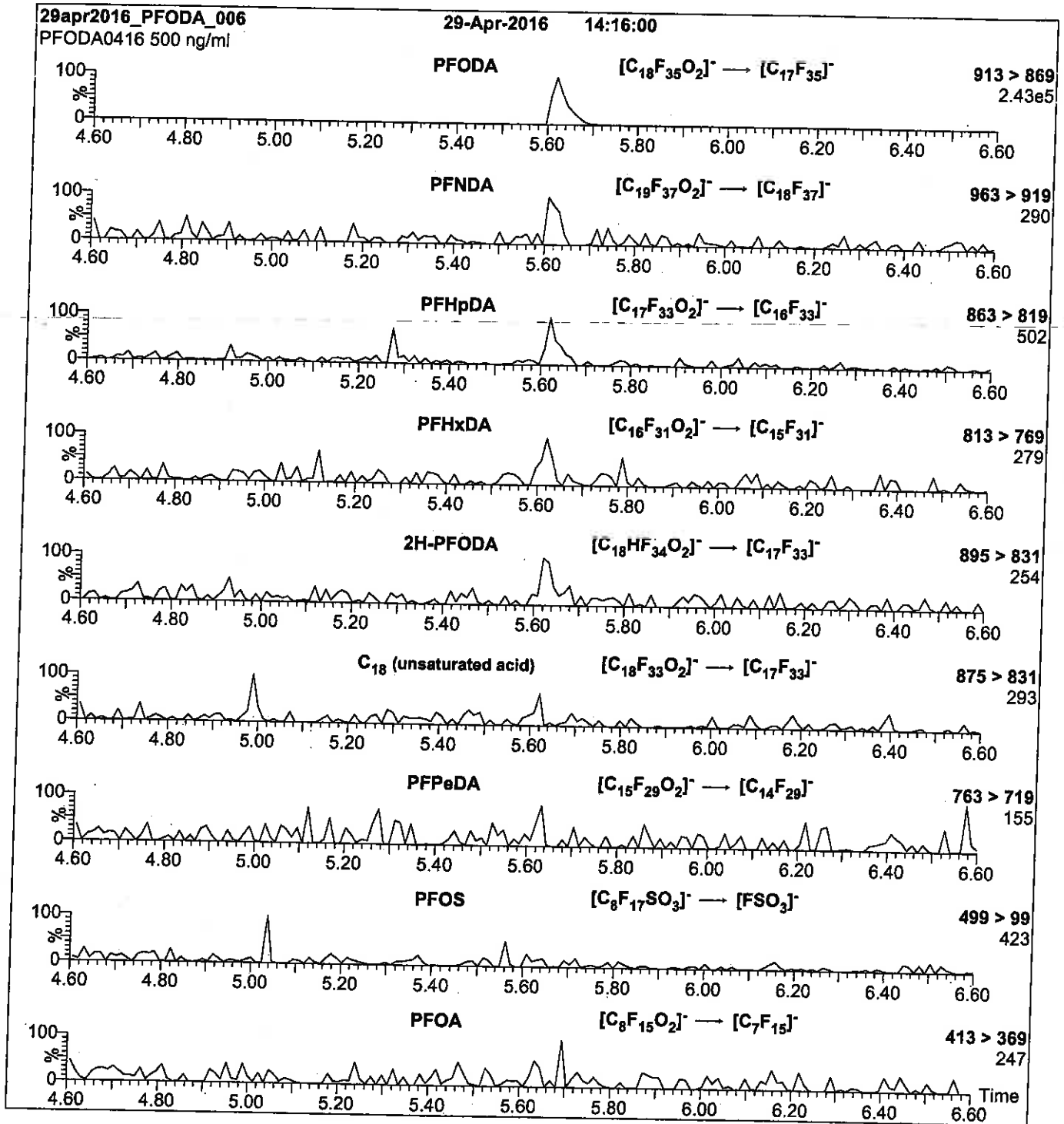
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (250 - 1000 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 25.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFODA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10 µl (500 ng/ml PFODA)

Mobile phase: Isocratic 90% (80:20 MeOH:ACN) / 10% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300 µl/min

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 15

Reagent

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**LCPFODA\_00007**



### **INTENDED USE:**

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### **HAZARDS:**

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### **SYNTHESIS / CHARACTERIZATION:**

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### **TRACEABILITY:**

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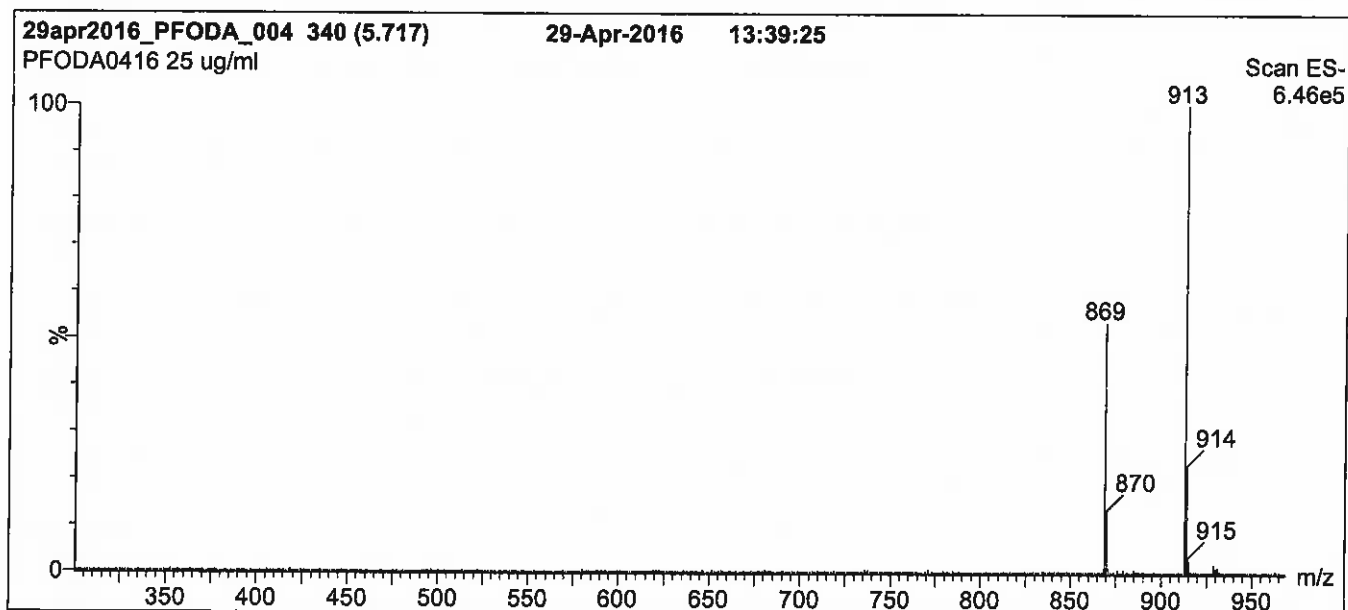
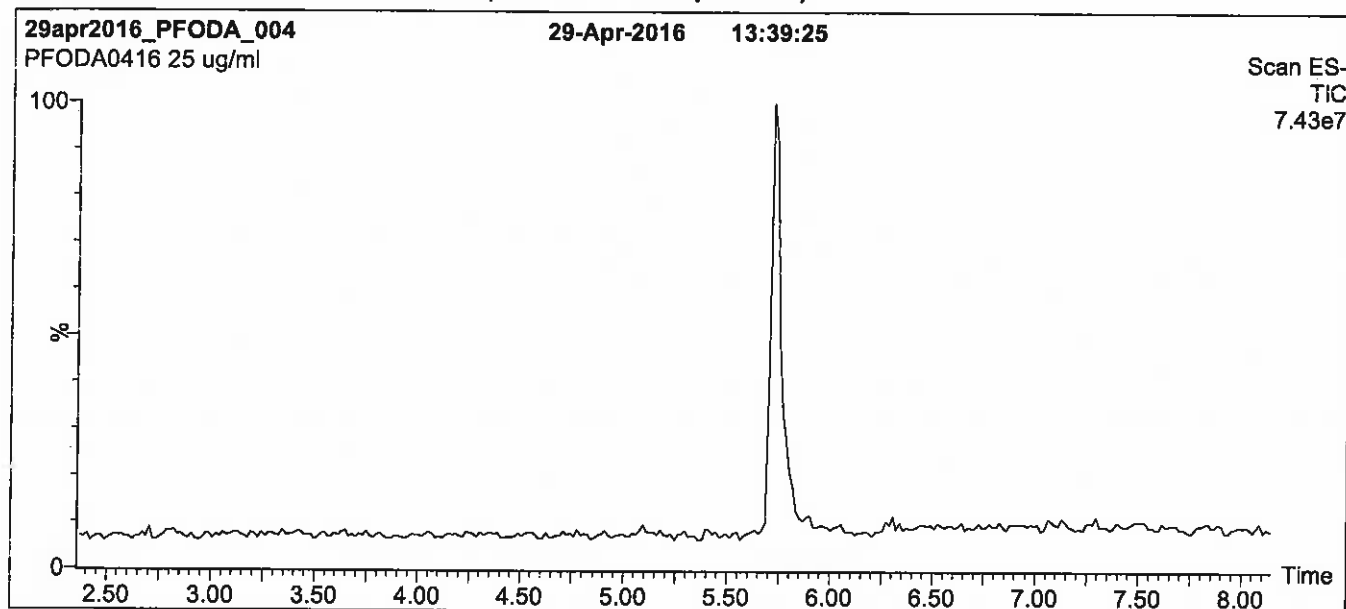
### **QUALITY MANAGEMENT:**

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**Figure 1: PFODA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
Start: 70% (80:20 MeOH:ACN) / 30% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 95% organic over 6 min and hold for  
2.5 min before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

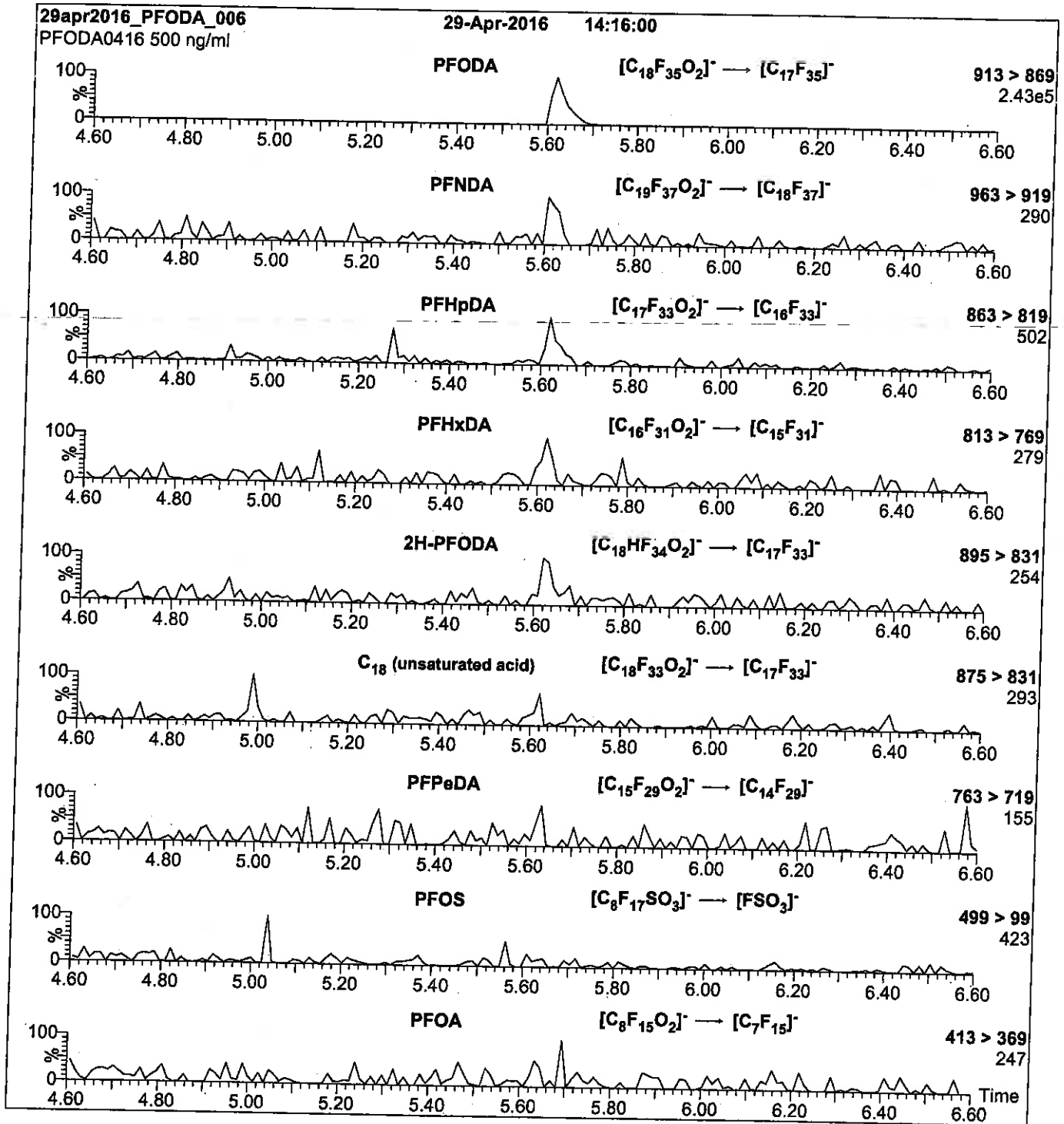
**MS Parameters**

Experiment: Full Scan (250 - 1000 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 3.00  
Cone Voltage (V) = 25.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750



**Figure 2: PFODA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10 µl (500 ng/ml PFODA)

Mobile phase: Isocratic 90% (80:20 MeOH:ACN) / 10% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300 µl/min

**MS Parameters**

Collision Gas (mbar) = 3.39e-3  
Collision Energy (eV) = 15

Reagent

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**LCPFOS-br\_00002**

Scanned  
10/14/16 SR

R: SBC 9/13/16



730515  
ID: LCPFOS-br\_00002  
Exp: 10/14/20 Prpt: SBC  
Potassium Perfluorooctane



730516  
ID: LCPFOS-br\_00003  
Exp: 10/14/20 Prpt: SBC  
Potassium Perfluorooctane



WELLINGTON  
LABORATORIES

CERTIFICATE OF ANALYSIS  
DOCUMENTATION

br-PFOSK

Potassium Perfluorooctanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers

**PRODUCT CODE:** br-PFOSK  
**LOT NUMBER:** brPFOSK1015  
**CONCENTRATION:** 50 ± 2.5 µg/ml (total potassium salt)  
46.4 ± 2.3 µg/ml (total PFOS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 10/13/2015  
**LAST TESTED:** (mm/dd/yyyy) 10/14/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 10/14/2020  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

DESCRIPTION:

The chemical purity has been determined to be ≥98% perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

DOCUMENTATION/ DATA ATTACHED:

Table A: Isomeric Components and Percent Composition by <sup>19</sup>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

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### **QUALITY MANAGEMENT:**

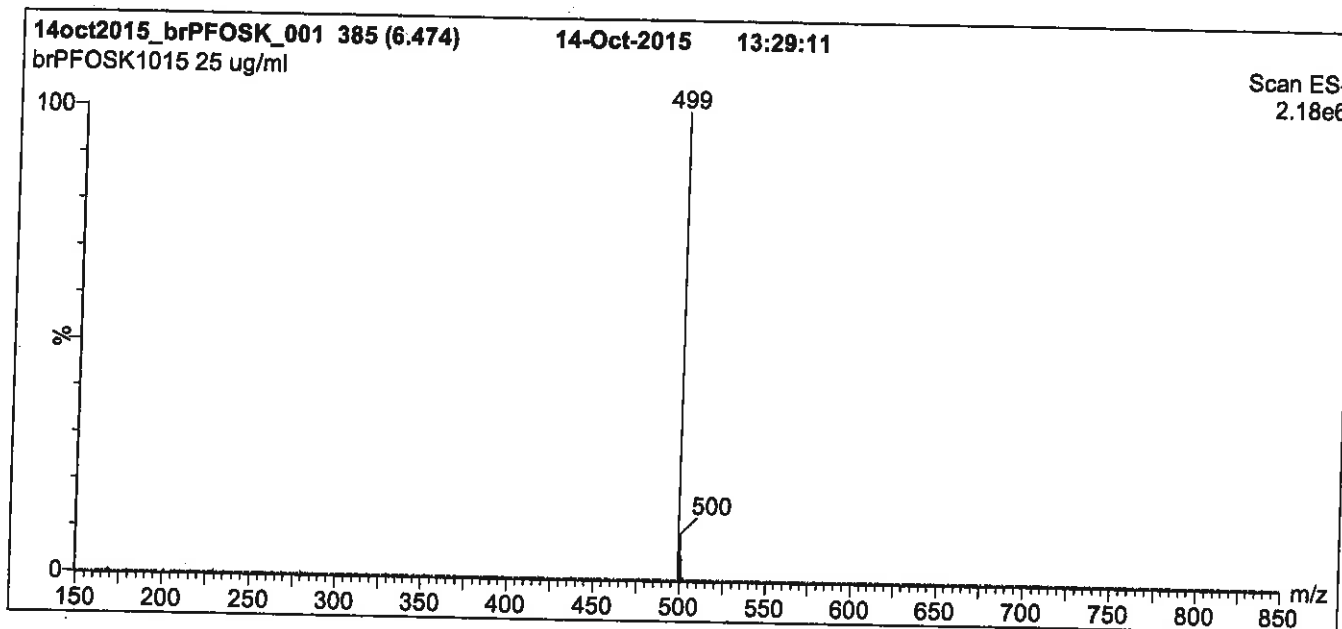
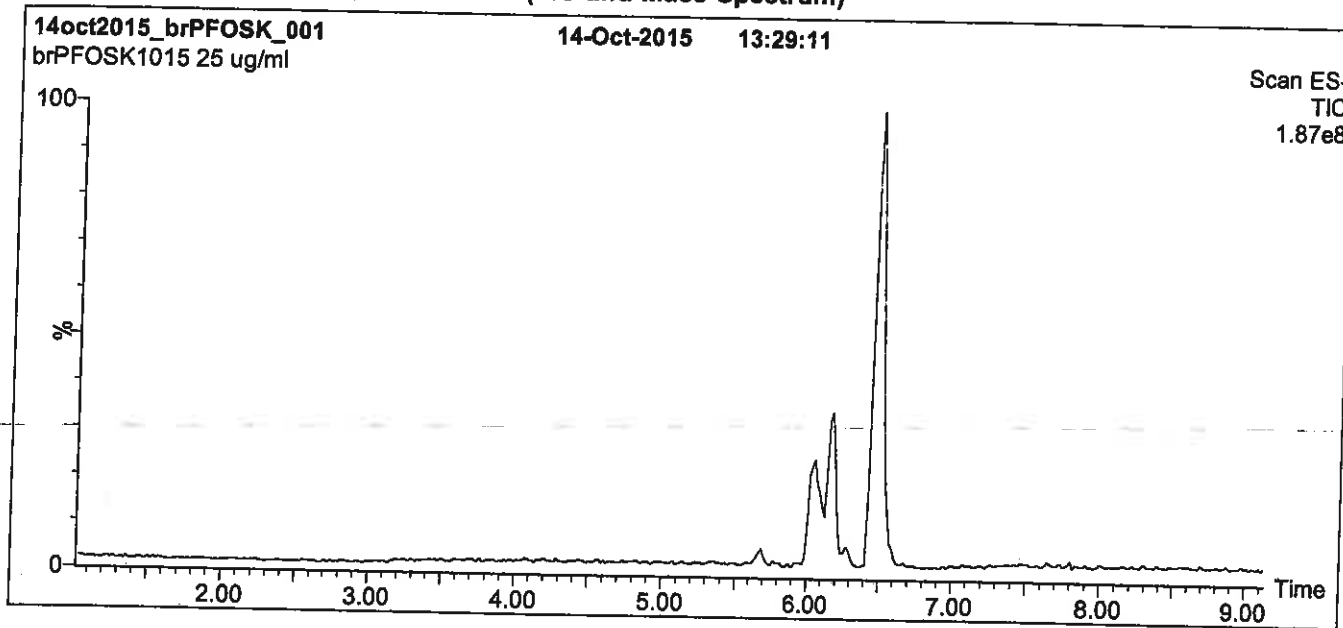
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: br-PFOSK; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 45% (80:20 MeOH:ACN) / 55% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 12 min and hold for 2 min.  
 Return to initial conditions over 0.5 min.  
 Time: 16 min

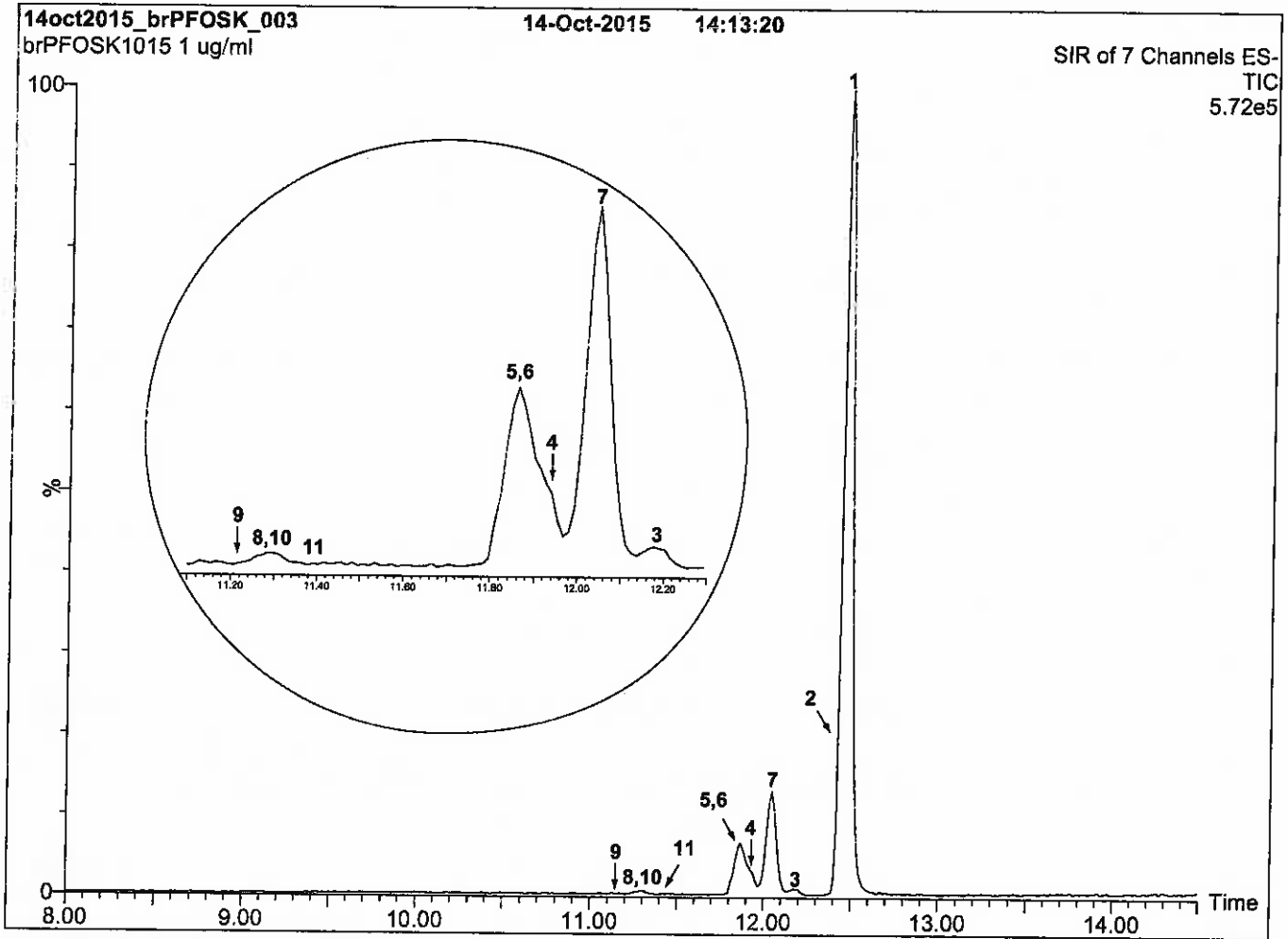
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 60.00  
 Cone Gas Flow (l/hr) = 50  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2:** br-PFOSK; LC/MS Data (SIR)



**Conditions for Figure 2:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

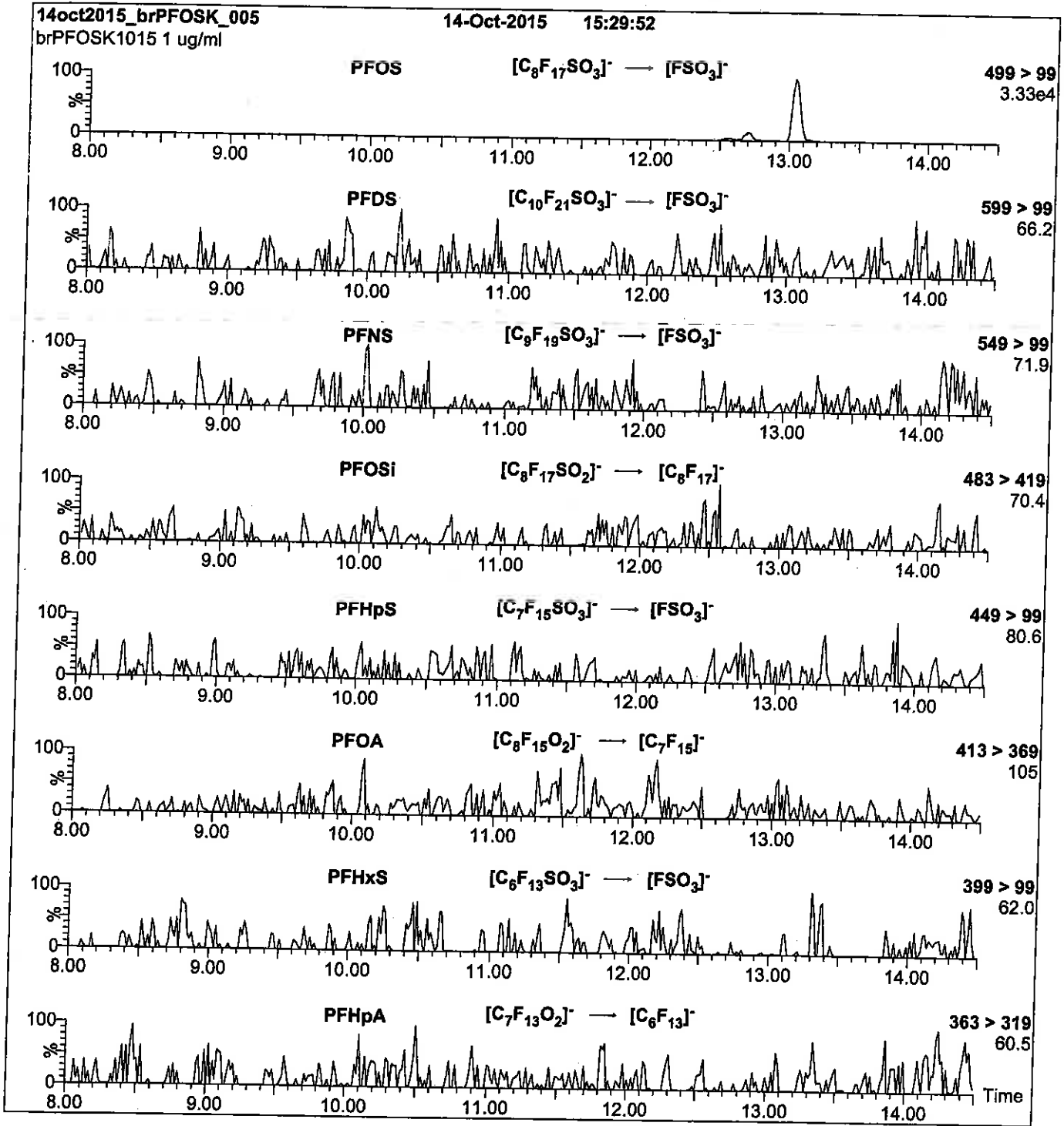
**Chromatographic Conditions:**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub> (1.7  $\mu$ m, 2.1 x 100 mm)  
**Injection:** 1.0  $\mu$ g/ml of br-PFOSK  
**Mobile Phase:** Gradient  
45% (80:20 MeOH:ACN) / 55% H<sub>2</sub>O (both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 15 min and hold for 3 min.  
Return to initial conditions over 1 min.  
Time: 20 min  
**Flow:** 300  $\mu$ l/min

**MS Conditions:**

SIR (ES)  
Source = 110 °C  
Desolvation = 325 °C  
Cone Voltage = 60V

**Figure 3: br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 3:**

Injection: On-column  
 Mobile phase: Same as Figure 2  
 Flow: 300  $\mu$ /min

**MS Parameters**

Collision Gas (mbar) = 3.06e-3  
 Collision Energy (eV) = 11-50 (variable)



Reagent

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**LCPFOS-br\_00003**

Scanned  
10/14/16 SR

R: SBC 9/13/16



730515  
ID: LCPFOS-br\_00002  
Exp: 10/14/20 Prpt: SBC  
Potassium Perfluorooctane



730516  
ID: LCPFOS-br\_00003  
Exp: 10/14/20 Prpt: SBC  
Potassium Perfluorooctane



**WELLINGTON  
LABORATORIES**

**CERTIFICATE OF ANALYSIS  
DOCUMENTATION**

**br-PFOSK**

**Potassium Perfluorooctanesulfonate  
Solution/Mixture of Linear and  
Branched Isomers**

**PRODUCT CODE:** br-PFOSK  
**LOT NUMBER:** brPFOSK1015  
**CONCENTRATION:** 50 ± 2.5 µg/ml (total potassium salt)  
46.4 ± 2.3 µg/ml (total PFOS anion)  
**SOLVENT(S):** Methanol  
**DATE PREPARED:** (mm/dd/yyyy) 10/13/2015  
**LAST TESTED:** (mm/dd/yyyy) 10/14/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 10/14/2020  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DESCRIPTION:**

The chemical purity has been determined to be ≥98% perfluorooctanesulfonate linear and branched isomers. The full name, structure and percent composition for each of the isomeric components are given in Table A.

**DOCUMENTATION/ DATA ATTACHED:**

Table A: Isomeric Components and Percent Composition by <sup>19</sup>F-NMR  
Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS Data (SIR)  
Figure 3: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- A 5-point calibration curve was generated using linear PFOS (potassium salt) and mass-labelled PFOS as an internal standard to enable quantitation of br-PFOSK using isotopic dilution.
- CAS#: 2795-39-3 (for linear isomer; potassium salt).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com**

### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compounds it contains.

### **HAZARDS:**

This product should only be used by qualified personnel familiar with its potential hazards and trained in the handling of hazardous chemicals. Due care should be exercised to prevent unnecessary human contact or ingestion. All procedures should be carried out in a well-functioning fume hood and suitable gloves, eye protection, and clothing should be worn at all times. Waste should be disposed of according to national and regional regulations. Safety Data Sheets (SDSs) are available upon request.

### **SYNTHESIS / CHARACTERIZATION:**

Where possible, all of our products are synthesized using single-product unambiguous routes. They are then characterized, and their structures and purities confirmed, using a combination of the most relevant techniques, such as NMR, GC/MS, LC/MS/MS, SFC/UV/MS/MS, x-ray crystallography, and melting point. Isotopic purities of mass-labelled compounds are also confirmed using HRGC/HRMS and/or LC/MS/MS.

### **HOMOGENEITY:**

Prior to solution preparation, crystalline material is tested for homogeneity using a variety of techniques (as stated above) and its solubility in a given diluent is taken into consideration. Duplicate solutions of a new product are prepared from the same crystalline lot and, after the addition of an appropriate internal standard, they are compared by GC/MS, LC/MS/MS and/or SFC/UV/MS/MS. The relative response factors of the analyte of interest in each solution are required to be <5% RSD. New solution lots of existing products are compared to older lots in the same manner, which further confirms the homogeneity of the crystalline material as well as the stability and homogeneity of the solutions in the storage containers.

### **UNCERTAINTY:**

The maximum combined relative standard uncertainty of our reference standard solutions is calculated using the following equation:

The combined relative standard uncertainty,  $u_c(y)$ , of a value  $y$  and the uncertainty of the independent parameters  $x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

All reference standard solutions are traceable to specific crystalline lots. The microbalances used for solution preparation are regularly tested by an external ISO/IEC 17025 accredited calibration company. In addition, their calibration is verified prior to each weighing using NIST and/or NRC traceable external weights. All volumetric glassware used is of Class A tolerance and has been tested according to the appropriate ASTM procedures, which are ultimately traceable to NIST. For certain products, traceability to international interlaboratory studies has also been established.

### **EXPIRY DATE / PERIOD OF VALIDITY:**

Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

### **LIMITED WARRANTY:**

At the time of shipment, all products are warranted to be free of defects in material and workmanship and to conform to the stated technical and purity specifications.

### **QUALITY MANAGEMENT:**

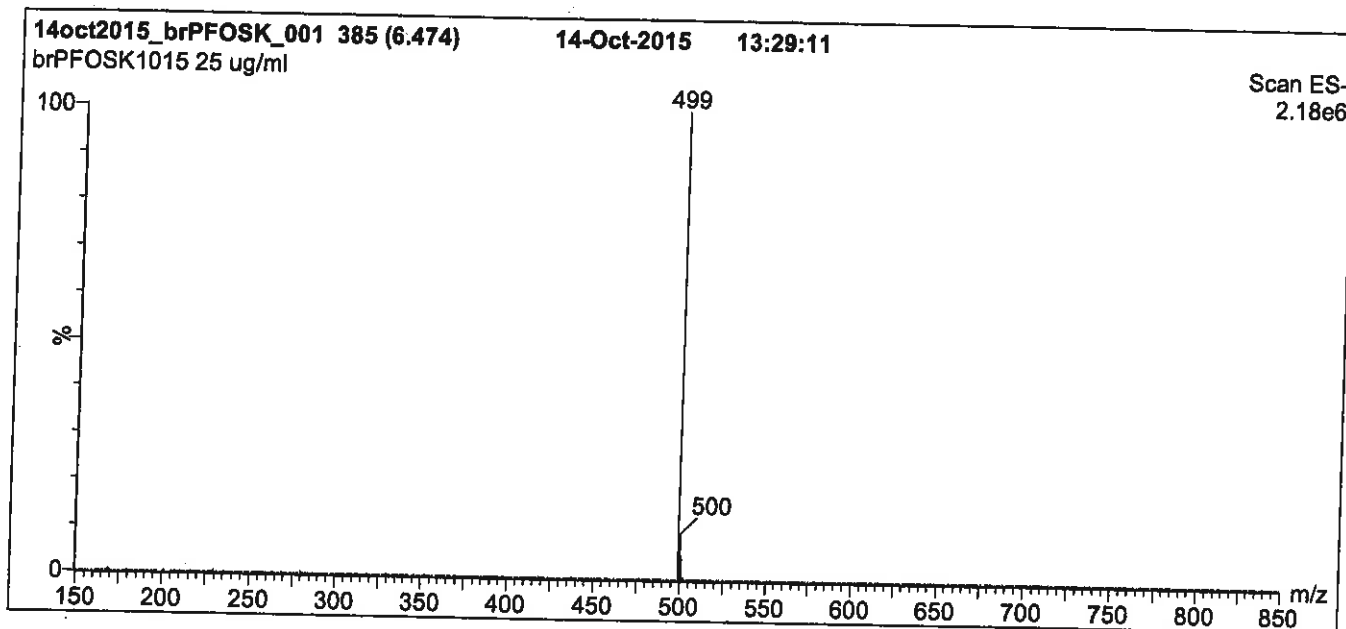
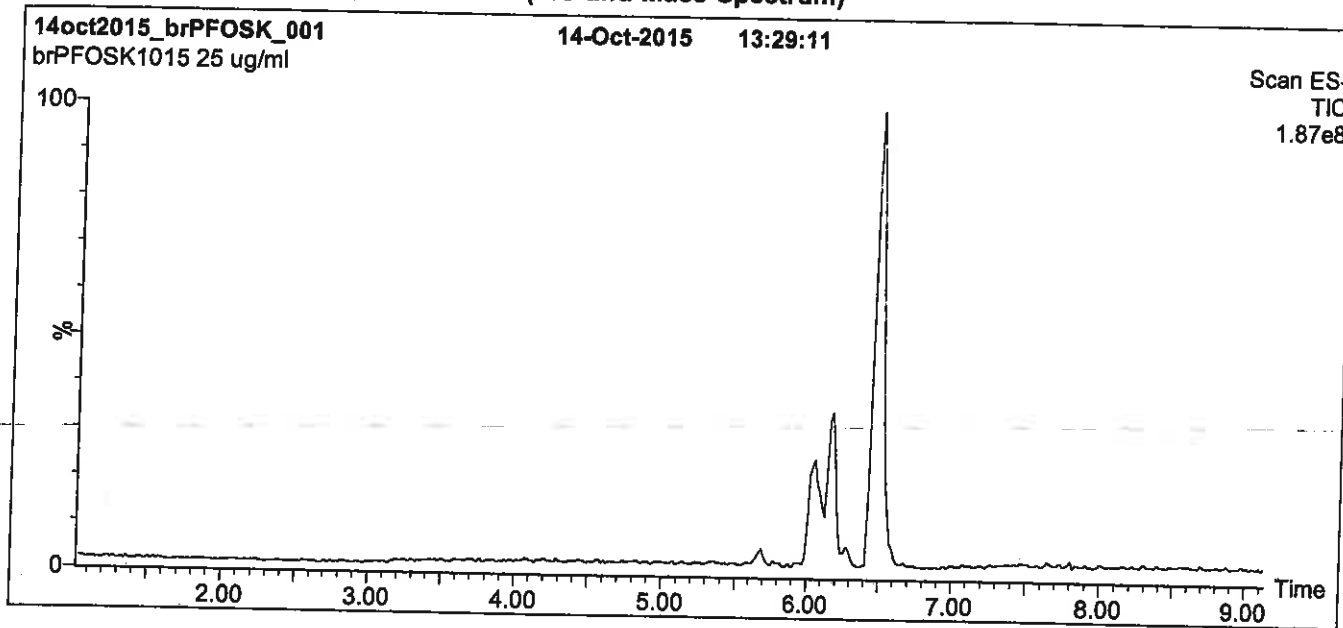
This product was produced using a Quality Management System registered to the latest versions of ISO 9001 by SAI Global, ISO/IEC 17025 by the Canadian Association for Laboratory Accreditation Inc. (CALA; A 1226), and ISO GUIDE 34 by ANSI-ASQ National Accreditation Board (ANAB; AR-1523).



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**Figure 1: br-PFOSK; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>,  
1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
Start: 45% (80:20 MeOH:ACN) / 55% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 12 min and hold for 2 min.  
Return to initial conditions over 0.5 min.  
Time: 16 min

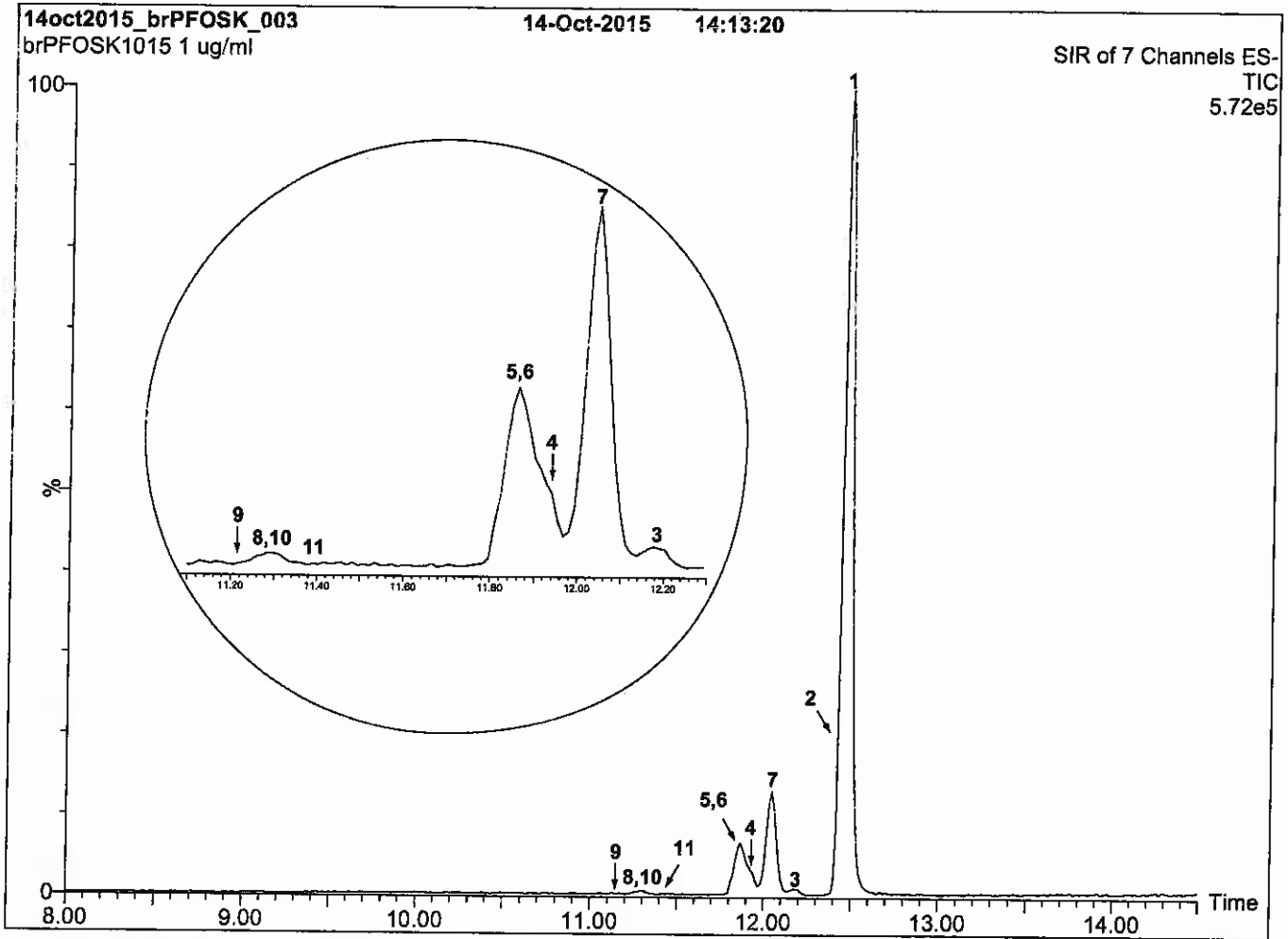
**Flow:** 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 60.00  
Cone Gas Flow (l/hr) = 50  
Desolvation Gas Flow (l/hr) = 750

**Figure 2:** br-PFOSK; LC/MS Data (SIR)



**Conditions for Figure 2:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

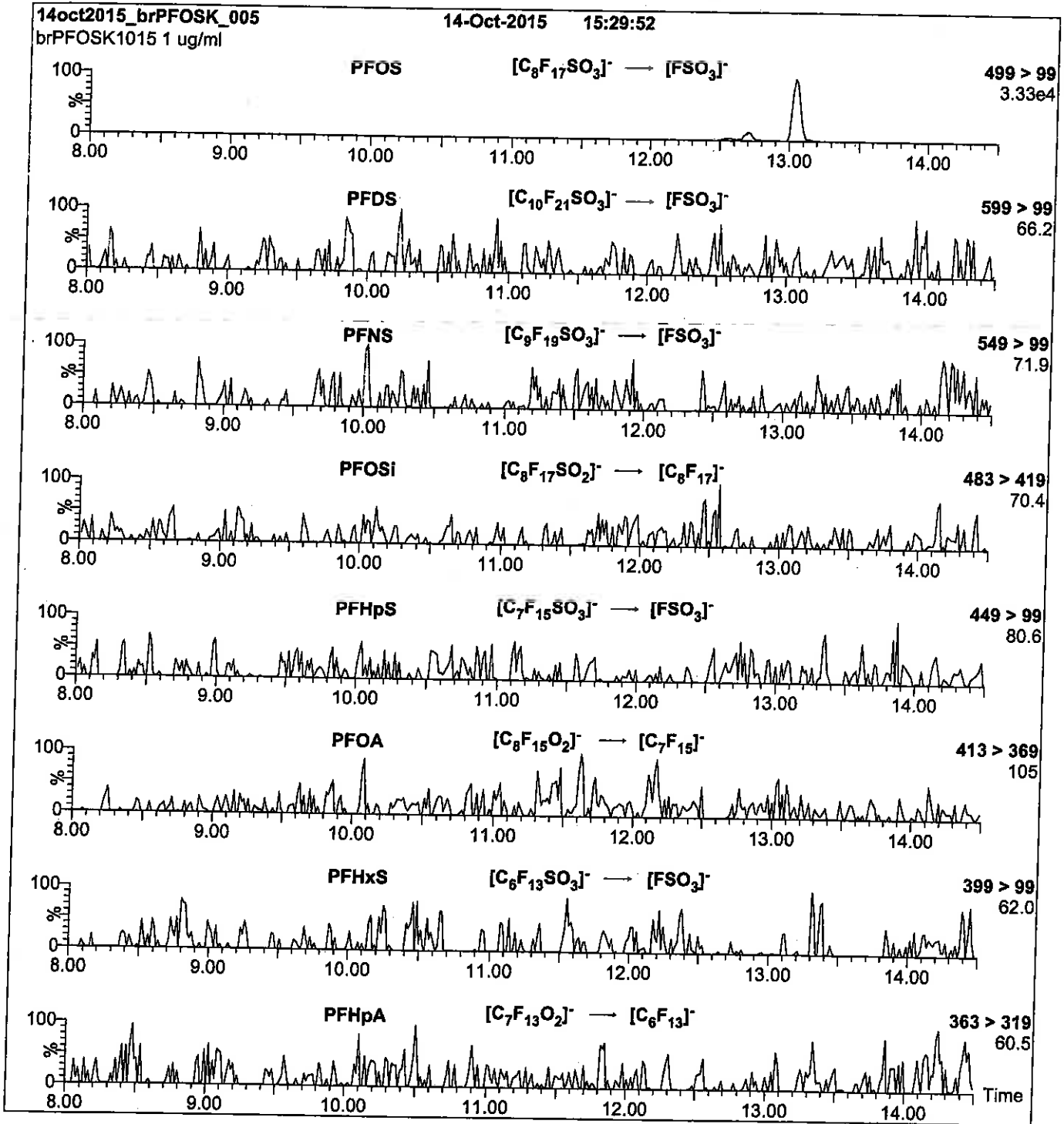
**Chromatographic Conditions:**

**Column:** Acquity UPLC BEH Shield RP<sub>18</sub> (1.7  $\mu$ m, 2.1 x 100 mm)  
**Injection:** 1.0  $\mu$ g/ml of br-PFOSK  
**Mobile Phase:** Gradient  
45% (80:20 MeOH:ACN) / 55% H<sub>2</sub>O (both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 15 min and hold for 3 min.  
Return to initial conditions over 1 min.  
Time: 20 min  
**Flow:** 300  $\mu$ l/min

**MS Conditions:**

SIR (ES)  
Source = 110  $^{\circ}$ C  
Desolvation = 325  $^{\circ}$ C  
Cone Voltage = 60V

**Figure 3: br-PFOSK; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 3:**

Injection: On-column

Mobile phase: Same as Figure 2

Flow: 300  $\mu$ /min

**MS Parameters**

Collision Gas (mbar) = 3.06e-3

Collision Energy (eV) = 11-50 (variable)

Reagent

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**LCPFOSA\_00010**





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$x_1, x_2, \dots, x_n$  on which it depends is:

$$u_c(y(x_1, x_2, \dots, x_n)) = \sqrt{\sum_{i=1}^n u(y, x_i)^2}$$

where  $x$  is expressed as a relative standard uncertainty of the individual parameter.

The individual uncertainties taken into account include those associated with weights (calibration of the balance) and volumes (calibration of the volumetric glassware). An expanded maximum combined percent relative uncertainty of  $\pm 5\%$  (calculated with a coverage factor of 2 and a level of confidence of 95%) is stated on the Certificate of Analysis for all of our products.

### **TRACEABILITY:**

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### **EXPIRY DATE / PERIOD OF VALIDITY:**

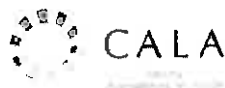
Ongoing stability studies of this product have demonstrated stability in its composition and concentration, until the specified expiry date, in the unopened ampoule. Monitoring for any degradation or change in concentration of the listed analyte(s) is performed on a routine basis.

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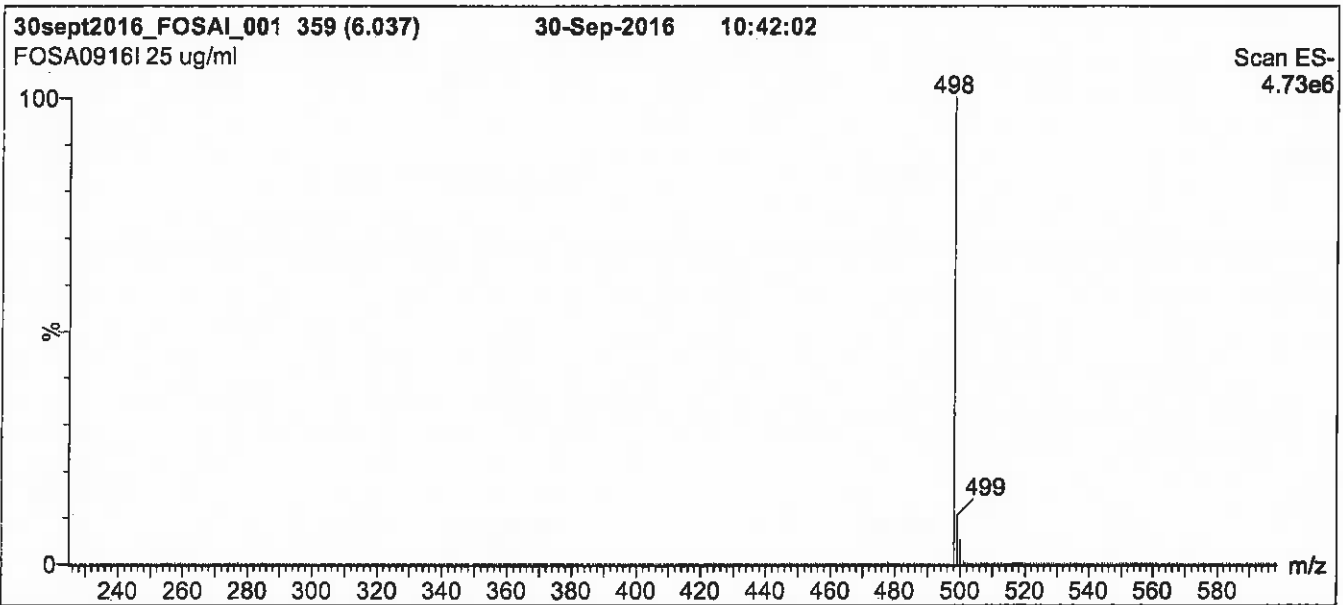
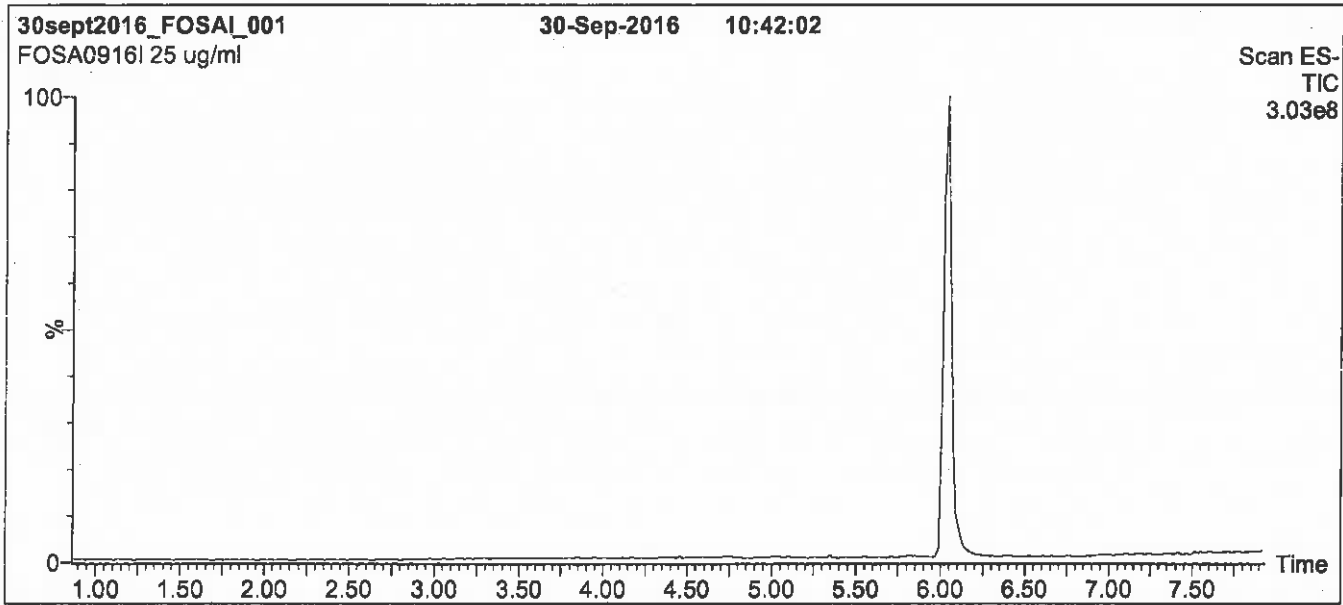
### **QUALITY MANAGEMENT:**

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**Figure 1: FOSA-I; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

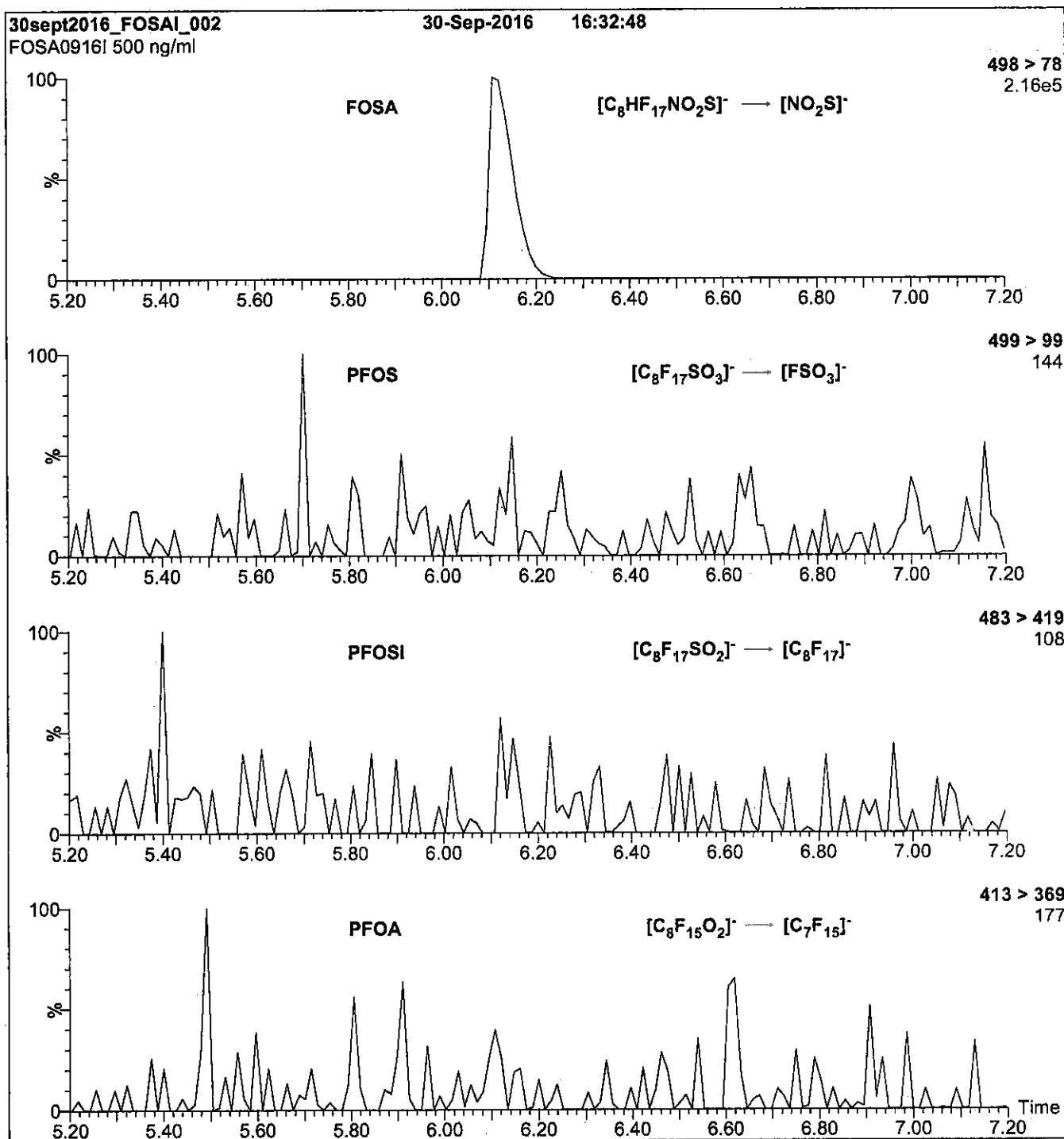
**Column:** Acquity UPLC BEH Shield RP, 1.7  $\mu$ m, 2.1 x 100 mm  
**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for 1.5 min before returning to initial conditions in 0.5 min.  
 Time: 10 min

**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (225 - 850 amu)  
**Source:** Electrospray (negative)  
**Capillary Voltage (kV) =** 2.50  
**Cone Voltage (V) =** 40.00  
**Cone Gas Flow (l/hr) =** 50  
**Desolvation Gas Flow (l/hr) =** 750

**Figure 2: FOSA-I; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

**Injection:** Direct loop injection  
10  $\mu$ l (500 ng/ml FOSA-I)

**Mobile phase:** Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

**Flow:** 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.20e-3  
Collision Energy (eV) = 30

Reagent

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**LCFPeA\_00006**

r: 12/21/16 Std  
s: 1/6/17 Std

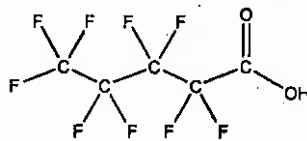


# WELLINGTON LABORATORIES

## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFPeA      **LOT NUMBER:** PFPeA0516  
**COMPOUND:** Perfluoro-n-pentanoic acid

**STRUCTURE:**      **CAS #:** 2706-90-3



**MOLECULAR FORMULA:**  $C_5HF_8O_2$       **MOLECULAR WEIGHT:** 264.05  
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$       **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 05/31/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 05/31/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

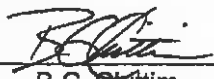
### DOCUMENTATION/ DATA ATTACHED:

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

### ADDITIONAL INFORMATION:

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.3% of Perfluoro-n-heptanoic acid (PFHpA) and ~ 0.2% of  $C_8H_2F_8O_2$  (hydrido - derivative) as measured by  $^{19}\text{F}$  NMR.

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**  **Date:** 06/02/2016  
B.G. Chittim (mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com

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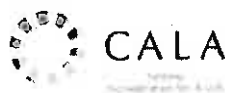
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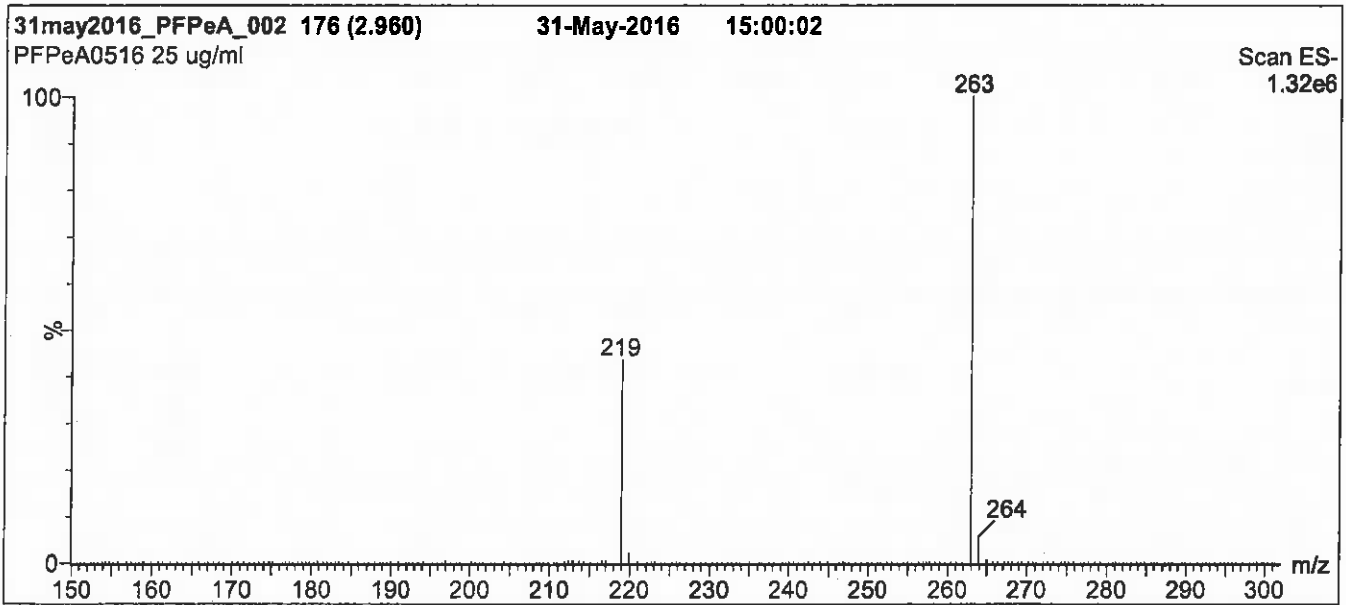
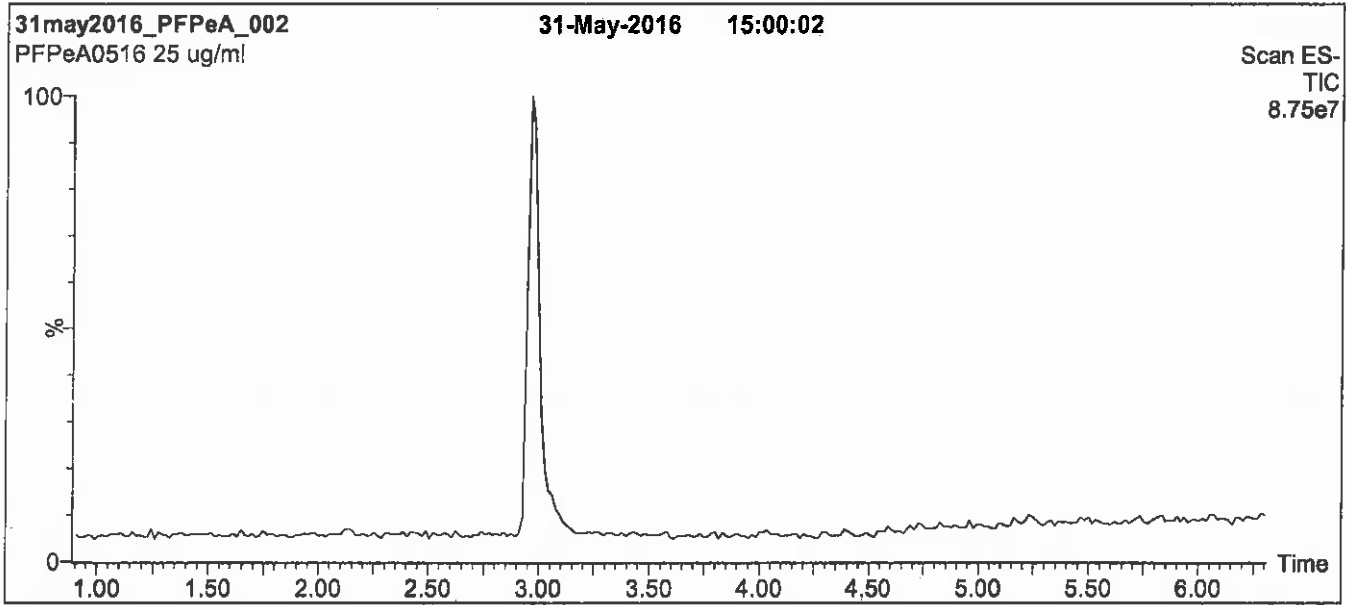
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**Figure 1: PFPeA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>,  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 30% (80:20 MeOH:ACN) / 70% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc 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  $\mu$ l/min

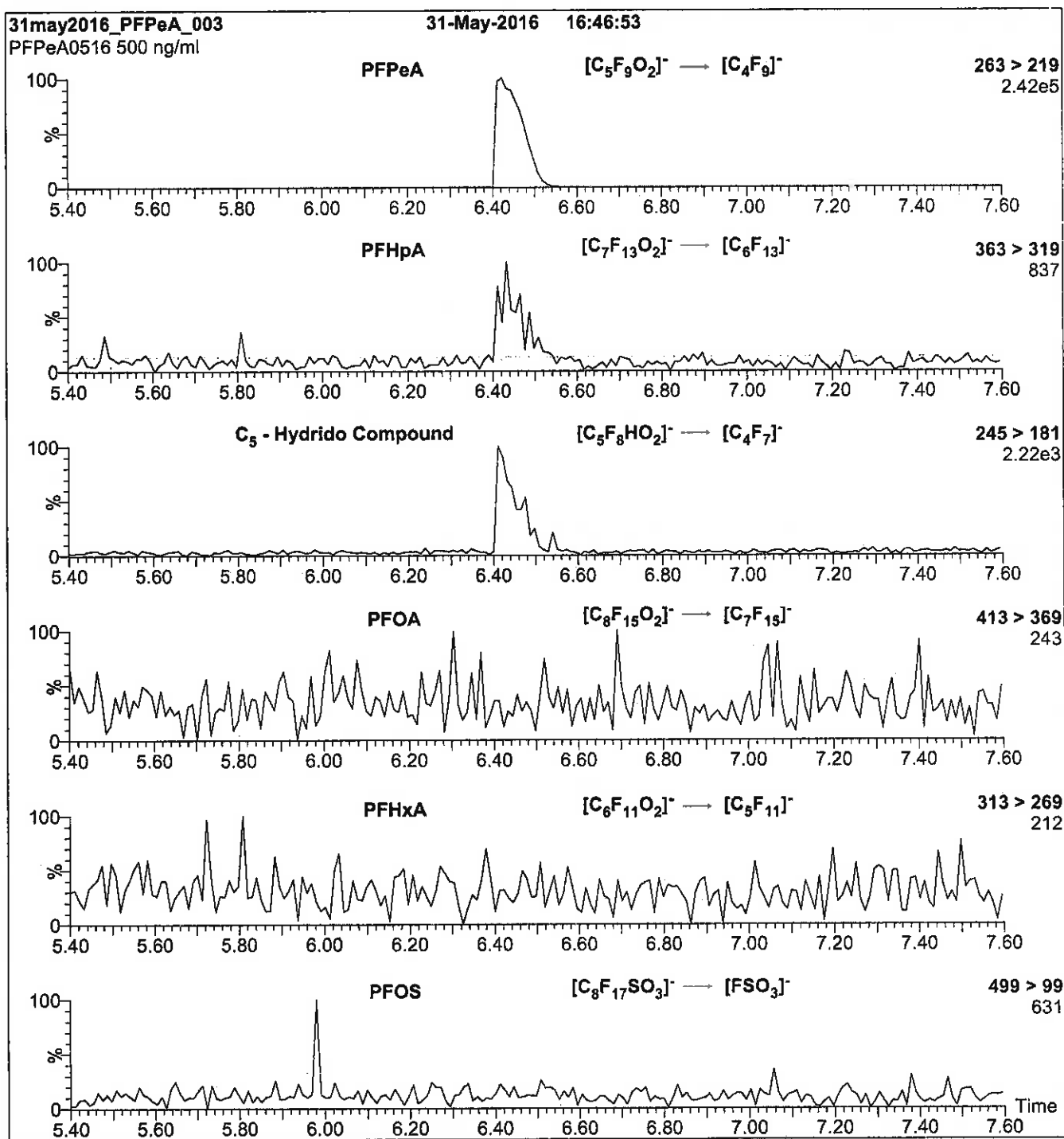
**MS Parameters**

Experiment: Full Scan (150 - 850 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 2.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750



**Figure 2: PFPeA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFPeA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.20e-3  
Collision Energy (eV) = 9

Reagent

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**LCPFTeDA\_00005**

R: SBG 9/13/16



730645  
ID: LCPFTeDA\_00005  
Exp: 12/09/20 Prpd: SBC  
PF-n-tetradecanoic acid



730659  
ID: LCPFTeDA\_00006  
Exp: 12/09/20 Prpd: SBC  
PF-n-tetradecanoic acid



# WELLINGTON LABORATORIES

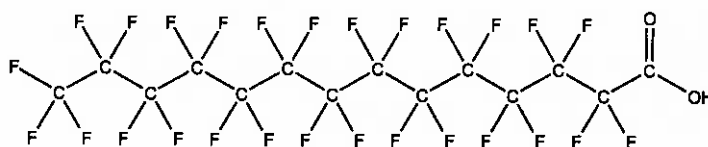
## CERTIFICATE OF ANALYSIS DOCUMENTATION

**PRODUCT CODE:** PFTeDA  
**COMPOUND:** Perfluoro-n-tetradecanoic acid

**LOT NUMBER:** PFTeDA1215

**STRUCTURE:**

**CAS #:** 376-06-7



**MOLECULAR FORMULA:** C<sub>14</sub>HF<sub>27</sub>O<sub>2</sub>  
**CONCENTRATION:** 50 ± 2.5 µg/ml

**MOLECULAR WEIGHT:** 714.11  
**SOLVENT(S):** Methanol  
Water (<1%)

**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 12/09/2015  
**EXPIRY DATE:** (mm/dd/yyyy) 12/09/2020  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place


**DOCUMENTATION/ DATA ATTACHED:**

- Figure 1: LC/MS Data (TIC and Mass Spectrum)
- Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.2% of PFDoA (C<sub>12</sub>HF<sub>23</sub>O<sub>2</sub>) and ~ 0.2% of PFPeDA (C<sub>16</sub>HF<sub>29</sub>O<sub>2</sub>).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**   
B.G. Chittim  
**Date:** 12/09/2015  
(mm/dd/yyyy)

**Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA**  
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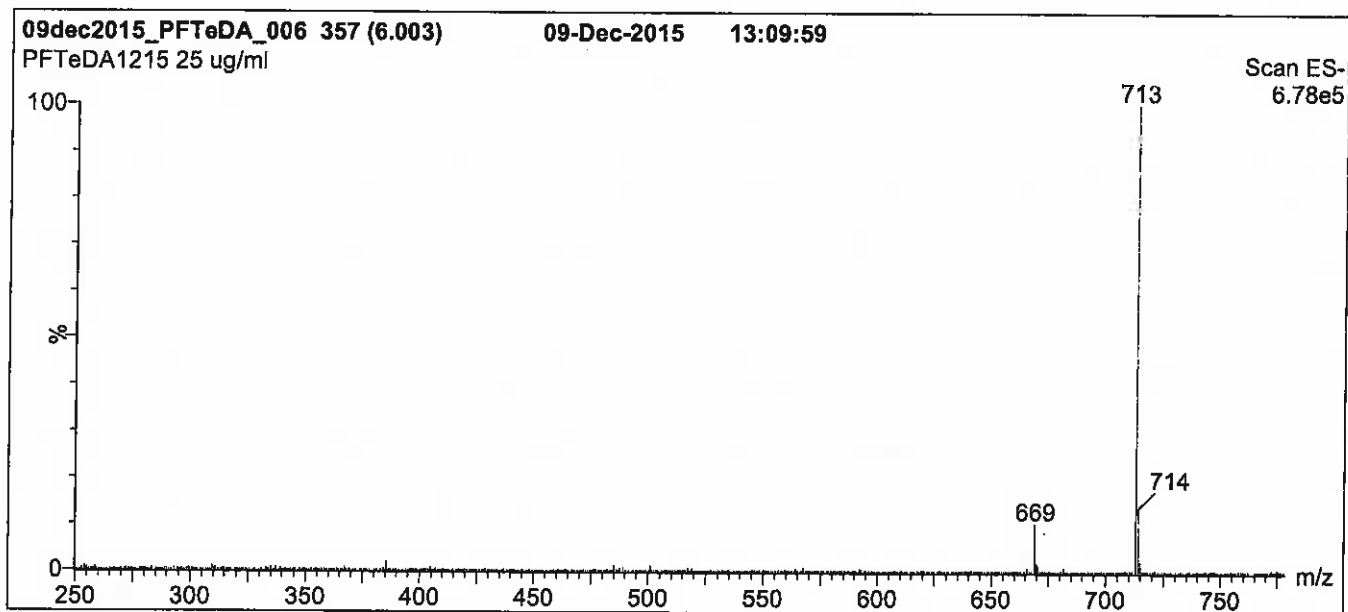
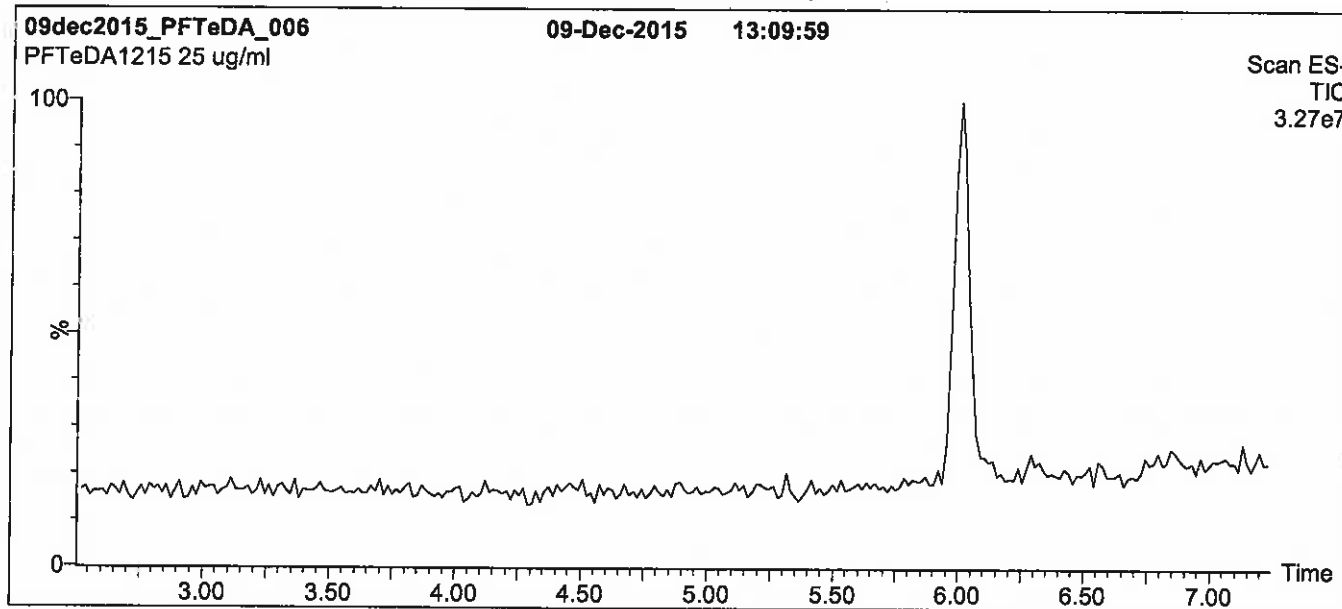
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**Figure 1: PFTeDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

Mobile phase: Gradient  
 Start: 65% (80:20 MeOH:ACN) / 35% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7.5 min and hold for 1.5 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

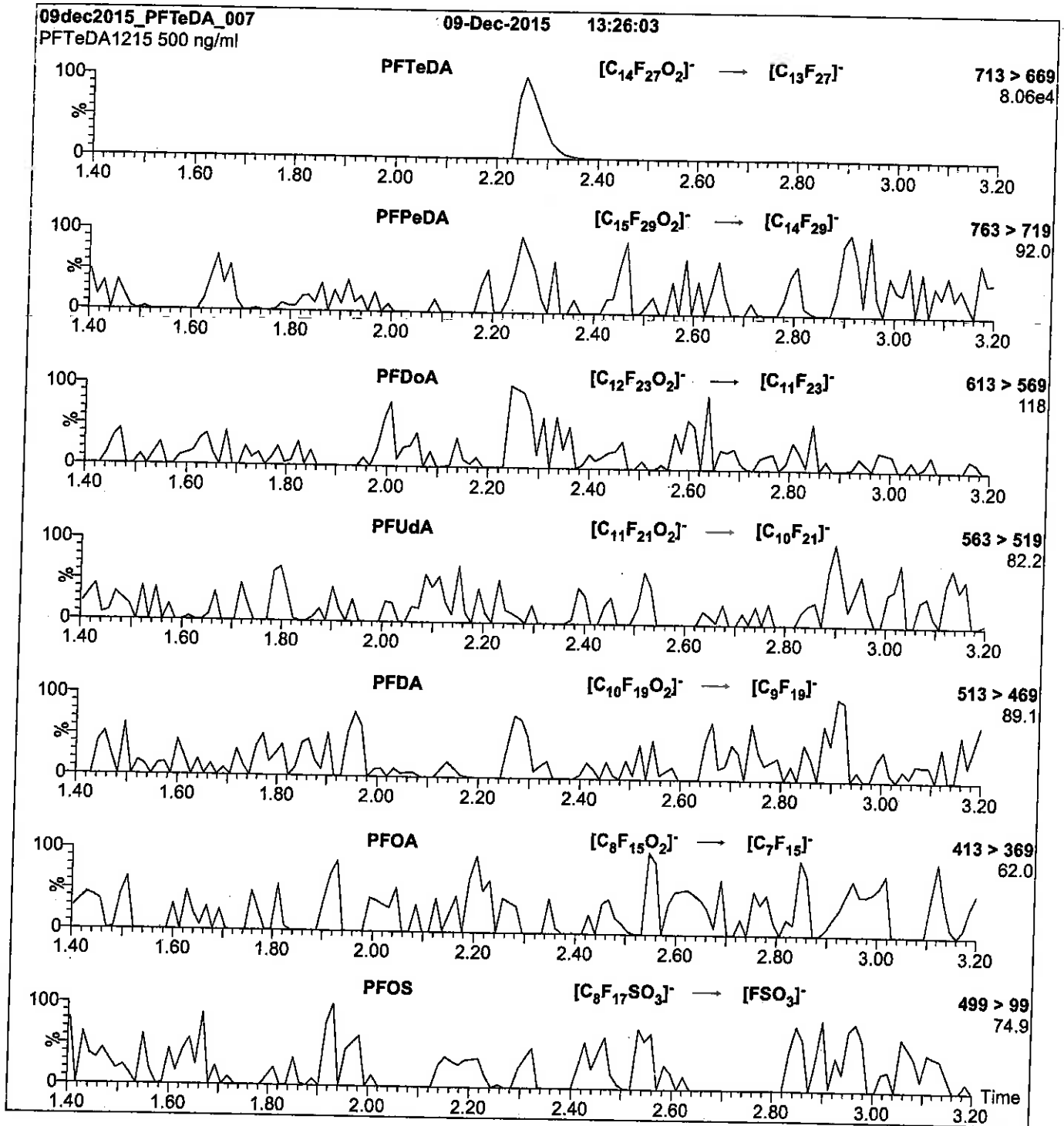
Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (250 - 1250 amu)

Source: Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 60  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFTeDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFTeDA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.43e-3  
Collision Energy (eV) = 14

Reagent

---

**LCPFT<sub>r</sub>DA\_00005**

R: SBC 9/13/16



730665  
ID: LCPFTrDA\_00005  
Exp: 02/12/21 Prod: SBC  
PF-n-tridecanoic acid



730666  
ID: LCPFTrDA\_00006  
Exp: 02/12/21 Prod: SBC  
PF-n-tridecanoic acid

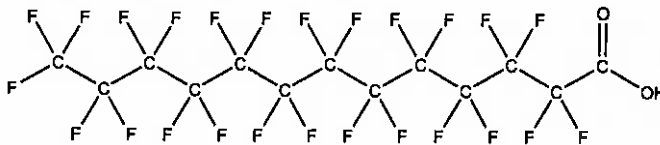


**WELLINGTON**  
LABORATORIES

**CERTIFICATE OF ANALYSIS**  
DOCUMENTATION

**PRODUCT CODE:** PFTrDA **LOT NUMBER:** PFTrDA0216  
**COMPOUND:** Perfluoro-n-tridecanoic acid

**STRUCTURE:** **CAS #:** 72629-94-8



**MOLECULAR FORMULA:**  $C_{13}HF_{25}O_2$  **MOLECULAR WEIGHT:** 664.11  
**CONCENTRATION:**  $50 \pm 2.5 \mu\text{g/ml}$  **SOLVENT(S):** Methanol  
Water (<1%)  
**CHEMICAL PURITY:** >98%  
**LAST TESTED:** (mm/dd/yyyy) 02/12/2016  
**EXPIRY DATE:** (mm/dd/yyyy) 02/12/2021  
**RECOMMENDED STORAGE:** Store ampoule in a cool, dark place

**DOCUMENTATION/ DATA ATTACHED:**

Figure 1: LC/MS Data (TIC and Mass Spectrum)  
Figure 2: LC/MS/MS Data (Selected MRM Transitions)

**ADDITIONAL INFORMATION:**

- See page 2 for further details.
- Contains 4 mole eq. of NaOH to prevent conversion of the carboxylic acid to the methyl ester.
- Contains ~ 0.1% of PFUDA ( $C_{11}HF_{21}O_2$ ), ~ 0.4% of PFDdA ( $C_{12}HF_{23}O_2$ ), and ~ 0.1% of PFTeDA ( $C_{14}HF_{27}O_2$ ).

**FOR LABORATORY USE ONLY: NOT FOR HUMAN OR DRUG USE**

**Certified By:**

B.G. Chittim

**Date:** 02/16/2016  
(mm/dd/yyyy)

Wellington Laboratories Inc., 345 Southgate Dr. Guelph ON N1G 3M5 CANADA  
519-822-2436 • Fax: 519-822-2849 • info@well-labs.com



### **INTENDED USE:**

The products prepared by Wellington Laboratories Inc. are for laboratory use only. This certified reference material (CRM) was designed to be used as a standard for the identification and/or quantification of the specific chemical compound it contains.

### **HAZARDS:**

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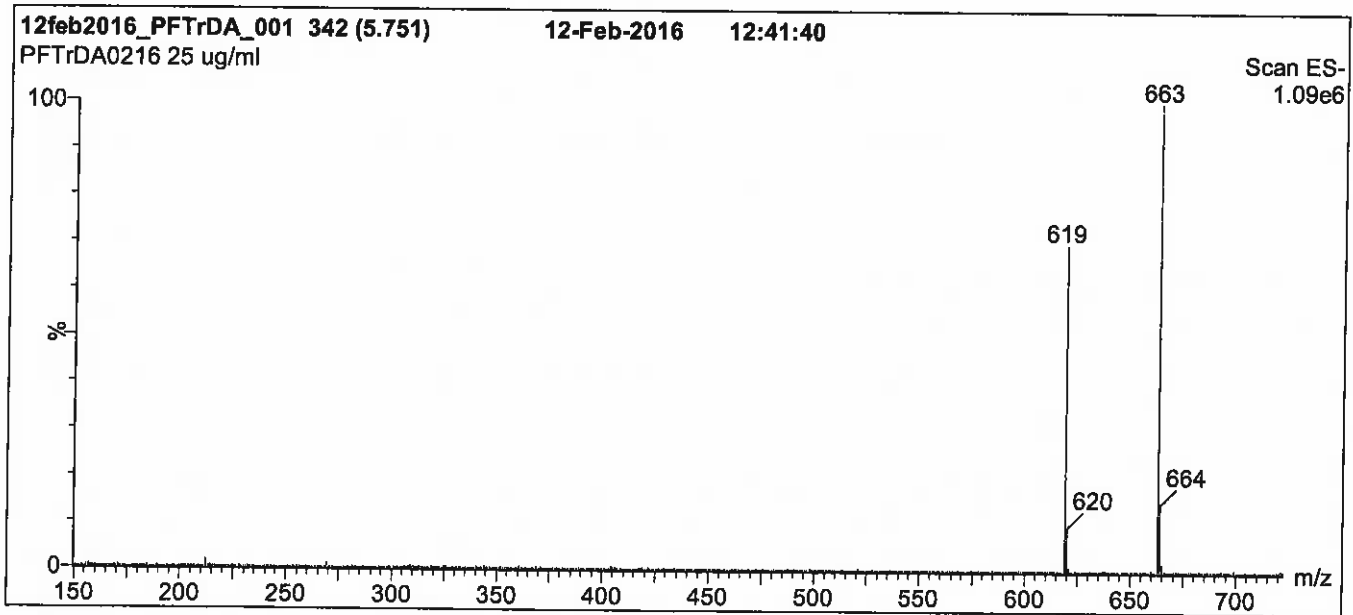
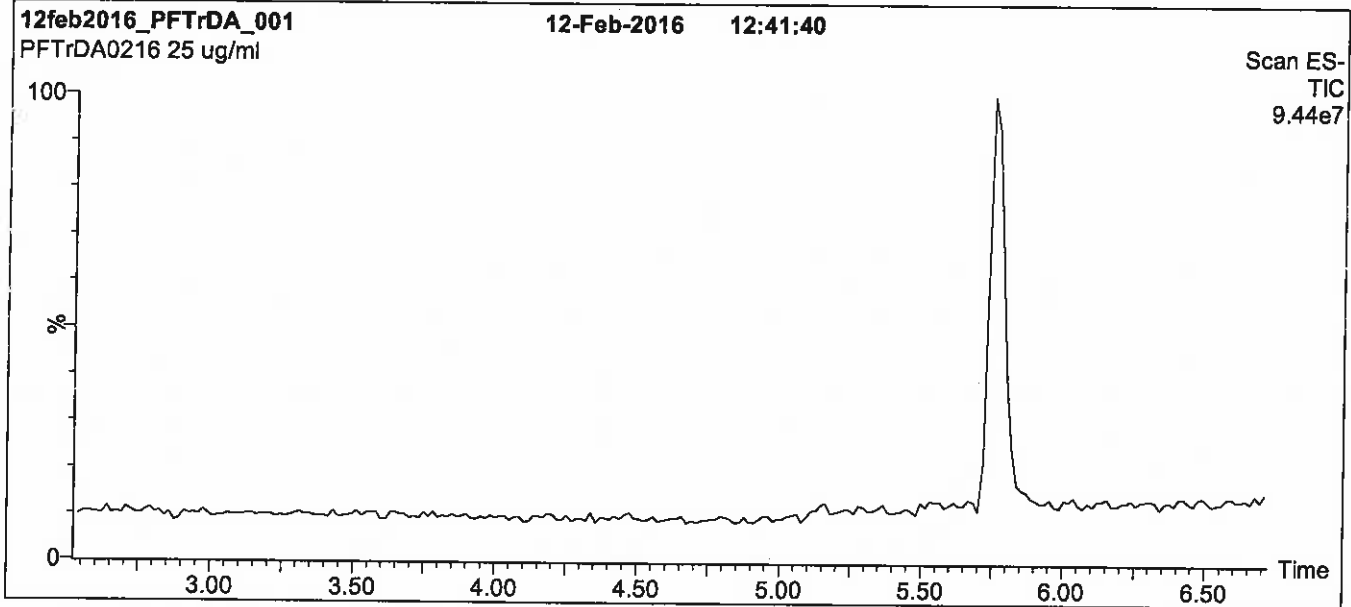
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**Figure 1: PFTTrDA; LC/MS Data (TIC and Mass Spectrum)**



**Conditions for Figure 1:**

**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro *micro* API MS

**Chromatographic Conditions**

Column: Acquity UPLC BEH Shield RP<sub>18</sub>  
1.7  $\mu$ m, 2.1 x 100 mm

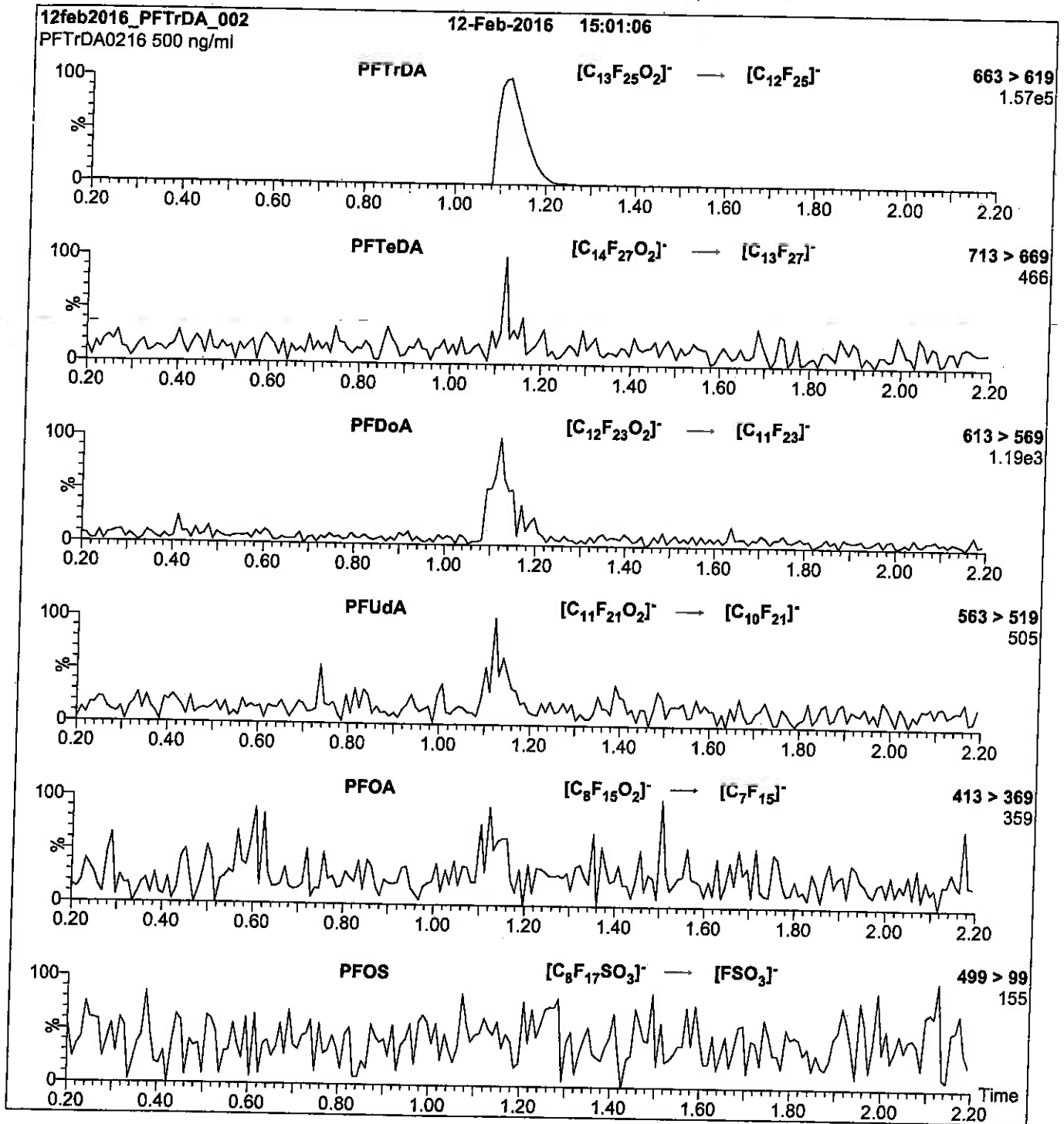
Mobile phase: Gradient  
Start: 60% (80:20 MeOH:ACN) / 40% H<sub>2</sub>O  
(both with 10 mM NH<sub>4</sub>OAc buffer)  
Ramp to 90% organic over 7 min and hold for 1.5 min  
before returning to initial conditions in 0.5 min.  
Time: 10 min

Flow: 300  $\mu$ l/min

**MS Parameters**

Experiment: Full Scan (150 - 850 amu)  
Source: Electrospray (negative)  
Capillary Voltage (kV) = 2.00  
Cone Voltage (V) = 22.00  
Cone Gas Flow (l/hr) = 60  
Desolvation Gas Flow (l/hr) = 650

**Figure 2: PFTrDA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
10  $\mu$ l (500 ng/ml PFTrDA)

Mobile phase: Isocratic 80% MeOH / 20% H<sub>2</sub>O

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.35e-3  
Collision Energy (eV) = 15

Reagent

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**LCPFUdA\_00005**



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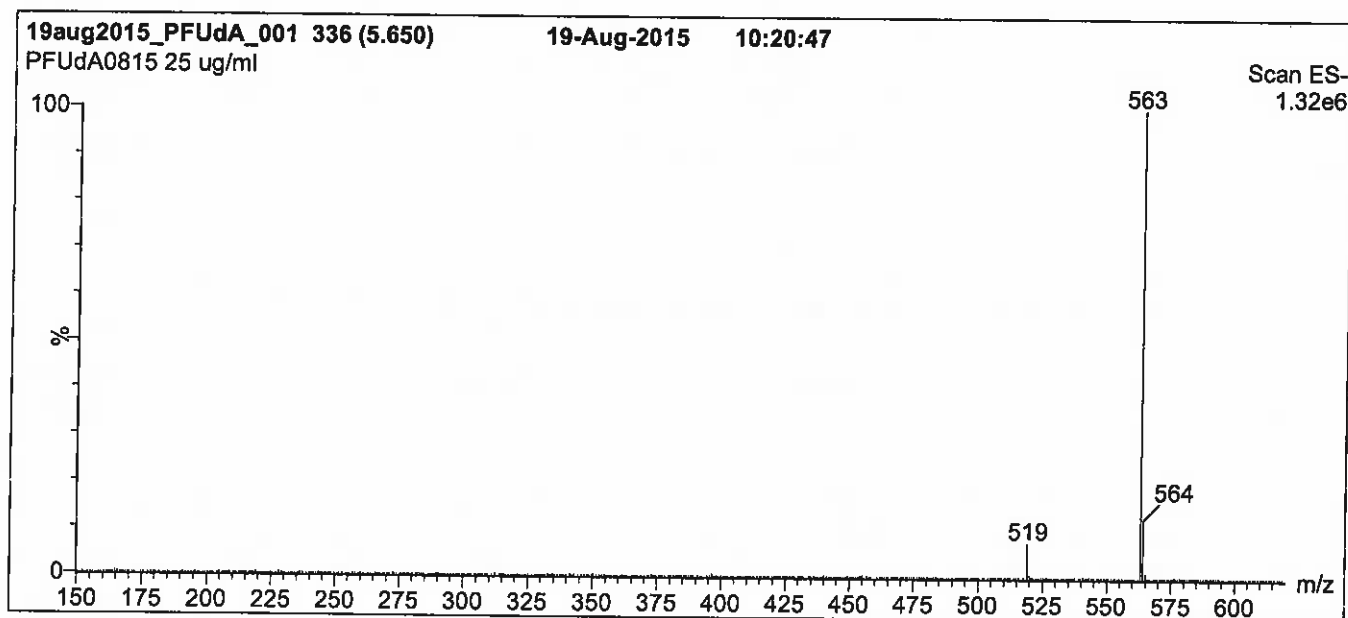
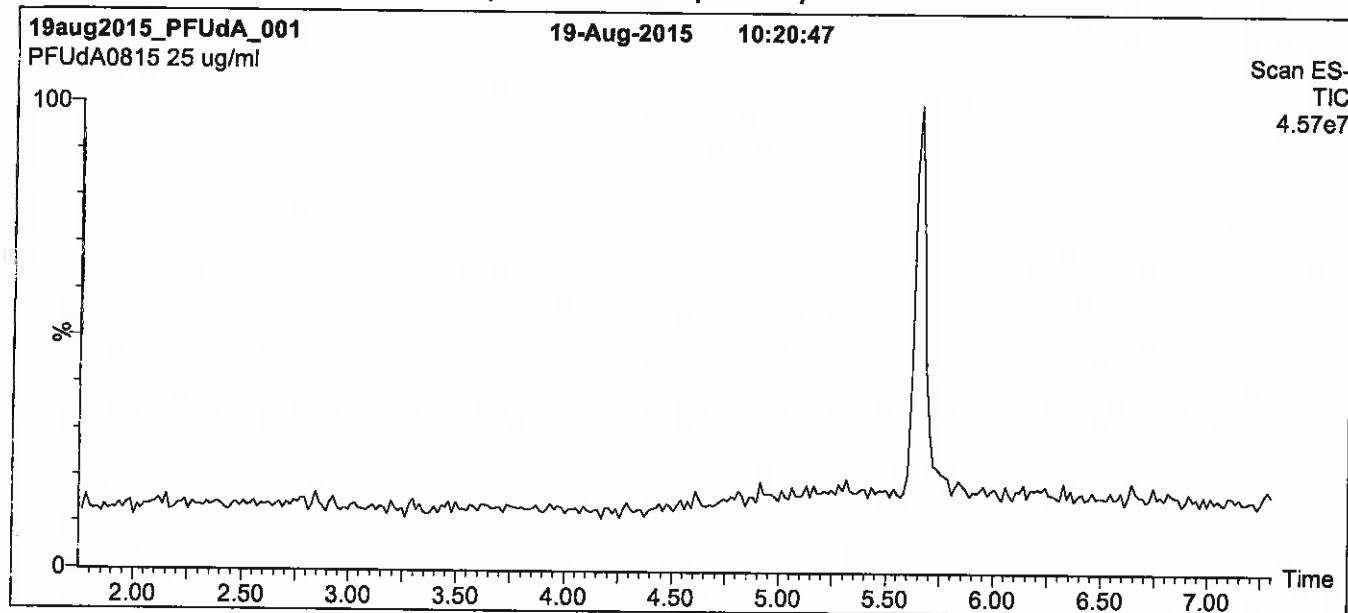
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**LC:** Waters Acquity Ultra Performance LC  
**MS:** Micromass Quattro micro API MS

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**Column:** Acquity UPLC BEH Shield RP<sub>18</sub>  
 1.7  $\mu$ m, 2.1 x 100 mm

**Mobile phase:** Gradient  
 Start: 50% (80:20 MeOH:ACN) / 50% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)  
 Ramp to 90% organic over 7 min and hold for 2 min  
 before returning to initial conditions in 0.5 min.  
 Time: 10 min

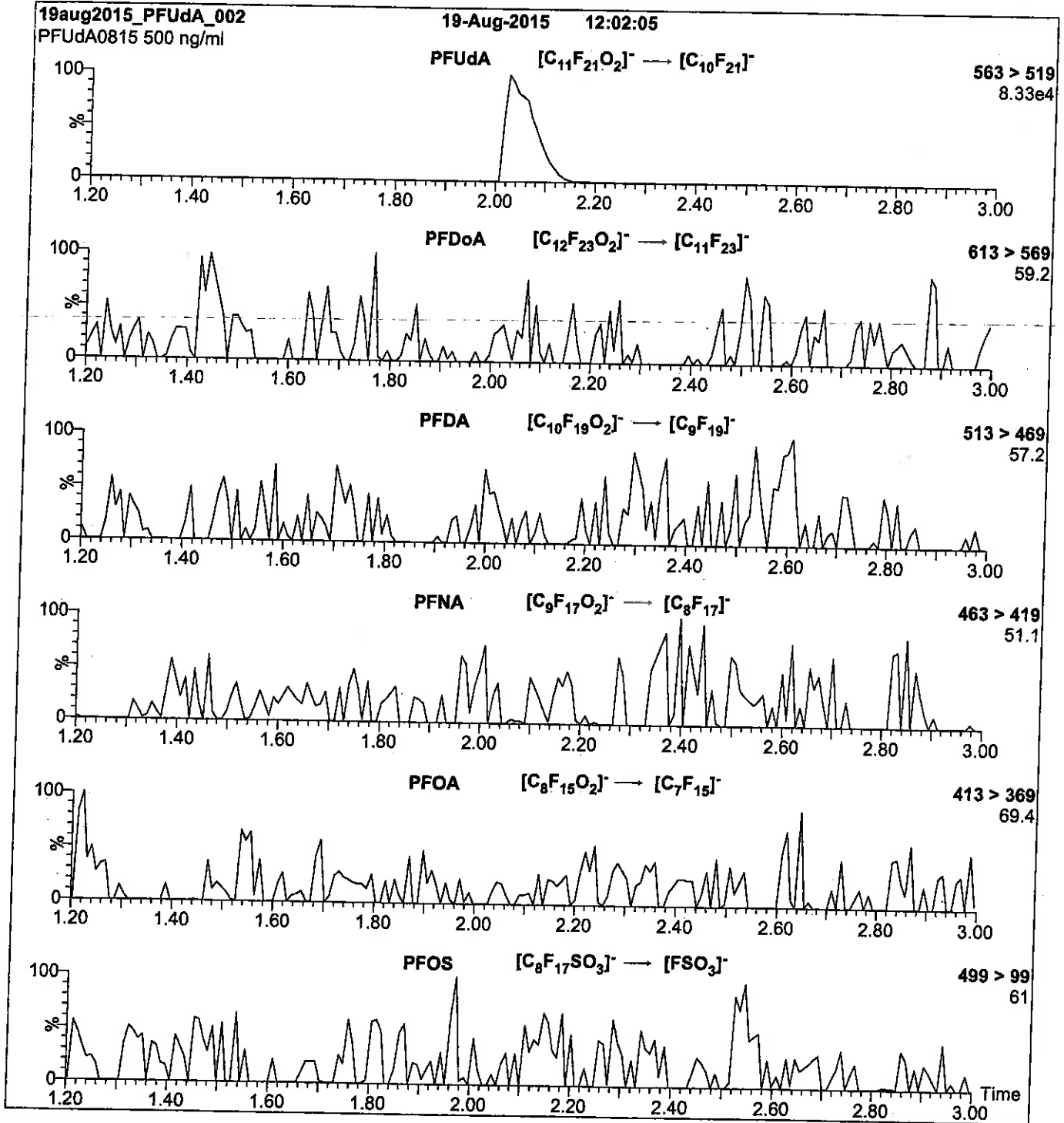
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 65  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml PFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
 Collision Energy (eV) = 11



Reagent

---

**LCPFUdA\_00006**



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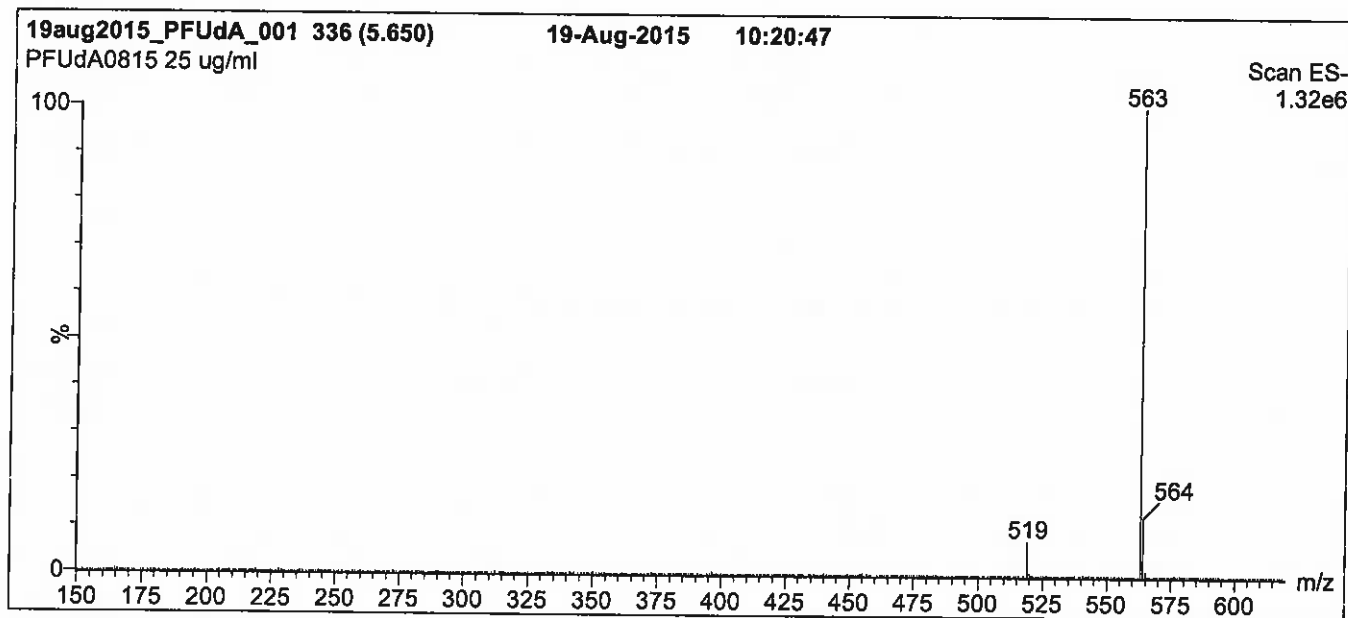
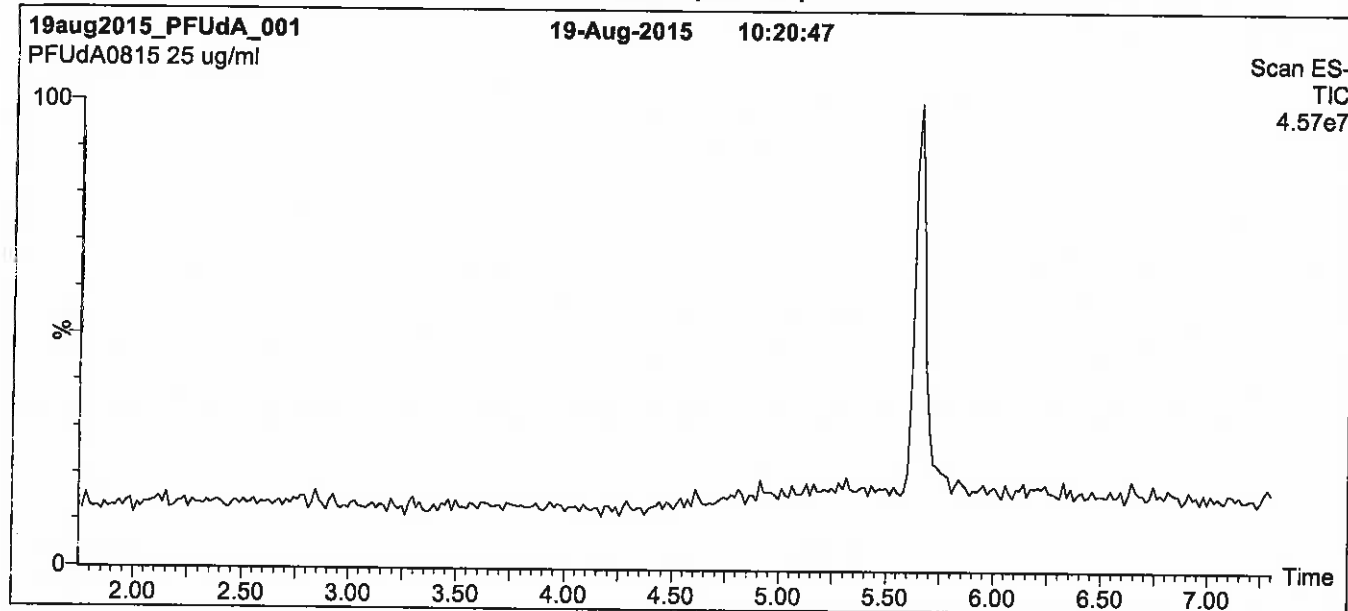
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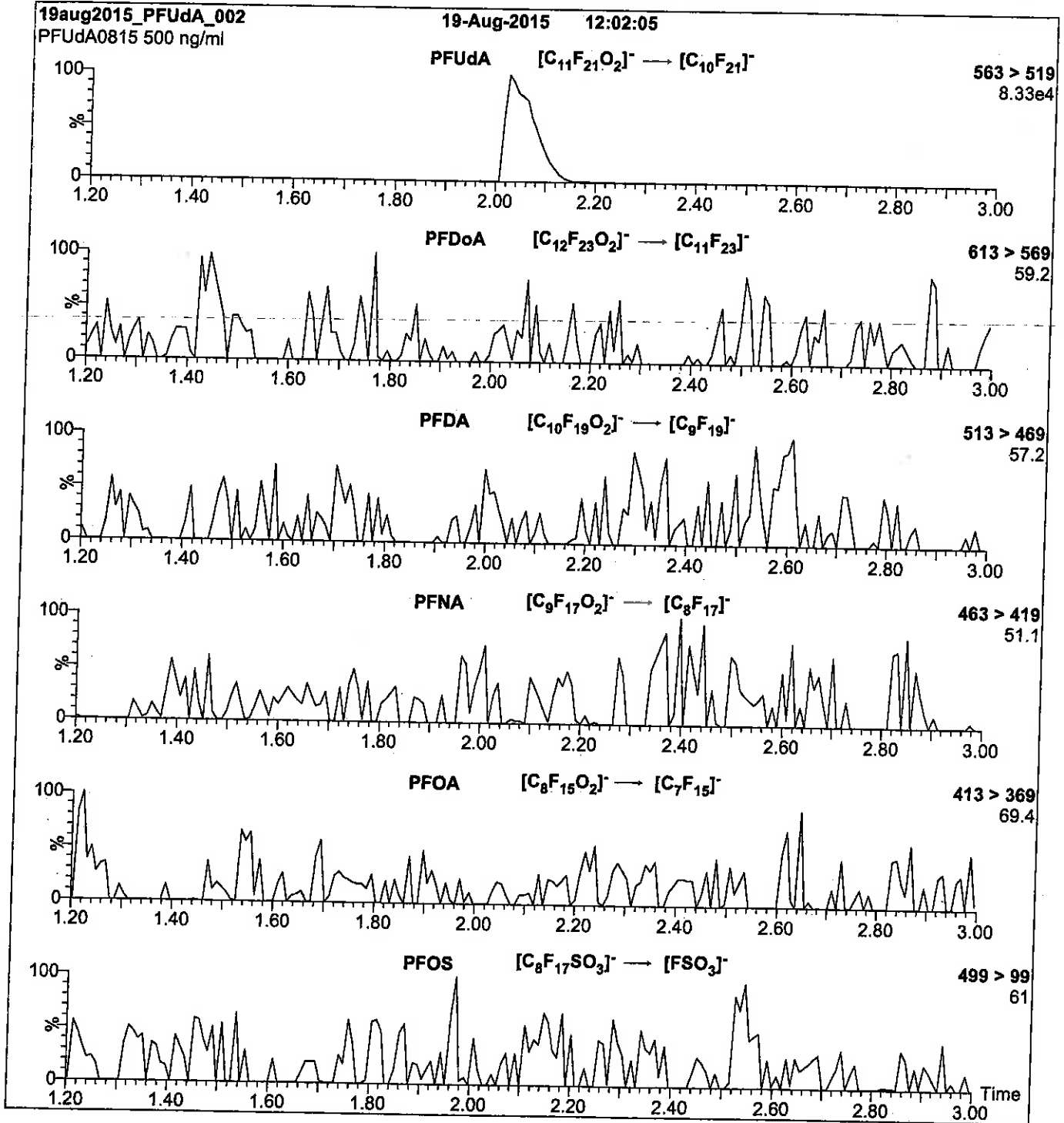
**Flow:** 300  $\mu$ l/min

**MS Parameters**

**Experiment:** Full Scan (150 - 850 amu)

**Source:** Electrospray (negative)  
 Capillary Voltage (kV) = 3.00  
 Cone Voltage (V) = 15.00  
 Cone Gas Flow (l/hr) = 65  
 Desolvation Gas Flow (l/hr) = 750

**Figure 2: PFUdA; LC/MS/MS Data (Selected MRM Transitions)**



**Conditions for Figure 2:**

Injection: Direct loop injection  
 10  $\mu$ l (500 ng/ml PFUdA)

Mobile phase: Isocratic 80% (80:20 MeOH:ACN) / 20% H<sub>2</sub>O  
 (both with 10 mM NH<sub>4</sub>OAc buffer)

Flow: 300  $\mu$ l/min

**MS Parameters**

Collision Gas (mbar) = 3.31e-3  
 Collision Energy (eV) = 11

# Method PFC DOD

---

Perfluronated Hydrocarbons (LC/MS)  
by Method PFC\_DOD

FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Matrix: Solid Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS #	PFOA #	PFOS #
MEAFF-IW04-SO-0617	320-29267-20	80	113	67
MEAFF-IW05-SO-0617	320-29267-21	80	109	62
MEAFF-IW06-SO-0617	320-29267-22	85	116	82
MEAFF-IW07-SO-0617	320-29267-23	91	126	70
MEAFF-IW08-SO-0617	320-29267-24	88	119	73
	MB 320-172026/1-A	93	128	93
	LCS 320-172026/2-A	96	118	90
MEAFF-IW08-SO-0617 MS	320-29267-24 MS	99	120	77
MEAFF-IW08-SO-0617 MSD	320-29267-24 MSD	92	122	81

PFHxS = 1802 PFHxS	<u>QC LIMITS</u>
PFOA = 13C4 PFOA	25-150
PFOS = 13C4 PFOS	25-150
	25-150

# Column to be used to flag recovery values

FORM II 537 (Modified)

FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Matrix: Water

Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS #	PFOA #	PFOS #
MEAFF-TA4J-1987MW01-0617	320-29267-1	110	38	109
MEAFF-AGAMW01-0617	320-29267-2	112	69	110
MEAFF-UNKN20MW01-0617	320-29267-3	109	42	108
MEAFF-EASTBMW01-0617	320-29267-4	117	64	116
MEAFF-TA4J-1984MW01-0617	320-29267-5	30	36	32
MEAFF-TA4J-1984MW01-0617 DL	320-29267-5 DL	111	99	103
MEAFF-UNKN6MW01-0617	320-29267-6	105	61	105
MEAFF-T45-2003MW01-0617	320-29267-7	112	62	105
MEAFF-UNKN5MW01-0617	320-29267-8	115	83	112
MEAFF-T45C-05-2008 MW01-0617	320-29267-9	18 Q	67	96
MEAFF-T45C-05-2008 MW01-0617 DL	320-29267-9 DL	74	117	102
MEAFF-T45C-05-2008 MW01-0617 DL2	320-29267-9 DL2	85	96	86
MEAFF-FD06-0617	320-29267-10	99	43	105
MEAFF-TA4-SOUTHMW01-0617	320-29267-11	103	99	107
MEAFF-EB08-0617	320-29267-12	107	124	102
MEAFF-EB09-0617	320-29267-13	116	143	106
MEAFF-T2C-1996MW01-0617	320-29267-14	119	108	92
MEAFF-T2C-1996MW01-0617 DL	320-29267-14 DL	135	119	122
MEAFF-UNKN11MW01-0617	320-29267-15	117	68	114
MEAFF-EB10-0617	320-29267-16	120	135	111
MEAFF-TA4J-1985MW01-0617	320-29267-17	124	37	111
MEAFF-IW03-GW-0617	320-29267-18	63	77	95
MEAFF-IW03-GW-0617 DL	320-29267-18 DL	101	95	112
MEAFF-FB02-0617	320-29267-19	113	125	112
	MB 320-170766/1-A	104	124	104
	MB 320-170805/1-A	114	133	108

QC LIMITS

PFHxS = 1802 PFHxS  
PFOA = 13C4 PFOA  
PFOS = 13C4 PFOS

25-150  
25-150  
25-150

# Column to be used to flag recovery values

FORM II 537 (Modified)



FORM II  
LCMS SURROGATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Matrix: Water Level: Low

GC Column (1): GeminiC18 3 ID: 3 (mm)

Client Sample ID	Lab Sample ID	PFHxS #	PFOA #	PFOS #
	LCS 320-170766/2-A	103	117	101
	LCS 320-170805/2-A	116	125	107
	LCSD 320-170766/3-A	101	117	98
MEAFF-EASTBMW01-06 17 MS	320-29267-4 MS	123	72	113
MEAFF-EASTBMW01-06 17 MSD	320-29267-4 MSD	112	60	107

PFHxS = 1802 PFHxS  
PFOA = 13C4 PFOA  
PFOS = 13C4 PFOS

QC LIMITS  
25-150  
25-150  
25-150

# Column to be used to flag recovery values

FORM II 537 (Modified)

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: 2017.06.27\_PFC\_B\_007.d  
 Lab ID: LCS 320-170766/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	40.0	41.6	104	60-140	
Perfluorooctanesulfonic acid (PFOS)	37.1	41.6	112	60-140	
13C4 PFOA	100	117	117	25-150	
13C4 PFOS	95.6	97.0	101	25-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	39.8	113	50-150	
18O2 PFHxS	94.6	97.3	103	25-150	

# Column to be used to flag recovery and RPD values  
 FORM III 537 (Modified)

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: 2017.06.28B\_004.d  
 Lab ID: LCS 320-170805/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ng/L)	LCS CONCENTRATION (ng/L)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	40.0	41.3	103	60-140	
Perfluorooctanesulfonic acid (PFOS)	37.1	41.2	111	60-140	
13C4 PFOA	100	125	125	25-150	
13C4 PFOS	95.6	102	107	25-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	37.7	107	50-150	
18O2 PFHxS	94.6	110	116	25-150	

# Column to be used to flag recovery and RPD values  
 FORM III 537 (Modified)

FORM III  
LCMS LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid Level: Low Lab File ID: 2017.07.18C\_002.d  
 Lab ID: LCS 320-172026/2-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ug/Kg)	LCS CONCENTRATION (ug/Kg)	LCS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	4.00	3.92	98	60-140	
Perfluorooctanesulfonic acid (PFOS)	3.71	4.16	112	60-140	
13C4 PFOA	10.0	11.8	118	25-150	
13C4 PFOS	9.56	8.58	90	25-150	
Perfluorobutanesulfonic acid (PFBS)	3.54	4.06	115	50-150	
18O2 PFHxS	9.46	9.04	96	25-150	

# Column to be used to flag recovery and RPD values  
 FORM III 537 (Modified)

FORM III  
LCMS LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Matrix: Water Level: Low Lab File ID: 2017.06.27\_PFC\_B\_008.d

Lab ID: LCSD 320-170766/3-A Client ID: \_\_\_\_\_

COMPOUND	SPIKE ADDED (ng/L)	LCSD CONCENTRATION (ng/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanoic acid (PFOA)	40.0	40.6	102	2	30	60-140	
Perfluorooctanesulfonic acid (PFOS)	37.1	42.8	115	3	30	60-140	
13C4 PFOA	100	117	117			25-150	
13C4 PFOS	95.6	93.3	98			25-150	
Perfluorobutanesulfonic acid (PFBS)	35.4	40.5	115	2	30	50-150	
18O2 PFHxS	94.6	95.9	101			25-150	

# Column to be used to flag recovery and RPD values

FORM III 537 (Modified)

FORM III  
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: 2017.06.28B\_009.d  
 Lab ID: 320-29267-4 MS Client ID: MEAFF-EASTBMW01-0617 MS

COMPOUND	SPIKE ADDED (ng/L)	SAMPLE CONCENTRATION (ng/L)	MS CONCENTRATION (ng/L)	MS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	37.4	0.77 J	39.1	103	60-140	
Perfluorooctanesulfonic acid (PFOS)	34.7	37	75.0	110	60-140	
13C4 PFOA	93.5	59	67.4	72	25-150	
13C4 PFOS	89.4	100	101	113	25-150	
Perfluorobutanesulfonic acid (PFBS)	33.1	1.6 J	36.1	104	50-150	
18O2 PFHxS	88.4	100	108	123	25-150	

# Column to be used to flag recovery and RPD values  
 FORM III 537 (Modified)

FORM III  
LCMS MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid Level: Low Lab File ID: 2017.07.18C\_008.d  
 Lab ID: 320-29267-24 MS Client ID: MEAFF-IW08-SO-0617 MS

COMPOUND	SPIKE ADDED (ug/Kg)	SAMPLE CONCENTRATION (ug/Kg)	MS CONCENTRATION (ug/Kg)	MS % REC	QC LIMITS REC	#
Perfluorooctanoic acid (PFOA)	4.31	0.32 U	4.35	101	60-140	
Perfluorooctanesulfonic acid (PFOS)	4.00	0.32 U	4.39	110	60-140	
13C4 PFOA	10.8	13	13.0	120	25-150	
13C4 PFOS	10.3	7.5	7.90	77	25-150	
Perfluorobutanesulfonic acid (PFBS)	3.81	0.32 U	4.49	118	50-150	
18O2 PFHxS	10.2	9.0	10.1	99	25-150	

# Column to be used to flag recovery and RPD values  
 FORM III 537 (Modified)

FORM III  
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Water Level: Low Lab File ID: 2017.06.28B\_010.d  
 Lab ID: 320-29267-4 MSD Client ID: MEAFF-EASTBMW01-0617 MSD

COMPOUND	SPIKE ADDED (ng/L)	MSD CONCENTRATION (ng/L)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanoic acid (PFOA)	38.4	38.8	99	1	30	60-140	
Perfluorooctanesulfonic acid (PFOS)	35.7	71.3	97	5	30	60-140	
13C4 PFOA	96.1	57.2	60			25-150	
13C4 PFOS	91.9	98.3	107			25-150	
Perfluorobutanesulfonic acid (PFBS)	34.0	36.3	102	0	30	50-150	
18O2 PFHxS	90.9	102	112			25-150	

# Column to be used to flag recovery and RPD values  
 FORM III 537 (Modified)



FORM III  
LCMS MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Matrix: Solid Level: Low Lab File ID: 2017.07.18C\_009.d  
 Lab ID: 320-29267-24 MSD Client ID: MEAFF-IW08-SO-0617 MSD

COMPOUND	SPIKE ADDED (ug/Kg)	MSD CONCENTRATION (ug/Kg)	MSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
Perfluorooctanoic acid (PFOA)	4.31	4.30	100	1	30	60-140	
Perfluorooctanesulfonic acid (PFOS)	4.00	4.55	114	4	30	60-140	
13C4 PFOA	10.8	13.1	122			25-150	
13C4 PFOS	10.3	8.33	81			25-150	
Perfluorobutanesulfonic acid (PFBS)	3.81	4.61	121	3	30	50-150	
18O2 PFHxS	10.2	9.36	92			25-150	

# Column to be used to flag recovery and RPD values  
 FORM III 537 (Modified)

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: 2017.06.27\_PFC\_B\_006.d Lab Sample ID: MB 320-170766/1-A  
 Matrix: Water Date Extracted: 06/23/2017 16:59  
 Instrument ID: A8\_N Date Analyzed: 06/28/2017 09:18  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-170766/2-A	2017.06.27_PFC B 007.d	06/28/2017 09:25
	LCSD 320-170766/3-A	2017.06.27_PFC B 008.d	06/28/2017 09:32
MEAFF-FD06-0617	320-29267-10	2017.06.27_PFC B 009.d	06/28/2017 09:39

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: 2017.06.28B\_003.d Lab Sample ID: MB 320-170805/1-A  
 Matrix: Water Date Extracted: 06/24/2017 12:27  
 Instrument ID: A8\_N Date Analyzed: 06/28/2017 23:33  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-170805/2-A	2017.06.28B 004.d	06/28/2017 23:40
MEAFF-TA4J-1987MW01-0617	320-29267-1	2017.06.28B 005.d	06/28/2017 23:47
MEAFF-AGAMW01-0617	320-29267-2	2017.06.28B 006.d	06/28/2017 23:54
MEAFF-UNKN20MW01-0617	320-29267-3	2017.06.28B 007.d	06/29/2017 00:01
MEAFF-EASTBMW01-0617	320-29267-4	2017.06.28B 008.d	06/29/2017 00:08
MEAFF-EASTBMW01-0617 MS	320-29267-4 MS	2017.06.28B 009.d	06/29/2017 00:15
MEAFF-EASTBMW01-0617 MSD	320-29267-4 MSD	2017.06.28B 010.d	06/29/2017 00:21
MEAFF-TA4J-1984MW01-0617	320-29267-5	2017.06.28B 011.d	06/29/2017 00:28
MEAFF-UNKN6MW01-0617	320-29267-6	2017.06.28B 012.d	06/29/2017 00:35
MEAFF-T45-2003MW01-0617	320-29267-7	2017.06.28B 014.d	06/29/2017 00:49
MEAFF-UNKN5MW01-0617	320-29267-8	2017.06.28B 015.d	06/29/2017 00:56
MEAFF-T45C-05-2008MW01-0617	320-29267-9	2017.06.28B 016.d	06/29/2017 01:03
MEAFF-TA4-SOUTHMW01-0617	320-29267-11	2017.06.28B 017.d	06/29/2017 01:10
MEAFF-EB08-0617	320-29267-12	2017.06.28B 018.d	06/29/2017 01:17
MEAFF-EB09-0617	320-29267-13	2017.06.28B 019.d	06/29/2017 01:24
MEAFF-T2C-1996MW01-0617	320-29267-14	2017.06.28B 020.d	06/29/2017 01:30
MEAFF-UNKN11MW01-0617	320-29267-15	2017.06.28B 021.d	06/29/2017 01:37
MEAFF-EB10-0617	320-29267-16	2017.06.28B 022.d	06/29/2017 01:44
MEAFF-TA4J-1985MW01-0617	320-29267-17	2017.06.28B 023.d	06/29/2017 01:51
MEAFF-IW03-GW-0617	320-29267-18	2017.06.28B 025.d	06/29/2017 02:05
MEAFF-FB02-0617	320-29267-19	2017.06.28B 026.d	06/29/2017 02:12
MEAFF-TA4J-1984MW01-0617 DL	320-29267-5 DL	2017.06.29D 002.d	06/29/2017 18:18

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: 2017.06.28B\_003.d Lab Sample ID: MB 320-170805/1-A  
 Matrix: Water Date Extracted: 06/24/2017 12:27  
 Instrument ID: A8\_N Date Analyzed: 06/28/2017 23:33  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
MEAFF-T45C-05-2008MW01-0617 DL	320-29267-9 DL	2017.06.29D 003.d	06/29/2017 18:25
MEAFF-T2C-1996MW01-0617 DL	320-29267-14 DL	2017.06.29D 004.d	06/29/2017 18:32
MEAFF-IW03-GW-0617 DL	320-29267-18 DL	2017.06.29D 005.d	06/29/2017 18:39
MEAFF-T45C-05-2008MW01-0617 DL2	320-29267-9 DL2	2017.06.30B 001.d	06/30/2017 12:20

FORM IV  
LCMS METHOD BLANK SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab File ID: 2017.07.18C\_001.d Lab Sample ID: MB 320-172026/1-A  
 Matrix: Solid Date Extracted: 07/01/2017 09:40  
 Instrument ID: A8\_N Date Analyzed: 07/19/2017 00:01  
 Level: (Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 320-172026/2-A	2017.07.18C 002.d	07/19/2017 00:08
MEAFF-IW04-SO-0617	320-29267-20	2017.07.18C 003.d	07/19/2017 00:15
MEAFF-IW05-SO-0617	320-29267-21	2017.07.18C 004.d	07/19/2017 00:22
MEAFF-IW06-SO-0617	320-29267-22	2017.07.18C 005.d	07/19/2017 00:29
MEAFF-IW07-SO-0617	320-29267-23	2017.07.18C 006.d	07/19/2017 00:36
MEAFF-IW08-SO-0617	320-29267-24	2017.07.18C 007.d	07/19/2017 00:43
MEAFF-IW08-SO-0617 MS	320-29267-24 MS	2017.07.18C 008.d	07/19/2017 00:50
MEAFF-IW08-SO-0617 MSD	320-29267-24 MSD	2017.07.18C 009.d	07/19/2017 00:57

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-TA4J-1987MW01-0617 Lab Sample ID: 320-29267-1  
 Matrix: Water Lab File ID: 2017.06.28B\_005.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 09:55  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 262.4 (mL) Date Analyzed: 06/28/2017 23:47  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.9	U	2.4	1.9	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.8	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	1.9	0.87

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	38		25-150
STL00991	13C4 PFOS	109		25-150
STL00994	18O2 PFHxS	110		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_005.d  
 Lims ID: 320-29267-A-1-A  
 Client ID: MEAFF-TA4J-1987MW01-0617  
 Sample Type: Client  
 Inject. Date: 28-Jun-2017 23:47:29 ALS Bottle#: 3 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-1-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:36:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.751	1.760	-0.009	1.000	6339	0.0195			3.3	
298.90 > 99.00	1.751	1.760	-0.009	1.000	2532		2.50(0.00-0.00)		3.8	
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.329	-0.019		11030670	51.9		110	25306	
* 62 13C2-PFOA										
415.00 > 370.00	2.641	2.656	-0.015		1946	50.0			72.0	
D 14 13C4 PFOA										
417.00 > 372.00	2.641	2.663	-0.022		2472566	18.9		37.9	12568	
D 18 13C4 PFOS										
503.00 > 80.00	3.000	3.026	-0.026		8463632	52.0		109	18954	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_005.d

Injection Date: 28-Jun-2017 23:47:29

Instrument ID: A8\_N

Lims ID: 320-29267-A-1-A

Lab Sample ID: 320-29267-1

Client ID: MEAFF-TA4J-1987MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 3 Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

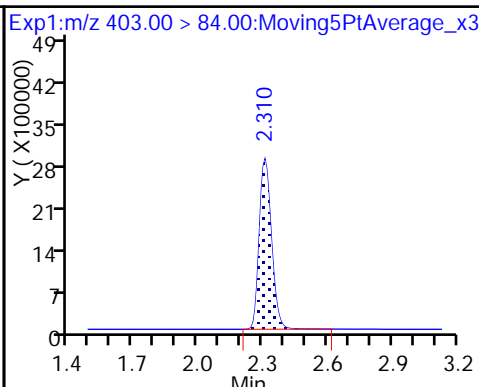
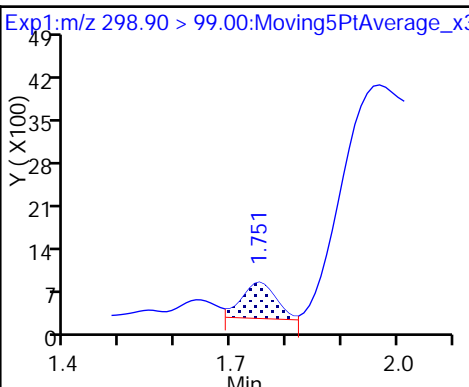
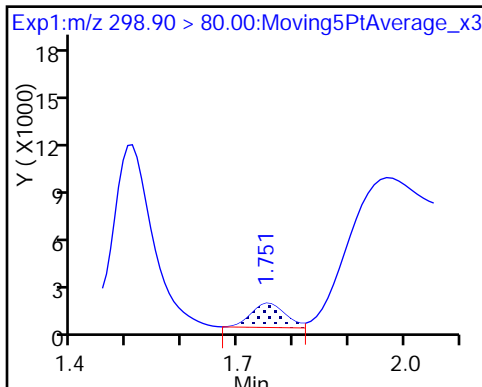
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

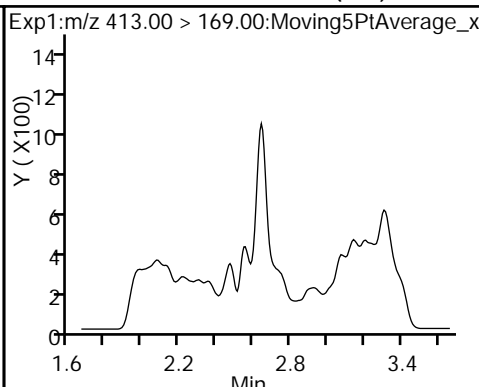
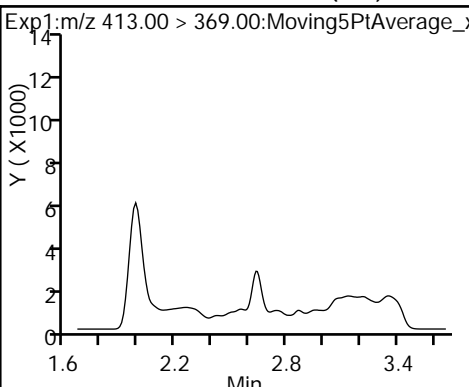
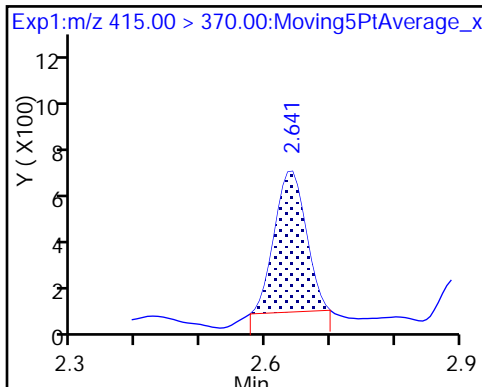
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (ND)

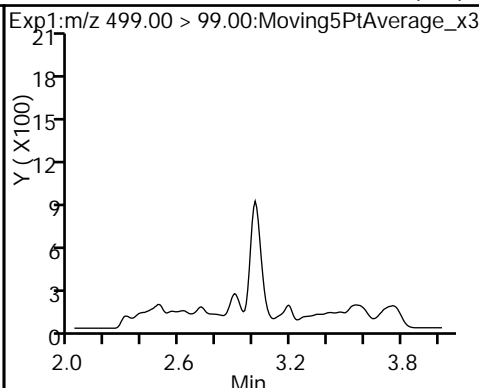
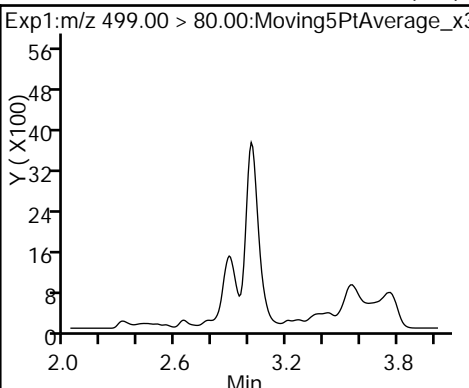
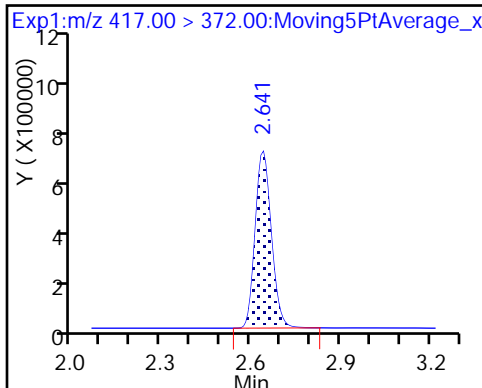
15 Perfluorooctanoic acid (ND)



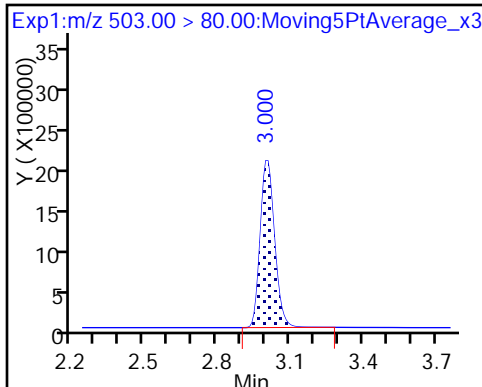
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS





FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-AGAMW01-0617 Lab Sample ID: 320-29267-2  
 Matrix: Water Lab File ID: 2017.06.28B\_006.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 10:00  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 254.9(mL) Date Analyzed: 06/28/2017 23:54  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.4	M	2.5	2.0	0.73
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U M	3.9	2.9	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.5	J M	2.5	2.0	0.90

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	69		25-150
STL00991	13C4 PFOS	110		25-150
STL00994	18O2 PFHxS	112		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_006.d  
 Lims ID: 320-29267-A-2-A  
 Client ID: MEAFF-AGAMW01-0617  
 Sample Type: Client  
 Inject. Date: 28-Jun-2017 23:54:23 ALS Bottle#: 4 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-2-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:37:26

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.760	1.760	0.0	1.000	252766	0.7622			110	M
298.90 > 99.00	1.760	1.760	0.0	1.000	96778		2.61(0.00-0.00)		111	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.329	-0.008		11251437	52.9		112	45720	
* 62 13C2-PFOA										
415.00 > 370.00	2.646	2.656	-0.010		2511	50.0			90.1	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.653	2.663	-0.010	1.000	214528	2.24			86.5	M
413.00 > 169.00	2.653	2.663	-0.010	1.000	128176		1.67(0.90-1.10)		472	M
D 14 13C4 PFOA										
417.00 > 372.00	2.653	2.663	-0.010		4511492	34.6		69.1	17838	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	2.899	3.026	-0.127	1.000	65963	0.3511			106	M
499.00 > 99.00	3.021	3.026	-0.005	1.042	8305		7.94(0.90-1.10)		26.5	M
D 18 13C4 PFOS										
503.00 > 80.00	3.021	3.026	-0.005		8560813	52.6		110	11223	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_006.d

Injection Date: 28-Jun-2017 23:54:23

Instrument ID: A8\_N

Lims ID: 320-29267-A-2-A

Lab Sample ID: 320-29267-2

Client ID: MEAFF-AGAMW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 4

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

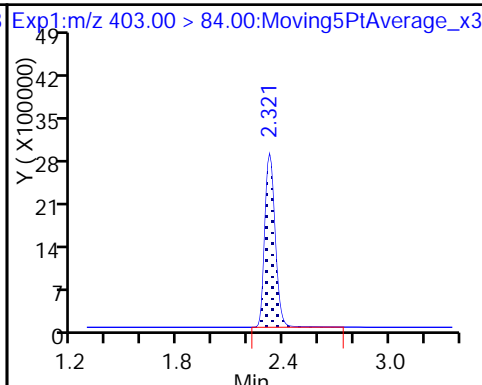
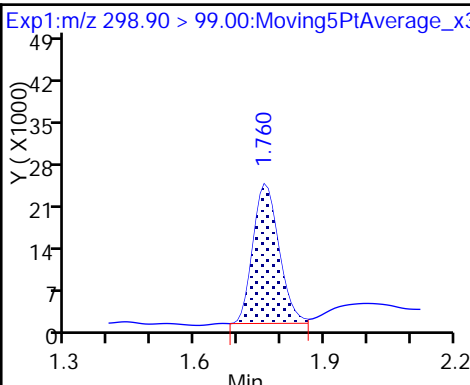
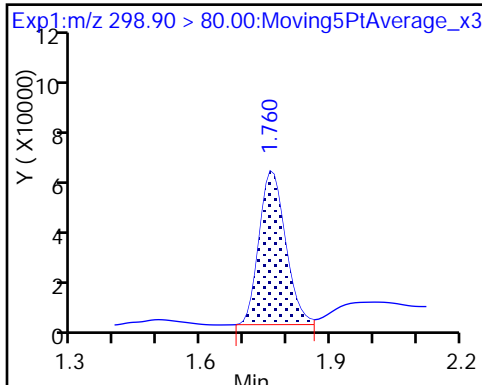
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

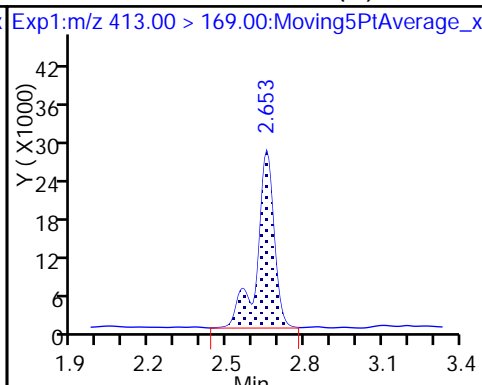
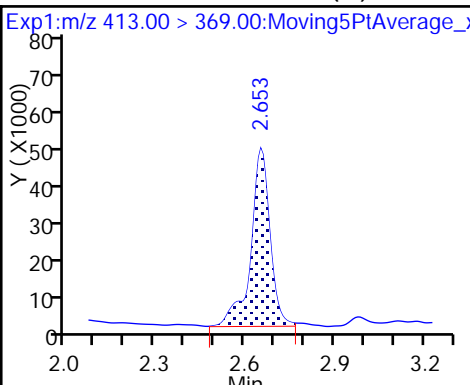
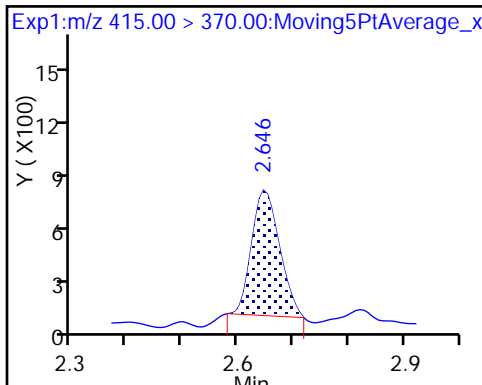
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

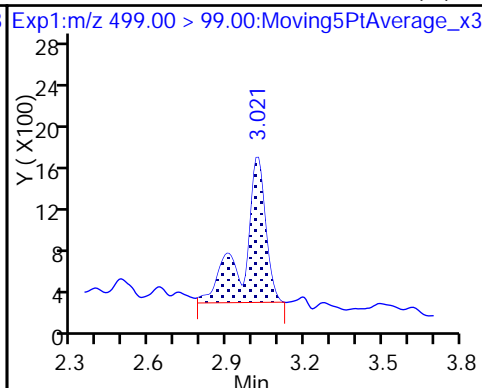
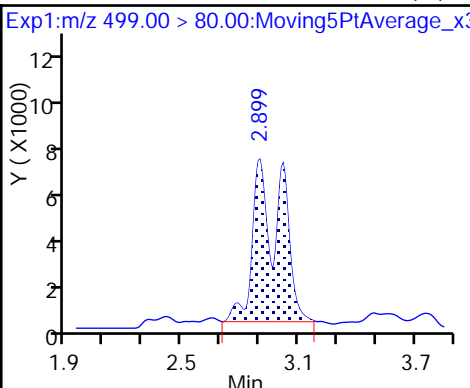
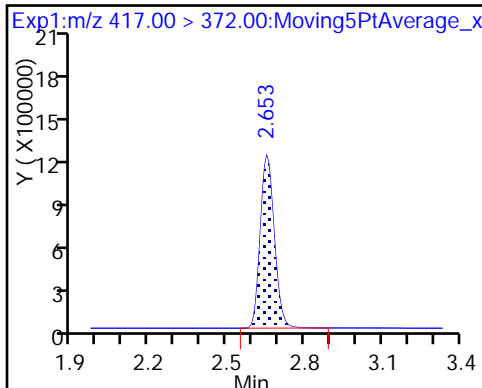
15 Perfluorooctanoic acid (M)



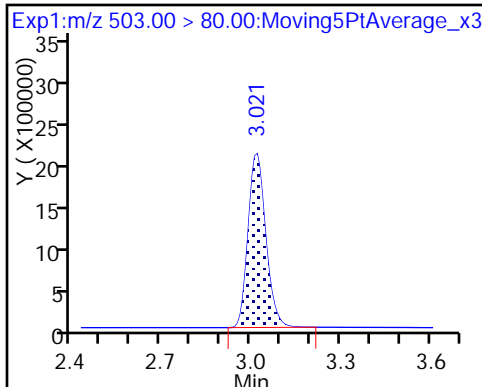
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)



D 18 13C4 PFOS



TestAmerica Sacramento

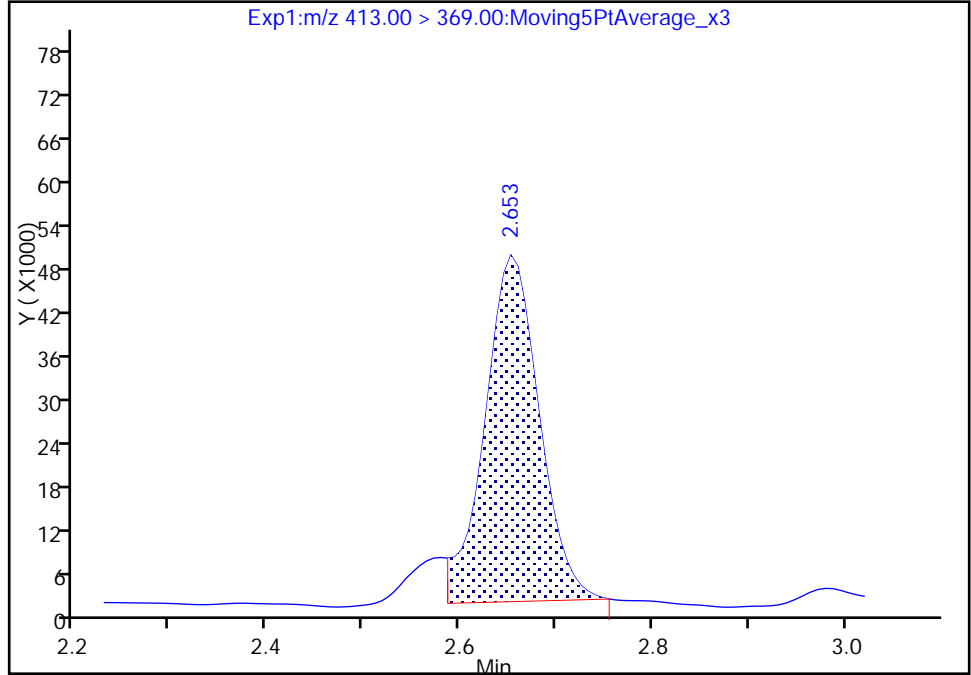
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_006.d  
Injection Date: 28-Jun-2017 23:54:23 Instrument ID: A8\_N  
Lims ID: 320-29267-A-2-A Lab Sample ID: 320-29267-2  
Client ID: MEAFF-AGAMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

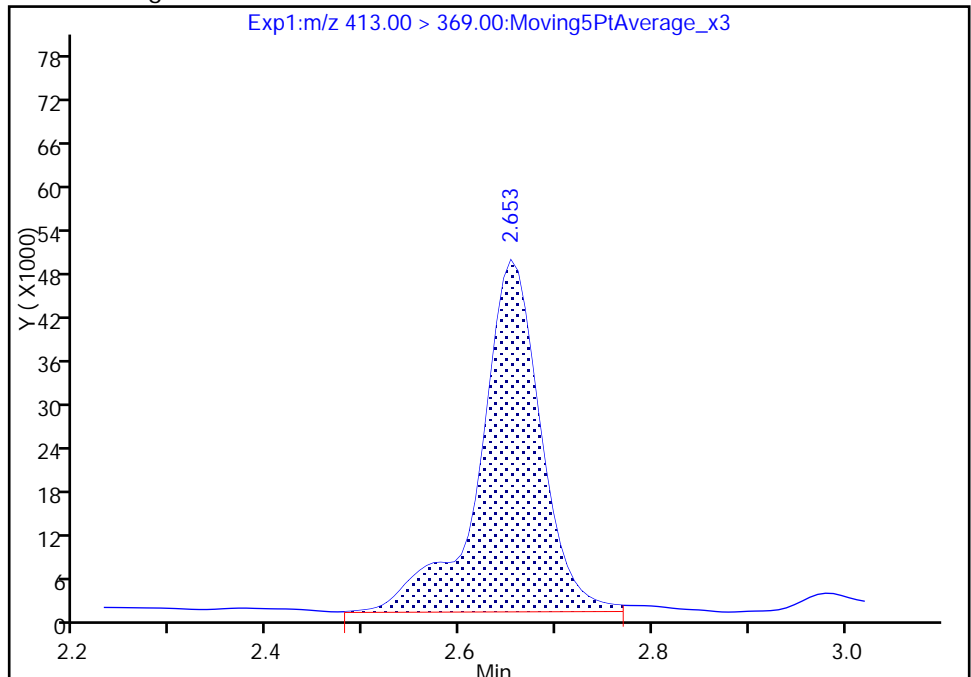
RT: 2.65  
Area: 185958  
Amount: 1.944127  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 214528  
Amount: 2.242817  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:37:02  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

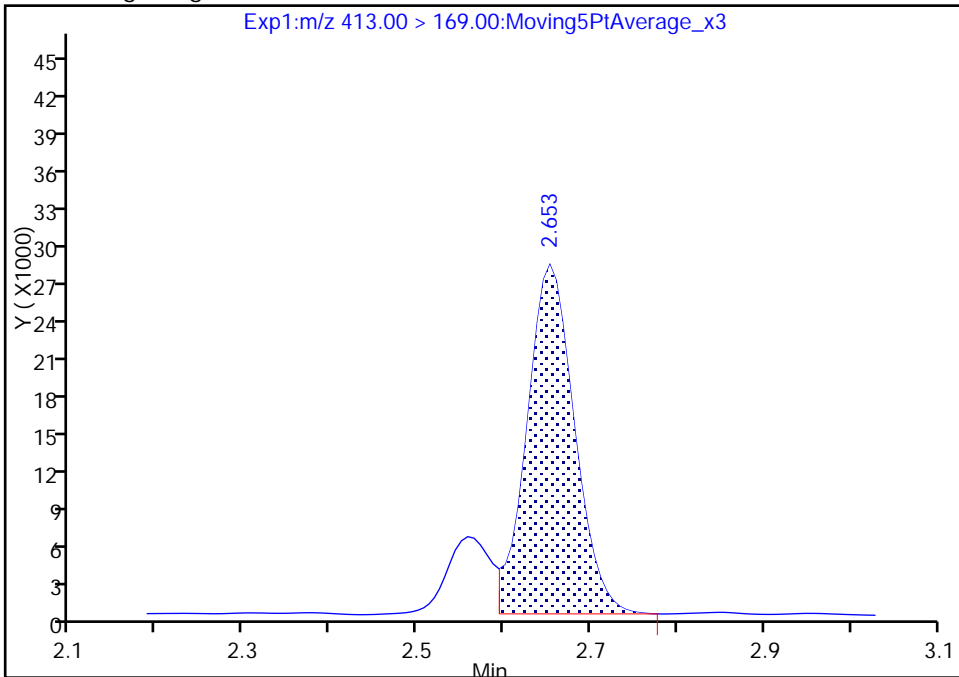
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_006.d  
Injection Date: 28-Jun-2017 23:54:23 Instrument ID: A8\_N  
Lims ID: 320-29267-A-2-A Lab Sample ID: 320-29267-2  
Client ID: MEAFF-AGAMW01-0617  
Operator ID: SACINSTLCS01 ALS Bottle#: 4 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

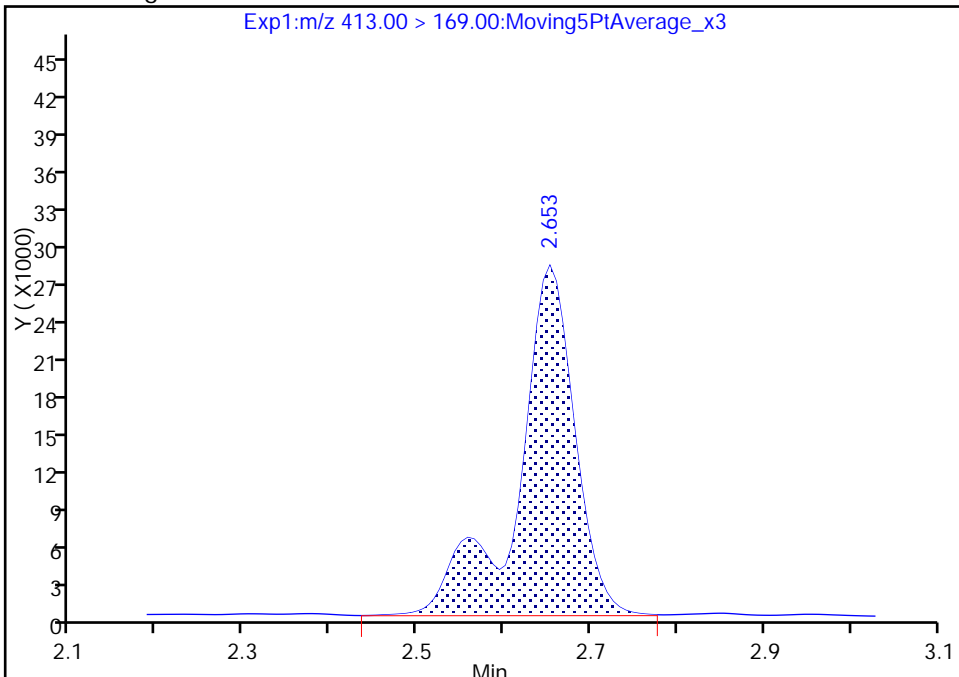
RT: 2.65  
Area: 105396  
Amount: 1.944127  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 128176  
Amount: 2.242817  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:37:07

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

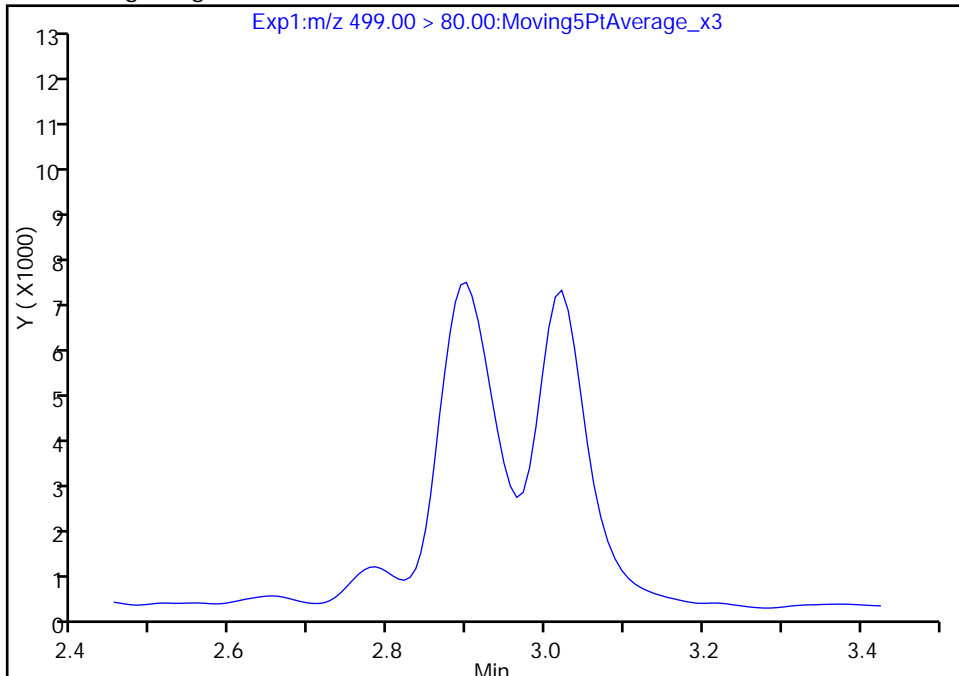
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_006.d  
Injection Date: 28-Jun-2017 23:54:23 Instrument ID: A8\_N  
Lims ID: 320-29267-A-2-A Lab Sample ID: 320-29267-2  
Client ID: MEAFF-AGAMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

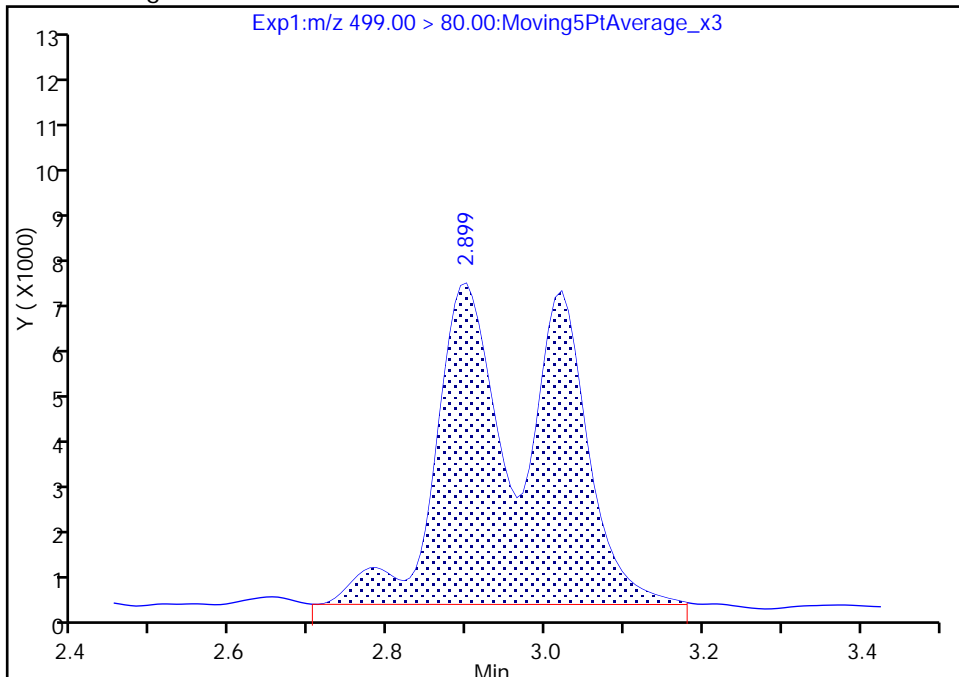
Not Detected  
Expected RT: 3.03

Processing Integration Results



Manual Integration Results

RT: 2.90  
Area: 65963  
Amount: 0.351117  
Amount Units: ng/ml



Reviewer: chandrasenas, 29-Jun-2017 16:37:17  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

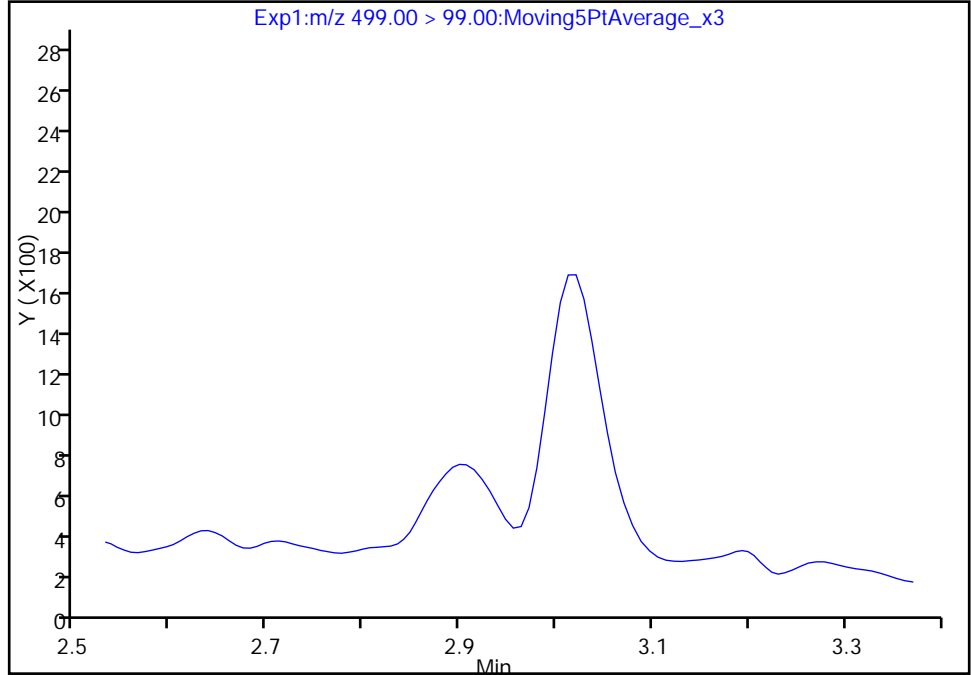
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_006.d  
Injection Date: 28-Jun-2017 23:54:23 Instrument ID: A8\_N  
Lims ID: 320-29267-A-2-A Lab Sample ID: 320-29267-2  
Client ID: MEAFF-AGAMW01-0617  
Operator ID: SACINSTLCS01 ALS Bottle#: 4 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

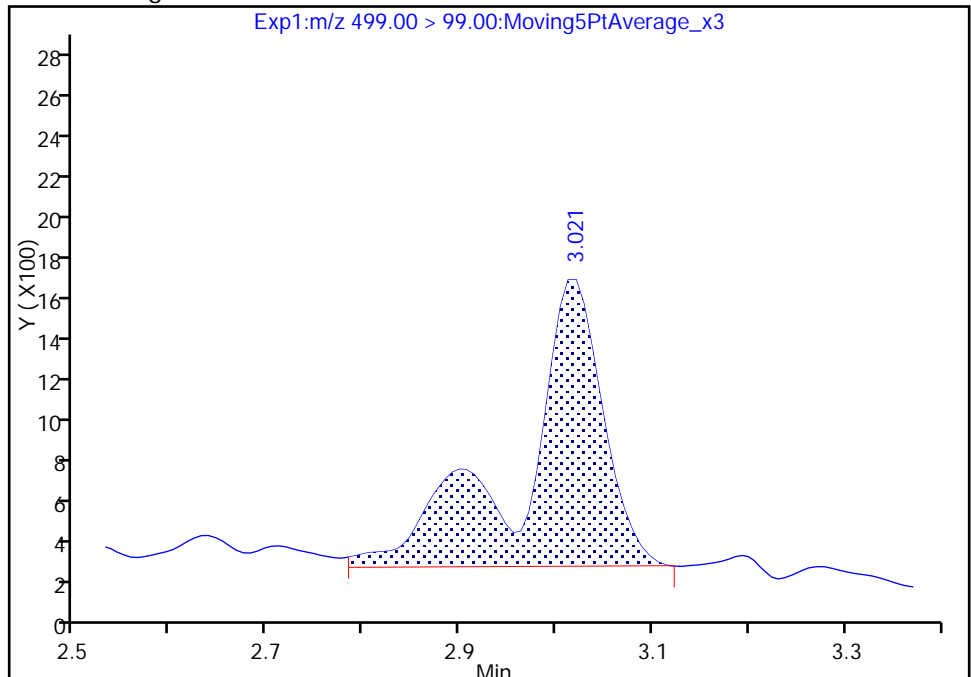
Not Detected  
Expected RT: 3.03

Processing Integration Results



RT: 3.02  
Area: 8305  
Amount: 0.351117  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:37:24

Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

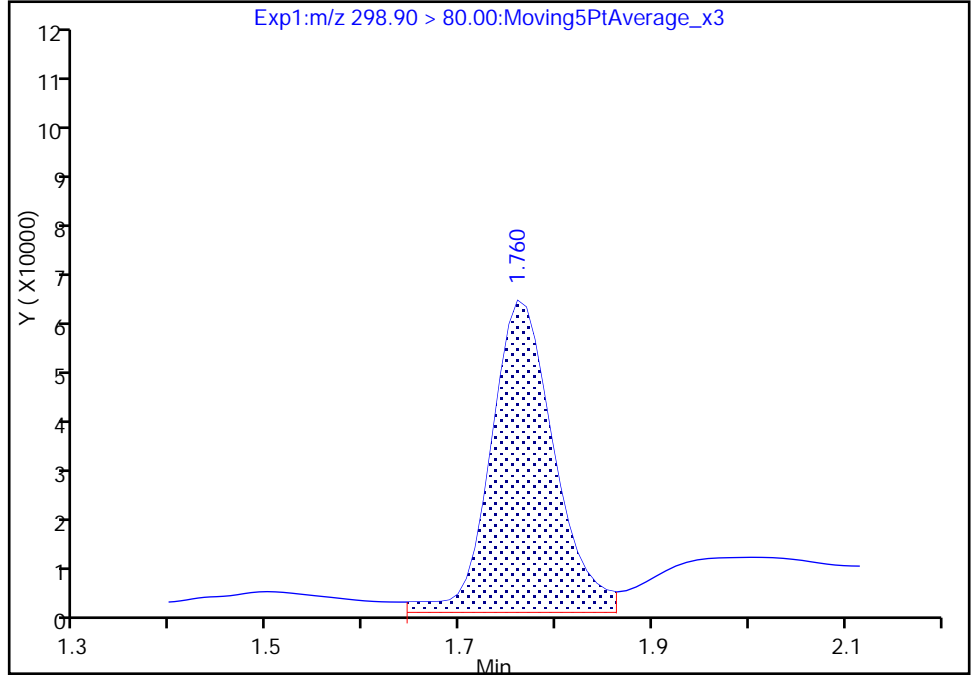
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Injection Date: 28-Jun-2017 23:54:23 Instrument ID: A8\_N  
Lims ID: 320-29267-A-2-A Lab Sample ID: 320-29267-2  
Client ID: MEAFF-AGAMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

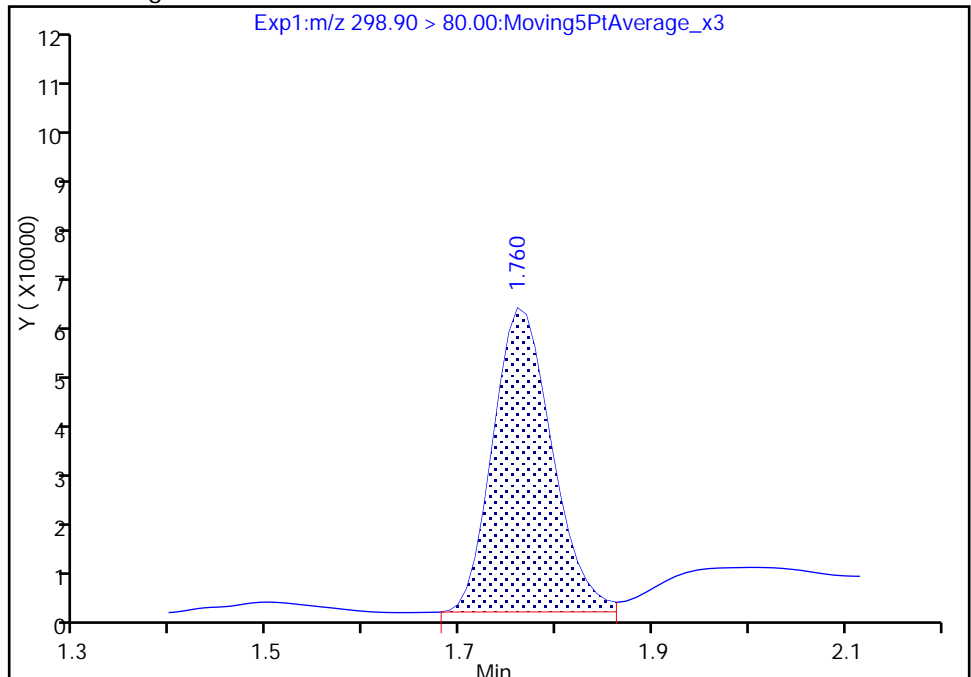
RT: 1.76  
Area: 280889  
Amount: 0.847052  
Amount Units: ng/ml

Processing Integration Results



RT: 1.76  
Area: 252766  
Amount: 0.762244  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:36:47  
Audit Action: Manually Integrated

Audit Reason: Baseline



TestAmerica Sacramento

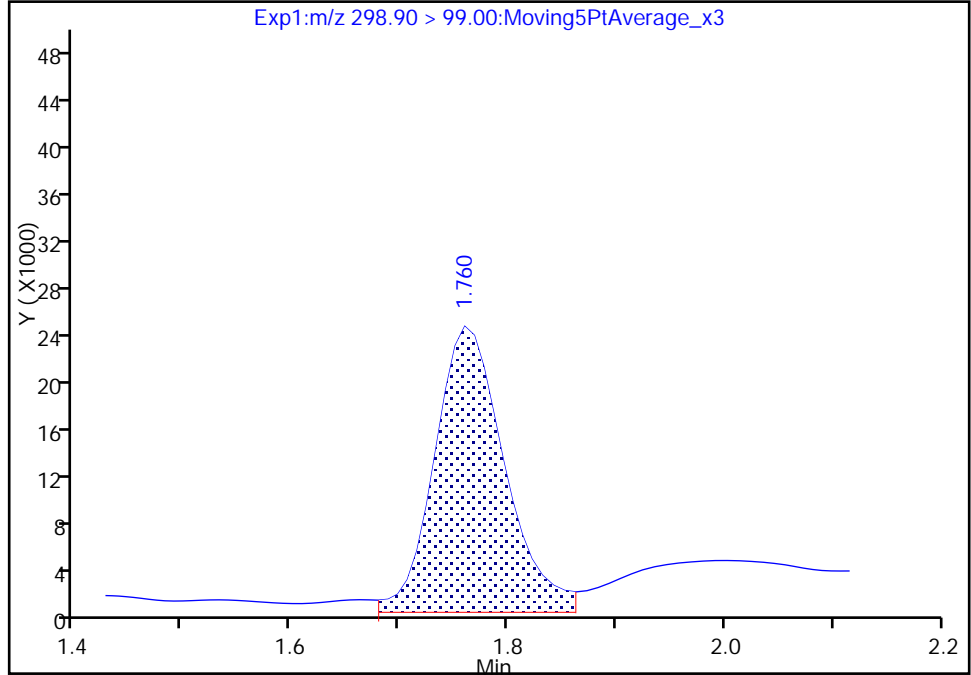
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_006.d  
Injection Date: 28-Jun-2017 23:54:23 Instrument ID: A8\_N  
Lims ID: 320-29267-A-2-A Lab Sample ID: 320-29267-2  
Client ID: MEAFF-AGAMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

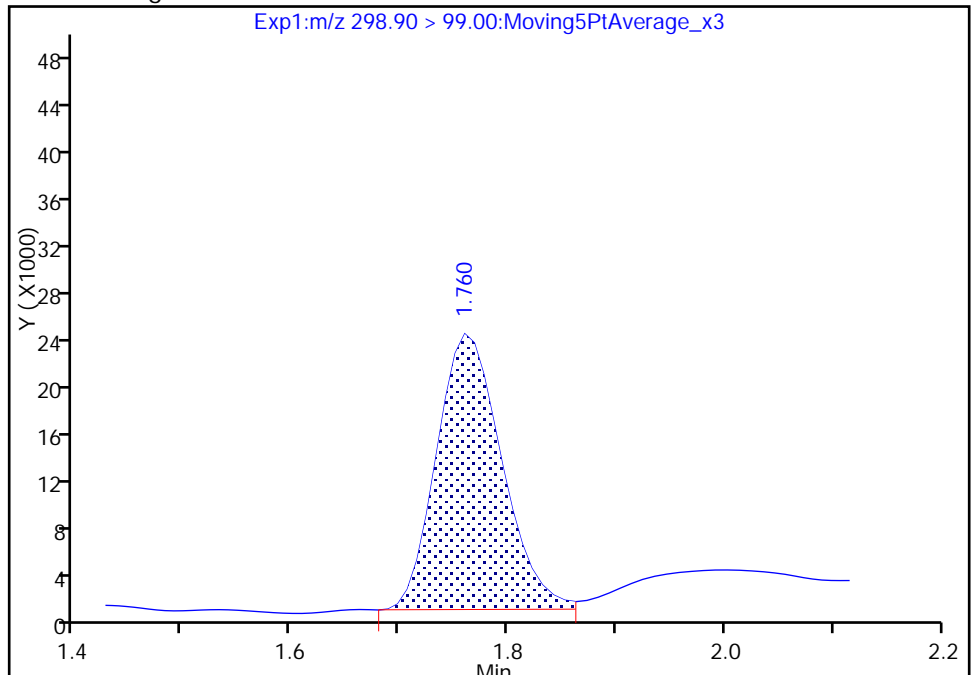
RT: 1.76  
Area: 108491  
Amount: 0.847052  
Amount Units: ng/ml

Processing Integration Results



RT: 1.76  
Area: 96778  
Amount: 0.762244  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:36:53

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-UNKN20MW01-0617 Lab Sample ID: 320-29267-3  
 Matrix: Water Lab File ID: 2017.06.28B\_007.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 11:55  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 268.8 (mL) Date Analyzed: 06/29/2017 00:01  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	J M	2.3	1.9	0.70
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.8	U	3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	19		2.3	1.9	0.85

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	42		25-150
STL00991	13C4 PFOS	108		25-150
STL00994	18O2 PFHxS	109		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_007.d  
 Lims ID: 320-29267-B-3-A  
 Client ID: MEAFF-UNKN20MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 00:01:17 ALS Bottle#: 5 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-b-3-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:37:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	3304696	10.2			1781	
298.90 > 99.00	1.753	1.760	-0.007	1.000	1339108		2.47(0.00-0.00)		1626	
D 11 18O2 PFHxS										
403.00 > 84.00	2.307	2.329	-0.022		10952612	51.5		109	28955	
* 62 13C2-PFOA										
415.00 > 370.00	2.632	2.656	-0.024		1813	50.0			66.0	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.640	2.663	-0.023	1.000	54620	0.9489			50.2	M
413.00 > 169.00	2.640	2.663	-0.023	1.000	34788		1.57(0.90-1.10)		119	M
D 14 13C4 PFOA										
417.00 > 372.00	2.640	2.663	-0.023		2714915	20.8		41.6	15083	
D 18 13C4 PFOS										
503.00 > 80.00	3.005	3.026	-0.021		8388838	51.6		108	17597	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_007.d

Injection Date: 29-Jun-2017 00:01:17

Instrument ID: A8\_N

Lims ID: 320-29267-B-3-A

Lab Sample ID: 320-29267-3

Client ID: MEAFF-UNKN20MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 5 Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

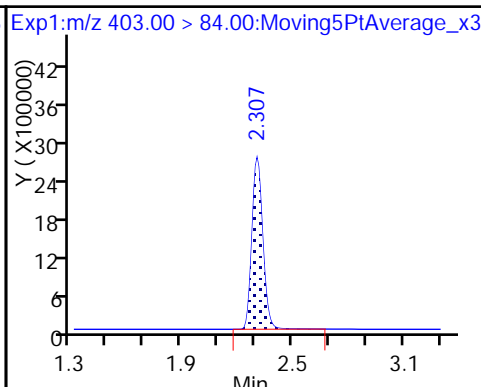
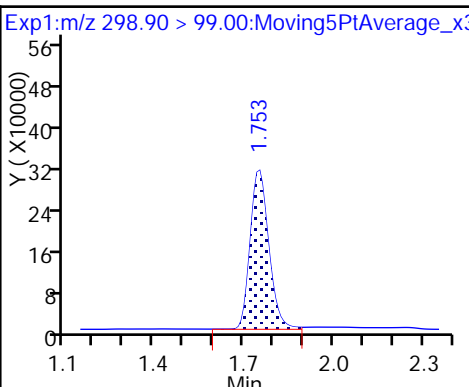
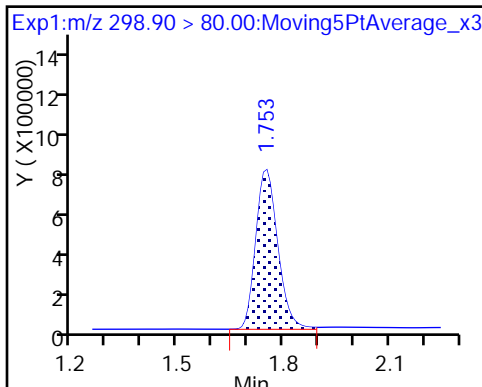
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

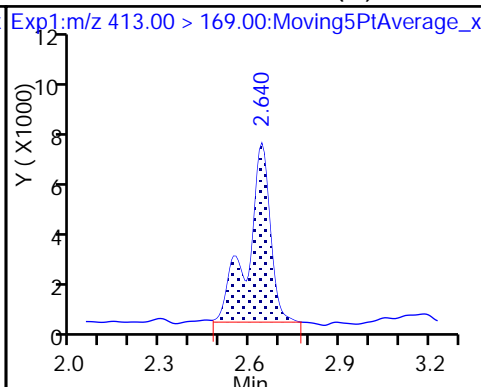
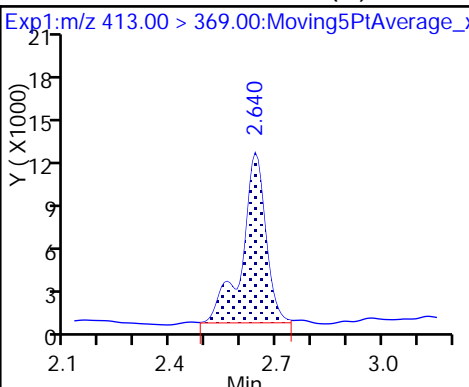
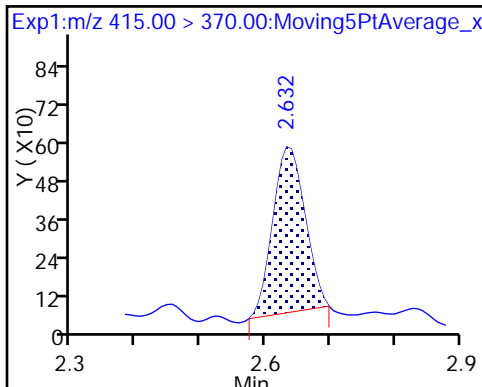
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

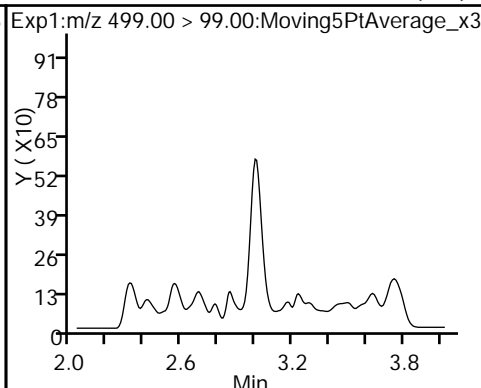
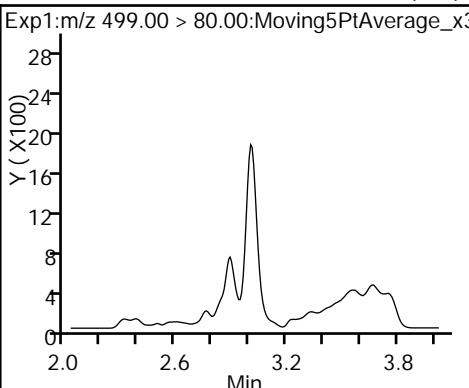
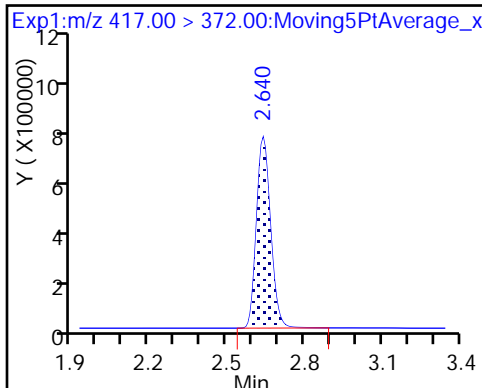
15 Perfluorooctanoic acid (M)



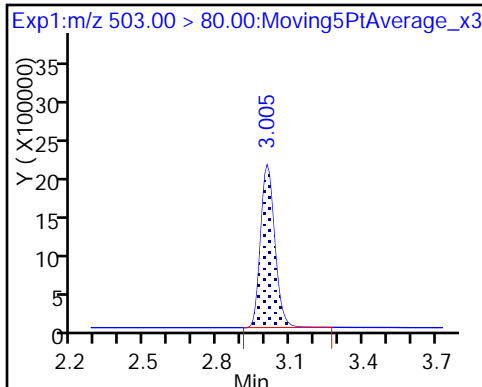
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



TestAmerica Sacramento

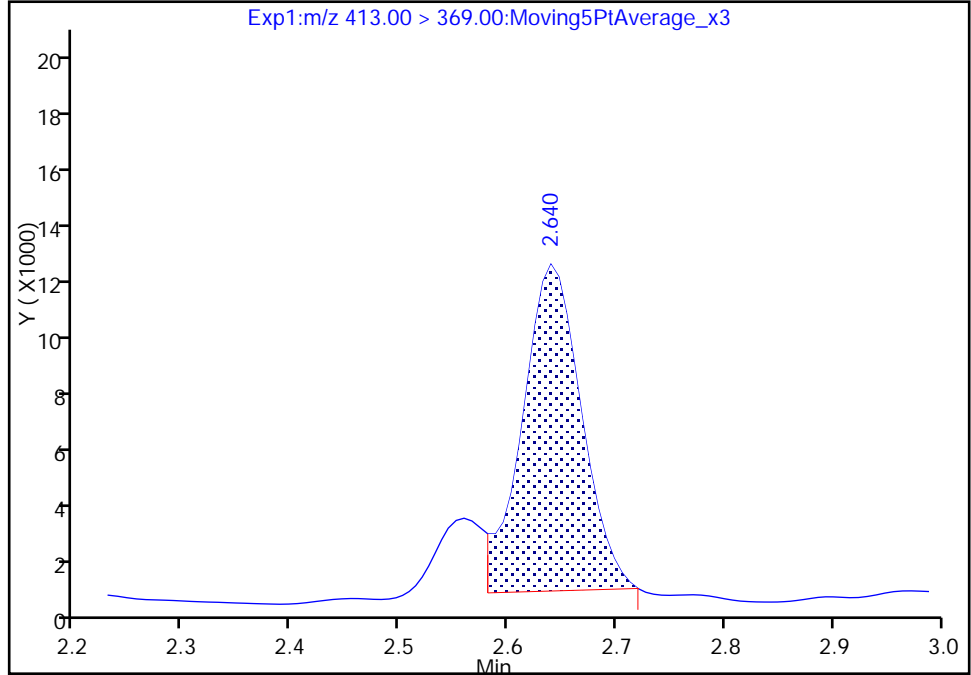
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Injection Date: 29-Jun-2017 00:01:17 Instrument ID: A8\_N  
Lims ID: 320-29267-B-3-A Lab Sample ID: 320-29267-3  
Client ID: MEAFF-UNKN20MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 7  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

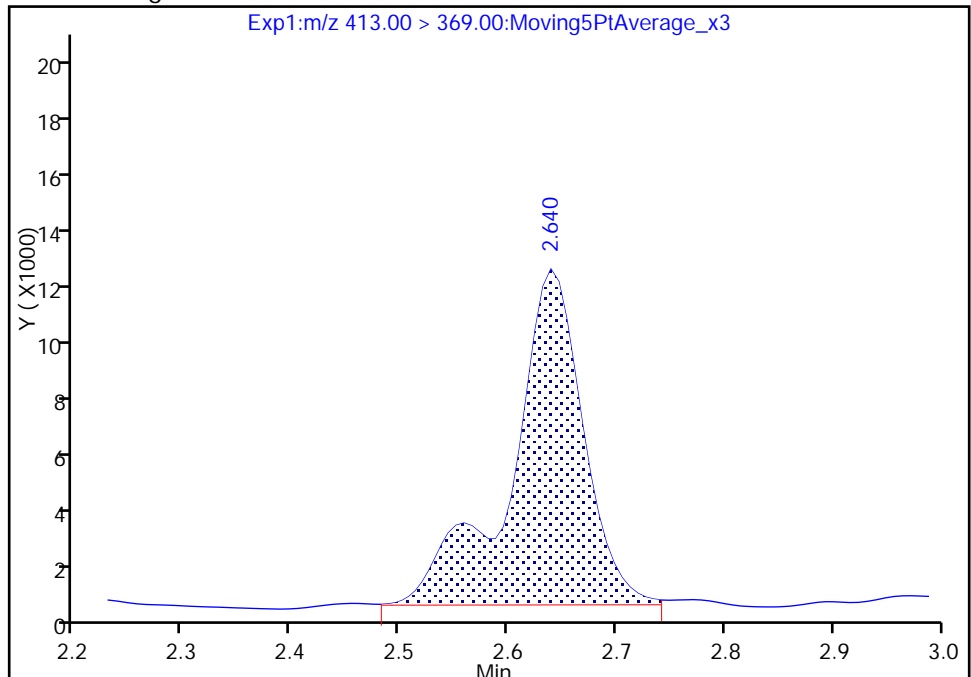
RT: 2.64  
Area: 42806  
Amount: 0.743667  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 54620  
Amount: 0.948911  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:37:39  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

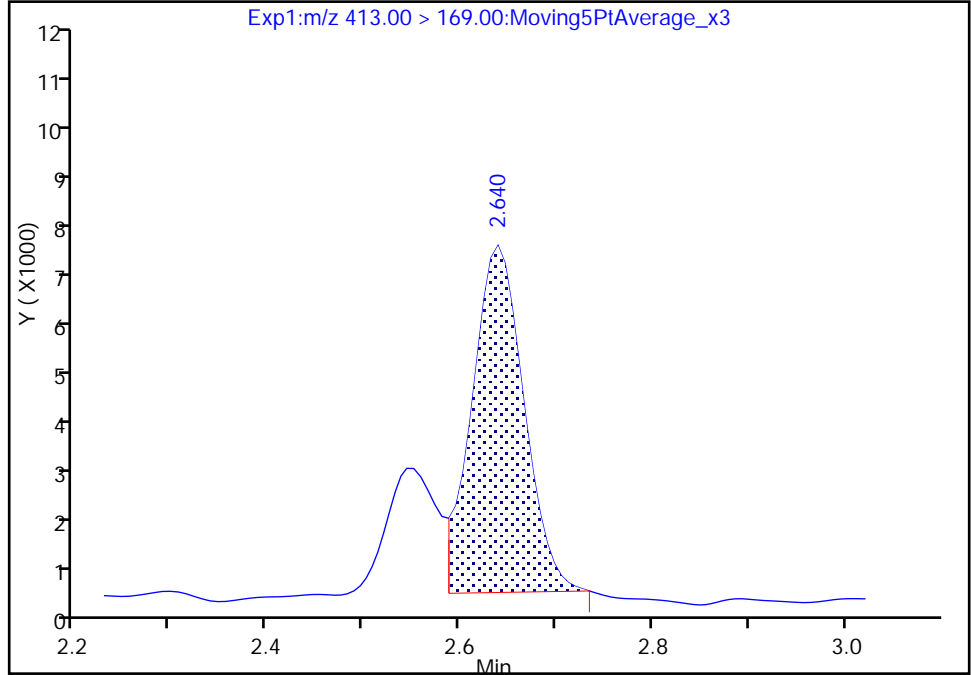
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Injection Date: 29-Jun-2017 00:01:17 Instrument ID: A8\_N  
Lims ID: 320-29267-B-3-A Lab Sample ID: 320-29267-3  
Client ID: MEAFF-UNKN20MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 7  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

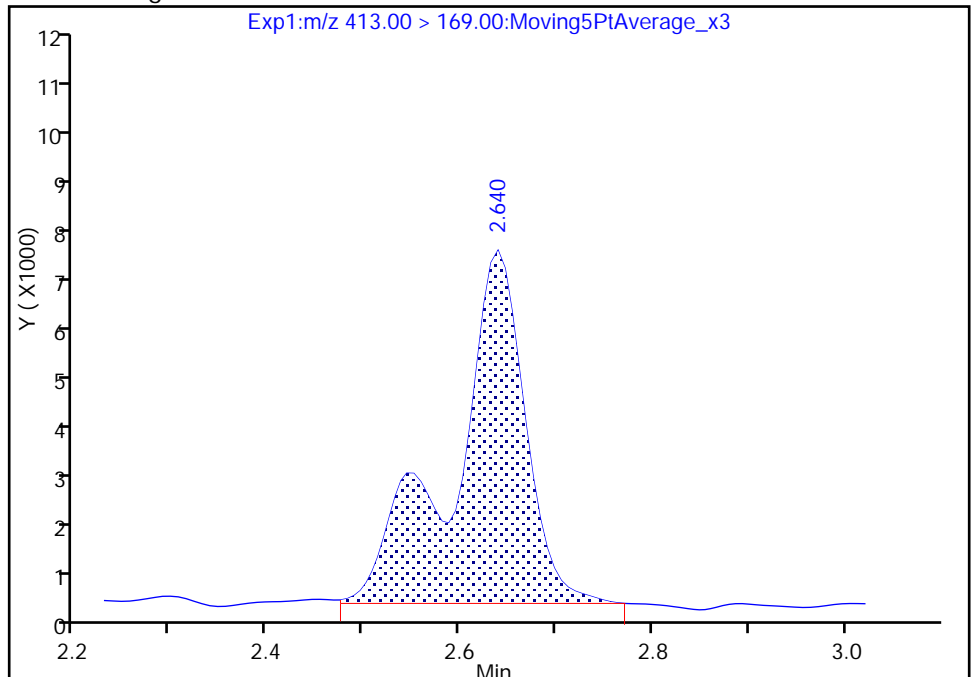
RT: 2.64  
Area: 24384  
Amount: 0.743667  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 34788  
Amount: 0.948911  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:37:46

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-EASTBMW01-0617 Lab Sample ID: 320-29267-4  
 Matrix: Water Lab File ID: 2017.06.28B\_008.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 11:35  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 272 (mL) Date Analyzed: 06/29/2017 00:08  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.77	J M	2.3	1.8	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	37		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.3	1.8	0.84

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	64		25-150
STL00991	13C4 PFOS	116		25-150
STL00994	18O2 PFHxS	117		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_008.d  
 Lims ID: 320-29267-A-4-A  
 Client ID: MEAFF-EASTBMW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 00:08:11 ALS Bottle#: 6 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-4-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:38:16

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.535	1.533	0.002	1.000	80296	0.7949			14.6	
D 1 13C4 PFBA										
217.00 > 172.00	1.526	1.533	-0.007		5608010	24.0		47.9	16216	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.735	1.742	-0.007	1.000	26764	0.3283			20.8	
D 3 13C5-PFPeA										
267.90 > 223.00	1.735	1.742	-0.007		3960021	24.6		49.3	15199	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	298071	0.8567			133	
298.90 > 99.00	1.753	1.760	-0.007	1.000	128158		2.33(0.00-0.00)		157	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.760	-0.007		251886	NC			5392	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.958	-0.010	1.000	2889	NR			144	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.992	-0.010		3621020	23.6		47.2	10294	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	2.003	-0.021	1.000	93455	1.27			99.2	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.295	2.312	-0.017	1.000	16934	0.1612			19.7	
D 9 13C4-PFHpA										
367.00 > 322.00	2.295	2.312	-0.017		4919521	35.9		71.9	15336	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.311	2.329	-0.018	1.000	1605406	5.82			1126	
D 11 18O2 PFHxS										
403.00 > 84.00	2.311	2.329	-0.018		11805441	55.5		117	15807	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.623	2.634	-0.011	1.000	822782	NR			9708	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.623	2.634	-0.011	47711	0.6552	0.0	2094	
* 62 13C2-PFOA	415.00	> 370.00	2.637	2.656	-0.019	2263	50.0		87.0	
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.645	2.663	-0.019	1.000	37193	0.4186			23.5	M
413.00 > 169.00	2.645	2.663	-0.019	1.000	27420		1.36(0.90-1.10)		79.1	M
D 14 13C4 PFOA	417.00	> 372.00	2.645	2.663	-0.019	4190604	32.1		64.2	15606
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.652	2.671	-0.019	1.000	77047	0.3540		215
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.011	3.026	-0.015	1.000	3979398	20.1		6920
499.00 > 99.00	3.011	3.026	-0.015	1.000	909712		4.37(0.90-1.10)		4006	
D 18 13C4 PFOS	503.00	> 80.00	3.011	3.026	-0.015	9042577	55.6		116	12766
D 19 13C5 PFNA	468.00	> 423.00	3.011	3.026	-0.015	3116713	29.7		59.4	9078
D 21 13C8 FOSA	506.00	> 78.00	3.370	3.379	-0.009	489856	1.86		3.7	4607
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.352	3.379	-0.027	1.000	3846	NR		230
D 26 M2-8:2FTS	529.00	> 509.00	3.352	3.379	-0.027	3970	0.0701		0.0	190
D 23 13C2 PFDA	515.00	> 470.00	3.370	3.388	-0.018	2706202	27.1		54.1	16082
D 27 d3-NMeFOSAA	573.00	> 419.00	3.517	3.542	-0.025	13400	0.3618		0.0	430
D 32 d5-NEtFOSAA	589.00	> 419.00	3.691	3.710	-0.019	12913	0.3495		0.0	88.0
D 30 13C2 PFUnA	565.00	> 520.00	3.691	3.710	-0.019	2034866	27.4		54.8	15777
31 Perfluoroundecanoic acid	563.00	> 519.00	3.700	3.710	-0.010	1.000	6743	0.1557		22.9
D 36 13C2 PFDaA	615.00	> 570.00	3.986	4.008	-0.022	2135176	29.1		58.2	8569
37 Perfluorododecanoic acid	613.00	> 569.00	3.863	4.008	-0.145	1.000	692	0.0170		2.1
D 43 13C2-PFTeDA	715.00	> 670.00	4.493	4.510	-0.017	5748673	38.0		75.9	52330
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.576	4.510	0.066	1.000	45779	0.4595		30.8
713.00 > 169.00	4.484	4.510	-0.026	0.980	2359		19.41(0.00-0.00)		88.7	
D 44 13C2-PFHxDA	815.00	> 770.00	4.900	4.922	-0.022	3601578	42.9		85.9	5916
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.900	4.922	-0.022	1.000	52186	0.5209		12.7

## QC Flag Legend

### Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

### Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_008.d

Injection Date: 29-Jun-2017 00:08:11

Instrument ID: A8\_N

Lims ID: 320-29267-A-4-A

Lab Sample ID: 320-29267-4

Client ID: MEAFF-EASTBMW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 6

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

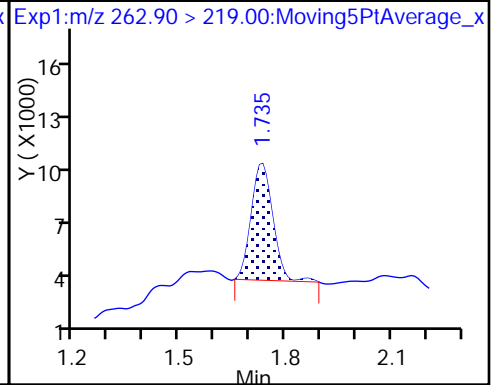
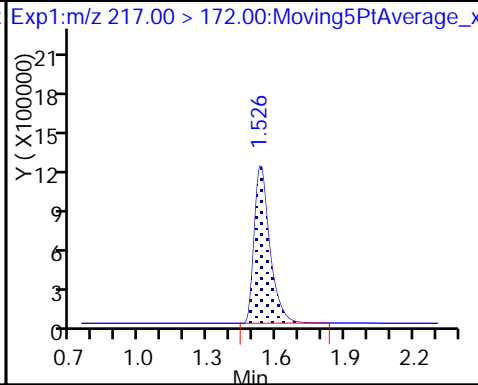
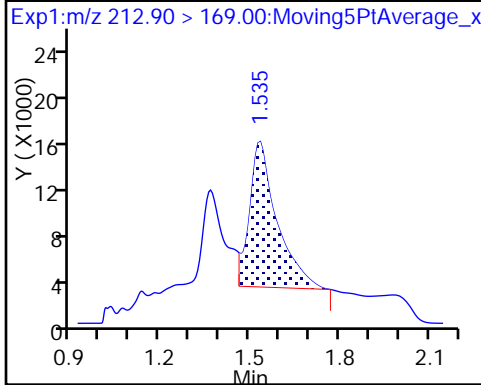
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

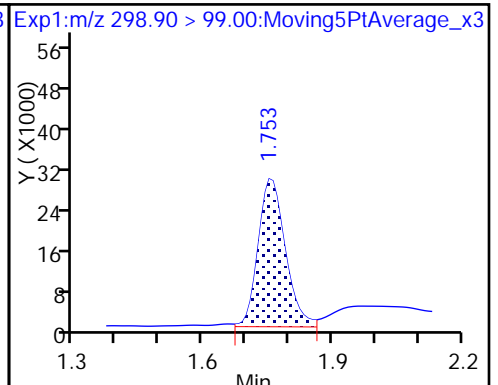
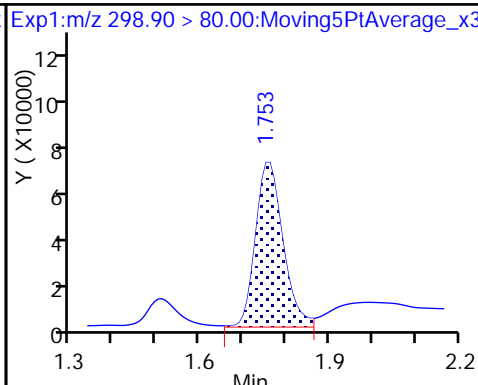
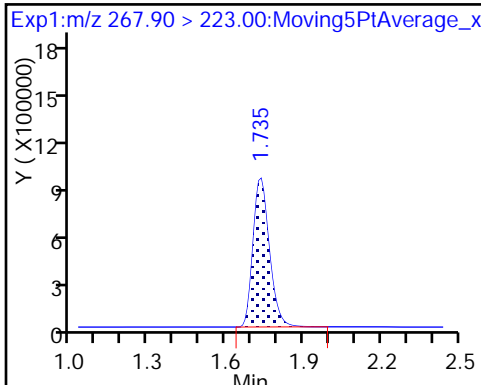
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

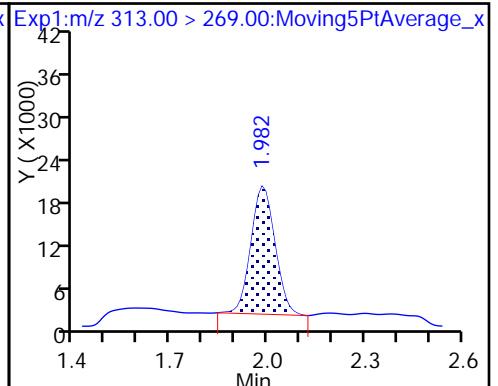
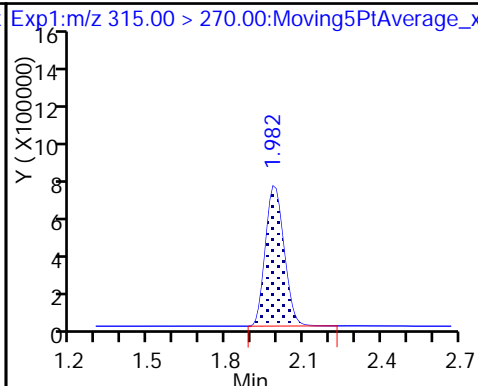
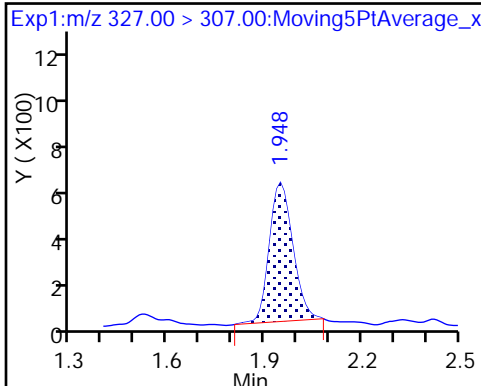
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

D 7 13C2 PFHxA

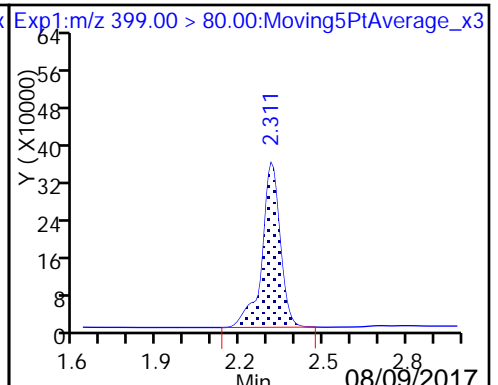
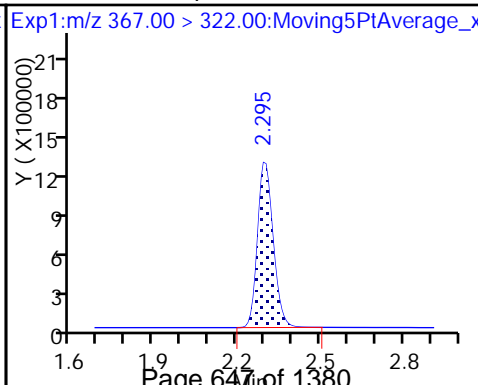
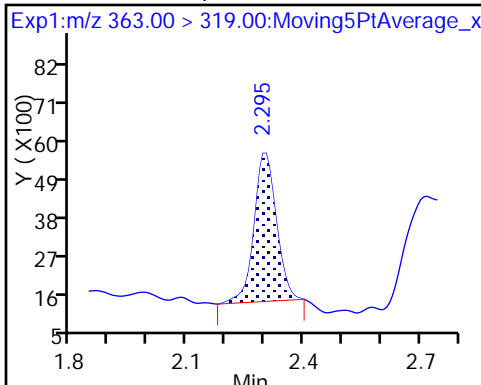
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

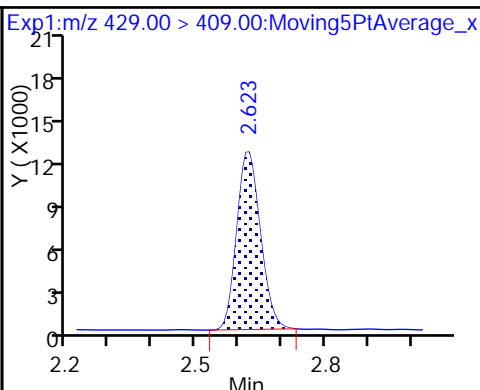
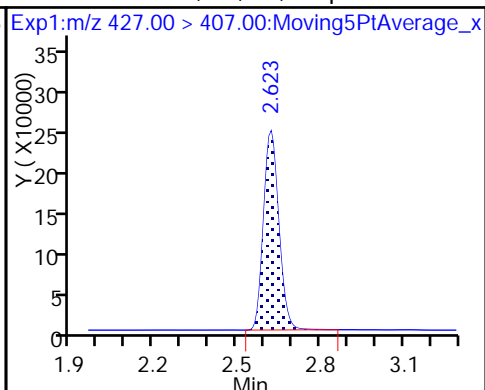
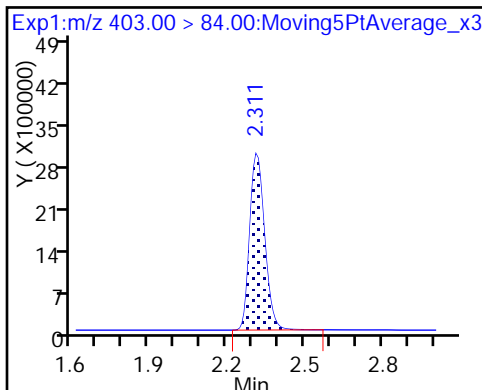
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

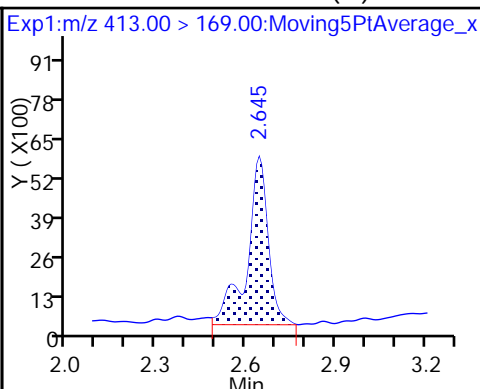
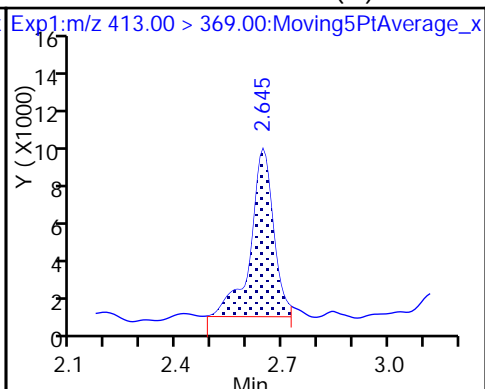
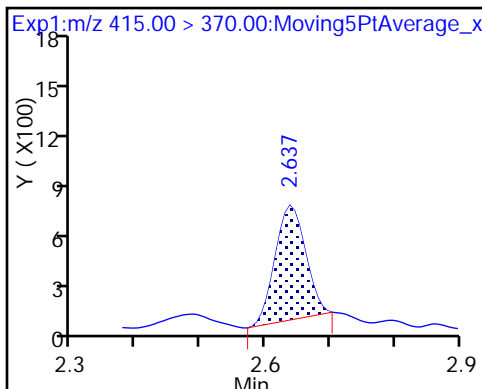
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

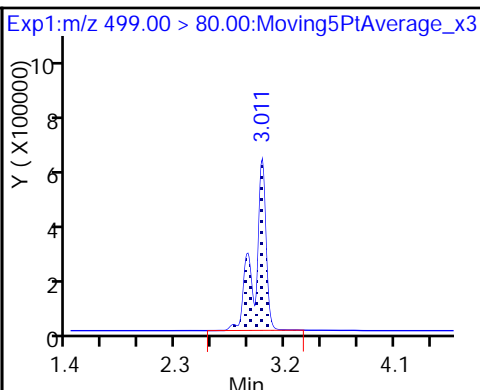
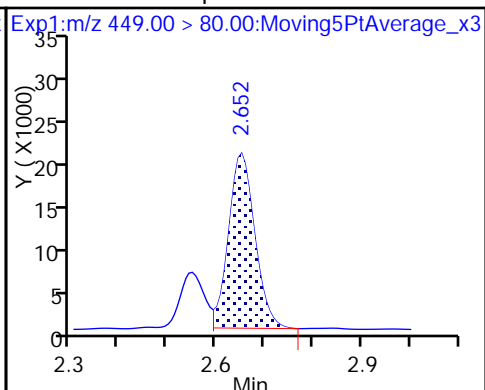
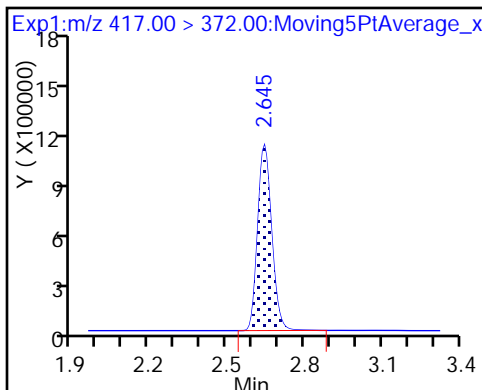
15 Perfluorooctanoic acid (M)



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

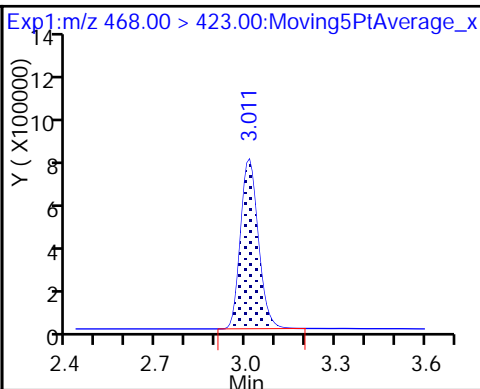
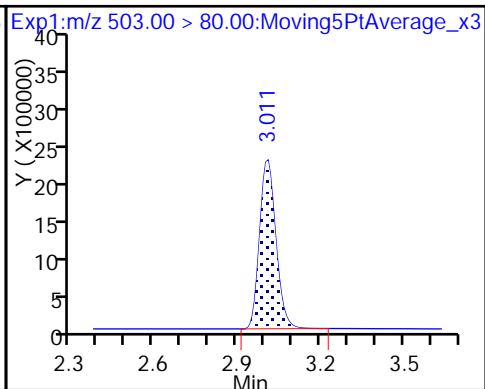
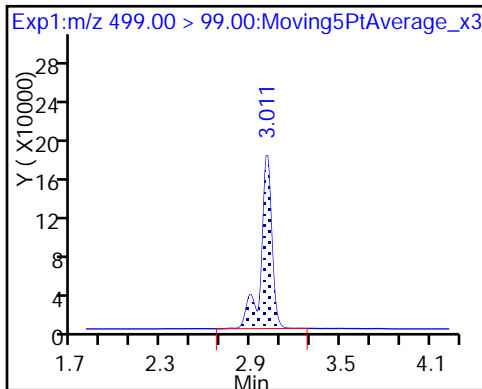
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

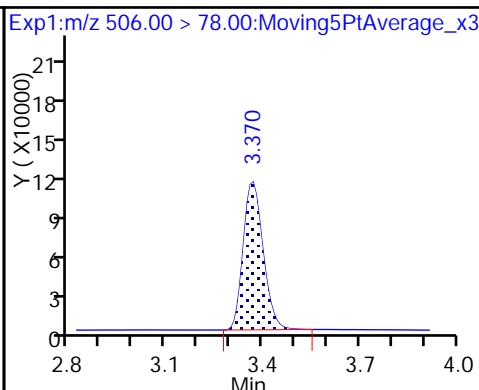
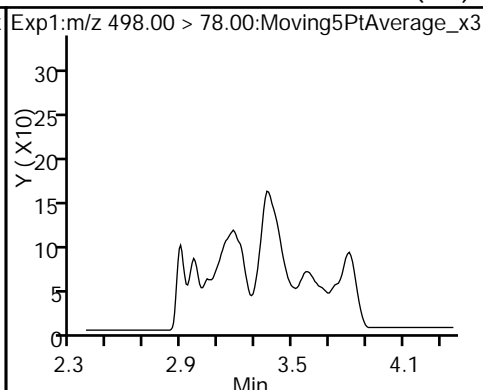
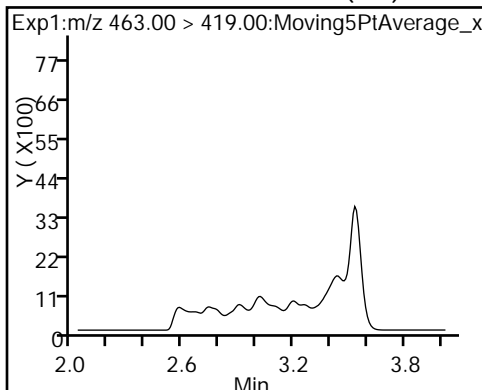
D 18 13C4 PFOS

D 19 13C5 PFNA



20 Perfluorononanoic acid (ND)

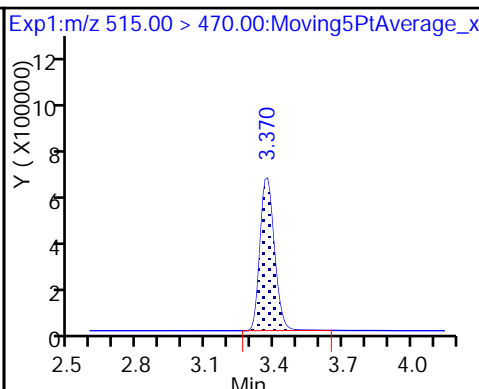
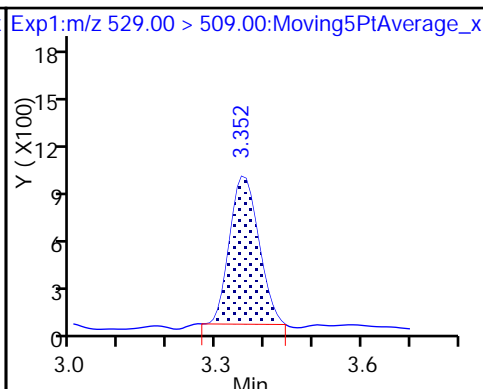
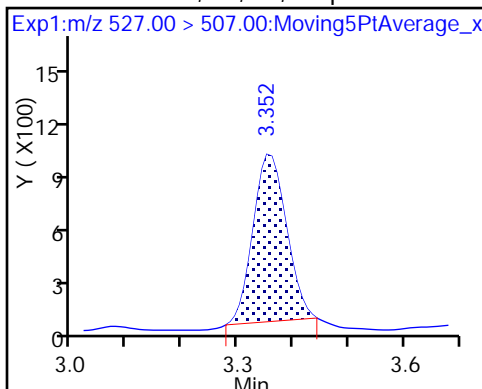
22 Perfluorooctane Sulfonamide (ND) D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecane

D 26 M2-8:2FTS

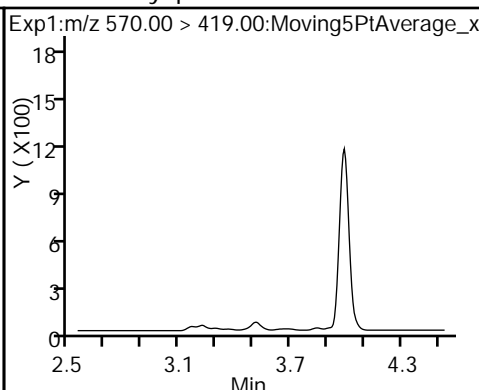
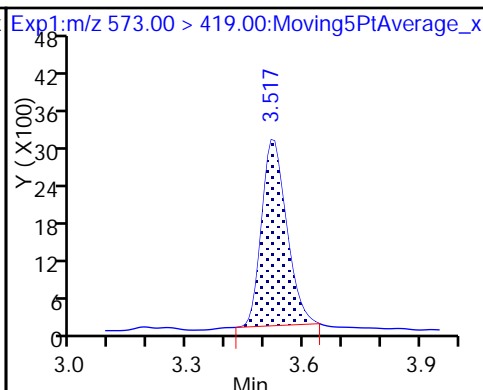
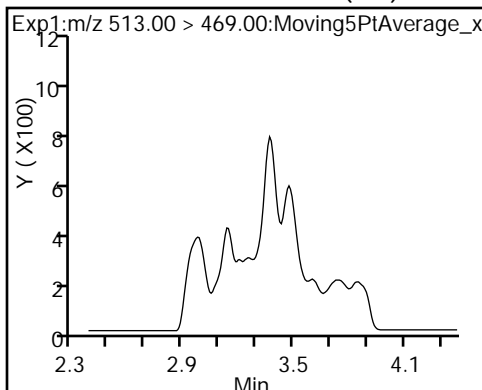
D 23 13C2 PFDA



24 Perfluorodecanoic acid (ND)

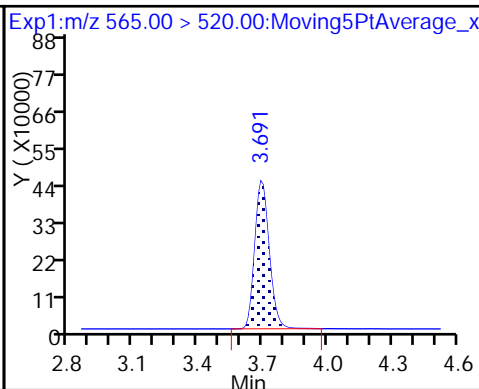
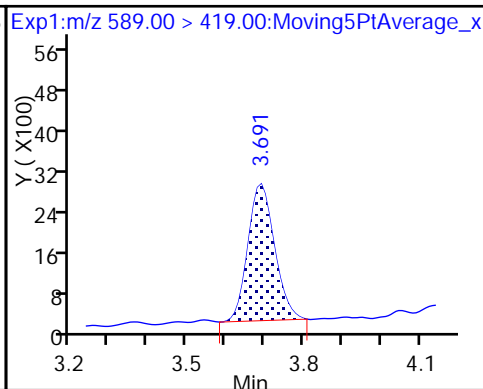
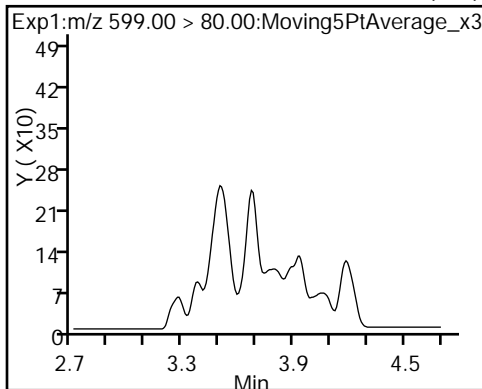
D 27 d3-NMeFOSAA

28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA

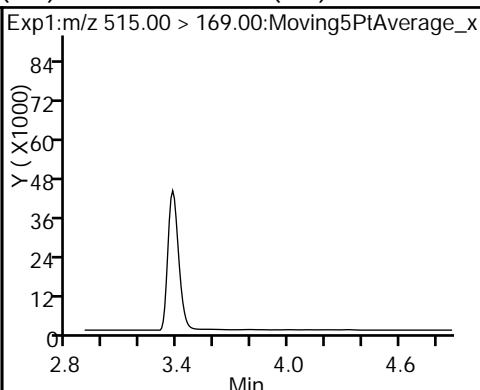
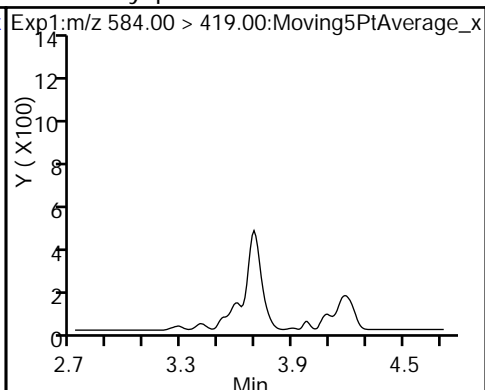
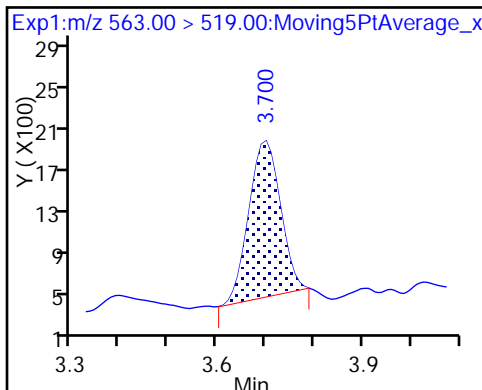
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid (ND)

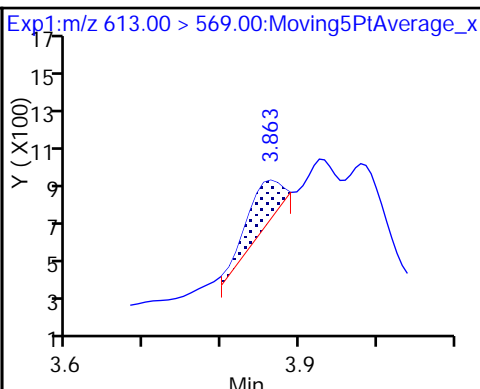
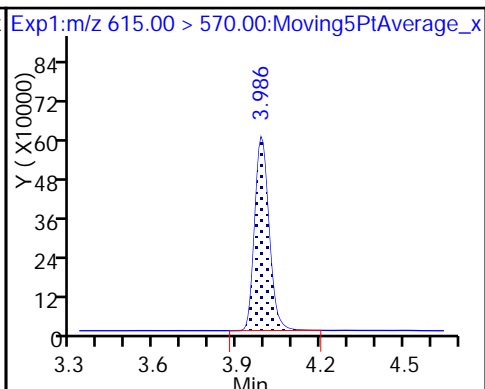
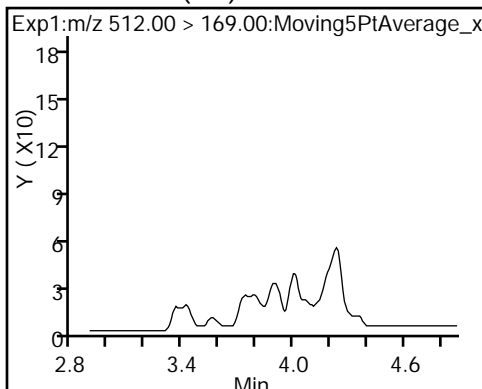
34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

D 36 13C2 PFDaA

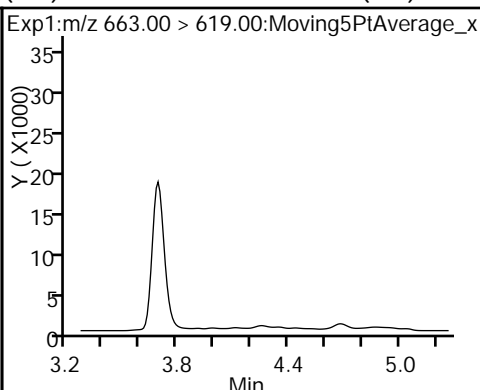
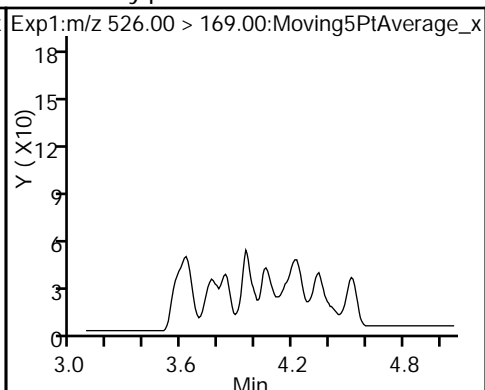
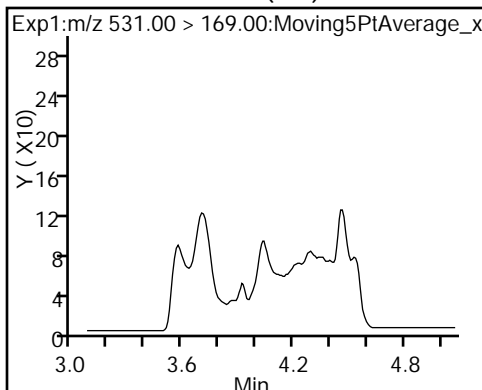
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M (ND)

39 N-ethylperfluoro-1-octanesulfonami (ND)

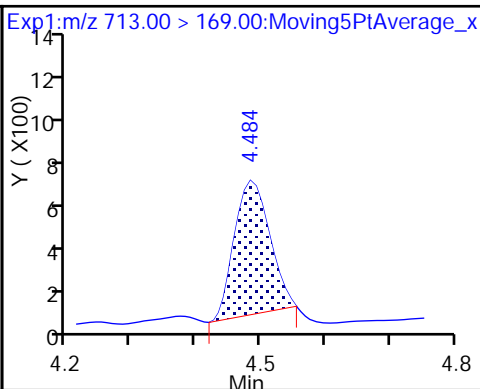
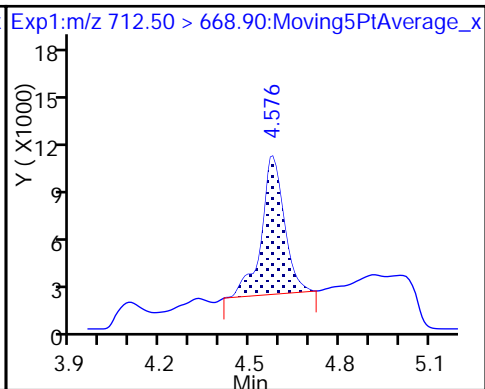
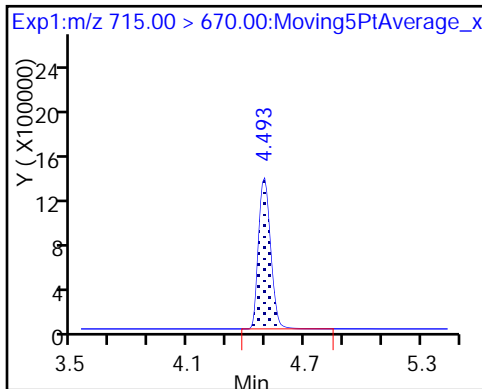
Perfluorotridecanoic acid (ND)



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

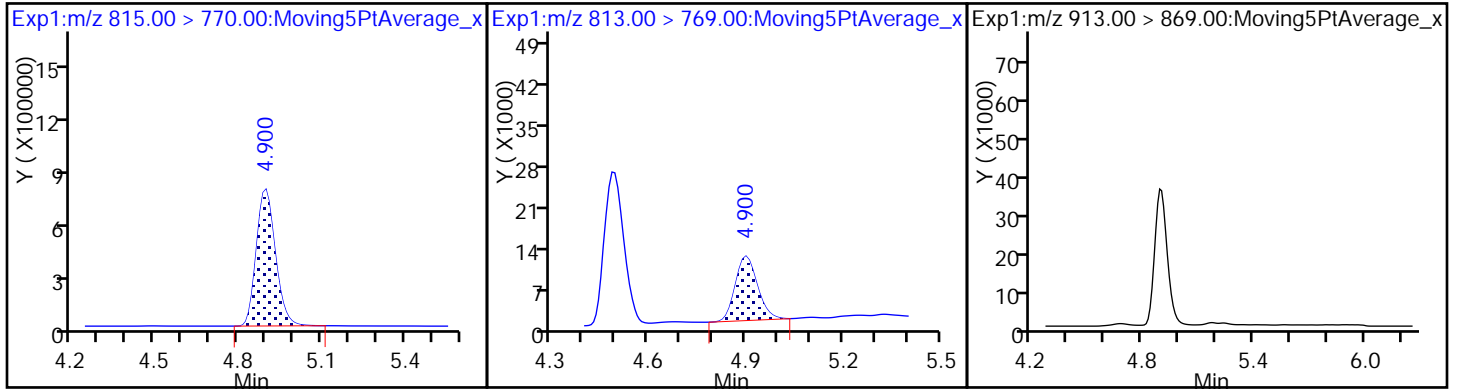
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid (ND)



TestAmerica Sacramento

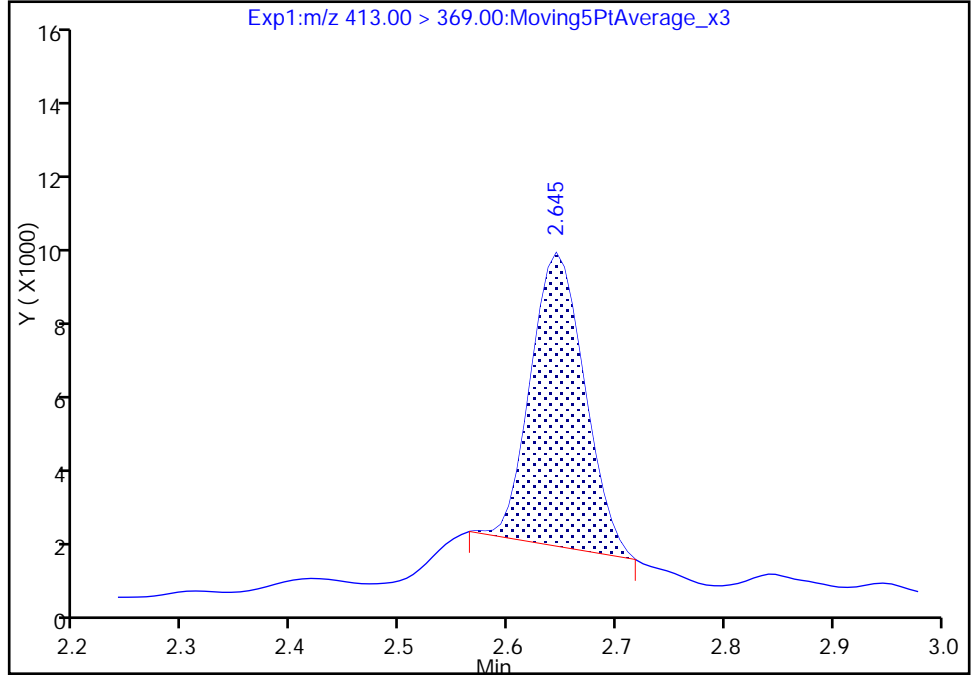
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_008.d  
Injection Date: 29-Jun-2017 00:08:11 Instrument ID: A8\_N  
Lims ID: 320-29267-A-4-A Lab Sample ID: 320-29267-4  
Client ID: MEAFF-EASTBMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 6 Worklist Smp#: 8  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

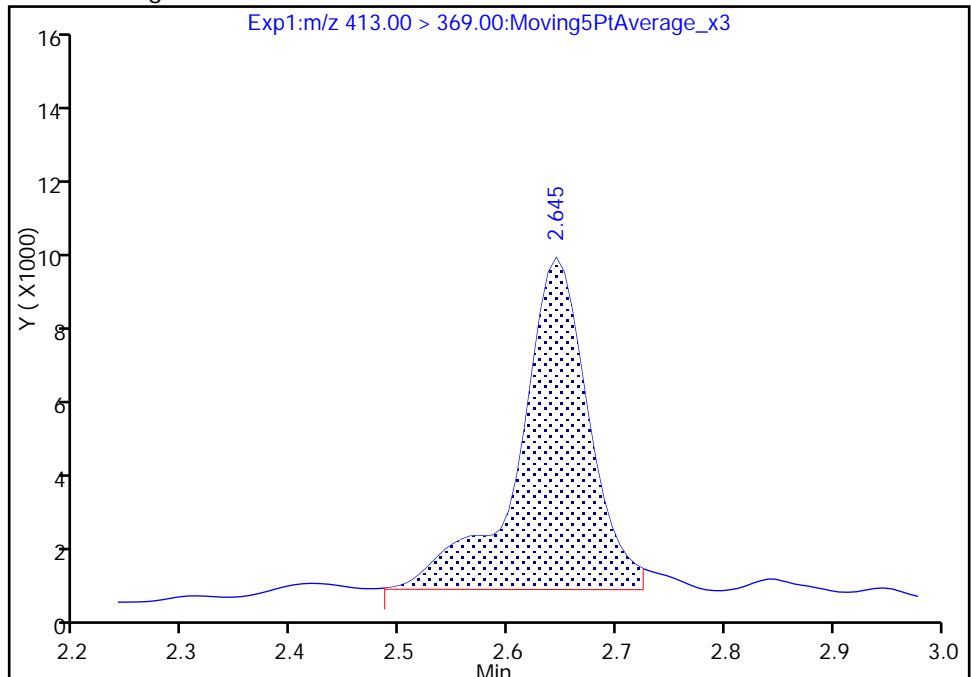
RT: 2.64  
Area: 25158  
Amount: 0.283158  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 37193  
Amount: 0.418615  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:38:06  
Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento

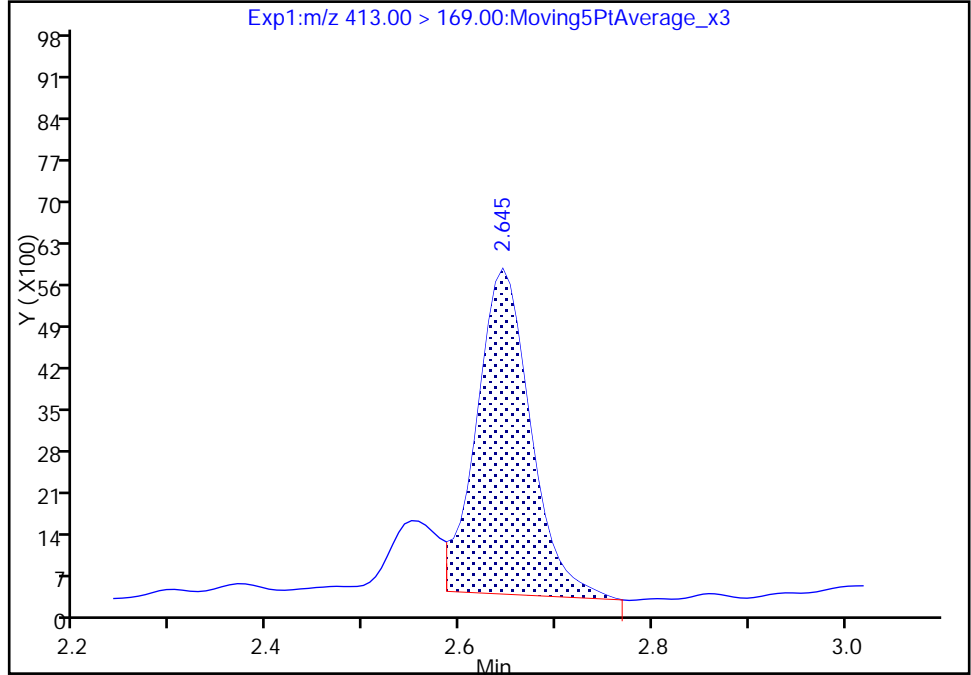
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_008.d  
Injection Date: 29-Jun-2017 00:08:11 Instrument ID: A8\_N  
Lims ID: 320-29267-A-4-A Lab Sample ID: 320-29267-4  
Client ID: MEAFF-EASTBMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 6 Worklist Smp#: 8  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

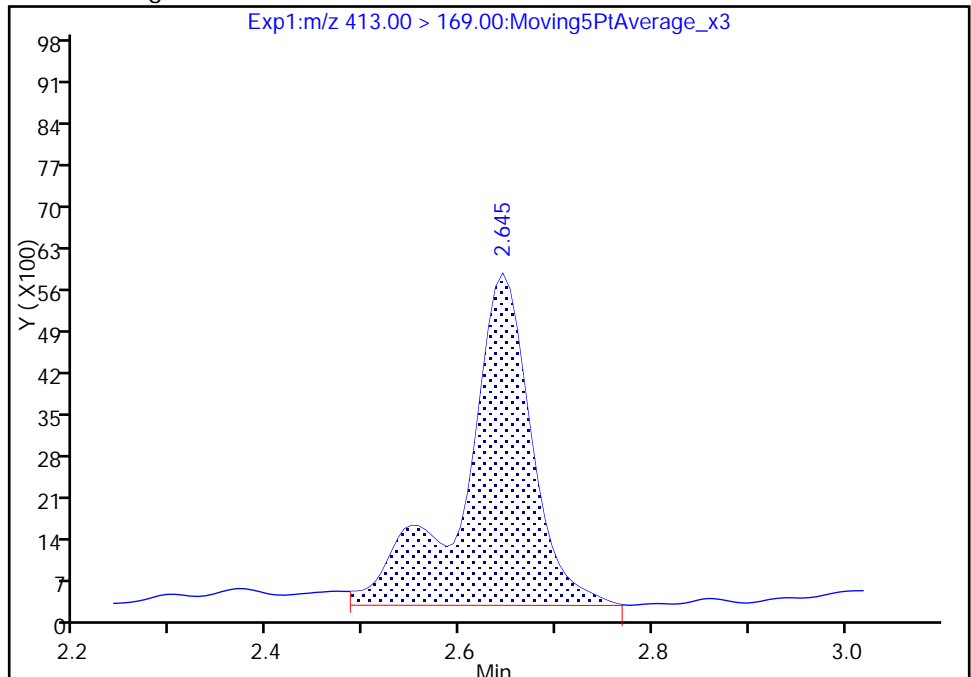
RT: 2.64  
Area: 21350  
Amount: 0.283158  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 27420  
Amount: 0.418615  
Amount Units: ng/ml

Manual Integration Results



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-TA4J-1984MW01-0617 Lab Sample ID: 320-29267-5  
 Matrix: Water Lab File ID: 2017.06.28B\_011.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 17:55  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 249.3 (mL) Date Analyzed: 06/29/2017 00:28  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	<i>Perfluorooctanoic acid (PFOA)</i>	4800	M E	2.5	2.0	0.75
1763-23-1	<i>Perfluorooctanesulfonic acid (PFOS)</i>	8200	E	4.0	3.0	1.3
375-73-5	<i>Perfluorobutanesulfonic acid (PFBS)</i>	1100	E	2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	36		25-150
STL00991	13C4 PFOS	32		25-150
STL00994	18O2 PFHxS	30		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_011.d  
 Lims ID: 320-29267-B-5-A  
 Client ID: MEAFF-TA4J-1984MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 00:28:53 ALS Bottle#: 9 Worklist Smp#: 11  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-b-5-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:41:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.760	0.002	1.000	47537132	537.2			3323	E
298.90 > 99.00	1.762	1.760	0.002	1.000	27354695		1.74(0.00-0.00)		4919	
D 11 18O2 PFHxS										
403.00 > 84.00	2.315	2.329	-0.014		3002391	14.1		29.8	5358	
* 62 13C2-PFOA										
415.00 > 370.00	2.641	2.656	-0.015		236561	50.0			309	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.648	2.663	-0.015	1.000	119435601	2384.6			1039	EM
413.00 > 169.00	2.648	2.663	-0.015	1.000	111943974		1.07(0.90-1.10)		1606	M
D 14 13C4 PFOA										
417.00 > 372.00	2.641	2.663	-0.022		2362372	18.1		36.2	6746	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	2.894	3.026	-0.132	1.000	220887925	4091.0			3988028	E
499.00 > 99.00	3.014	3.026	-0.012	1.041	74813170		2.95(0.90-1.10)		2915	
D 18 13C4 PFOS										
503.00 > 80.00	3.014	3.026	-0.012		2460412	15.1		31.6	2159	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_011.d

Injection Date: 29-Jun-2017 00:28:53

Instrument ID: A8\_N

Lims ID: 320-29267-B-5-A

Lab Sample ID: 320-29267-5

Client ID: MEAFF-TA4J-1984MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 9

Worklist Smp#: 11

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

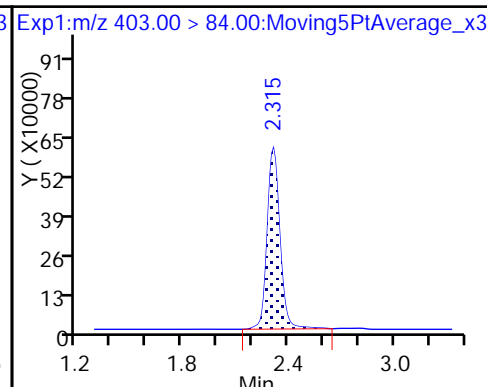
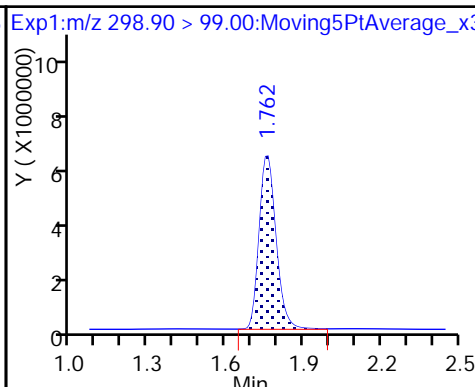
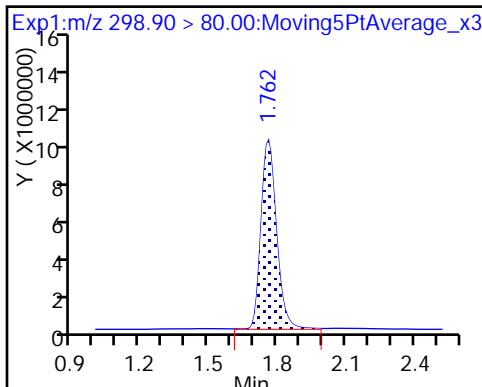
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

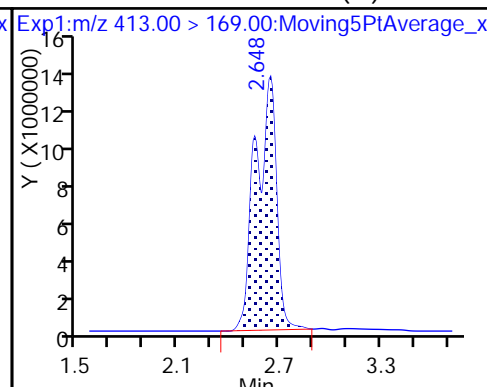
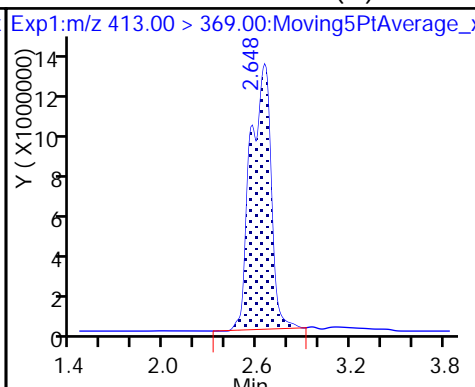
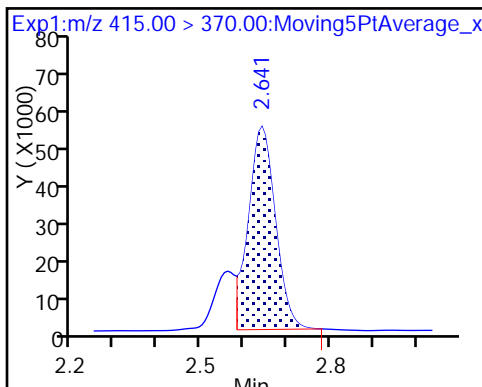
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

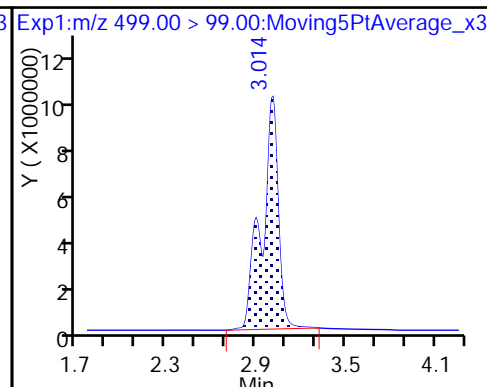
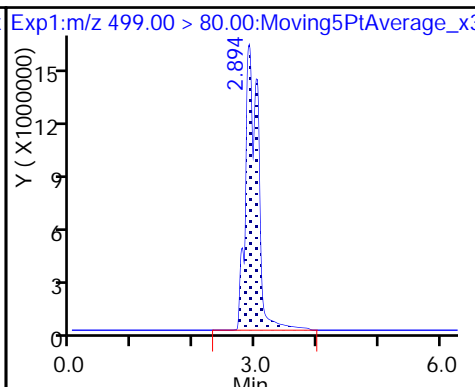
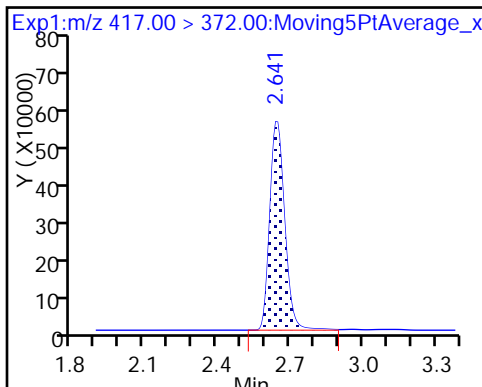
15 Perfluorooctanoic acid (M)



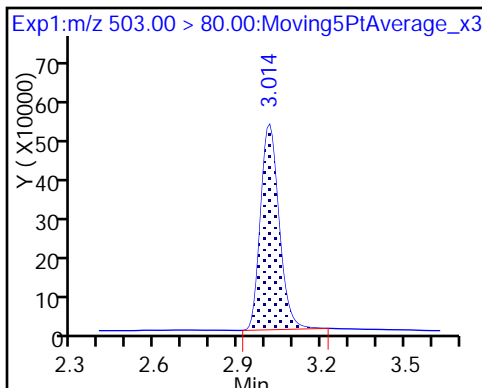
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

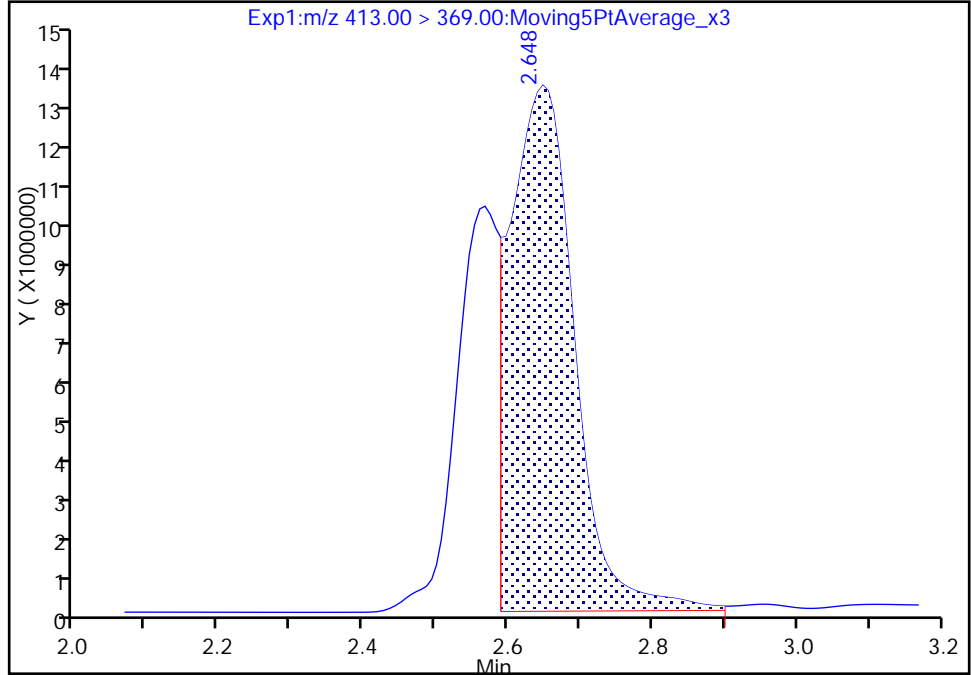
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_011.d  
Injection Date: 29-Jun-2017 00:28:53 Instrument ID: A8\_N  
Lims ID: 320-29267-B-5-A Lab Sample ID: 320-29267-5  
Client ID: MEAFF-TA4J-1984MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 9 Worklist Smp#: 11  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

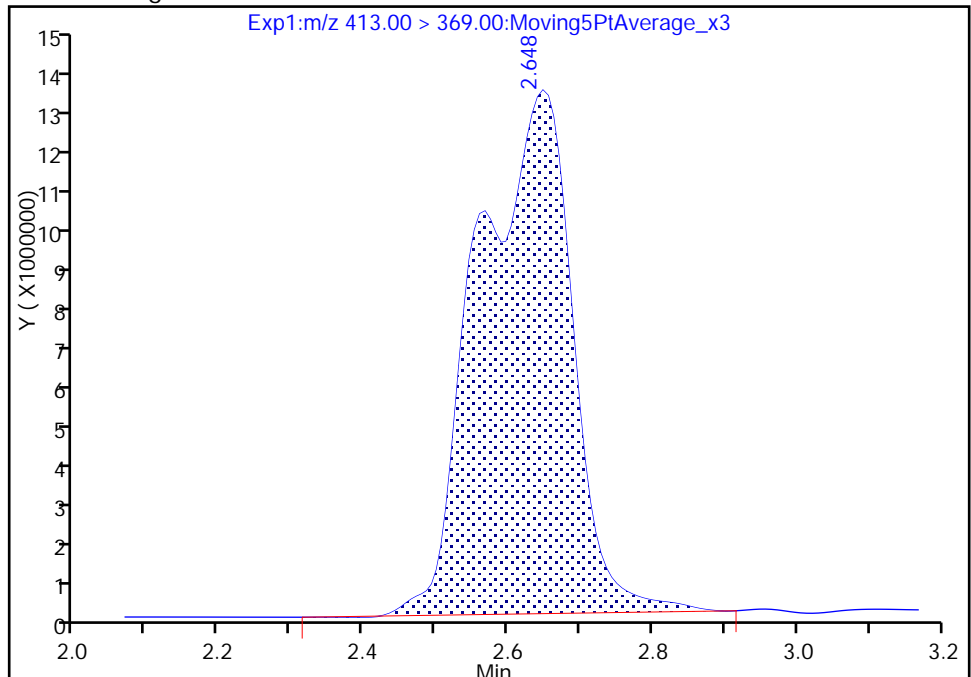
RT: 2.65  
Area: 80834554  
Amount: 1613.9078  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 119435601  
Amount: 2384.5996  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:40:12  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

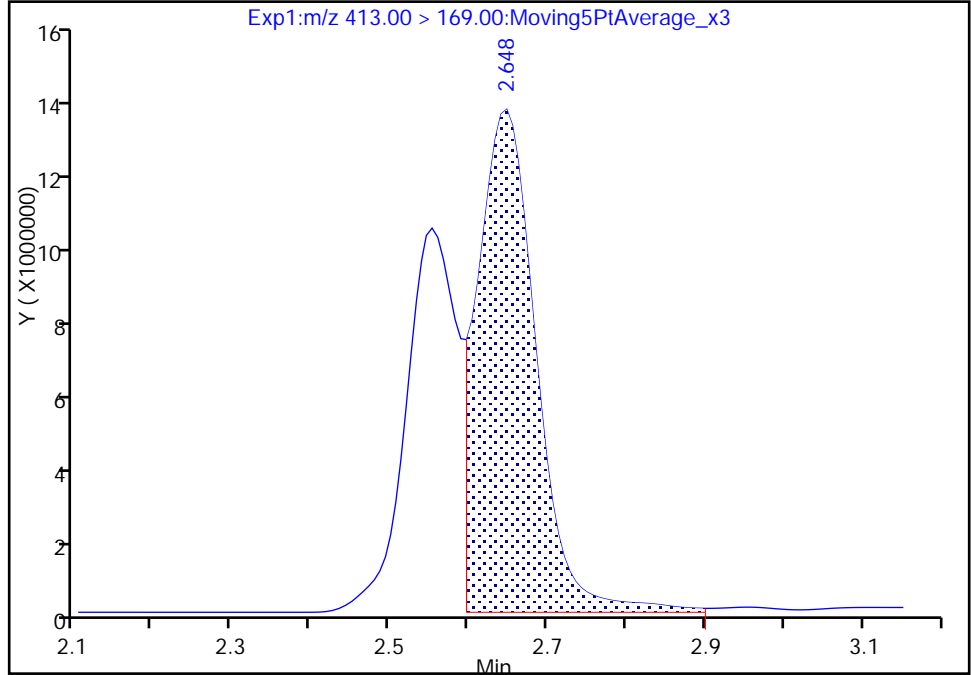
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_011.d  
Injection Date: 29-Jun-2017 00:28:53 Instrument ID: A8\_N  
Lims ID: 320-29267-B-5-A Lab Sample ID: 320-29267-5  
Client ID: MEAFF-TA4J-1984MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 9 Worklist Smp#: 11  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

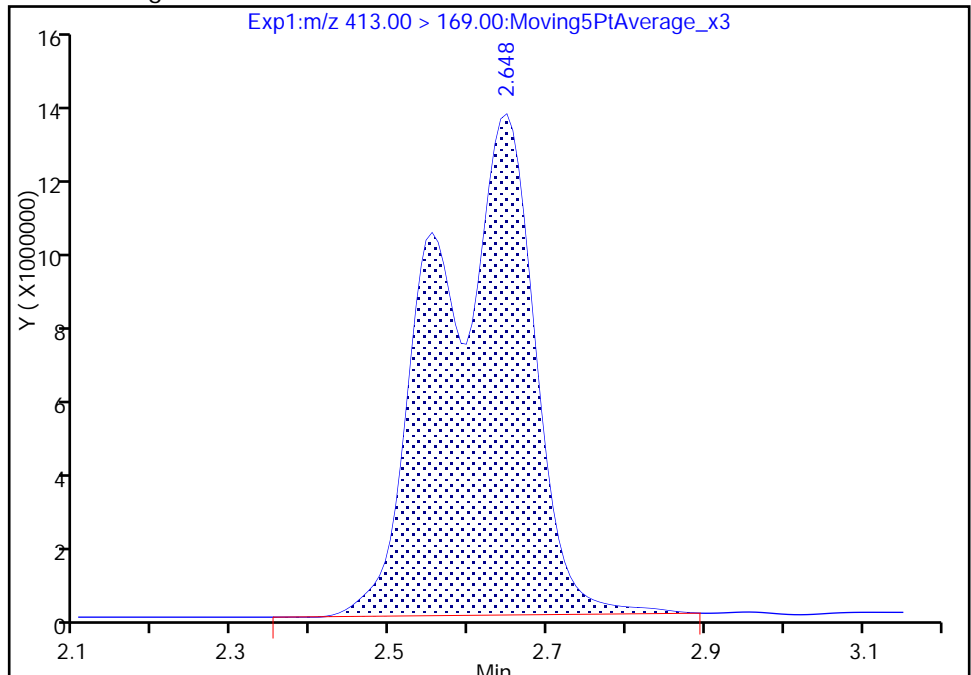
RT: 2.65  
Area: 67698349  
Amount: 1613.9078  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 111943974  
Amount: 2384.5996  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:40:14

Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_002.d  
 Lims ID: 320-29267-B-5-A  
 Client ID: MEAFF-TA4J-1984MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 18:18:25 ALS Bottle#: 1 Worklist Smp#: 2  
 Injection Vol: 2.0 ul Dil. Factor: 50.0000  
 Sample Info: 320-29267-b-5-a 50X  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 08:15:59 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 07:57:36

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.759	1.760	-0.001	1.000	2078540	6.34			897	
298.90 > 99.00	1.759	1.760	-0.001	1.000	857316		2.42(0.00-0.00)		857	
D 11 18O2 PFHxS										
403.00 > 84.00	2.320	2.329	-0.009		222439	1.05		2.2	5040	
* 62 13C2-PFOA										
415.00 > 370.00	2.646	2.656	-0.010		10943	50.0			236	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.653	2.663	-0.010	1.000	14693680	107.2			4220	M
413.00 > 169.00	2.653	2.663	-0.010	1.000	9833744		1.49(0.90-1.10)		5687	M
D 14 13C4 PFOA										
417.00 > 372.00	2.653	2.663	-0.010		129256	0.99		2.0	1820	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.020	3.026	-0.006	1.000	20613491	117.6			7296	
499.00 > 99.00	3.020	3.026	-0.006	1.000	4650527		4.43(0.90-1.10)		8907	
D 18 13C4 PFOS										
503.00 > 80.00	3.020	3.026	-0.006		159715	0.9816		2.1	1956	

QC Flag Legend

Review Flags

M - Manually Integrated



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_002.d

Injection Date: 29-Jun-2017 18:18:25

Instrument ID: A8\_N

Lims ID: 320-29267-B-5-A

Lab Sample ID: 320-29267-5

Client ID: MEAFF-TA4J-1984MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 1 Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 50.0000

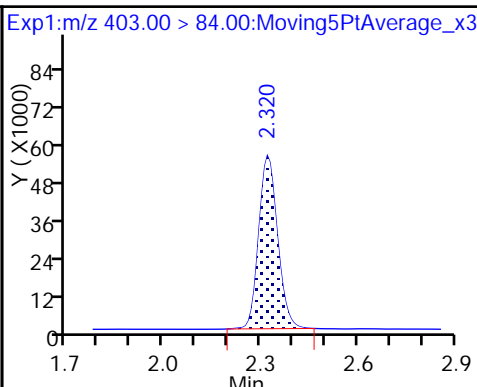
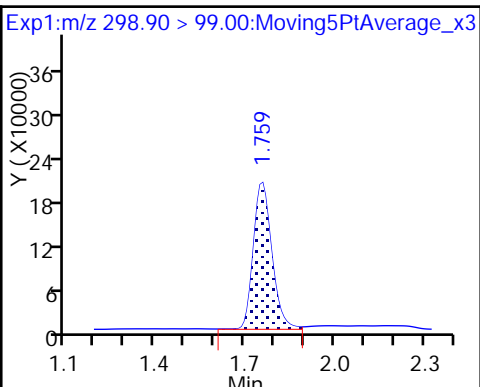
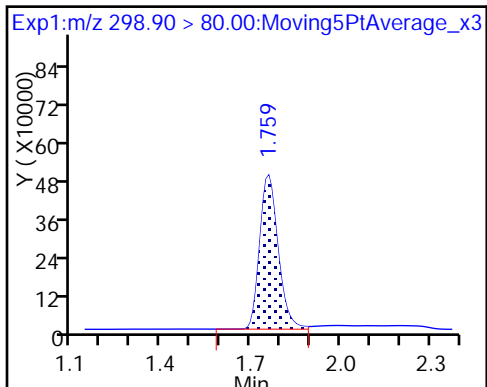
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

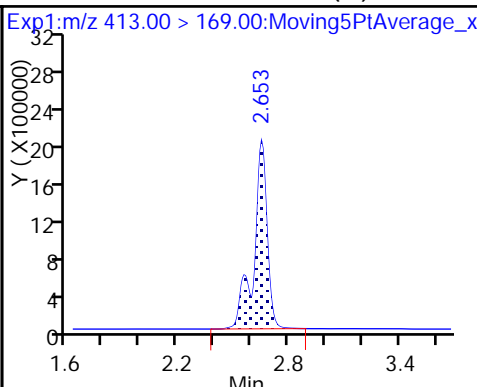
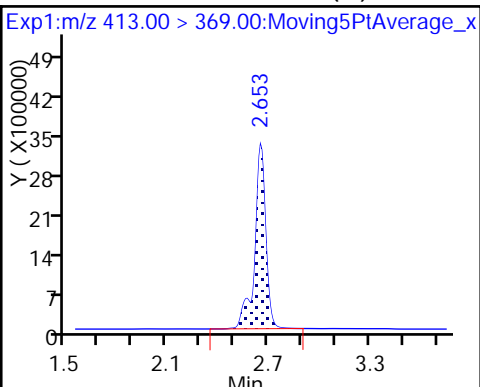
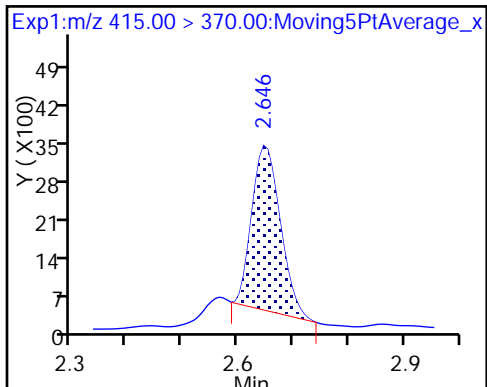
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

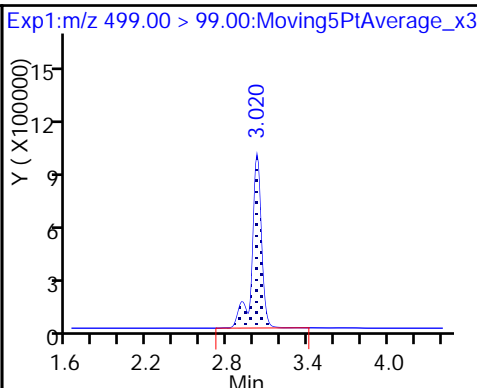
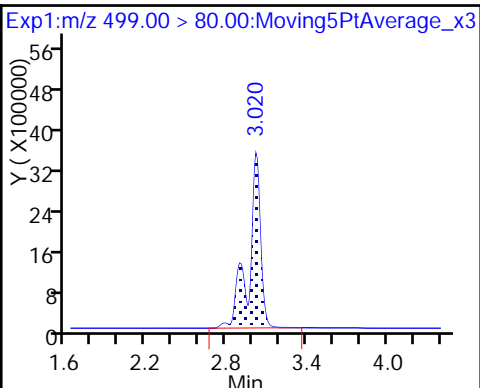
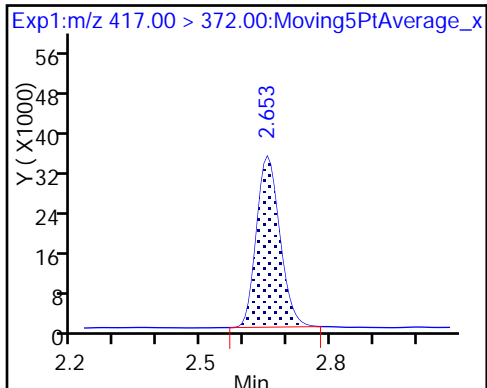
15 Perfluorooctanoic acid (M)



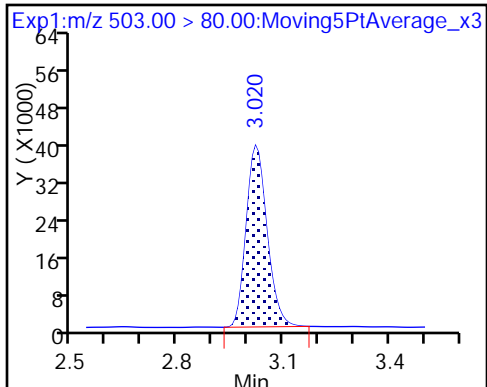
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

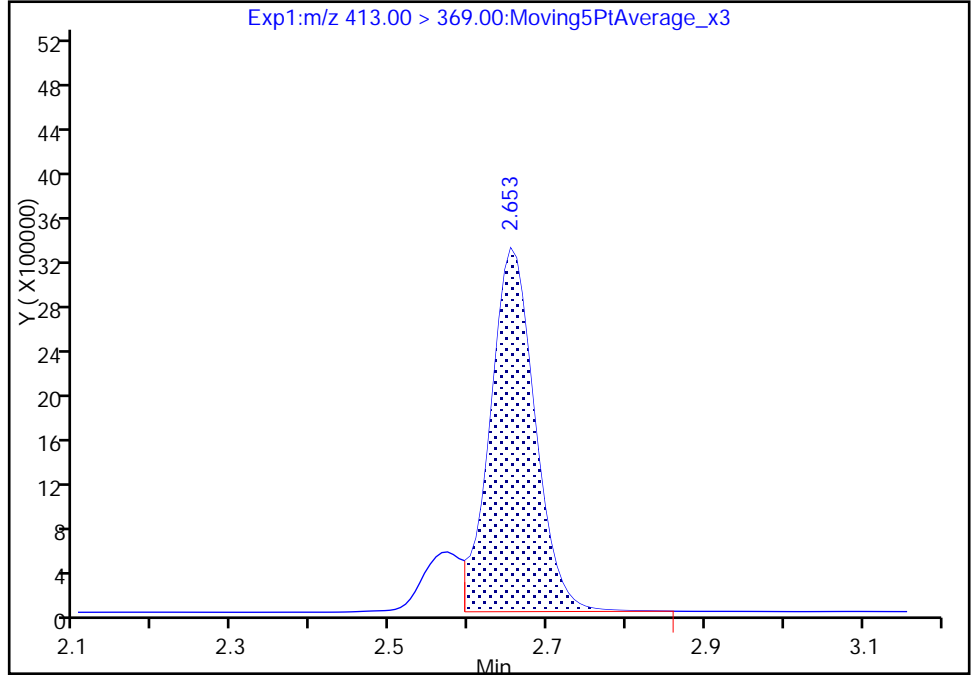
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_002.d  
Injection Date: 29-Jun-2017 18:18:25 Instrument ID: A8\_N  
Lims ID: 320-29267-B-5-A Lab Sample ID: 320-29267-5  
Client ID: MEAFF-TA4J-1984MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 2  
Injection Vol: 2.0 ul Dil. Factor: 50.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

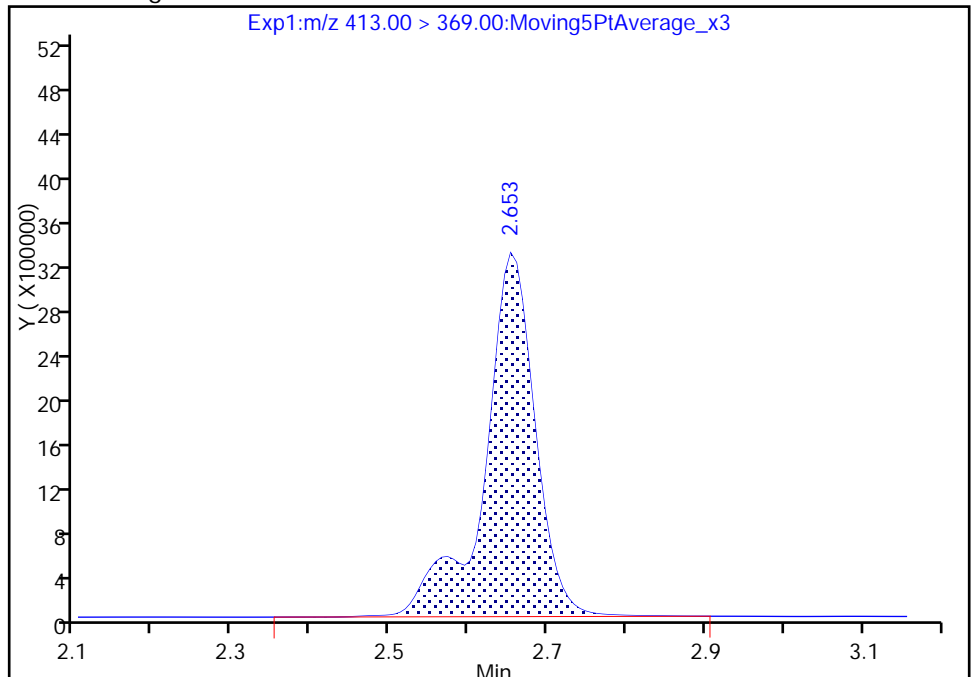
RT: 2.65  
Area: 12836175  
Amount: 93.679567  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 14693680  
Amount: 107.2358  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 30-Jun-2017 07:57:31  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

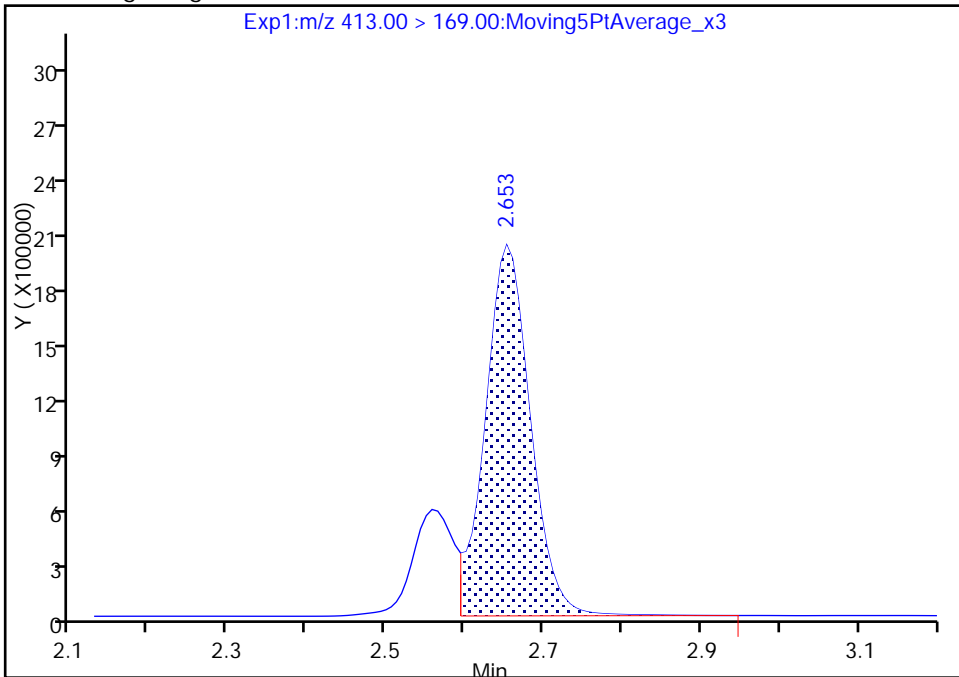
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_002.d  
Injection Date: 29-Jun-2017 18:18:25 Instrument ID: A8\_N  
Lims ID: 320-29267-B-5-A Lab Sample ID: 320-29267-5  
Client ID: MEAFF-TA4J-1984MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 1 Worklist Smp#: 2  
Injection Vol: 2.0 ul Dil. Factor: 50.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

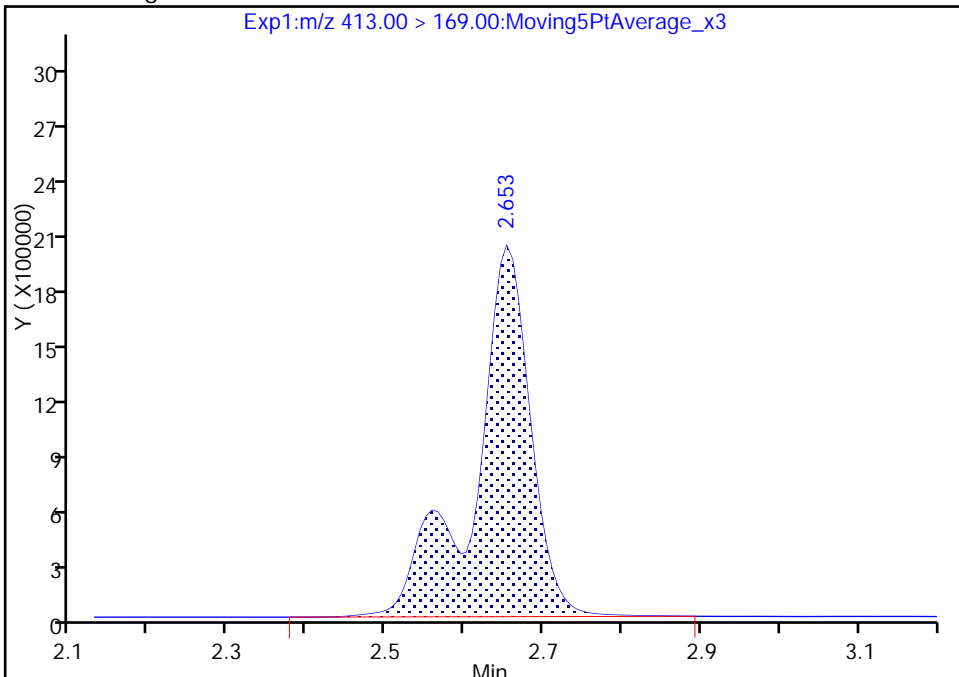
RT: 2.65  
Area: 7823975  
Amount: 93.679567  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 9833744  
Amount: 107.2358  
Amount Units: ng/ml

Manual Integration Results



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-UNKN6MW01-0617 Lab Sample ID: 320-29267-6  
 Matrix: Water Lab File ID: 2017.06.28B\_012.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 16:20  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 245.2 (mL) Date Analyzed: 06/29/2017 00:35  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	6.2	M	2.5	2.0	0.76
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18		4.1	3.1	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.5	M	2.5	2.0	0.94

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	61		25-150
STL00991	13C4 PFOS	105		25-150
STL00994	18O2 PFHxS	105		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_012.d  
 Lims ID: 320-29267-A-6-A  
 Client ID: MEAFF-UNKN6MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 00:35:48 ALS Bottle#: 10 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-6-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:41:52

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	377580	1.22		70.4		M
298.90 > 99.00	1.753	1.760	-0.007	1.000	153408		2.46(0.00-0.00)	43.2		M
D 11 18O2 PFHxS										
403.00 > 84.00	2.313	2.329	-0.016		10541517	49.6		105	14872	
* 62 13C2-PFOA										
415.00 > 370.00	2.646	2.656	-0.010		2667	50.0		77.1		
15 Perfluorooctanoic acid										
413.00 > 369.00	2.646	2.663	-0.017	1.000	259617	3.05		67.3		M
413.00 > 169.00	2.646	2.663	-0.017	1.000	171837		1.51(0.90-1.10)	313		M
D 14 13C4 PFOA										
417.00 > 372.00	2.646	2.663	-0.017		4010196	30.7		61.4	15175	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.013	3.026	-0.013	1.000	1559774	8.70		1812		
499.00 > 99.00	3.013	3.026	-0.013	1.000	340252		4.58(0.90-1.10)	965		
D 18 13C4 PFOS										
503.00 > 80.00	3.013	3.026	-0.013		8167647	50.2		105	12813	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_012.d

Injection Date: 29-Jun-2017 00:35:48

Instrument ID: A8\_N

Lims ID: 320-29267-A-6-A

Lab Sample ID: 320-29267-6

Client ID: MEAFF-UNKN6MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 10

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

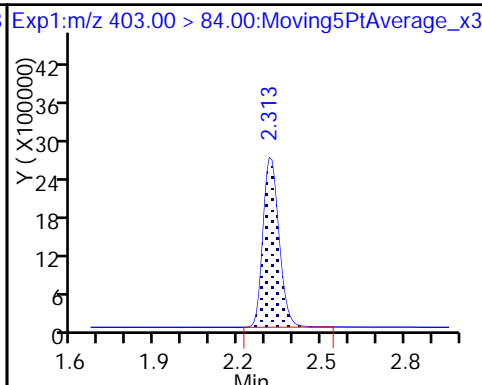
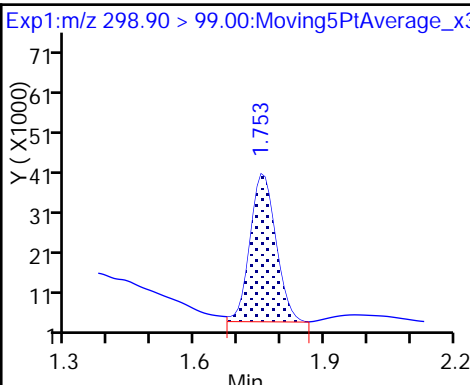
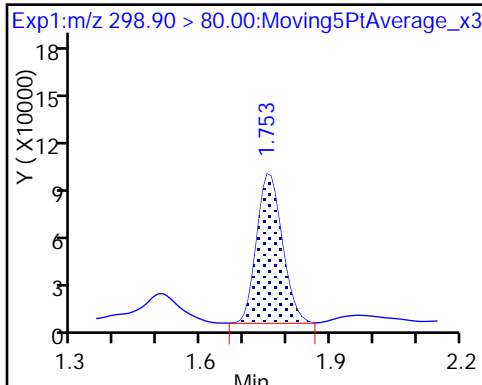
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

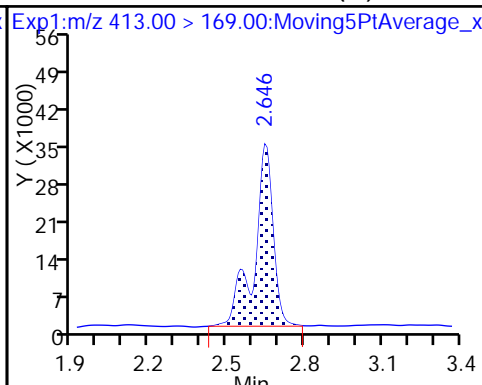
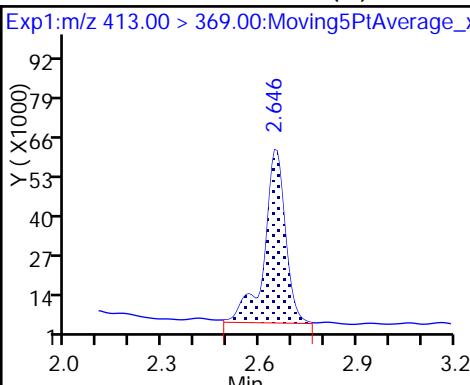
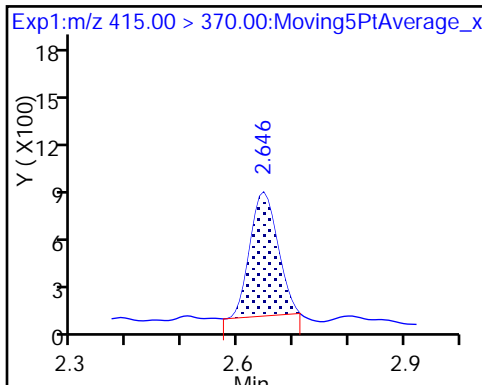
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

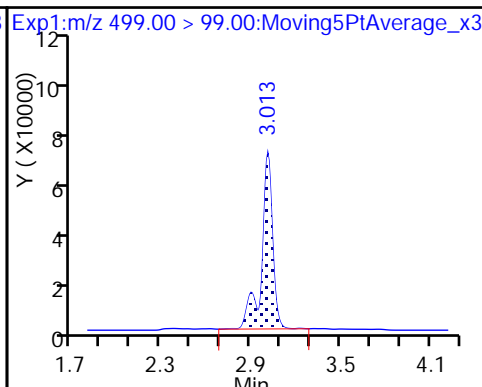
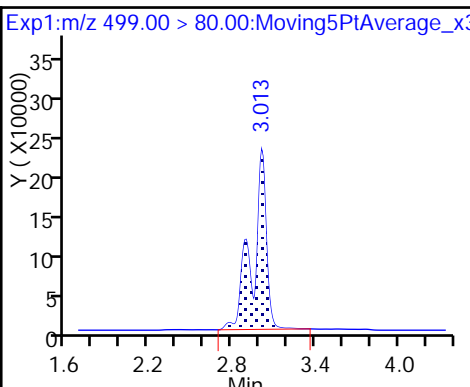
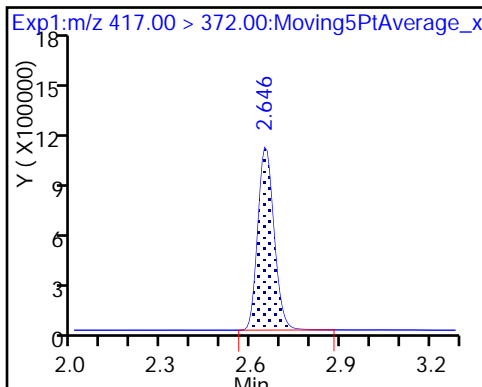
15 Perfluorooctanoic acid (M)



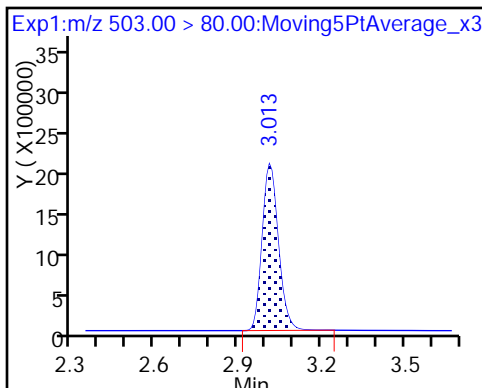
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

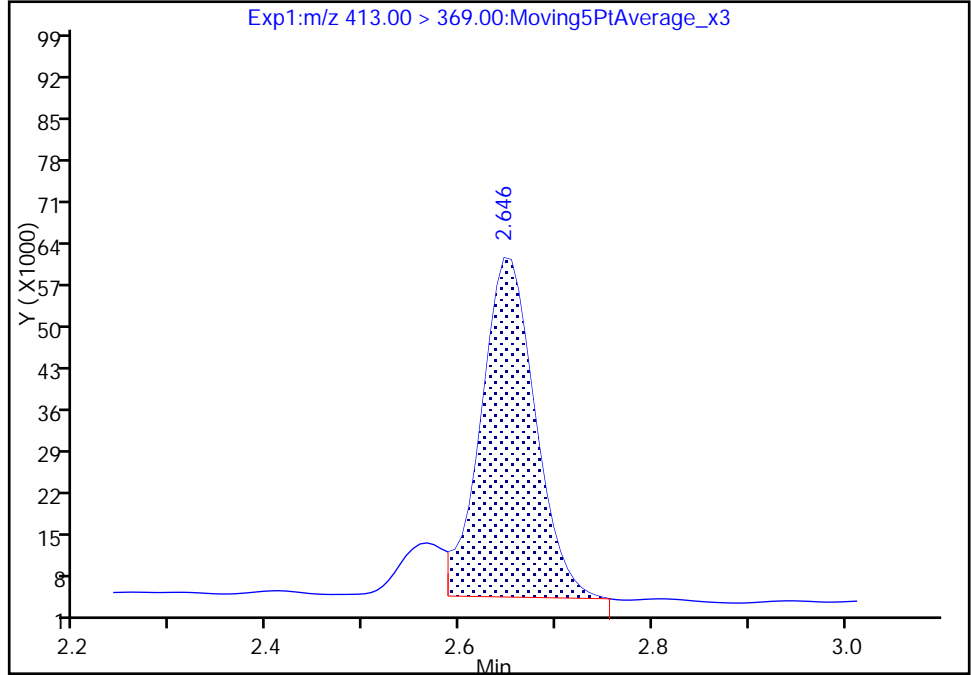
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_012.d  
Injection Date: 29-Jun-2017 00:35:48 Instrument ID: A8\_N  
Lims ID: 320-29267-A-6-A Lab Sample ID: 320-29267-6  
Client ID: MEAFF-UNKN6MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

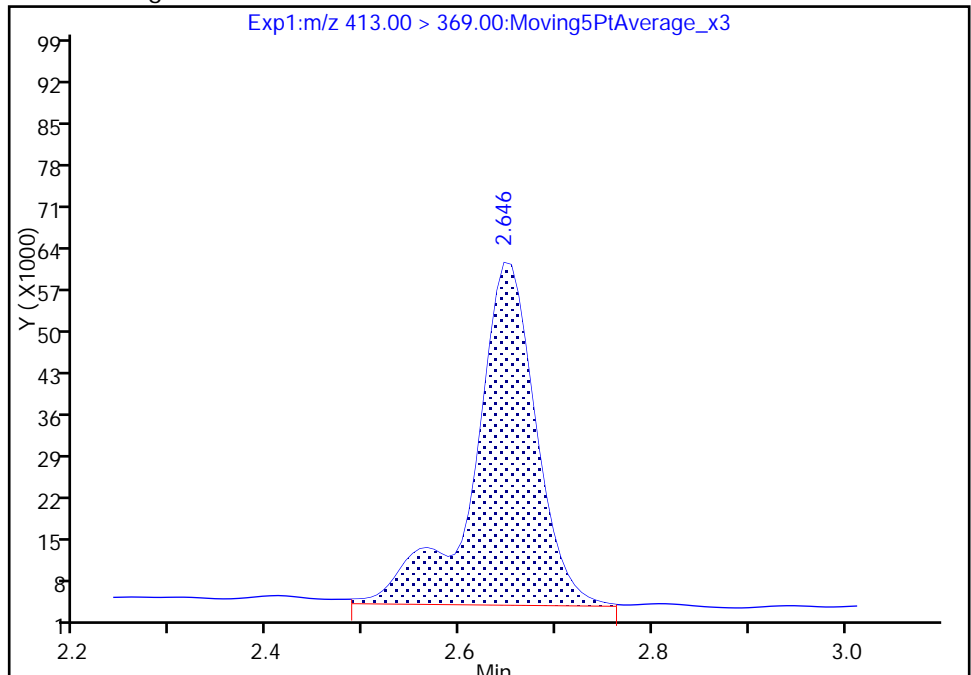
RT: 2.65  
Area: 222169  
Amount: 2.613051  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 259617  
Amount: 3.053497  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:41:43  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

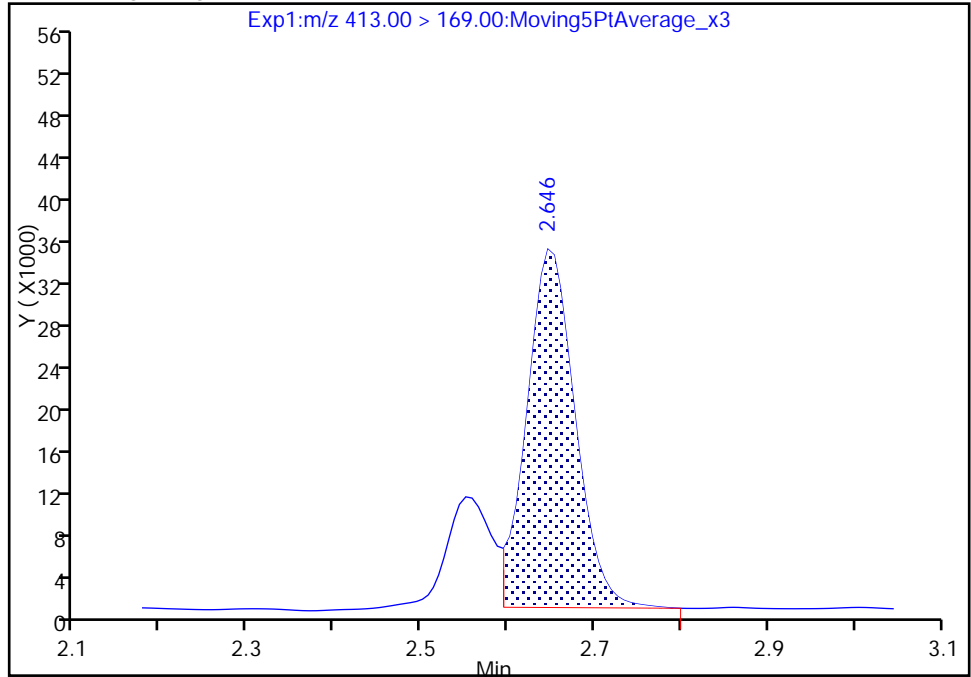
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_012.d  
Injection Date: 29-Jun-2017 00:35:48 Instrument ID: A8\_N  
Lims ID: 320-29267-A-6-A Lab Sample ID: 320-29267-6  
Client ID: MEAFF-UNKN6MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

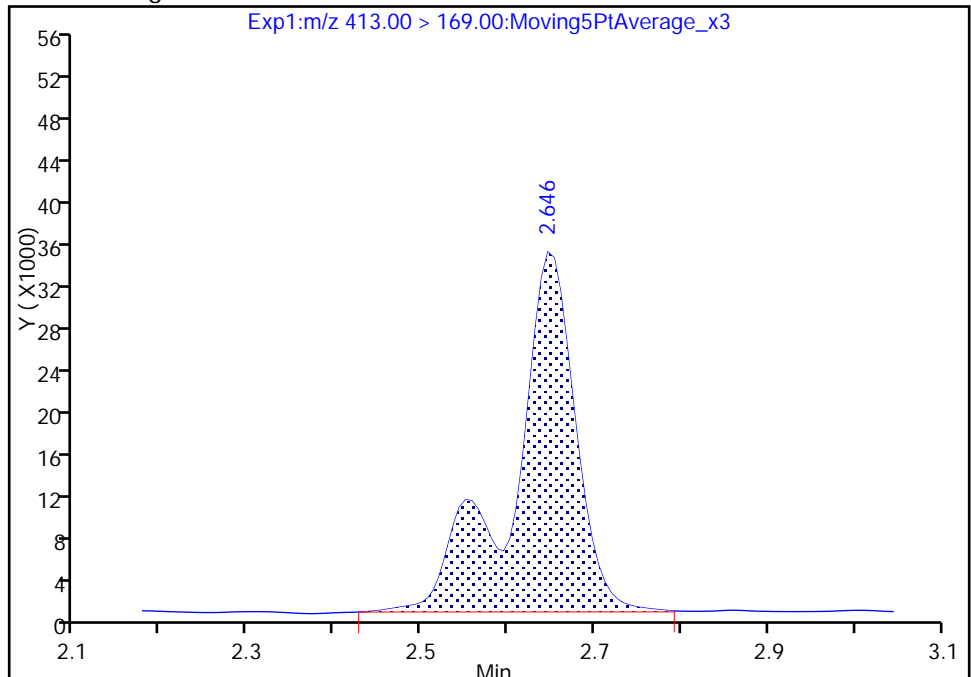
RT: 2.65  
Area: 130903  
Amount: 2.613051  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 171837  
Amount: 3.053497  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:41:49

Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento

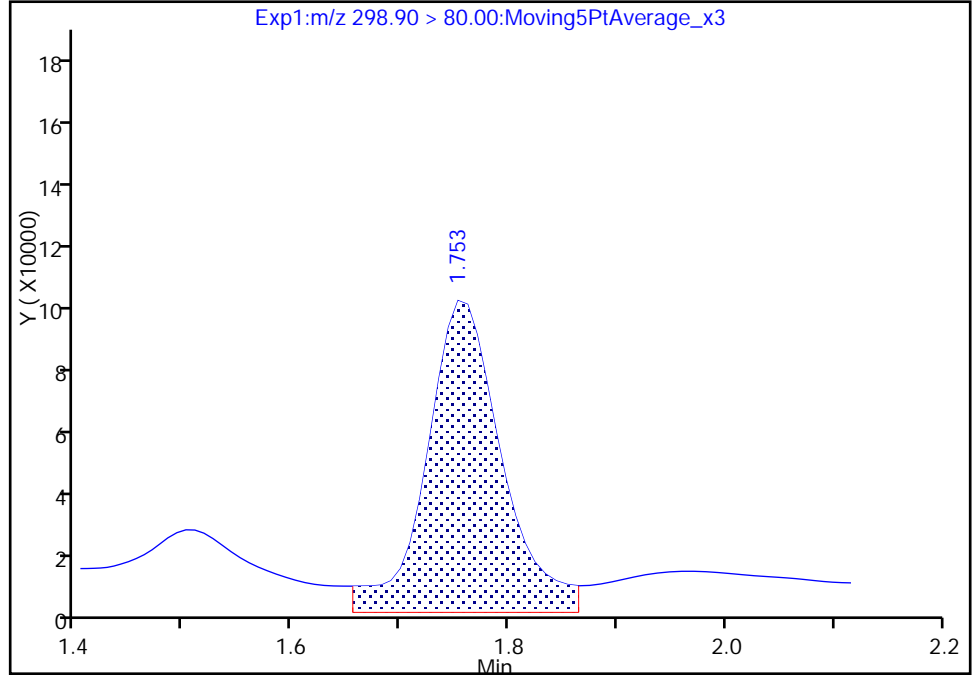
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_012.d  
Injection Date: 29-Jun-2017 00:35:48 Instrument ID: A8\_N  
Lims ID: 320-29267-A-6-A Lab Sample ID: 320-29267-6  
Client ID: MEAFF-UNKN6MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

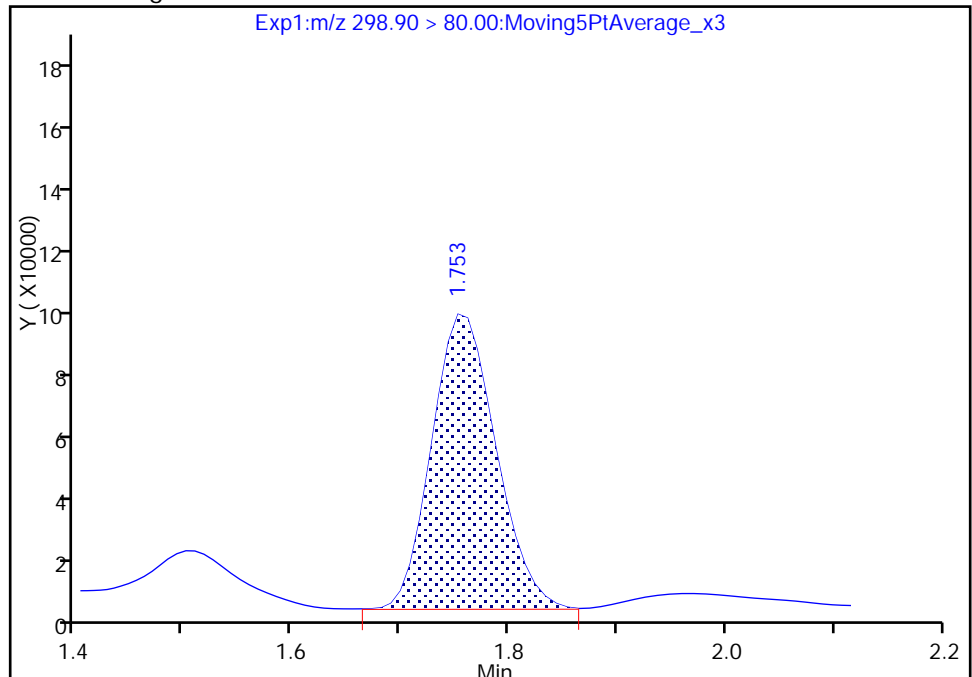
RT: 1.75  
Area: 481210  
Amount: 1.548870  
Amount Units: ng/ml

Processing Integration Results



RT: 1.75  
Area: 377580  
Amount: 1.215317  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:41:29  
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

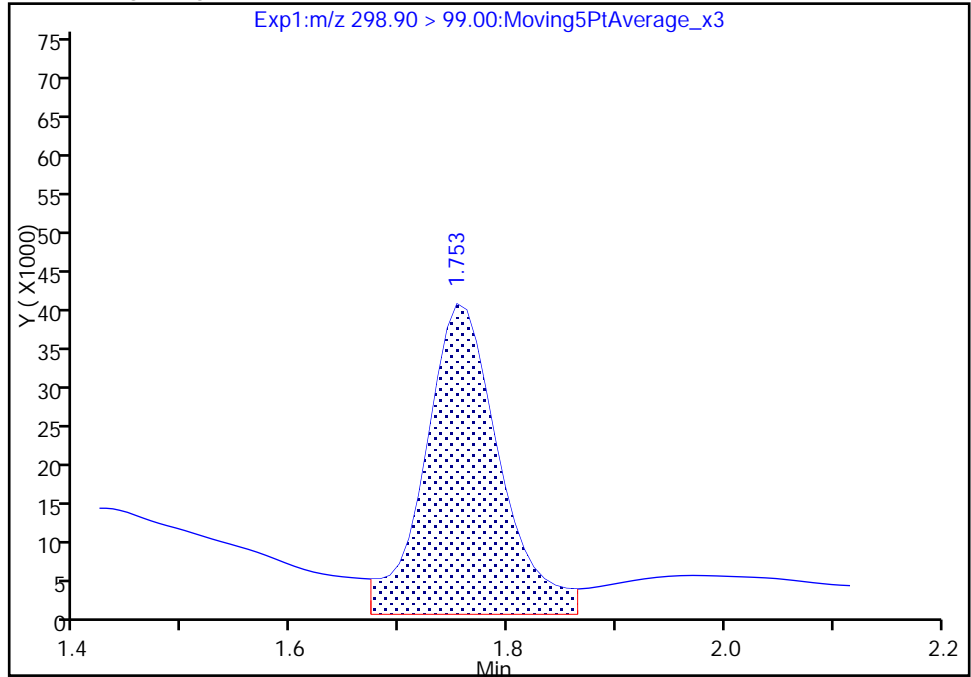
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_012.d  
Injection Date: 29-Jun-2017 00:35:48 Instrument ID: A8\_N  
Lims ID: 320-29267-A-6-A Lab Sample ID: 320-29267-6  
Client ID: MEAFF-UNKN6MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 10 Worklist Smp#: 12  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

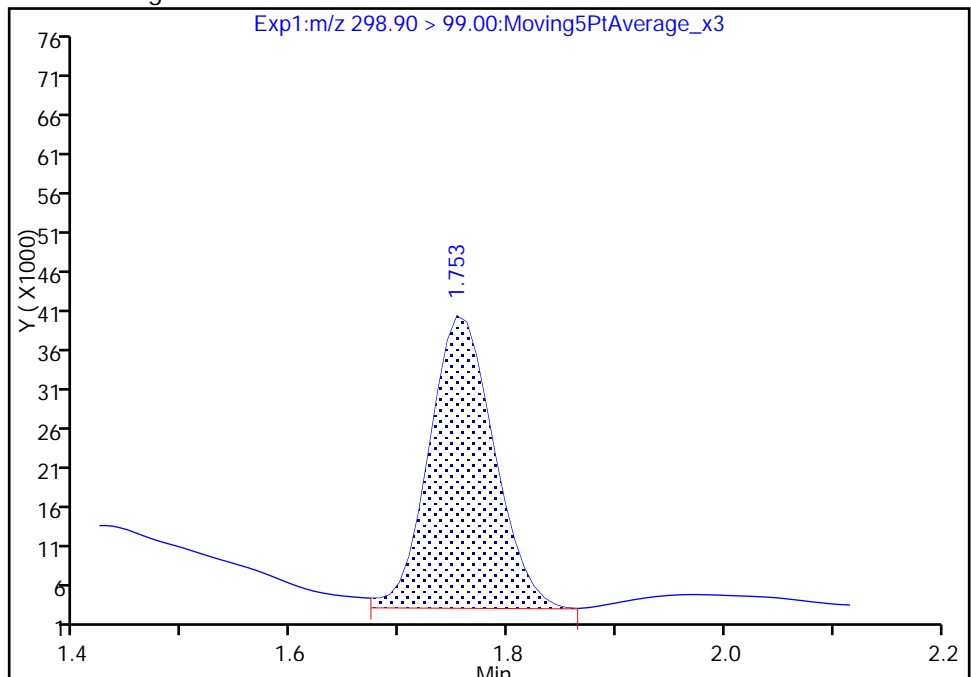
RT: 1.75  
Area: 191176  
Amount: 1.548870  
Amount Units: ng/ml

Processing Integration Results



RT: 1.75  
Area: 153408  
Amount: 1.215317  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:41:35

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-T45-2003MW01-0617 Lab Sample ID: 320-29267-7  
 Matrix: Water Lab File ID: 2017.06.28B\_014.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 17:05  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 267.7 (mL) Date Analyzed: 06/29/2017 00:49  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	3.0	M	2.3	1.9	0.70
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.4	J M	3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U M	2.3	1.9	0.86

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	62		25-150
STL00991	13C4 PFOS	105		25-150
STL00994	18O2 PFHxS	112		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_014.d  
 Lims ID: 320-29267-A-7-A  
 Client ID: MEAFF-T45-2003MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 00:49:36 ALS Bottle#: 11 Worklist Smp#: 14  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-7-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:42:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.760	1.760	0.0	1.000	143372	0.4313			42.6	M
298.90 > 99.00	1.760	1.760	0.0	1.000	53930		2.66(0.00-0.00)		24.1	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.313	2.329	-0.016		11278894	53.0		112	18642	
* 62 13C2-PFOA										
415.00 > 370.00	2.639	2.656	-0.018		3685	50.0			78.9	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.646	2.663	-0.017	1.000	135124	1.58			51.9	M
413.00 > 169.00	2.646	2.663	-0.017	1.000	88774		1.52(0.90-1.10)		173	M
D 14 13C4 PFOA										
417.00 > 372.00	2.646	2.663	-0.017		4029087	30.9		61.7	14769	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	2.892	3.026	-0.134	1.000	137969	0.7664			291	
499.00 > 99.00	3.012	3.026	-0.014	1.041	23590		5.85(0.90-1.10)		75.1	M
D 18 13C4 PFOS										
503.00 > 80.00	3.012	3.026	-0.014		8203209	50.4		105	14928	

QC Flag Legend

Review Flags  
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_014.d

Injection Date: 29-Jun-2017 00:49:36

Instrument ID: A8\_N

Lims ID: 320-29267-A-7-A

Lab Sample ID: 320-29267-7

Client ID: MEAFF-T45-2003MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 11

Worklist Smp#: 14

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

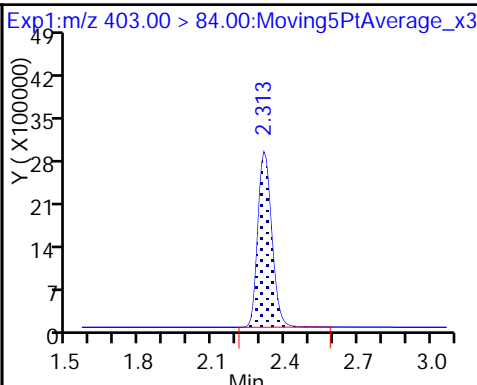
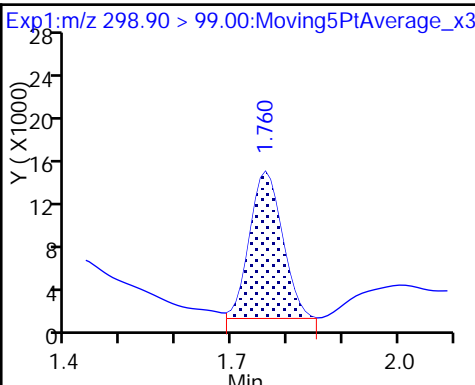
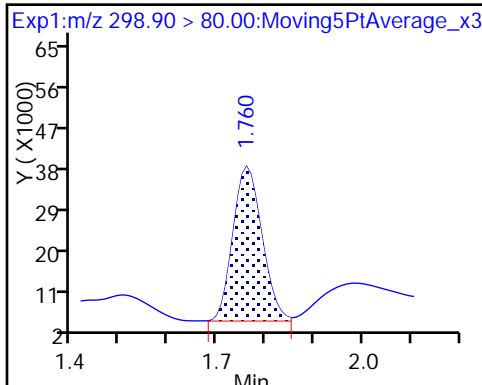
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

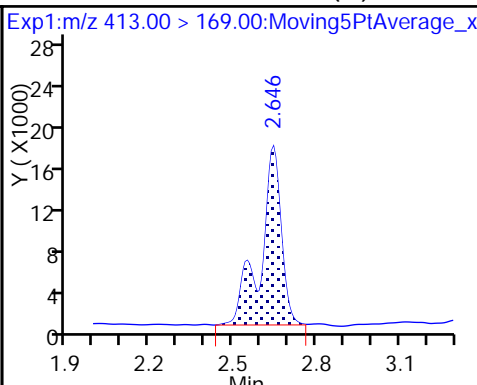
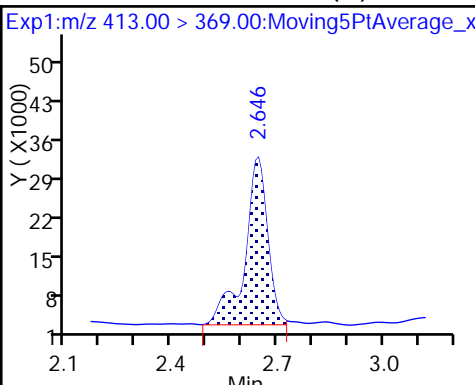
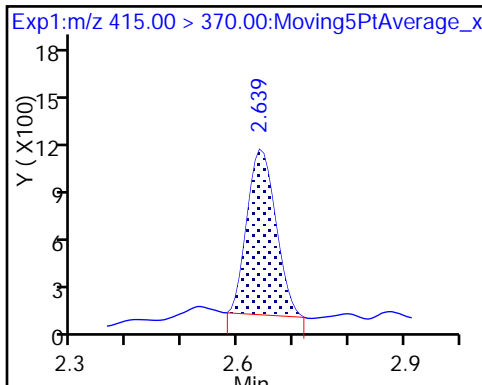
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

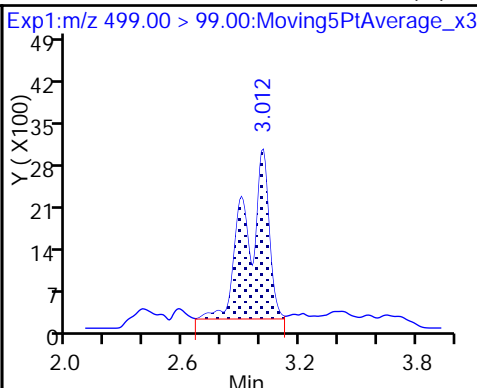
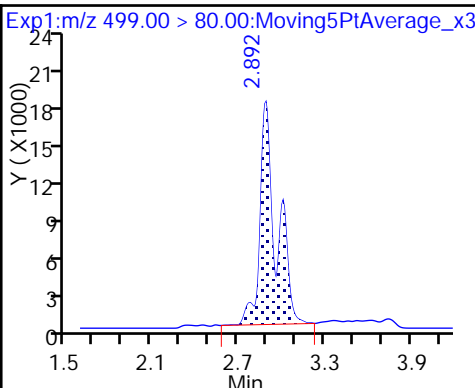
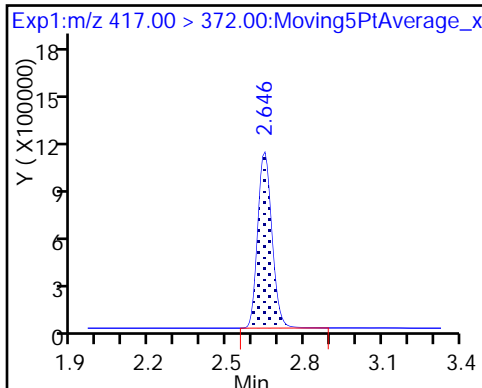
15 Perfluorooctanoic acid (M)



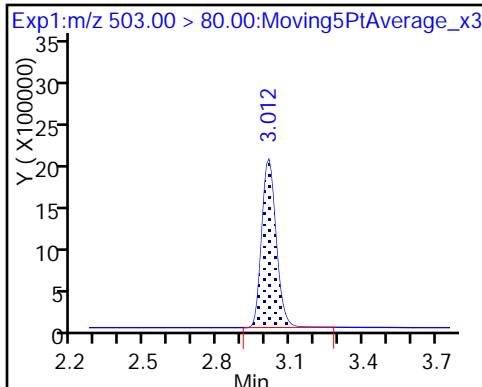
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid (M)



D 18 13C4 PFOS



TestAmerica Sacramento

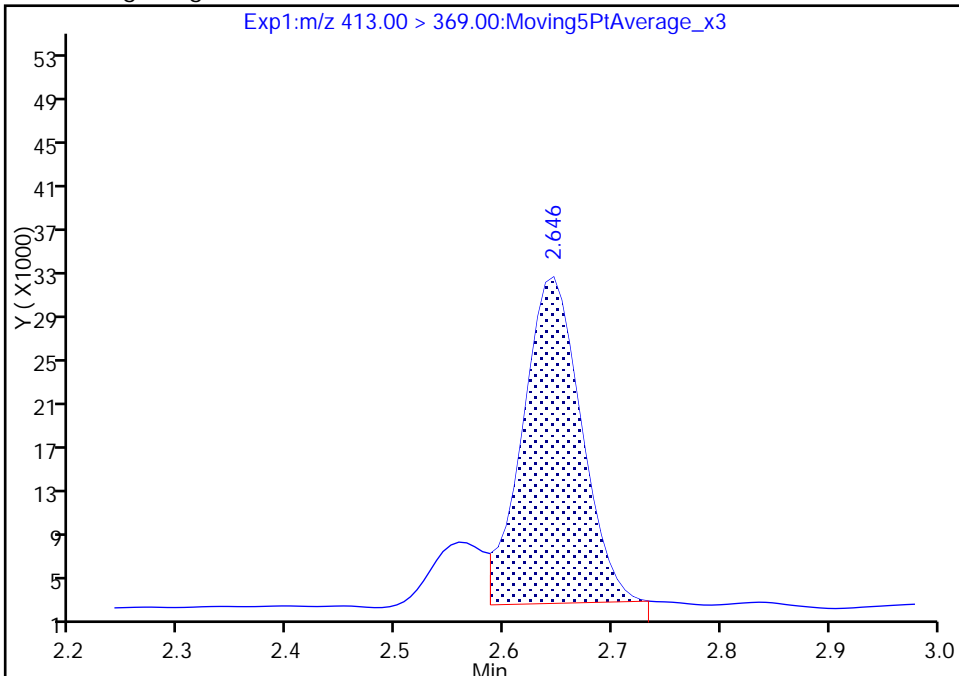
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_014.d  
Injection Date: 29-Jun-2017 00:49:36 Instrument ID: A8\_N  
Lims ID: 320-29267-A-7-A Lab Sample ID: 320-29267-7  
Client ID: MEAFF-T45-2003MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 14  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

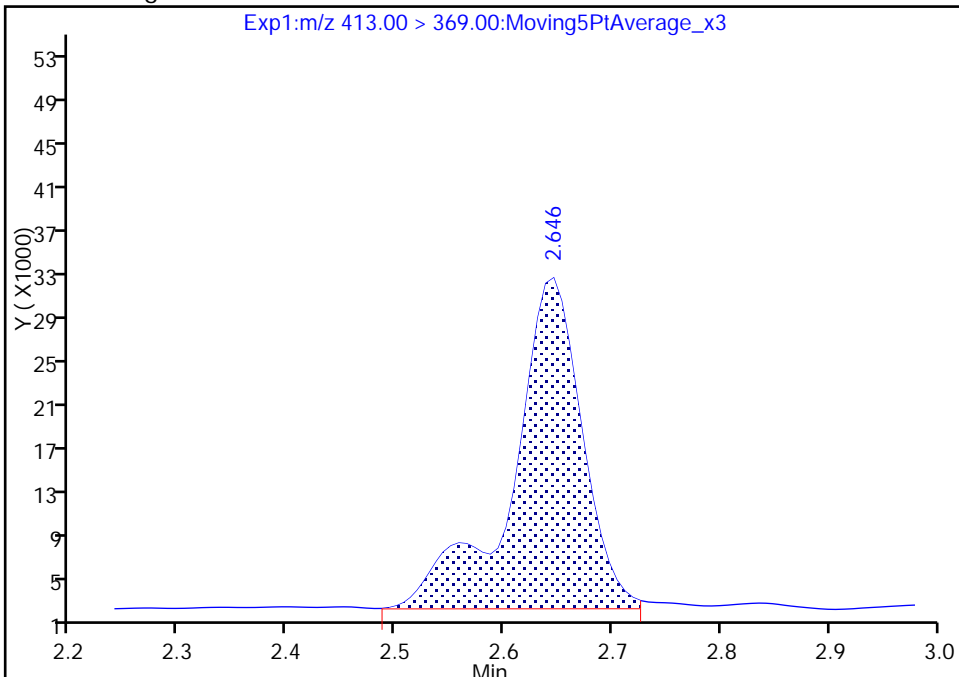
RT: 2.65  
Area: 110959  
Amount: 1.298930  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 135124  
Amount: 1.581815  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:42:24  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

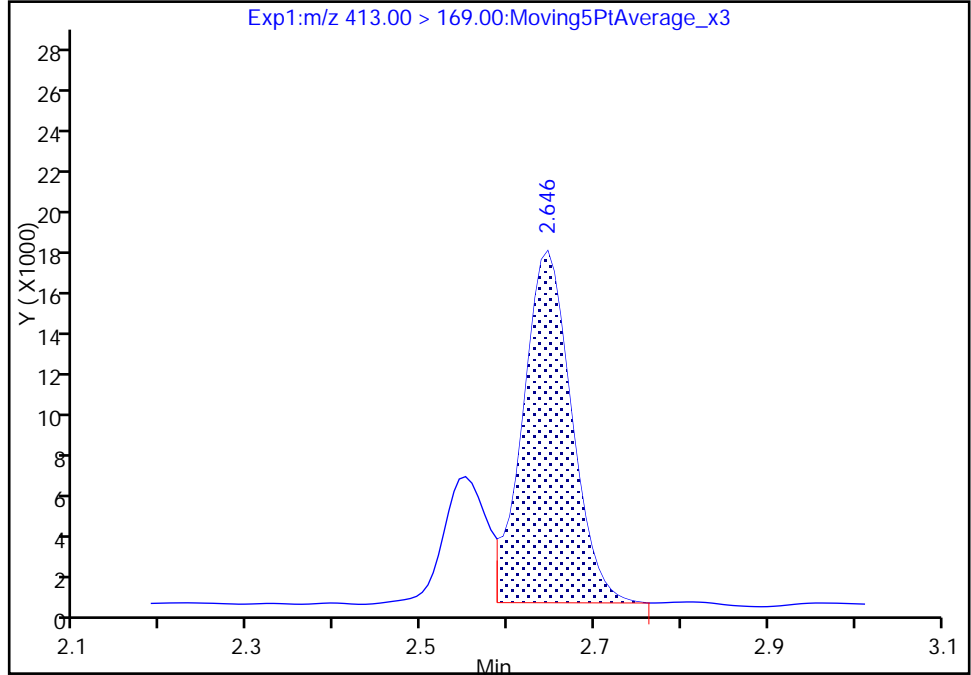
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_014.d  
Injection Date: 29-Jun-2017 00:49:36 Instrument ID: A8\_N  
Lims ID: 320-29267-A-7-A Lab Sample ID: 320-29267-7  
Client ID: MEAFF-T45-2003MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 14  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

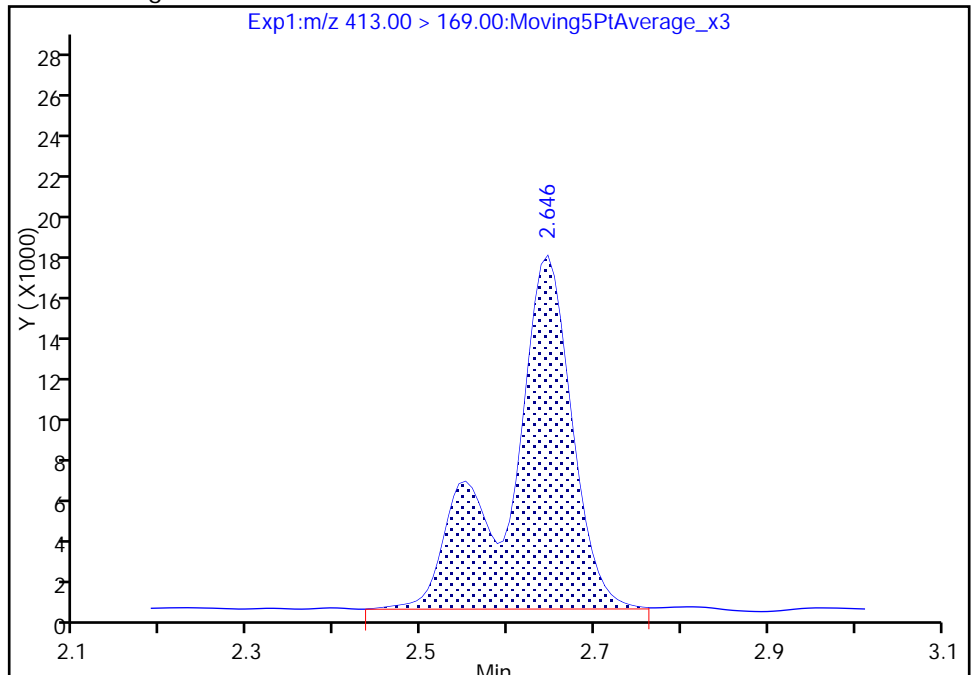
RT: 2.65  
Area: 66451  
Amount: 1.298930  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 88774  
Amount: 1.581815  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:42:31

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

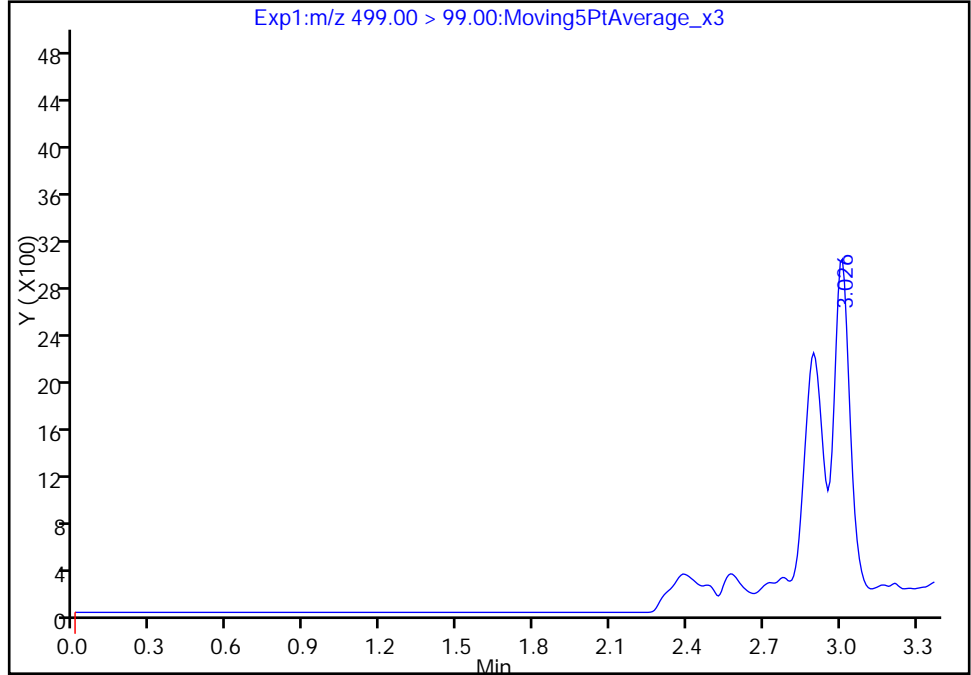
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_014.d  
Injection Date: 29-Jun-2017 00:49:36 Instrument ID: A8\_N  
Lims ID: 320-29267-A-7-A Lab Sample ID: 320-29267-7  
Client ID: MEAFF-T45-2003MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 14  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

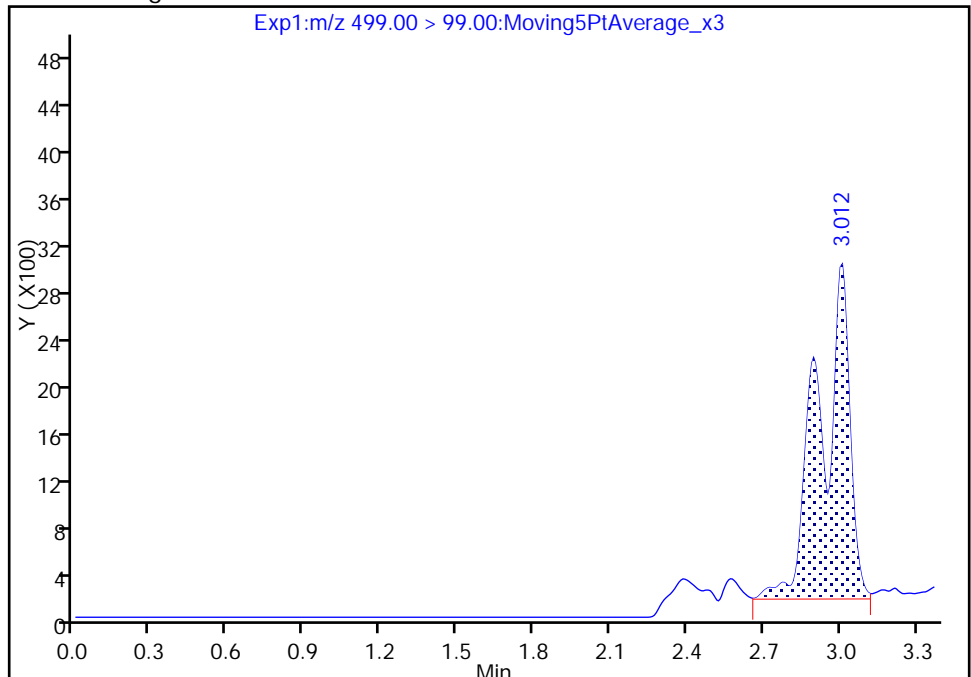
RT: 3.03  
Area: 0  
Amount: 0.766415  
Amount Units: ng/ml

Processing Integration Results



RT: 3.01  
Area: 23590  
Amount: 0.766415  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:42:40  
Audit Action: Manually Integrated

Audit Reason: Assign Peak



TestAmerica Sacramento

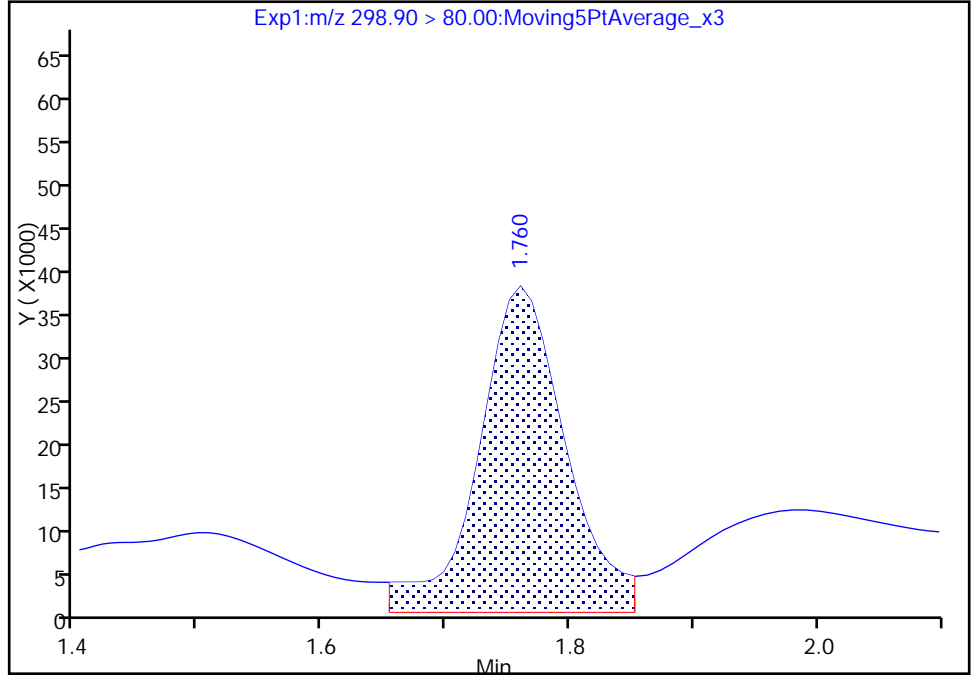
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_014.d  
Injection Date: 29-Jun-2017 00:49:36 Instrument ID: A8\_N  
Lims ID: 320-29267-A-7-A Lab Sample ID: 320-29267-7  
Client ID: MEAFF-T45-2003MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 14  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

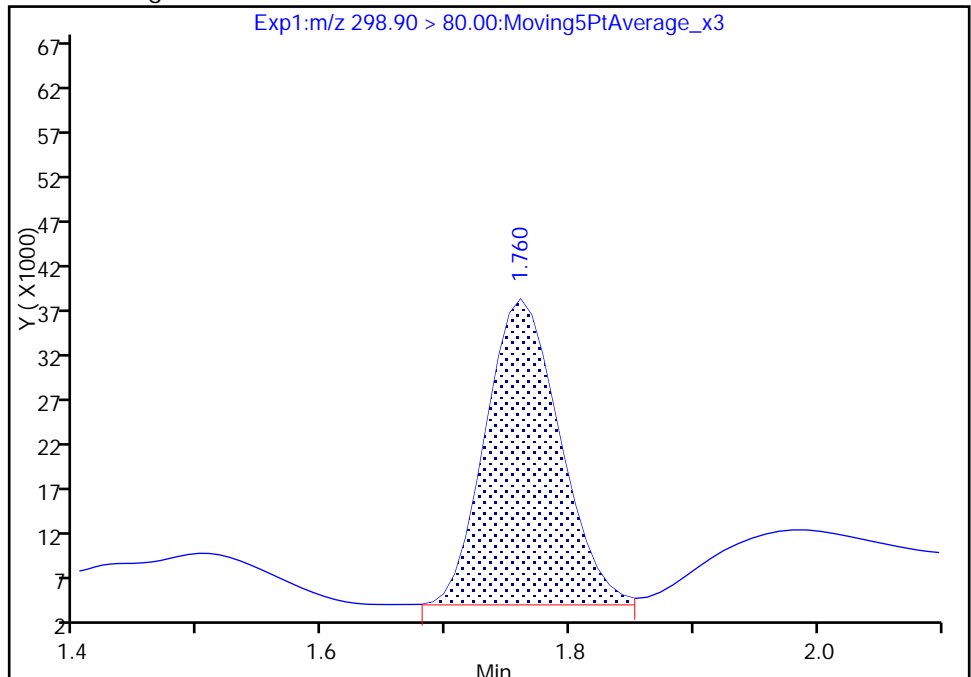
RT: 1.76  
Area: 184636  
Amount: 0.555435  
Amount Units: ng/ml

Processing Integration Results



RT: 1.76  
Area: 143372  
Amount: 0.431302  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:42:09  
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

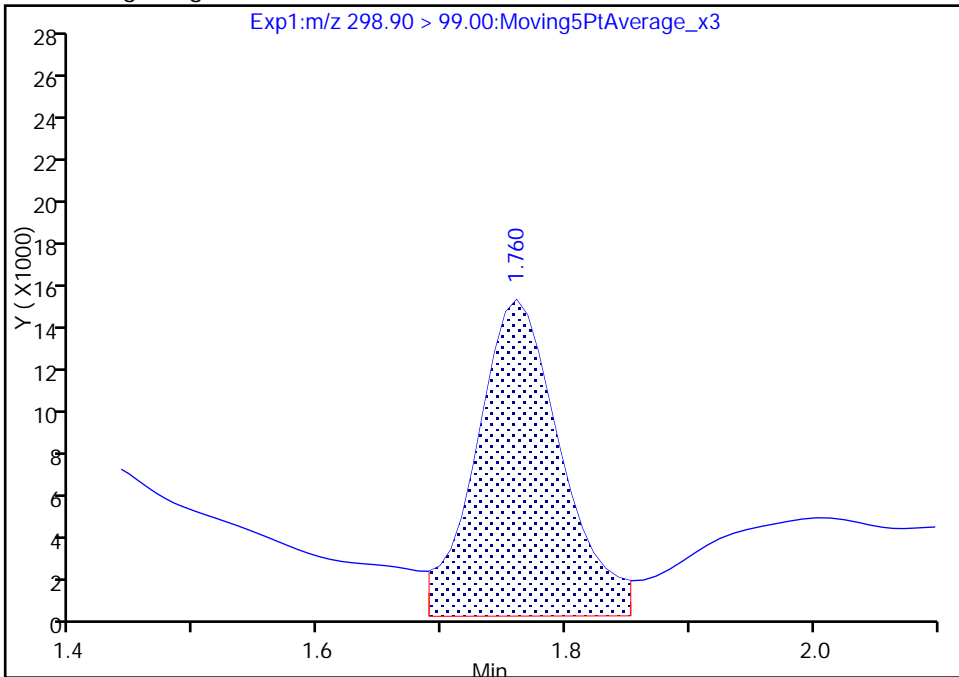
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Injection Date: 29-Jun-2017 00:49:36 Instrument ID: A8\_N  
Lims ID: 320-29267-A-7-A Lab Sample ID: 320-29267-7  
Client ID: MEAFF-T45-2003MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 11 Worklist Smp#: 14  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

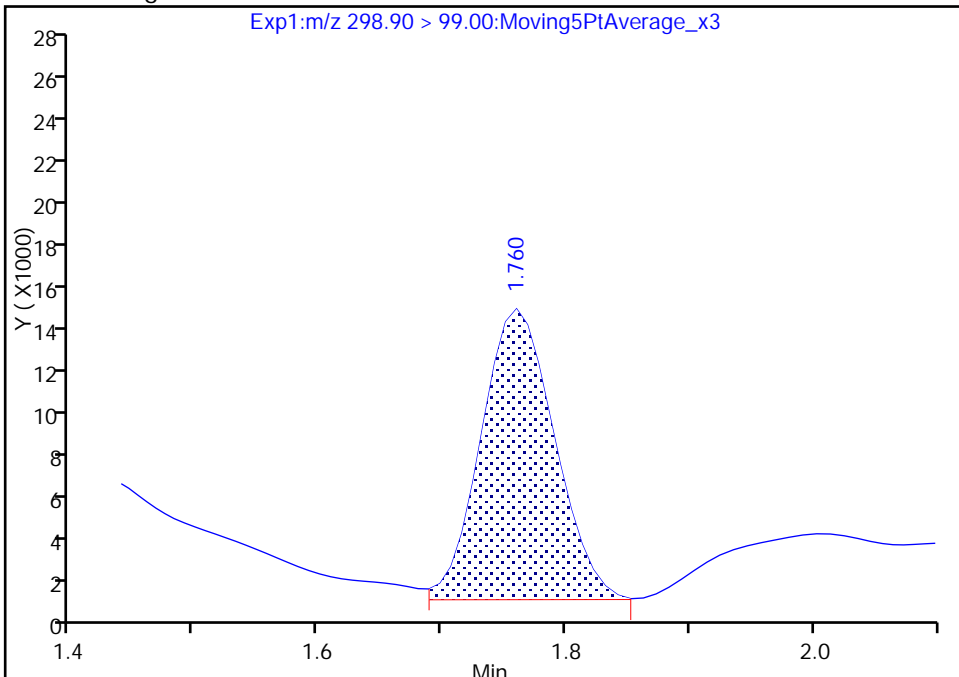
RT: 1.76  
Area: 69572  
Amount: 0.555435  
Amount Units: ng/ml

Processing Integration Results



RT: 1.76  
Area: 53930  
Amount: 0.431302  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:42:16

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-UNKN5MW01-0617 Lab Sample ID: 320-29267-8  
 Matrix: Water Lab File ID: 2017.06.28B\_015.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 14:30  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 253 (mL) Date Analyzed: 06/29/2017 00:56  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	6.2	M	2.5	2.0	0.74
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	6.8		4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	30		2.5	2.0	0.91

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	83		25-150
STL00991	13C4 PFOS	112		25-150
STL00994	18O2 PFHxS	115		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_015.d  
 Lims ID: 320-29267-B-8-A  
 Client ID: MEAFF-UNKN5MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 00:56:29 ALS Bottle#: 12 Worklist Smp#: 15  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-b-8-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:43:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	5233097	15.3			2008	
298.90 > 99.00	1.753	1.760	-0.007	1.000	2139042		2.45(0.00-0.00)		3245	
D 11 18O2 PFHxS										
403.00 > 84.00	2.312	2.329	-0.017		11573022	54.4		115	45154	
* 62 13C2-PFOA										
415.00 > 370.00	2.638	2.656	-0.018		4326	50.0			132	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.645	2.663	-0.018	1.000	357668	3.13			109	M
413.00 > 169.00	2.645	2.663	-0.018	1.000	272629		1.31(0.90-1.10)		482	M
D 14 13C4 PFOA										
417.00 > 372.00	2.645	2.663	-0.018		5396075	41.3		82.7	14118	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	2.884	3.026	-0.142	1.000	652120	3.42			1478	
499.00 > 99.00	2.891	3.026	-0.135	1.002	90590		7.20(0.90-1.10)		294	
D 18 13C4 PFOS										
503.00 > 80.00	3.011	3.026	-0.015		8689784	53.4		112	15826	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_015.d

Injection Date: 29-Jun-2017 00:56:29

Instrument ID: A8\_N

Lims ID: 320-29267-B-8-A

Lab Sample ID: 320-29267-8

Client ID: MEAFF-UNKN5MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 12

Worklist Smp#: 15

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

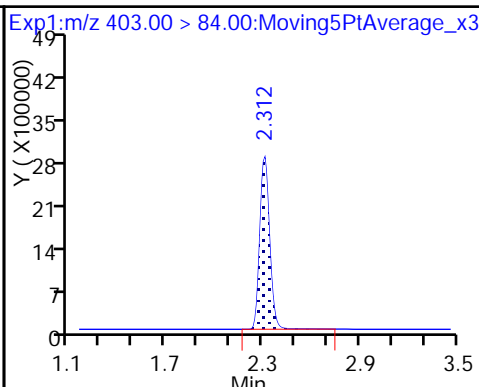
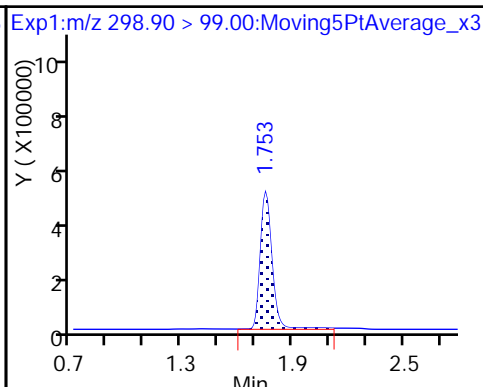
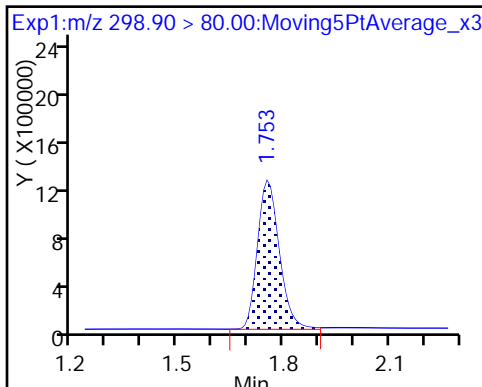
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

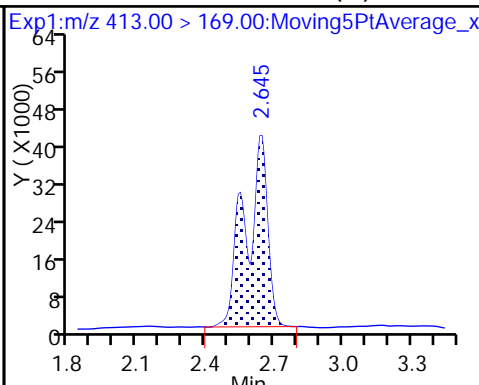
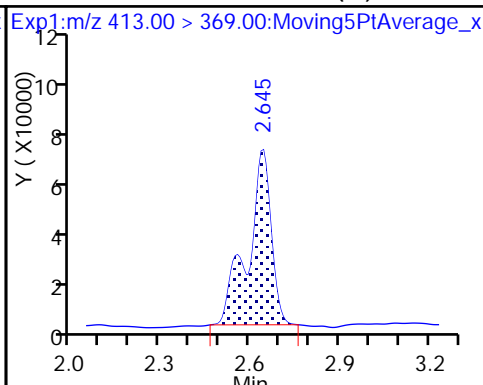
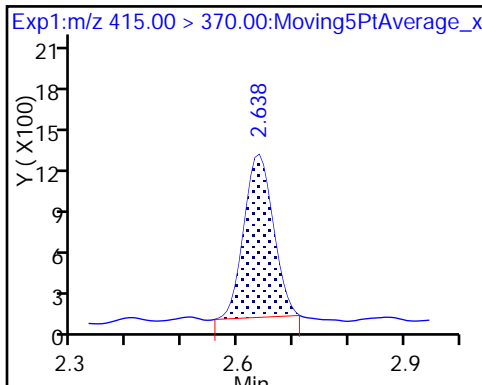
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

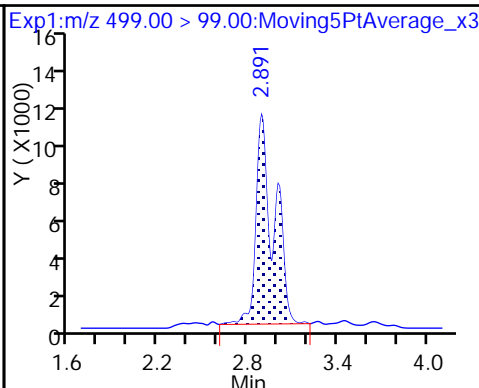
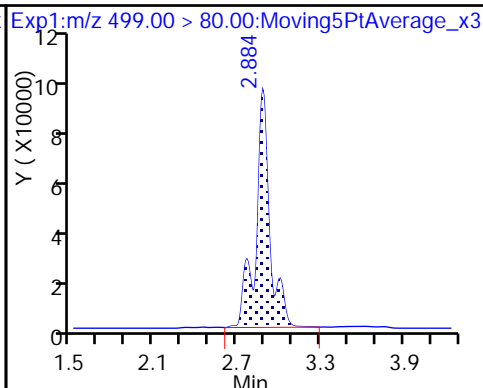
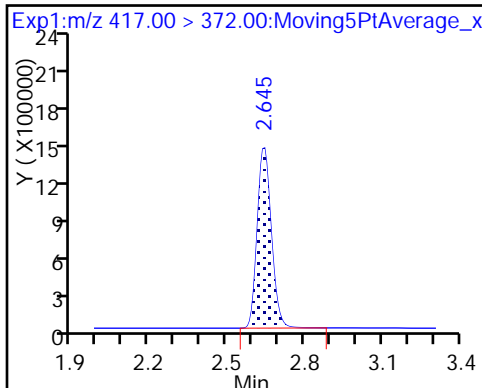
15 Perfluorooctanoic acid (M)



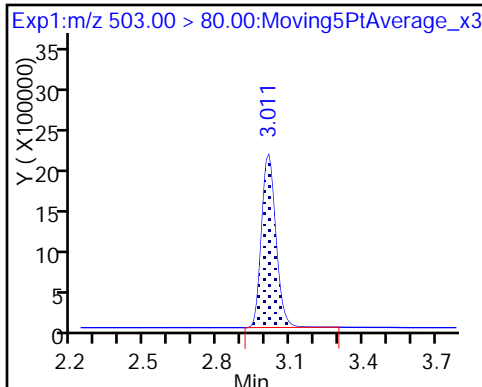
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

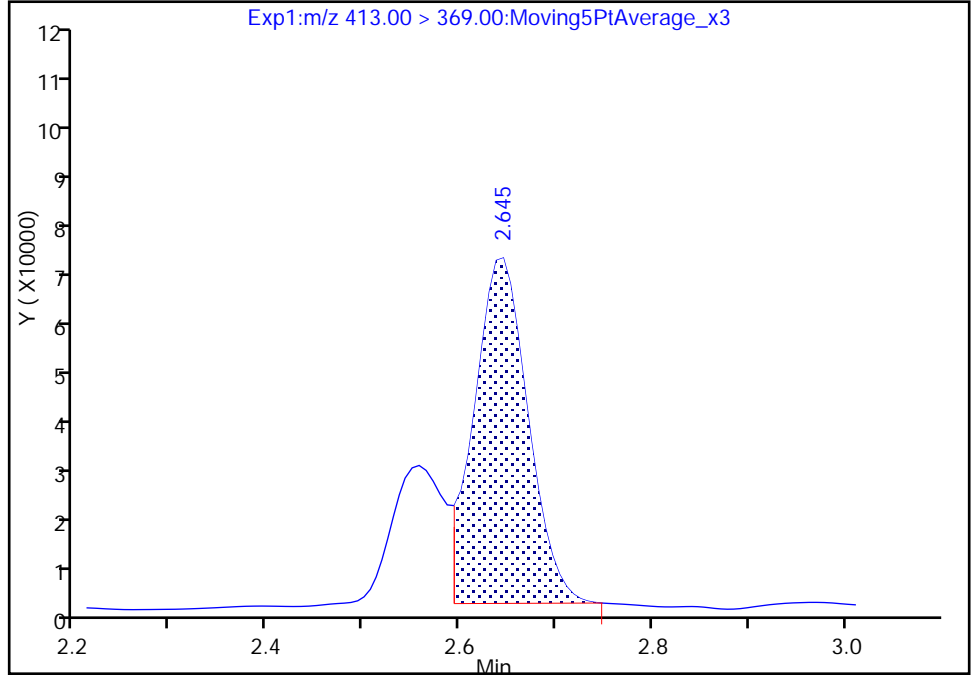
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_015.d  
Injection Date: 29-Jun-2017 00:56:29 Instrument ID: A8\_N  
Lims ID: 320-29267-B-8-A Lab Sample ID: 320-29267-8  
Client ID: MEAFF-UNKN5MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 15  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

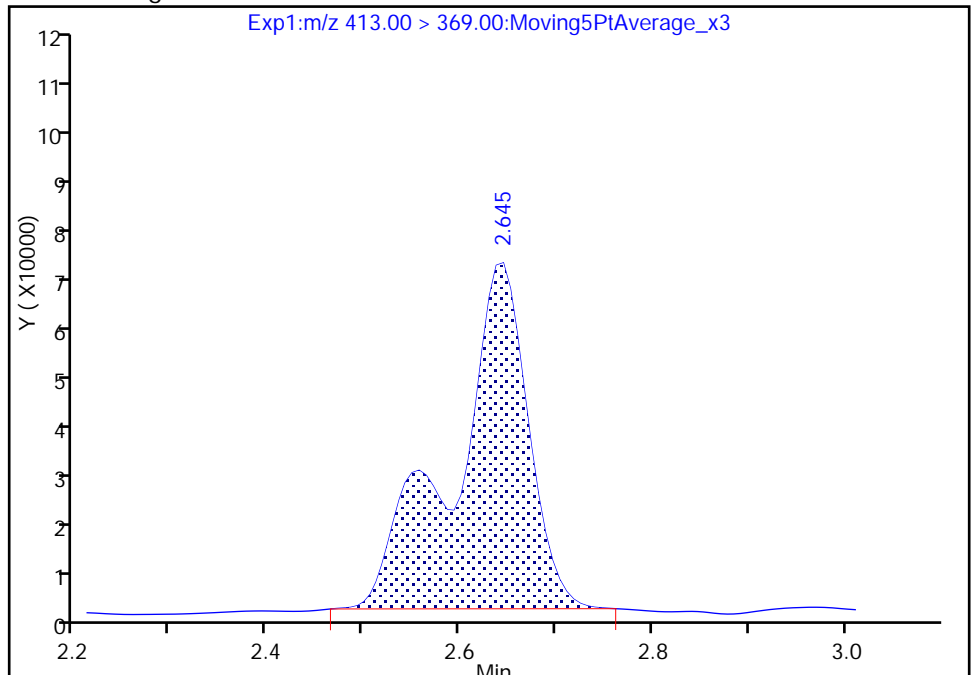
RT: 2.65  
Area: 255397  
Amount: 2.232378  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 357668  
Amount: 3.126310  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:42:54  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

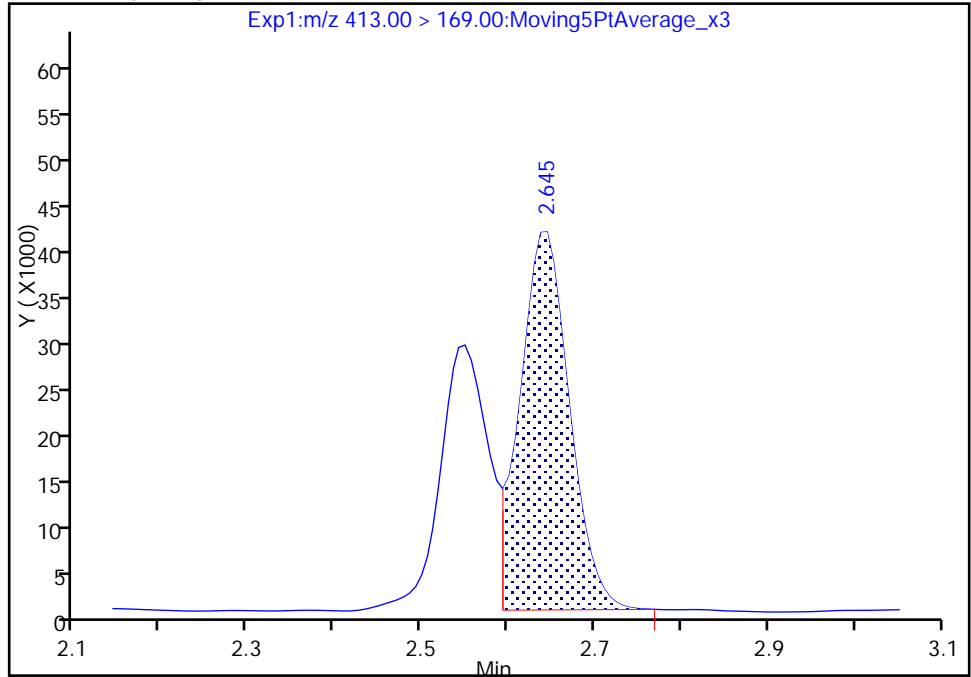
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Injection Date: 29-Jun-2017 00:56:29 Instrument ID: A8\_N  
Lims ID: 320-29267-B-8-A Lab Sample ID: 320-29267-8  
Client ID: MEAFF-UNKN5MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 12 Worklist Smp#: 15  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

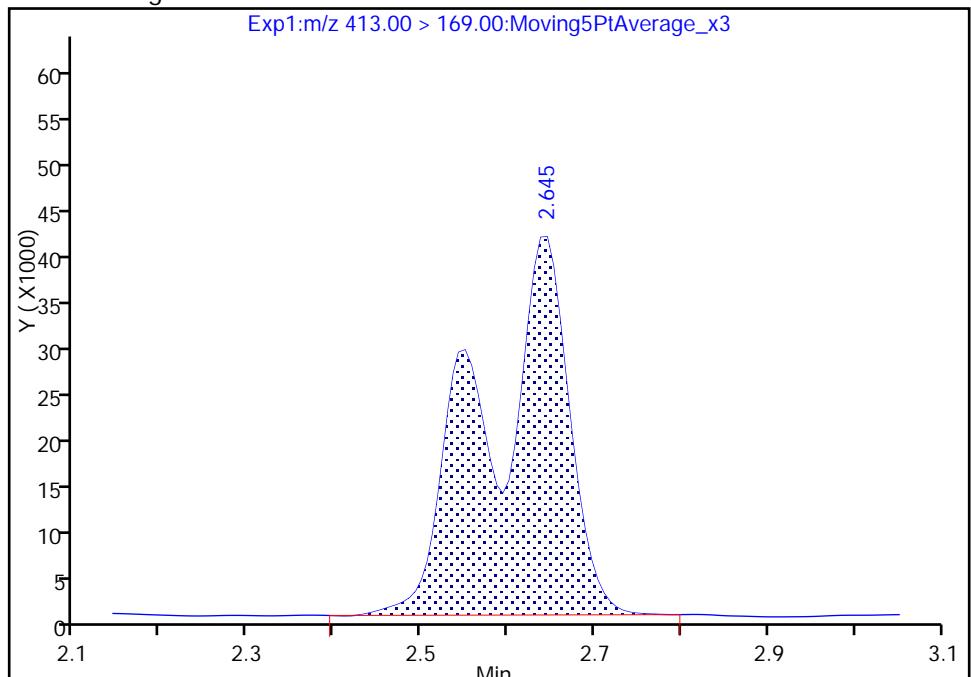
RT: 2.65  
Area: 161100  
Amount: 2.232378  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 272629  
Amount: 3.126310  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:42:59

Audit Action: Manually Integrated

Audit Reason: Isomers





TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_016.d  
 Lims ID: 320-29267-A-9-A  
 Client ID: MEAFF-T45C-05-2008MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:03:24 ALS Bottle#: 13 Worklist Smp#: 16  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-9-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:43:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.795	1.760	0.035	1.000	75075912	1380.7			198	E
298.90 > 99.00	1.769	1.760	0.009	0.985	79985336		0.94(0.00-0.00)		615	E
D 11 18O2 PFHxS										
403.00 > 84.00	2.309	2.329	-0.020		1844973	8.67		18.3	2717	
* 62 13C2-PFOA										
415.00 > 370.00	2.638	2.656	-0.018		71385	50.0			281	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.647	2.663	-0.016	1.000	64054040	687.5			2430	EM
413.00 > 169.00	2.647	2.663	-0.016	1.000	53670952		1.19(0.90-1.10)		3951	M
D 14 13C4 PFOA										
417.00 > 372.00	2.647	2.663	-0.016		4394307	33.7		67.3	11885	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.009	3.026	-0.017	1.000	16404532	99.9			2597	
499.00 > 99.00	3.009	3.026	-0.017	1.000	3616921		4.54(0.90-1.10)		5489	
D 18 13C4 PFOS										
503.00 > 80.00	3.009	3.026	-0.017		7483153	46.0		96.2	6494	

**QC Flag Legend**

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_016.d

Injection Date: 29-Jun-2017 01:03:24

Instrument ID: A8\_N

Lims ID: 320-29267-A-9-A

Lab Sample ID: 320-29267-9

Client ID: MEAFF-T45C-05-2008MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 13

Worklist Smp#: 16

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

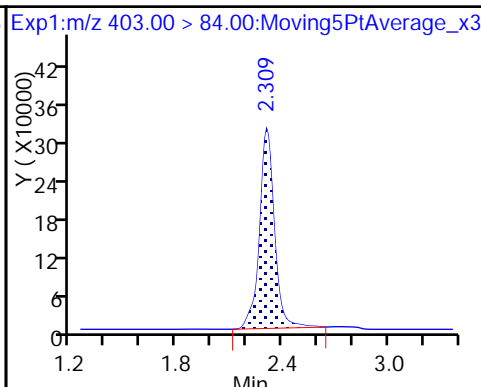
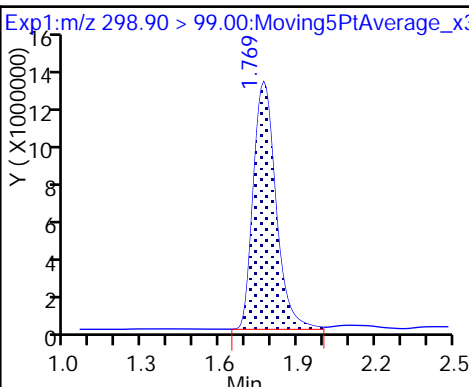
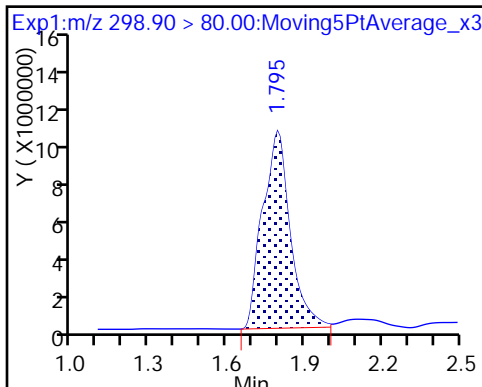
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

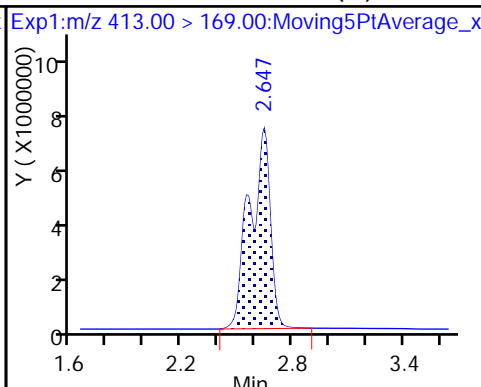
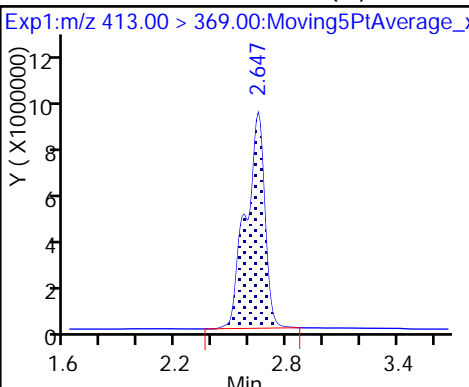
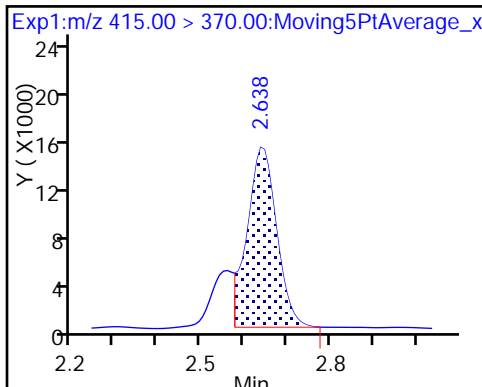
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

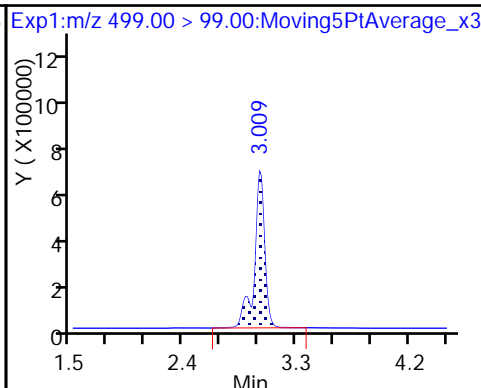
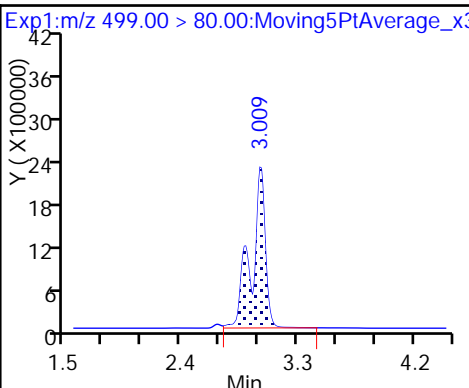
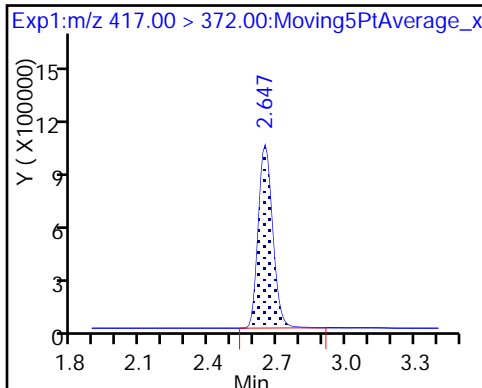
15 Perfluorooctanoic acid (M)



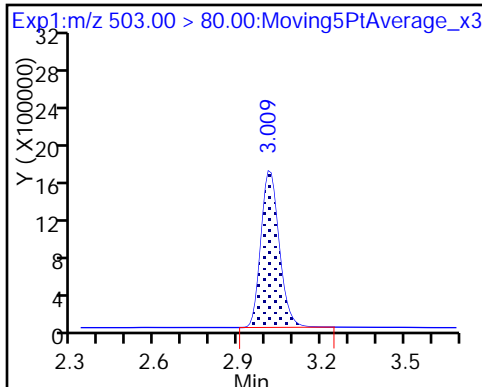
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

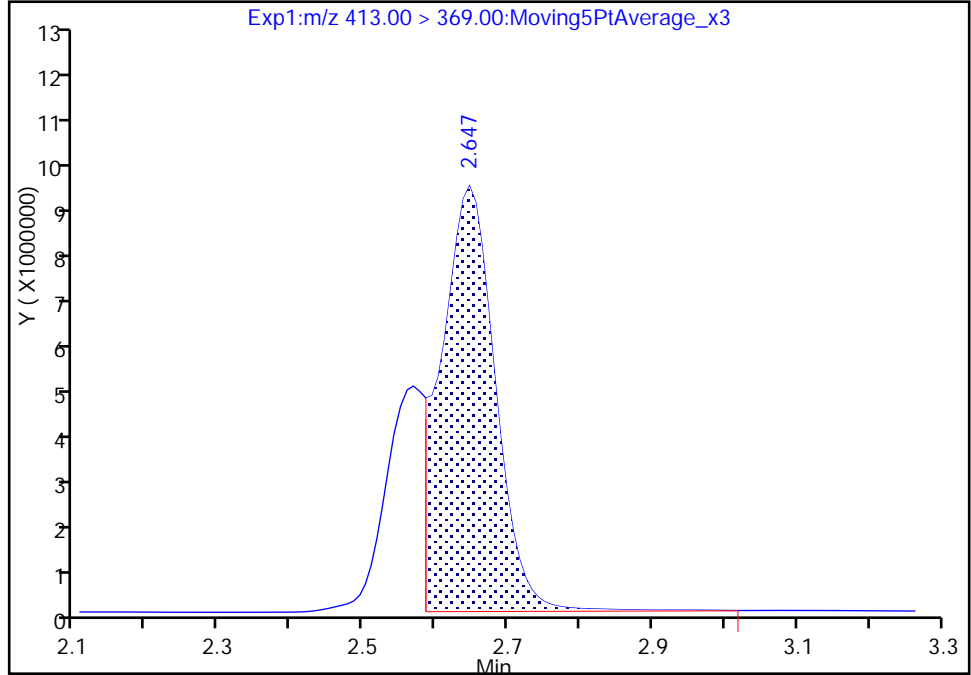
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_016.d  
Injection Date: 29-Jun-2017 01:03:24 Instrument ID: A8\_N  
Lims ID: 320-29267-A-9-A Lab Sample ID: 320-29267-9  
Client ID: MEAFF-T45C-05-2008MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 16  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

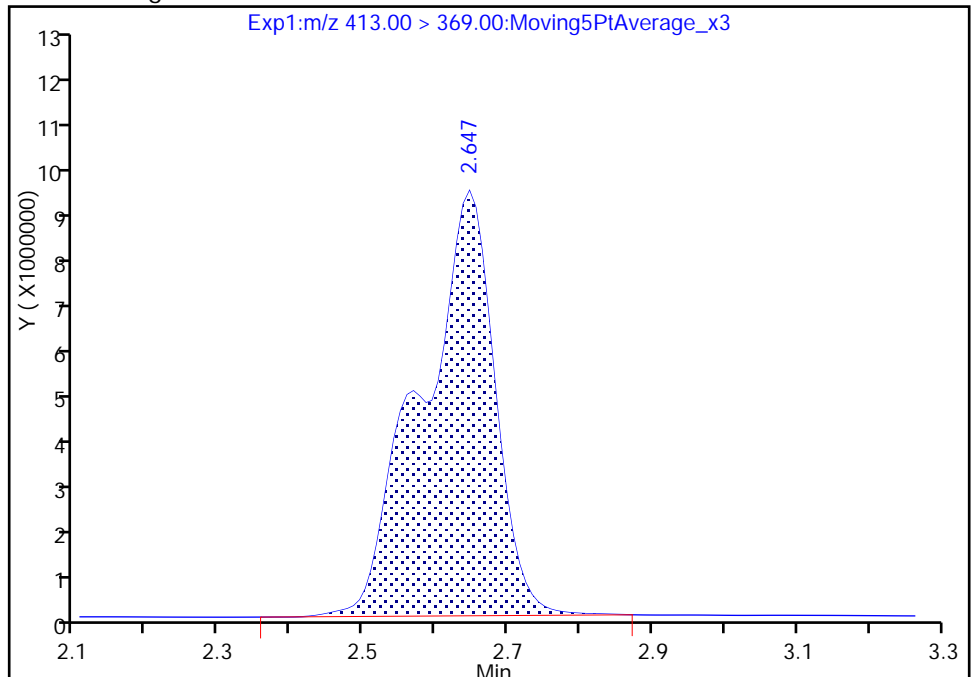
RT: 2.65  
Area: 46952772  
Amount: 503.9655  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 64054040  
Amount: 687.5212  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:43:16  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

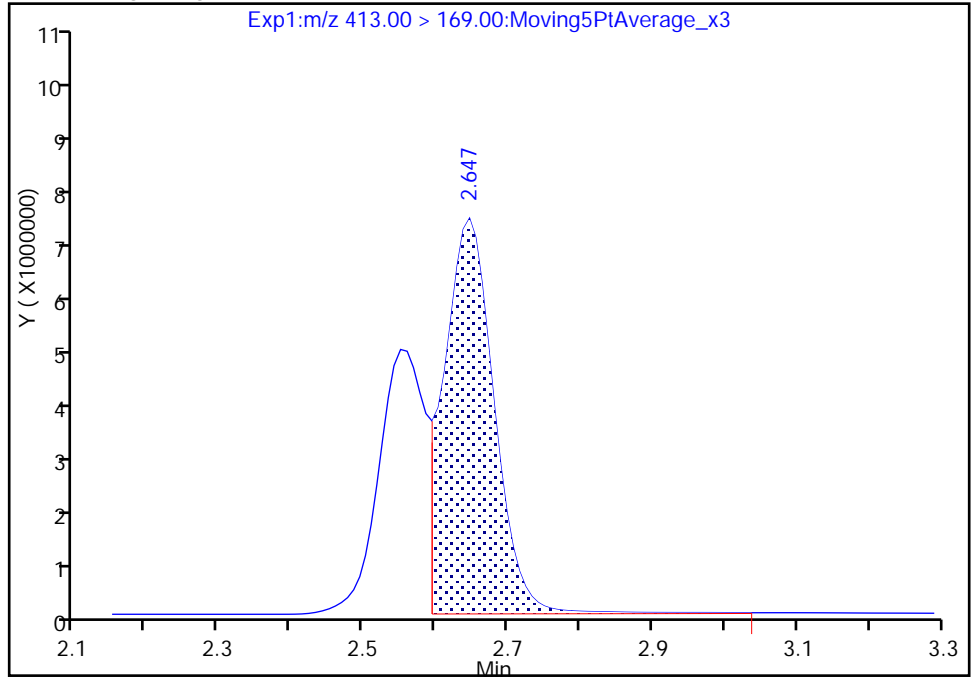
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_016.d  
Injection Date: 29-Jun-2017 01:03:24 Instrument ID: A8\_N  
Lims ID: 320-29267-A-9-A Lab Sample ID: 320-29267-9  
Client ID: MEAFF-T45C-05-2008MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 13 Worklist Smp#: 16  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

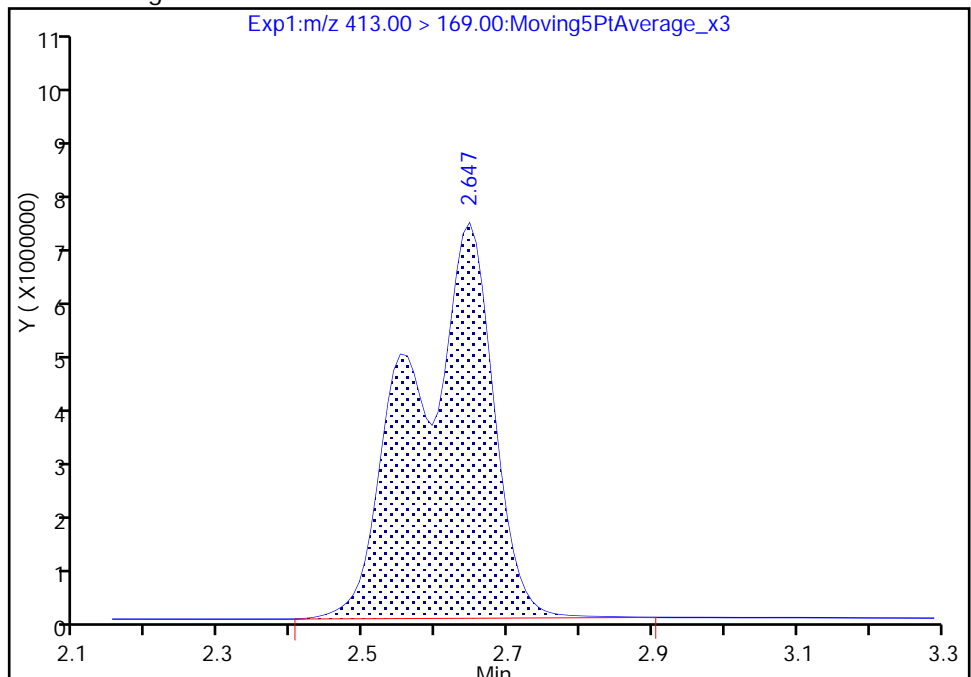
RT: 2.65  
Area: 33238379  
Amount: 503.9655  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 53670952  
Amount: 687.5212  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:43:18

Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_003.d  
 Lims ID: 320-29267-A-9-A  
 Client ID: MEAFF-T45C-05-2008MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 18:25:19 ALS Bottle#: 2 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 20.0000  
 Sample Info: 320-29267-a-9-a 20X  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 08:15:59 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 07:58:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.760	0.002	1.000	46639131	212.2			6005	E
298.90 > 99.00	1.762	1.760	0.002	1.000	26486246		1.76(0.00-0.00)		33893	E
D 11 18O2 PFHxS										
403.00 > 84.00	2.323	2.329	-0.006		372945	1.75		3.7	2930	
* 62 13C2-PFOA										
415.00 > 370.00	2.648	2.656	-0.008		3333	50.0			78.6	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.655	2.663	-0.008	1.000	8148541	50.4			2448	M
413.00 > 169.00	2.655	2.663	-0.008	1.000	5484162		1.49(0.90-1.10)		3872	M
D 14 13C4 PFOA										
417.00 > 372.00	2.655	2.663	-0.008		381259	2.92		5.8	4666	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.030	3.026	0.004	1.000	860629	4.96			1867	
499.00 > 99.00	3.030	3.026	0.004	1.000	185263		4.65(0.90-1.10)		1005	
D 18 13C4 PFOS										
503.00 > 80.00	3.030	3.026	0.004		395464	2.43		5.1	2708	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_003.d

Injection Date: 29-Jun-2017 18:25:19

Instrument ID: A8\_N

Lims ID: 320-29267-A-9-A

Lab Sample ID: 320-29267-9

Client ID: MEAFF-T45C-05-2008MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 20.0000

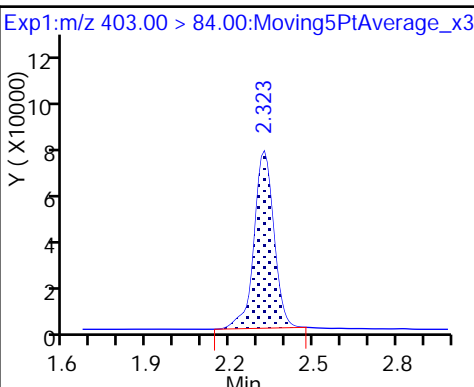
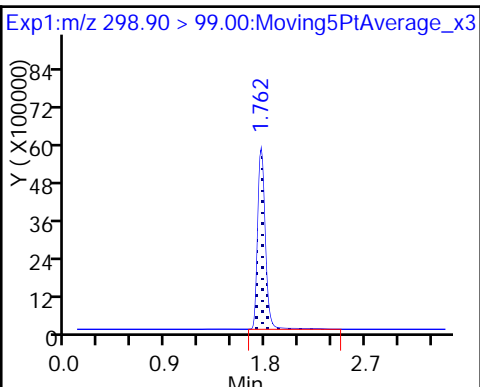
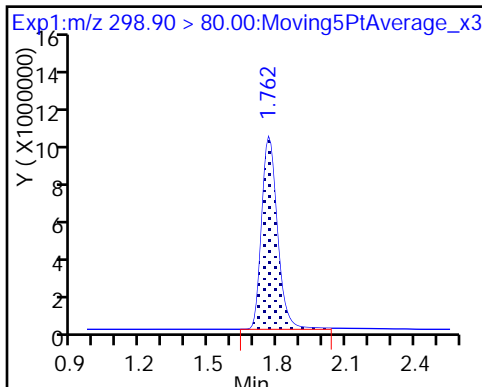
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

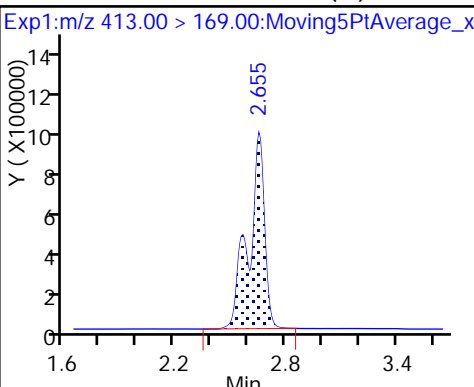
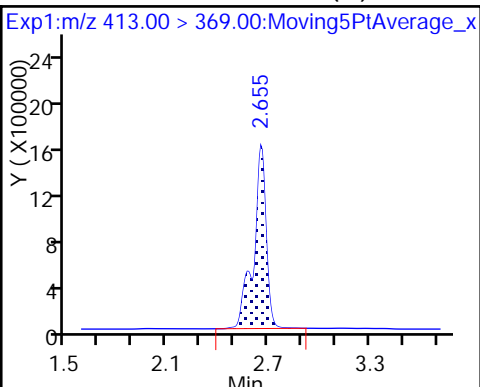
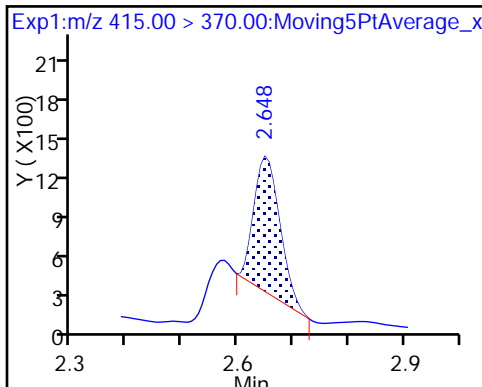
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

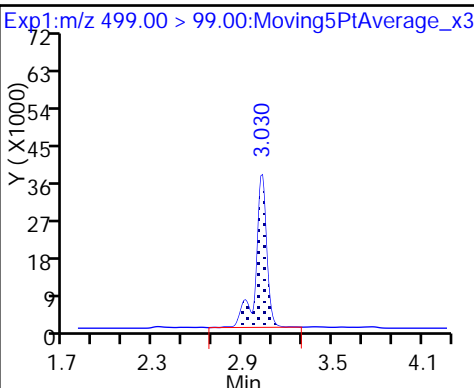
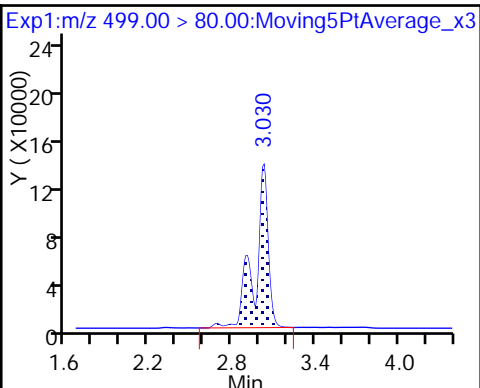
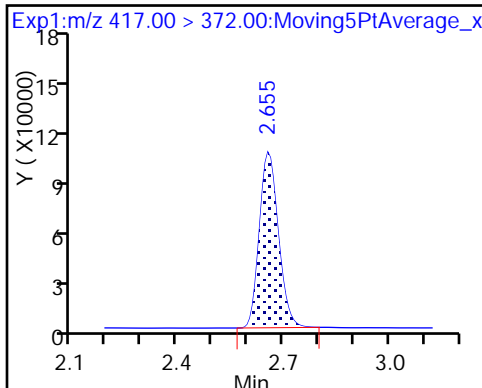
15 Perfluorooctanoic acid (M)



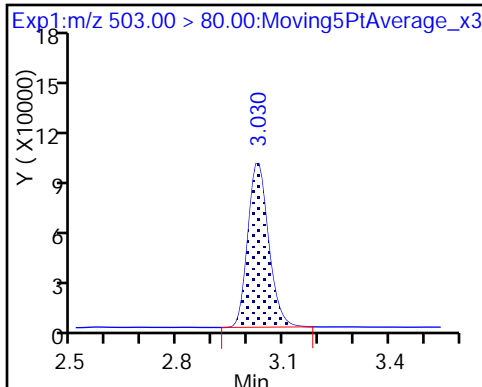
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

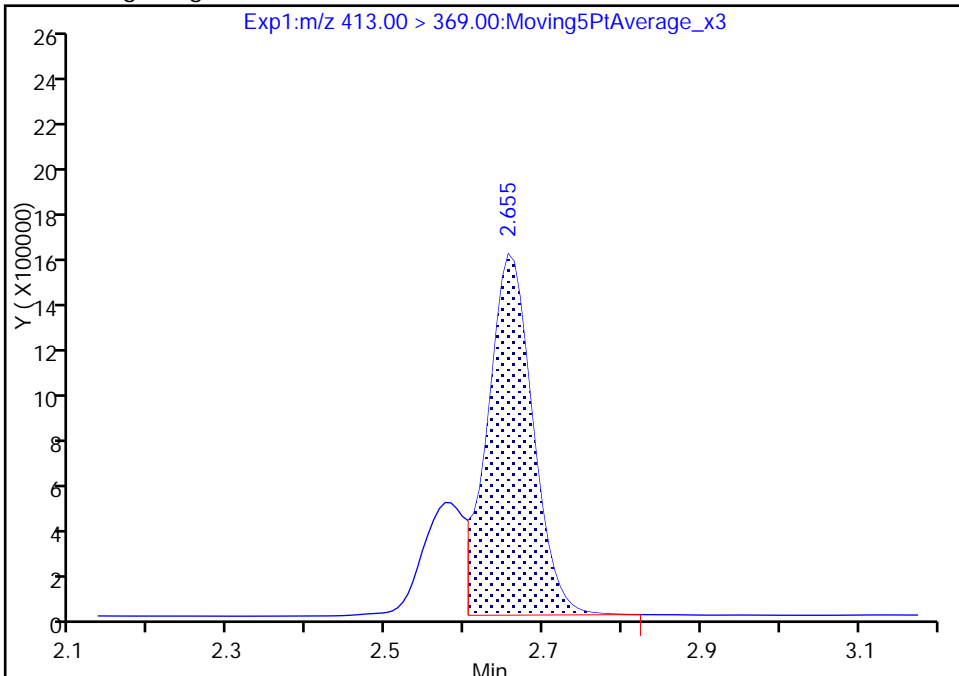
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_003.d  
Injection Date: 29-Jun-2017 18:25:19 Instrument ID: A8\_N  
Lims ID: 320-29267-A-9-A Lab Sample ID: 320-29267-9  
Client ID: MEAFF-T45C-05-2008MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 2.0 ul Dil. Factor: 20.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

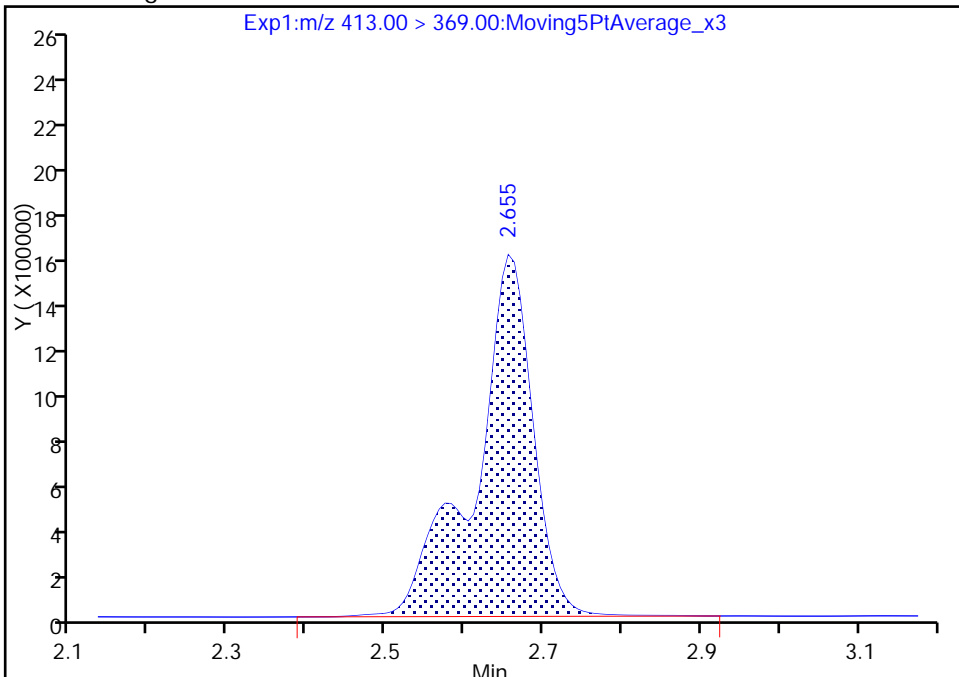
RT: 2.66  
Area: 6281434  
Amount: 38.854262  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
Area: 8148541  
Amount: 50.403386  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 30-Jun-2017 07:57:54  
Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento

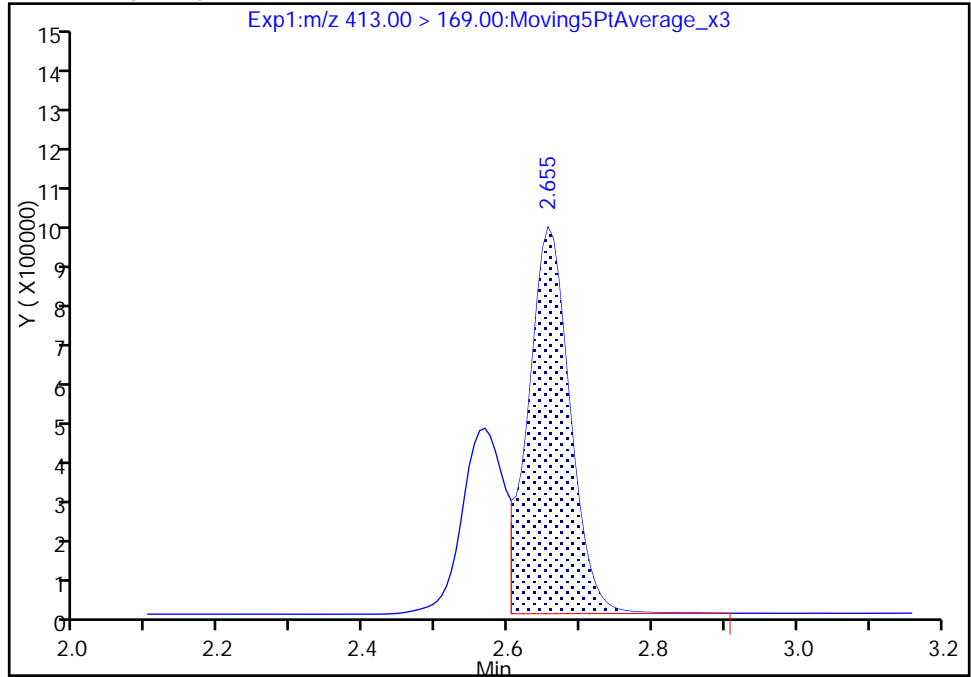
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_003.d  
Injection Date: 29-Jun-2017 18:25:19 Instrument ID: A8\_N  
Lims ID: 320-29267-A-9-A Lab Sample ID: 320-29267-9  
Client ID: MEAFF-T45C-05-2008MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 2 Worklist Smp#: 3  
Injection Vol: 2.0 ul Dil. Factor: 20.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

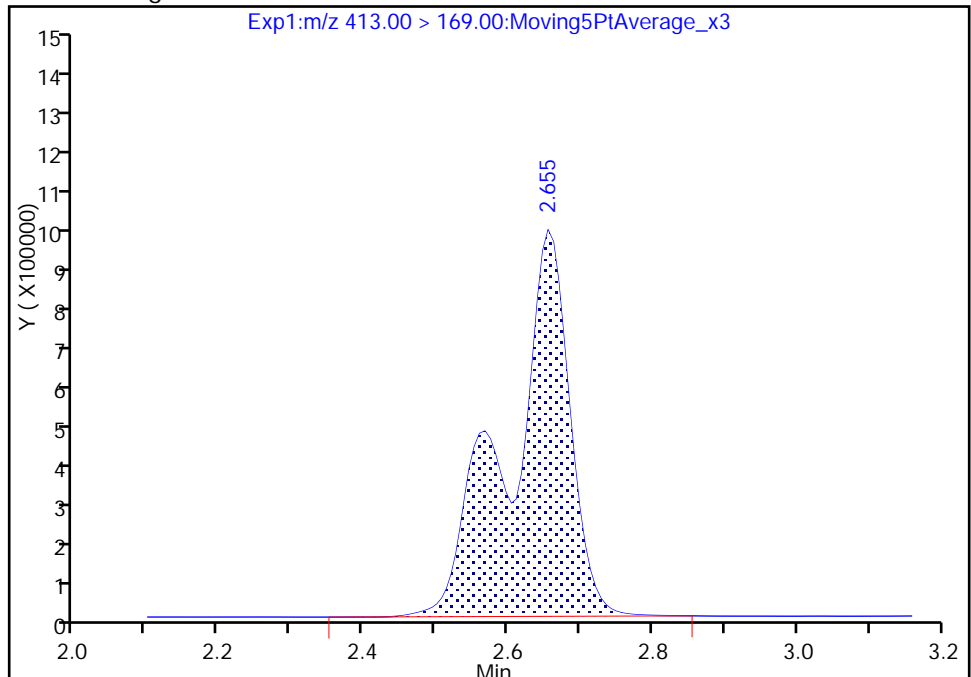
RT: 2.66  
Area: 3712919  
Amount: 38.854262  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
Area: 5484162  
Amount: 50.403386  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 30-Jun-2017 07:57:57

Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30B\_001.d  
 Lims ID: 320-29267-A-9-A  
 Client ID: MEAFF-T45C-05-2008MW01-0617  
 Sample Type: Client  
 Inject. Date: 30-Jun-2017 12:20:02 ALS Bottle#: 44 Worklist Smp#: 13  
 Injection Vol: 2.0 ul Dil. Factor: 50.0000  
 Sample Info: 320-29267-A-9-A 50x  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 13:56:09 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 13:15:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.771	1.775	-0.004	1.000	25262448	86.2			136303	
298.90 > 99.00	1.771	1.775	-0.004	1.000	12582922		2.01(0.00-0.00)		39751	
D 11 18O2 PFHxS										
403.00 > 84.00	2.341	2.346	-0.006		191376	0.8033		1.7	3475	
* 62 13C2-PFOA										
415.00 > 370.00	2.667	2.679	-0.012		3515	50.0			83.9	
D 14 13C4 PFOA										
417.00 > 372.00	2.675	2.682	-0.007		150073	0.9592		1.9	2832	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.675	2.683	-0.008	1.000	3095259	19.3			1164	M
413.00 > 169.00	2.675	2.683	-0.008	1.000	2094517		1.48(0.90-1.10)		2356	M
D 18 13C4 PFOS										
503.00 > 80.00	3.044	3.054	-0.010		149024	0.8266		1.7	1925	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.052	3.057	-0.005	1.000	317061	1.95			1118	
499.00 > 99.00	3.044	3.057	-0.013	0.997	74374		4.26(0.90-1.10)		577	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30B\_001.d

Injection Date: 30-Jun-2017 12:20:02

Instrument ID: A8\_N

Lims ID: 320-29267-A-9-A

Lab Sample ID: 320-29267-9

Client ID: MEAFF-T45C-05-2008MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 44

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 50.0000

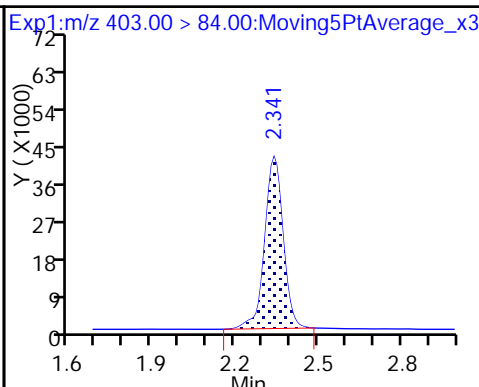
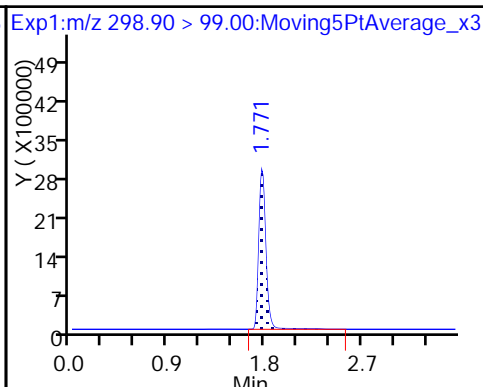
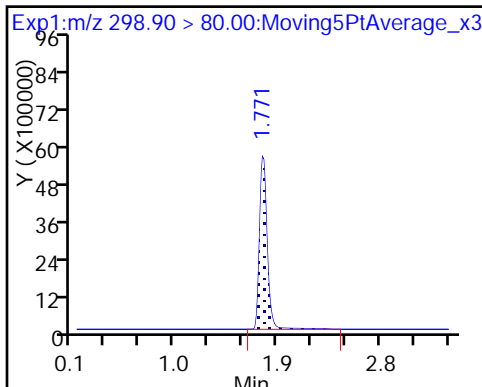
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

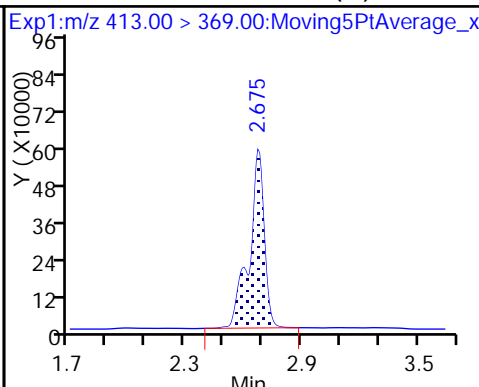
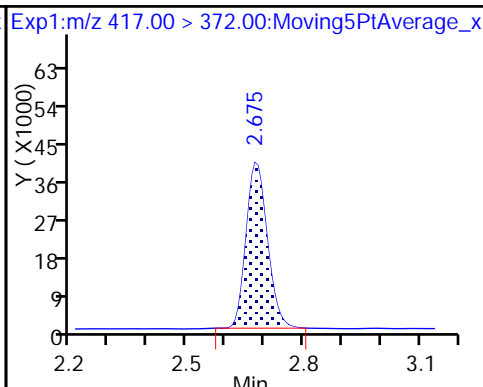
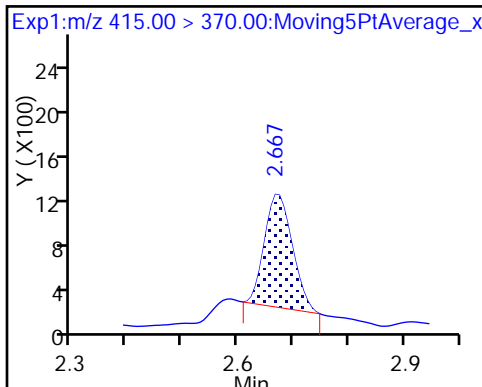
D 11 18O2 PFHxS



\* 62 13C2-PFOA

D 14 13C4 PFOA

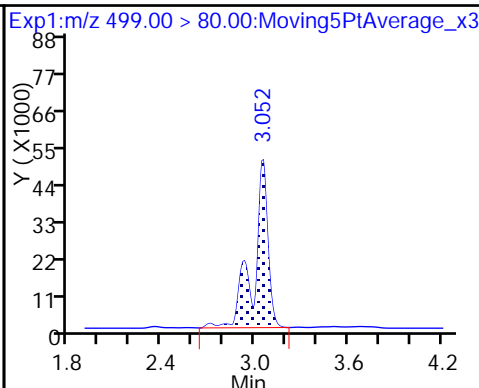
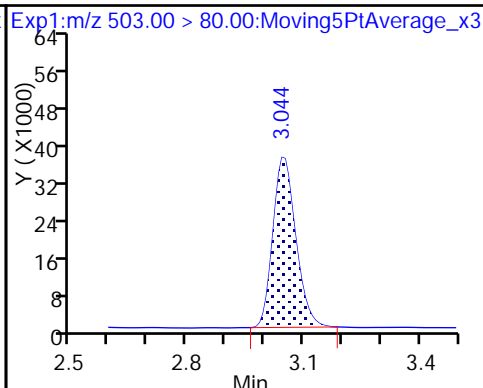
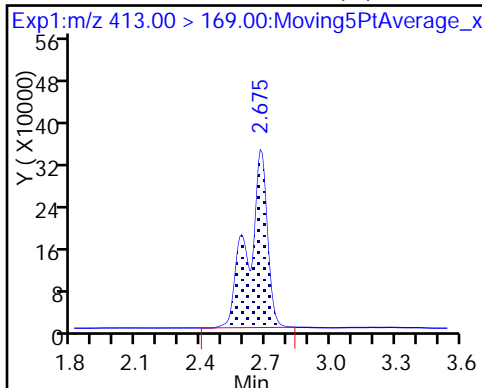
15 Perfluorooctanoic acid (M)



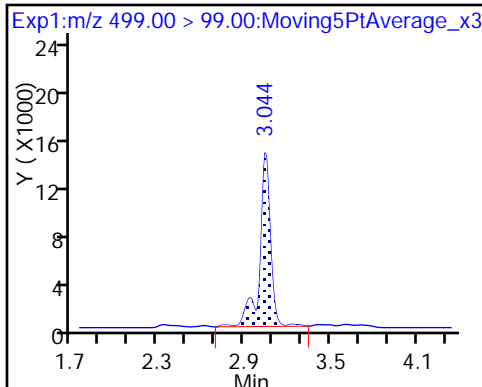
15 Perfluorooctanoic acid (M)

D 18 13C4 PFOS

17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid



TestAmerica Sacramento

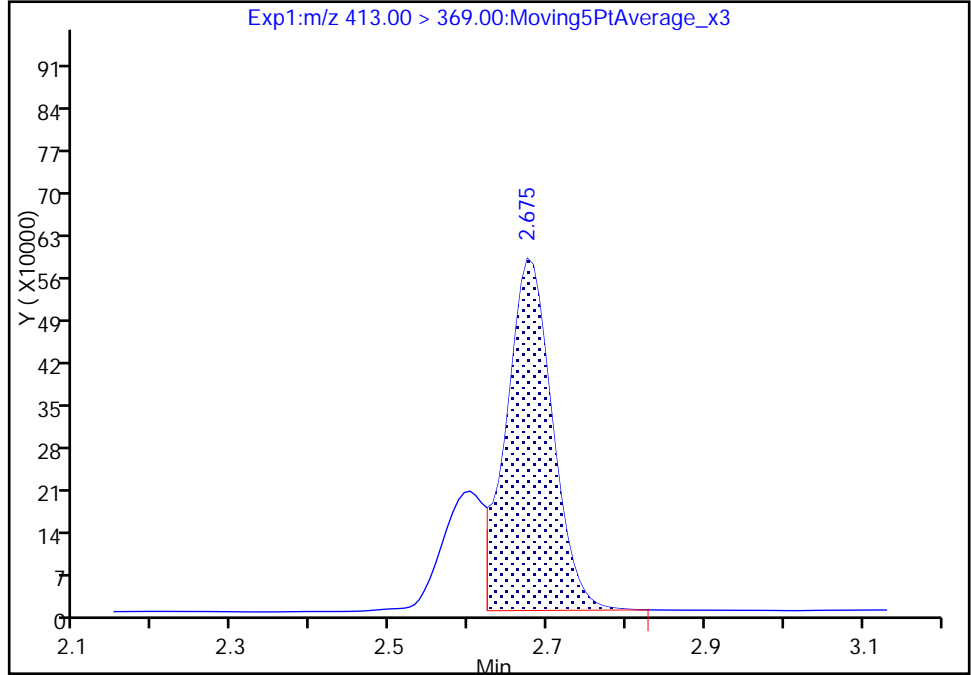
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30B\_001.d  
Injection Date: 30-Jun-2017 12:20:02 Instrument ID: A8\_N  
Lims ID: 320-29267-A-9-A Lab Sample ID: 320-29267-9  
Client ID: MEAFF-T45C-05-2008MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 44 Worklist Smp#: 13  
Injection Vol: 2.0 ul Dil. Factor: 50.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

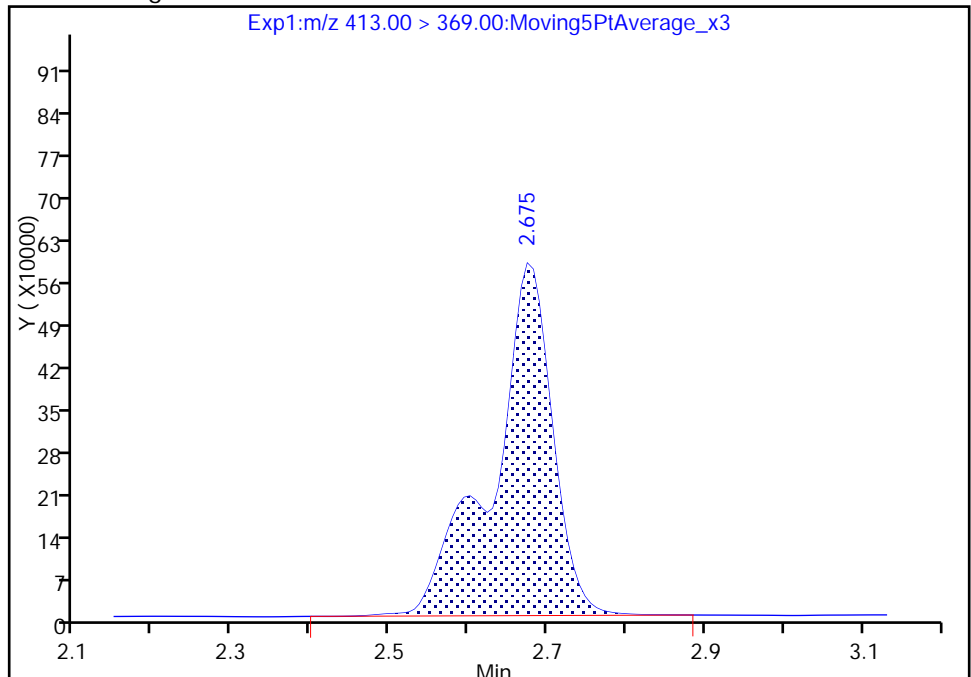
RT: 2.67  
Area: 2359918  
Amount: 14.713558  
Amount Units: ng/ml

Processing Integration Results



RT: 2.67  
Area: 3095259  
Amount: 19.298243  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 30-Jun-2017 13:15:28  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

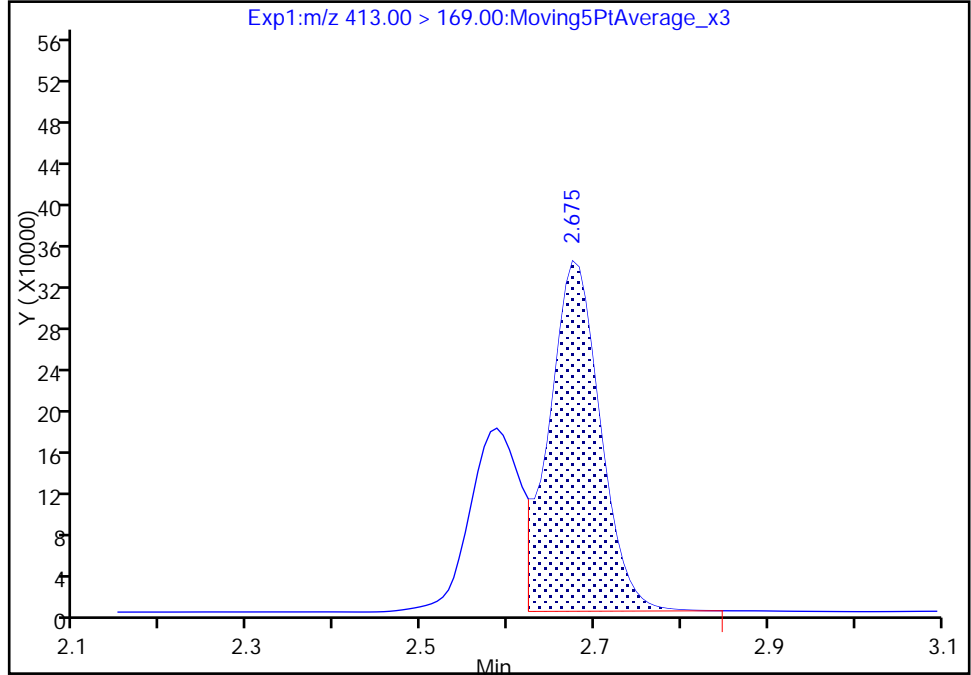
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30B\_001.d  
Injection Date: 30-Jun-2017 12:20:02 Instrument ID: A8\_N  
Lims ID: 320-29267-A-9-A Lab Sample ID: 320-29267-9  
Client ID: MEAFF-T45C-05-2008MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 44 Worklist Smp#: 13  
Injection Vol: 2.0 ul Dil. Factor: 50.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

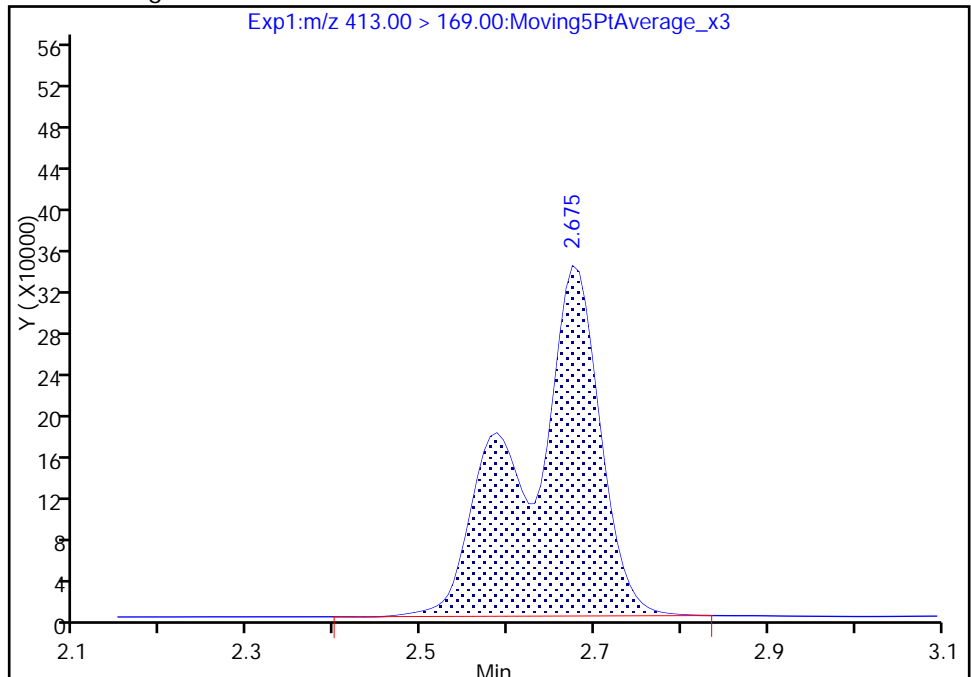
RT: 2.67  
Area: 1387897  
Amount: 14.713558  
Amount Units: ng/ml

Processing Integration Results



RT: 2.67  
Area: 2094517  
Amount: 19.298243  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 30-Jun-2017 13:15:30

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-FD06-0617 Lab Sample ID: 320-29267-10  
 Matrix: Water Lab File ID: 2017.06.27\_PFC\_B\_009.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 00:00  
 Extraction Method: 3535 Date Extracted: 06/23/2017 16:59  
 Sample wt/vol: 282.9(mL) Date Analyzed: 06/28/2017 09:39  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171335 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.5	M	2.2	1.8	0.66
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U M	3.5	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.2	1.8	0.81

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	43		25-150
STL00991	13C4 PFOS	105		25-150
STL00994	18O2 PFHxS	99		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_009.d  
 Lims ID: 320-29267-A-10-A  
 Client ID: MEAFF-FD06-0617  
 Sample Type: Client  
 Inject. Date: 28-Jun-2017 09:39:21 ALS Bottle#: 8 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-10-a  
 Misc. Info.: Plate: 1 Rack: 4  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 15:52:02 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK008

First Level Reviewer: barnettj Date: 28-Jun-2017 14:27:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.770	1.769	0.001	1.000	273883	0.9306			121	
298.90 > 99.00	1.761	1.769	-0.008	0.995	105754		2.59(0.00-0.00)		96.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.330	2.329	0.001		9985960	46.9		99.3	22792	
D 14 13C4 PFOA										
417.00 > 372.00	2.662	2.656	0.006		2802116	21.5		42.9	12718	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.662	2.656	0.006	1.000	149660	2.52			58.9	M
413.00 > 169.00	2.662	2.656	0.006	1.000	97598		1.53(0.90-1.10)		333	M
* 62 13C2-PFOA										
415.00 > 370.00	2.655	2.656	-0.001		2126	50.0			85.1	
D 18 13C4 PFOS										
503.00 > 80.00	3.024	3.026	-0.002		8183380	50.3		105	15079	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.024	3.026	-0.002	1.000	65321	0.3637			151	M
499.00 > 99.00	3.024	3.026	-0.002	1.000	14735		4.43(0.90-1.10)		36.9	M

QC Flag Legend

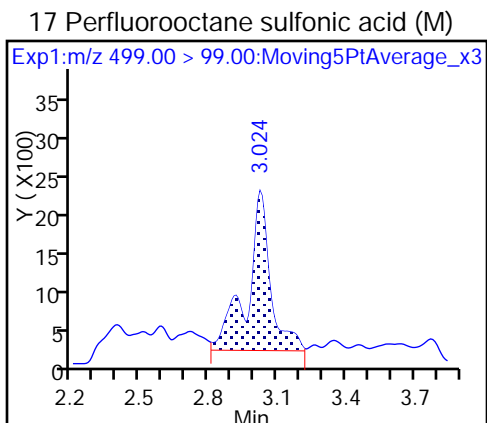
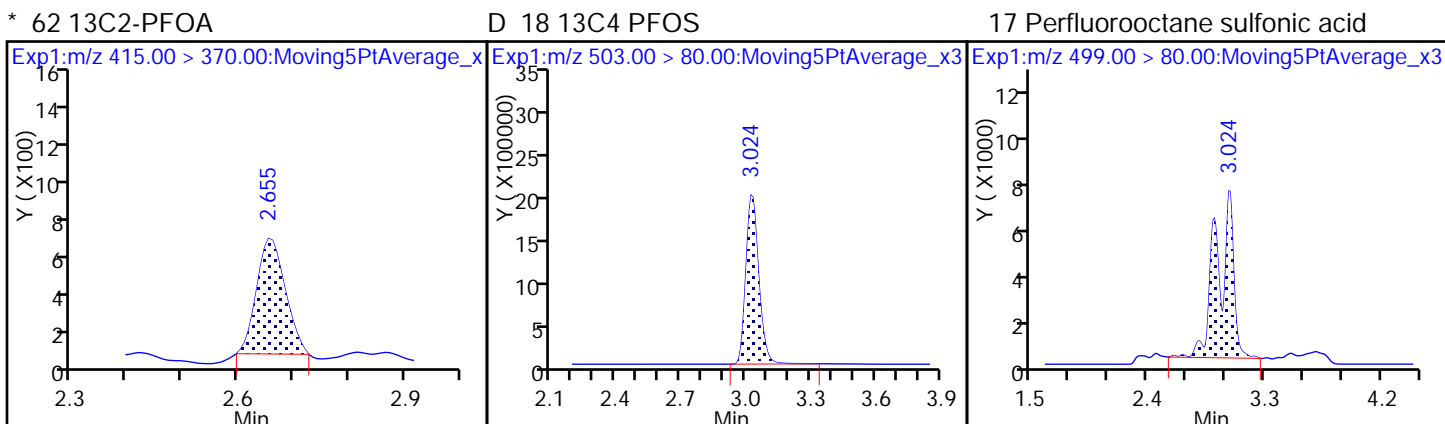
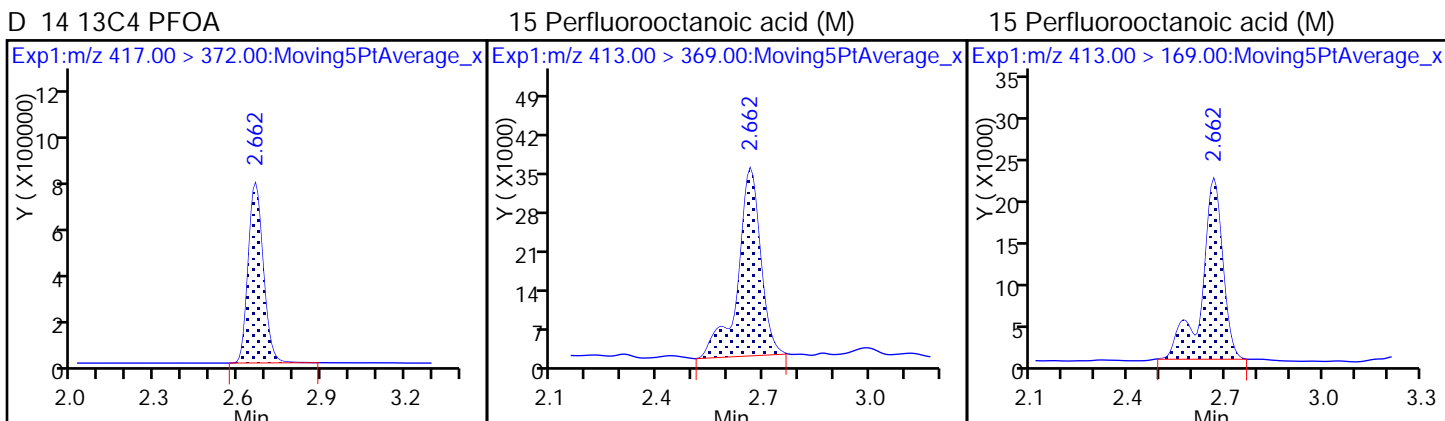
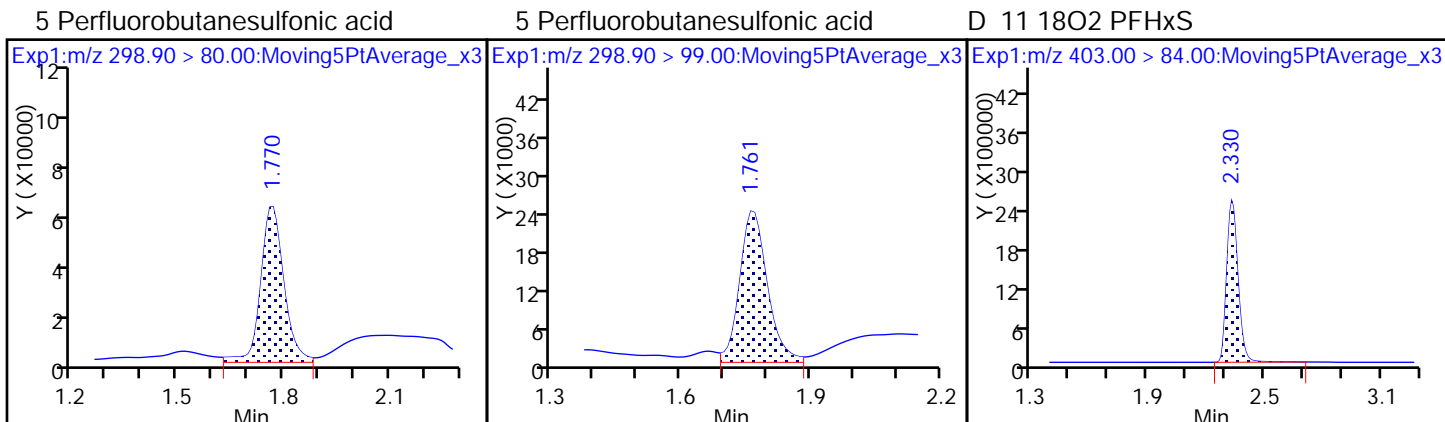
Review Flags

M - Manually Integrated



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_009.d  
Injection Date: 28-Jun-2017 09:39:21 Instrument ID: A8\_N  
Lims ID: 320-29267-A-10-A Lab Sample ID: 320-29267-10  
Client ID: MEAFF-FD06-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 8 Worklist Smp#: 9  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL



TestAmerica Sacramento

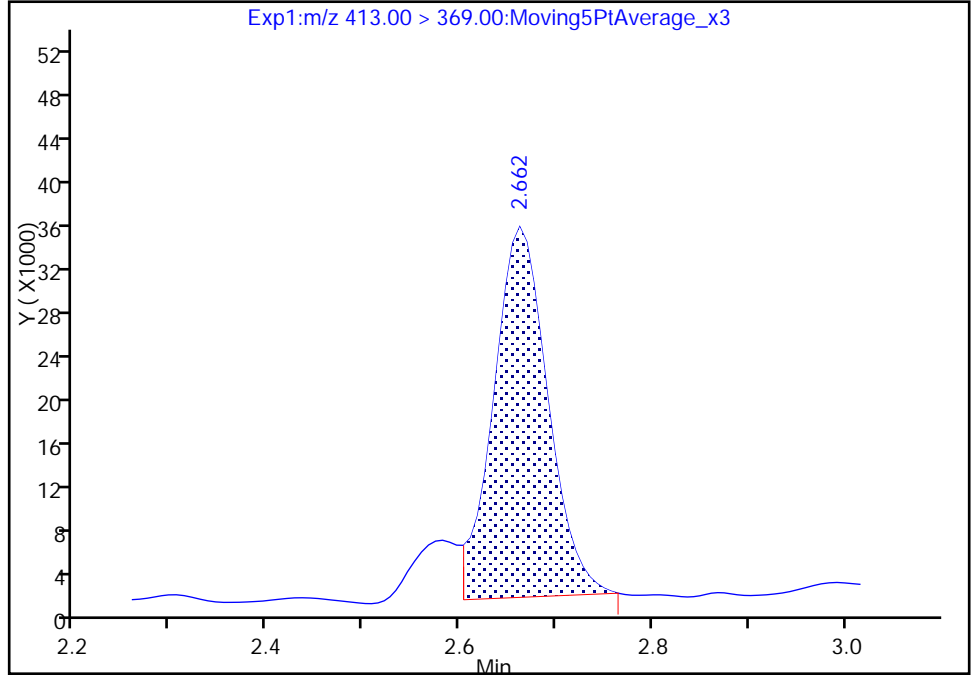
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Injection Date: 28-Jun-2017 09:39:21 Instrument ID: A8\_N  
Lims ID: 320-29267-A-10-A Lab Sample ID: 320-29267-10  
Client ID: MEAFF-FD06-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 8 Worklist Smp#: 9  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

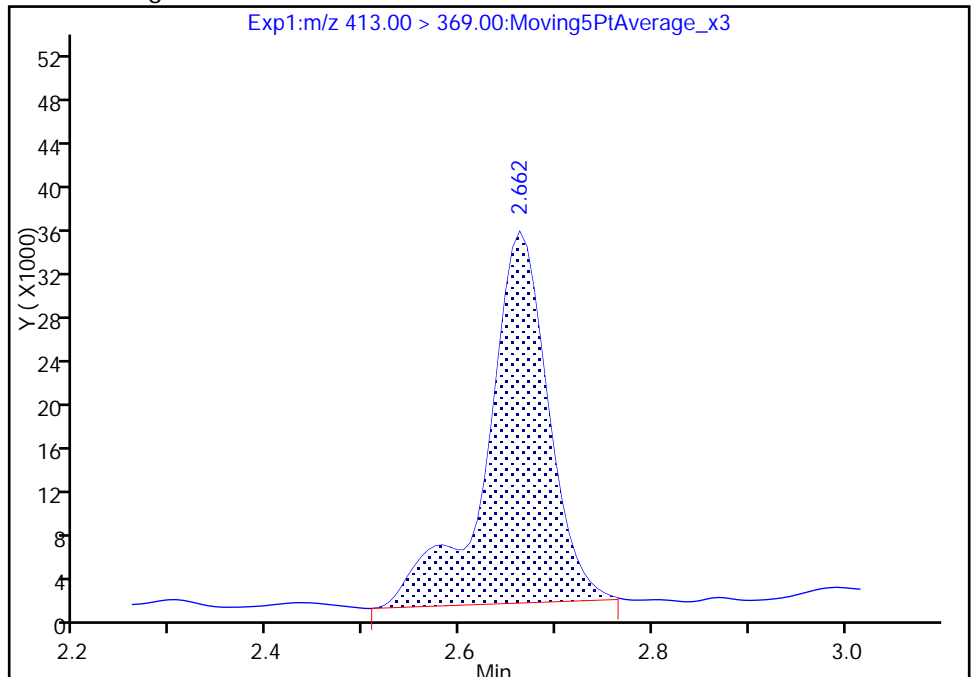
RT: 2.66  
Area: 130253  
Amount: 2.192460  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
Area: 149660  
Amount: 2.519124  
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 28-Jun-2017 15:49:11  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

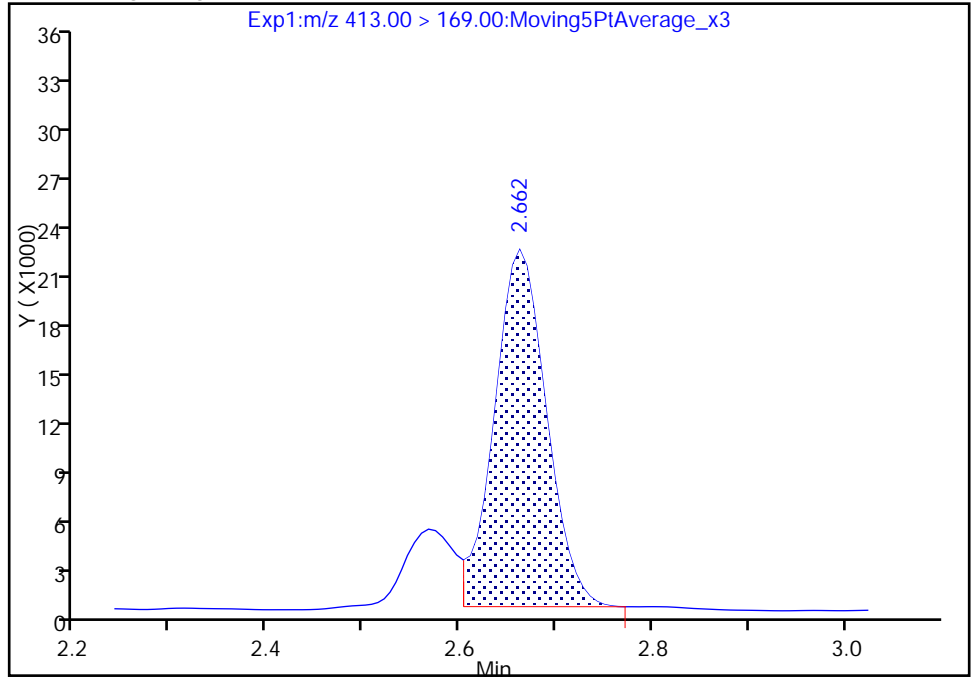
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Injection Date: 28-Jun-2017 09:39:21 Instrument ID: A8\_N  
Lims ID: 320-29267-A-10-A Lab Sample ID: 320-29267-10  
Client ID: MEAFF-FD06-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 8 Worklist Smp#: 9  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

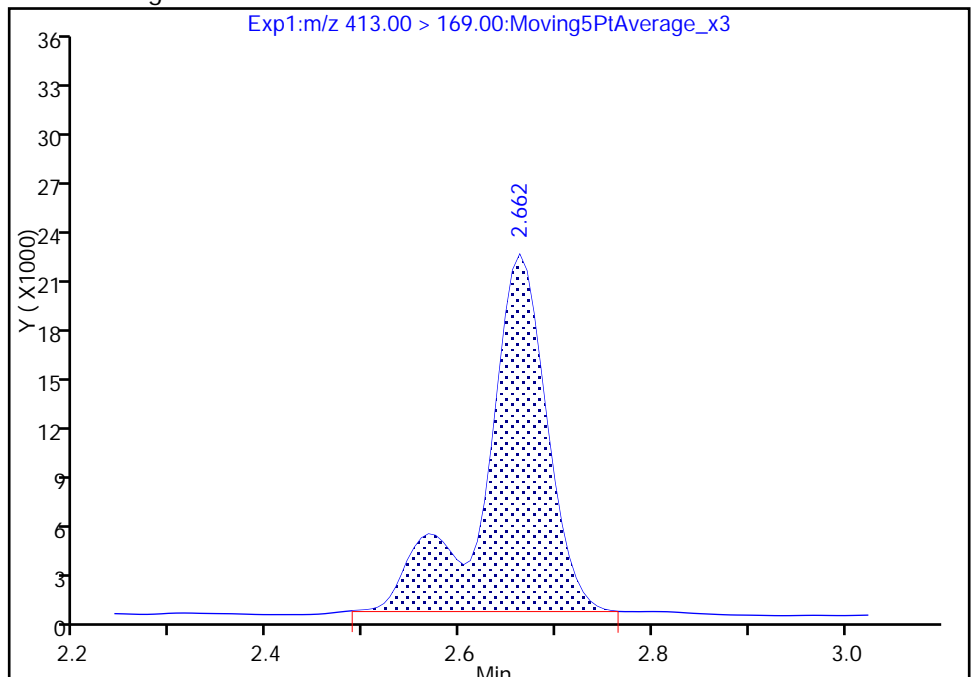
RT: 2.66  
Area: 81091  
Amount: 2.192460  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
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Amount: 2.519124  
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

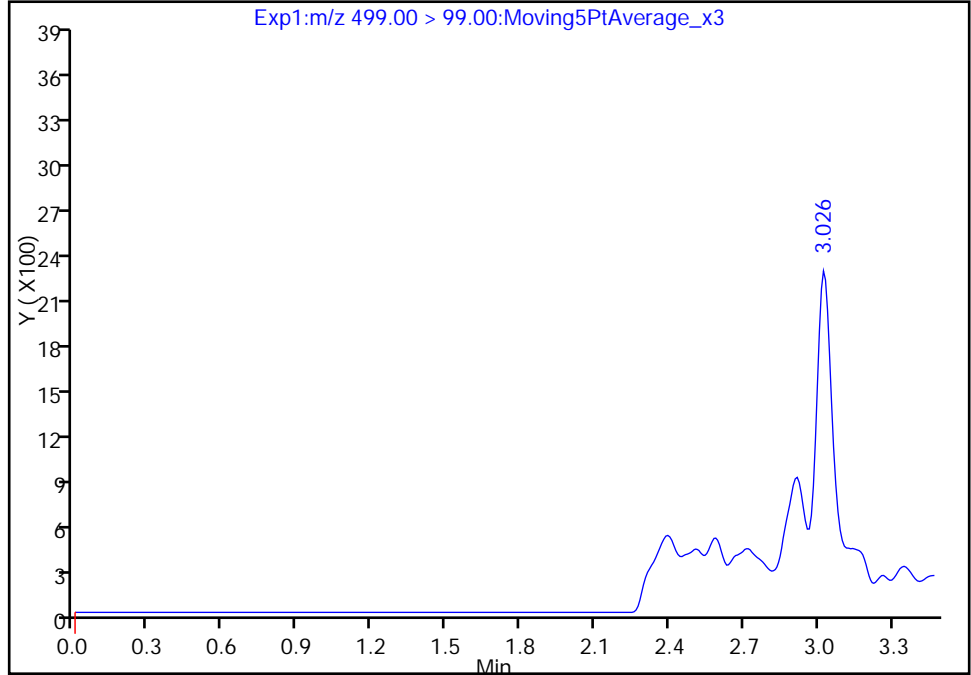
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Lims ID: 320-29267-A-10-A Lab Sample ID: 320-29267-10  
Client ID: MEAFF-FD06-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 8 Worklist Smp#: 9  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

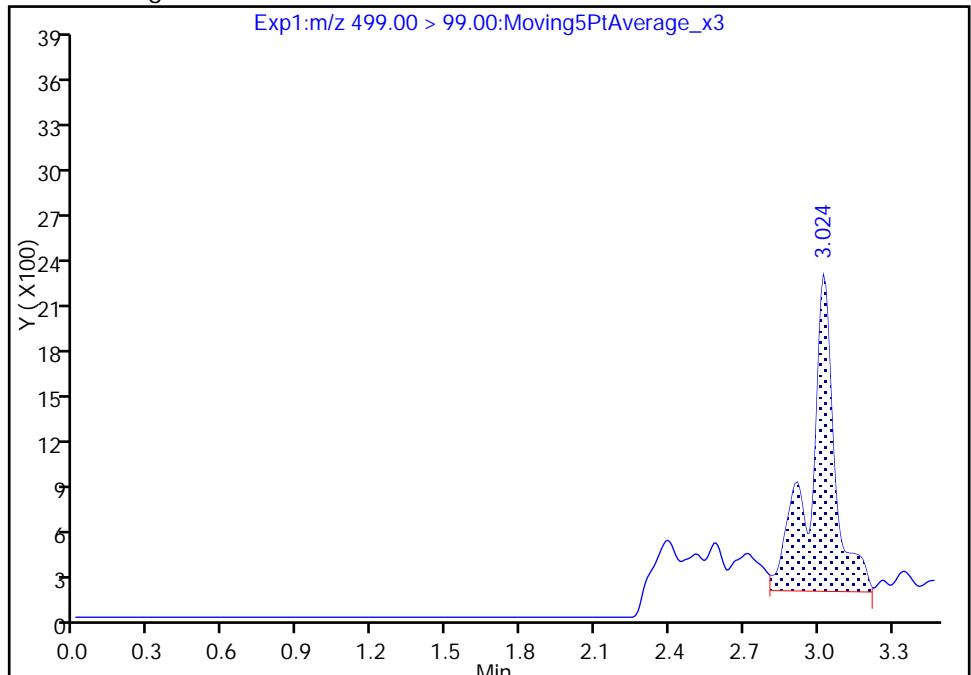
RT: 3.03  
Area: 0  
Amount: 0.363736  
Amount Units: ng/ml

Processing Integration Results



RT: 3.02  
Area: 14735  
Amount: 0.363736  
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 28-Jun-2017 15:49:50  
Audit Action: Manually Integrated

Audit Reason: Missed Peak

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-TA4-SOUTHMW01-0617 Lab Sample ID: 320-29267-11  
 Matrix: Water Lab File ID: 2017.06.28B\_017.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 15:15  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 257.5 (mL) Date Analyzed: 06/29/2017 01:10  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	2.5	M	2.4	1.9	0.73
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U M	3.9	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	J M	2.4	1.9	0.89

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	99		25-150
STL00991	13C4 PFOS	107		25-150
STL00994	18O2 PFHxS	103		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_017.d  
 Lims ID: 320-29267-A-11-A  
 Client ID: MEAFF-TA4-SOUTHMW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:10:17 ALS Bottle#: 14 Worklist Smp#: 17  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-11-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:47:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.760	0.002	1.000	317343	1.04			46.1	M
298.90 > 99.00	1.753	1.760	-0.007	0.995	114367		2.77(0.00-0.00)		49.5	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.317	2.329	-0.012		10335083	48.6		103	13059	
* 62 13C2-PFOA										
415.00 > 370.00	2.644	2.656	-0.012		3628	50.0			103	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.652	2.663	-0.011	1.000	176590	1.29			41.1	M
413.00 > 169.00	2.652	2.663	-0.011	1.000	116714		1.51(0.90-1.10)		194	M
D 14 13C4 PFOA										
417.00 > 372.00	2.652	2.663	-0.011		6445194	49.4		98.7	18023	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.019	3.026	-0.007	1.000	75061	0.4093			108	
499.00 > 99.00	3.011	3.026	-0.015	0.997	17565		4.27(0.90-1.10)		50.2	M
D 18 13C4 PFOS										
503.00 > 80.00	3.011	3.026	-0.015		8356753	51.4		107	49057	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_017.d

Injection Date: 29-Jun-2017 01:10:17

Instrument ID: A8\_N

Lims ID: 320-29267-A-11-A

Lab Sample ID: 320-29267-11

Client ID: MEAFF-TA4-SOUTHMW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 14

Worklist Smp#: 17

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

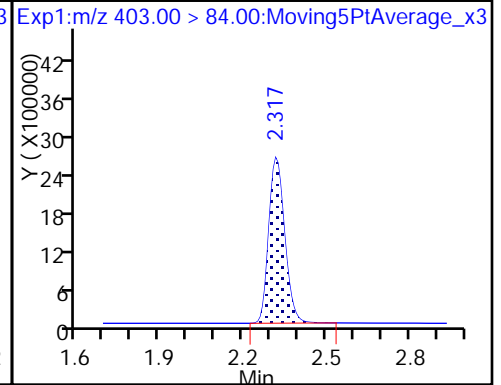
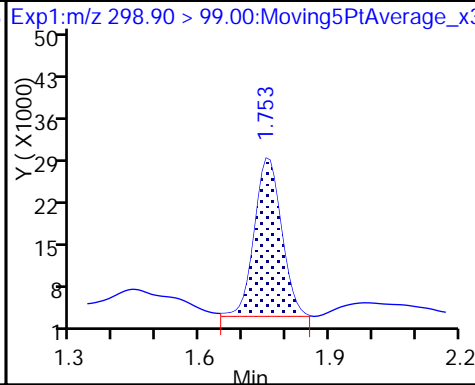
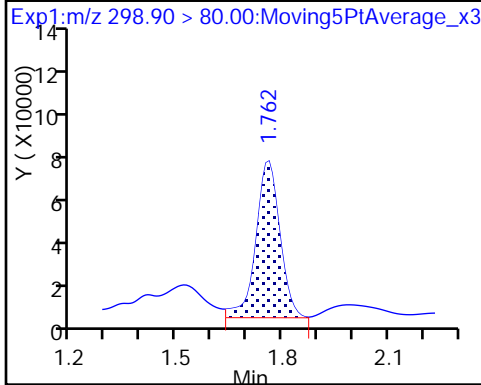
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

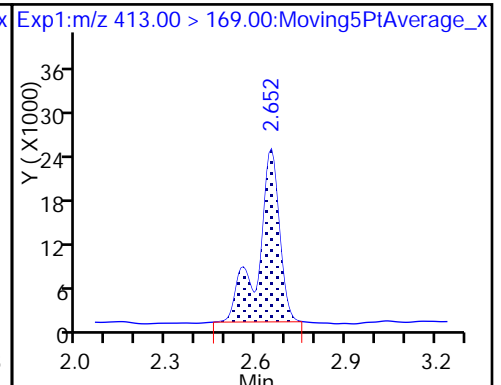
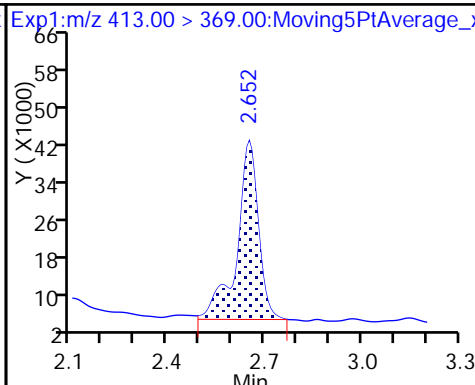
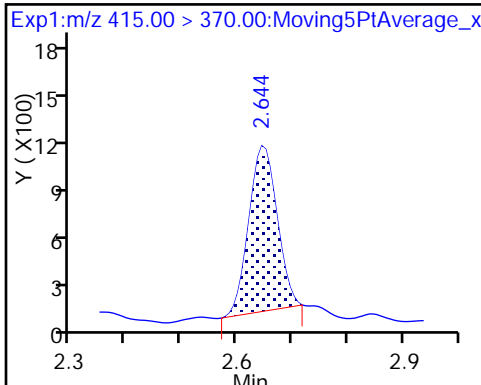
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

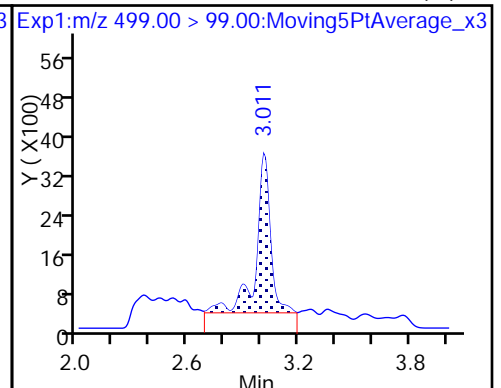
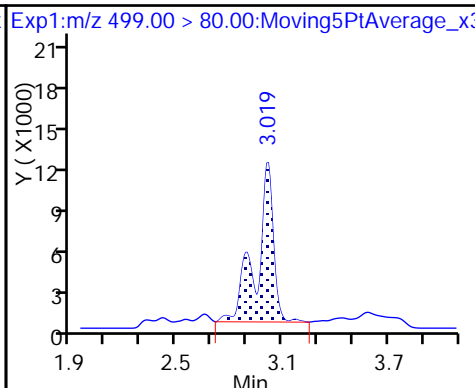
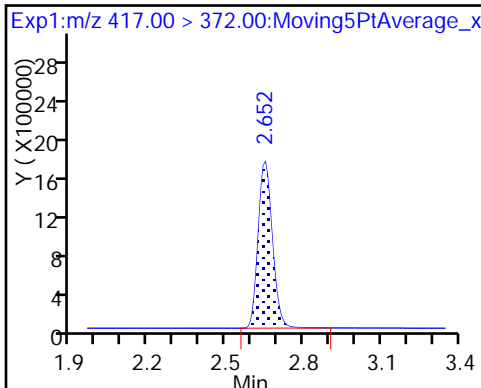
15 Perfluorooctanoic acid (M)



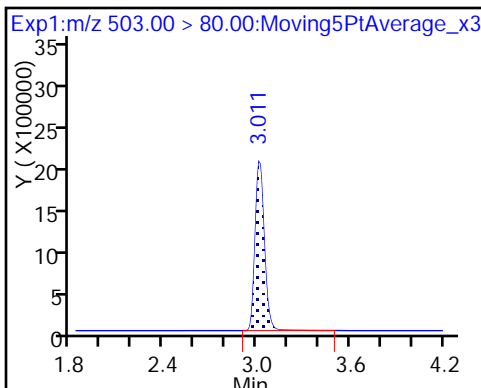
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid (M)



D 18 13C4 PFOS



TestAmerica Sacramento

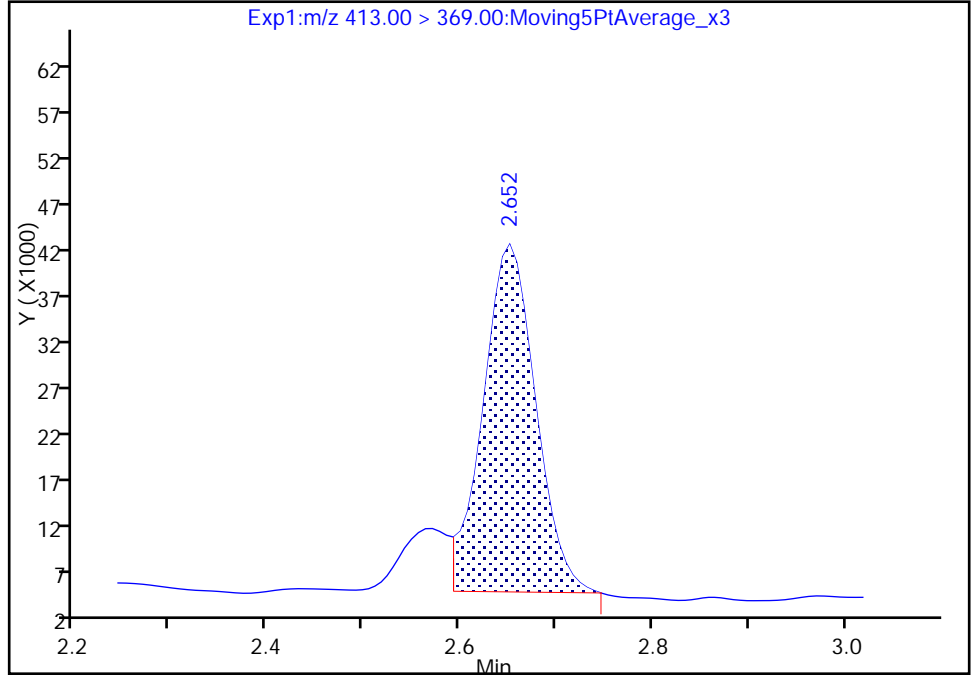
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_017.d  
Injection Date: 29-Jun-2017 01:10:17 Instrument ID: A8\_N  
Lims ID: 320-29267-A-11-A Lab Sample ID: 320-29267-11  
Client ID: MEAFF-TA4-SOUTHMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 17  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

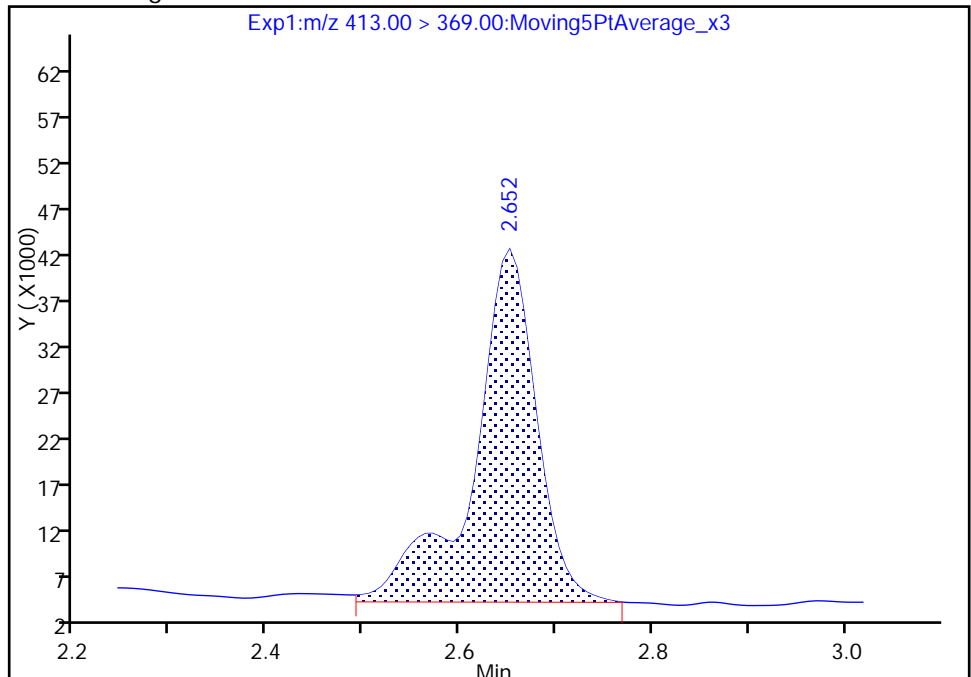
RT: 2.65  
Area: 143514  
Amount: 1.050239  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 176590  
Amount: 1.292290  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:46:34  
Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento

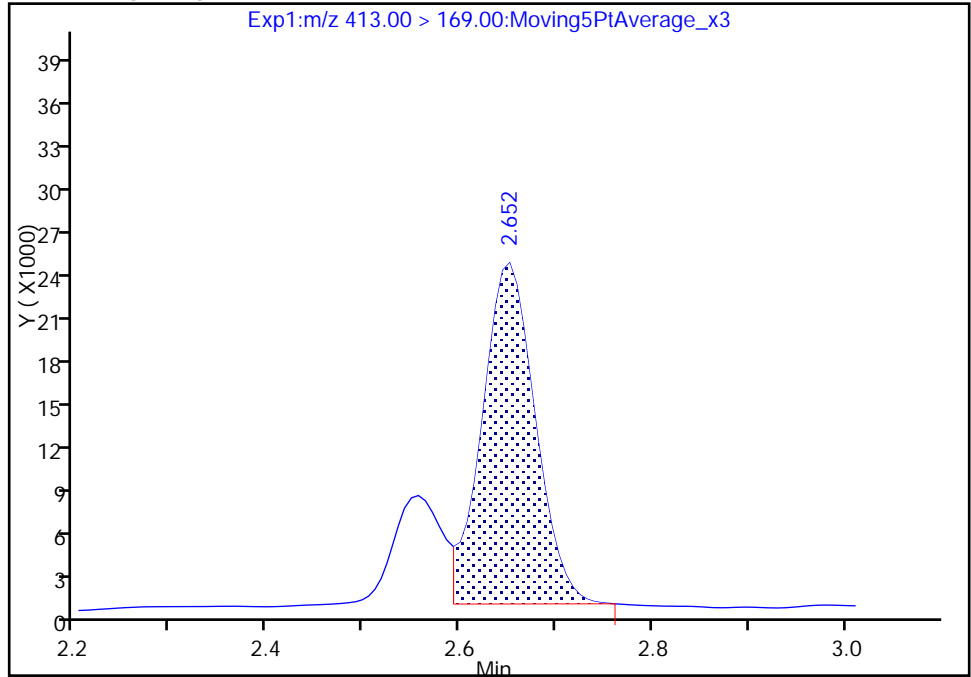
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_017.d  
Injection Date: 29-Jun-2017 01:10:17 Instrument ID: A8\_N  
Lims ID: 320-29267-A-11-A Lab Sample ID: 320-29267-11  
Client ID: MEAFF-TA4-SOUTHMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 17  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

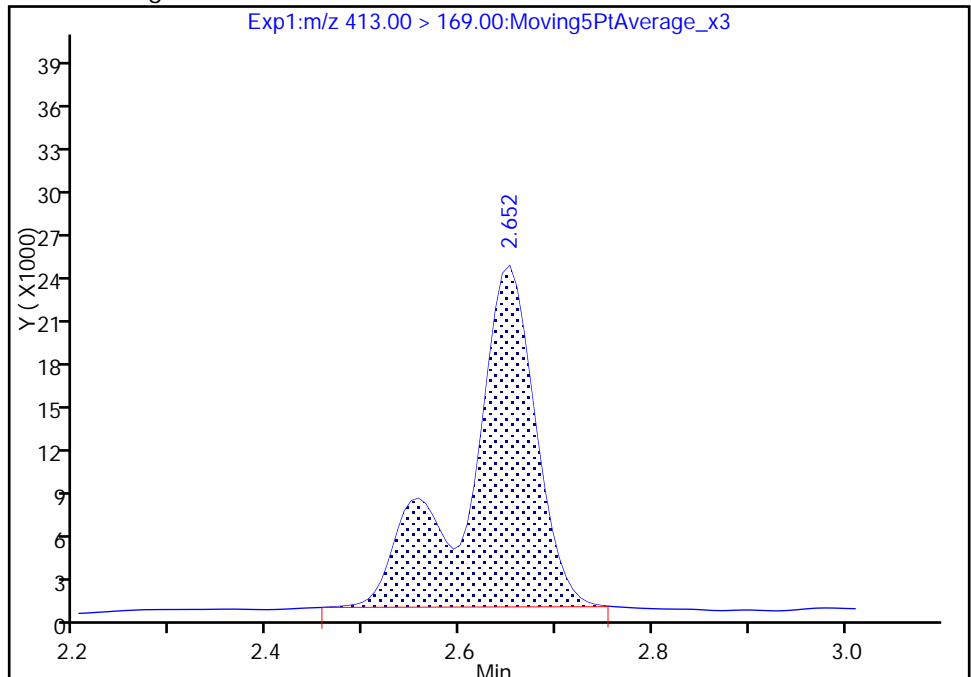
RT: 2.65  
Area: 90278  
Amount: 1.050239  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 116714  
Amount: 1.292290  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:46:39

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

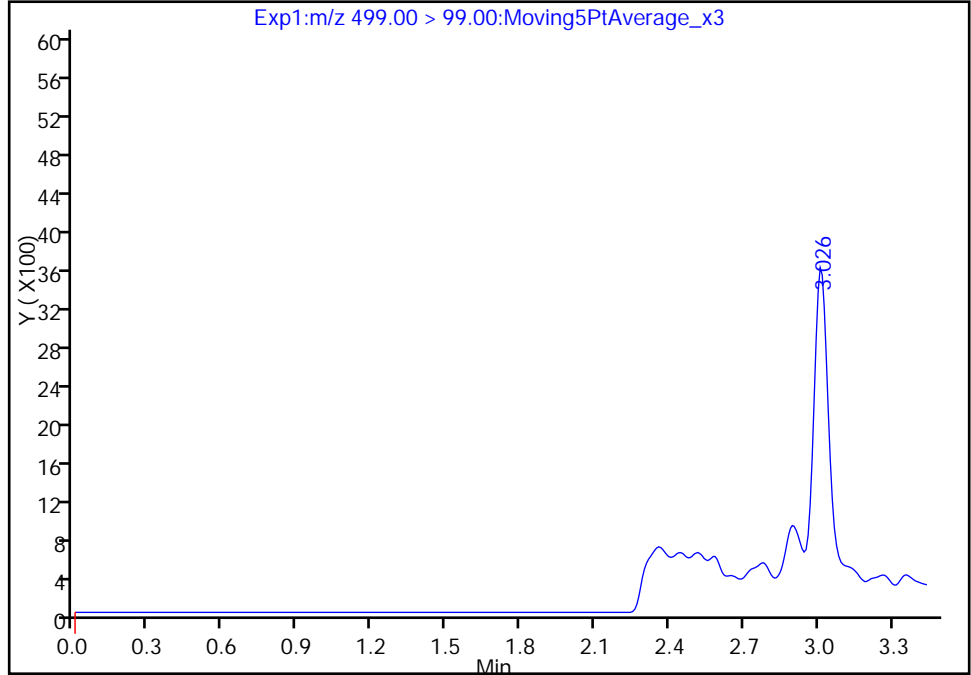
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Injection Date: 29-Jun-2017 01:10:17 Instrument ID: A8\_N  
Lims ID: 320-29267-A-11-A Lab Sample ID: 320-29267-11  
Client ID: MEAFF-TA4-SOUTHMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 17  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

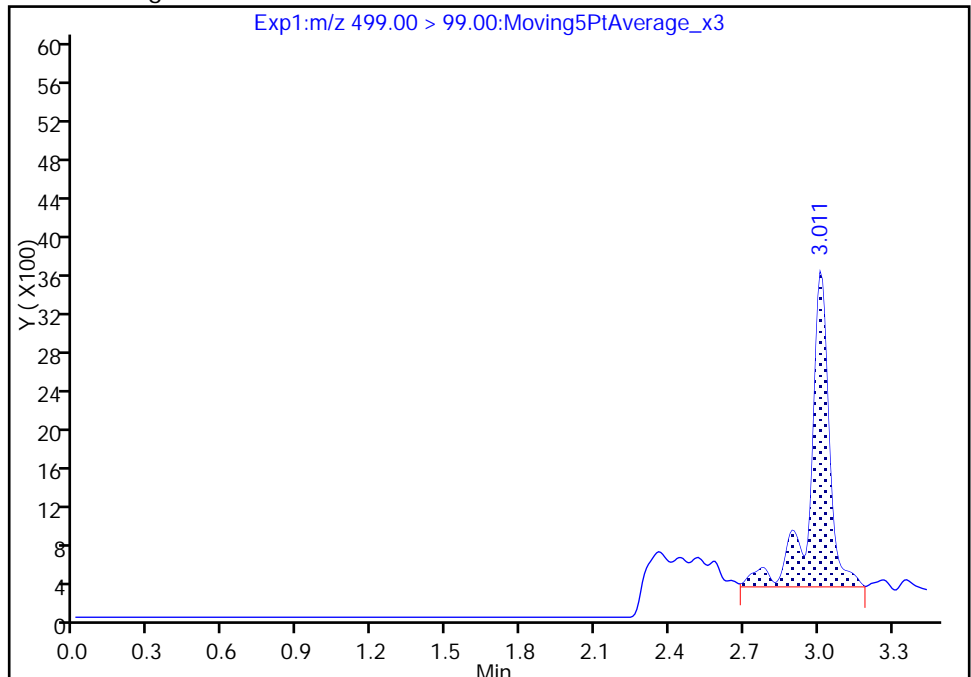
RT: 3.03  
Area: 0  
Amount: 0.409301  
Amount Units: ng/ml

Processing Integration Results



RT: 3.01  
Area: 17565  
Amount: 0.409301  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:46:55  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

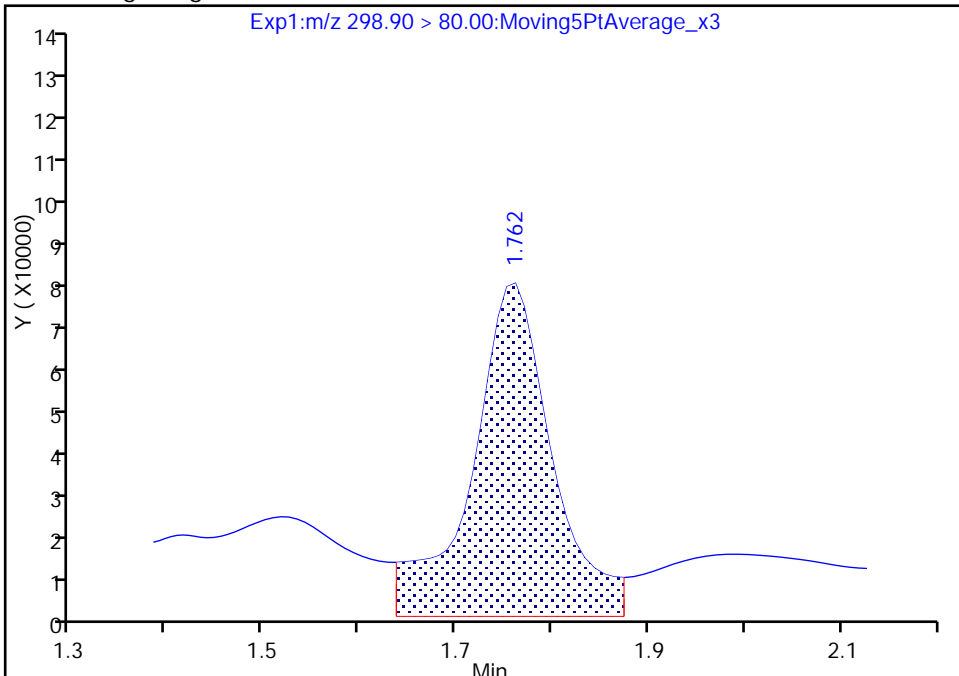
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_017.d  
Injection Date: 29-Jun-2017 01:10:17 Instrument ID: A8\_N  
Lims ID: 320-29267-A-11-A Lab Sample ID: 320-29267-11  
Client ID: MEAFF-TA4-SOUTHMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 17  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

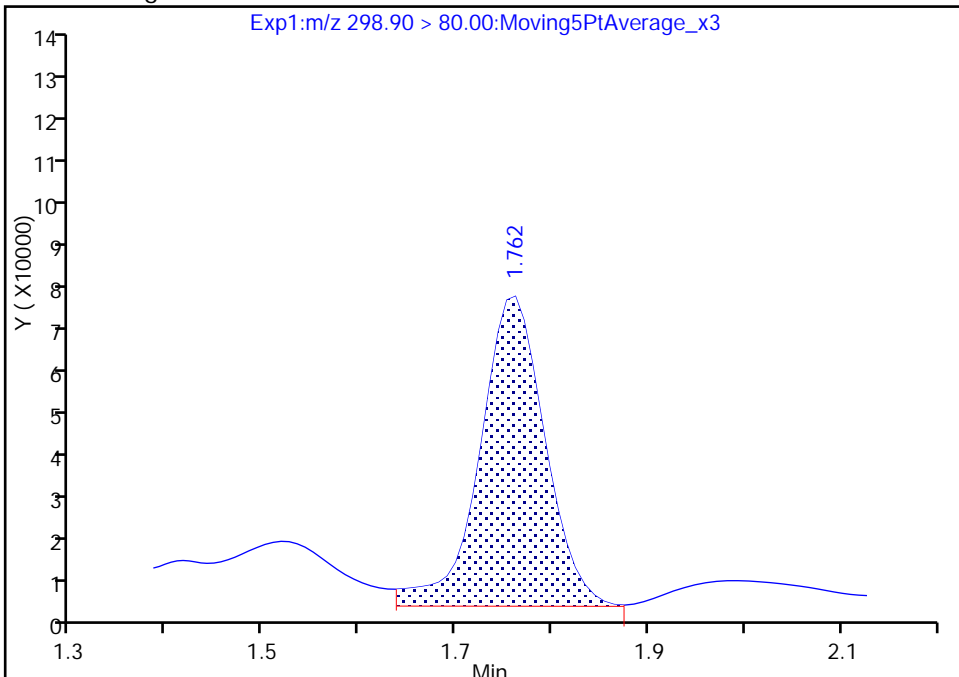
RT: 1.76  
Area: 439957  
Amount: 1.444374  
Amount Units: ng/ml

Processing Integration Results



RT: 1.76  
Area: 317343  
Amount: 1.041834  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:44:13  
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

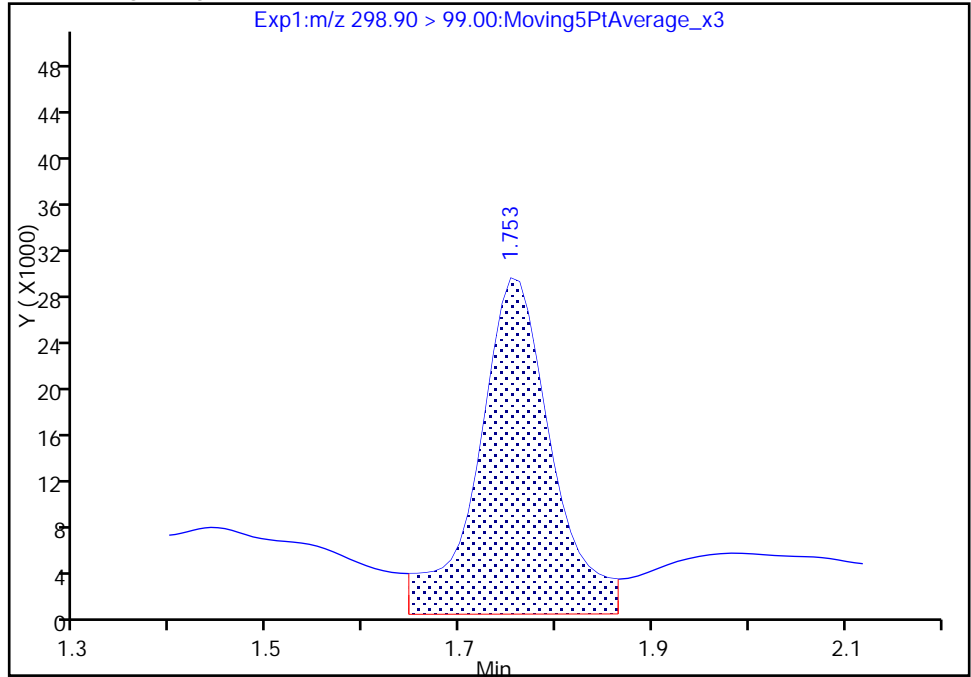
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Injection Date: 29-Jun-2017 01:10:17 Instrument ID: A8\_N  
Lims ID: 320-29267-A-11-A Lab Sample ID: 320-29267-11  
Client ID: MEAFF-TA4-SOUTHMW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 14 Worklist Smp#: 17  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

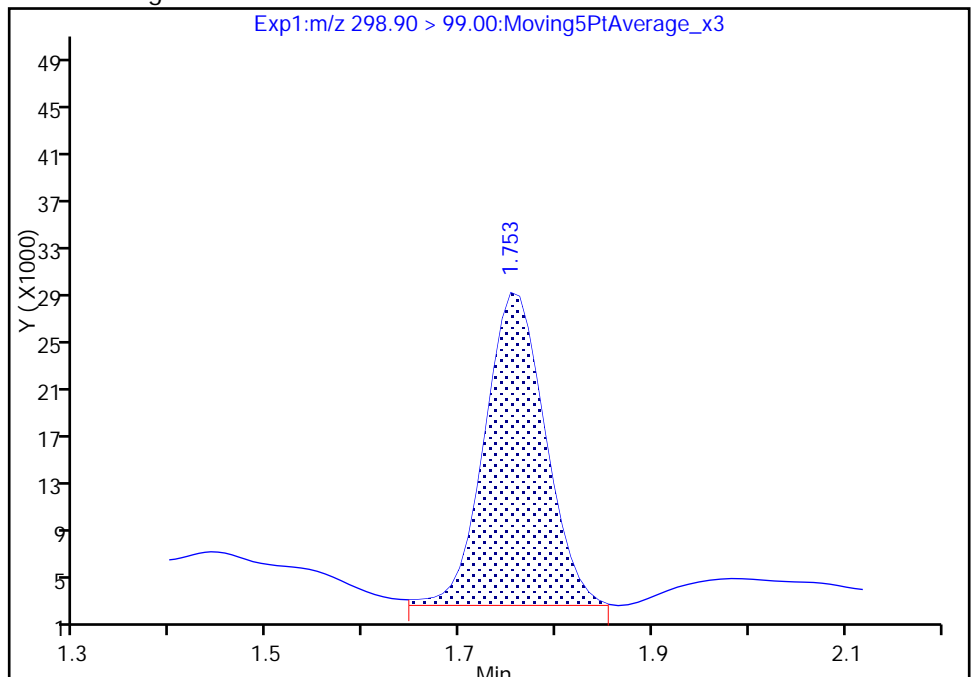
RT: 1.75  
Area: 154305  
Amount: 1.444374  
Amount Units: ng/ml

Processing Integration Results



RT: 1.75  
Area: 114367  
Amount: 1.041834  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:44:18

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-EB08-0617 Lab Sample ID: 320-29267-12  
 Matrix: Water Lab File ID: 2017.06.28B\_018.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 17:30  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 280.8 (mL) Date Analyzed: 06/29/2017 01:17  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U M	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	124		25-150
STL00991	13C4 PFOS	102		25-150
STL00994	18O2 PFHxS	107		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_018.d  
 Lims ID: 320-29267-A-12-A  
 Client ID: MEAFF-EB08-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:17:11 ALS Bottle#: 15 Worklist Smp#: 18  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-12-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:47:39

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.749	1.760	-0.011	1.000	21815	0.0687			11.1	M
298.90 > 99.00	1.741	1.760	-0.019	0.995	9701		2.25(0.00-0.00)		8.8	M
D 11 18O2 PFHxS										
403.00 > 84.00	2.311	2.329	-0.018		10774493	50.7		107	36215	
* 62 13C2-PFOA										
415.00 > 370.00	2.645	2.656	-0.011		4580	50.0			137	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.645	2.663	-0.018	1.000	13989	0.0818			4.2	
413.00 > 169.00	2.645	2.663	-0.018	1.000	11101		1.26(0.90-1.10)		34.5	
D 14 13C4 PFOA										
417.00 > 372.00	2.645	2.663	-0.018		8061600	61.8		124	28051	
D 18 13C4 PFOS										
503.00 > 80.00	3.004	3.026	-0.022		7916134	48.7		102	30222	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_018.d

Injection Date: 29-Jun-2017 01:17:11

Instrument ID: A8\_N

Lims ID: 320-29267-A-12-A

Lab Sample ID: 320-29267-12

Client ID: MEAFF-EB08-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 15

Worklist Smp#: 18

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

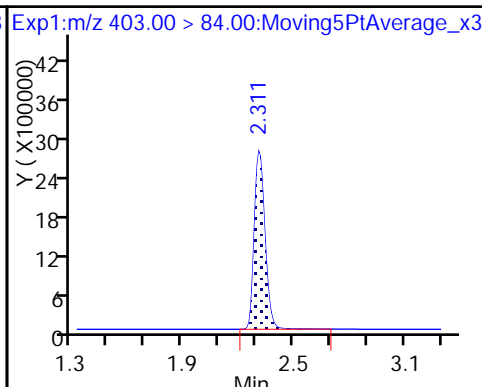
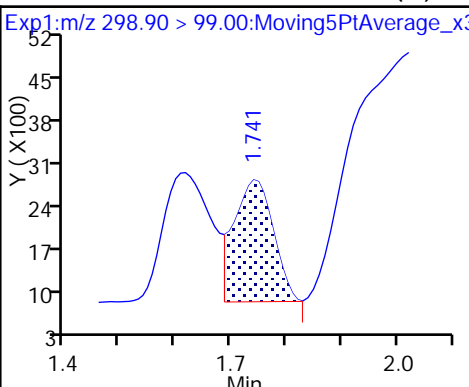
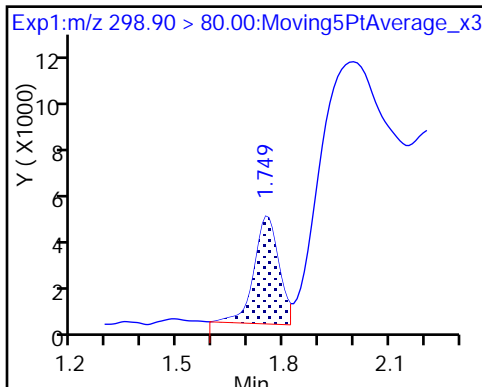
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid (M)

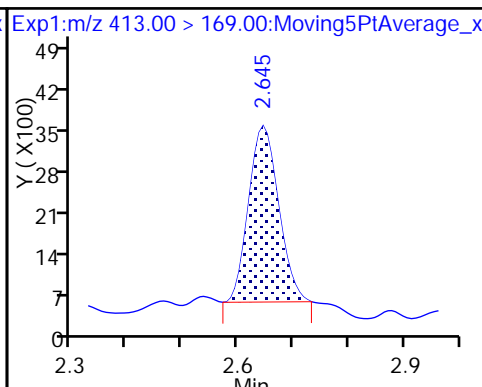
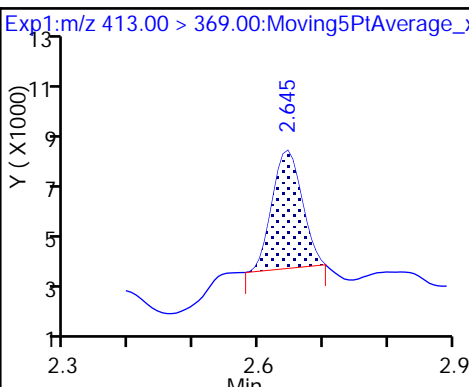
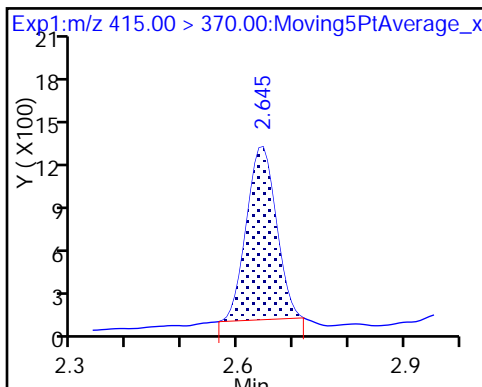
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

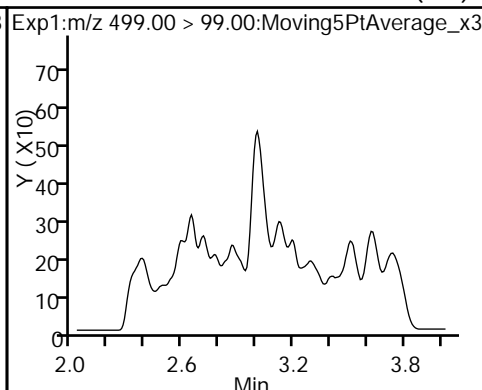
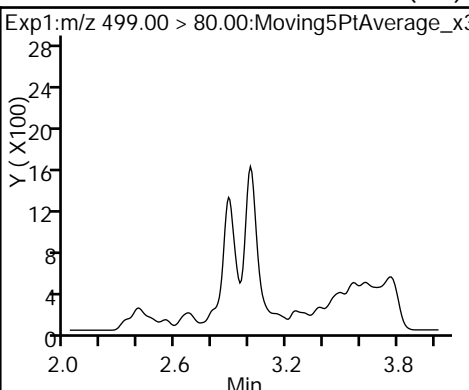
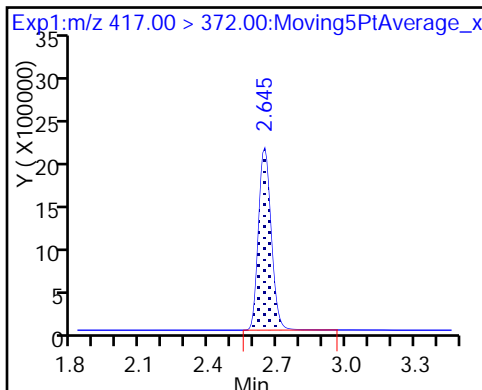
15 Perfluorooctanoic acid



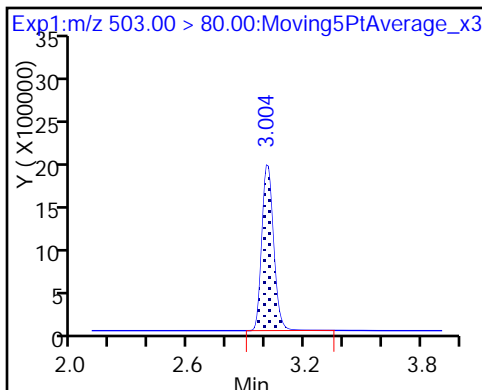
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



TestAmerica Sacramento

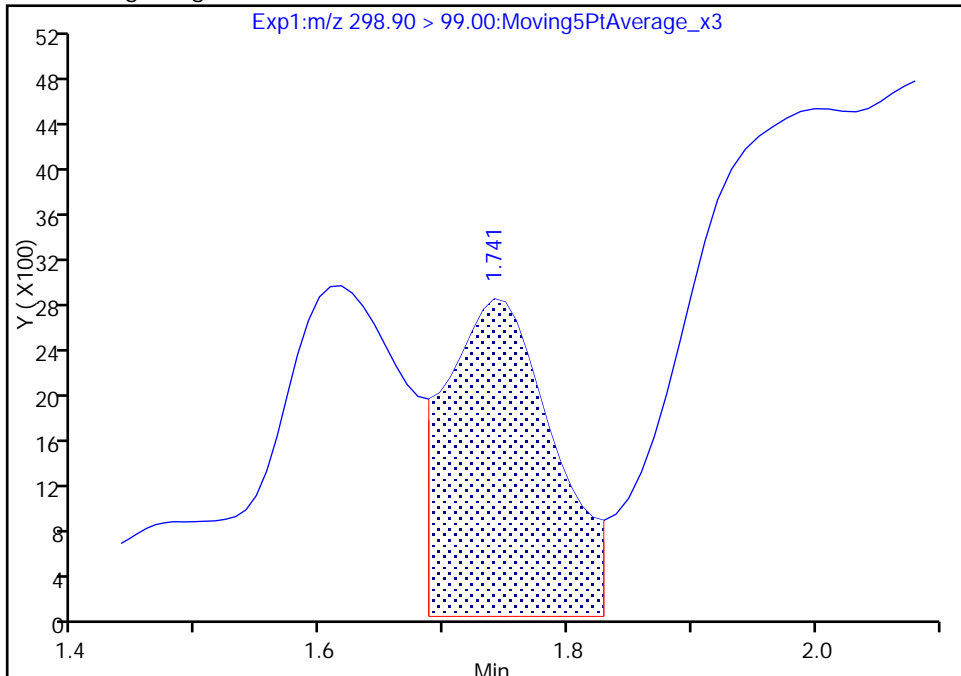
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Injection Date: 29-Jun-2017 01:17:11 Instrument ID: A8\_N  
Lims ID: 320-29267-A-12-A Lab Sample ID: 320-29267-12  
Client ID: MEAFF-EB08-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 15 Worklist Smp#: 18  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

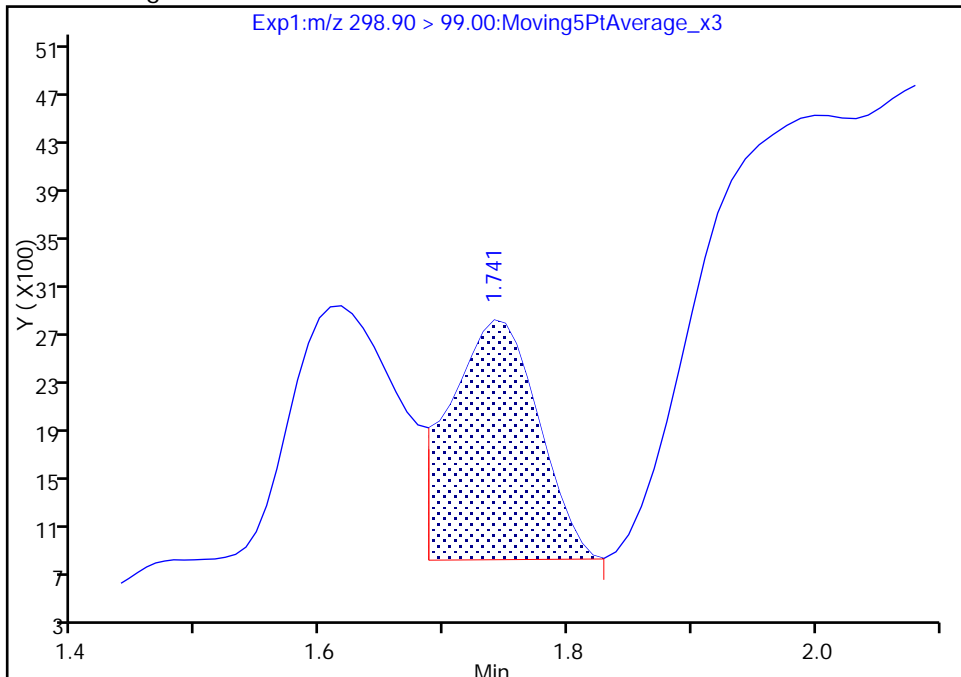
RT: 1.74  
Area: 16883  
Amount: 0.068698  
Amount Units: ng/ml

Processing Integration Results



RT: 1.74  
Area: 9701  
Amount: 0.068698  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:47:27  
Audit Action: Manually Integrated

Audit Reason: Baseline



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-EB09-0617 Lab Sample ID: 320-29267-13  
 Matrix: Water Lab File ID: 2017.06.28B\_019.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 18:25  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 274.6(mL) Date Analyzed: 06/29/2017 01:24  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U M	2.3	1.8	0.68
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	4.6		3.6	2.7	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.3	1.8	0.84

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	143		25-150
STL00991	13C4 PFOS	106		25-150
STL00994	18O2 PFHxS	116		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_019.d  
 Lims ID: 320-29267-A-13-A  
 Client ID: MEAFF-EB09-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:24:05 ALS Bottle#: 16 Worklist Smp#: 19  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-13-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:48:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	9077	0.0264			5.6	
298.90 > 99.00	1.735	1.760	-0.025	0.990	8751		1.04(0.00-0.00)		7.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.308	2.329	-0.021		11657832	54.8		116	27062	
* 62 13C2-PFOA										
415.00 > 370.00	2.634	2.656	-0.022		5727	50.0			195	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.641	2.663	-0.022	1.000	59517	0.3015			12.6	M
413.00 > 169.00	2.641	2.663	-0.022	1.000	32910		1.81(0.90-1.10)		107	M
D 14 13C4 PFOA										
417.00 > 372.00	2.641	2.663	-0.022		9309563	71.3		143	27505	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.008	3.026	-0.018	1.000	455181	2.51			1988	
499.00 > 99.00	3.008	3.026	-0.018	1.000	100729		4.52(0.90-1.10)		712	
D 18 13C4 PFOS										
503.00 > 80.00	3.008	3.026	-0.018		8254033	50.7		106	15155	

QC Flag Legend

Review Flags  
M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_019.d

Injection Date: 29-Jun-2017 01:24:05

Instrument ID: A8\_N

Lims ID: 320-29267-A-13-A

Lab Sample ID: 320-29267-13

Client ID: MEAFF-EB09-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 16

Worklist Smp#: 19

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

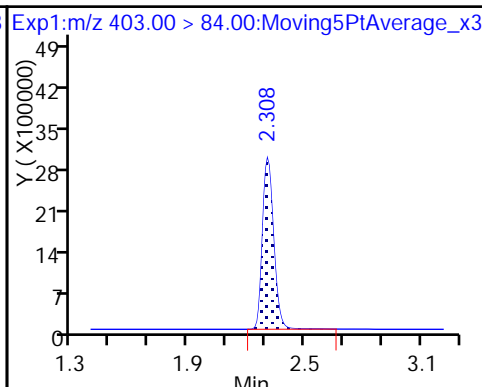
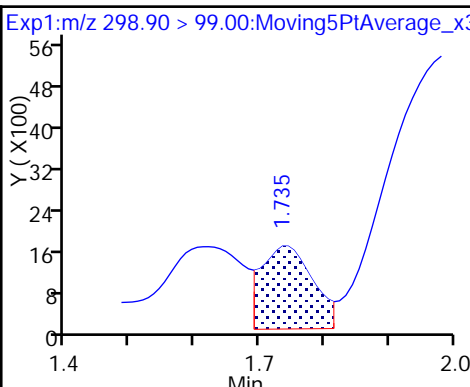
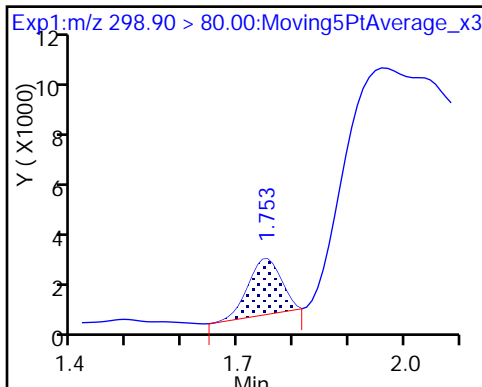
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

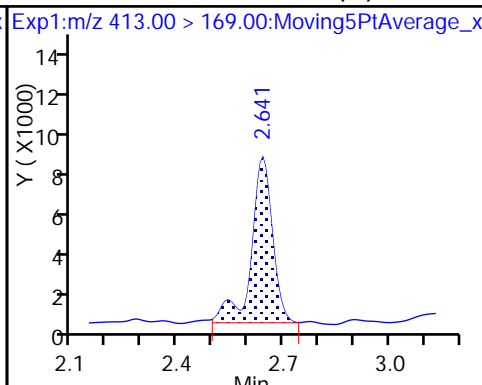
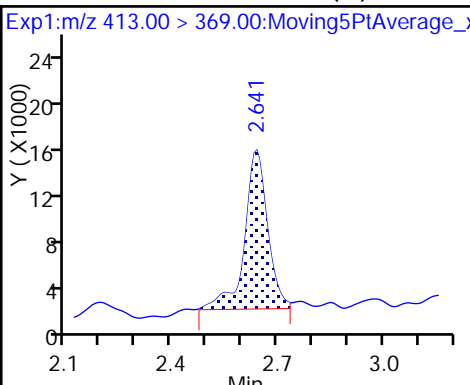
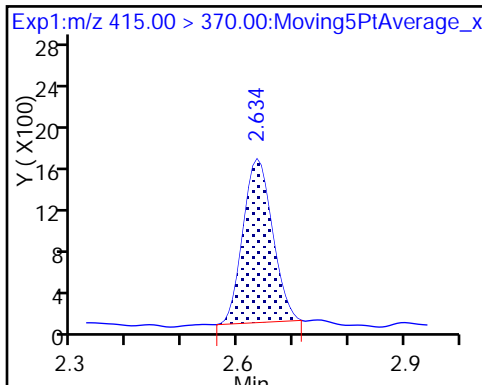
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

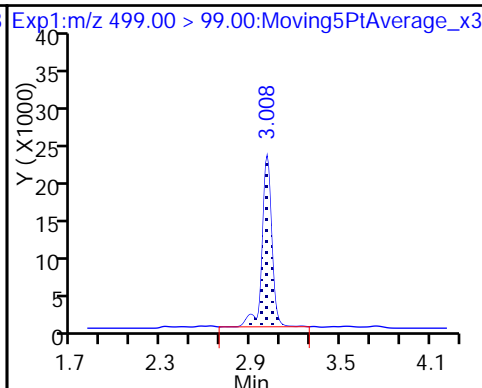
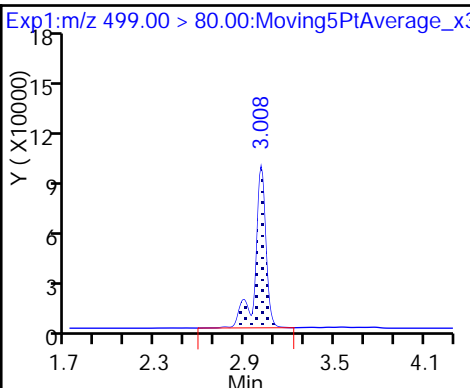
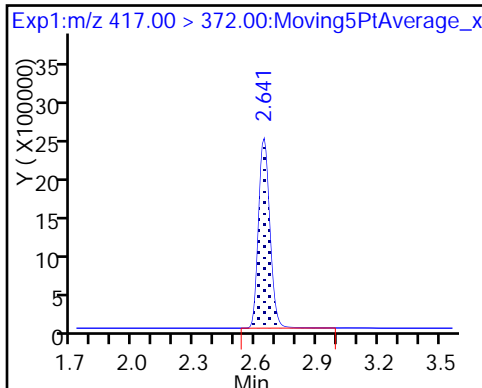
15 Perfluorooctanoic acid (M)



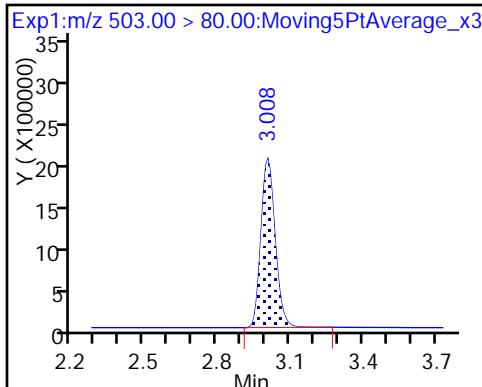
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

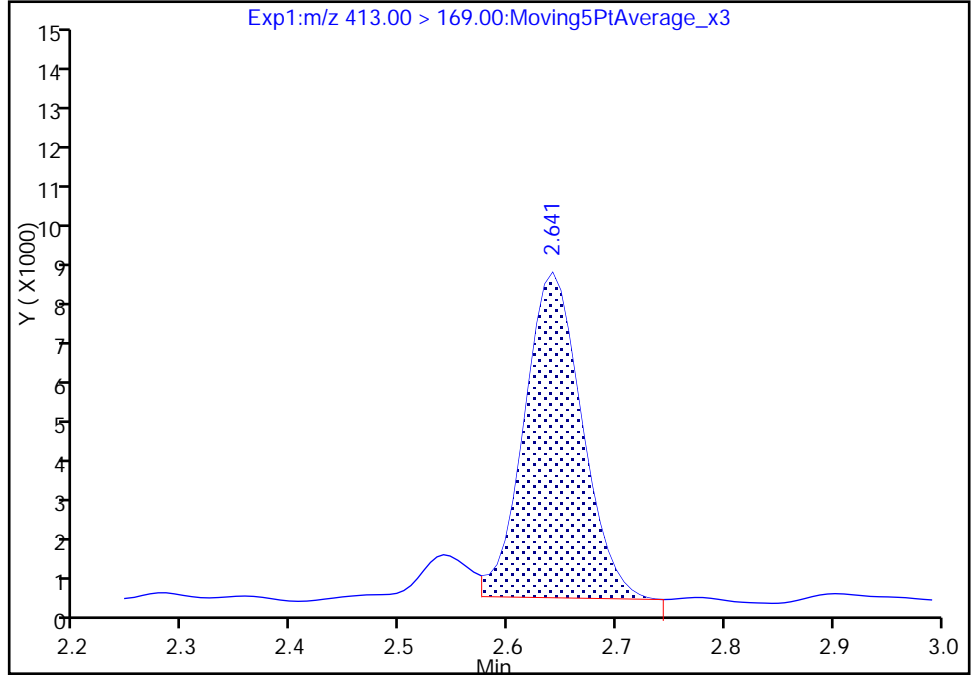
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_019.d  
Injection Date: 29-Jun-2017 01:24:05 Instrument ID: A8\_N  
Lims ID: 320-29267-A-13-A Lab Sample ID: 320-29267-13  
Client ID: MEAFF-EB09-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 19  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

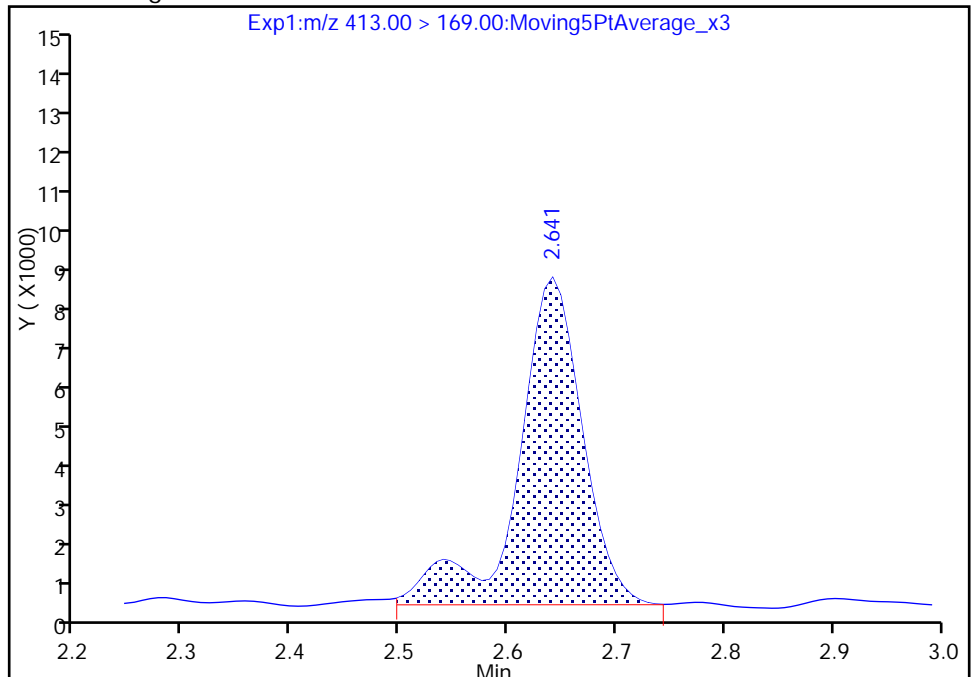
RT: 2.64  
Area: 29042  
Amount: 0.231439  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 32910  
Amount: 0.301538  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:47:57  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

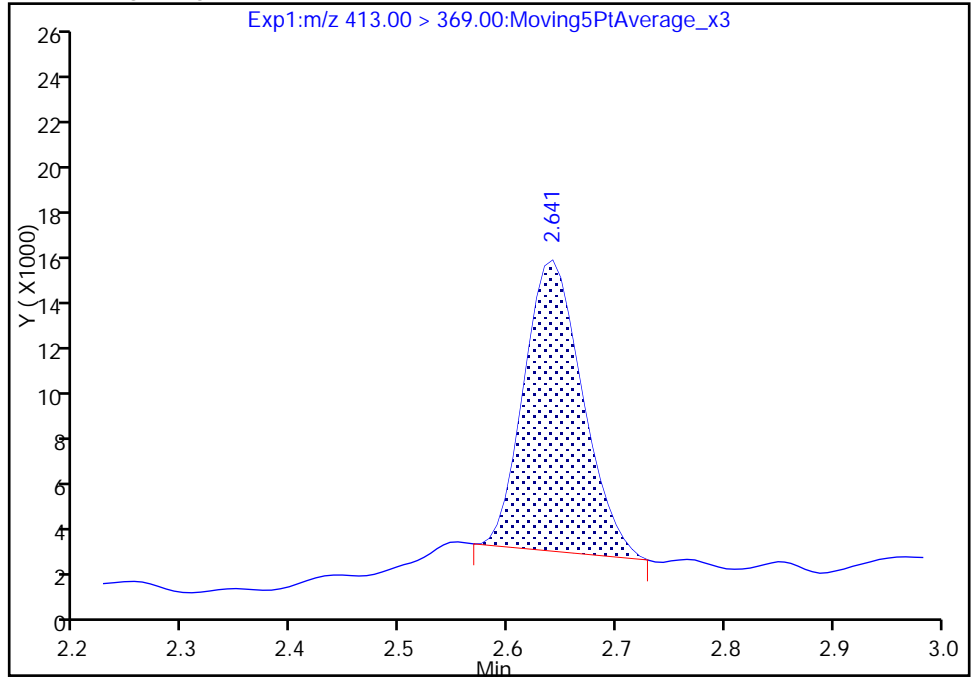
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Injection Date: 29-Jun-2017 01:24:05 Instrument ID: A8\_N  
Lims ID: 320-29267-A-13-A Lab Sample ID: 320-29267-13  
Client ID: MEAFF-EB09-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 16 Worklist Smp#: 19  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

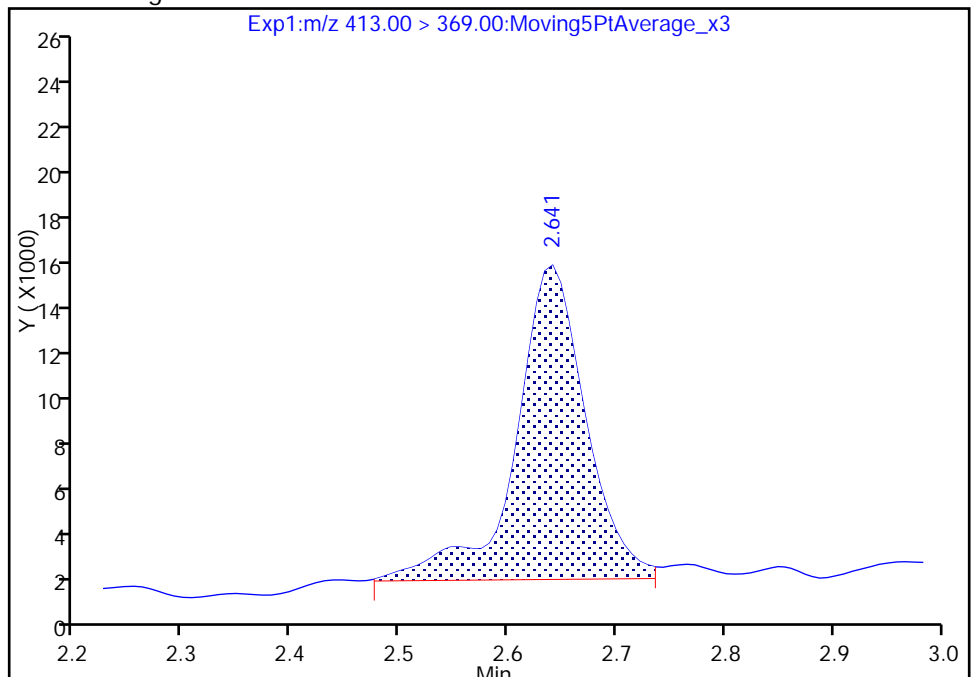
RT: 2.64  
Area: 45681  
Amount: 0.231439  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 59517  
Amount: 0.301538  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:48:03

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-T2C-1996MW01-0617 Lab Sample ID: 320-29267-14  
 Matrix: Water Lab File ID: 2017.06.28B\_020.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 08:50  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 262.3 (mL) Date Analyzed: 06/29/2017 01:30  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	9.0	M	2.4	1.9	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	720	E	3.8	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.8		2.4	1.9	0.87

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	108		25-150
STL00991	13C4 PFOS	92		25-150
STL00994	18O2 PFHxS	119		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_020.d  
 Lims ID: 320-29267-A-14-A  
 Client ID: MEAFF-T2C-1996MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:30:59 ALS Bottle#: 17 Worklist Smp#: 20  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-14-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:48:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	521423	1.48			144	
298.90 > 99.00	1.753	1.760	-0.007	1.000	204214		2.55(0.00-0.00)		167	
D 11 18O2 PFHxS										
403.00 > 84.00	2.312	2.329	-0.017		11949230	56.2		119	29906	
* 62 13C2-PFOA										
415.00 > 370.00	2.638	2.656	-0.018		4827	50.0			169	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.646	2.663	-0.017	1.000	706065	4.72			229	M
413.00 > 169.00	2.638	2.663	-0.025	0.997	427120		1.65(0.90-1.10)		1053	M
D 14 13C4 PFOA										
417.00 > 372.00	2.638	2.663	-0.025		7048833	54.0		108	16074	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.012	3.026	-0.014	1.000	59452524	378.7			7206	E
499.00 > 99.00	3.004	3.026	-0.022	0.997	17404641		3.42(0.90-1.10)		8492	E
D 18 13C4 PFOS										
503.00 > 80.00	3.012	3.026	-0.014		7154538	44.0		92.0	8429	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_020.d

Injection Date: 29-Jun-2017 01:30:59

Instrument ID: A8\_N

Lims ID: 320-29267-A-14-A

Lab Sample ID: 320-29267-14

Client ID: MEAFF-T2C-1996MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 17

Worklist Smp#: 20

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

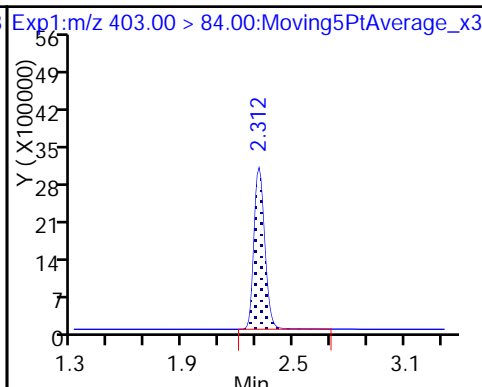
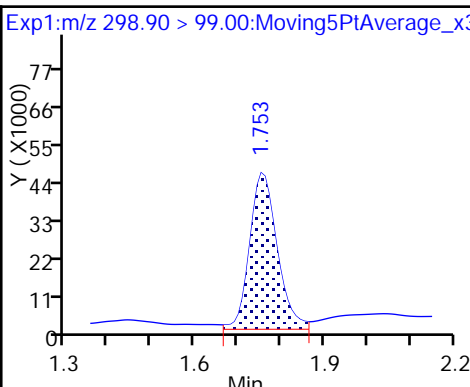
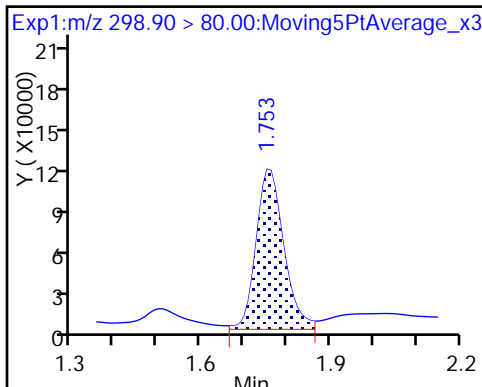
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

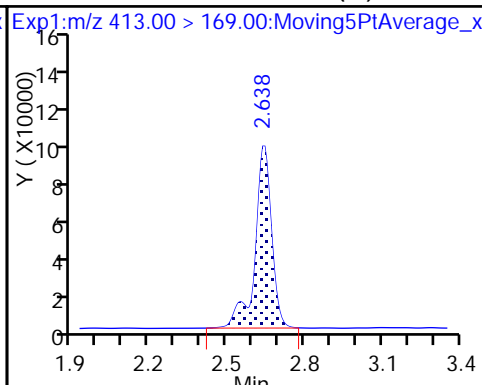
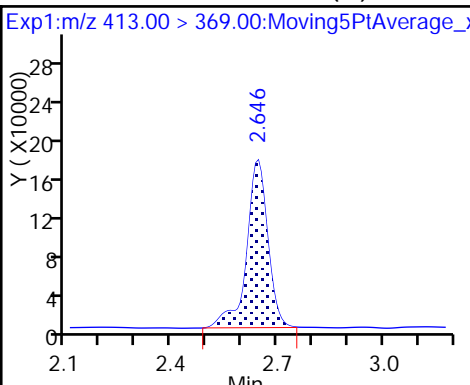
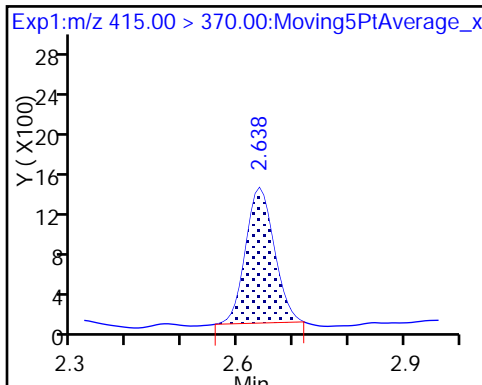
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

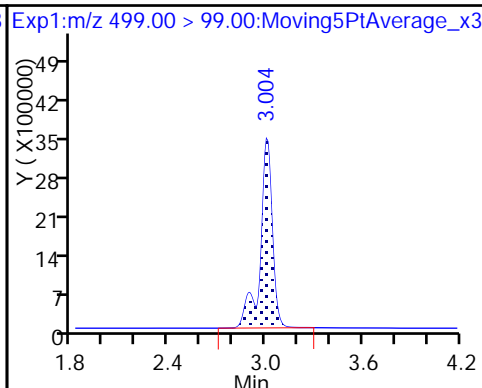
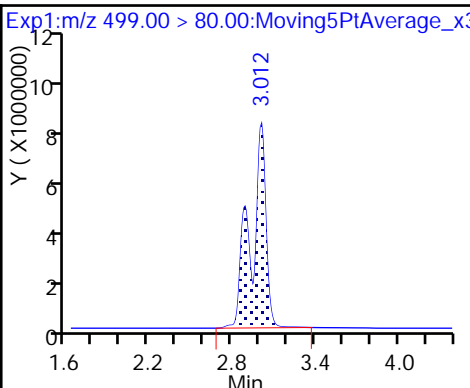
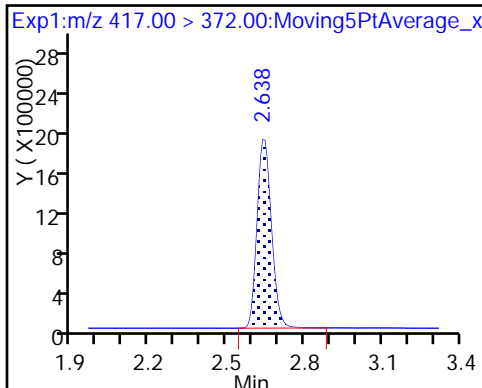
15 Perfluorooctanoic acid (M)



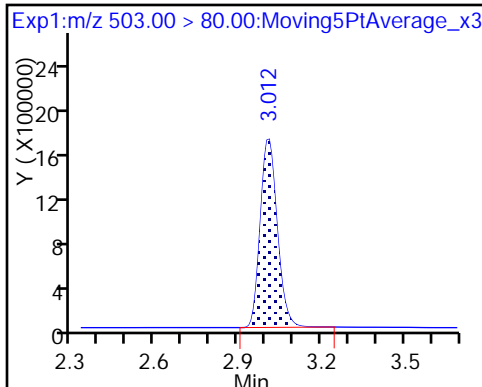
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS





TestAmerica Sacramento

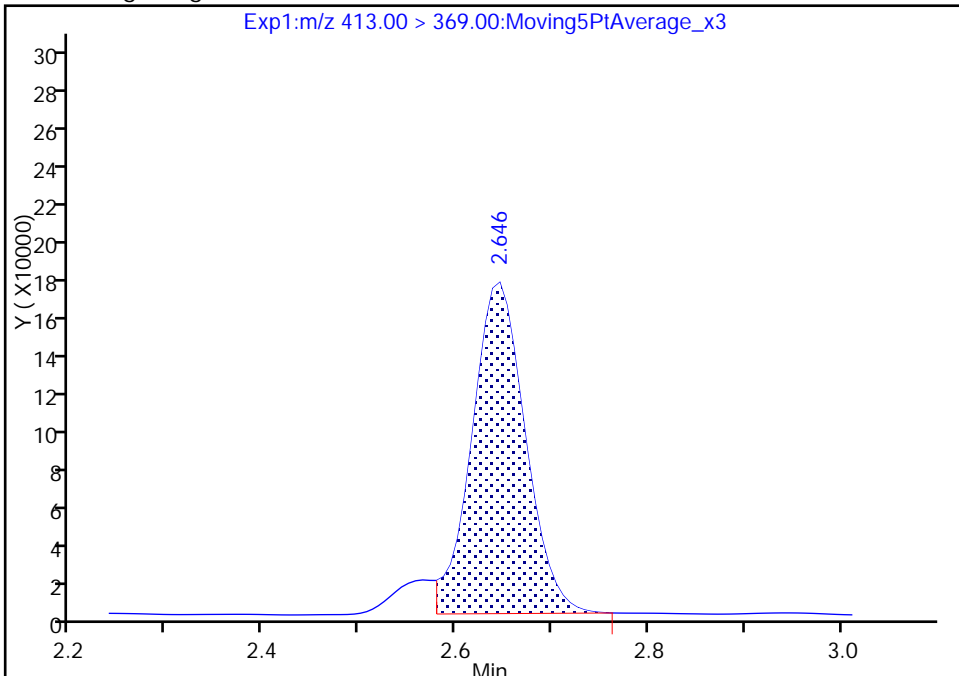
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_020.d  
Injection Date: 29-Jun-2017 01:30:59 Instrument ID: A8\_N  
Lims ID: 320-29267-A-14-A Lab Sample ID: 320-29267-14  
Client ID: MEAFF-T2C-1996MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 20  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

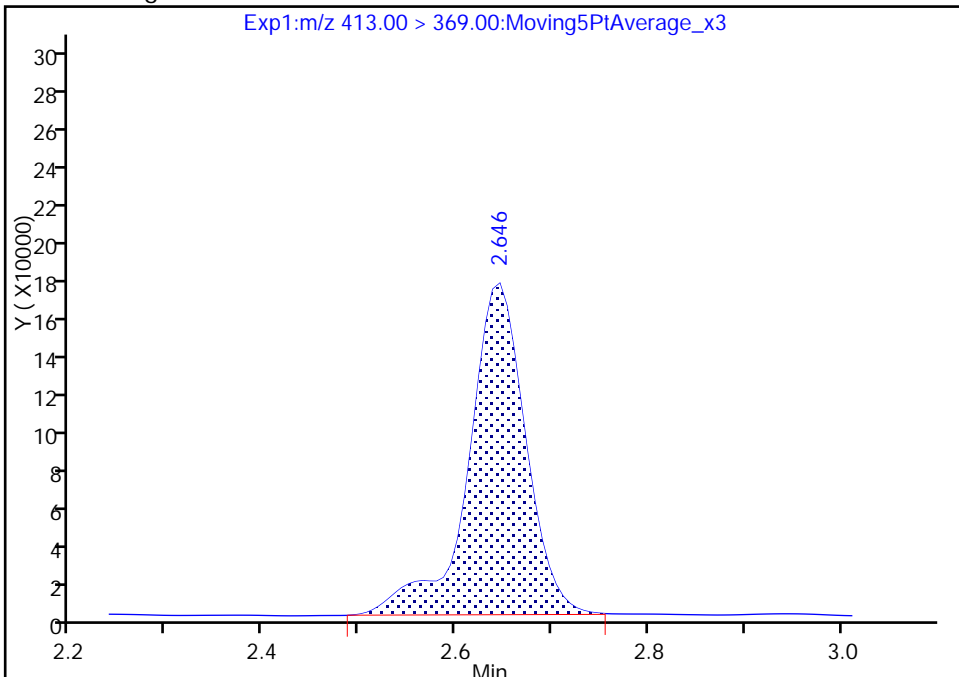
RT: 2.65  
Area: 652693  
Amount: 4.367387  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 706065  
Amount: 4.724517  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:48:23  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

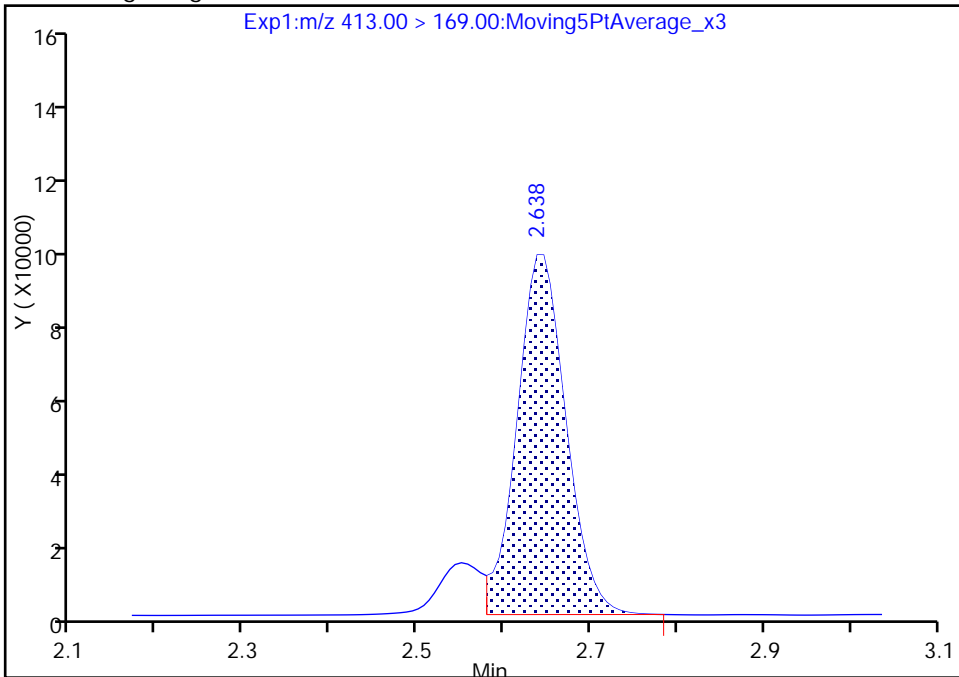
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_020.d  
Injection Date: 29-Jun-2017 01:30:59 Instrument ID: A8\_N  
Lims ID: 320-29267-A-14-A Lab Sample ID: 320-29267-14  
Client ID: MEAFF-T2C-1996MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 17 Worklist Smp#: 20  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

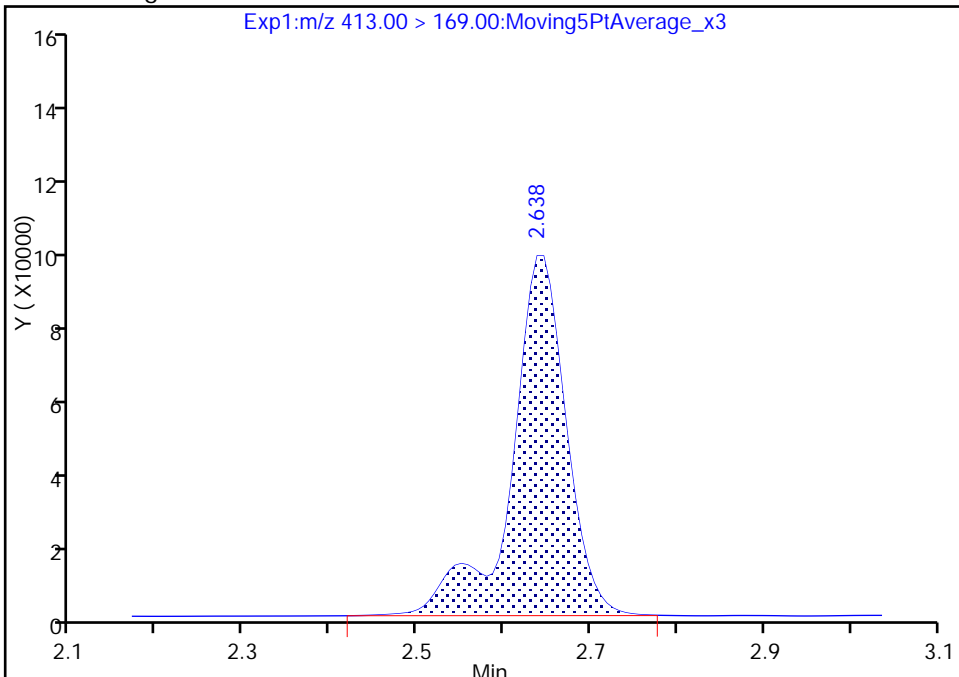
RT: 2.64  
Area: 378442  
Amount: 4.367387  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 427120  
Amount: 4.724517  
Amount Units: ng/ml

Manual Integration Results





TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_004.d  
 Lims ID: 320-29267-A-14-A  
 Client ID: MEAFF-T2C-1996MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 18:32:13 ALS Bottle#: 3 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 5.0000  
 Sample Info: 320-29267-a-14-a 5X  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 08:15:59 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 07:58:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.760	0.002	1.000	130426	0.3253			56.0	
298.90 > 99.00	1.762	1.760	0.002	1.000	52274		2.50(0.00-0.00)		53.4	
D 11 18O2 PFHxS										
403.00 > 84.00	2.324	2.329	-0.005		2720882	12.8		27.0	10539	
* 62 13C2-PFOA										
415.00 > 370.00	2.654	2.656	-0.002		1363	50.0			48.6	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.662	2.663	-0.001	1.000	165681	1.01			68.2	M
413.00 > 169.00	2.662	2.663	-0.001	1.000	99435		1.67(0.90-1.10)		238	M
D 14 13C4 PFOA										
417.00 > 372.00	2.662	2.663	-0.001		1549967	11.9		23.7	8718	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.030	3.026	0.004	1.000	16893214	81.0			7712	
499.00 > 99.00	3.030	3.026	0.004	1.000	4390161		3.85(0.90-1.10)		6953	
D 18 13C4 PFOS										
503.00 > 80.00	3.030	3.026	0.004		1901208	11.7		24.4	7205	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_004.d

Injection Date: 29-Jun-2017 18:32:13

Instrument ID: A8\_N

Lims ID: 320-29267-A-14-A

Lab Sample ID: 320-29267-14

Client ID: MEAFF-T2C-1996MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 5.0000

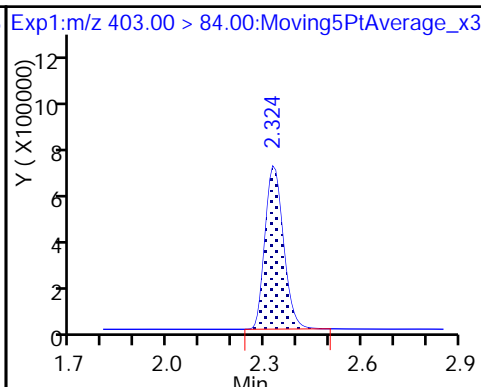
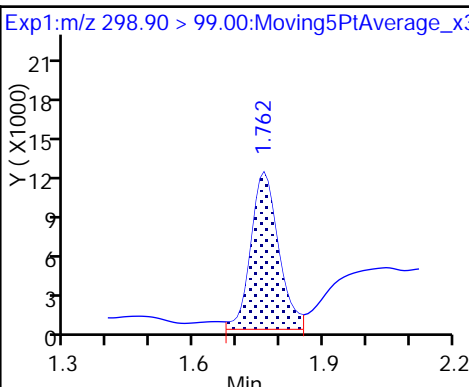
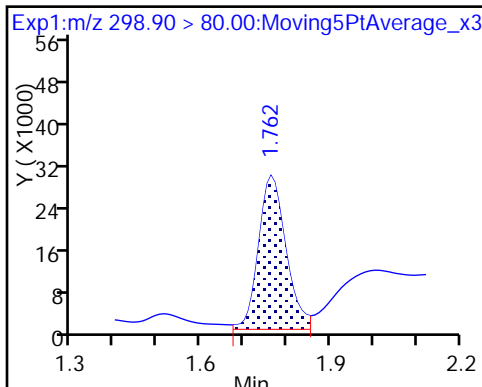
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

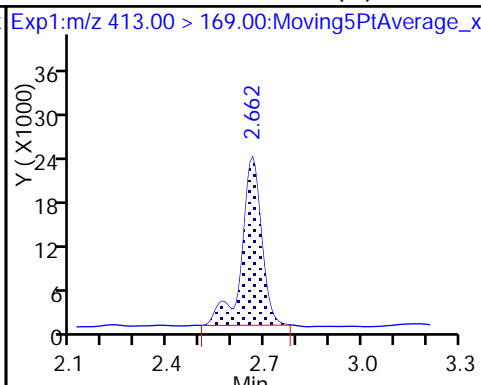
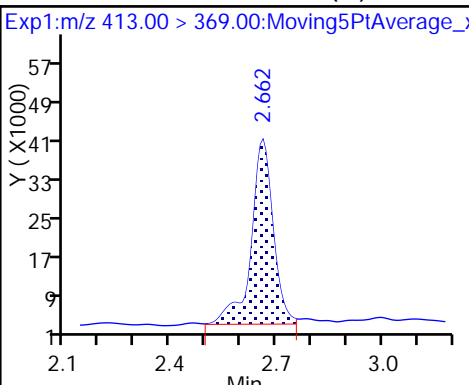
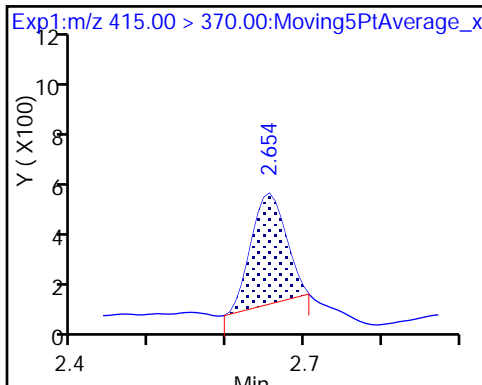
D 11 1802 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

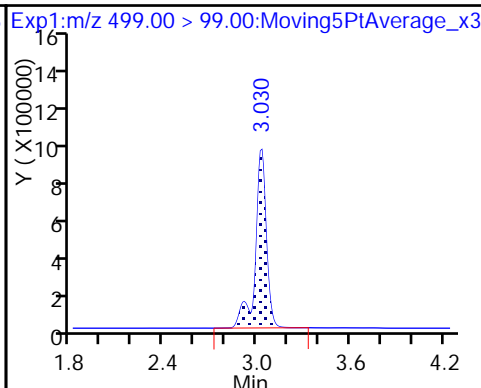
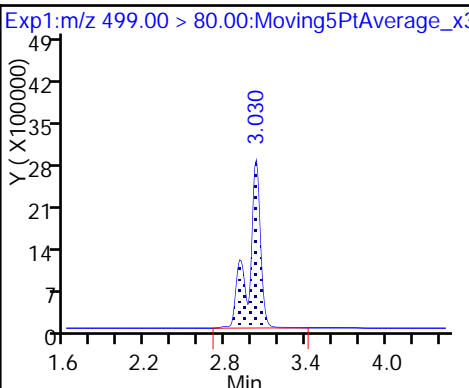
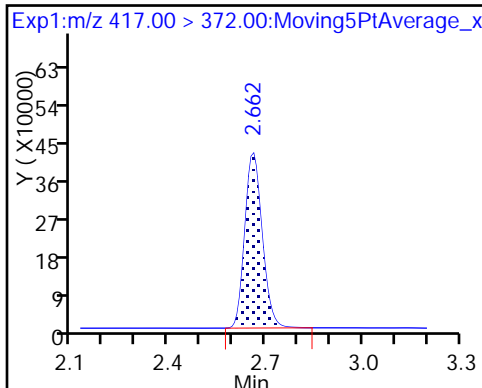
15 Perfluorooctanoic acid (M)



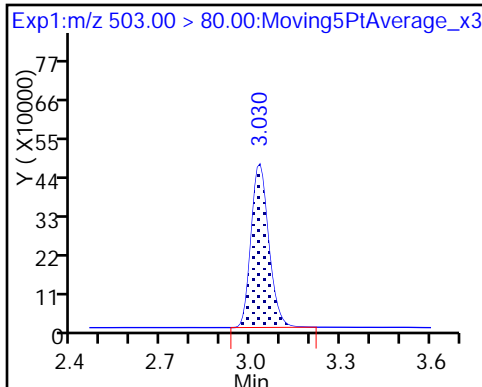
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

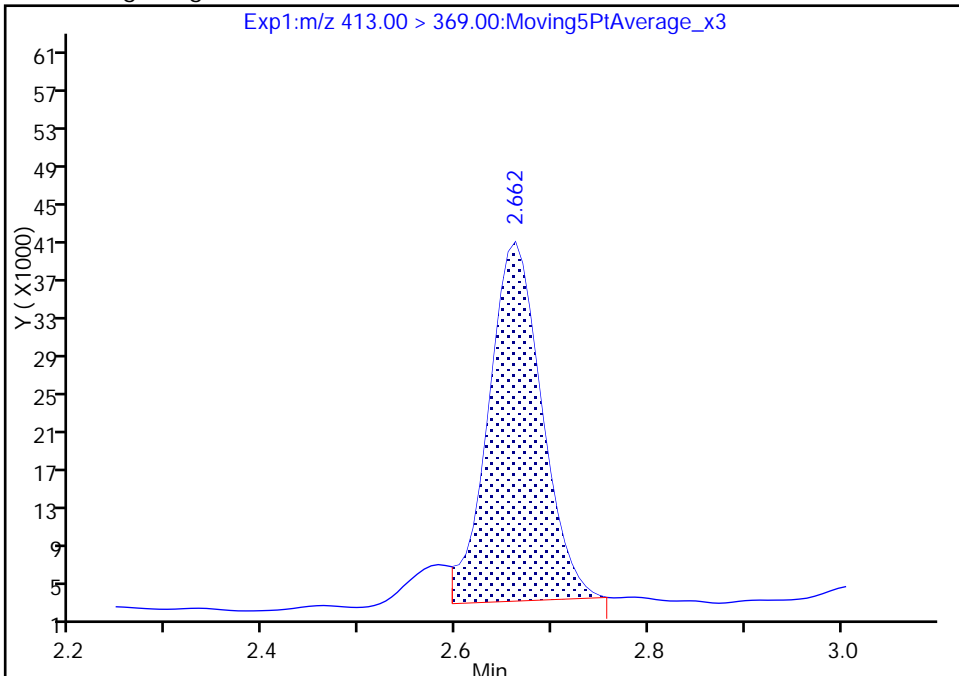
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_004.d  
Injection Date: 29-Jun-2017 18:32:13 Instrument ID: A8\_N  
Lims ID: 320-29267-A-14-A Lab Sample ID: 320-29267-14  
Client ID: MEAFF-T2C-1996MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 5.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

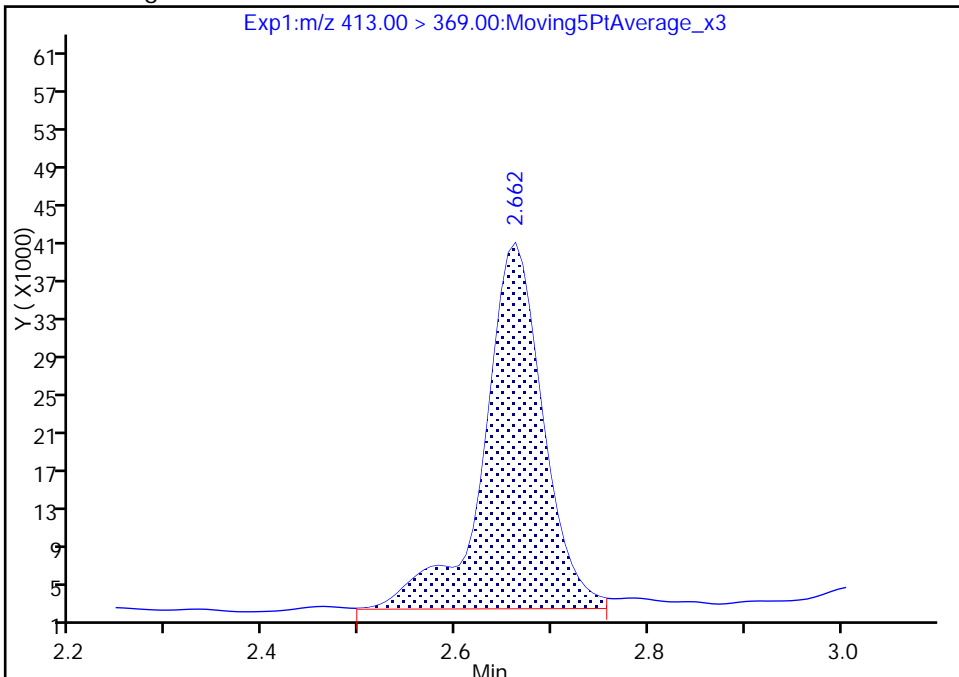
RT: 2.66  
Area: 144196  
Amount: 0.877588  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
Area: 165681  
Amount: 1.008347  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 30-Jun-2017 07:58:42  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

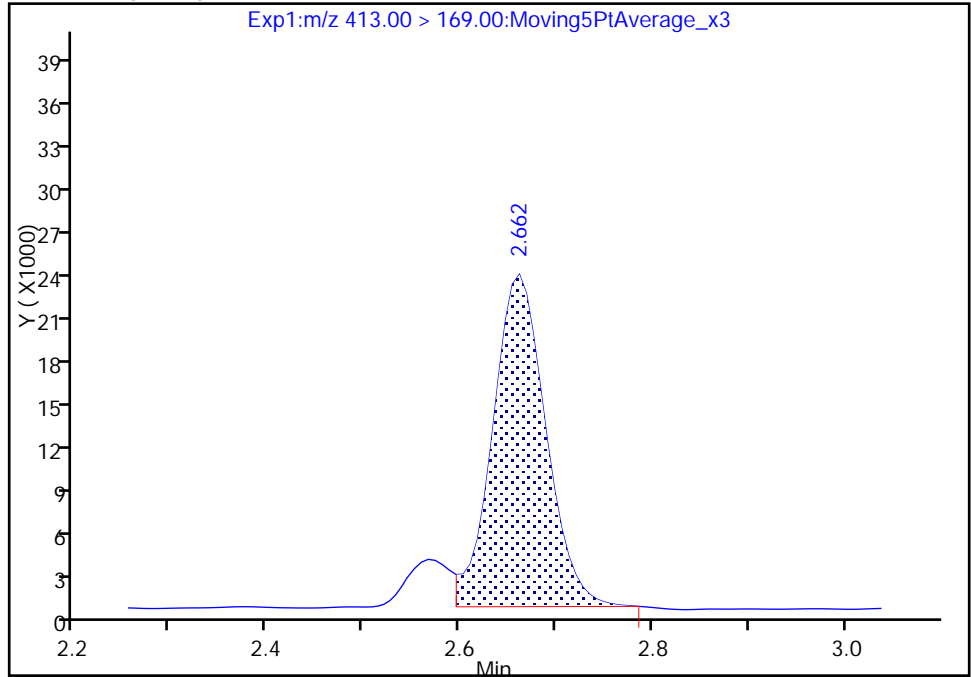
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_004.d  
Injection Date: 29-Jun-2017 18:32:13 Instrument ID: A8\_N  
Lims ID: 320-29267-A-14-A Lab Sample ID: 320-29267-14  
Client ID: MEAFF-T2C-1996MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 5.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

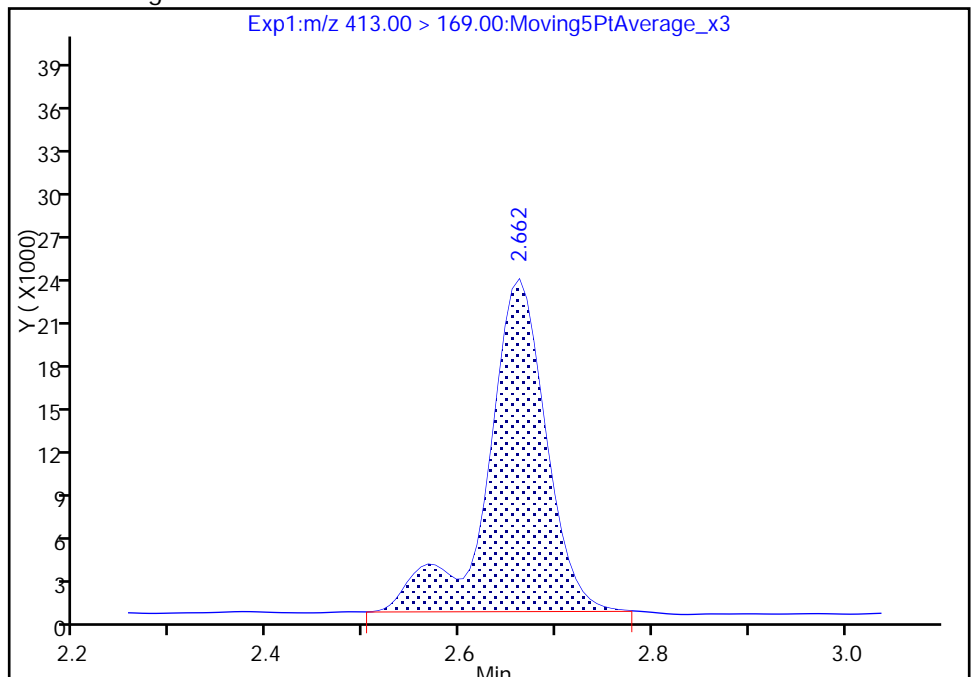
RT: 2.66  
Area: 89103  
Amount: 0.877588  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
Area: 99435  
Amount: 1.008347  
Amount Units: ng/ml

Manual Integration Results



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-UNKN11MW01-0617 Lab Sample ID: 320-29267-15  
 Matrix: Water Lab File ID: 2017.06.28B\_021.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 09:50  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 251.2 (mL) Date Analyzed: 06/29/2017 01:37  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	J M	2.5	2.0	0.74
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.4	J	4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U M	2.5	2.0	0.91

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	68		25-150
STL00991	13C4 PFOS	114		25-150
STL00994	18O2 PFHxS	117		25-150



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_021.d  
 Lims ID: 320-29267-A-15-A  
 Client ID: MEAFF-UNKN11MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:37:53 ALS Bottle#: 18 Worklist Smp#: 21  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-15-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:49:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.760	1.760	0.0	1.000	134142	0.3881		77.2		M
298.90 > 99.00	1.760	1.760	0.0	1.000	48641		2.76(0.00-0.00)	61.3		M
D 11 18O2 PFHxS										
403.00 > 84.00	2.310	2.329	-0.019		11728323	55.1		117	40577	
* 62 13C2-PFOA										
415.00 > 370.00	2.637	2.656	-0.019		2292	50.0		85.6		
15 Perfluorooctanoic acid										
413.00 > 369.00	2.644	2.663	-0.019	1.000	85618	0.9049		37.1		M
413.00 > 169.00	2.644	2.663	-0.019	1.000	54436		1.57(0.90-1.10)	161		M
D 14 13C4 PFOA										
417.00 > 372.00	2.644	2.663	-0.019		4462660	34.2		68.4	20599	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	2.884	3.026	-0.142	1.000	230579	1.18		440		
499.00 > 99.00	3.003	3.026	-0.023	1.041	38312		6.02(0.90-1.10)	141		
D 18 13C4 PFOS										
503.00 > 80.00	3.003	3.026	-0.023		8867073	54.5		114	12080	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_021.d

Injection Date: 29-Jun-2017 01:37:53

Instrument ID: A8\_N

Lims ID: 320-29267-A-15-A

Lab Sample ID: 320-29267-15

Client ID: MEAFF-UNKN11MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 18 Worklist Smp#: 21

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

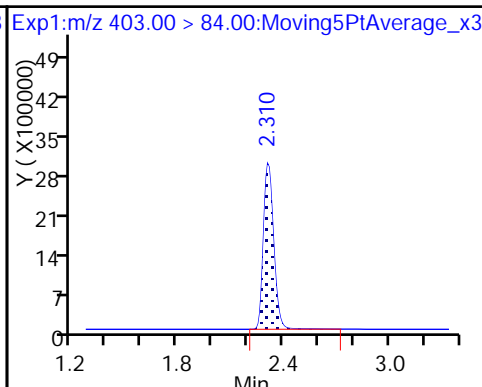
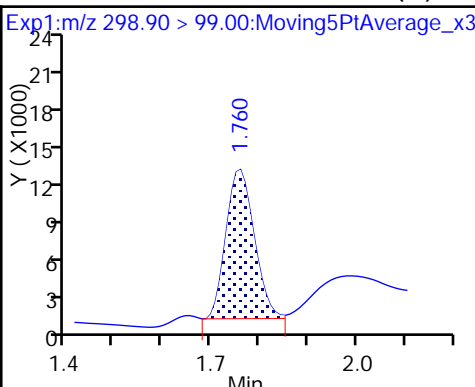
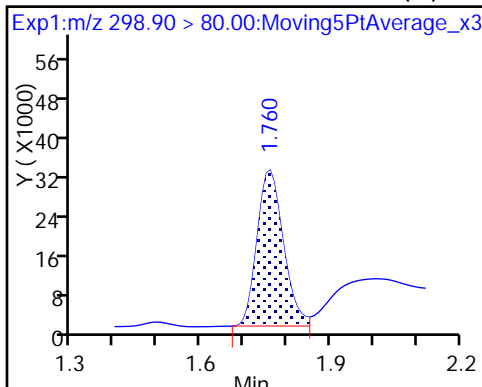
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid (M)

5 Perfluorobutanesulfonic acid (M)

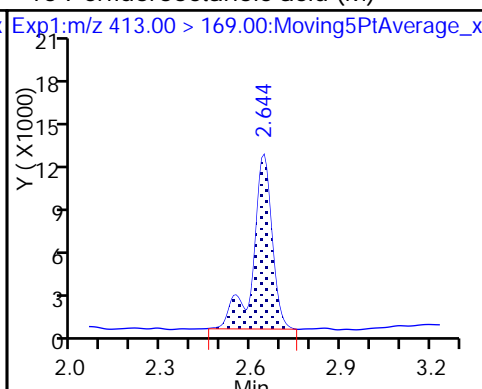
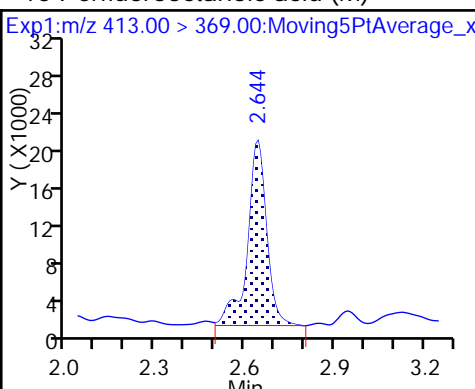
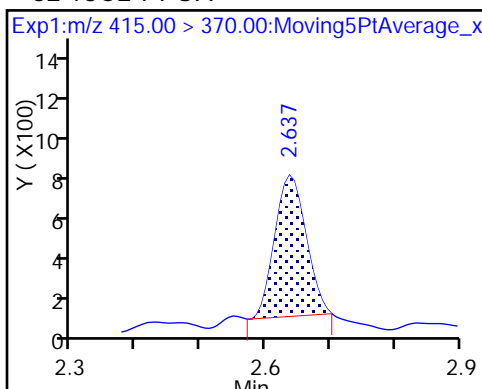
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

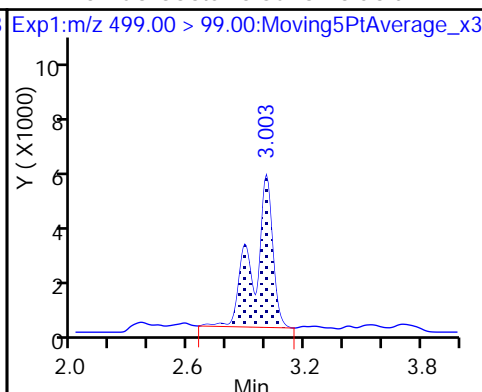
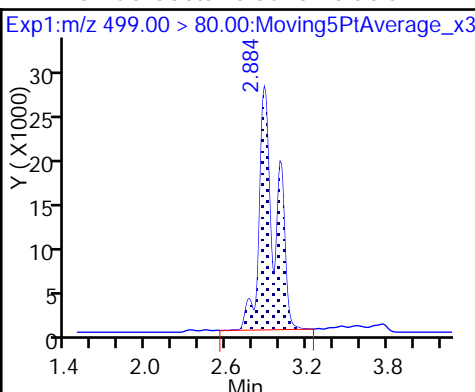
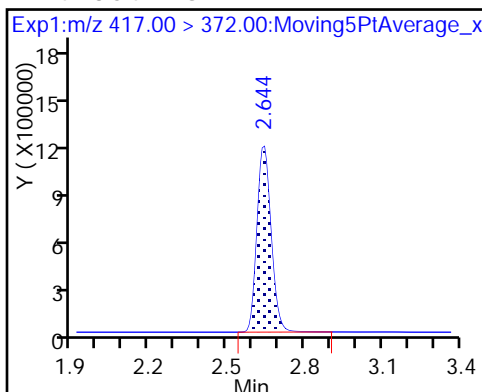
15 Perfluorooctanoic acid (M)



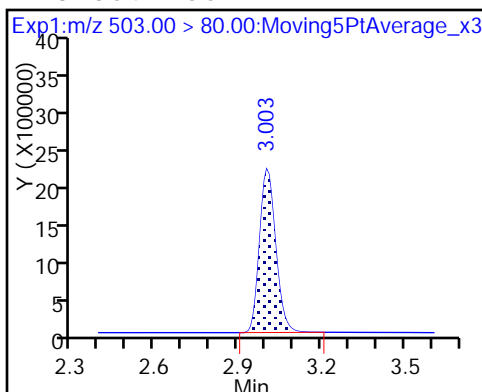
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

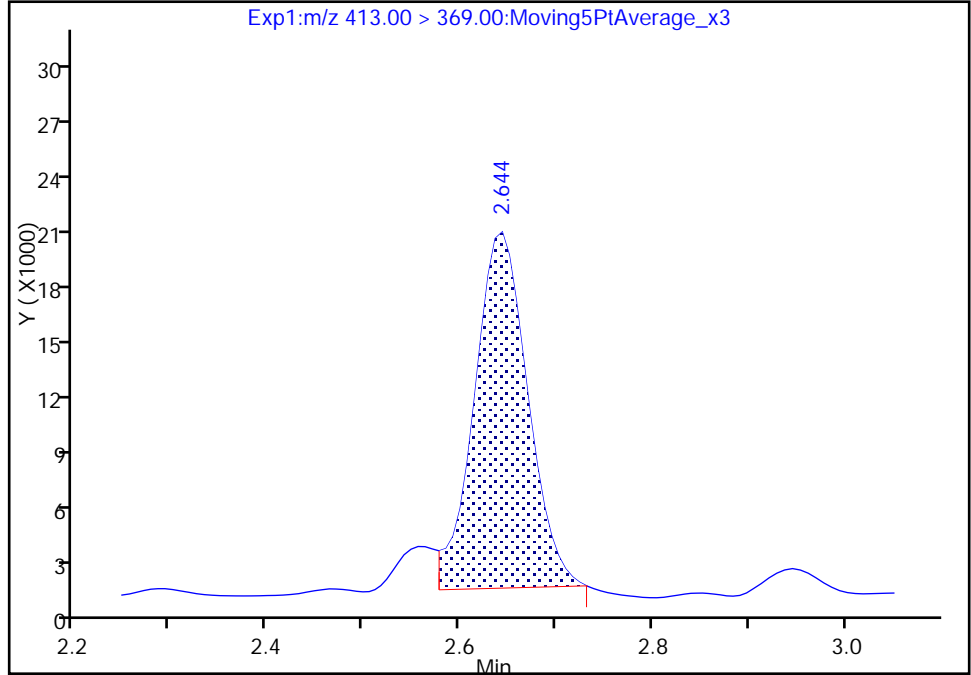
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_021.d  
Injection Date: 29-Jun-2017 01:37:53 Instrument ID: A8\_N  
Lims ID: 320-29267-A-15-A Lab Sample ID: 320-29267-15  
Client ID: MEAFF-UNKN11MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 21  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

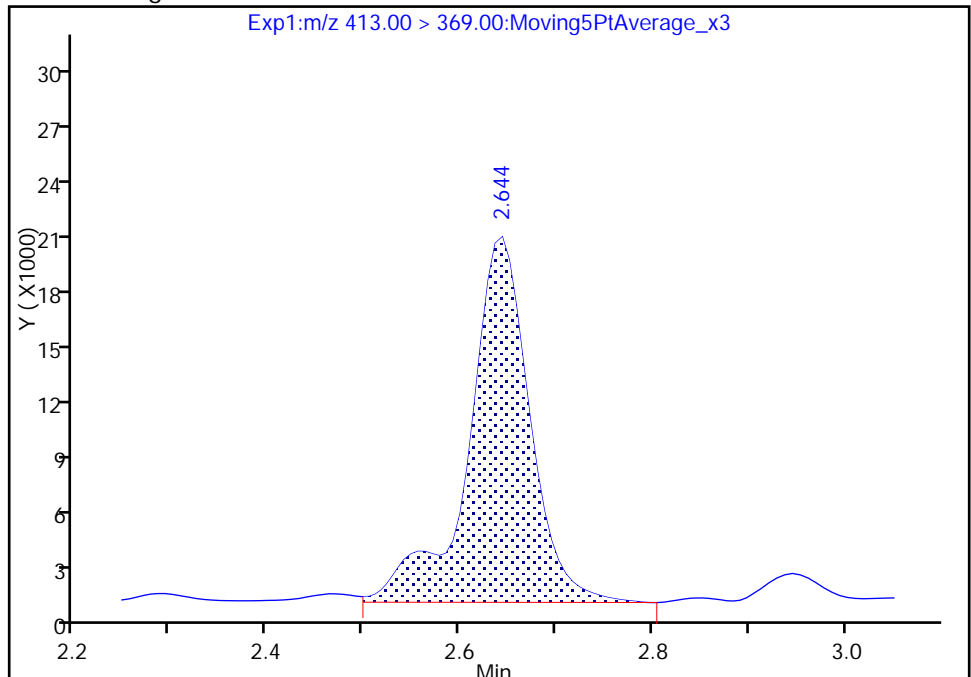
RT: 2.64  
Area: 72061  
Amount: 0.761617  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 85618  
Amount: 0.904901  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:49:17  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

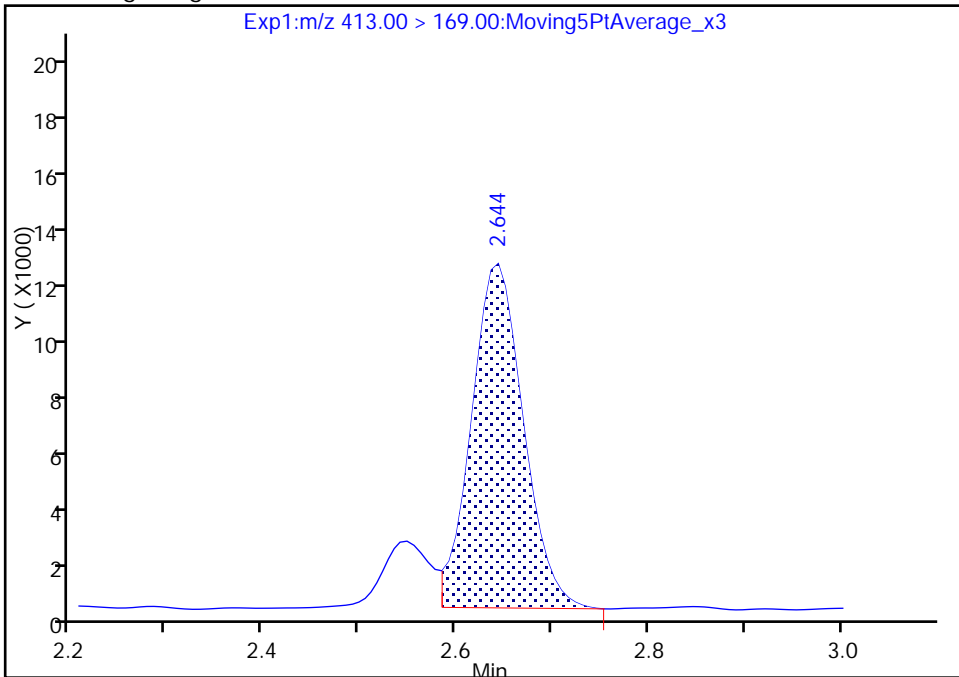
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_021.d  
Injection Date: 29-Jun-2017 01:37:53 Instrument ID: A8\_N  
Lims ID: 320-29267-A-15-A Lab Sample ID: 320-29267-15  
Client ID: MEAFF-UNKN11MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 21  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

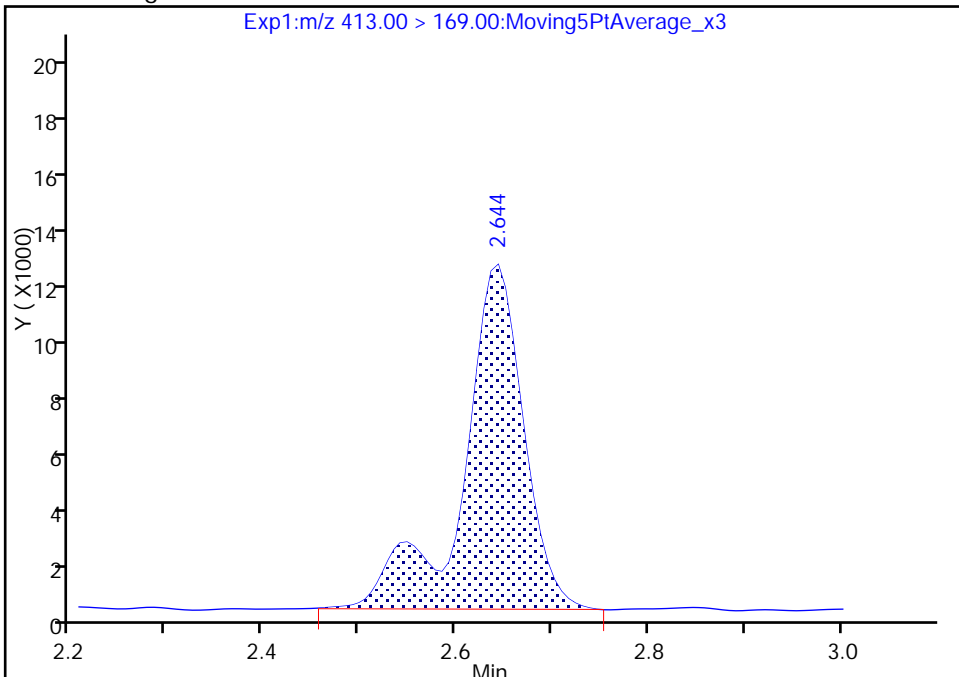
RT: 2.64  
Area: 46077  
Amount: 0.761617  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 54436  
Amount: 0.904901  
Amount Units: ng/ml

Manual Integration Results



TestAmerica Sacramento

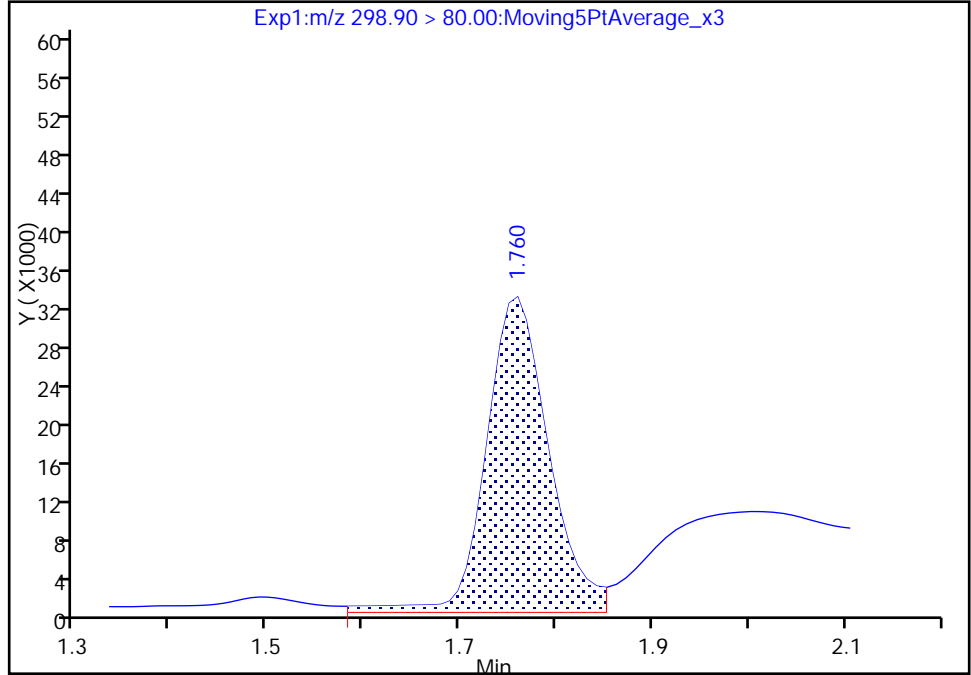
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_021.d  
Injection Date: 29-Jun-2017 01:37:53 Instrument ID: A8\_N  
Lims ID: 320-29267-A-15-A Lab Sample ID: 320-29267-15  
Client ID: MEAFF-UNKN11MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 21  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 1

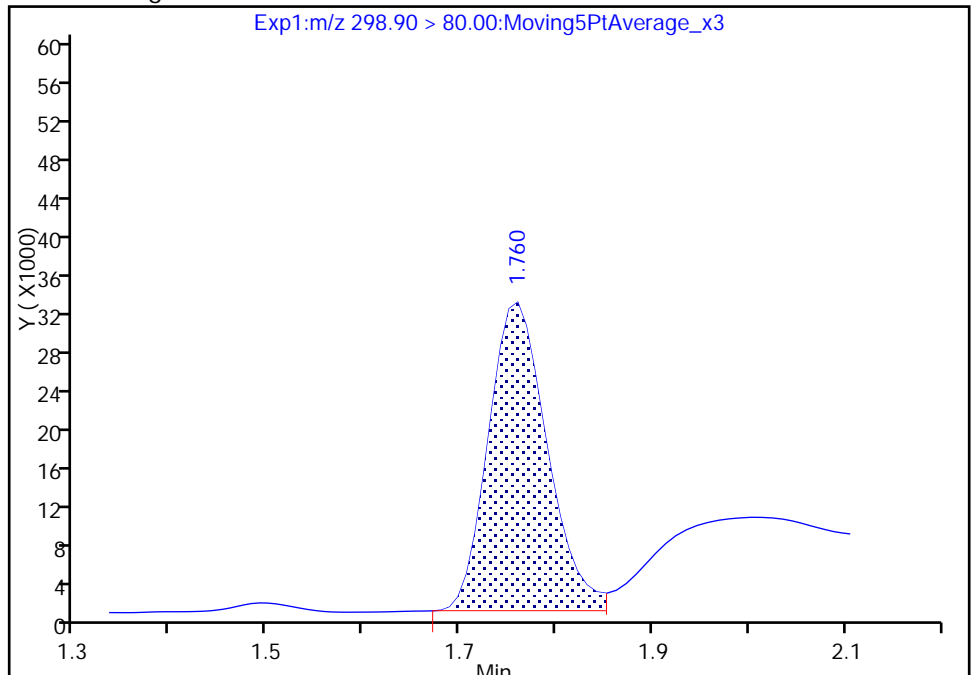
RT: 1.76  
Area: 146265  
Amount: 0.423144  
Amount Units: ng/ml

Processing Integration Results



RT: 1.76  
Area: 134142  
Amount: 0.388072  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:49:00  
Audit Action: Manually Integrated

Audit Reason: Baseline

TestAmerica Sacramento

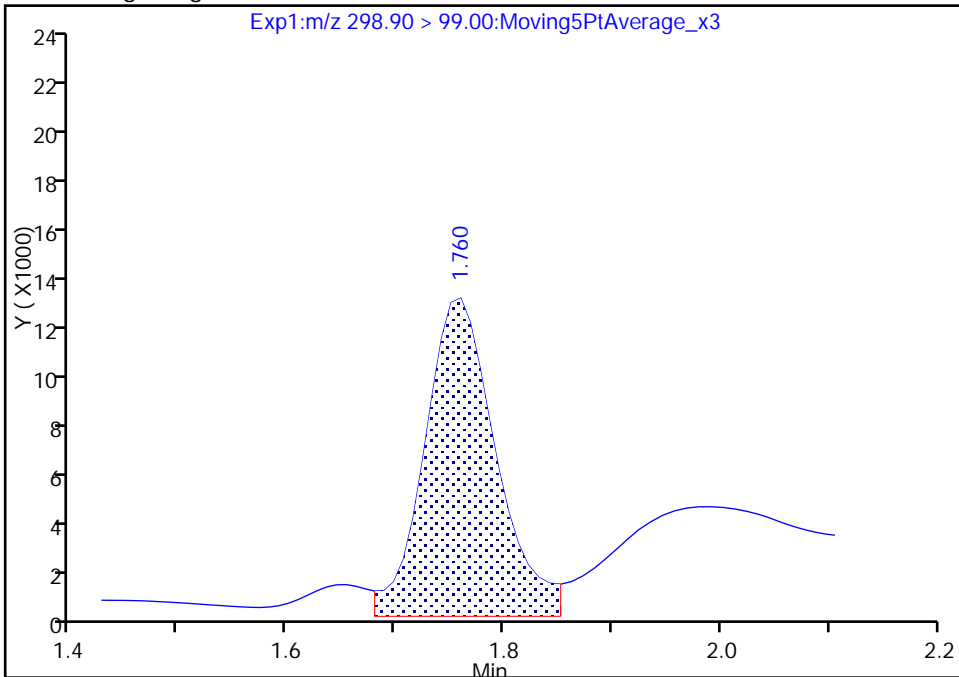
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_021.d  
Injection Date: 29-Jun-2017 01:37:53 Instrument ID: A8\_N  
Lims ID: 320-29267-A-15-A Lab Sample ID: 320-29267-15  
Client ID: MEAFF-UNKN11MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 18 Worklist Smp#: 21  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

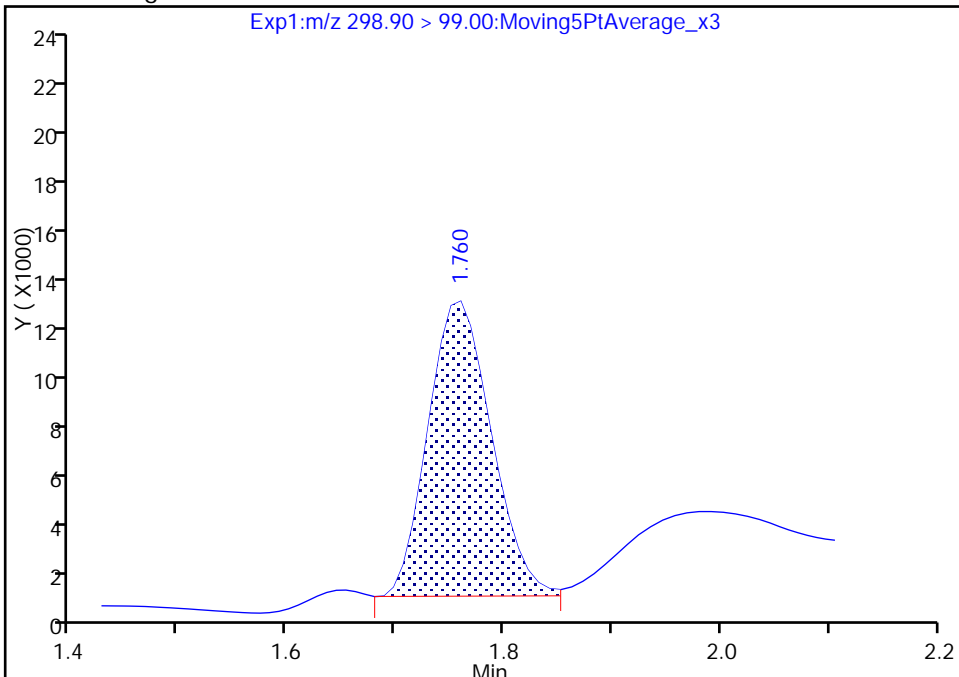
RT: 1.76  
Area: 59507  
Amount: 0.423144  
Amount Units: ng/ml

Processing Integration Results



RT: 1.76  
Area: 48641  
Amount: 0.388072  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:49:06

Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-EB10-0617 Lab Sample ID: 320-29267-16  
 Matrix: Water Lab File ID: 2017.06.28B\_022.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 10:55  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 284.5 (mL) Date Analyzed: 06/29/2017 01:44  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	1.8	0.66
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.6	U	3.5	2.6	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	1.8	0.81

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	135		25-150
STL00991	13C4 PFOS	111		25-150
STL00994	18O2 PFHxS	120		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_022.d  
 Lims ID: 320-29267-A-16-A  
 Client ID: MEAFF-EB10-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:44:48 ALS Bottle#: 19 Worklist Smp#: 22  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-16-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:49:56

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.760	0.002	1.000	10024	0.0281			6.0	
298.90 > 99.00	1.762	1.760	0.002	1.000	6444		1.56(0.00-0.00)		6.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.317	2.329	-0.012		12097436	56.9		120	39140	
* 62 13C2-PFOA										
415.00 > 370.00	2.644	2.656	-0.012		5877	50.0			260	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.651	2.663	-0.012	1.000	45140	0.2413			8.6	M
413.00 > 169.00	2.651	2.663	-0.012	1.000	21377		2.11(0.90-1.10)		67.7	M
D 14 13C4 PFOA										
417.00 > 372.00	2.651	2.663	-0.012		8824493	67.6		135	19845	
D 18 13C4 PFOS										
503.00 > 80.00	3.019	3.026	-0.007		8621350	53.0		111	14330	

QC Flag Legend

Review Flags

M - Manually Integrated



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_022.d

Injection Date: 29-Jun-2017 01:44:48

Instrument ID: A8\_N

Lims ID: 320-29267-A-16-A

Lab Sample ID: 320-29267-16

Client ID: MEAFF-EB10-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 19 Worklist Smp#: 22

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

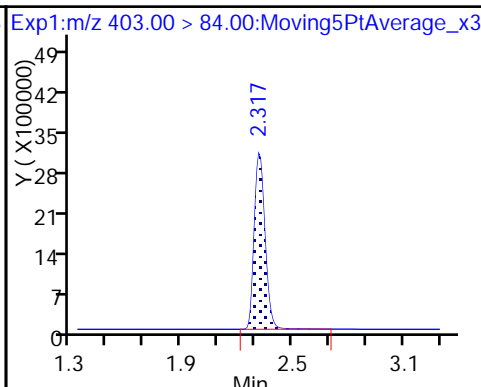
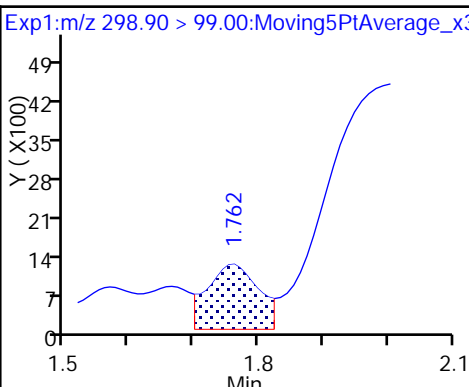
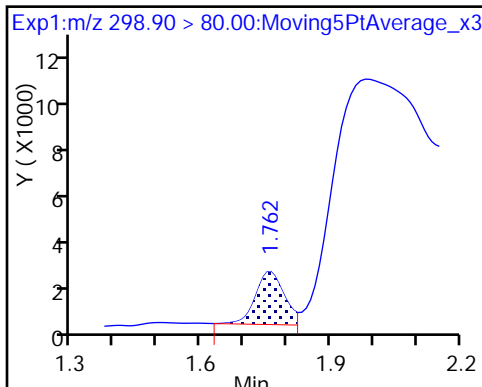
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

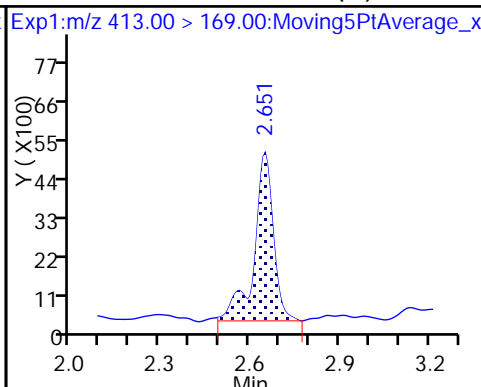
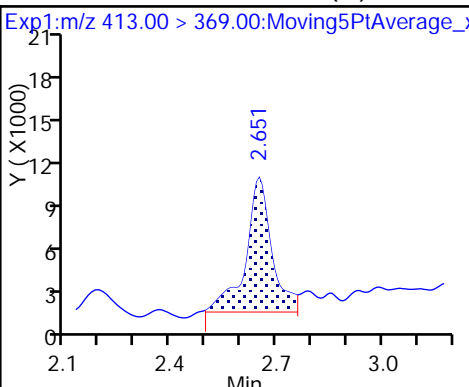
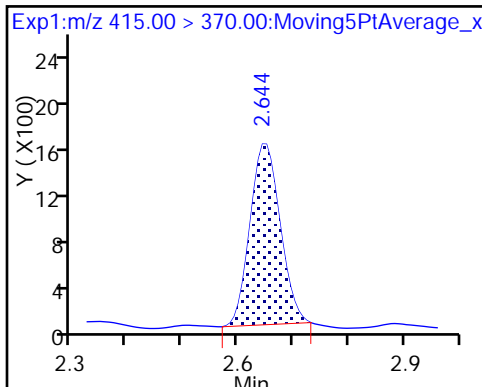
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

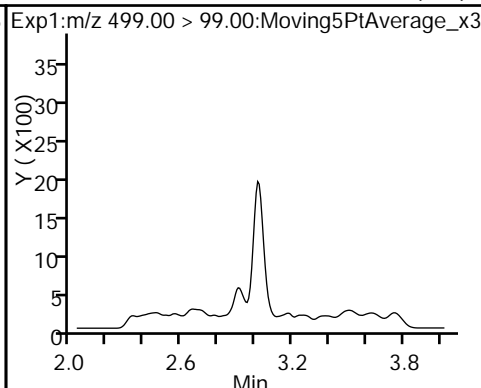
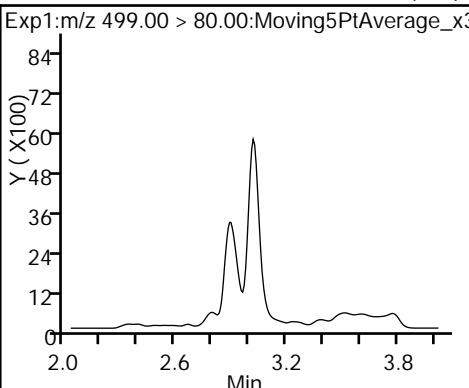
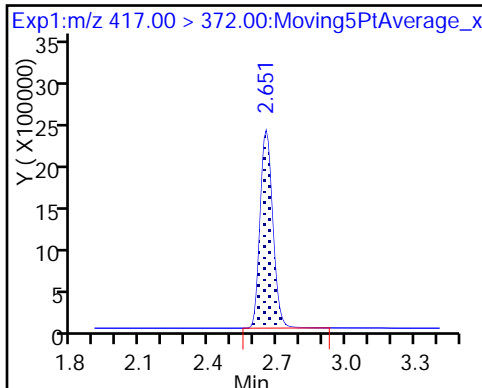
15 Perfluorooctanoic acid (M)



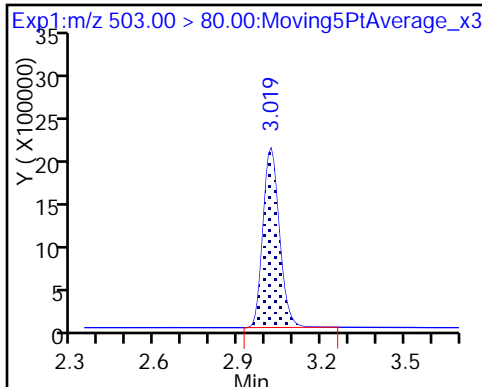
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



TestAmerica Sacramento

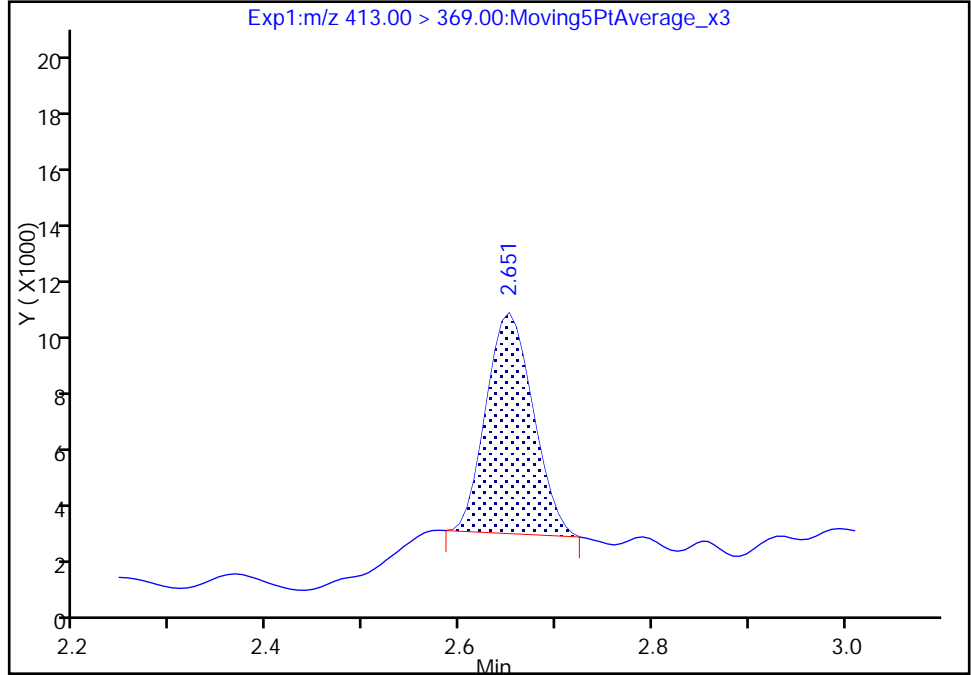
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_022.d  
Injection Date: 29-Jun-2017 01:44:48 Instrument ID: A8\_N  
Lims ID: 320-29267-A-16-A Lab Sample ID: 320-29267-16  
Client ID: MEAFF-EB10-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 22  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

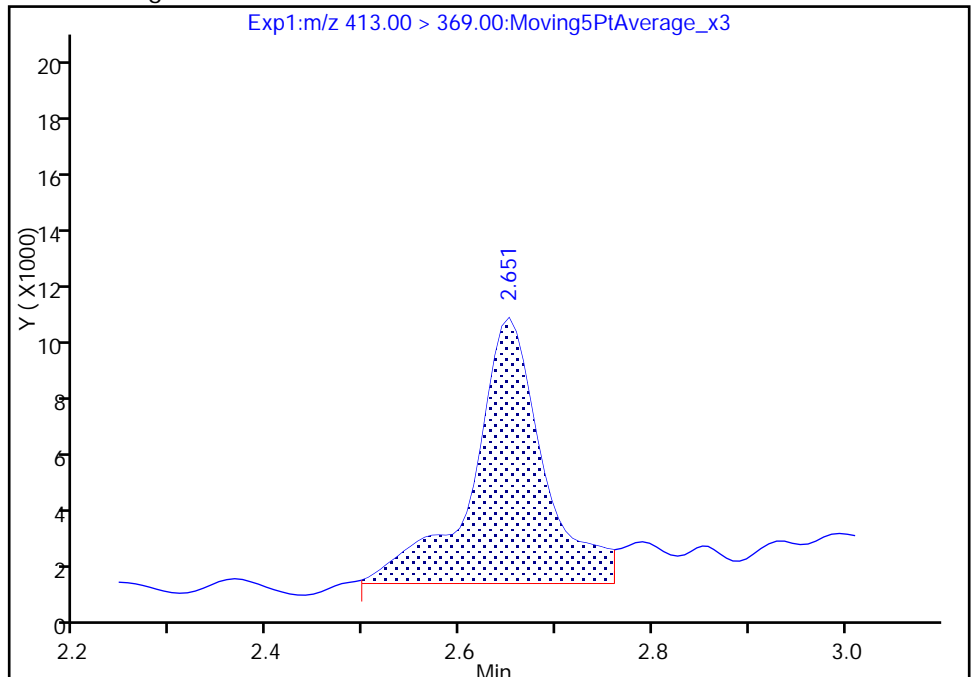
RT: 2.65  
Area: 24761  
Amount: 0.132345  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 45140  
Amount: 0.241269  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:49:44  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

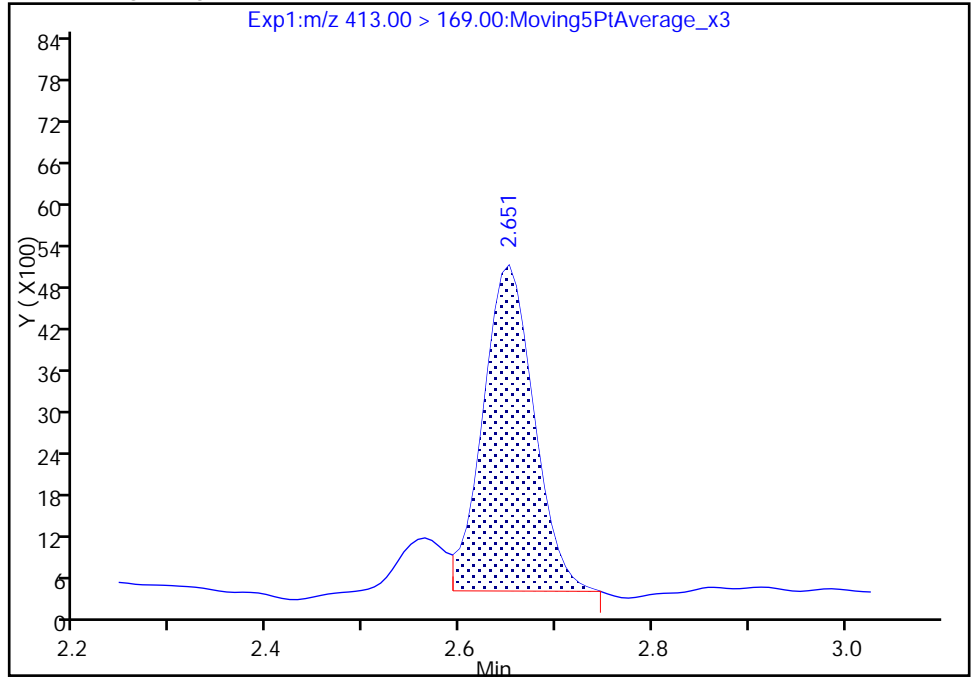
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_022.d  
 Injection Date: 29-Jun-2017 01:44:48 Instrument ID: A8\_N  
 Lims ID: 320-29267-A-16-A Lab Sample ID: 320-29267-16  
 Client ID: MEAFF-EB10-0617  
 Operator ID: SACINSTLCMS01 ALS Bottle#: 19 Worklist Smp#: 22  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
 Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

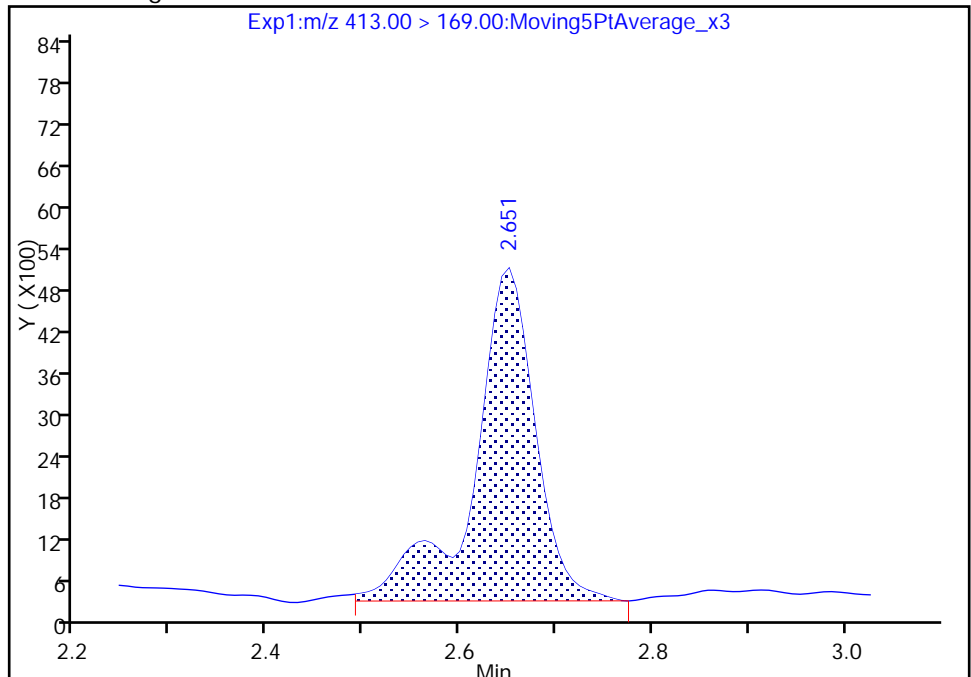
RT: 2.65  
 Area: 17210  
 Amount: 0.132345  
 Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
 Area: 21377  
 Amount: 0.241269  
 Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:49:53

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-TA4J-1985MW01-0617 Lab Sample ID: 320-29267-17  
 Matrix: Water Lab File ID: 2017.06.28B\_023.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 11:30  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 254.5 (mL) Date Analyzed: 06/29/2017 01:51  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.78	J M	2.5	2.0	0.73
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	2.9	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	2.0	0.90

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	37		25-150
STL00991	13C4 PFOS	111		25-150
STL00994	18O2 PFHxS	124		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_023.d  
 Lims ID: 320-29267-B-17-A  
 Client ID: MEAFF-TA4J-1985MW01-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 01:51:41 ALS Bottle#: 20 Worklist Smp#: 23  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-b-17-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:50:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.751	1.760	-0.009	1.000	32613	0.0890			15.6	
298.90 > 99.00	1.751	1.760	-0.009	1.000	20108		1.62(0.00-0.00)		16.9	
D 11 18O2 PFHxS										
403.00 > 84.00	2.317	2.329	-0.012		12432680	58.5		124	33830	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.648	2.663	-0.015	1.000	20631	0.3977			8.0	M
413.00 > 169.00	2.648	2.663	-0.015	1.000	15908		1.30(0.90-1.10)		33.0	M
D 14 13C4 PFOA										
417.00 > 372.00	2.648	2.663	-0.015		2446756	18.7		37.5	11506	
D 18 13C4 PFOS										
503.00 > 80.00	3.008	3.026	-0.018		8669235	53.3		111	10499	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_023.d

Injection Date: 29-Jun-2017 01:51:41

Instrument ID: A8\_N

Lims ID: 320-29267-B-17-A

Lab Sample ID: 320-29267-17

Client ID: MEAFF-TA4J-1985MW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 20

Worklist Smp#: 23

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

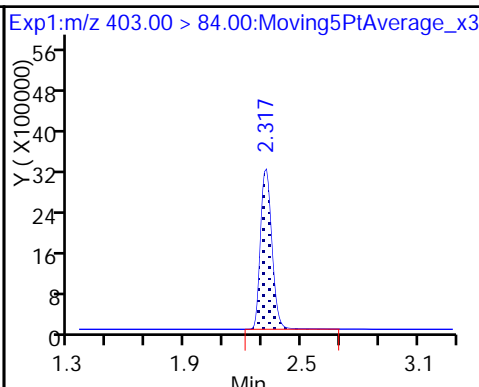
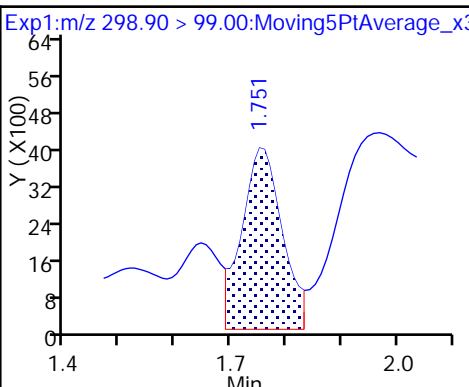
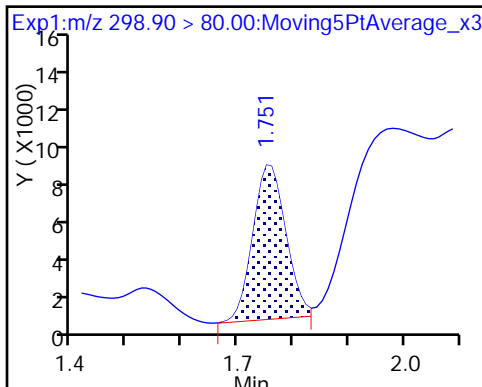
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

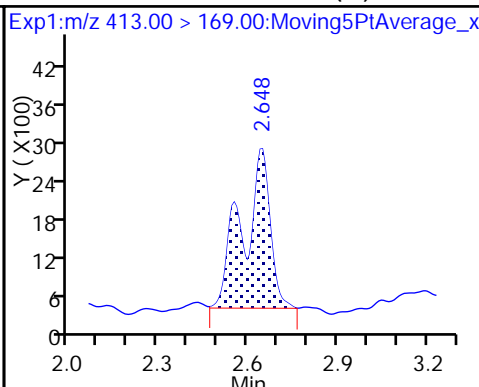
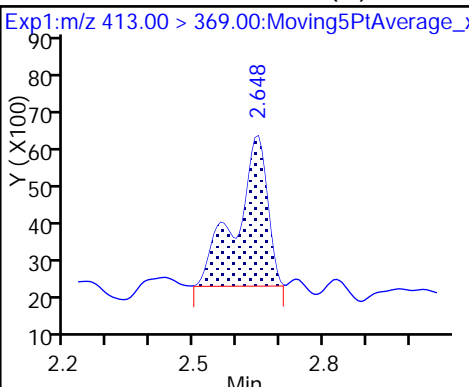
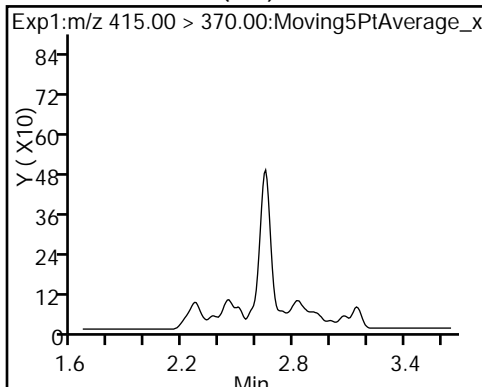
D 11 18O2 PFHxS



\* 62 13C2-PFOA (ND)

15 Perfluorooctanoic acid (M)

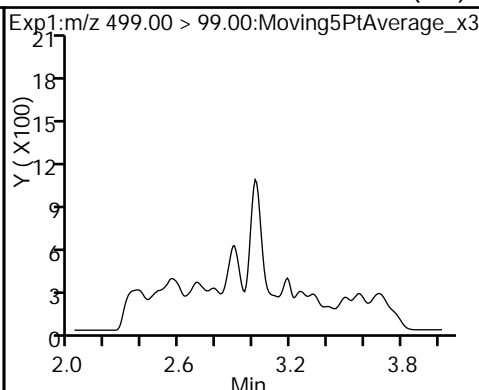
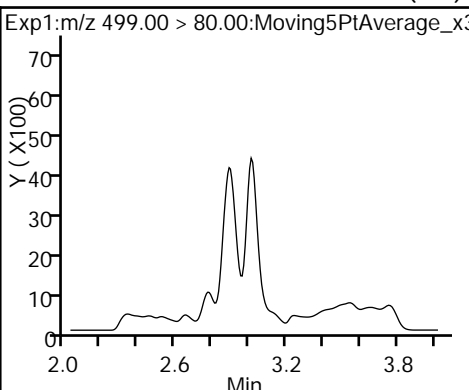
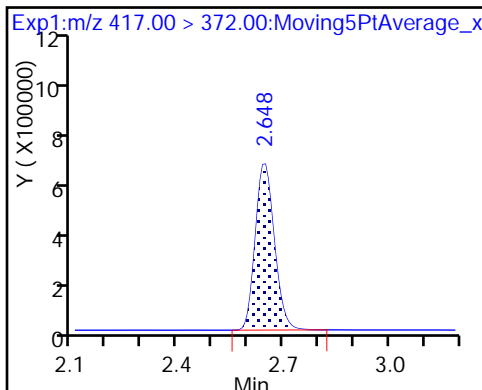
15 Perfluorooctanoic acid (M)



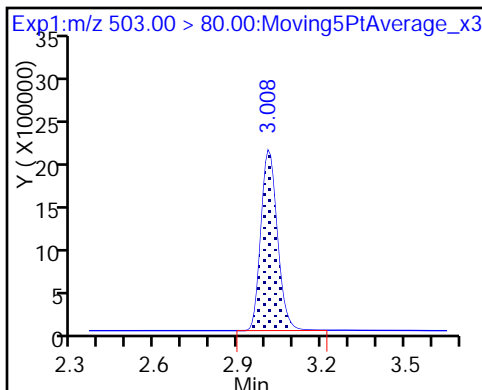
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



TestAmerica Sacramento

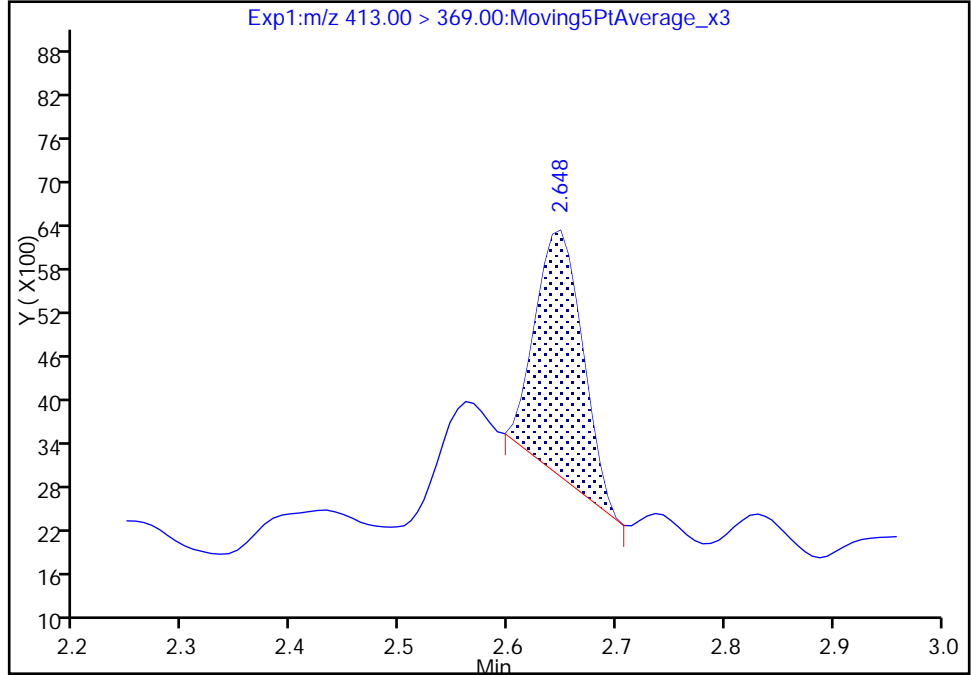
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Injection Date: 29-Jun-2017 01:51:41 Instrument ID: A8\_N  
Lims ID: 320-29267-B-17-A Lab Sample ID: 320-29267-17  
Client ID: MEAFF-TA4J-1985MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 23  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

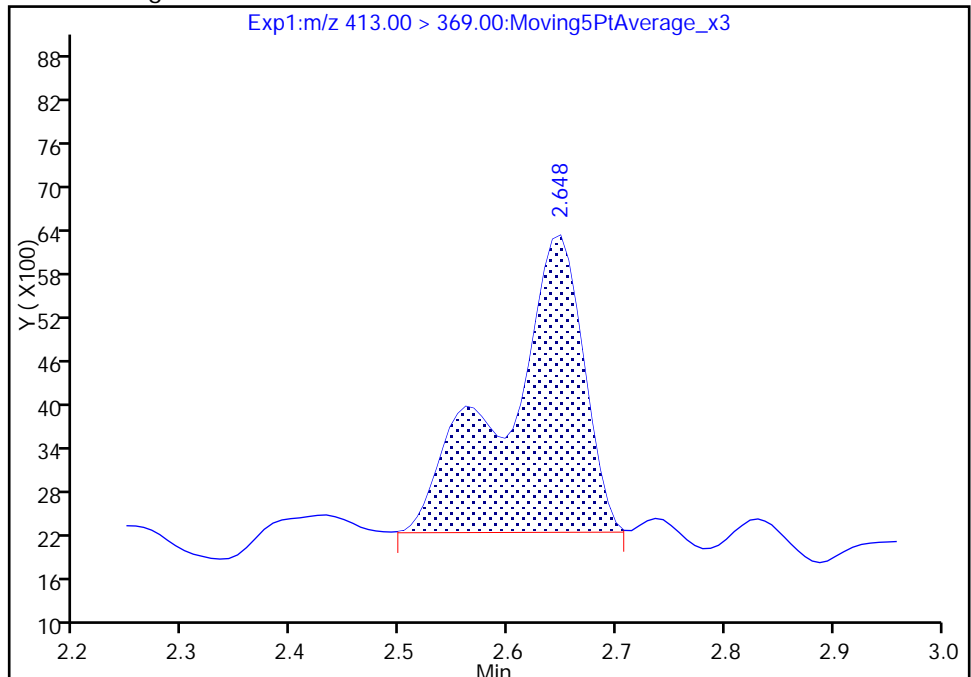
RT: 2.65  
Area: 10102  
Amount: 0.194736  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 20631  
Amount: 0.397704  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:50:13  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

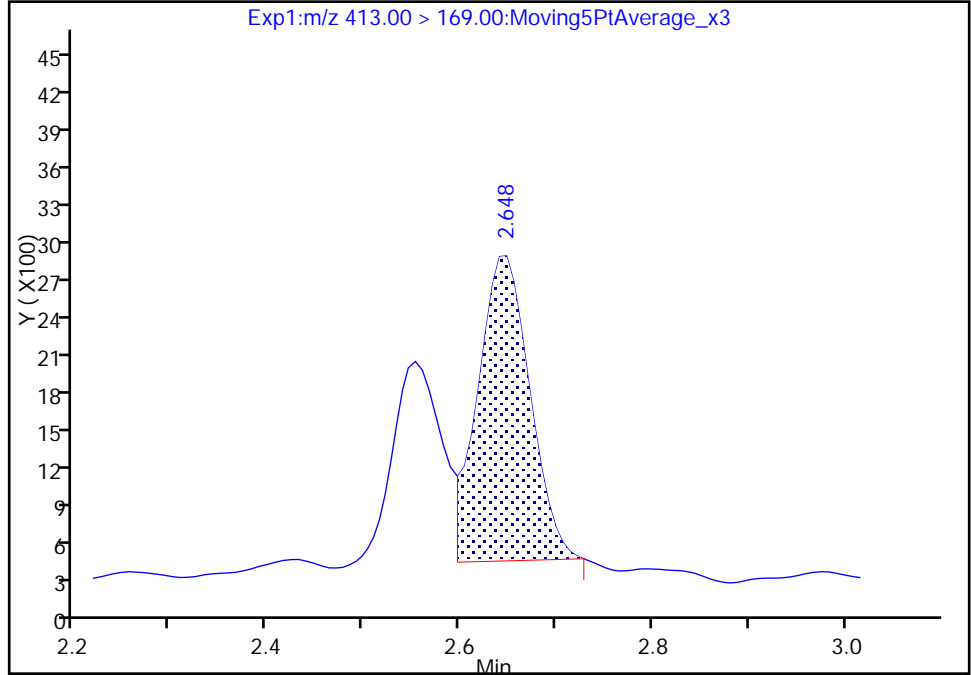
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_023.d  
Injection Date: 29-Jun-2017 01:51:41 Instrument ID: A8\_N  
Lims ID: 320-29267-B-17-A Lab Sample ID: 320-29267-17  
Client ID: MEAFF-TA4J-1985MW01-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 20 Worklist Smp#: 23  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

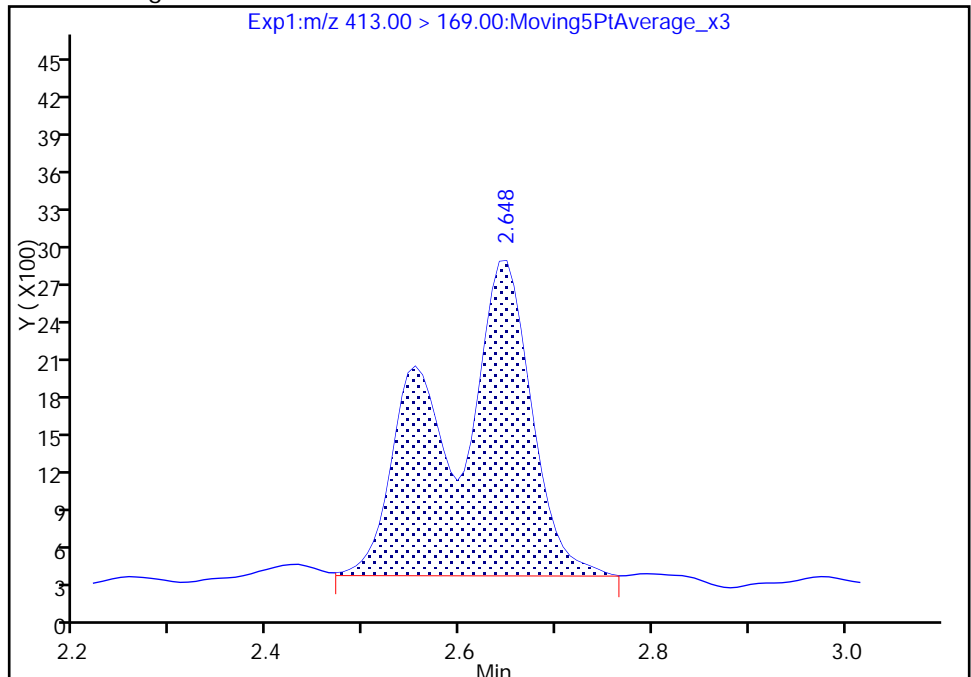
RT: 2.65  
Area: 9061  
Amount: 0.194736  
Amount Units: ng/ml

Processing Integration Results



RT: 2.65  
Area: 15908  
Amount: 0.397704  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:50:20

Audit Action: Manually Integrated

Audit Reason: Isomers



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW03-GW-0617 Lab Sample ID: 320-29267-18  
 Matrix: Water Lab File ID: 2017.06.28B\_025.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:05  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 265.4 (mL) Date Analyzed: 06/29/2017 02:05  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	<i>Perfluorooctanoic acid (PFOA)</i>	510	M E	2.4	1.9	0.70
1763-23-1	<i>Perfluorooctanesulfonic acid (PFOS)</i>	560	E	3.8	2.8	1.2
375-73-5	<i>Perfluorobutanesulfonic acid (PFBS)</i>	410	E	2.4	1.9	0.86

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	77		25-150
STL00991	13C4 PFOS	95		25-150
STL00994	18O2 PFHxS	63		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_025.d  
 Lims ID: 320-29267-B-18-A  
 Client ID: MEAFF-IW03-GW-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 02:05:30 ALS Bottle#: 21 Worklist Smp#: 25  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-b-18-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:21 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:50:54

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	41257400	220.1			2344	E
298.90 > 99.00	1.753	1.760	-0.007	1.000	22575933		1.83(0.00-0.00)		6068	
D 11 18O2 PFHxS										
403.00 > 84.00	2.304	2.329	-0.025		6359123	29.9		63.2	12666	
* 62 13C2-PFOA										
415.00 > 370.00	2.632	2.656	-0.024		28130	50.0			337	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.639	2.663	-0.024	1.000	28681587	270.8			5507	EM
413.00 > 169.00	2.639	2.663	-0.024	1.000	20289360		1.41(0.90-1.10)		6194	M
D 14 13C4 PFOA										
417.00 > 372.00	2.639	2.663	-0.024		4995818	38.3		76.5	14131	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.004	3.026	-0.022	1.000	48524414	299.4			8380	E
499.00 > 99.00	3.004	3.026	-0.022	1.000	12245385		3.96(0.90-1.10)		8642	
D 18 13C4 PFOS										
503.00 > 80.00	3.004	3.026	-0.022		7384681	45.4		94.9	10499	

QC Flag Legend

Processing Flags

E - Exceeded Maximum Amount

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_025.d

Injection Date: 29-Jun-2017 02:05:30

Instrument ID: A8\_N

Lims ID: 320-29267-B-18-A

Lab Sample ID: 320-29267-18

Client ID: MEAFF-IW03-GW-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 21

Worklist Smp#: 25

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

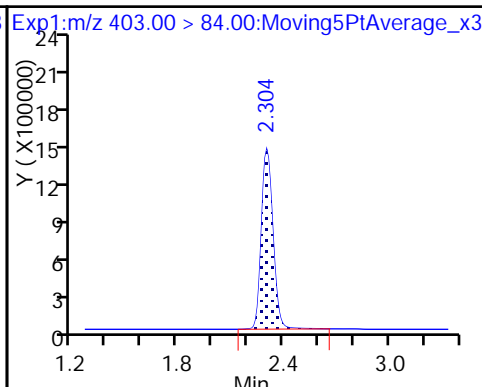
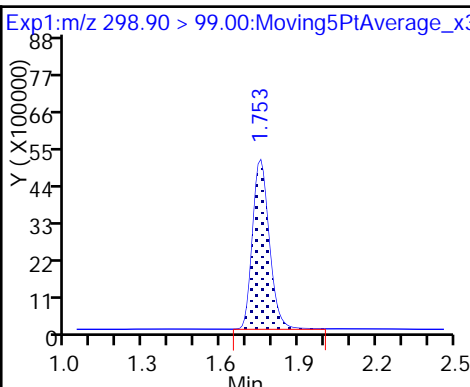
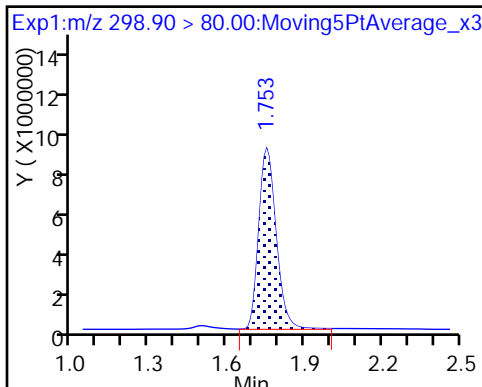
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

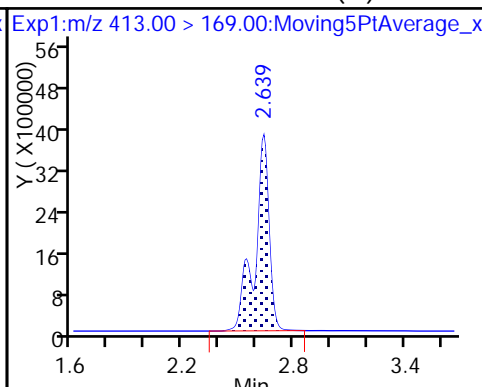
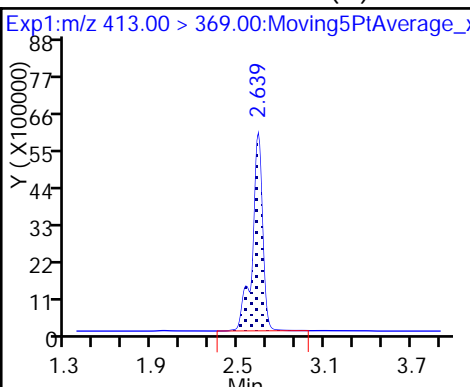
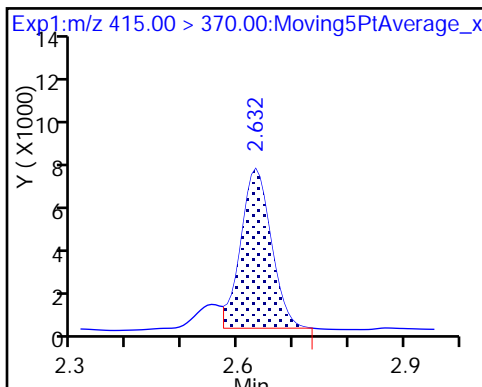
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

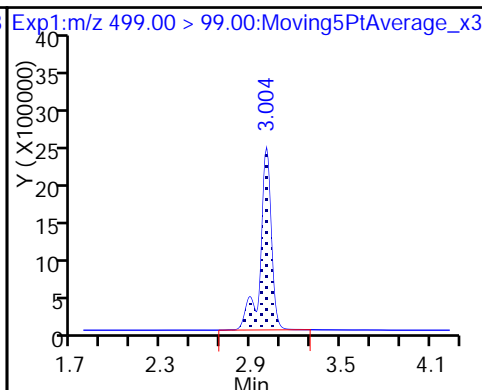
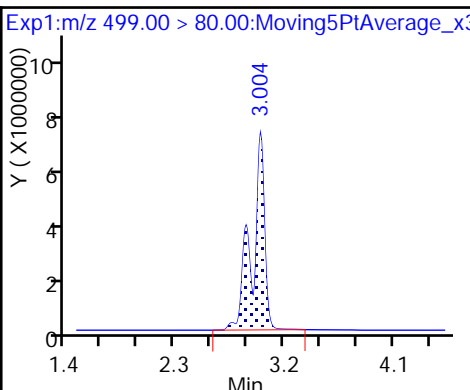
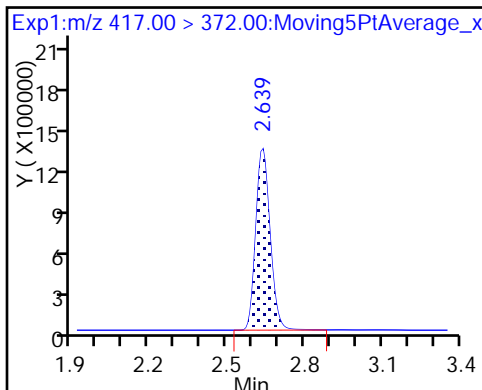
15 Perfluorooctanoic acid (M)



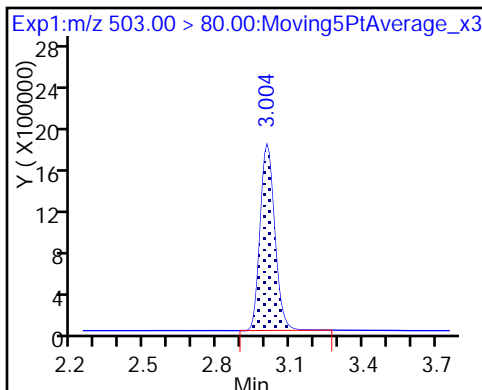
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

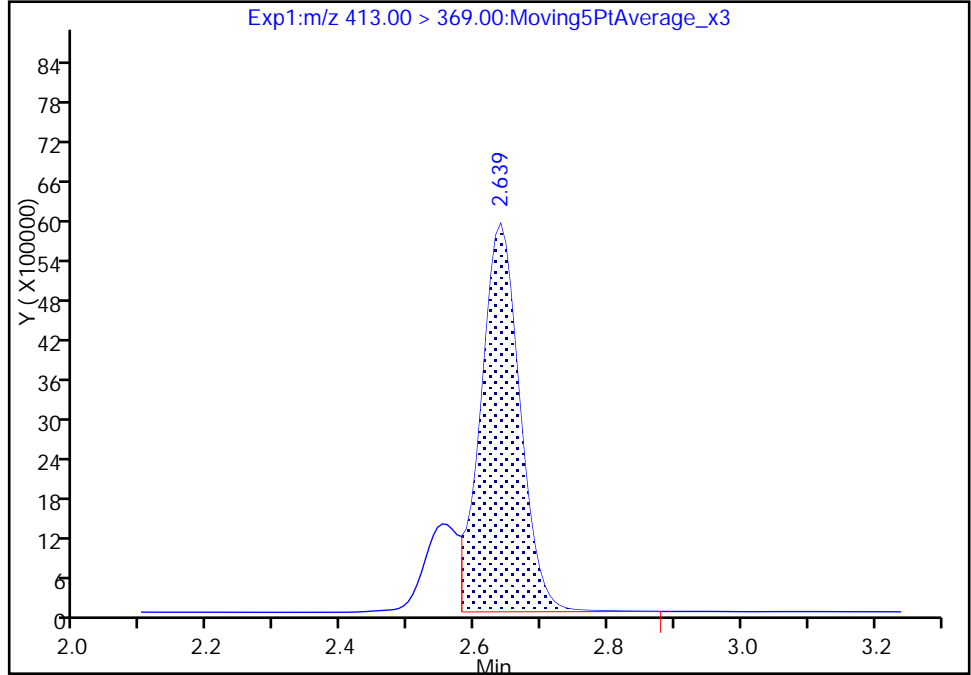
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_025.d  
Injection Date: 29-Jun-2017 02:05:30 Instrument ID: A8\_N  
Lims ID: 320-29267-B-18-A Lab Sample ID: 320-29267-18  
Client ID: MEAFF-IW03-GW-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 25  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

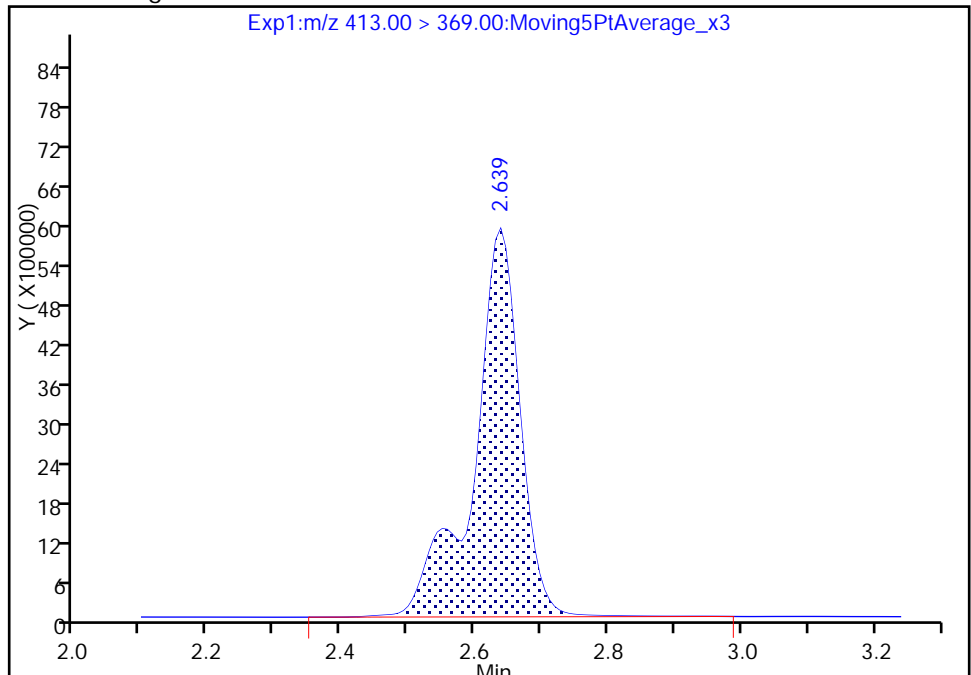
RT: 2.64  
Area: 23817778  
Amount: 224.8664  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 28681587  
Amount: 270.7862  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:50:41  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

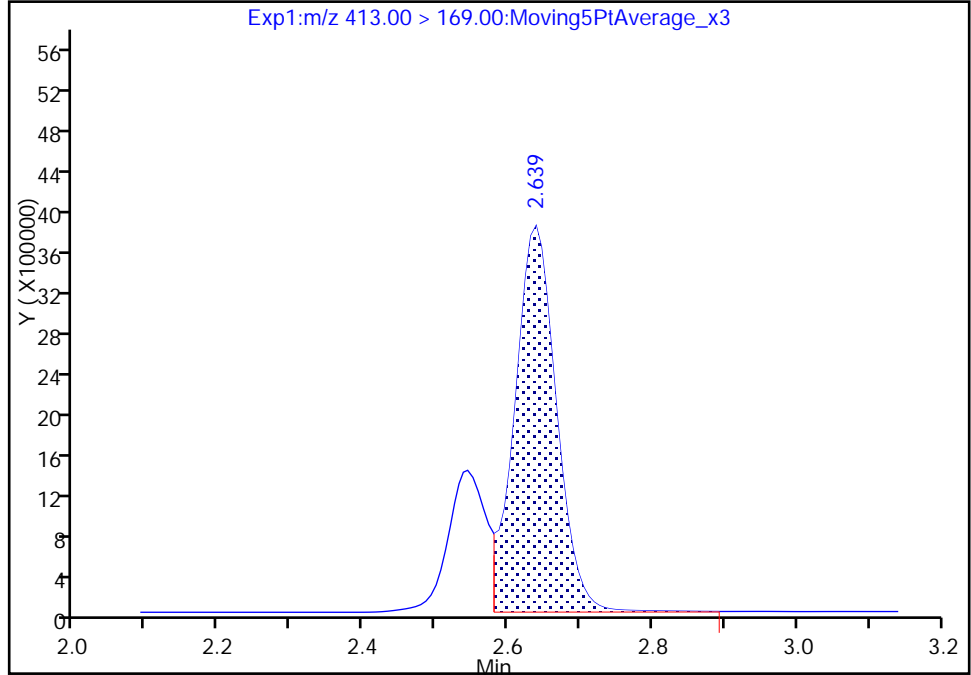
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_025.d  
Injection Date: 29-Jun-2017 02:05:30 Instrument ID: A8\_N  
Lims ID: 320-29267-B-18-A Lab Sample ID: 320-29267-18  
Client ID: MEAFF-IW03-GW-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 21 Worklist Smp#: 25  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

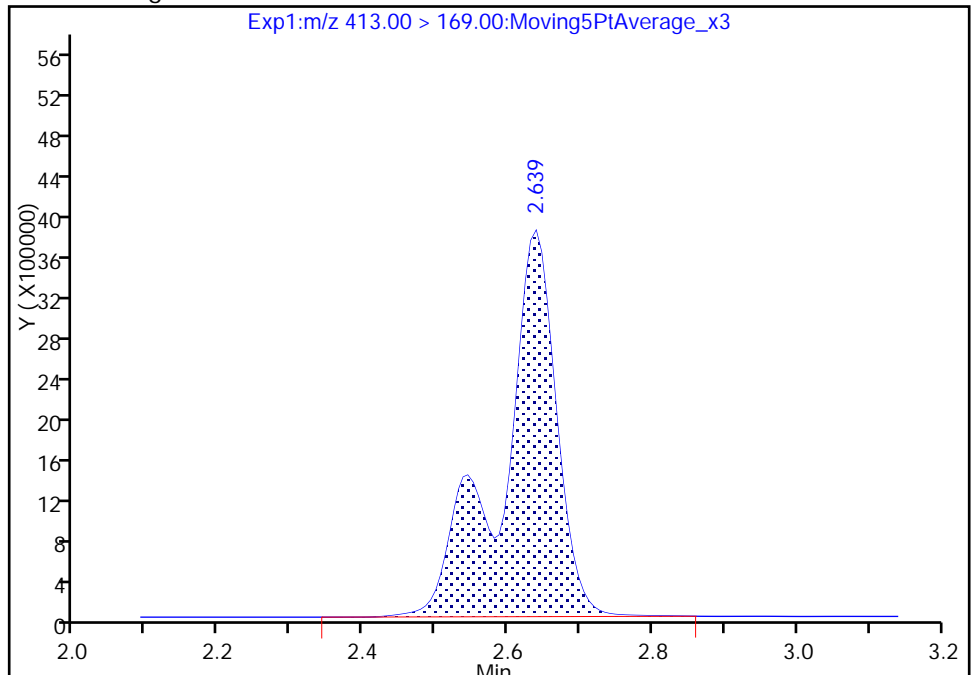
RT: 2.64  
Area: 15287570  
Amount: 224.8664  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 20289360  
Amount: 270.7862  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:50:43

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW03-GW-0617 DL Lab Sample ID: 320-29267-18 DL  
 Matrix: Water Lab File ID: 2017.06.29D\_005.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:05  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 265.4 (mL) Date Analyzed: 06/29/2017 18:39  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 5  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171828 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	550	D M	12	9.4	3.5
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	590	D	19	14	6.0
375-73-5	Perfluorobutanesulfonic acid (PFBS)	450	D	12	9.4	4.3

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	95		25-150
STL00991	13C4 PFOS	112		25-150
STL00994	18O2 PFHxS	101		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_005.d  
 Lims ID: 320-29267-B-18-A  
 Client ID: MEAFF-IW03-GW-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 18:39:07 ALS Bottle#: 4 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 5.0000  
 Sample Info: 320-29267-b-18-a 5X  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 08:15:59 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 07:59:07

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.760	1.760	0.0	1.000	14363271	48.2			3541	
298.90 > 99.00	1.760	1.760	0.0	1.000	6230805		2.31(0.00-0.00)		8649	
D 11 18O2 PFHxS										
403.00 > 84.00	2.324	2.329	-0.005		2024184	9.52		20.1	10357	
* 62 13C2-PFOA										
415.00 > 370.00	2.656	2.656	0.0		6650	50.0			172	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.656	2.663	-0.007	1.000	7698910	58.9			2592	M
413.00 > 169.00	2.656	2.663	-0.007	1.000	5145976		1.50(0.90-1.10)		4931	M
D 14 13C4 PFOA										
417.00 > 372.00	2.656	2.663	-0.007		1233777	9.45		18.9	8404	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.024	3.026	-0.002	1.000	12100125	63.1			7582	
499.00 > 99.00	3.024	3.026	-0.002	1.000	2747113		4.40(0.90-1.10)		6119	
D 18 13C4 PFOS										
503.00 > 80.00	3.024	3.026	-0.002		1746841	10.7		22.5	6297	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_005.d

Injection Date: 29-Jun-2017 18:39:07

Instrument ID: A8\_N

Lims ID: 320-29267-B-18-A

Lab Sample ID: 320-29267-18

Client ID: MEAFF-IW03-GW-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 4

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 5.0000

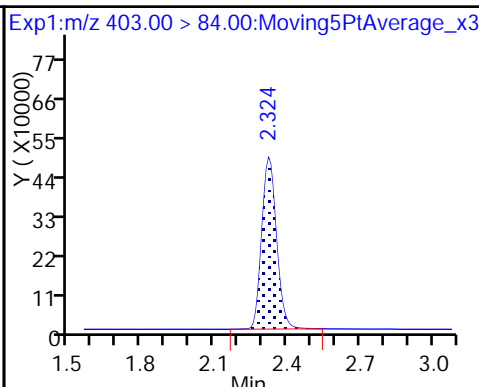
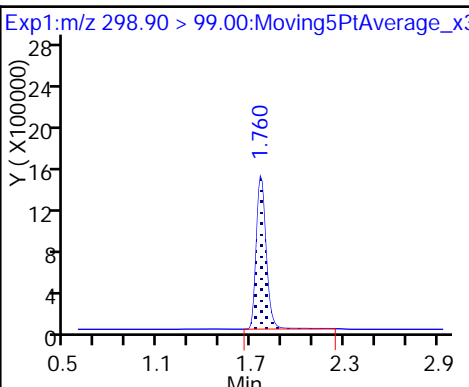
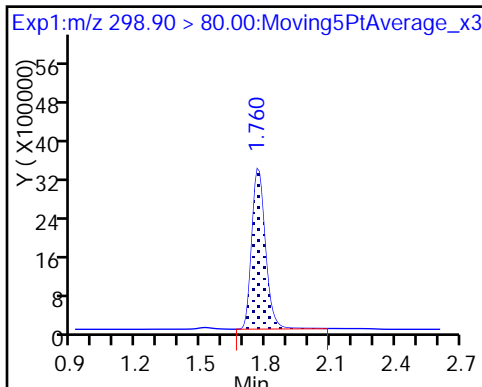
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

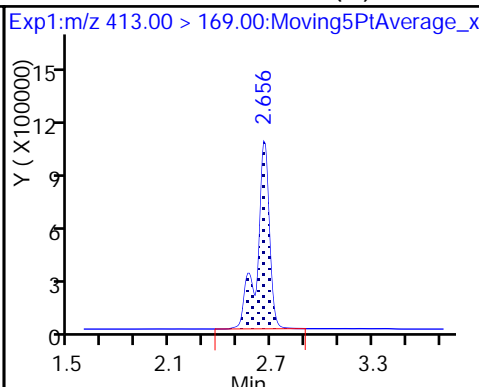
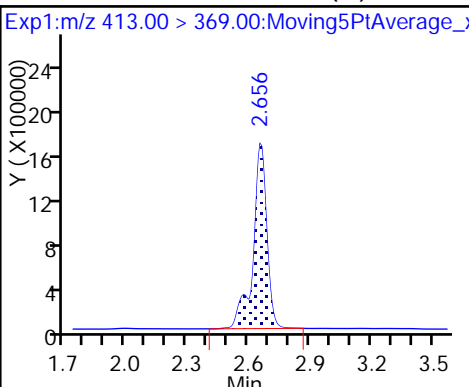
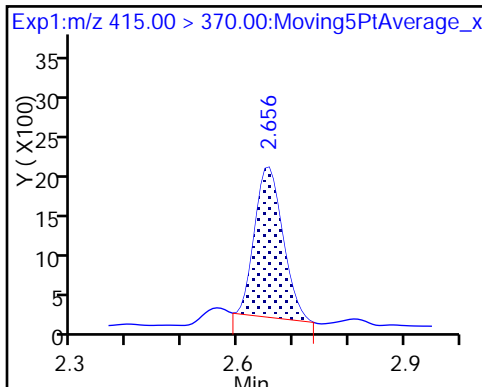
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

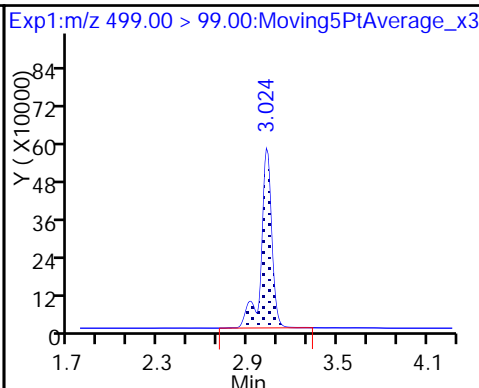
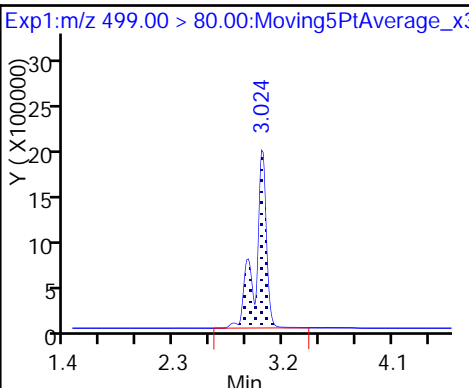
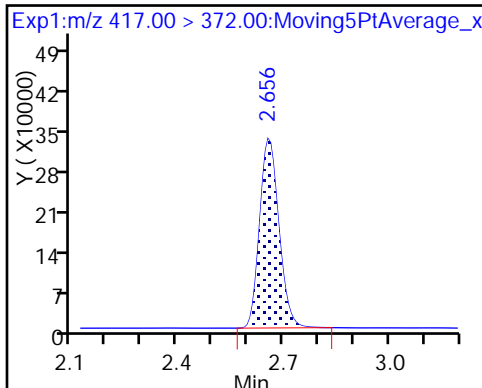
15 Perfluorooctanoic acid (M)



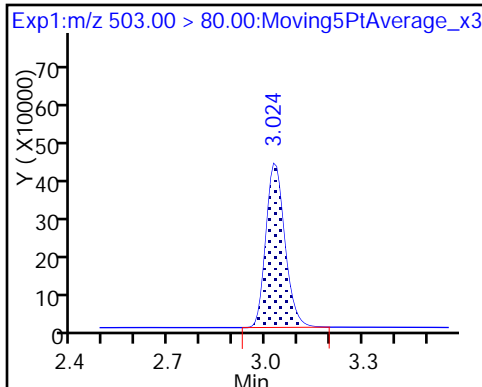
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS





TestAmerica Sacramento

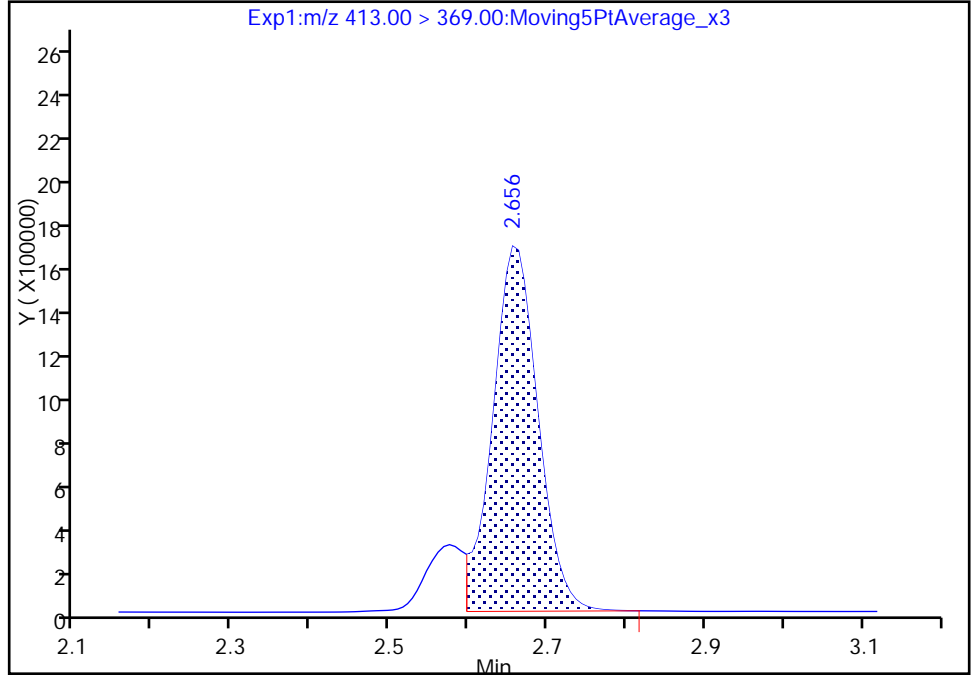
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_005.d  
Injection Date: 29-Jun-2017 18:39:07 Instrument ID: A8\_N  
Lims ID: 320-29267-B-18-A Lab Sample ID: 320-29267-18  
Client ID: MEAFF-IW03-GW-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 5  
Injection Vol: 2.0 ul Dil. Factor: 5.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

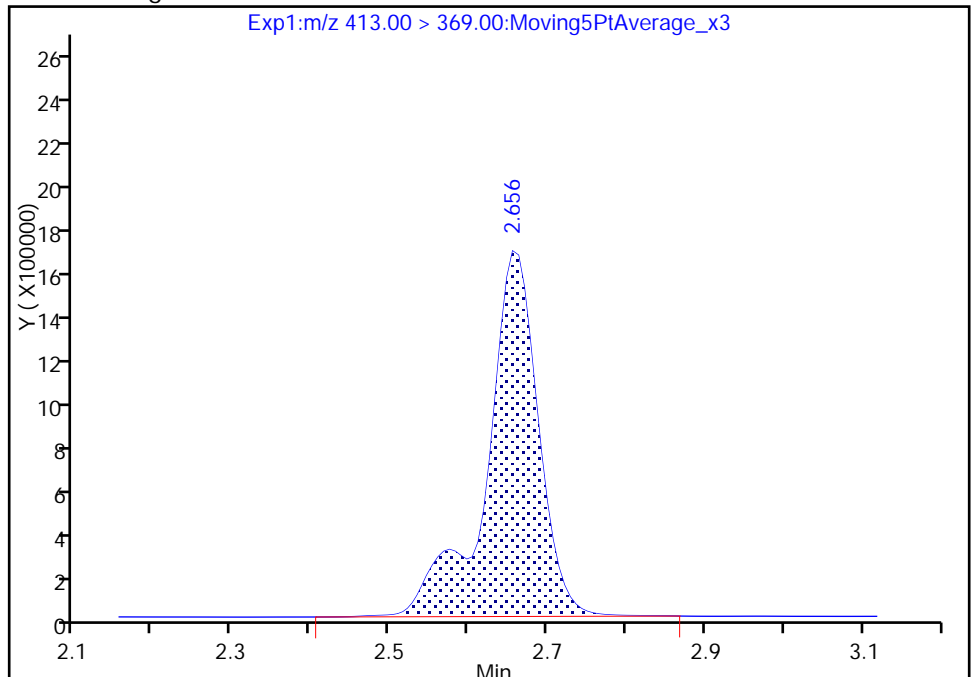
RT: 2.66  
Area: 6646989  
Amount: 50.821590  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
Area: 7698910  
Amount: 58.864374  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 30-Jun-2017 07:59:02  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

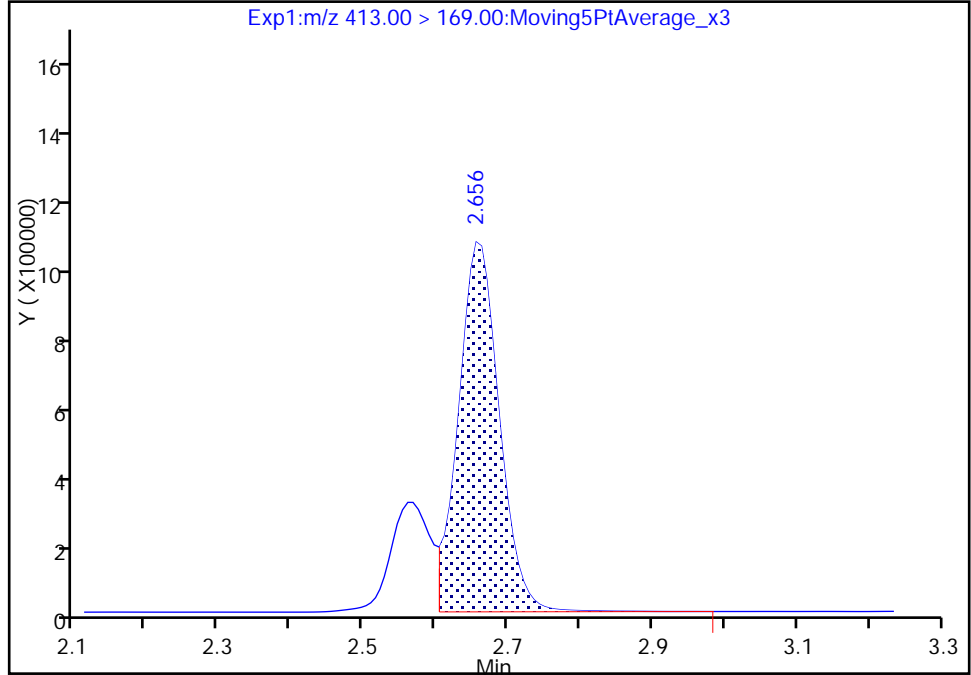
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Injection Date: 29-Jun-2017 18:39:07 Instrument ID: A8\_N  
Lims ID: 320-29267-B-18-A Lab Sample ID: 320-29267-18  
Client ID: MEAFF-IW03-GW-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 5  
Injection Vol: 2.0 ul Dil. Factor: 5.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

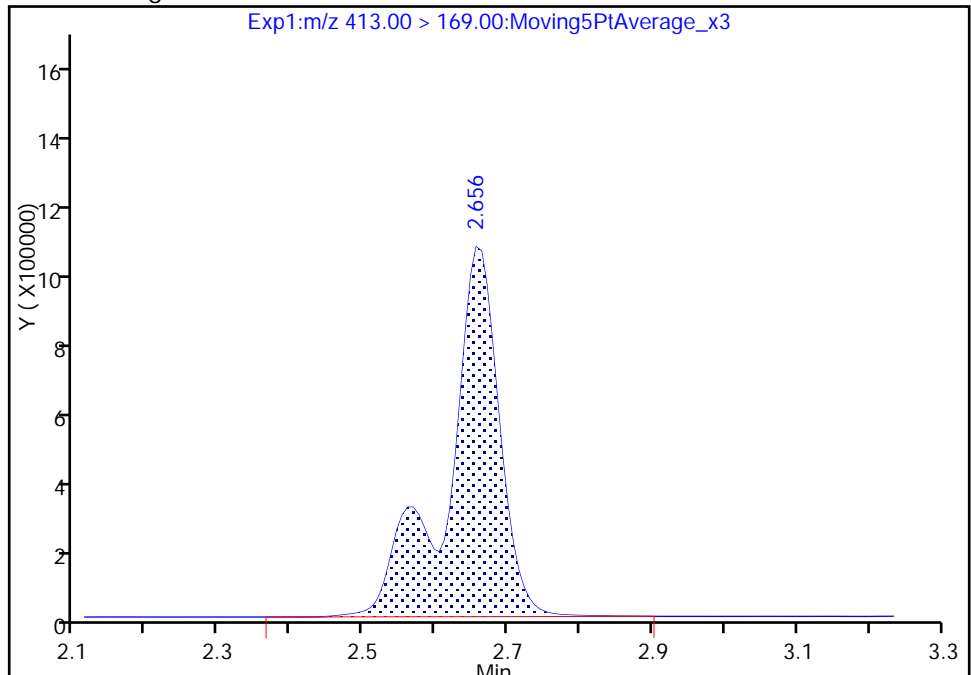
RT: 2.66  
Area: 3984309  
Amount: 50.821590  
Amount Units: ng/ml

Processing Integration Results



RT: 2.66  
Area: 5145976  
Amount: 58.864374  
Amount Units: ng/ml

Manual Integration Results



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-FB02-0617 Lab Sample ID: 320-29267-19  
 Matrix: Water Lab File ID: 2017.06.28B\_026.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 13:40  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 280.8 (mL) Date Analyzed: 06/29/2017 02:12  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	125		25-150
STL00991	13C4 PFOS	112		25-150
STL00994	18O2 PFHxS	113		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_026.d  
 Lims ID: 320-29267-A-19-A  
 Client ID: MEAFF-FB02-0617  
 Sample Type: Client  
 Inject. Date: 29-Jun-2017 02:12:24 ALS Bottle#: 22 Worklist Smp#: 26  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-19-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:21 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:51:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	14264	0.0426			7.9	
298.90 > 99.00	1.744	1.760	-0.016	0.995	7072		2.02(0.00-0.00)		7.1	
D 11 18O2 PFHxS										
403.00 > 84.00	2.307	2.329	-0.022		11359674	53.4		113	15103	
* 62 13C2-PFOA										
415.00 > 370.00	2.641	2.656	-0.015		5199	50.0			198	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.641	2.663	-0.022	1.000	44263	0.2562			7.9	M
413.00 > 169.00	2.641	2.663	-0.022	1.000	25493		1.74(0.90-1.10)		74.6	M
D 14 13C4 PFOA										
417.00 > 372.00	2.641	2.663	-0.022		8150169	62.4		125	16695	
D 18 13C4 PFOS										
503.00 > 80.00	3.007	3.026	-0.019		8707016	53.5		112	12232	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_026.d

Injection Date: 29-Jun-2017 02:12:24

Instrument ID: A8\_N

Lims ID: 320-29267-A-19-A

Lab Sample ID: 320-29267-19

Client ID: MEAFF-FB02-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 22

Worklist Smp#: 26

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

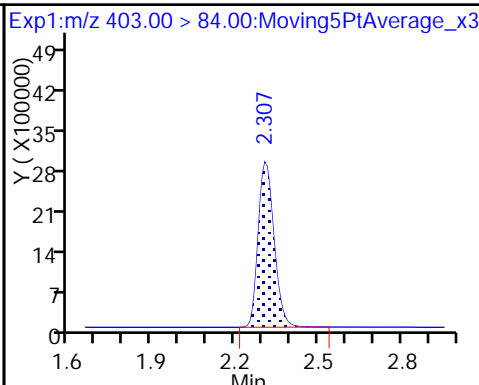
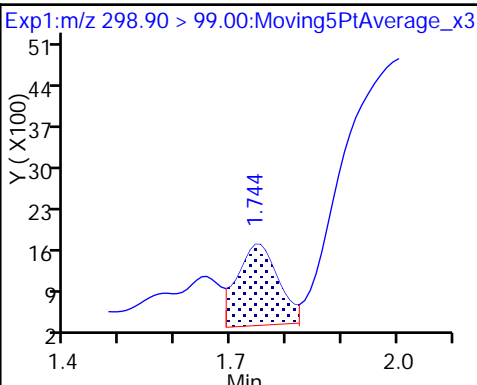
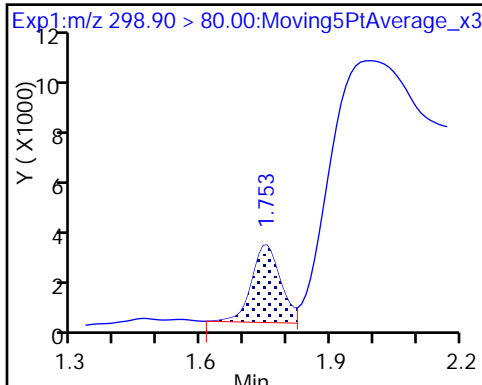
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

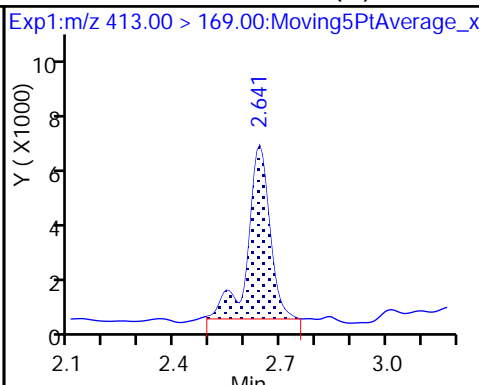
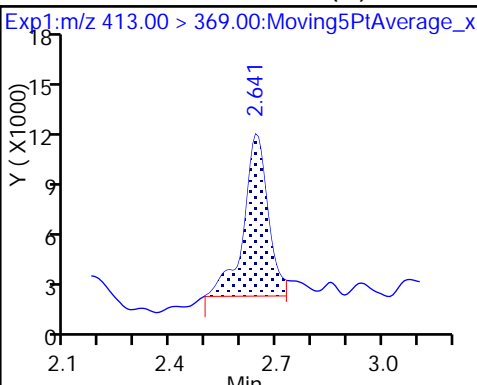
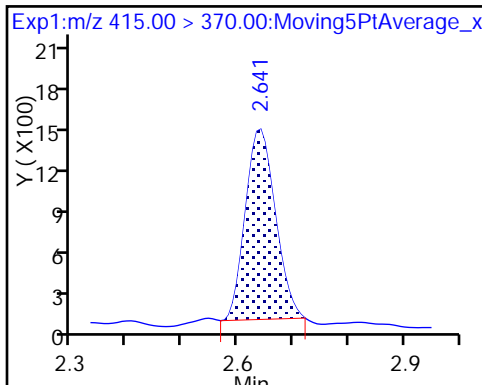
D 11 18O2 PFHxS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (M)

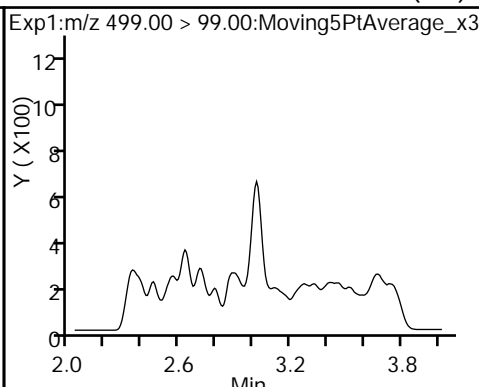
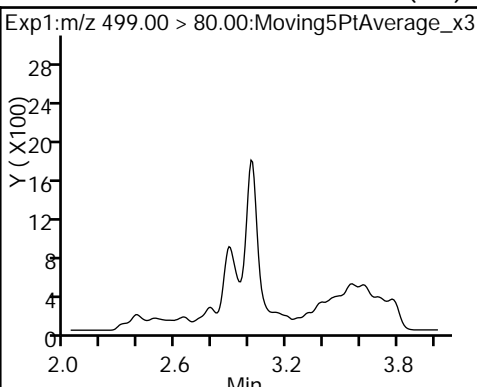
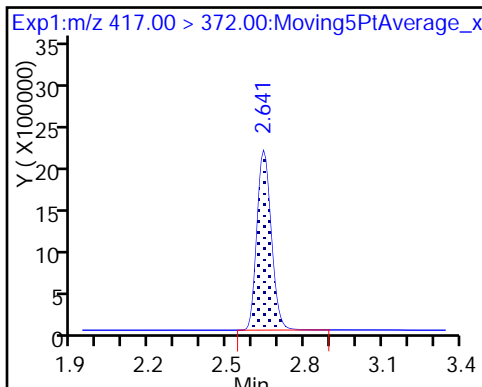
15 Perfluorooctanoic acid (M)



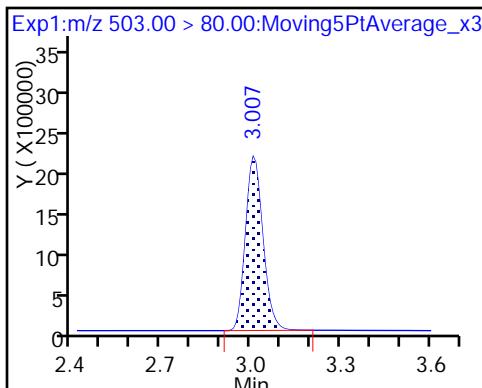
D 14 13C4 PFOA

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



TestAmerica Sacramento

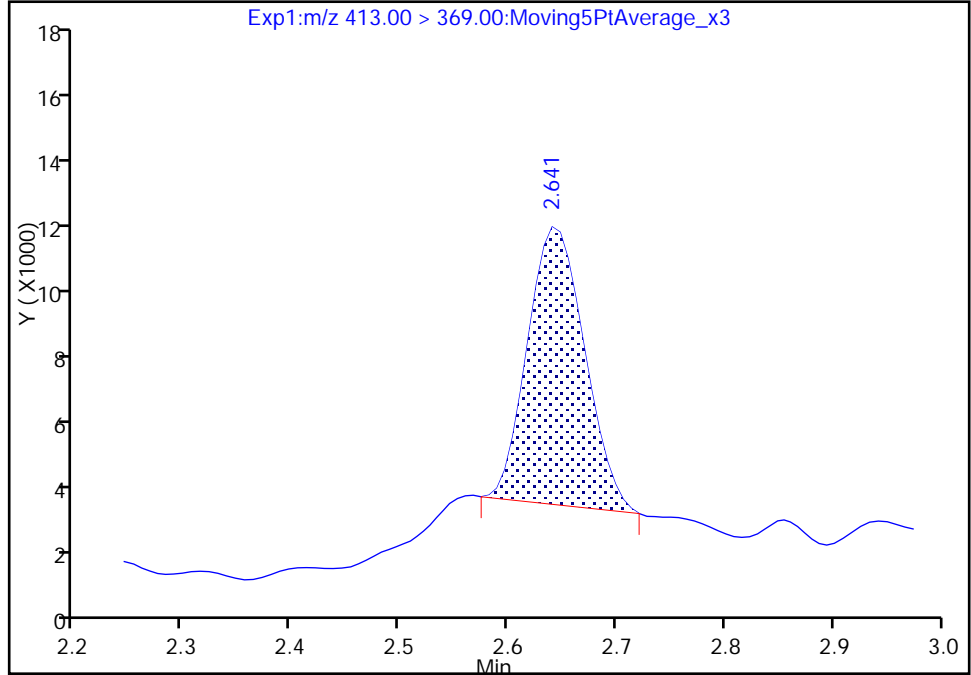
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_026.d  
Injection Date: 29-Jun-2017 02:12:24 Instrument ID: A8\_N  
Lims ID: 320-29267-A-19-A Lab Sample ID: 320-29267-19  
Client ID: MEAFF-FB02-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 26  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

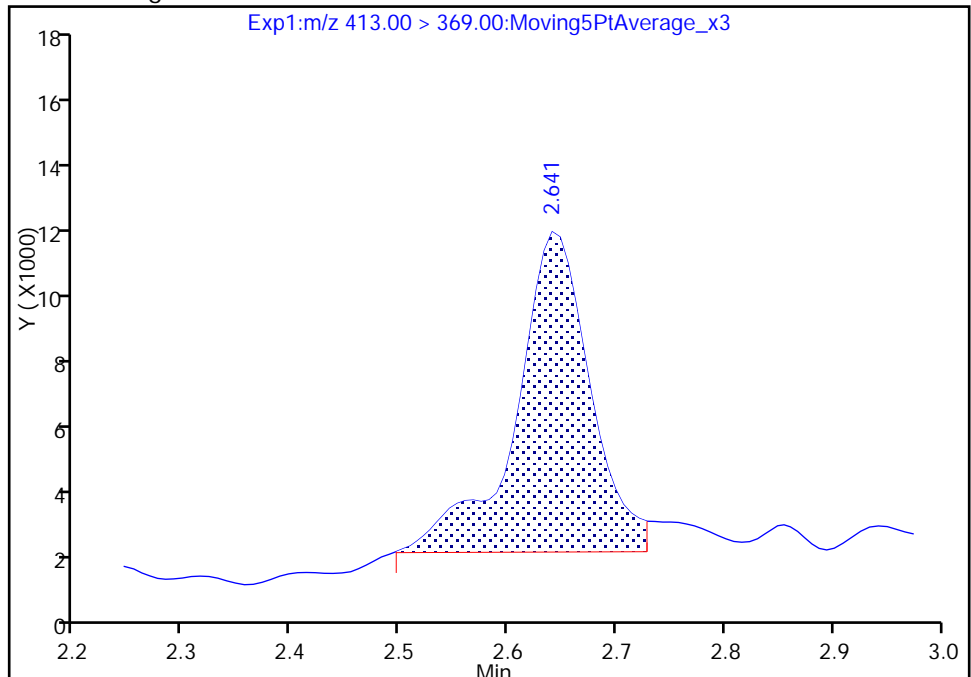
RT: 2.64  
Area: 29177  
Amount: 0.168851  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 44263  
Amount: 0.256156  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:51:10  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

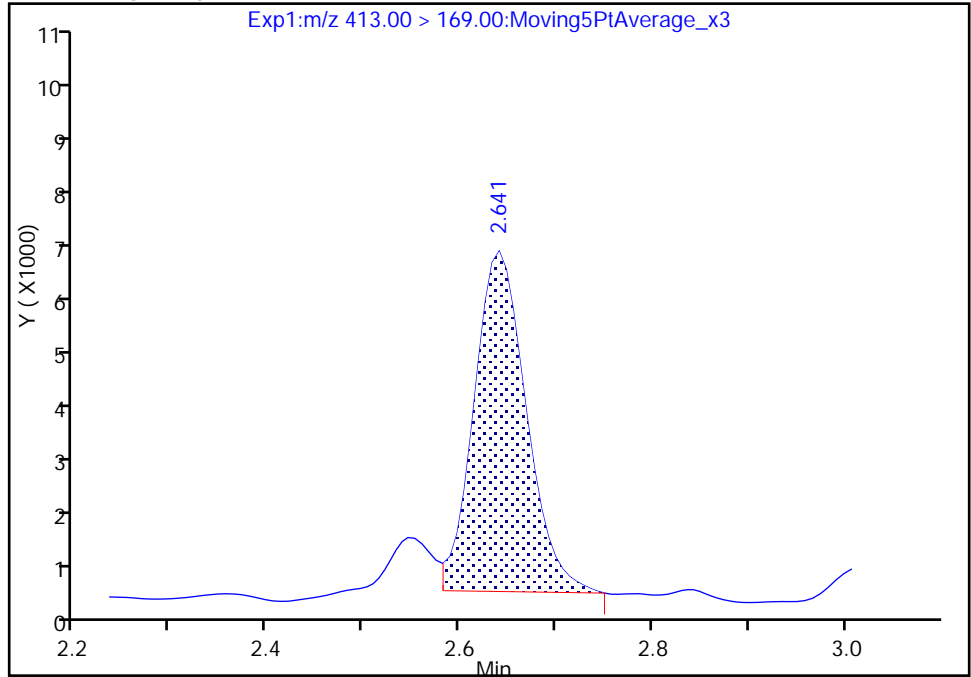
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_026.d  
Injection Date: 29-Jun-2017 02:12:24 Instrument ID: A8\_N  
Lims ID: 320-29267-A-19-A Lab Sample ID: 320-29267-19  
Client ID: MEAFF-FB02-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 22 Worklist Smp#: 26  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

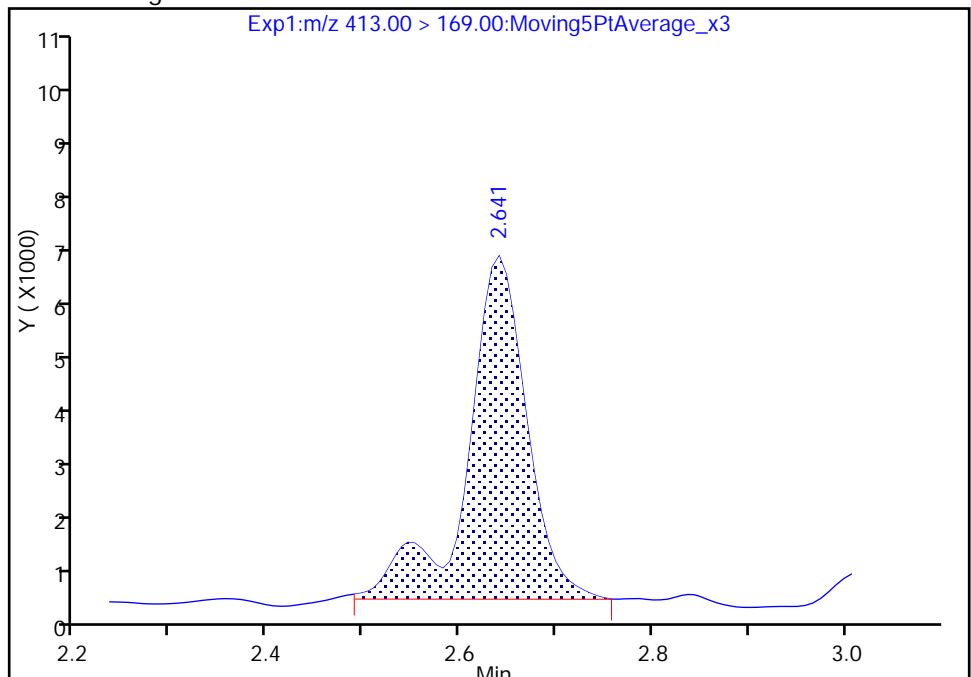
RT: 2.64  
Area: 21945  
Amount: 0.168851  
Amount Units: ng/ml

Processing Integration Results



RT: 2.64  
Area: 25493  
Amount: 0.256156  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 29-Jun-2017 16:51:19

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW04-SO-0617 Lab Sample ID: 320-29267-20  
 Matrix: Solid Lab File ID: 2017.07.18C\_003.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:20  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.09(g) Date Analyzed: 07/19/2017 00:15  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: 9.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.32	U M	0.54	0.32	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.32	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.32	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	113		25-150
STL00991	13C4 PFOS	67		25-150
STL00994	18O2 PFHxS	80		25-150



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_003.d  
 Lims ID: 320-29267-A-20-A  
 Client ID: MEAFF-IW04-SO-0617  
 Sample Type: Client  
 Inject. Date: 19-Jul-2017 00:15:43 ALS Bottle#: 3 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-20-a  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:47:58

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.782	1.782	0.0	1.000	8161	0.0427			6.5	
298.90 > 99.00	1.773	1.782	-0.009	0.995	8399		0.97(0.00-0.00)		8.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.352	2.355	-0.003		6781848	38.0		80.4	40861	
* 62 13C2-PFOA										
415.00 > 370.00	2.682	2.685	-0.003		3867	50.0			146	
D 14 13C4 PFOA										
417.00 > 372.00	2.682	2.685	-0.003		5303742	56.3		113	34044	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.682	2.685	-0.003	1.000	24629	0.2186			4.4	M
413.00 > 169.00	2.682	2.685	-0.003	1.000	9564		2.58(0.90-1.10)		45.8	M
D 18 13C4 PFOS										
503.00 > 80.00	3.051	3.051	0.001		4117451	32.0		66.9	24357	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_003.d

Injection Date: 19-Jul-2017 00:15:43

Instrument ID: A8\_N

Lims ID: 320-29267-A-20-A

Lab Sample ID: 320-29267-20

Client ID: MEAFF-IW04-SO-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 3

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

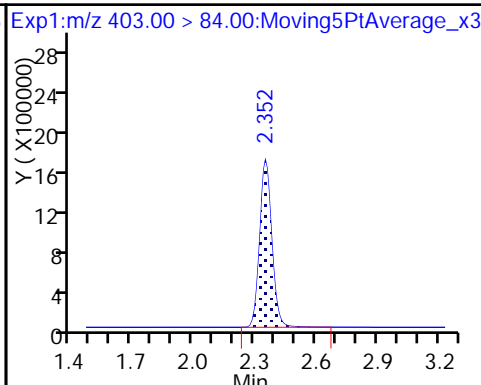
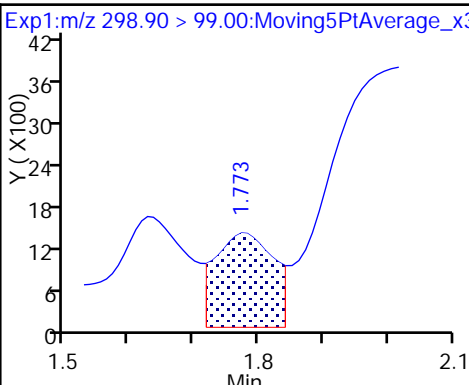
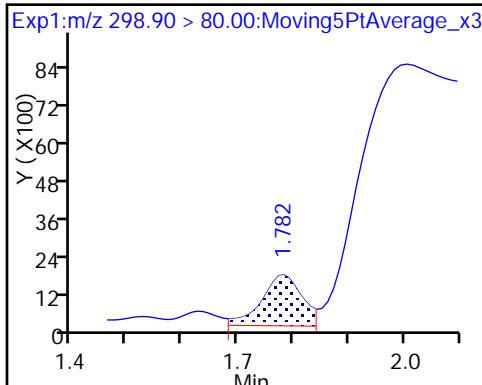
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

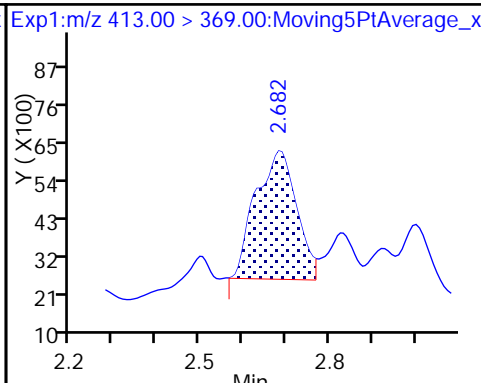
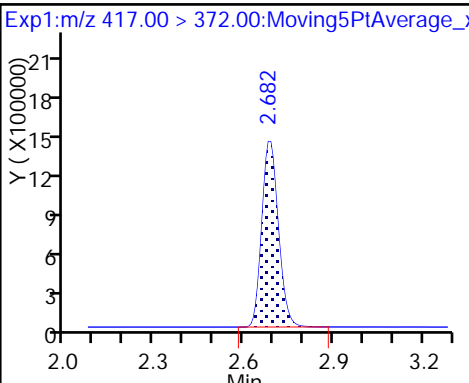
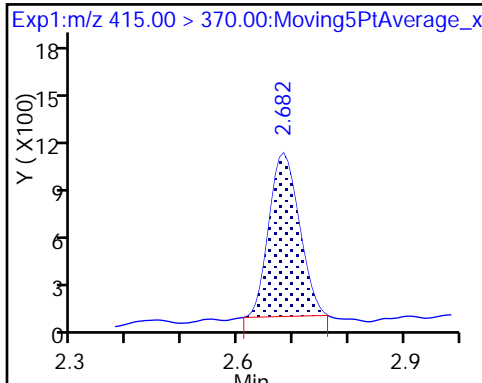
D 11 18O2 PFHxS



\* 62 13C2-PFOA

D 14 13C4 PFOA

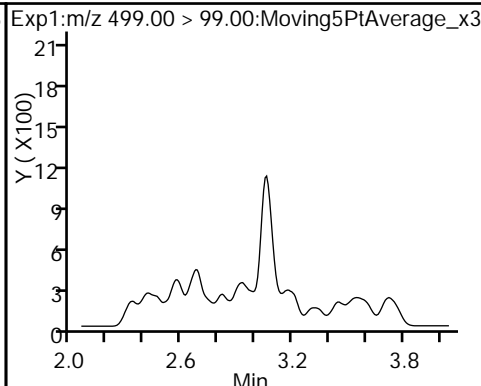
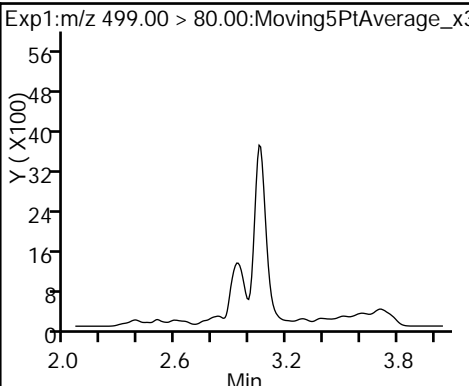
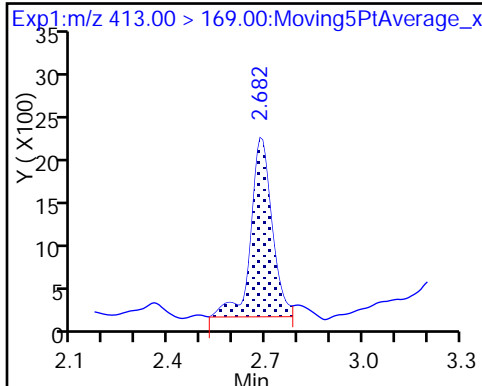
15 Perfluorooctanoic acid (M)



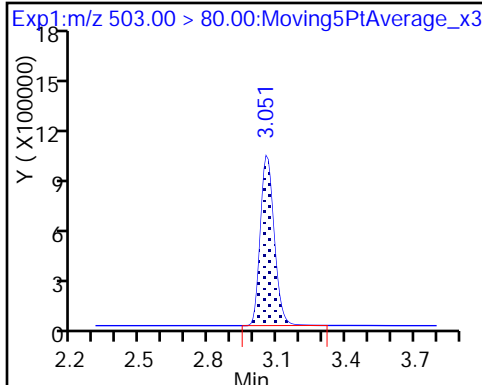
15 Perfluorooctanoic acid (M)

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



TestAmerica Sacramento

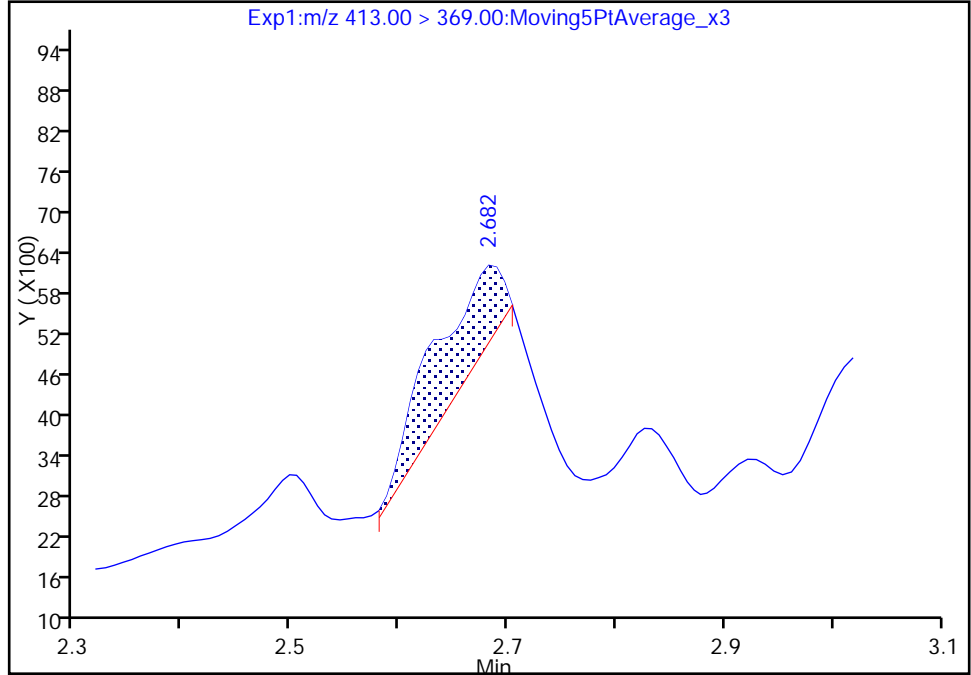
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_003.d  
Injection Date: 19-Jul-2017 00:15:43 Instrument ID: A8\_N  
Lims ID: 320-29267-A-20-A Lab Sample ID: 320-29267-20  
Client ID: MEAFF-IW04-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

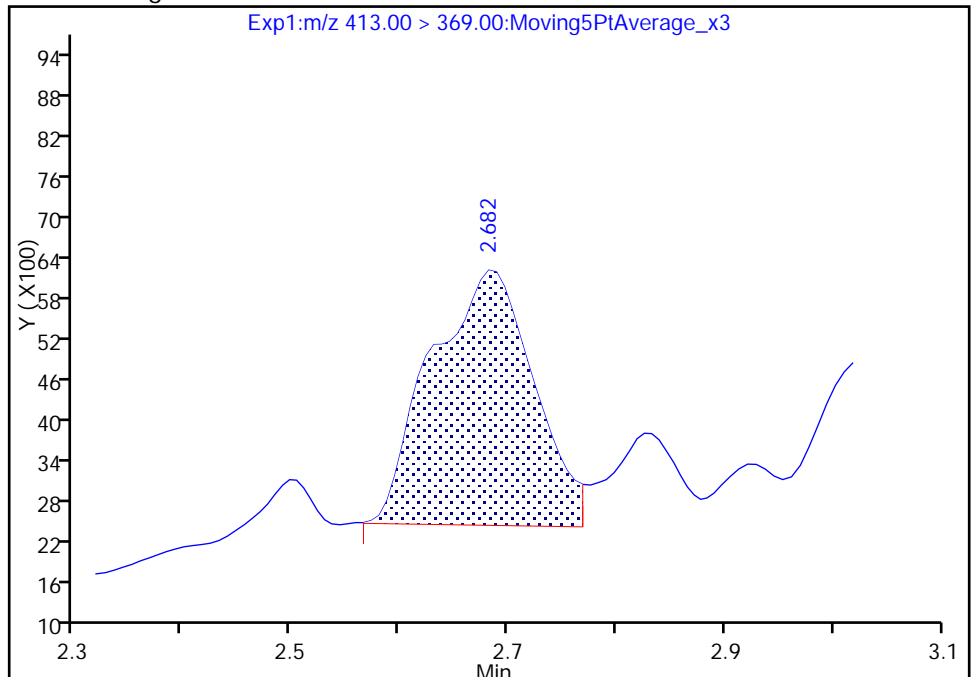
RT: 2.68  
Area: 6462  
Amount: 0.057344  
Amount Units: ng/ml

Processing Integration Results



RT: 2.68  
Area: 24629  
Amount: 0.218560  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 19-Jul-2017 13:50:31

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

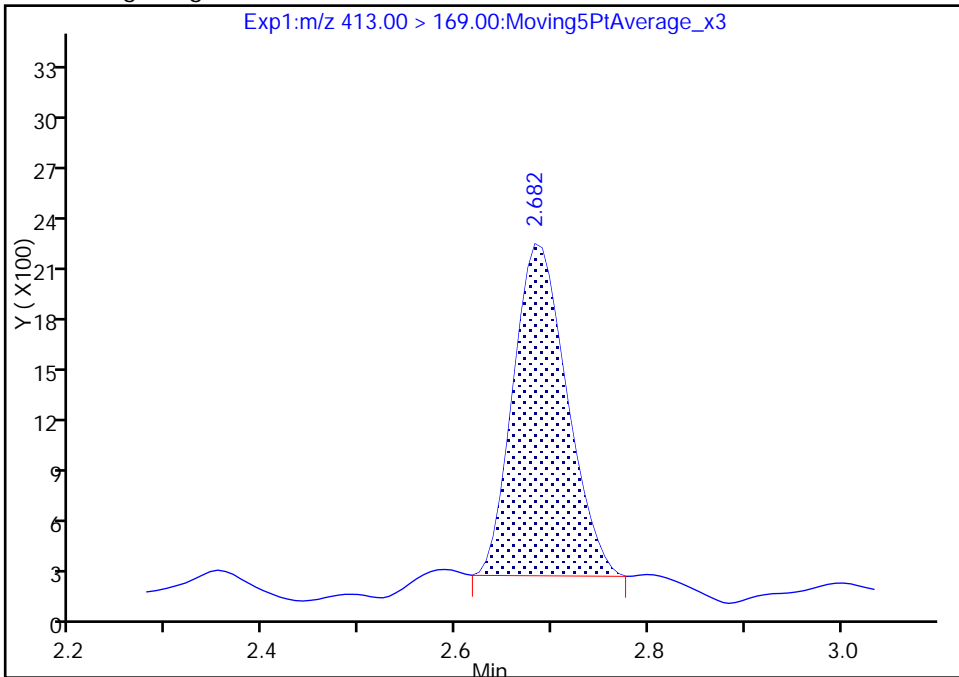
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_003.d  
Injection Date: 19-Jul-2017 00:15:43 Instrument ID: A8\_N  
Lims ID: 320-29267-A-20-A Lab Sample ID: 320-29267-20  
Client ID: MEAFF-IW04-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 3 Worklist Smp#: 4  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

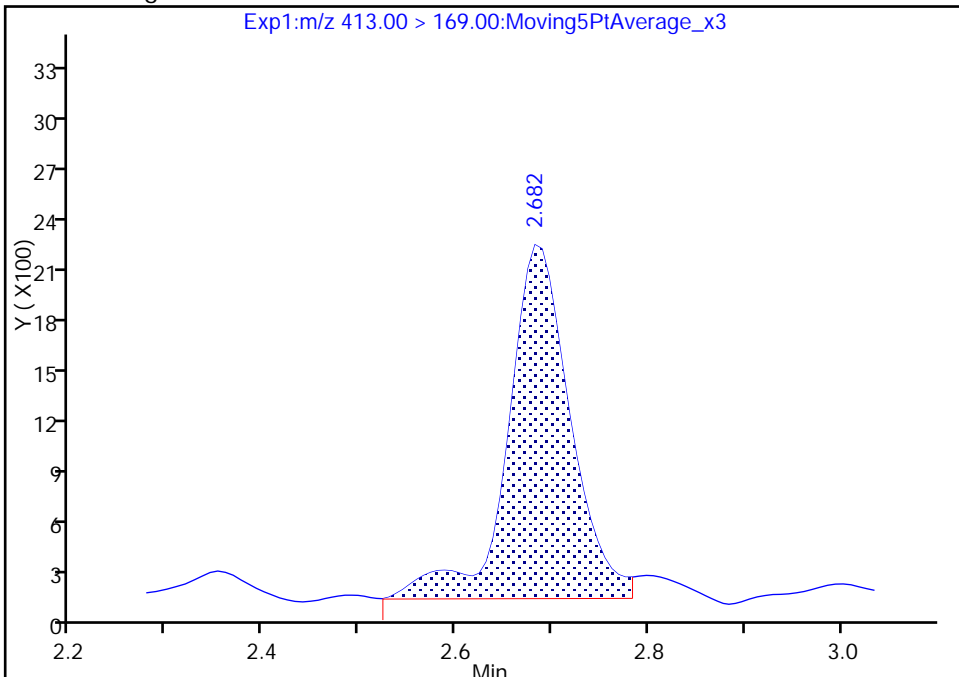
RT: 2.68  
Area: 7629  
Amount: 0.057344  
Amount Units: ng/ml

Processing Integration Results



RT: 2.68  
Area: 9564  
Amount: 0.218560  
Amount Units: ng/ml

Manual Integration Results



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW05-SO-0617 Lab Sample ID: 320-29267-21  
 Matrix: Solid Lab File ID: 2017.07.18C\_004.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:30  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.03(g) Date Analyzed: 07/19/2017 00:22  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: 20.9 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.38	U M	0.63	0.38	0.13
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.23	J M	0.63	0.38	0.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.50	0.38	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	109		25-150
STL00991	13C4 PFOS	62		25-150
STL00994	18O2 PFHxS	80		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_004.d  
 Lims ID: 320-29267-A-21-A  
 Client ID: MEAFF-IW05-SO-0617  
 Sample Type: Client  
 Inject. Date: 19-Jul-2017 00:22:37 ALS Bottle#: 4 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-21-a  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:51:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.784	1.782	0.002	1.000	8959	0.0469			8.9	
298.90 > 99.00	1.775	1.782	-0.007	0.995	11589		0.77(0.00-0.00)		11.6	
D 11 18O2 PFHxS										
403.00 > 84.00	2.345	2.355	-0.010		6787919	38.0		80.4	41094	
* 62 13C2-PFOA										
415.00 > 370.00	2.677	2.685	-0.008		3467	50.0			126	
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.685	-0.001		5146152	54.7		109	39231	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.684	2.685	-0.001	1.000	50379	0.4608			13.6	M
413.00 > 169.00	2.684	2.685	-0.001	1.000	29692		1.70(0.90-1.10)		152	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.054	3.051	0.004	1.000	76689	0.9151			337	M
499.00 > 99.00	3.046	3.051	-0.004	0.997	15698		4.89(0.90-1.10)		65.2	M
D 18 13C4 PFOS										
503.00 > 80.00	3.054	3.051	0.004		3841592	29.8		62.4	25275	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_004.d

Injection Date: 19-Jul-2017 00:22:37

Instrument ID: A8\_N

Lims ID: 320-29267-A-21-A

Lab Sample ID: 320-29267-21

Client ID: MEAFF-IW05-SO-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 4

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

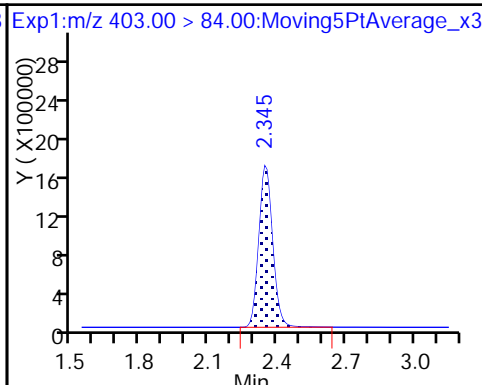
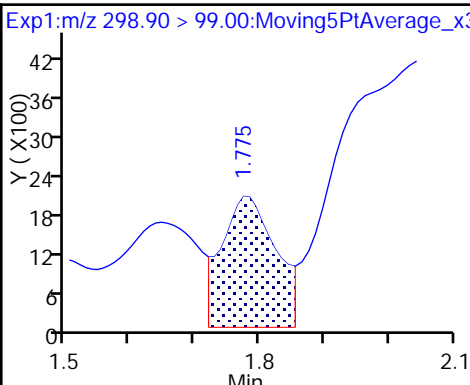
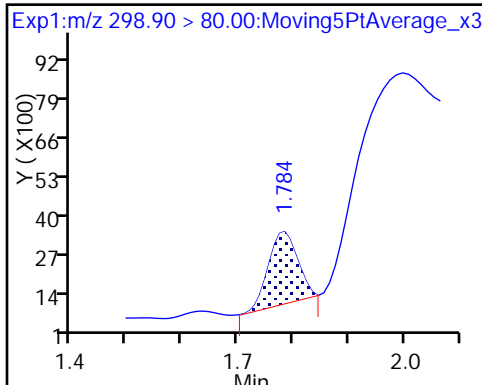
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

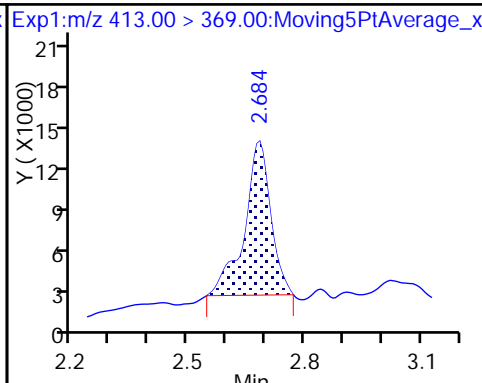
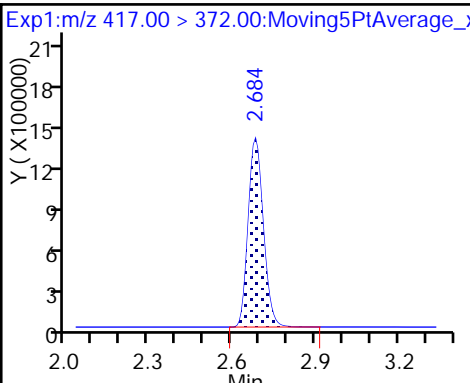
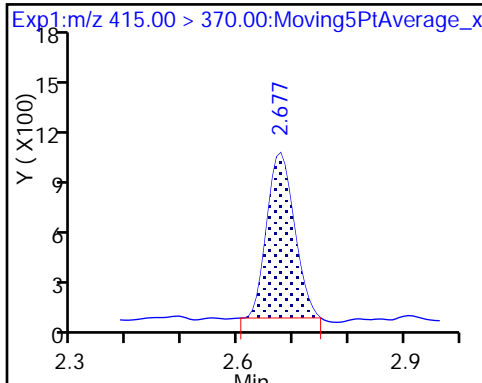
D 11 18O2 PFHxS



\* 62 13C2-PFOA

D 14 13C4 PFOA

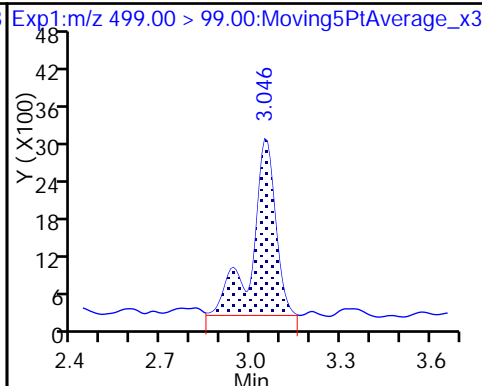
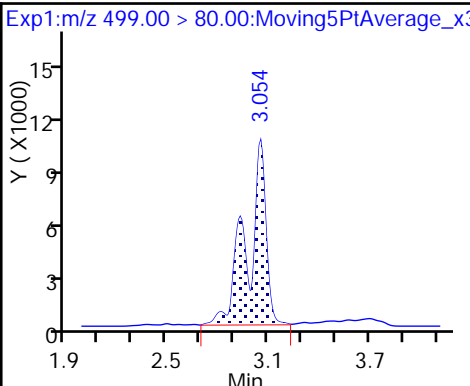
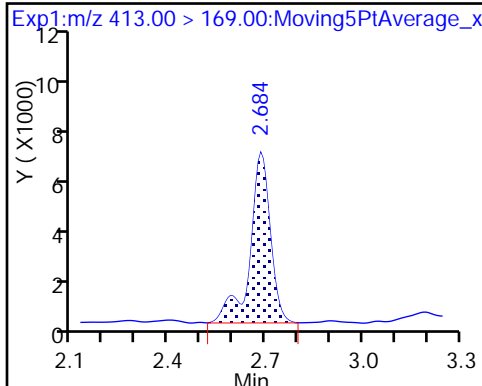
15 Perfluorooctanoic acid



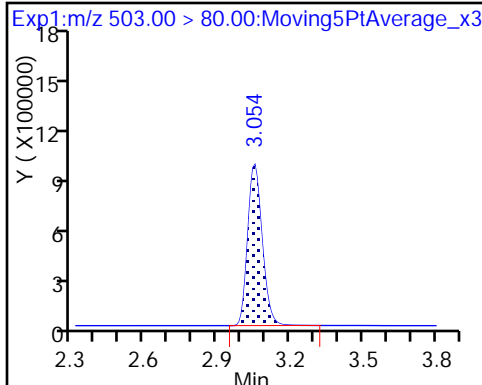
15 Perfluorooctanoic acid (M)

17 Perfluorooctane sulfonic acid (M)

17 Perfluorooctane sulfonic acid (M)



D 18 13C4 PFOS



TestAmerica Sacramento

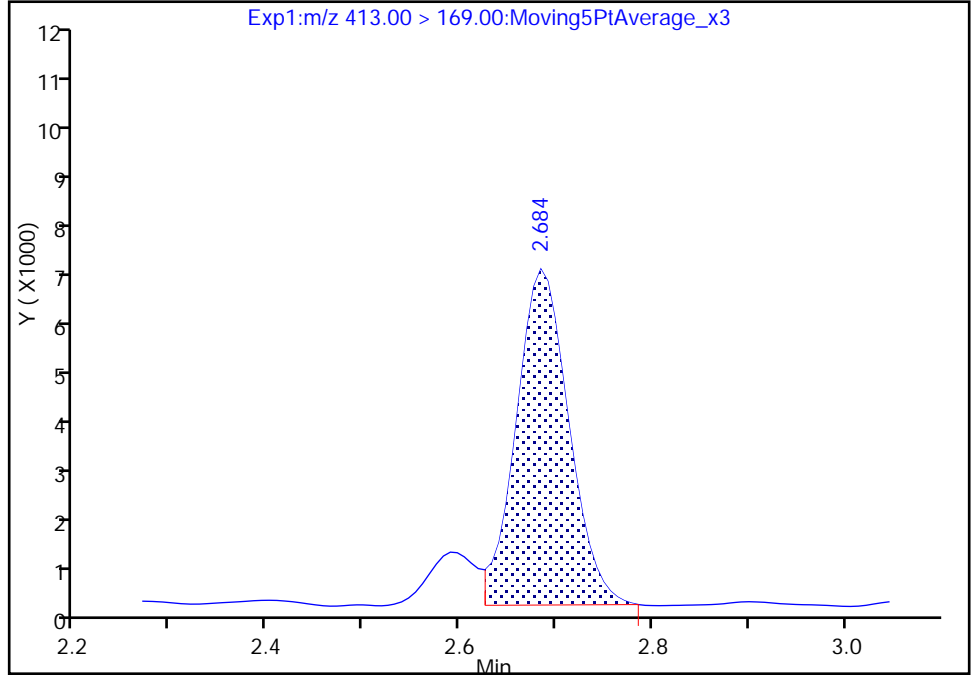
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_004.d  
Injection Date: 19-Jul-2017 00:22:37 Instrument ID: A8\_N  
Lims ID: 320-29267-A-21-A Lab Sample ID: 320-29267-21  
Client ID: MEAFF-IW05-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 5  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

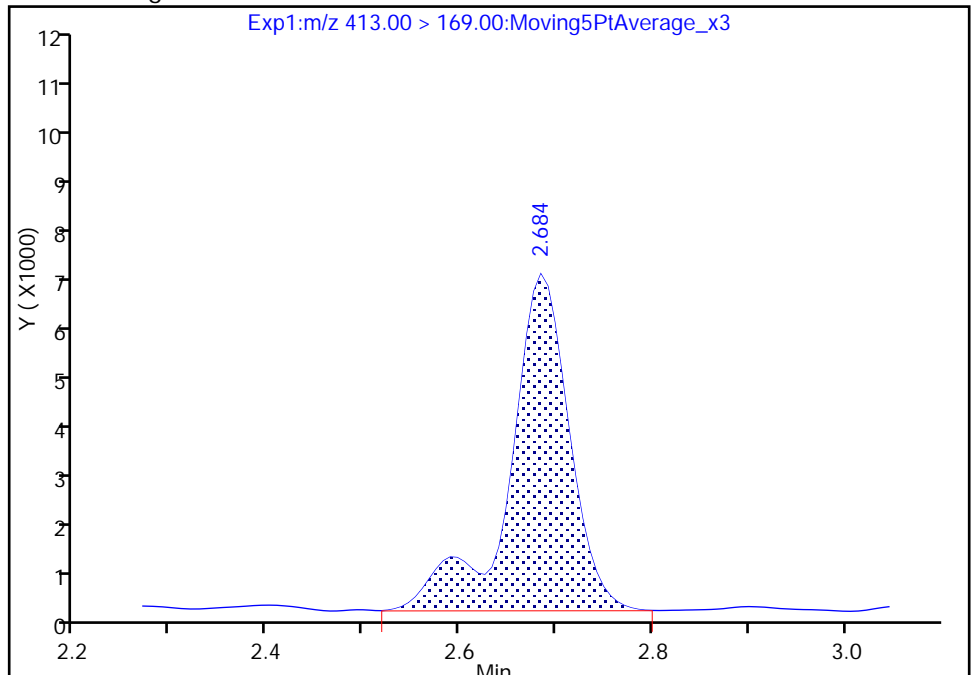
RT: 2.68  
Area: 25712  
Amount: 0.460758  
Amount Units: ng/ml

Processing Integration Results



RT: 2.68  
Area: 29692  
Amount: 0.460758  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 19-Jul-2017 13:50:53

Audit Action: Manually Integrated

Audit Reason: Isomers



TestAmerica Sacramento

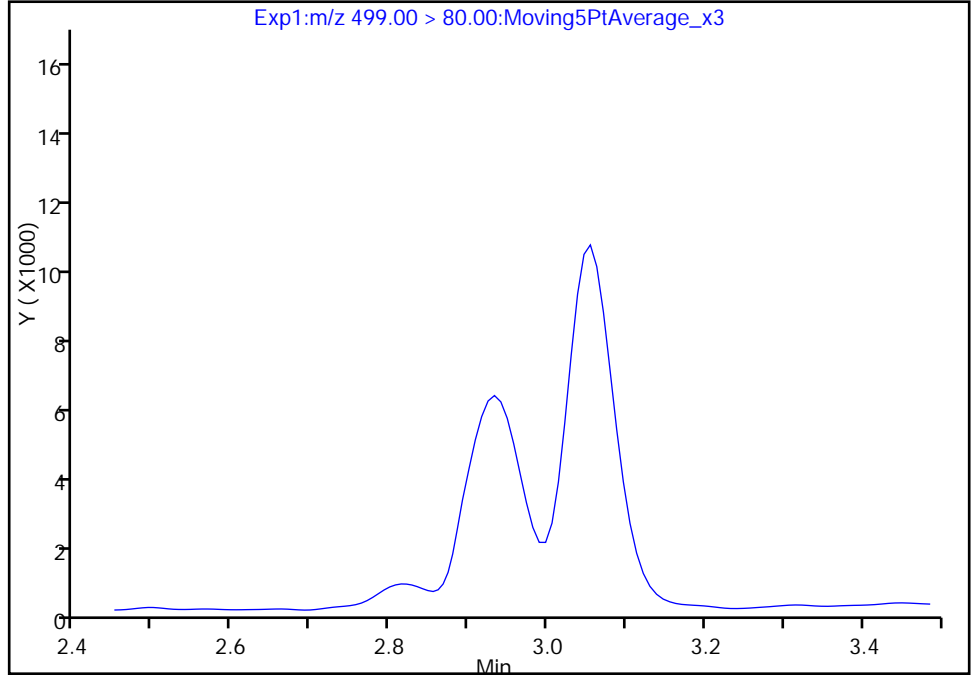
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_004.d  
Injection Date: 19-Jul-2017 00:22:37 Instrument ID: A8\_N  
Lims ID: 320-29267-A-21-A Lab Sample ID: 320-29267-21  
Client ID: MEAFF-IW05-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 5  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 1

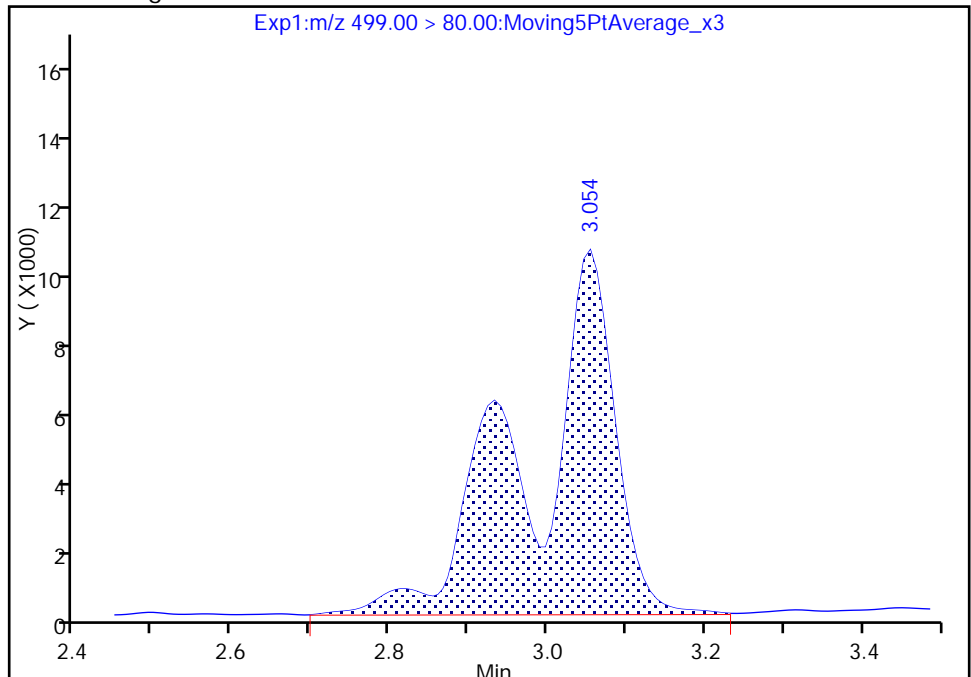
Not Detected  
Expected RT: 3.05

Processing Integration Results



Manual Integration Results

RT: 3.05  
Area: 76689  
Amount: 0.915092  
Amount Units: ng/ml



Reviewer: chandrasenas, 19-Jul-2017 13:51:04  
Audit Action: Manually Integrated

Audit Reason: Assign Peak

TestAmerica Sacramento

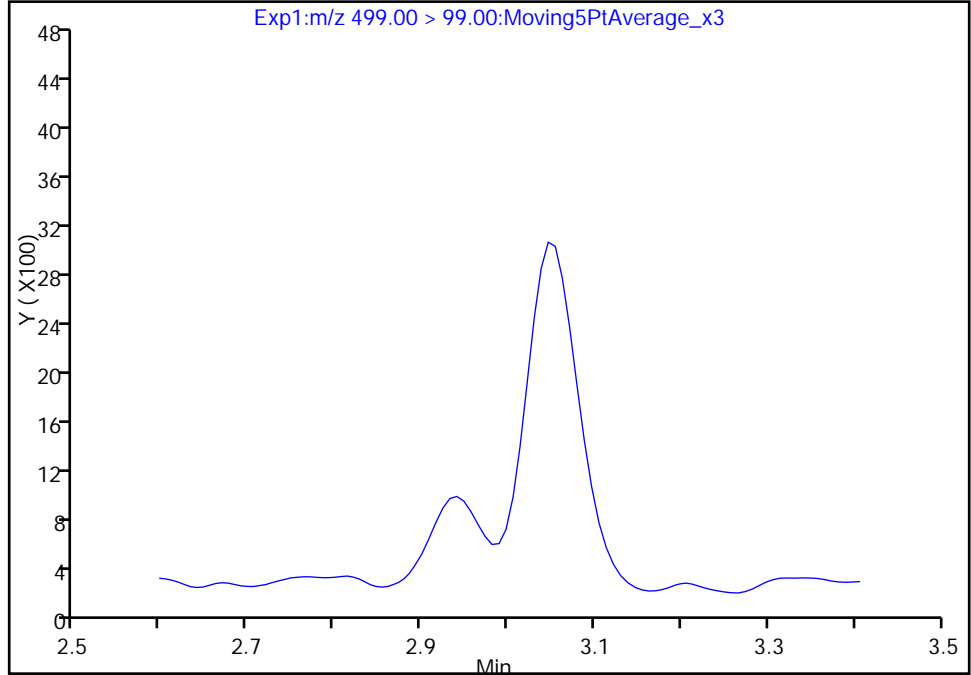
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_004.d  
Injection Date: 19-Jul-2017 00:22:37 Instrument ID: A8\_N  
Lims ID: 320-29267-A-21-A Lab Sample ID: 320-29267-21  
Client ID: MEAFF-IW05-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 4 Worklist Smp#: 5  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

17 Perfluorooctane sulfonic acid, CAS: 1763-23-1

Signal: 2

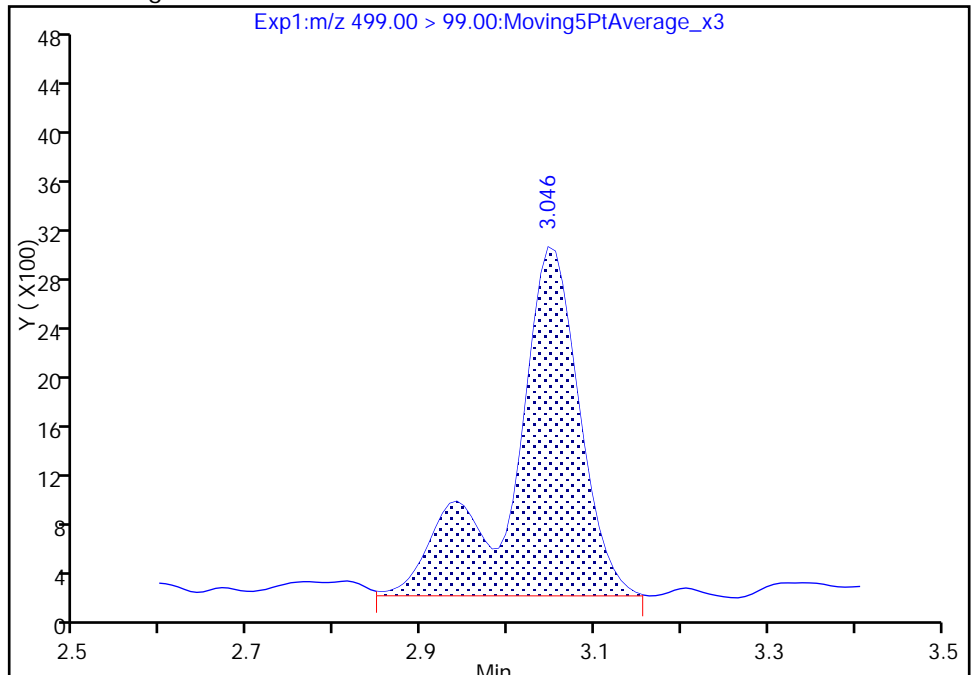
Not Detected  
Expected RT: 3.05

Processing Integration Results



Manual Integration Results

RT: 3.05  
Area: 15698  
Amount: 0.915092  
Amount Units: ng/ml



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW06-SO-0617 Lab Sample ID: 320-29267-22  
 Matrix: Solid Lab File ID: 2017.07.18C\_005.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:40  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.06(g) Date Analyzed: 07/19/2017 00:29  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: 17.2 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.37	J M	0.60	0.36	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	9.7		0.60	0.36	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.2		0.48	0.36	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	116		25-150
STL00991	13C4 PFOS	82		25-150
STL00994	18O2 PFHxS	85		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_005.d  
 Lims ID: 320-29267-A-22-A  
 Client ID: MEAFF-IW06-SO-0617  
 Sample Type: Client  
 Inject. Date: 19-Jul-2017 00:29:31 ALS Bottle#: 5 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-22-a  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:51:33

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.782	1.782	0.0	1.000	998858	4.94			680	
298.90 > 99.00	1.782	1.782	0.0	1.000	390905		2.56(0.00-0.00)		463	
D 11 18O2 PFHxS										
403.00 > 84.00	2.347	2.355	-0.008		7177141	40.2		85.1	38972	
* 62 13C2-PFOA										
415.00 > 370.00	2.684	2.685	-0.001		4344	50.0			147	
D 14 13C4 PFOA										
417.00 > 372.00	2.684	2.685	-0.001		5439377	57.8		116	36120	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.684	2.685	-0.001	1.000	180482	1.56			59.6	M
413.00 > 169.00	2.684	2.685	-0.001	1.000	116311		1.55(0.90-1.10)		505	M
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.051	0.0	1.000	4456698	40.6			10181	
499.00 > 99.00	3.050	3.051	0.0	1.000	1015910		4.39(0.90-1.10)		4116	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.051	0.0		5029065	39.0		81.7	17511	

QC Flag Legend

Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_005.d

Injection Date: 19-Jul-2017 00:29:31

Instrument ID: A8\_N

Lims ID: 320-29267-A-22-A

Lab Sample ID: 320-29267-22

Client ID: MEAFF-IW06-SO-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

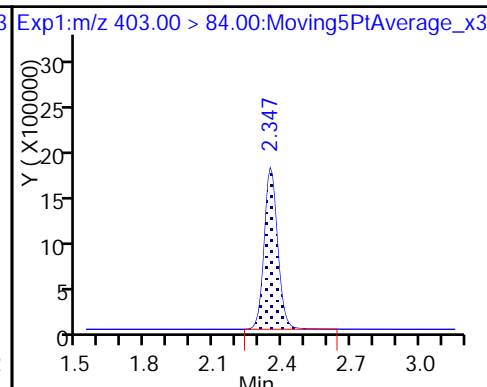
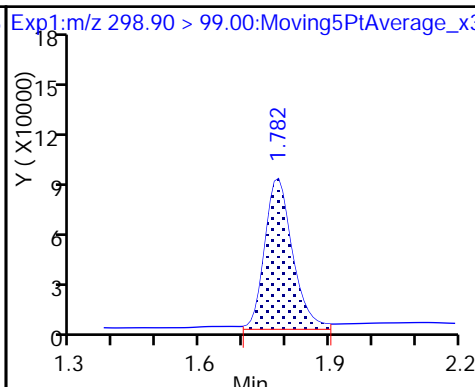
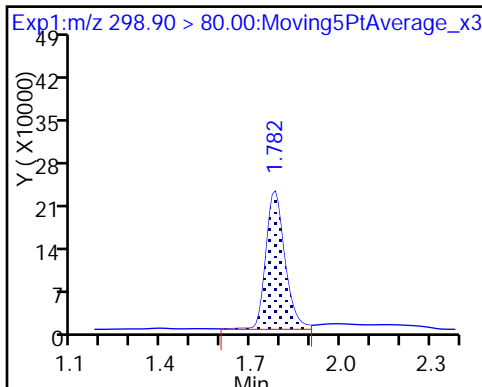
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid

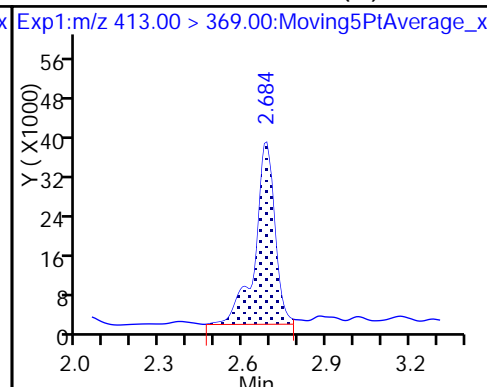
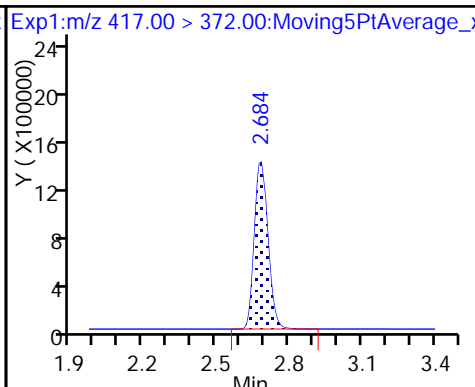
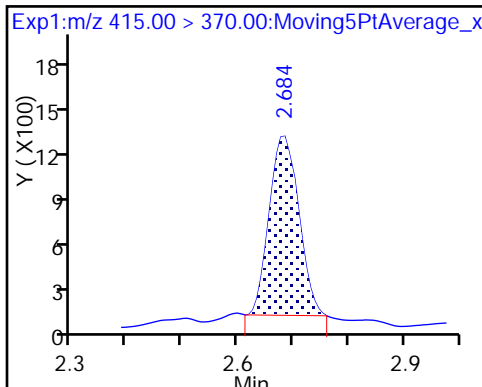
D 11 18O2 PFHxS



\* 62 13C2-PFOA

D 14 13C4 PFOA

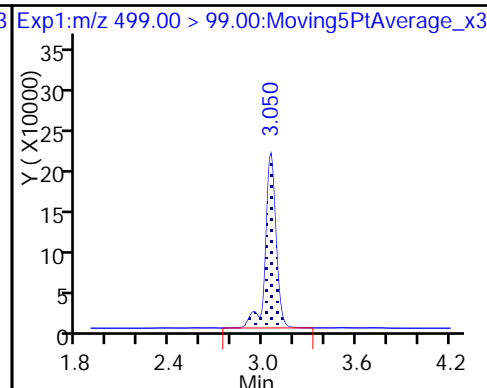
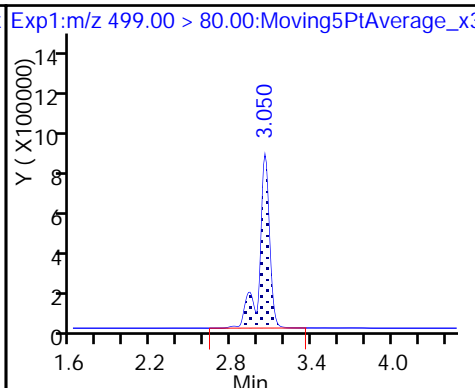
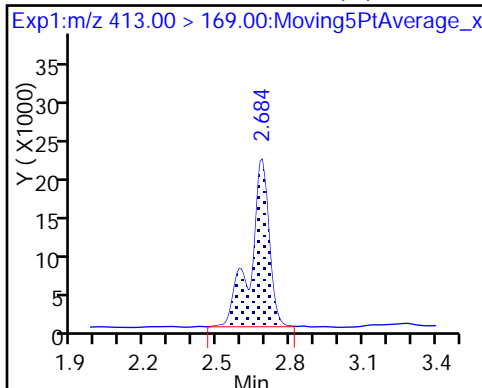
15 Perfluorooctanoic acid (M)



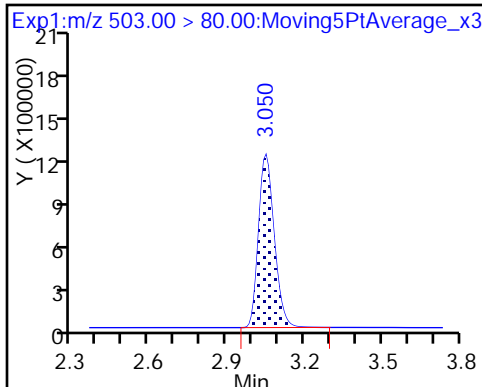
15 Perfluorooctanoic acid (M)

17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid



D 18 13C4 PFOS



TestAmerica Sacramento

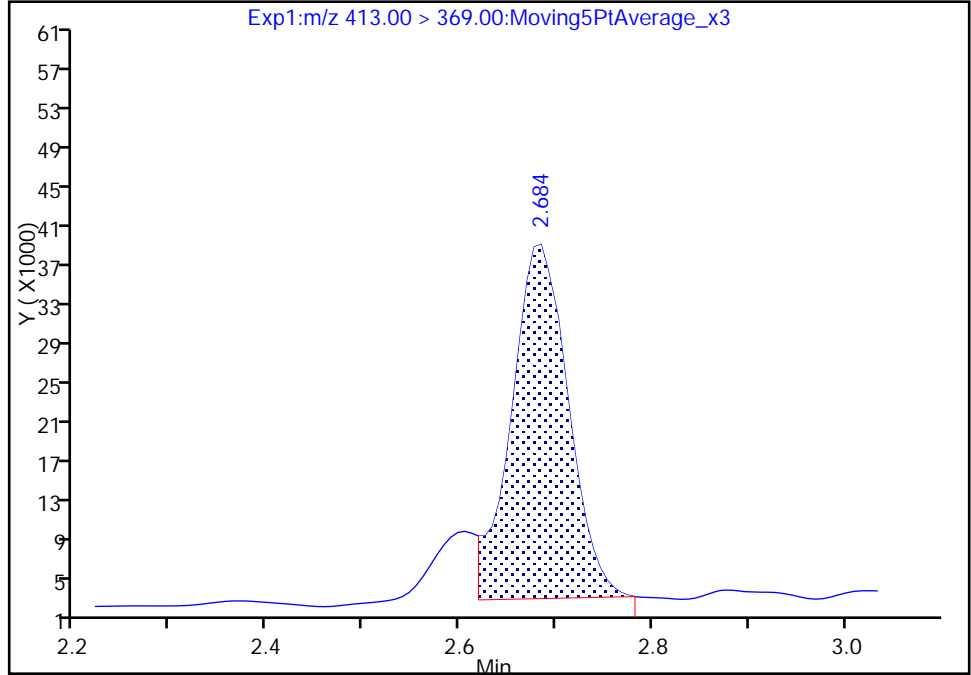
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_005.d  
Injection Date: 19-Jul-2017 00:29:31 Instrument ID: A8\_N  
Lims ID: 320-29267-A-22-A Lab Sample ID: 320-29267-22  
Client ID: MEAFF-IW06-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

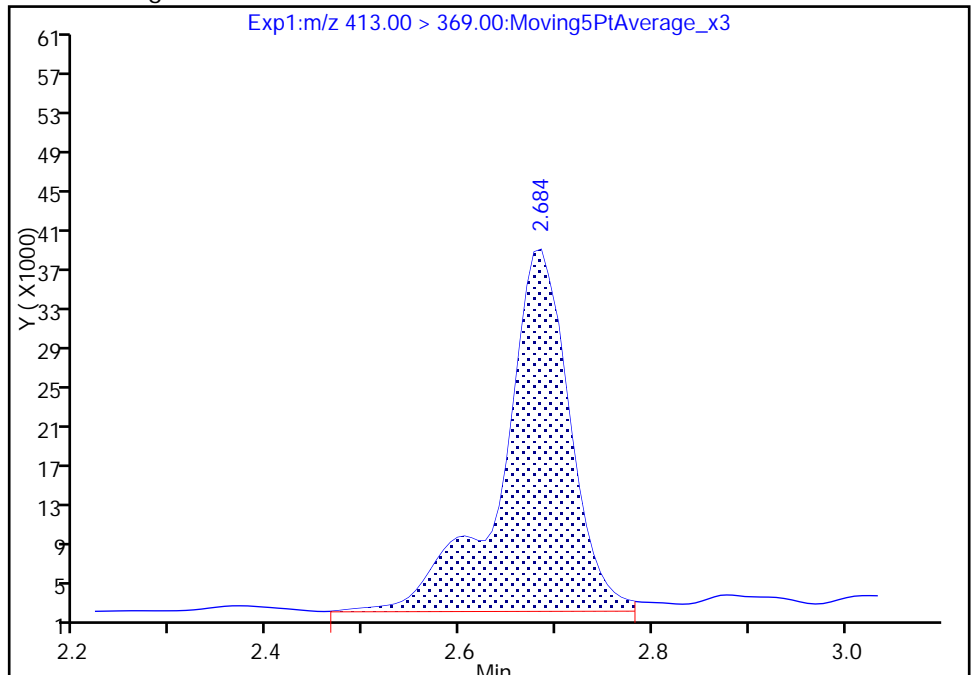
RT: 2.68  
Area: 146354  
Amount: 1.266372  
Amount Units: ng/ml

Processing Integration Results



RT: 2.68  
Area: 180482  
Amount: 1.561675  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 19-Jul-2017 13:51:26  
Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

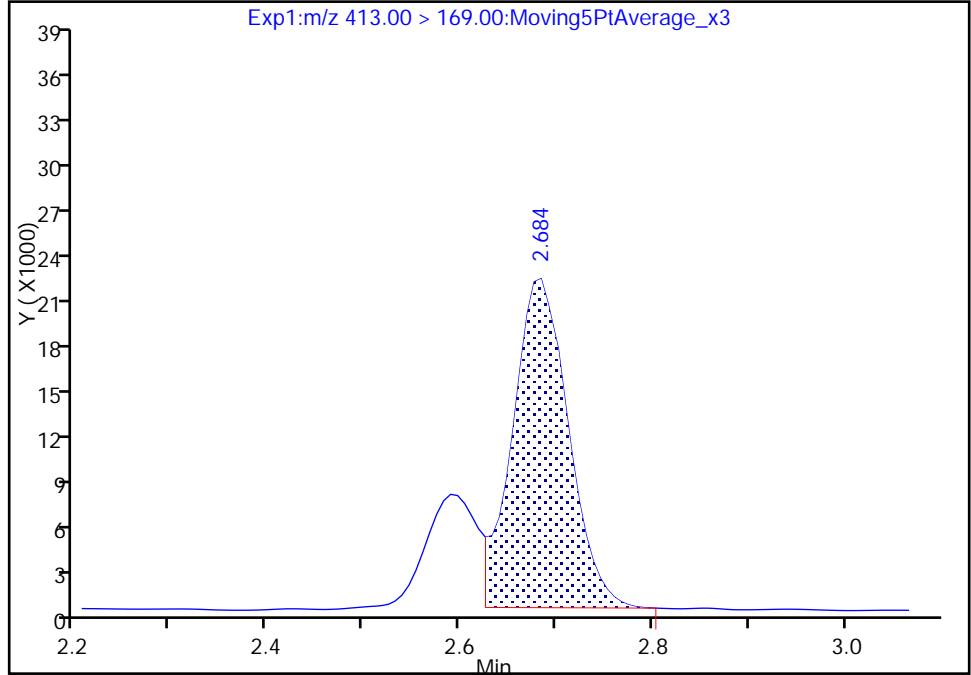
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_005.d  
Injection Date: 19-Jul-2017 00:29:31 Instrument ID: A8\_N  
Lims ID: 320-29267-A-22-A Lab Sample ID: 320-29267-22  
Client ID: MEAFF-IW06-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

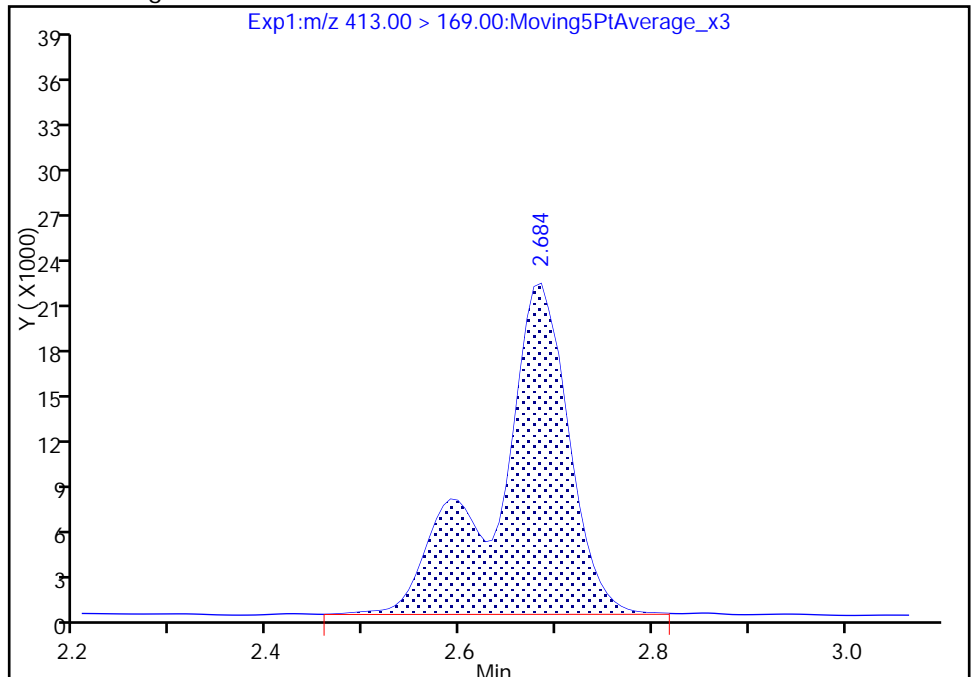
RT: 2.68  
Area: 86786  
Amount: 1.266372  
Amount Units: ng/ml

Processing Integration Results



RT: 2.68  
Area: 116311  
Amount: 1.561675  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 19-Jul-2017 13:51:31

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW07-SO-0617 Lab Sample ID: 320-29267-23  
 Matrix: Solid Lab File ID: 2017.07.18C\_006.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:50  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.07(g) Date Analyzed: 07/19/2017 00:36  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: 13.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.34	U	0.57	0.34	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.34	U	0.57	0.34	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.34	U	0.45	0.34	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	126		25-150
STL00991	13C4 PFOS	70		25-150
STL00994	18O2 PFHxS	91		25-150



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_006.d  
 Lims ID: 320-29267-A-23-A  
 Client ID: MEAFF-IW07-SO-0617  
 Sample Type: Client  
 Inject. Date: 19-Jul-2017 00:36:26 ALS Bottle#: 6 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-23-a  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:51:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 11 18O2 PFHxS	403.00 > 84.00	2.353	2.355	-0.002	7678578	43.0		91.0	36302	
* 62 13C2-PFOA	415.00 > 370.00	2.685	2.685	0.0	4237	50.0			165	
D 14 13C4 PFOA	417.00 > 372.00	2.685	2.685	0.0	5955203	63.2		126	43672	
D 18 13C4 PFOS	503.00 > 80.00	3.057	3.051	0.007	4284010	33.3		69.6	22216	

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_006.d

Injection Date: 19-Jul-2017 00:36:26

Instrument ID: A8\_N

Lims ID: 320-29267-A-23-A

Lab Sample ID: 320-29267-23

Client ID: MEAFF-IW07-SO-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 6

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

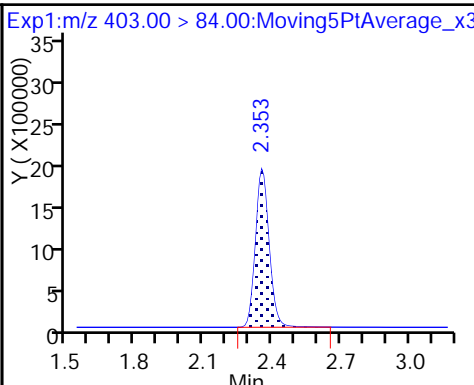
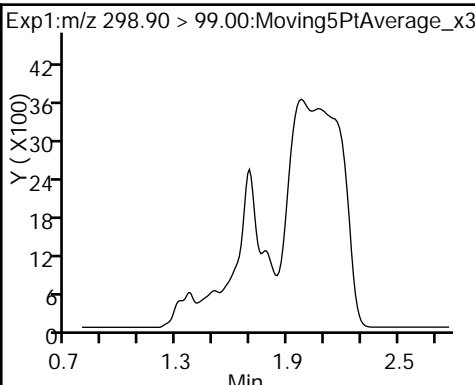
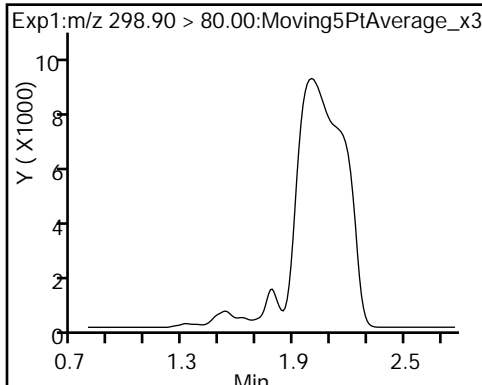
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

5 Perfluorobutanesulfonic acid (ND)

5 Perfluorobutanesulfonic acid (ND)

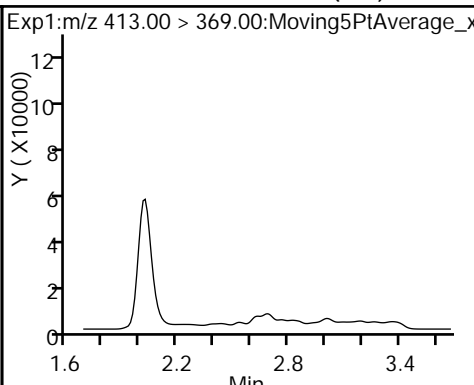
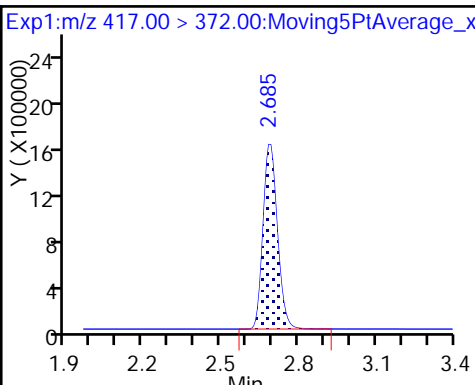
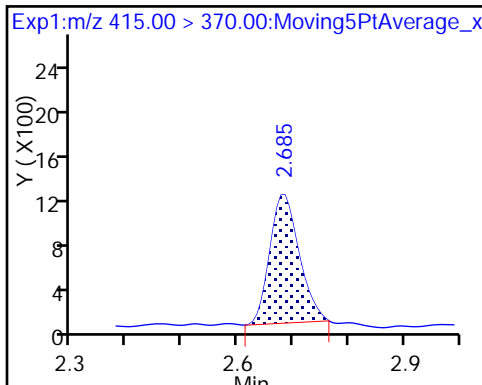
D 11 18O2 PFHxS



\* 62 13C2-PFOA

D 14 13C4 PFOA

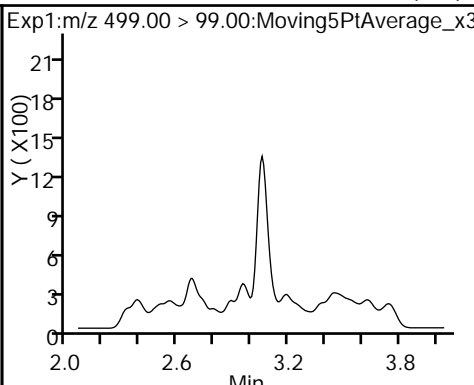
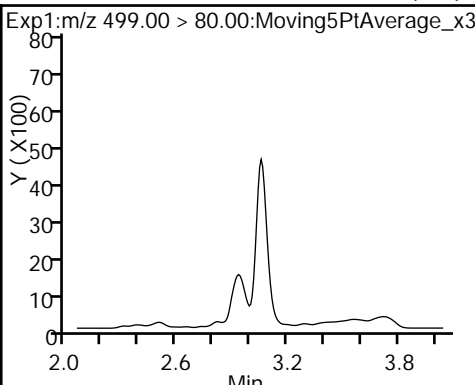
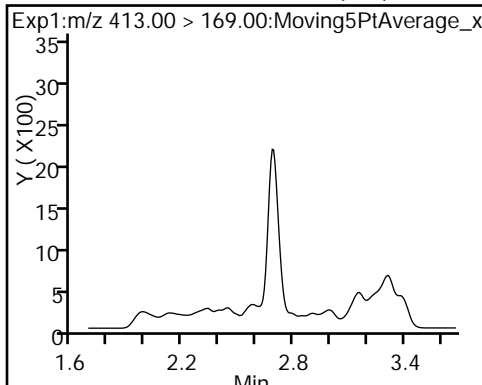
15 Perfluorooctanoic acid (ND)



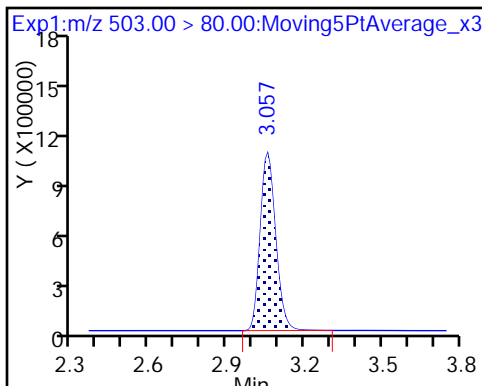
15 Perfluorooctanoic acid (ND)

17 Perfluorooctane sulfonic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



D 18 13C4 PFOS



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW08-SO-0617 Lab Sample ID: 320-29267-24  
 Matrix: Solid Lab File ID: 2017.07.18C\_007.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 13:00  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.01(g) Date Analyzed: 07/19/2017 00:43  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: 7.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.32	U M	0.54	0.32	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.32	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.32	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	119		25-150
STL00991	13C4 PFOS	73		25-150
STL00994	18O2 PFHxS	88		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_007.d  
 Lims ID: 320-29267-A-24-A  
 Client ID: MEAFF-IW07-SO-0617  
 Sample Type: Client  
 Inject. Date: 19-Jul-2017 00:43:20 ALS Bottle#: 7 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-24-  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:52:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.542	1.545	-0.003	9385379	53.0		106	38581	
2 Perfluorobutyric acid	212.90 > 169.00	1.542	1.545	-0.003	1.000	58945	0.3440		16.1	
D 3 13C5-PFPeA	267.90 > 223.00	1.751	1.754	-0.003	6867502	55.5		111	62738	
D 47 13C3-PFBS	301.90 > 83.00	1.778	1.782	-0.004	157107	NC			4577	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.778	1.782	-0.004	1.000	4058	0.0194		3.6	
	298.90 > 99.00	1.769	1.782	-0.013	0.995	4571	0.89(0.00-0.00)		6.2	
D 40 d-N-EtFOSE-M	212.90 > 169.00	2.070	1.884	0.186	43111	NC			9.7	
6 Perfluorohexanoic acid	313.00 > 269.00	2.012	2.017	-0.005	1.000	8656	0.0782		9.5	
D 7 13C2 PFHxA	315.00 > 270.00	2.012	2.017	-0.005	5854984	49.5		99.0	33936	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.333	2.339	-0.006	1.000	4975	0.0368		6.7	
D 9 13C4-PFHpA	367.00 > 322.00	2.333	2.339	-0.006	6628909	61.8		124	43442	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.349	2.355	-0.006	1.000	38740	0.2435		43.9	
D 11 18O2 PFHxS	403.00 > 84.00	2.349	2.355	-0.006	7440222	41.7		88.2	38625	
D 12 M2-6:2FTS	429.00 > 409.00	2.658	2.656	0.002	1953	0.0374		0.0	115	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.658	2.656	0.002	1.000	10995	NR		521	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
* 62 13C2-PFOA	415.00	> 370.00	2.680	2.685	-0.005	3773	50.0		173	
D 14 13C4 PFOA	417.00	> 372.00	2.687	2.685	0.002	5589548	59.4		119	30756
15 Perfluorooctanoic acid										M
413.00 > 369.00	2.680	2.685	-0.005	1.000	35741	0.3010			5.4	M
413.00 > 169.00	2.687	2.685	0.002	1.003	8519		4.20(0.90-1.10)		49.0	M
20 Perfluorononanoic acid										
463.00 > 419.00	3.058	3.051	0.008	1.000	4972	0.0599			10.4	
D 18 13C4 PFOS	503.00	> 80.00	3.049	3.051	-0.001	4483458	34.8		72.8	24561
D 19 13C5 PFNA	468.00	> 423.00	3.049	3.051	-0.001	4104930	54.0		108	20547
D 21 13C8 FOSA	506.00	> 78.00	3.398	3.394	0.004	3221802	15.5		30.9	16346
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.408	3.403	0.005	1.000	1942	0.0327			52.1	
D 23 13C2 PFDA	515.00	> 470.00	3.408	3.412	-0.004	2730987	42.4		84.7	12242
D 32 d5-NEtFOSAA	589.00	> 419.00	3.732	3.732	0.0	1544	0.0607		0.0	5.5
D 30 13C2 PFUnA	565.00	> 520.00	3.742	3.732	0.010	1981433	41.0		82.1	12005
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.742	3.732	0.010	1.000	6809	0.1632			16.8	
D 36 13C2 PFDoA	615.00	> 570.00	4.026	4.030	-0.004	1941132	40.9		81.9	5140
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.134	4.291	-0.157	1.000	2342	0.0704			1.0	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.602	4.526	0.076	1.000	52140	0.6719			8.3	
713.00 > 169.00	4.527	4.526	0.001	0.984	2308		22.59(0.00-0.00)		107	
D 43 13C2-PFTeDA	715.00	> 670.00	4.527	4.526	0.001	4372357	49.3		98.6	17080
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.940	4.934	0.006	1.000	45960	0.6680			6.7	
D 44 13C2-PFHxDA	815.00	> 770.00	4.940	4.934	0.006	1849380	40.9		81.8	3167
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.221	5.281	-0.060	1.000	4131	0.1350			1.3	

## QC Flag Legend

### Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

### Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_007.d

Injection Date: 19-Jul-2017 00:43:20

Instrument ID: A8\_N

Lims ID: 320-29267-A-24-A

Lab Sample ID: 320-29267-24

Client ID: MEAFF-IW07-SO-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 7

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

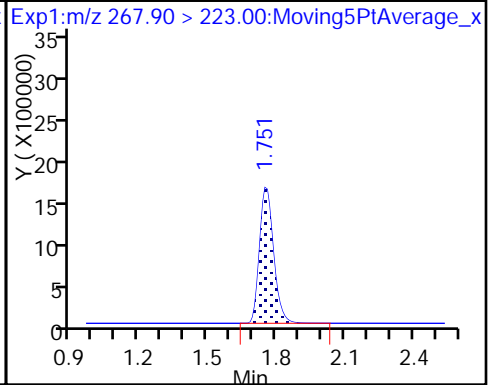
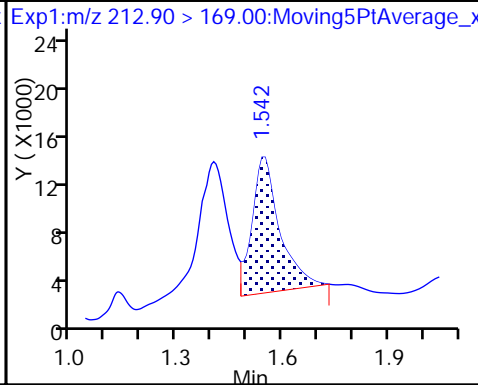
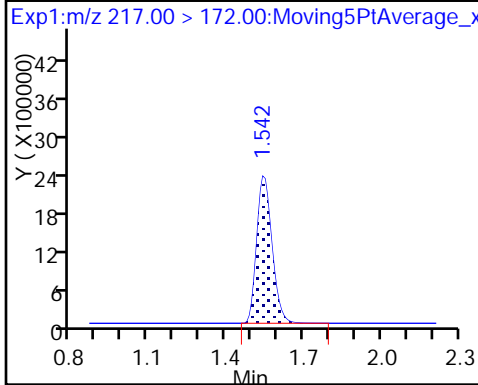
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

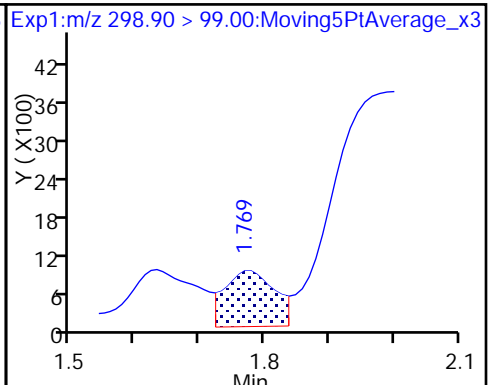
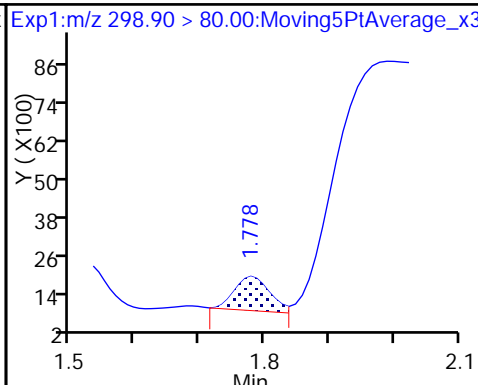
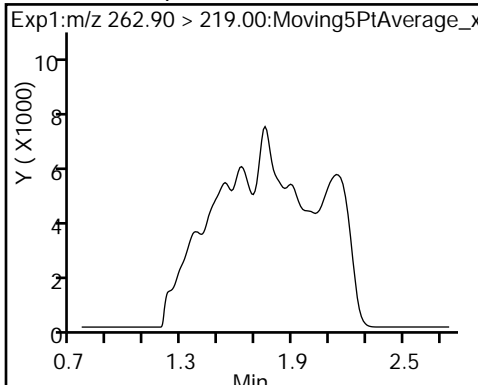
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (ND)

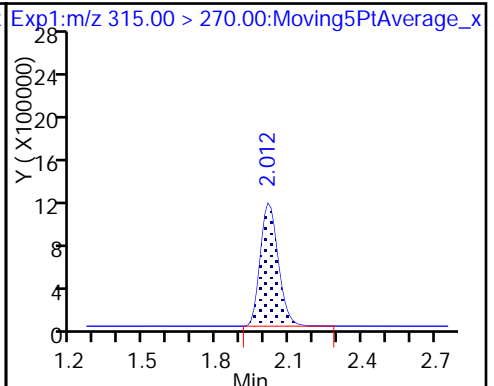
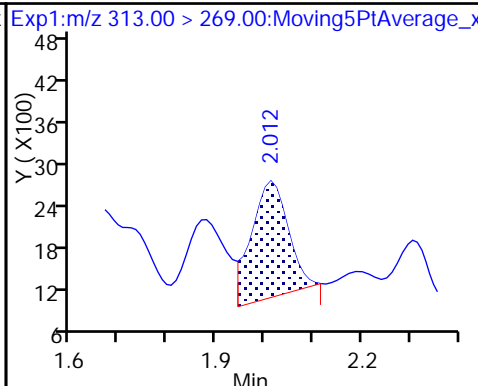
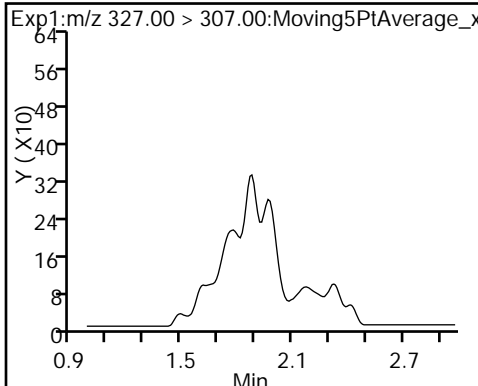
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid (ND)

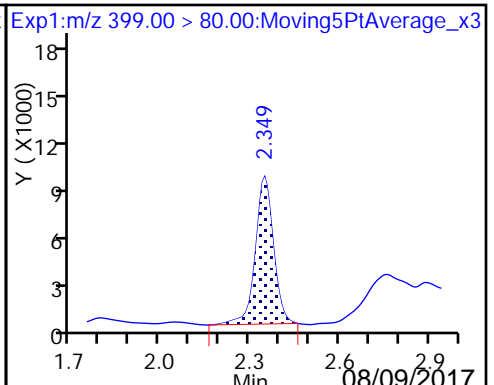
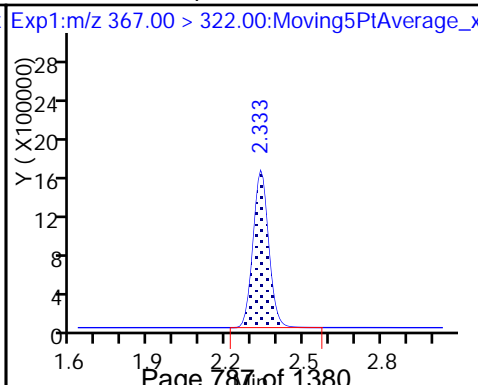
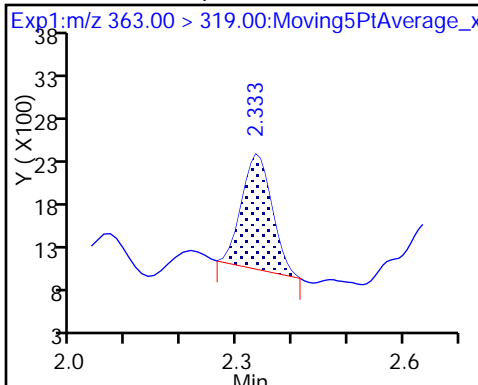
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

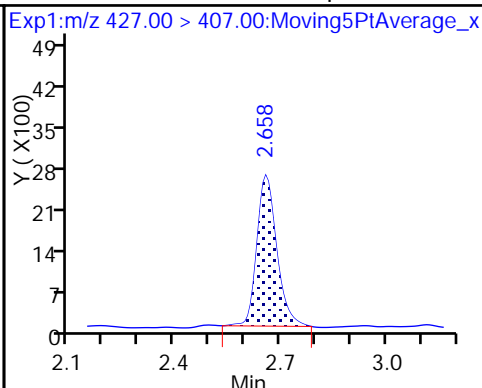
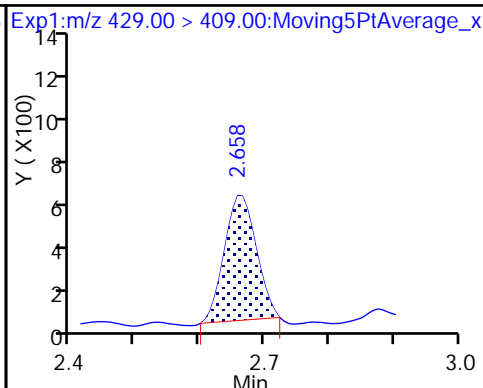
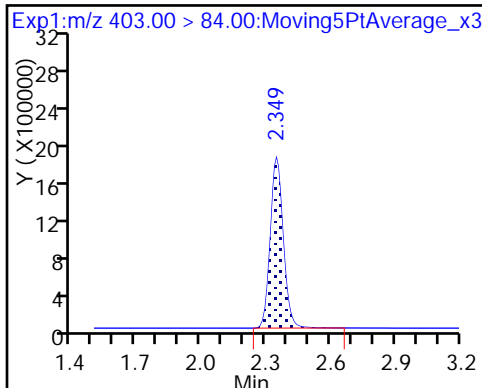
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

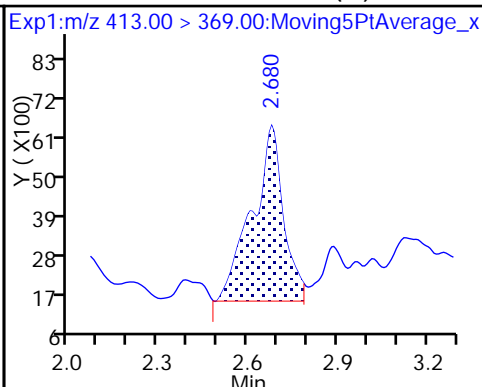
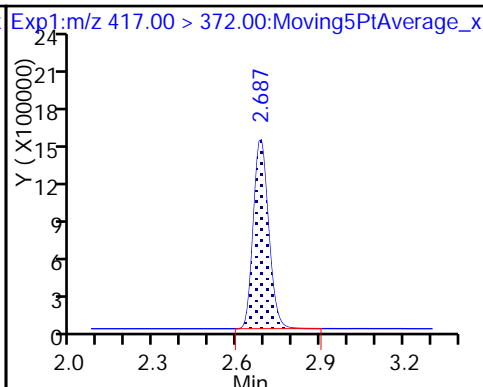
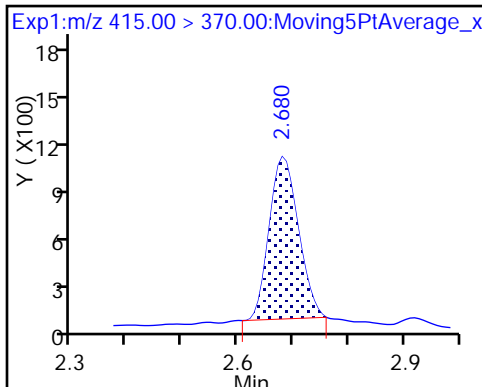
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

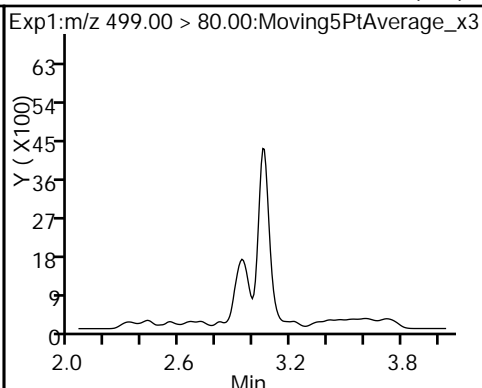
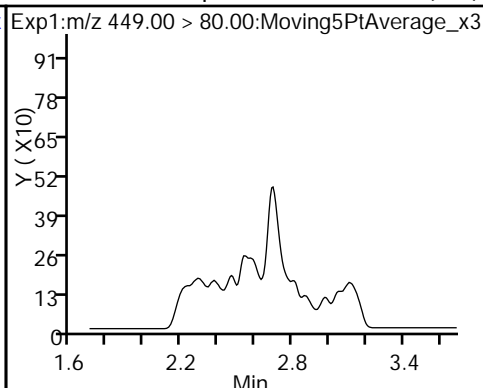
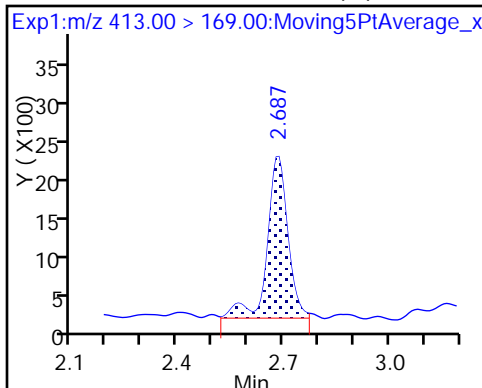
15 Perfluorooctanoic acid (M)



15 Perfluorooctanoic acid (M)

16 Perfluoroheptanesulfonic Acid (ND)

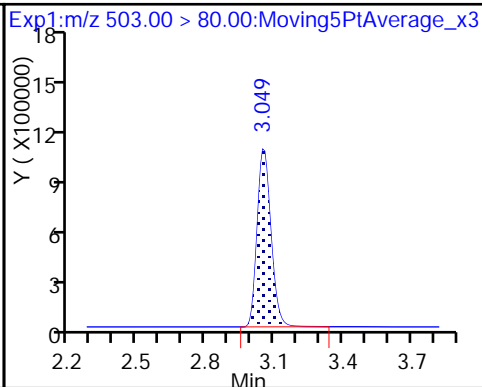
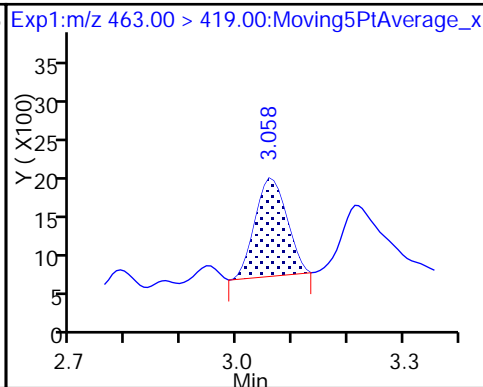
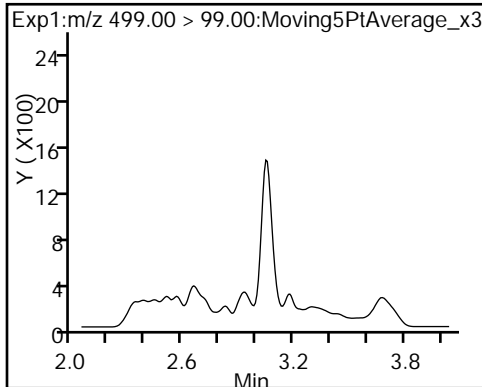
17 Perfluorooctane sulfonic acid (ND)



17 Perfluorooctane sulfonic acid (ND)

20 Perfluorononanoic acid

D 18 13C4 PFOS

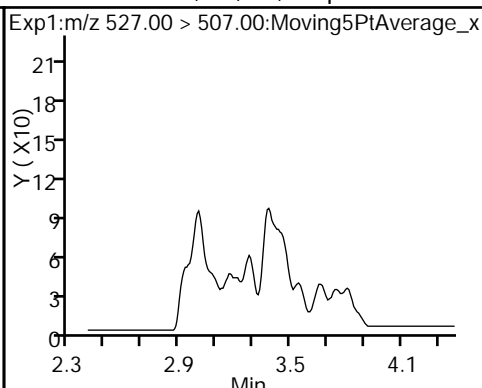
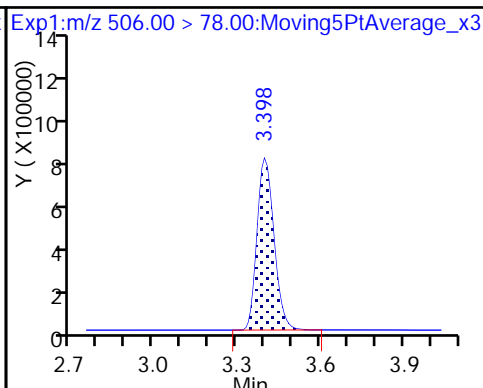
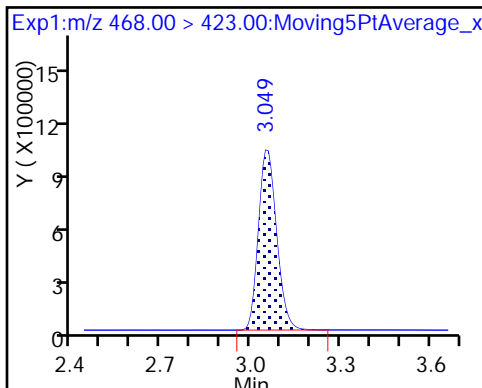




D 19 13C5 PFNA

D 21 13C8 FOSA

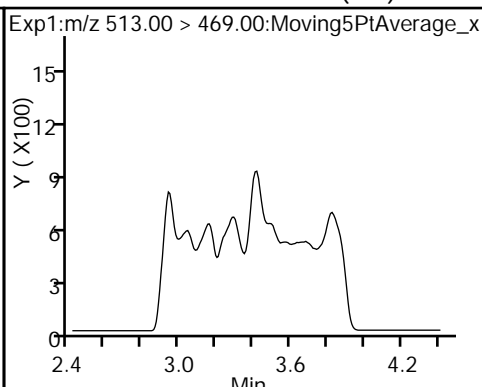
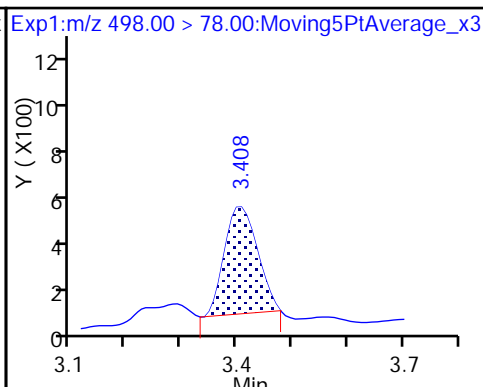
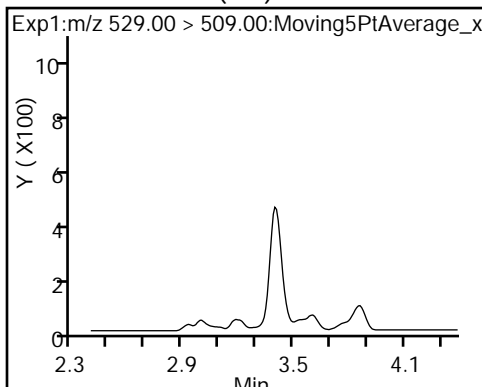
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



D 26 M2-8:2FTS (ND)

22 Perfluorooctane Sulfonamide

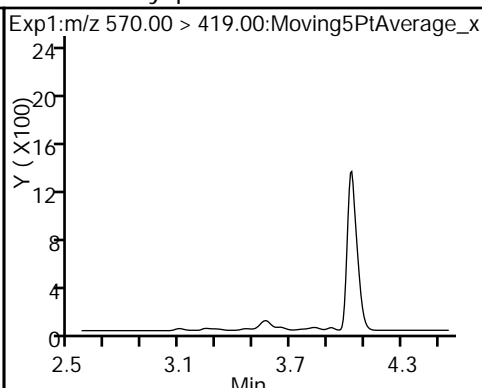
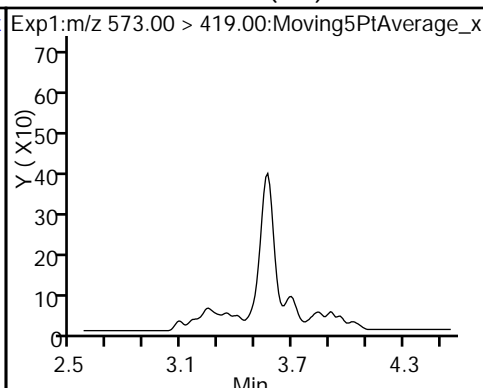
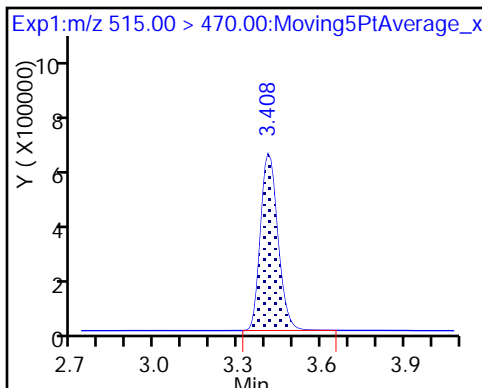
24 Perfluorodecanoic acid (ND)



D 23 13C2 PFDA

D 27 d3-NMeFOSAA (ND)

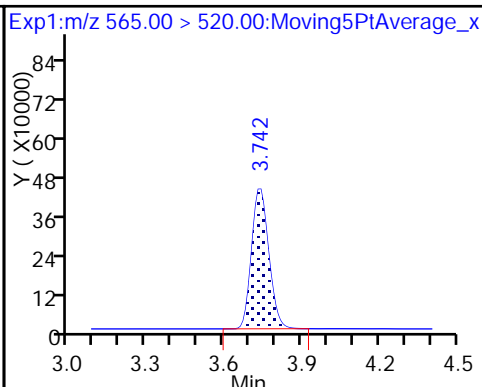
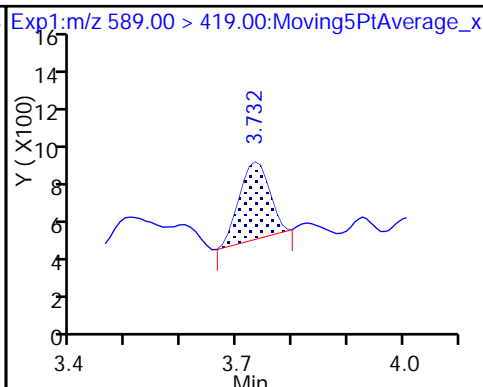
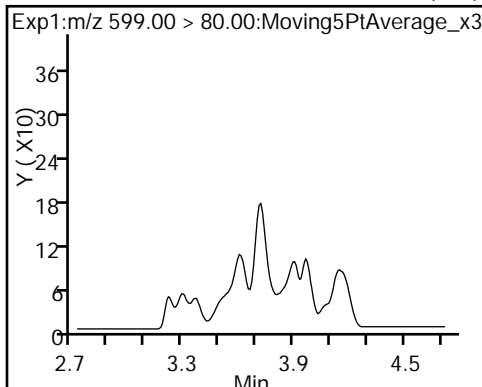
28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid (ND)

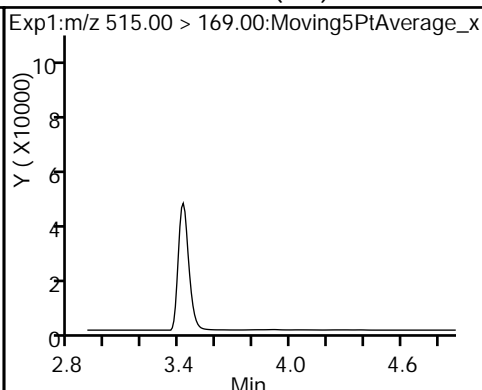
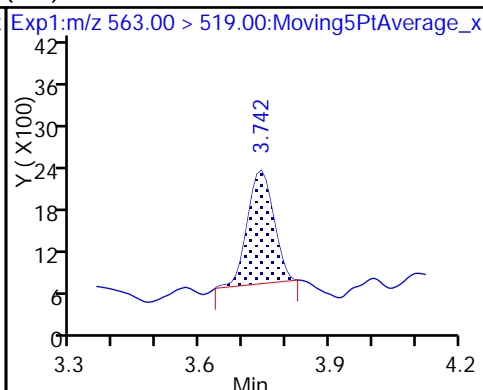
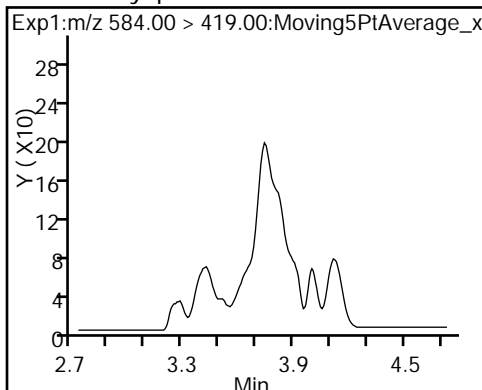
D 32 d5-NEtFOSAA

D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid (ND) Perfluoroundecanoic acid

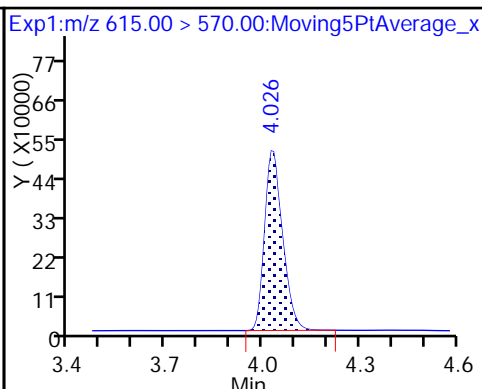
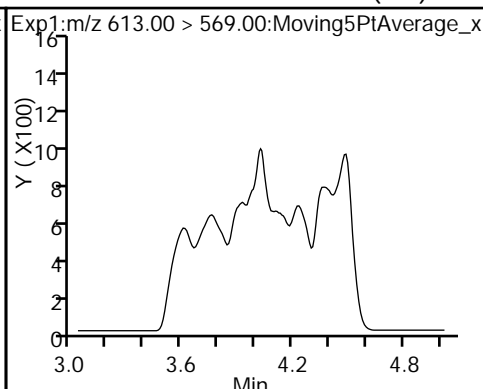
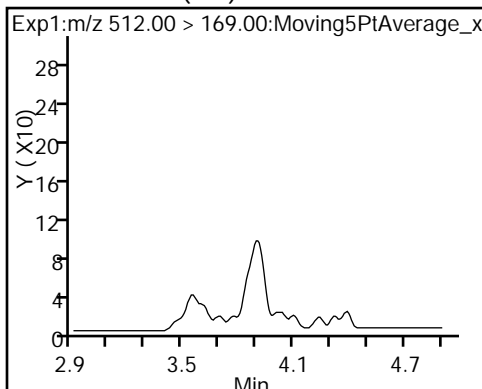
D 34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

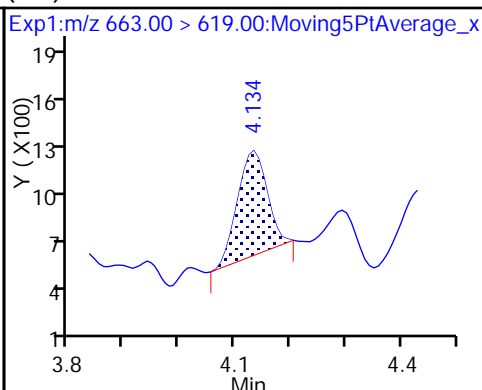
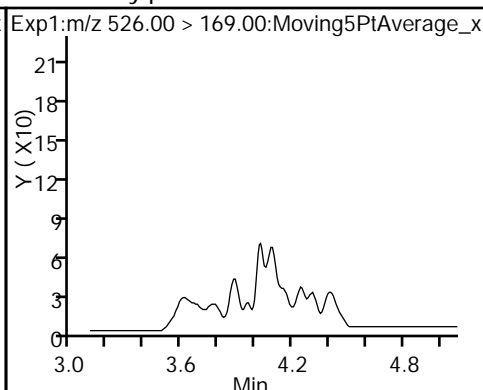
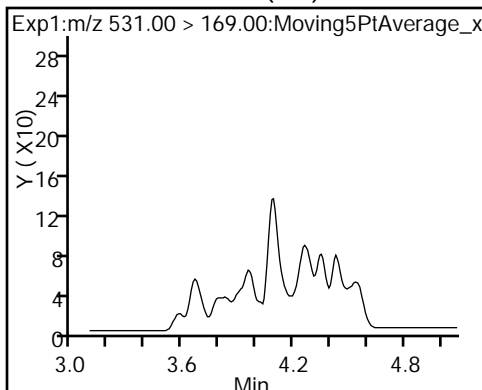
37 Perfluorododecanoic acid (ND)

D 36 13C2 PFDa



D 38 d-N-EtFOSA-M (ND)

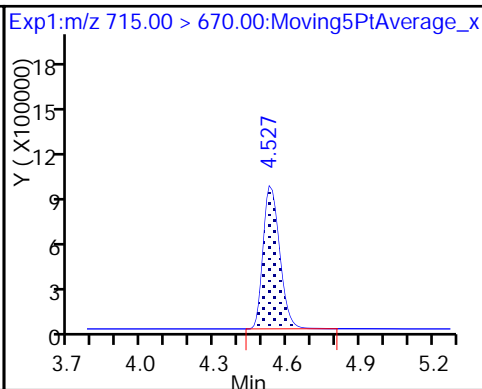
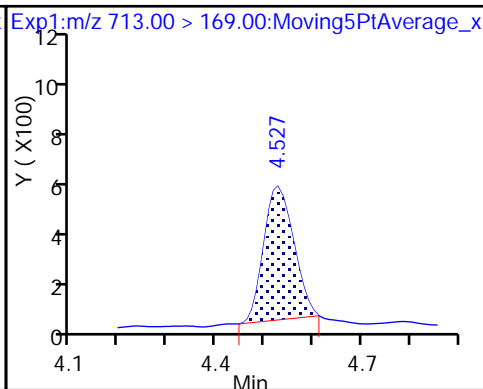
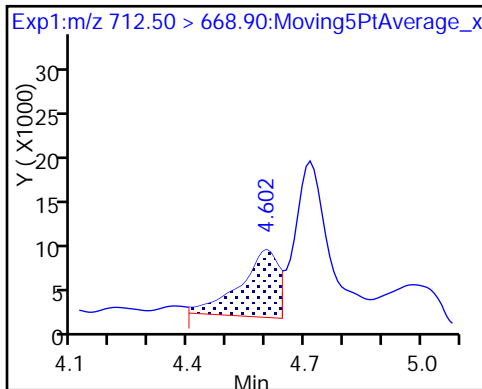
39 N-ethylperfluoro-1-octanesulfonami (ND) Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

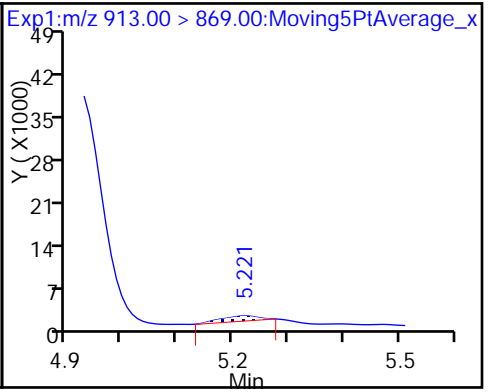
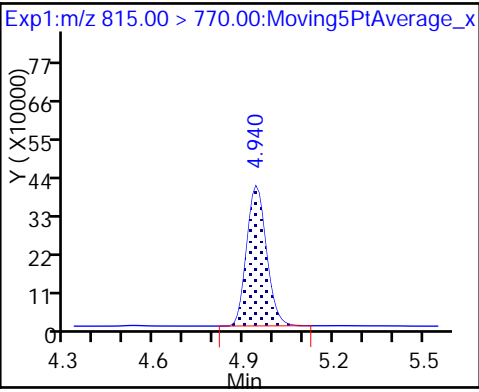
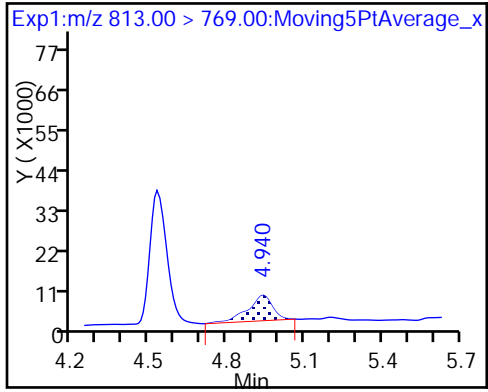
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento

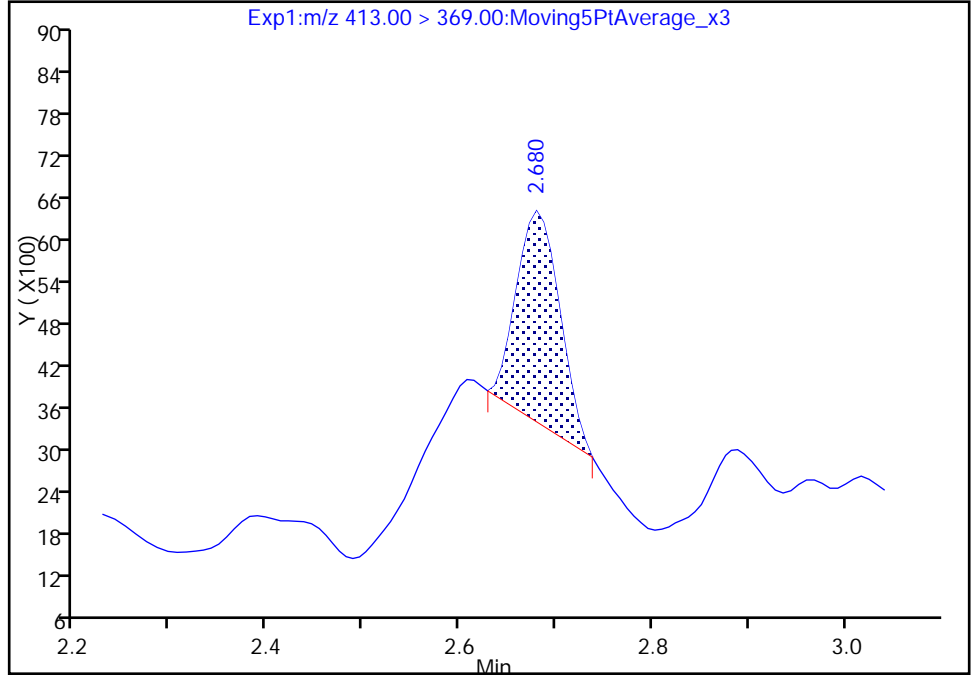
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Injection Date: 19-Jul-2017 00:43:20 Instrument ID: A8\_N  
Lims ID: 320-29267-A-24-A Lab Sample ID: 320-29267-24  
Client ID: MEAFF-IW07-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 7 Worklist Smp#: 8  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 1

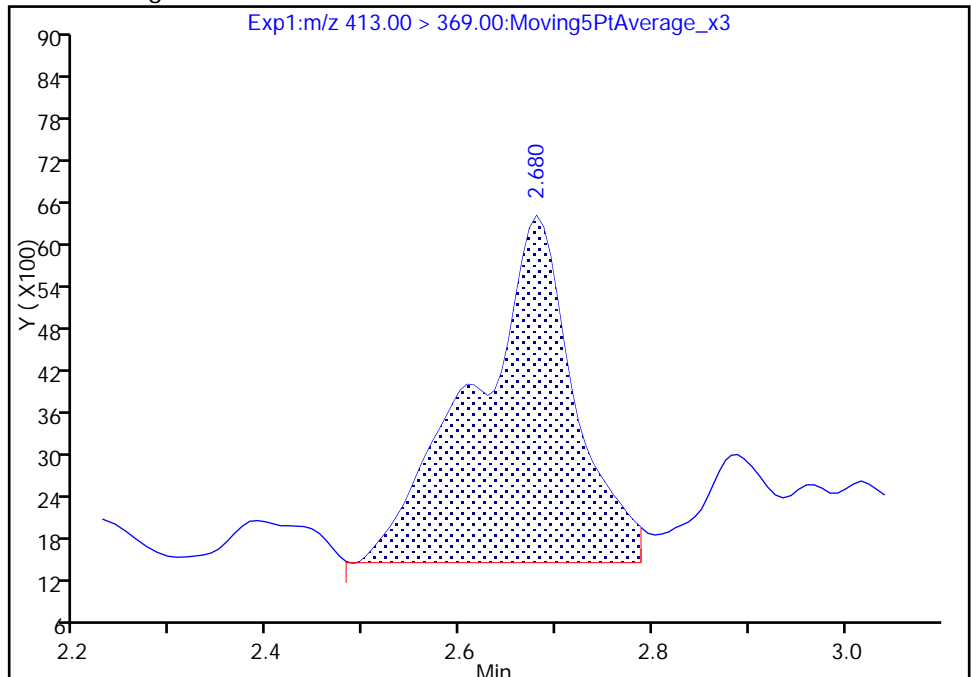
RT: 2.68  
Area: 9378  
Amount: 0.078966  
Amount Units: ng/ml

Processing Integration Results



RT: 2.68  
Area: 35741  
Amount: 0.300951  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 19-Jul-2017 13:52:03

Audit Action: Manually Integrated

Audit Reason: Isomers

TestAmerica Sacramento

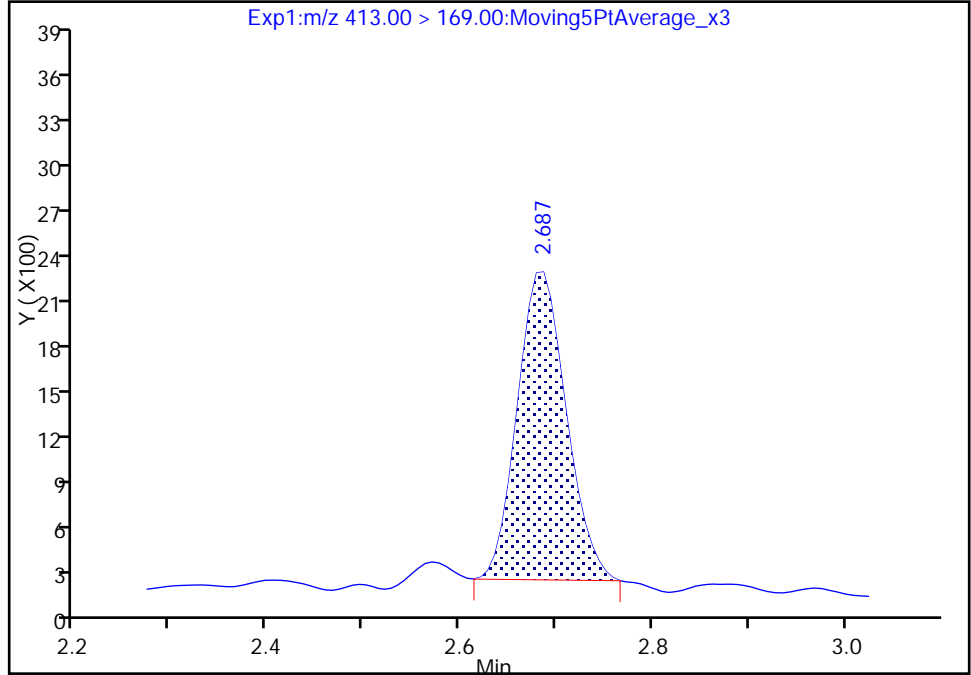
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Injection Date: 19-Jul-2017 00:43:20 Instrument ID: A8\_N  
Lims ID: 320-29267-A-24-A Lab Sample ID: 320-29267-24  
Client ID: MEAFF-IW07-SO-0617  
Operator ID: SACINSTLCMS01 ALS Bottle#: 7 Worklist Smp#: 8  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

15 Perfluorooctanoic acid, CAS: 335-67-1

Signal: 2

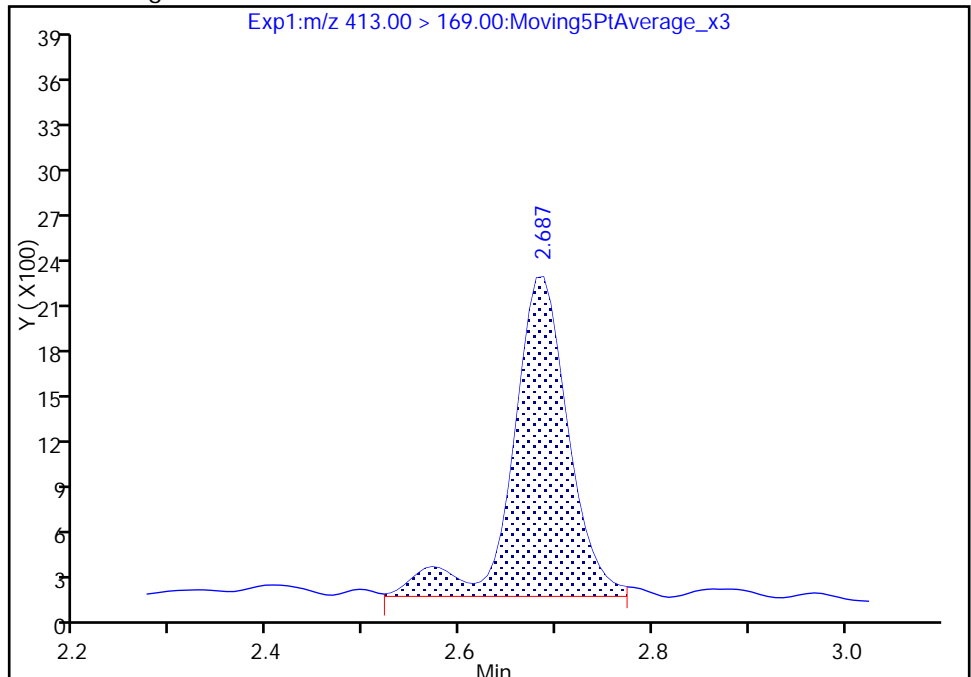
RT: 2.69  
Area: 7135  
Amount: 0.078966  
Amount Units: ng/ml

Processing Integration Results



RT: 2.69  
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Amount: 0.300951  
Amount Units: ng/ml

Manual Integration Results



Reviewer: chandrasenas, 19-Jul-2017 13:52:09

Audit Action: Manually Integrated

Audit Reason: Isomers

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N

GC Column: GeminiC18 3 ID: 3 (mm)

Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13

Calibration End Date: 06/28/2017 01:01

Calibration ID: 32001

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171299/3	2017.06.27_PFC_CURVE_003.d
Level 2	IC 320-171299/4	2017.06.27_PFC_CURVE_004.d
Level 3	IC 320-171299/5	2017.06.27_PFC_CURVE_005.d
Level 4	IC 320-171299/6	2017.06.27_PFC_CURVE_006.d
Level 5	IC 320-171299/7	2017.06.27_PFC_CURVE_007.d
Level 6	IC 320-171299/8	2017.06.27_PFC_CURVE_008.d
Level 7	IC 320-171299/9	2017.06.27_PFC_CURVE_009.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.551	1.550	1.549	1.543	1.549	1.549	1.549				1.299 - 1.799	1.549
Perfluoropentanoic acid (PFPeA)	1.761	1.760	1.760	1.753	1.751	1.750	1.759				1.506 - 2.006	1.756
Perfluorobutanesulfonic acid (PFBS)	1.788	1.786	1.786	1.779	1.777	1.777	1.786				1.603 - 1.963	1.783
4:2 FTS	1.993	1.991	1.980	1.981	1.980	1.979	1.980				1.733 - 2.233	1.983
Perfluorohexanoic acid (PFHxA)	2.026	2.025	2.024	2.015	2.013	2.024	2.024				1.772 - 2.272	2.022
Perfluoroheptanoic acid (PFHpA)	2.352	2.353	2.350	2.340	2.339	2.339	2.343				2.095 - 2.595	2.345
Perfluorohexanesulfonic acid (PFHxS)	2.368	2.362	2.359	2.356	2.356	2.356	2.361				2.110 - 2.610	2.360
6:2 FTS	2.684	2.678	2.677	2.669	2.667	2.669	2.673				2.424 - 2.924	2.674
Perfluorooctanoic acid (PFOA)	2.713	2.707	2.706	2.698	2.696	2.698	2.702				2.453 - 2.953	2.703
Perfluoroheptanesulfonic Acid (PFHpS)	2.721	2.714	2.713	2.705	2.703	2.705	2.709				2.460 - 2.960	2.710
Perfluorooctanesulfonic acid (PFOS)	3.091	3.083	3.080	3.071	3.071	3.064	3.071				2.826 - 3.326	3.076
Perfluorononanoic acid (PFNA)	3.091	3.083	3.080	3.071	3.071	3.073	3.071				2.827 - 3.327	3.077
Perfluorooctane Sulfonamide (FOSA)	3.415	3.414	3.411	3.402	3.407	3.399	3.408				3.158 - 3.658	3.408
8:2 FTS	3.441	3.440	3.430	3.421	3.425	3.417	3.426				3.179 - 3.679	3.429
Perfluorodecanoic acid (PFDA)	3.458	3.449	3.447	3.439	3.434	3.436	3.436				3.192 - 3.692	3.443
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.616	3.614	3.600	3.601	3.601	3.592	3.594				3.352 - 3.852	3.603
Perfluorodecanesulfonic acid (PFDS)	3.774	3.761	3.760	3.749	3.749	3.750	3.743				3.505 - 4.005	3.755
Perfluoroundecanoic acid (PFUnA)	3.784	3.781	3.779	3.768	3.768	3.769	3.762				3.523 - 4.023	3.773
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	3.794	3.781	3.779	3.768	3.768	3.769	3.762				3.525 - 4.025	3.774
MeFOSA	3.919	3.916	3.906	3.908	3.909	3.910	3.905				3.660 - 4.160	3.910
Perfluorododecanoic acid (PFDoA)	4.090	4.079	4.079	4.070	4.064	4.064	4.061				3.822 - 4.322	4.072
N-EtFOSA-M	4.107	4.105	4.104	4.096	4.099	4.100	4.097				3.851 - 4.351	4.101
Perfluorotridecanoic Acid (PFTriA)	4.362	4.351	4.341	4.333	4.332	4.334	4.332				4.091 - 4.591	4.341
Perfluorotetradecanoic acid (PFTeA)	4.601	4.599	4.574	4.574	4.571	4.573	4.572				4.331 - 4.831	4.581
Perfluoro-n-hexadecanoic acid (PFHxDA)	+++	5.008	4.995	4.995	4.995	4.985	4.985				4.748 - 5.248	4.994
Perfluoro-n-octadecanoic acid (PFODA)	5.373	5.365	5.356	5.343	5.347	5.341	5.335				5.101 - 5.601	5.351
13C4 PFBA	1.551	1.550	1.549	1.543	1.541	1.541	1.549				1.296 - 1.796	1.546
13C5-PFPeA	1.761	1.760	1.760	1.753	1.751	1.750	1.751				1.505 - 2.005	1.755
13C2 PFHxA	2.026	2.025	2.024	2.015	2.013	2.024	2.024				1.772 - 2.272	2.022
13C4-PFHpA	2.352	2.353	2.350	2.340	2.339	2.339	2.343				2.095 - 2.595	2.345
18O2 PFHxS	2.368	2.362	2.359	2.356	2.356	2.356	2.361				2.110 - 2.610	2.360
M2-6:2 FTS	2.684	2.678	2.677	2.669	2.667	2.669	2.673				2.424 - 2.924	2.674

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299  
 SDG No.: \_\_\_\_\_  
 Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N  
 Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFOA	2.713	2.707	2.706	2.698	2.696	2.691	2.695				2.451 - 2.951	2.701
13C4 PFOS	3.091	3.083	3.080	3.071	3.071	3.064	3.071				2.826 - 3.326	3.076
13C5 PFNA	3.091	3.083	3.080	3.071	3.071	3.073	3.071				2.827 - 3.327	3.077
13C8 FOSA	3.415	3.414	3.402	3.402	3.407	3.399	3.399				3.155 - 3.655	3.405
M2-8:2FTS	3.441	3.440	3.430	3.421	3.425	3.417	3.426				3.179 - 3.679	3.429
13C2 PFDA	3.458	3.449	3.447	3.439	3.434	3.436	3.436				3.192 - 3.692	3.443
d3-NMeFOSAA	3.616	3.603	3.600	3.591	3.590	3.592	3.594				3.348 - 3.848	3.598
d5-NEtFOSAA	3.784	3.771	3.769	3.759	3.758	3.759	3.752				3.515 - 4.015	3.765
13C2 PFUnA	3.784	3.781	3.769	3.768	3.768	3.769	3.762				3.522 - 4.022	3.772
d-N-MeFOSA-M	3.910	3.907	3.906	3.899	3.900	3.901	3.905				3.654 - 4.154	3.904
13C2 PFDoA	4.090	4.079	4.069	4.070	4.064	4.064	4.061				3.821 - 4.321	4.071
d-N-EtFOSA-M	4.098	4.096	4.096	4.087	4.091	4.091	4.088				3.842 - 4.342	4.092
13C2-PFTeDA	4.601	4.587	4.574	4.574	4.571	4.573	4.562				4.328 - 4.828	4.577
13C2-PFHxDA	5.019	5.008	4.995	4.995	4.995	4.985	4.985				4.748 - 5.248	4.997

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171299/3	2017.06.27_PFC_CURVE_003.d
Level 2	IC 320-171299/4	2017.06.27_PFC_CURVE_004.d
Level 3	IC 320-171299/5	2017.06.27_PFC_CURVE_005.d
Level 4	IC 320-171299/6	2017.06.27_PFC_CURVE_006.d
Level 5	IC 320-171299/7	2017.06.27_PFC_CURVE_007.d
Level 6	IC 320-171299/8	2017.06.27_PFC_CURVE_008.d
Level 7	IC 320-171299/9	2017.06.27_PFC_CURVE_009.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C4 PFBA	237738 264112	252314 213500	235956 203334	230986	Ave		233991.300			8.9		50.0				
13C5-PFPeA	165879 179599	178580 142495	165463 131839	161820	Ave		160810.774			11.0		50.0				
13C2 PFHxA	150767 182202	163501 143176	153648 131690	148822	Ave		153400.860			10.4		50.0				
13C4-PFHpA	142331 157345	150070 121786	139376 106278	141106	Ave		136898.766			12.7		50.0				
18O2 PFHxS	207251 246595	226688 197975	213940 186890	209538	Ave		212696.602			9.1		50.0				
M2-6:2FTS	69149 85644	78944 69523	67406 69370	69666	Ave		72814.4090			9.3		50.0				
13C4 PFOA	135144 148041	144402 114312	134994 102302	134576	Ave		130538.817			12.6		50.0				
13C4 PFOS	158653 185330	169592 156717	159748 147733	161237	Ave		162715.634			7.3		50.0				
13C5 PFNA	108130 116173	114825 96947	107521 83715	107623	Ave		104990.620			10.7		50.0				
13C8 FOSA	263091 300494	280053 246733	261987 231149	264230	Ave		263962.580			8.4		50.0				
M2-8:2FTS	55393 66571	62066 52640	55365 51728	52580	Ave		56620.4205			9.9		50.0				
13C2 PFDA	103140 112876	112102 88433	102655 82379	98552	Ave		100019.751			11.4		50.0				
d3-NMeFOSAA	35985 42945	39211 35175	36627 34429	34858	Ave		37033.1057			8.2		50.0				
d5-NEtFOSAA	37499 42895	39089 34475	37967 30270	36416	Ave		36944.3257			10.6		50.0				

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.



FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C2 PFUnA	79282 82095	82301 64866	78246 56939	76384	Ave		74301.7057			13.0			50.0			
d-N-MeFOSA-M	69899 87749	75322 71754	72121 74032	71345	Ave		74603.2229			8.1			50.0			
13C2 PFDoA	74335 84559	79365 67592	70818 63175	74104	Ave		73421.1657			9.7			50.0			
d-N-EtFOSA-M	69910 87075	74641 70523	70970 71263	70425	Ave		73543.9686			8.4			50.0			
13C2-PFTEdA	145891 178285	151816 143779	150937 136805	152748	Ave		151465.880			8.6			50.0			
13C2-PFHxDA	82539 95612	87646 78155	82565 75339	85348	Ave		83886.2229			7.9			50.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N

GC Column: GeminiC18 3 ID: 3(mm)

Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13

Calibration End Date: 06/28/2017 01:01

Calibration ID: 32001

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
Perfluorobutanoic acid (PFBA)	0.9096 0.9147	0.8729 0.7767	0.9388	0.9335	0.9584	AveID		0.9007			6.8		35.0				
Perfluoropentanoic acid (PFPeA)	1.0735 1.0183	1.0647 0.8820	1.0635	1.0519	1.0516	AveID		1.0294			6.5		35.0				
Perfluorobutanesulfonic acid (PFBS)	1.4463 1.2894	1.4706 1.1003	1.4775	1.5423	1.4320	AveID		1.3940			10.8		50.0				
4:2 FTS	0.9260 0.8950	0.9093 0.8393	1.0484	1.0811	0.9479	AveID		0.9496			9.1		35.0				
Perfluorohexanoic acid (PFHxA)	1.0902 0.9911	1.0349 0.8796	1.0619	1.0333	1.0219	AveID		1.0161			6.7		35.0				
Perfluoroheptanoic acid (PFHpA)	1.0858 1.0794	1.0428 1.0055	1.1208	1.0722	1.0692	AveID		1.0679			3.4		35.0				
Perfluorohexanesulfonic acid (PFHxS)	1.3523 1.0461	1.1708 0.9727	1.0645	1.0529	1.0736	AveID		1.1047			11.2		35.0				
6:2FTS	1.1329 0.9761	0.9576 0.8608	1.0290	0.9913	0.9532	AveID		0.9859			8.4		35.0				
Perfluorooctanoic acid (PFOA)	1.1910 1.0597	1.0501 0.9801	1.0750	1.0222	1.0425	AveID		1.0601			6.2		35.0				
Perfluoroheptanesulfonic Acid (PFHpS)	1.1774 1.1070	1.1673 0.9684	1.1838	1.2184	1.2312	AveID		1.1505			7.8		50.0				
Perfluorooctanesulfonic acid (PFOS)	1.0619 1.0690	1.0047 1.0439	1.0422	1.0337	1.0873	AveID		1.0490			2.6		35.0				
Perfluorononanoic acid (PFNA)	0.9129 1.0046	0.9414 1.0086	1.0237	0.9887	1.0646	AveID		0.9921			5.1		35.0				
Perfluorooctane Sulfonamide (FOSA)	1.0488 0.9382	0.9520 0.7870	1.0319	1.0356	1.0239	AveID		0.9739			9.6		35.0				
8:2FTS	1.0823 1.0153	0.9490 0.8759	0.9983	1.0704	0.9992	AveID		0.9986			7.1		35.0				
Perfluorodecanoic acid (PFDA)	0.9588 0.9943	0.9379 0.9445	0.9509	0.9755	0.9924	AveID		0.9649			2.4		35.0				
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9159 1.1009	0.9803 1.0843	1.0276	1.0932	1.0955	AveID		1.0425			6.9		35.0				
Perfluorodecanesulfonic acid (PFDS)	0.6064 0.6329	0.6101 0.6255	0.6563	0.6589	0.6735	AveID		0.6377			4.0		50.0				
Perfluoroundecanoic acid (PFUnA)	1.1890 1.0019	1.1123 1.0445	1.0593	1.0063	1.0359	AveID		1.0641			6.2		35.0				
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.7996 0.9851	1.0353 1.0599	0.9816	0.9825	0.9787	AveID		0.9747			8.6		35.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299  
 SDG No.: \_\_\_\_\_  
 Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N  
 Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
MeFOSA	0.8983 1.0042	0.8981 0.9363	0.9415	0.9900	0.9969	AveID		0.9522			4.8		35.0				
Perfluorododecanoic acid (PFDoA)	0.9078 0.9573	0.9245 0.9722	1.0132	0.9271	0.9624	AveID		0.9521			3.7		35.0				
N-EtFOSA-M	0.8723 1.0544	0.9292 1.0102	0.9989	1.0617	1.0629	AveID		0.9985			7.3		35.0				
Perfluorotridecanoic Acid (PFTriA)	0.9154 0.9788	0.9417 0.9494	1.0240	0.9762	1.0082	AveID		0.9705			3.9		50.0				
Perfluorotetradecanoic acid (PFTeA)	2.3604 2.3493	2.3457 2.1203	2.4935	2.3112	2.3514	AveID		2.3331			4.7		50.0				
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++ 1.0229	1.6983 0.9814	1.1713	1.0158	1.0313	L2ID	0.6992	1.0037						0.9990		0.9900	
Perfluoro-n-octadecanoic acid (PFODA)	1.0131 1.0962	1.0427 1.0863	1.1261	1.0745	1.1073	AveID		1.0780			3.6		50.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171299/3	2017.06.27_PFC_CURVE_003.d
Level 2	IC 320-171299/4	2017.06.27_PFC_CURVE_004.d
Level 3	IC 320-171299/5	2017.06.27_PFC_CURVE_005.d
Level 4	IC 320-171299/6	2017.06.27_PFC_CURVE_006.d
Level 5	IC 320-171299/7	2017.06.27_PFC_CURVE_007.d
Level 6	IC 320-171299/8	2017.06.27_PFC_CURVE_008.d
Level 7	IC 320-171299/9	2017.06.27_PFC_CURVE_009.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
		LVL 6	LVL 7				LVL 6	LVL 7			
13C4 PFBA	Ave	11886919 10675010	12615678 10166691	11797801	11549275	13205581	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C5-PFPeA	Ave	8293954 7124768	8929012 6591945	8273150	8090985	8979957	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFHxA	Ave	7538335 7158780	8175034 6584505	7682413	7441111	9110123	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C4-PFHpA	Ave	7116534 6089305	7503477 5313908	6968809	7055297	7867238	50.0 50.0	50.0 50.0	50.0	50.0	50.0
1802 PFHxS	Ave	9802958 9364216	10722327 8839903	10119383	9911128	11663930	47.3 47.3	47.3 47.3	47.3	47.3	47.3
M2-6:2FTS	Ave	3284589 3302334	3749819 3295055	3201778	3309130	4068086	47.5 47.5	47.5 47.5	47.5	47.5	47.5
13C4 PFOA	Ave	6757182 5715583	7220112 5115116	6749720	6728822	7402051	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C4 PFOS	Ave	7583619 7491053	8106507 7061626	7635965	7707122	8858759	47.8 47.8	47.8 47.8	47.8	47.8	47.8
13C5 PFNA	Ave	5406486 4847358	5741270 4185731	5376033	5381166	5808673	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C8 FOSA	Ave	13154563 12336650	14002627 11557466	13099370	13211524	15024703	50.0 50.0	50.0 50.0	50.0	50.0	50.0
M2-8:2FTS	Ave	2653329 2521442	2972973 2477757	2651990	2518585	3188751	47.9 47.9	47.9 47.9	47.9	47.9	47.9
13C2 PFDA	Ave	5156995 4421659	5605116 4118965	5132771	4927623	5643784	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d3-NMeFOSAA	Ave	1799267 1758767	1960572 1721455	1831369	1742910	2147247	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d5-NEtFOSAA	Ave	1874966 1723727	1954442 1513502	1898327	1820803	2144747	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFUnA	Ave	3964080 3243280	4115073 2846934	3912305	3819175	4104750	50.0 50.0	50.0 50.0	50.0	50.0	50.0

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
		LVL 6	LVL 7				LVL 6	LVL 7			
d-N-MeFOSA-M	Ave	3494948 3587709	3766110 3701580	3606058	3567251	4387472	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFDoA	Ave	3716745 3379621	3968258 3158739	3540892	3705209	4227944	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d-N-EtFOSA-M	Ave	3495515 3526135	3732058 3563174	3548486	3521257	4353764	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2-PFTeDA	Ave	7294557 7188952	7590782 6840230	7546862	7637411	8914264	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2-PFHxDA	Ave	4126958 3907752	4382288 3766939	4128252	4267397	4780592	50.0 50.0	50.0 50.0	50.0	50.0	50.0

Curve Type Legend:

Ave = Average

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171299/3	2017.06.27_PFC_CURVE_003.d
Level 2	IC 320-171299/4	2017.06.27_PFC_CURVE_004.d
Level 3	IC 320-171299/5	2017.06.27_PFC_CURVE_005.d
Level 4	IC 320-171299/6	2017.06.27_PFC_CURVE_006.d
Level 5	IC 320-171299/7	2017.06.27_PFC_CURVE_007.d
Level 6	IC 320-171299/8	2017.06.27_PFC_CURVE_008.d
Level 7	IC 320-171299/9	2017.06.27_PFC_CURVE_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7				LVL 6	LVL 7			
Perfluorobutanoic acid (PFBA)		AveID	108120 19529228	220239 31585487	1107615	4312576	12656286	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoropentanoic acid (PFPeA)		AveID	89039 14509953	190139 23255486	879879	3404309	9443251	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorobutanesulfonic acid (PFBS)		AveID	132490 22564944	294690 36354753	1397171	5713726	15607971	0.442 88.4	0.884 177	4.42	17.7	44.2
4:2 FTS		AveID	29902 5811420	67042 10875967	330033	1406942	3791195	0.467 93.4	0.934 187	4.67	18.7	46.7
Perfluorohexanoic acid (PFHxA)		AveID	82181 14190069	169209 23166575	815792	3075492	9309307	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoroheptanoic acid (PFHpA)		AveID	77268 13145899	156493 21372445	781071	3025785	8411272	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorohexanesulfonic acid (PFHxS)		AveID	127523 18845568	241518 33084312	1036177	4015290	12045375	0.455 91.0	0.910 182	4.55	18.2	45.5
6:2FTS		AveID	37133 6433270	71669 11321706	328782	1309362	3869731	0.474 94.8	0.948 190	4.74	19.0	47.4
Perfluorooctanoic acid (PFOA)		AveID	80477 12113676	151634 20052628	725611	2751243	7716902	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	88915 16515521	188463 27240352	900193	3740530	10861633	0.476 95.2	0.952 190	4.76	19.0	47.6
Perfluorooctanesulfonic acid (PFOS)		AveID	78174 15546912	158122 28622131	772533	3093407	9350192	0.464 92.8	0.928 186	4.64	18.6	46.4
Perfluorononanoic acid (PFNA)		AveID	49357 9739220	108092 16886918	550324	2128228	6184063	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorooctane Sulfonamide (FOSA)		AveID	137967 23148531	266605 36383951	1351726	5472890	15383456	0.500 100	1.00 200	5.00	20.0	50.0
8:2FTS		AveID	28717 5119791	56425 8681158	264754	1078348	3186328	0.479 95.8	0.958 192	4.79	19.2	47.9
Perfluorodecanoic acid (PFDA)		AveID	49444 8792931	105137 15560863	488082	1922781	5600678	0.500 100	1.00 200	5.00	20.0	50.0

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171299

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/28/2017 00:13 Calibration End Date: 06/28/2017 01:01 Calibration ID: 32001

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	16479 3872343	38438 7466479	188190	762143	2352348	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorodecanesulfonic acid (PFDS)		AveID	46373 9560988	99750 17816860	505354	2048221	6016476	0.482 96.4	0.964 193	4.82	19.3	48.2
Perfluoroundecanoic acid (PFUnA)		AveID	47133 6498995	91540 11894686	414412	1537226	4251916	0.500 100	1.00 200	5.00	20.0	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	14993 3396144	40468 6416477	186343	715544	2099128	0.500 100	1.00 200	5.00	20.0	50.0
MeFOSA		AveID	31394 7205455	67644 13863578	339523	1412678	4374026	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorododecanoic acid (PFDoA)		AveID	33742 6470650	73375 12283288	358777	1374056	4068765	0.500 100	1.00 200	5.00	20.0	50.0
N-EtFOSA-M		AveID	30491 7435798	69355 14398576	354466	1495344	4627670	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorotridecanoic Acid (PFTriA)		AveID	34024 6616124	74736 11996210	362572	1446860	4262655	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorotetradecanoic acid (PFTeA)		AveID	87731 15879482	186165 26789665	882931	3425461	9941671	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	+++++ 6914193	134786 12399383	414748	1505434	4360289	+++++ 100	1.00 200	5.00	20.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)		AveID	37653 7409509	82755 13725574	398746	1592491	4681812	0.500 100	1.00 200	5.00	20.0	50.0

Curve Type Legend:

AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_003.d  
 Lims ID: IC L1 Full  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 28-Jun-2017 00:13:24 ALS Bottle#: 28 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L1-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:28:22 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 28-Jun-2017 08:21:08

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.551	1.546	0.005	11886919	50.8		102	22399	
2 Perfluorobutyric acid	212.90 > 169.00	1.551	1.549	0.002	108120	0.5049		101	43.4	
D 3 13C5-PFPeA	267.90 > 223.00	1.761	1.755	0.006	8293954	51.6		103	22670	
4 Perfluoropentanoic acid	262.90 > 219.00	1.761	1.756	0.005	89039	0.5215		104	50.7	
D 47 13C3-PFBS	301.90 > 83.00	1.779	1.776	0.003	211470	NC			7153	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.788	1.783	0.005	132490	0.4586		104	103	
	298.90 > 99.00	1.779	1.783	-0.004	58443		2.27(0.00-0.00)	104	104	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.993	1.983	0.010	29902	0.4554		97.5	1510	
D 7 13C2 PFHxA	315.00 > 270.00	2.026	2.022	0.004	7538335	49.1		98.3	18709	
6 Perfluorohexanoic acid	313.00 > 269.00	2.026	2.022	0.004	82181	0.5364		107	198	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.352	2.345	0.007	77268	0.5083		102	172	
D 9 13C4-PFHpA	367.00 > 322.00	2.352	2.345	0.007	7116534	52.0		104	22724	
D 11 18O2 PFHxS	403.00 > 84.00	2.368	2.360	0.008	9802958	46.1		97.4	17209	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.368	2.360	0.008	127523	0.5570		122	145	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.684	2.674	0.010	1.000	37133	0.5447	115	764	
D 12 M2-6:2FTS	429.00	> 409.00	2.684	2.674	0.010		3284589	45.1	95.0	12819	
* 62 13C2-PFOA	415.00	> 370.00	2.706	2.695	0.011		7300132	50.0		17146	
D 14 13C4 PFOA	417.00	> 372.00	2.713	2.701	0.012		6757182	51.8	104	13979	
15 Perfluorooctanoic acid	413.00	> 369.00	2.713	2.703	0.010	1.000	80477	0.5617	112	17.1	
	413.00	> 169.00	2.713	2.703	0.010	1.000	47313		1.70(0.90-1.10)	112	254
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.721	2.710	0.011	1.000	88915	0.4871	102	2169	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.091	3.076	0.015	1.000	78174	0.4697	101	640	
	499.00	> 99.00	3.091	3.076	0.015	1.000	16542		4.73(0.90-1.10)	101	168
D 18 13C4 PFOS	503.00	> 80.00	3.091	3.076	0.015		7583619	46.6	97.5	14217	
D 19 13C5 PFNA	468.00	> 423.00	3.091	3.077	0.014		5406486	51.5	103	12379	
20 Perfluorononanoic acid	463.00	> 419.00	3.091	3.077	0.014	1.000	49357	0.4601	92.0	159	
D 21 13C8 FOSA	506.00	> 78.00	3.415	3.405	0.010		13154563	49.8	99.7	121496	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.415	3.408	0.007	1.000	137967	0.5385	108	1366	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.441	3.429	0.012	1.000	28717	0.5191	108	1143	
D 26 M2-8:2FTS	529.00	> 509.00	3.441	3.429	0.012		2653329	46.9	97.8	25774	
24 Perfluorodecanoic acid	513.00	> 469.00	3.458	3.442	0.016	1.000	49444	0.4968	99.4	311	
D 23 13C2 PFDA	515.00	> 470.00	3.458	3.442	0.016		5156995	51.6	103	26789	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.616	3.598	0.018		1799267	48.6	97.2	9731	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.616	3.602	0.014	1.000	16479	0.4393	87.9	381	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.774	3.755	0.019	1.000	46373	0.4584	95.1	1705	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.784	3.765	0.019		1874966	50.8	102	6794	
D 30 13C2 PFUnA	565.00	> 520.00	3.784	3.772	0.012		3964080	53.4	107	19278	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.784	3.773	0.011	1.000	47133	0.5587	112	139	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.794	3.775	0.019	1.003	14993	0.4102	82.0	365	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.910	3.904	0.006		3494948	46.8	93.7	641	
35 MeFOSA	512.00 > 169.00	3.919	3.910	0.009	1.000	31394	0.4717	94.3	1004	
D 36 13C2 PFDaA	615.00 > 570.00	4.090	4.071	0.019		3716745	50.6	101	10545	
37 Perfluorododecanoic acid	613.00 > 569.00	4.090	4.072	0.018	1.000	33742	0.4768	95.4	37.0	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.098	4.092	0.006		3495515	47.5	95.1	6236	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.107	4.101	0.006	1.000	30491	0.4368	87.4	1092	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.362	4.341	0.021	1.000	34024	0.4716	94.3	9.2	
D 43 13C2-PFTeDA	715.00 > 670.00	4.601	4.578	0.022		7294557	48.2	96.3	51696	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.601	4.581	0.019	1.000	87731	0.5059	101	5.2	
	713.00 > 169.00	4.589	4.581	0.008	0.997	11077		7.92(0.00-0.00)	101	172
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.019	4.998	0.021	1.000	92507	0.5432	109	18.1	
D 44 13C2-PFHxDA	815.00 > 770.00	5.019	4.998	0.021		4126958	49.2	98.4	7314	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.373	5.351	0.022	1.000	37653	0.4699	94.0	14.8	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L1\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_003.d

Injection Date: 28-Jun-2017 00:13:24

Instrument ID: A8\_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 28

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

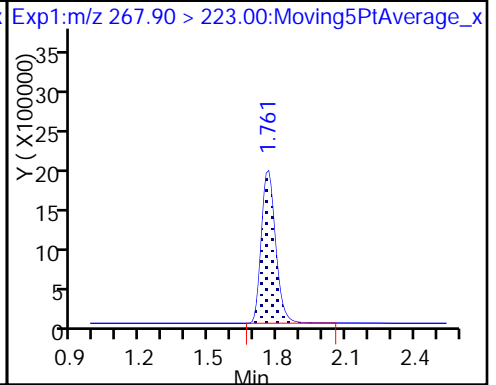
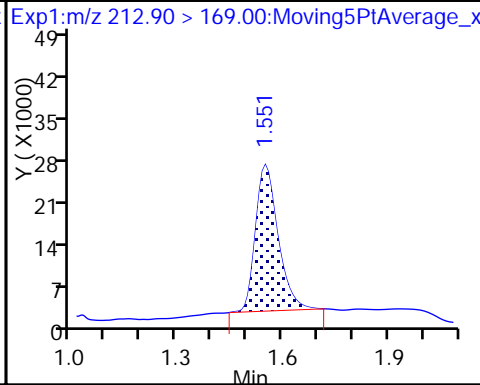
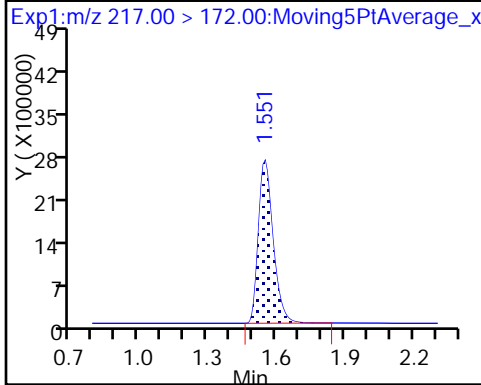
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

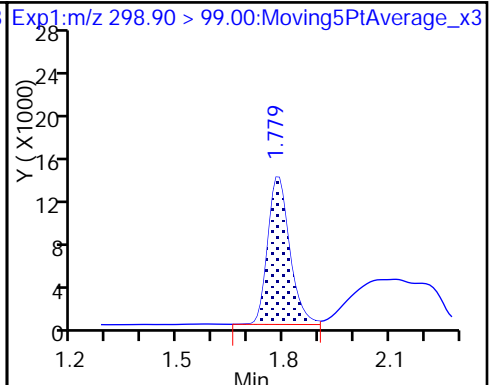
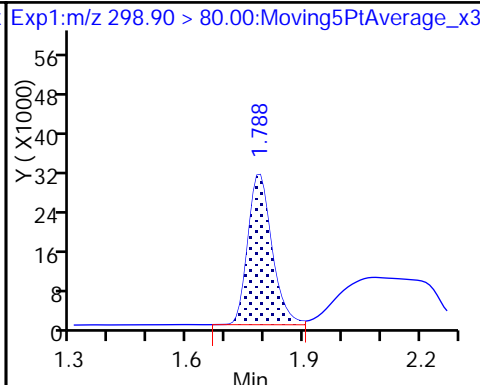
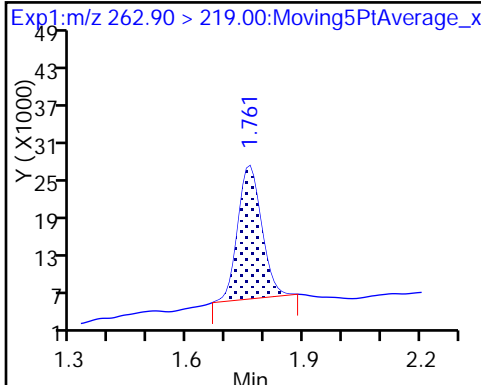
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

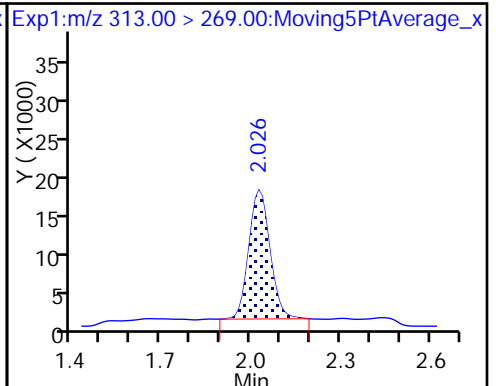
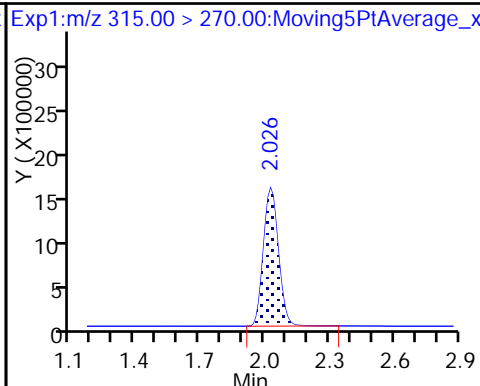
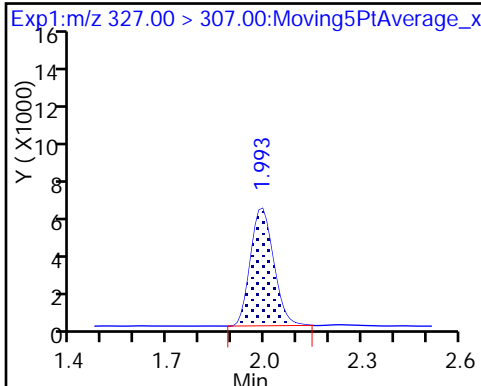
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

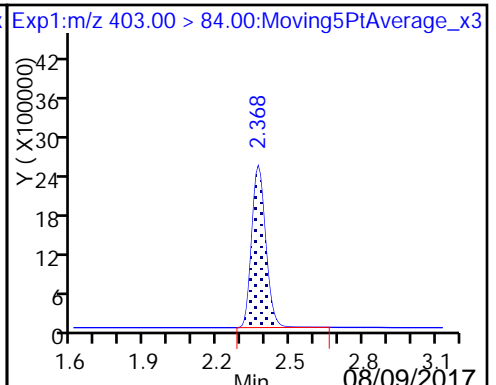
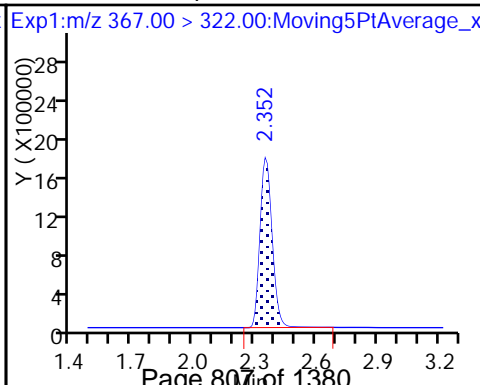
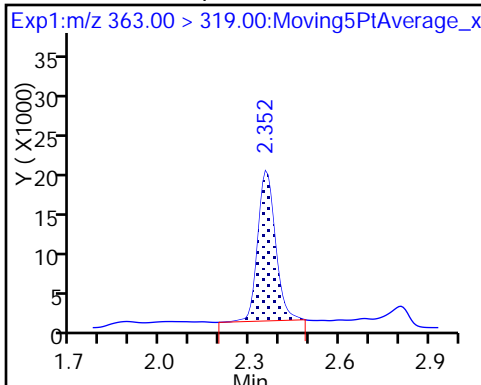
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

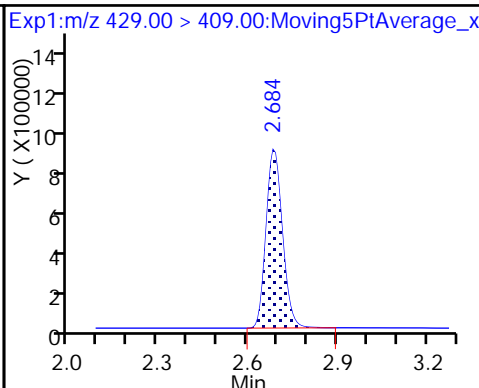
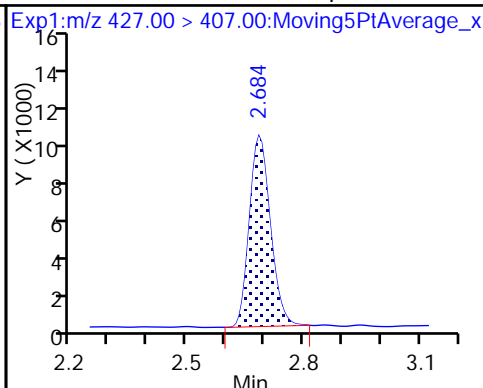
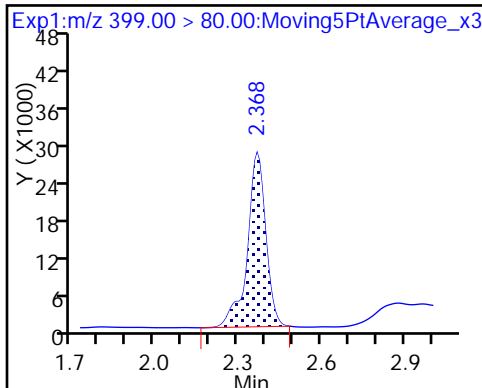
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

13 Sodium 1H,1H,2H,2H-perfluorooctanoate

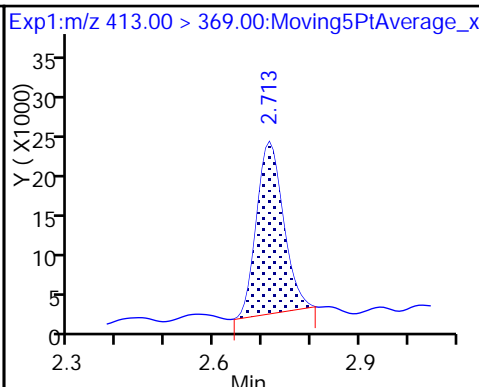
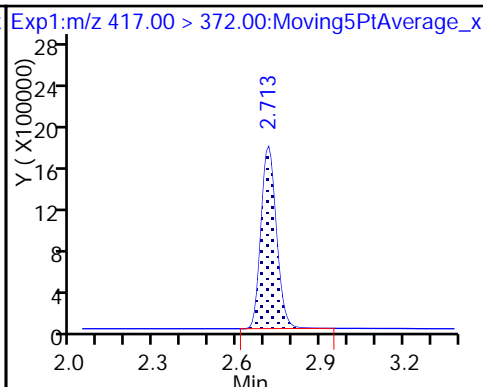
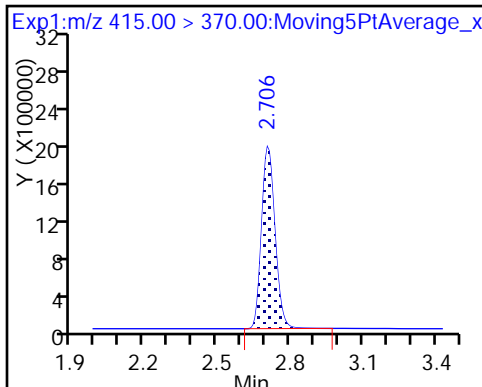
D 12 M2-6:2FTS



\* 62 13C2-PFOA

D 14 13C4 PFOA

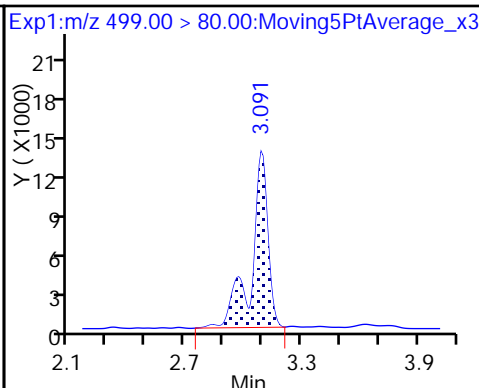
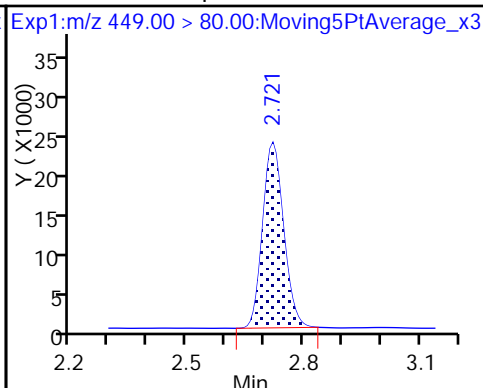
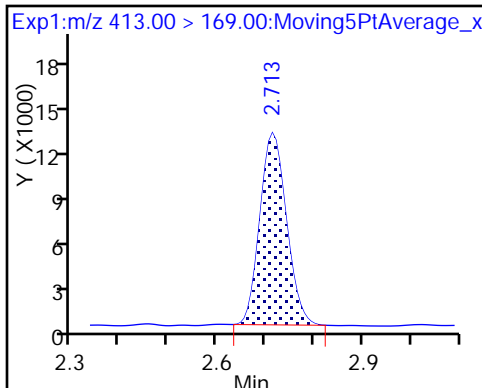
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

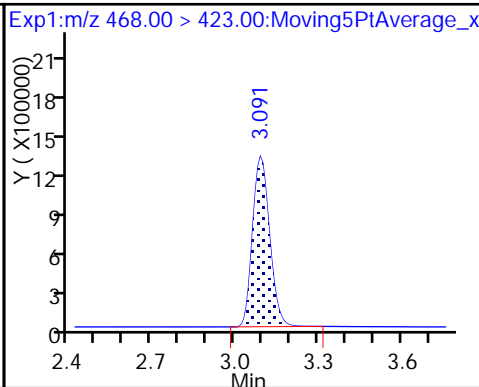
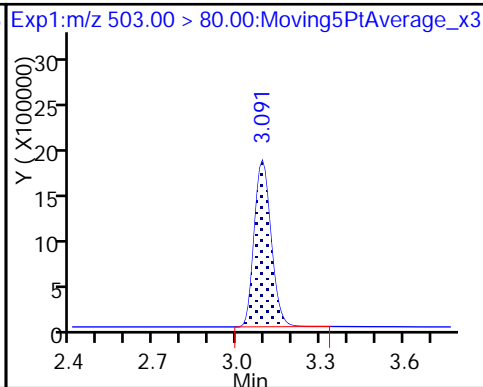
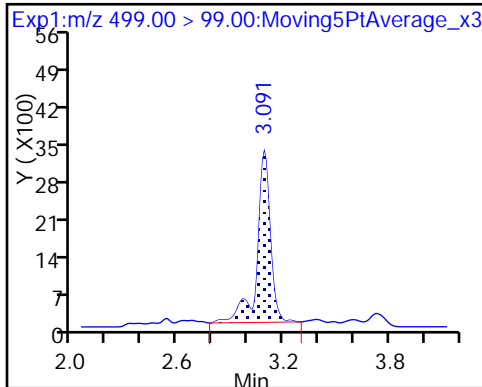
17 Perfluorooctane sulfonic acid

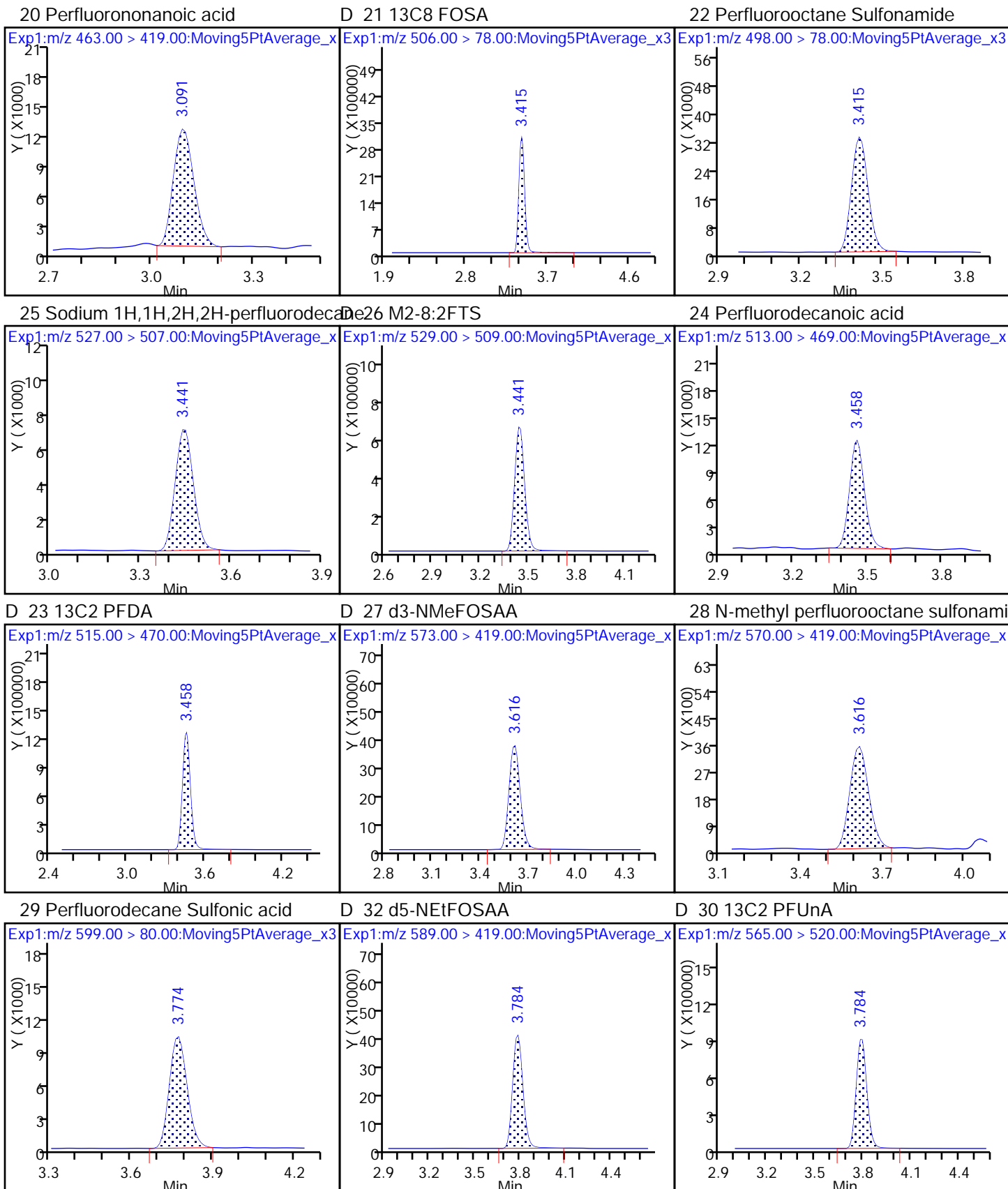


17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

D 19 13C5 PFNA

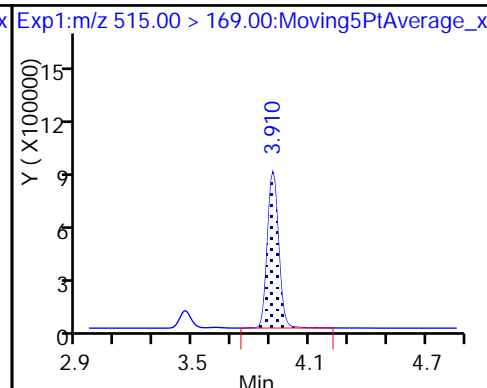
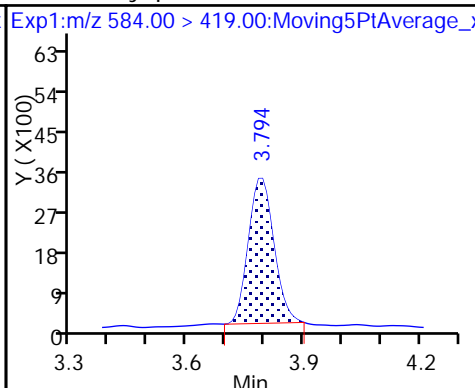
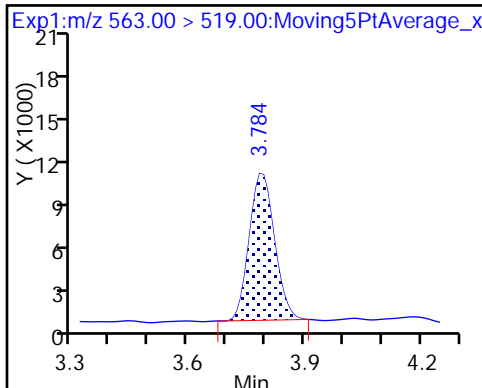




31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

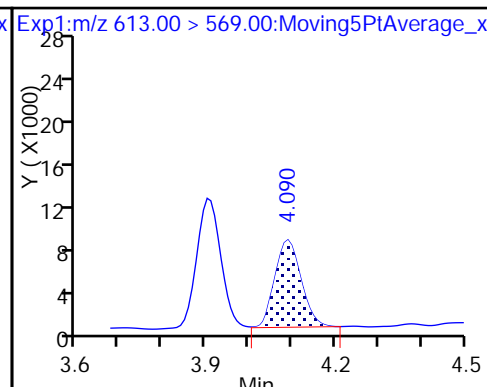
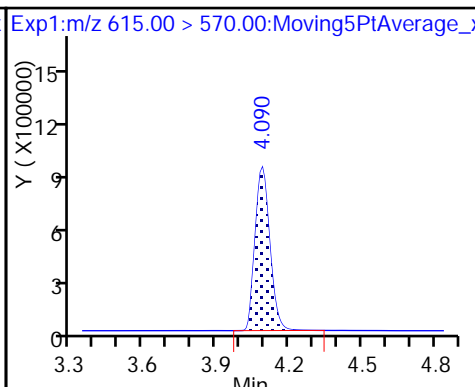
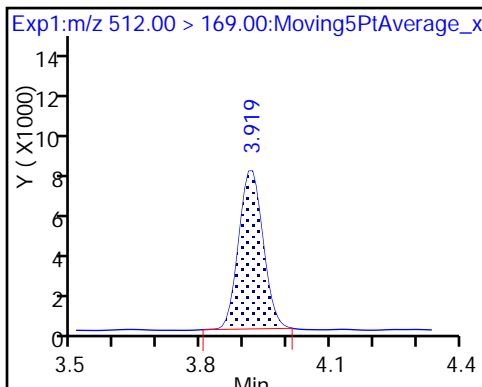
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

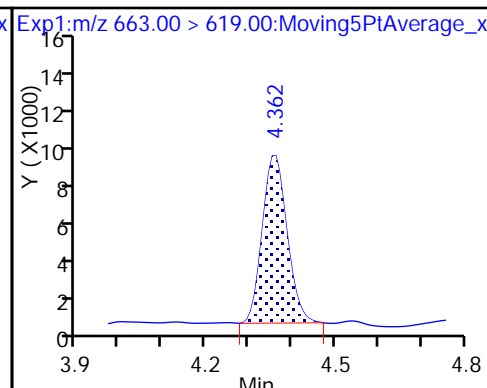
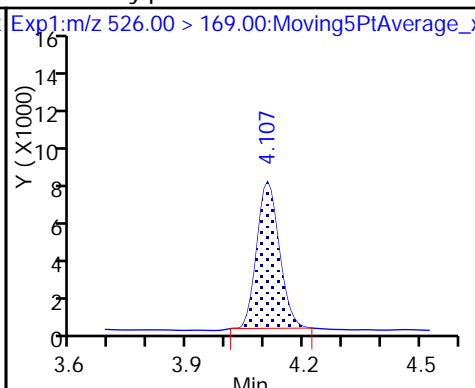
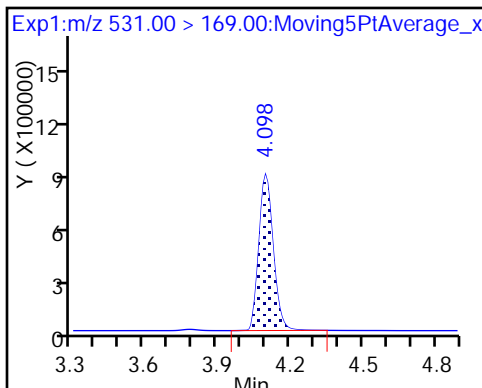
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

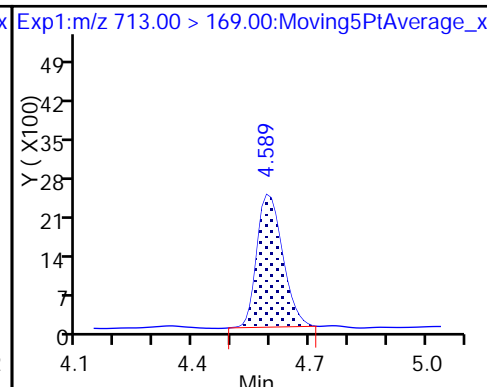
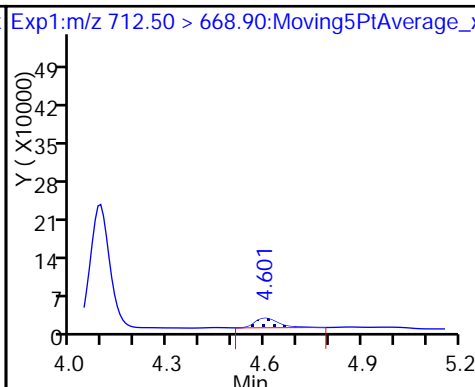
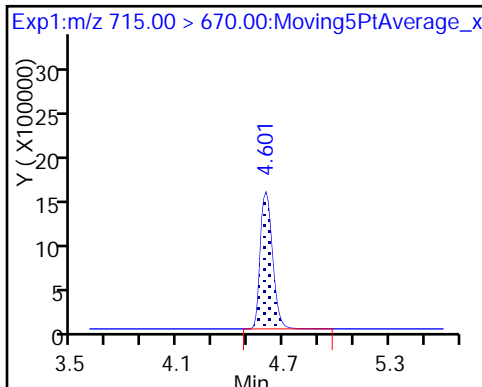
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

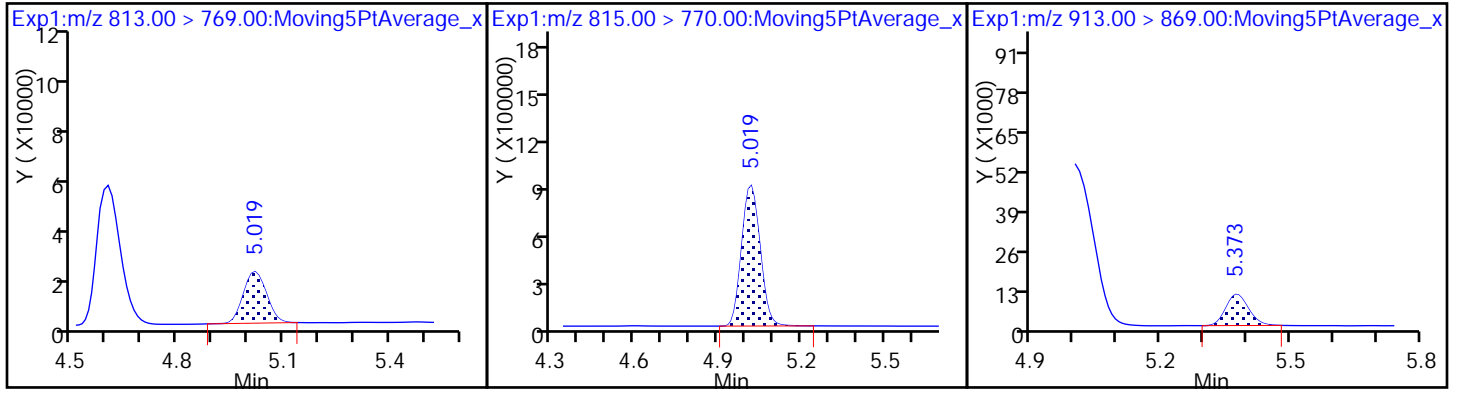
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_004.d  
 Lims ID: IC L2 Full  
 Client ID:  
 Sample Type: IC Calib Level: 2  
 Inject. Date: 28-Jun-2017 00:20:18 ALS Bottle#: 29 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L2-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:28:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.550	1.546	0.004	12615678	53.9		108	21354	
2 Perfluorobutyric acid	212.90 > 169.00	1.550	1.549	0.001	220239	0.9692		96.9	86.6	
D 3 13C5-PFPeA	267.90 > 223.00	1.760	1.755	0.005	8929012	55.5		111	36736	
4 Perfluoropentanoic acid	262.90 > 219.00	1.760	1.756	0.004	190139	1.03		103	117	
D 47 13C3-PFBS	301.90 > 83.00	1.777	1.776	0.001	227646	NC			6043	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.786	1.783	0.003	294690	0.9325		105	192	
	298.90 > 99.00	1.777	1.783	-0.006	121552		2.42(0.00-0.00)	105	219	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.991	1.983	0.008	67042	0.8943		95.8	3382	
6 Perfluorohexanoic acid	313.00 > 269.00	2.025	2.022	0.003	169209	1.02		102	400	
D 7 13C2 PFHxA	315.00 > 270.00	2.025	2.022	0.003	8175034	53.3		107	15349	
D 9 13C4-PFHpA	367.00 > 322.00	2.353	2.345	0.008	7503477	54.8		110	32899	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.353	2.345	0.008	156493	0.9765		97.6	301	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.362	2.360	0.002	241518	0.9645		106	259	
D 11 18O2 PFHxS	403.00 > 84.00	2.362	2.360	0.002	10722327	50.4		107	19022	
D 12 M2-6:2FTS	429.00 > 409.00	2.678	2.674	0.004	3749819	51.5		108	16552	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.678	2.674	0.004	1.000	71669	0.9209	97.1	1446
* 62 13C2-PFOA	415.00	> 370.00	2.700	2.695	0.005		7674103	50.0		16369
D 14 13C4 PFOA	417.00	> 372.00	2.707	2.701	0.006		7220112	55.3	111	17292
15 Perfluorooctanoic acid	413.00	> 369.00	2.707	2.703	0.004	1.000	151634	0.99	99.1	31.8
	413.00	> 169.00	2.707	2.703	0.004	1.000	93729	1.62(0.90-1.10)	99.1	471
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.714	2.710	0.004	1.000	188463	0.9659	101	3380
D 18 13C4 PFOS	503.00	> 80.00	3.083	3.076	0.007		8106507	49.8	104	18965
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.083	3.076	0.007	1.000	158122	0.8888	95.8	1189
	499.00	> 99.00	3.083	3.076	0.007	1.000	35506	4.45(0.90-1.10)	95.8	346
20 Perfluorononanoic acid	463.00	> 419.00	3.083	3.077	0.006	1.000	108092	0.9489	94.9	349
D 19 13C5 PFNA	468.00	> 423.00	3.083	3.077	0.006		5741270	54.7	109	11973
D 21 13C8 FOSA	506.00	> 78.00	3.414	3.405	0.009		14002627	53.0	106	64730
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.414	3.408	0.006	1.000	266605	0.9775	97.7	2616
D 26 M2-8:2FTS	529.00	> 509.00	3.440	3.429	0.011		2972973	52.5	110	34791
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.440	3.429	0.011	1.000	56425	0.9104	95.0	1896
D 23 13C2 PFDA	515.00	> 470.00	3.449	3.442	0.007		5605116	56.0	112	28415
24 Perfluorodecanoic acid	513.00	> 469.00	3.449	3.442	0.007	1.000	105137	0.9720	97.2	712
D 27 d3-NMeFOSAA	573.00	> 419.00	3.603	3.598	0.005		1960572	52.9	106	11238
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.614	3.602	0.012	1.003	38438	0.9403	94.0	739
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.761	3.755	0.006	1.000	99750	0.9224	95.7	3673
D 32 d5-NEtFOSAA	589.00	> 419.00	3.771	3.765	0.006		1954442	52.9	106	5597
D 30 13C2 PFUnA	565.00	> 520.00	3.781	3.772	0.009		4115073	55.4	111	36083
31 Perfluoroundecanoic acid	563.00	> 519.00	3.781	3.773	0.008	1.000	91540	1.05	105	281
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.781	3.775	0.006	1.003	40468	1.06	106	901
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.907	3.904	0.003		3766110	50.5	101	608

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.916	3.910	0.006	1.000	67644	0.9432	94.3	1922	
D 36 13C2 PFDaA	615.00 > 570.00	4.079	4.071	0.008		3968258	54.0	108	11258	
37 Perfluorododecanoic acid	613.00 > 569.00	4.079	4.072	0.007	1.000	73375	0.9711	97.1	79.3	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.096	4.092	0.004		3732058	50.7	101	5843	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.105	4.101	0.004	1.000	69355	0.9306	93.1	1723	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.351	4.341	0.010	1.000	74736	0.9703	97.0	22.6	
D 43 13C2-PFTeDA	715.00 > 670.00	4.587	4.578	0.009		7590782	50.1	100	39825	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.599	4.581	0.018	1.000	186165	1.01	101	11.9	
	713.00 > 169.00	4.587	4.581	0.006	0.997	22304	8.35(0.00-0.00)	101	292	
D 44 13C2-PFHxDA	815.00 > 770.00	5.008	4.998	0.010		4382288	52.2	104	7548	
45 Perfluorohexadecanoic acid	813.00 > 769.00	5.008	4.998	0.010	1.000	134786	1.00	99.5	23.8	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.365	5.351	0.014	1.000	82755	0.9672	96.7	28.8	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L2\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_004.d

Injection Date: 28-Jun-2017 00:20:18

Instrument ID: A8\_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 29

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

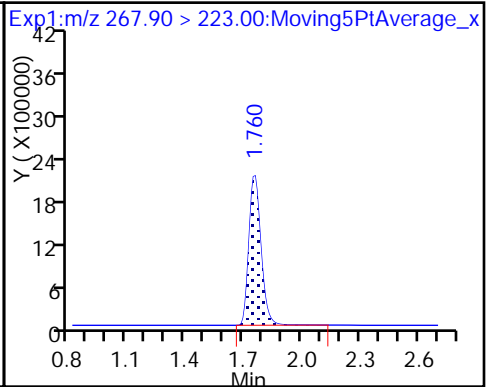
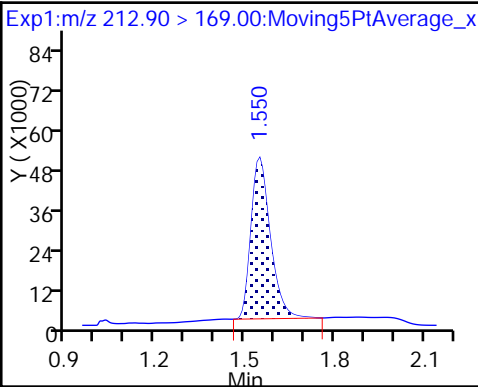
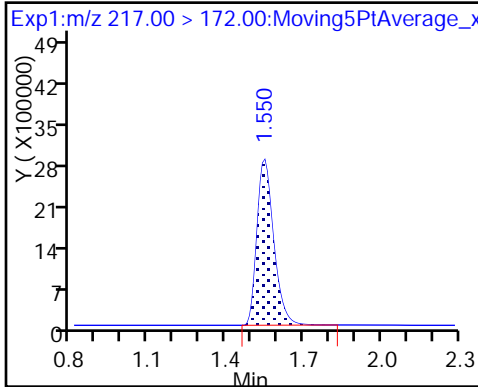
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

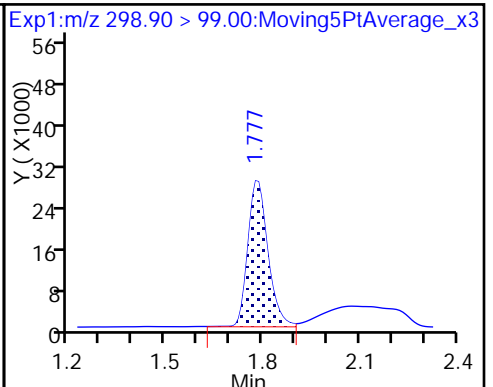
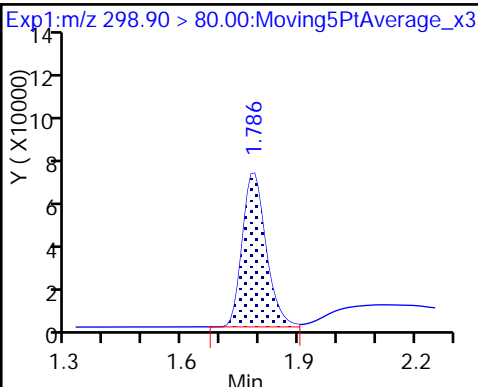
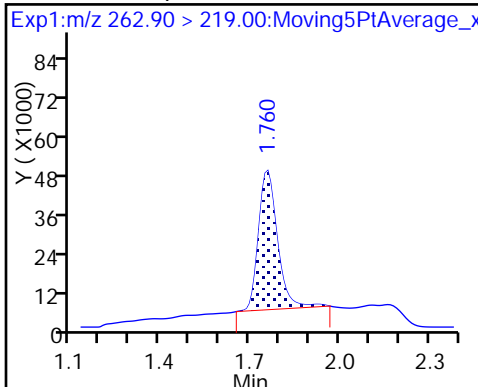
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

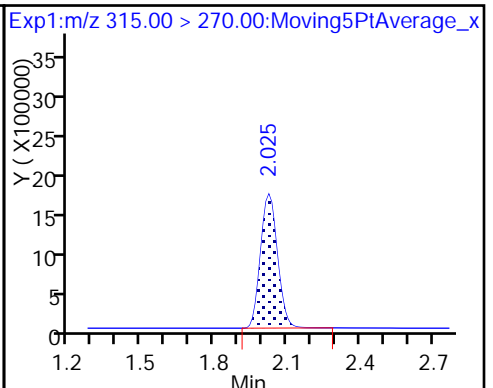
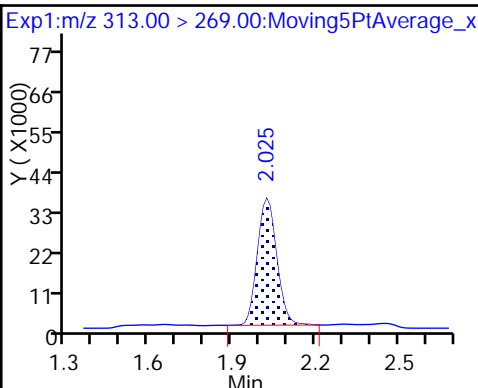
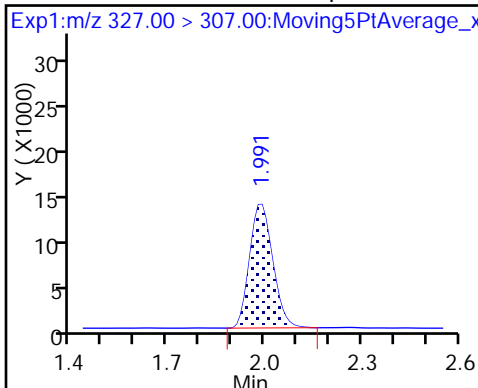
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

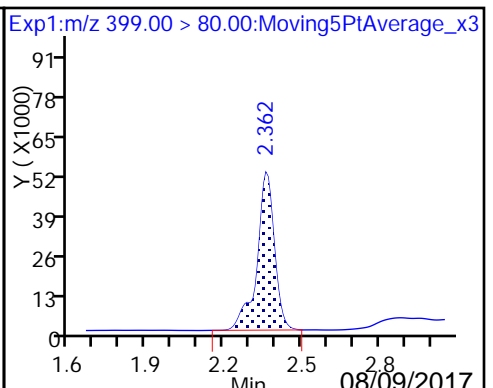
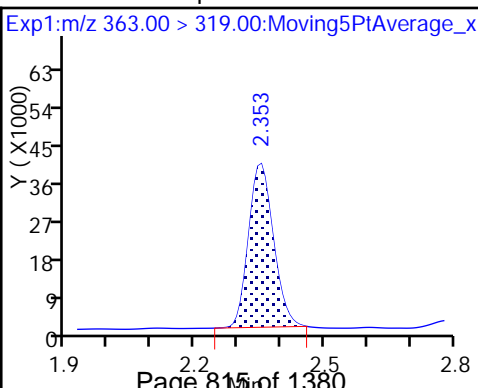
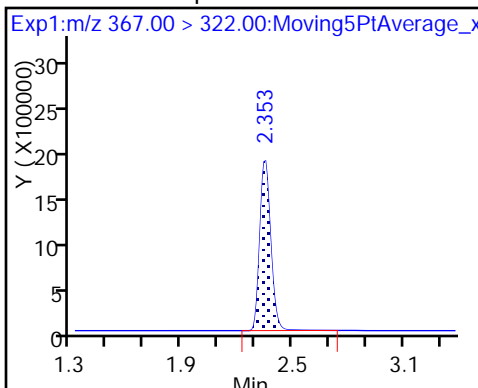
D 7 13C2 PFHxA



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

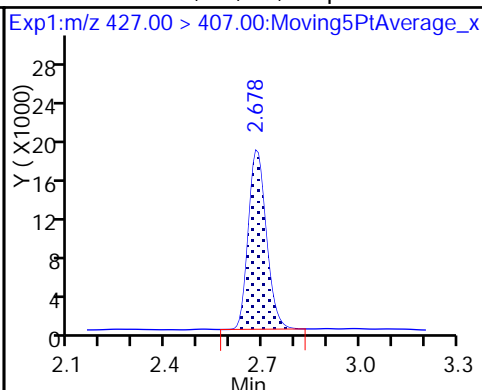
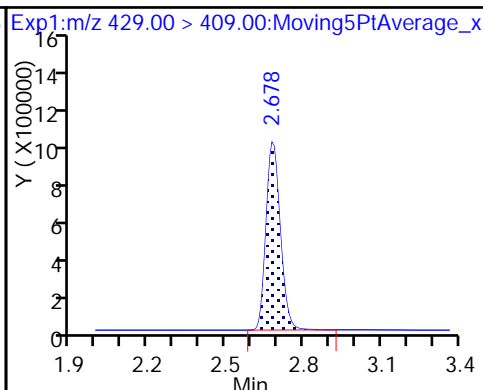
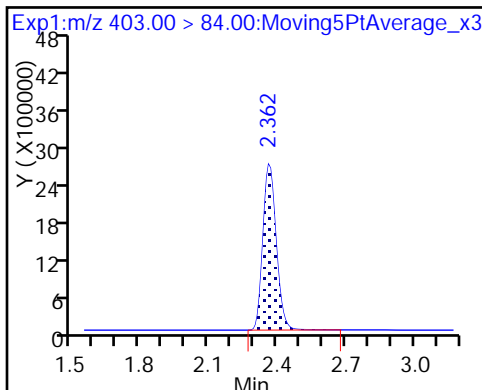
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

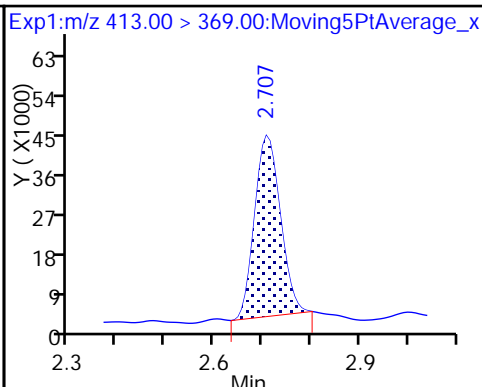
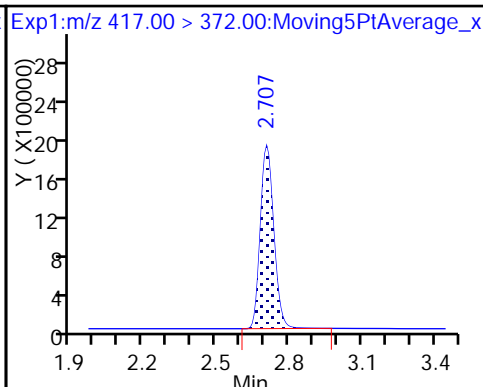
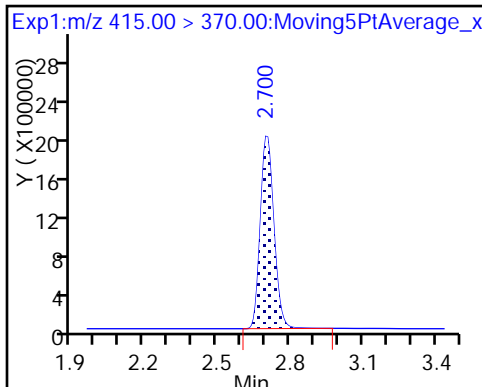
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

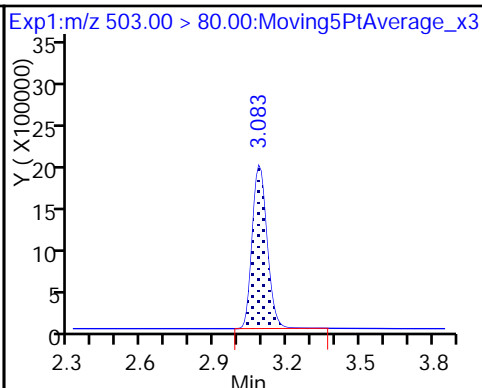
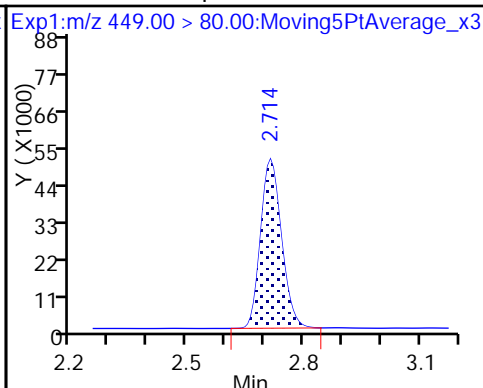
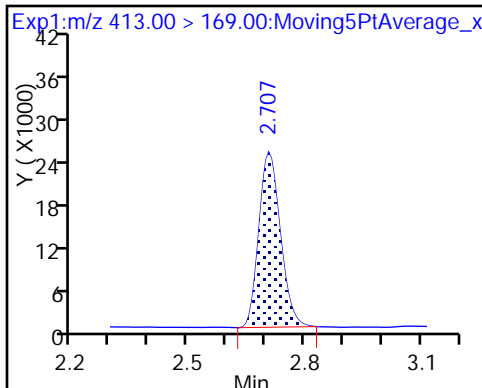
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

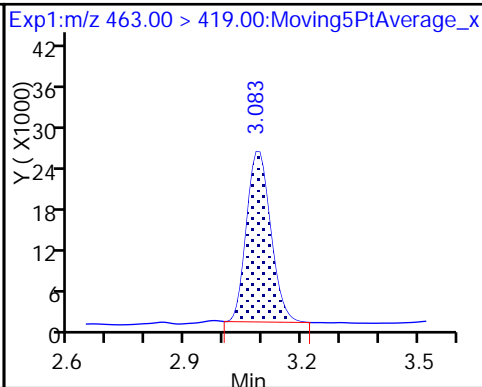
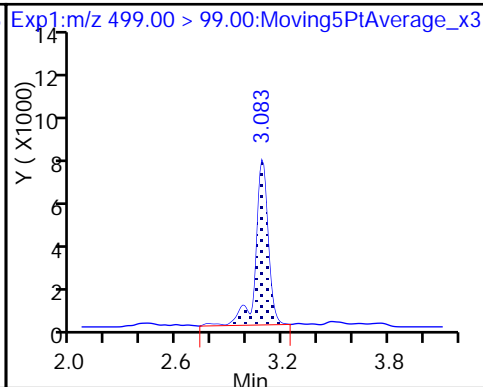
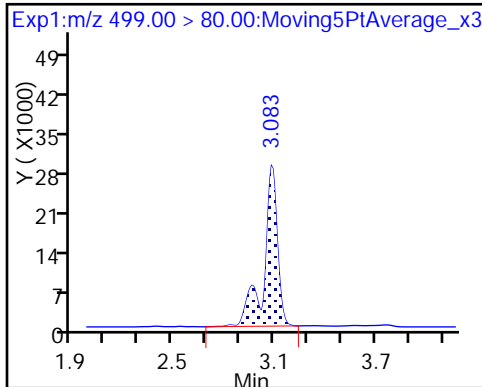
D 18 13C4 PFOS



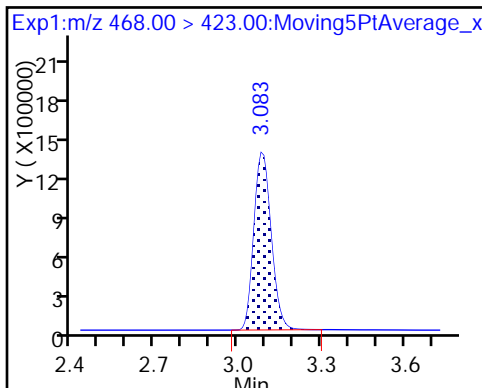
17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

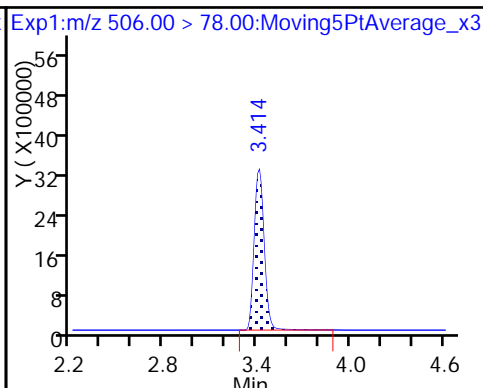
20 Perfluorononanoic acid



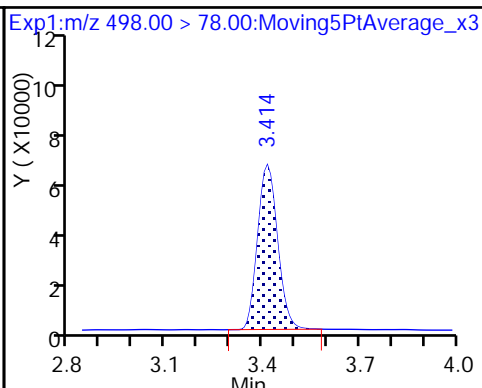
D 19 13C5 PFNA



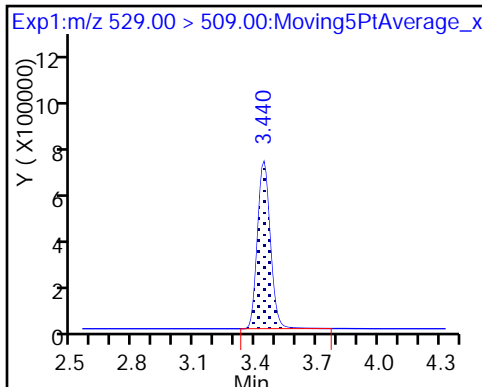
D 21 13C8 FOSA



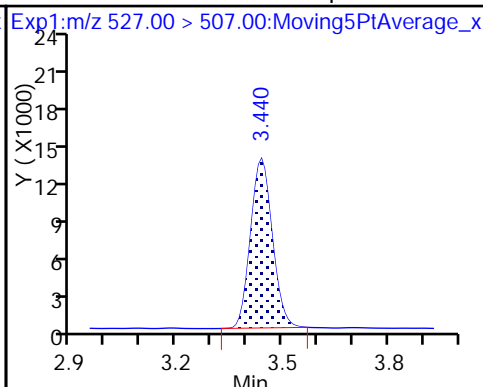
22 Perfluorooctane Sulfonamide



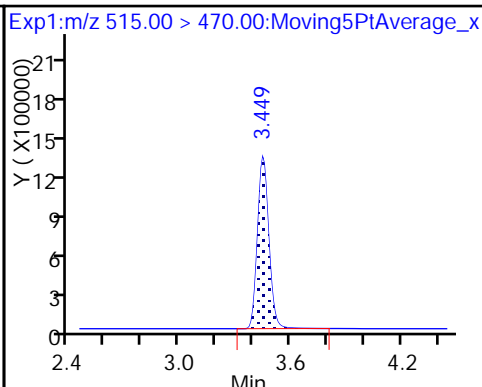
D 26 M2-8:2FTS



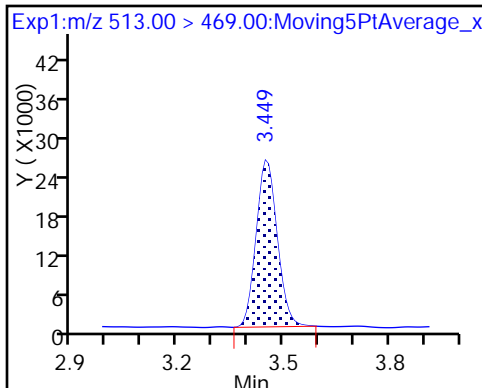
25 Sodium 1H,1H,2H,2H-perfluorodeca



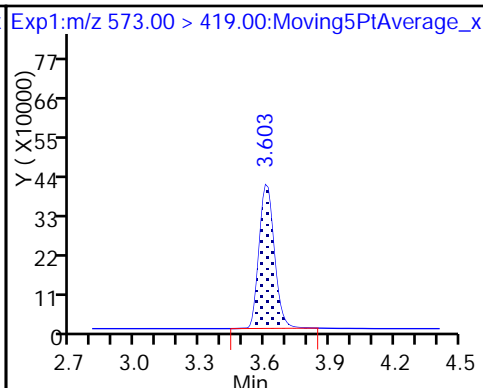
De23 13C2 PFDA



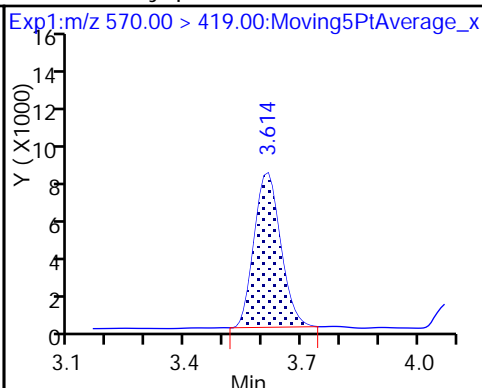
24 Perfluorodecanoic acid



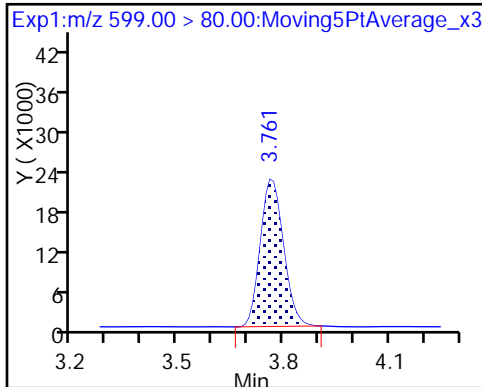
D 27 d3-NMeFOSAA



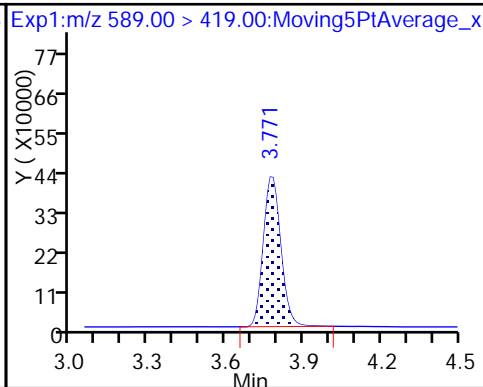
28 N-methyl perfluorooctane sulfonami



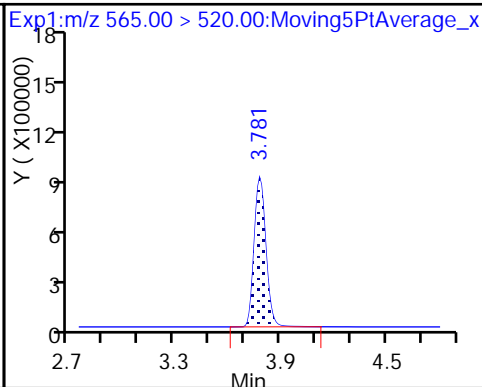
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



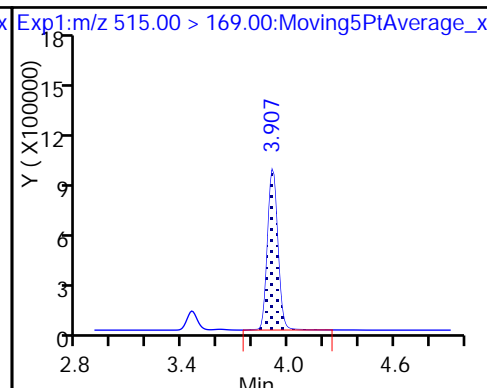
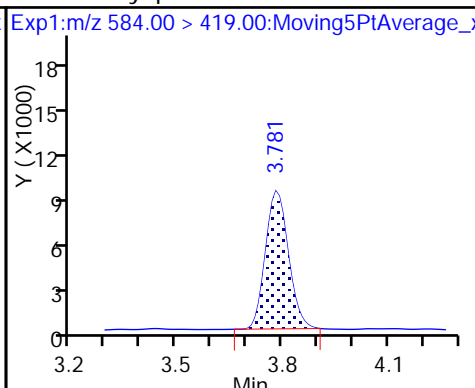
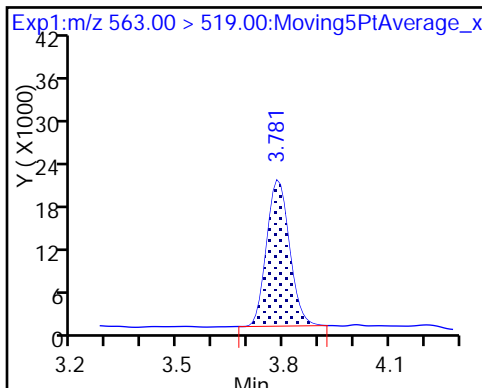
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

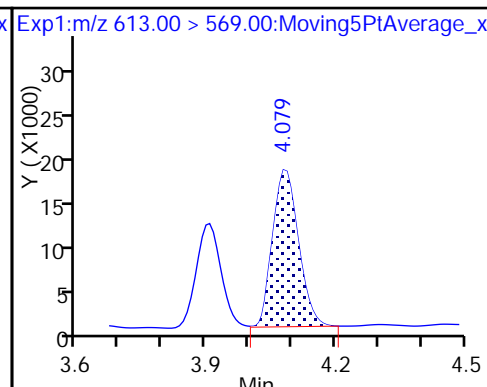
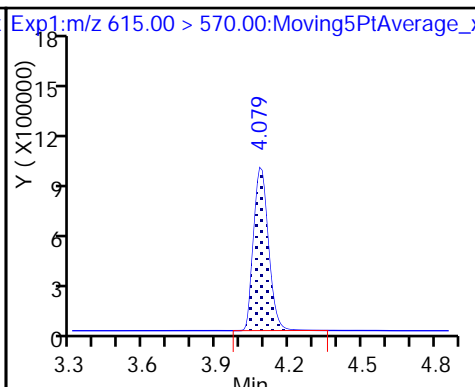
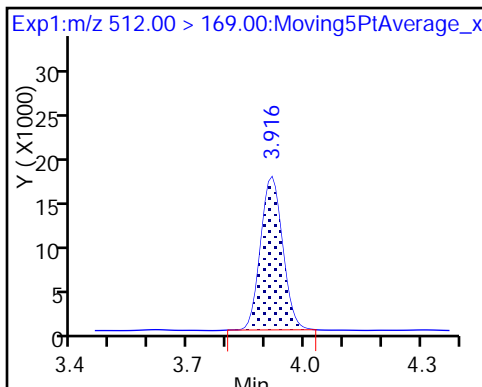
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

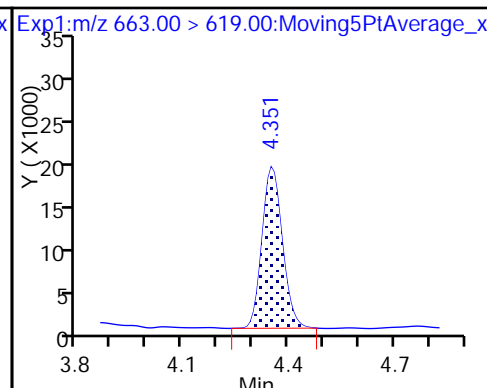
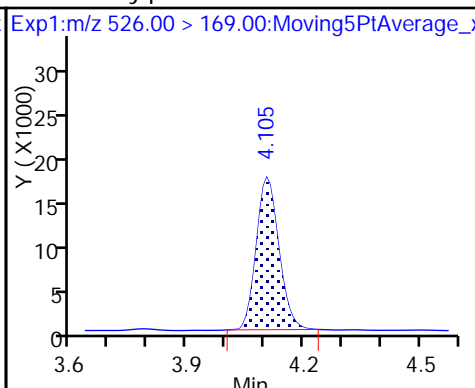
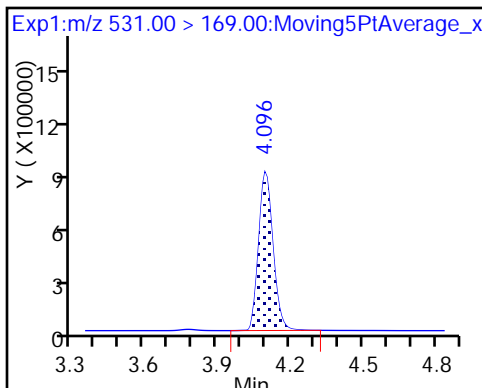
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

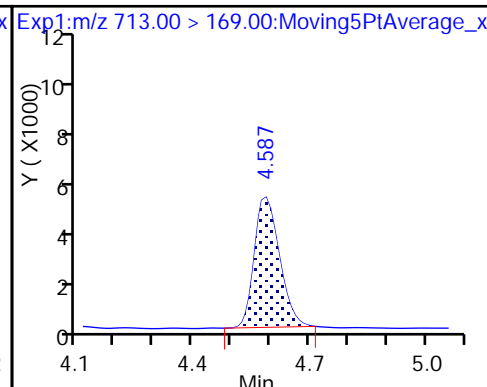
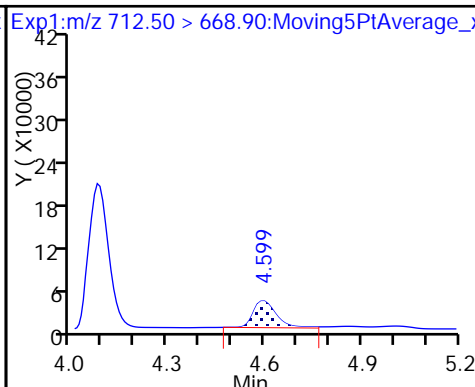
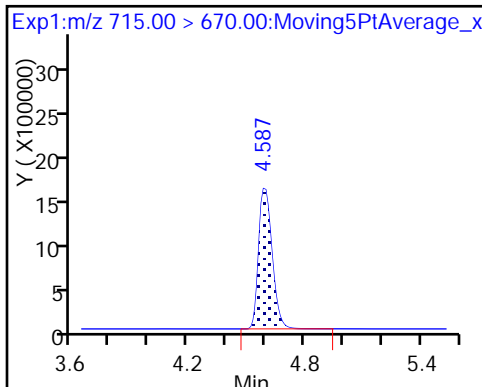
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

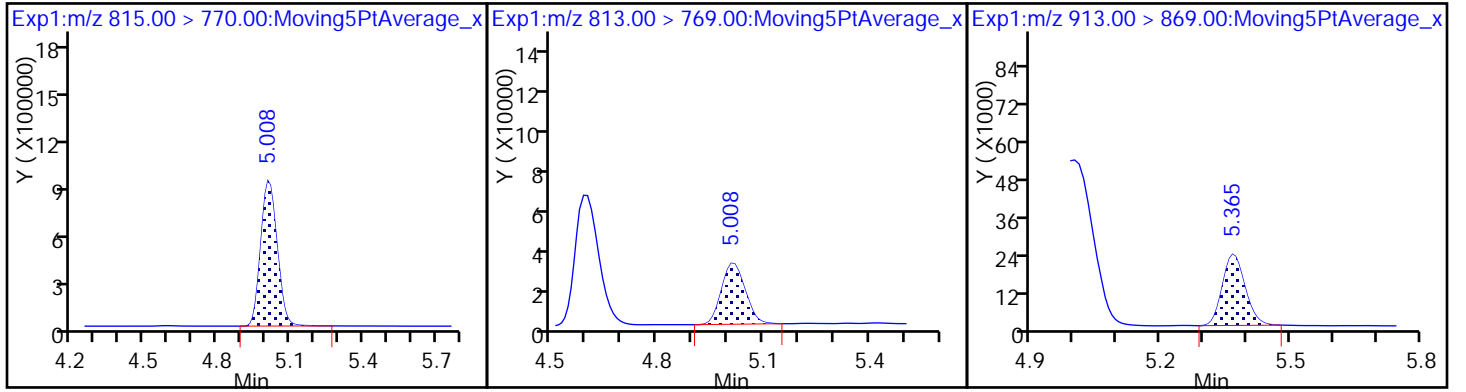
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_005.d  
 Lims ID: IC L3 Full  
 Client ID:  
 Sample Type: IC Calib Level: 3  
 Inject. Date: 28-Jun-2017 00:27:13 ALS Bottle#: 30 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L3-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:28:33 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.549	1.546	0.003	11797801	50.4		101	25021	
2 Perfluorobutyric acid	212.90 > 169.00	1.549	1.549	0.0	1107615	5.21		104	449	
D 3 13C5-PFPeA	267.90 > 223.00	1.760	1.755	0.005	8273150	51.4		103	23346	
4 Perfluoropentanoic acid	262.90 > 219.00	1.760	1.756	0.004	879879	5.17		103	507	
D 47 13C3-PFBS	301.90 > 83.00	1.777	1.776	0.001	210229	NC			6264	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.786	1.783	0.003	1397171	4.68		106	856	
	298.90 > 99.00	1.786	1.783	0.003	565769		2.47(0.00-0.00)	106	825	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.980	1.983	-0.003	330033	5.16		110	8365	
D 7 13C2 PFHxA	315.00 > 270.00	2.024	2.022	0.002	7682413	50.1		100	23872	
6 Perfluorohexanoic acid	313.00 > 269.00	2.024	2.022	0.002	815792	5.23		105	1772	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.350	2.345	0.005	781071	5.25		105	1343	
D 9 13C4-PFHpA	367.00 > 322.00	2.350	2.345	0.005	6968809	50.9		102	13504	
D 11 18O2 PFHxS	403.00 > 84.00	2.359	2.360	-0.001	10119383	47.6		101	23191	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.359	2.360	-0.001	1036177	4.38		96.4	947	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.677	2.674	0.003	328782	4.95		104	6182	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.677	2.674	0.003	3201778	44.0	92.6	11835	
* 62 13C2-PFOA	415.00	> 370.00	2.699	2.695	0.004	7048522	50.0		24921	
D 14 13C4 PFOA	417.00	> 372.00	2.706	2.701	0.005	6749720	51.7	103	22237	
15 Perfluorooctanoic acid	413.00	> 369.00	2.706	2.703	0.003	1.000	725611	5.07	101	164
	413.00	> 169.00	2.706	2.703	0.003	1.000	421016	1.72(0.90-1.10)	101	1866
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.713	2.710	0.003	1.000	900193	4.90	103	8059
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.080	3.076	0.004	1.000	772533	4.61	99.4	3835
	499.00	> 99.00	3.080	3.076	0.004	1.000	168904	4.57(0.90-1.10)	99.4	2209
D 18 13C4 PFOS	503.00	> 80.00	3.080	3.076	0.004		7635965	46.9	98.2	14315
D 19 13C5 PFNA	468.00	> 423.00	3.080	3.077	0.003		5376033	51.2	102	13292
20 Perfluorononanoic acid	463.00	> 419.00	3.080	3.077	0.003	1.000	550324	5.16	103	1563
D 21 13C8 FOSA	506.00	> 78.00	3.402	3.405	-0.003		13099370	49.6	99.3	28019
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.411	3.408	0.003	1.000	1351726	5.30	106	8251
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.430	3.429	0.001	1.000	264754	4.79	100.0	6155
D 26 M2-8:2FTS	529.00	> 509.00	3.430	3.429	0.001		2651990	46.8	97.8	47205
24 Perfluorodecanoic acid	513.00	> 469.00	3.447	3.442	0.005	1.000	488082	4.93	98.6	2563
D 23 13C2 PFDA	515.00	> 470.00	3.447	3.442	0.005		5132771	51.3	103	24031
D 27 d3-NMeFOSAA	573.00	> 419.00	3.600	3.598	0.002		1831369	49.5	98.9	9293
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.600	3.602	-0.002	1.000	188190	4.93	98.6	1576
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.760	3.755	0.005	1.000	505354	4.96	103	7934
D 32 d5-NEtFOSAA	589.00	> 419.00	3.769	3.765	0.004		1898327	51.4	103	5576
D 30 13C2 PFUnA	565.00	> 520.00	3.769	3.772	-0.003		3912305	52.7	105	15907
31 Perfluoroundecanoic acid	563.00	> 519.00	3.779	3.773	0.006	1.000	414412	4.98	99.5	1119
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.779	3.775	0.004	1.003	186343	5.04	101	3061
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.906	3.904	0.002		3606058	48.3	96.7	642

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.906	3.910	-0.004	1.000	339523	4.94	98.9	4978	
D 36 13C2 PFDaA	615.00 > 570.00	4.069	4.071	-0.002		3540892	48.2	96.5	9066	
37 Perfluorododecanoic acid	613.00 > 569.00	4.079	4.072	0.007	1.000	358777	5.32	106	372	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.096	4.092	0.004		3548486	48.2	96.5	6277	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.104	4.101	0.003	1.000	354466	5.00	100	4502	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.341	4.341	0.0	1.000	362572	5.28	106	106	
D 43 13C2-PFTeDA	715.00 > 670.00	4.574	4.578	-0.004		7546862	49.8	99.7	50714	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.574	4.581	-0.007	1.000	882931	5.34	107	57.0	
	713.00 > 169.00	4.574	4.581	-0.007	1.000	107267	8.23(0.00-0.00)	107	1407	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.995	4.998	-0.003	1.000	414748	5.14	103	70.3	
D 44 13C2-PFHxDA	815.00 > 770.00	4.995	4.998	-0.003		4128252	49.2	98.4	8577	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.356	5.351	0.005	1.000	398746	5.22	104	135	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L3\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_005.d

Injection Date: 28-Jun-2017 00:27:13

Instrument ID: A8\_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 30

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

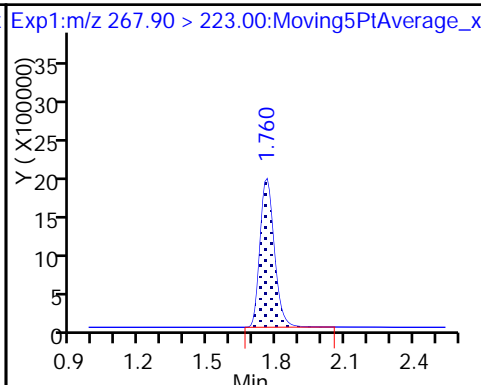
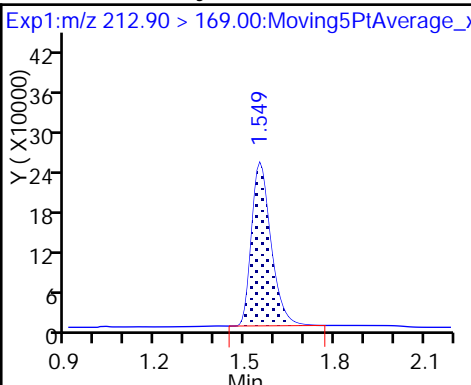
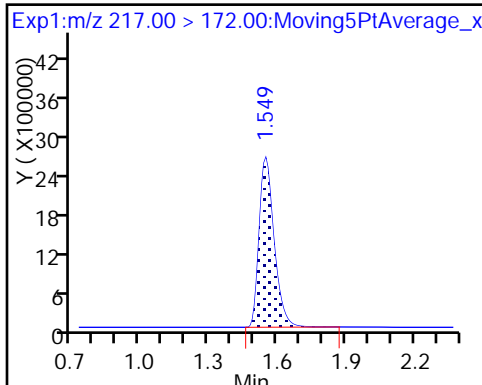
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

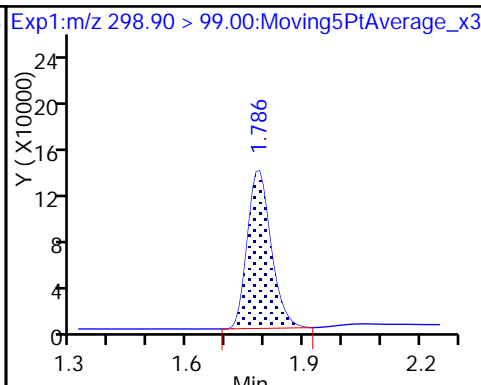
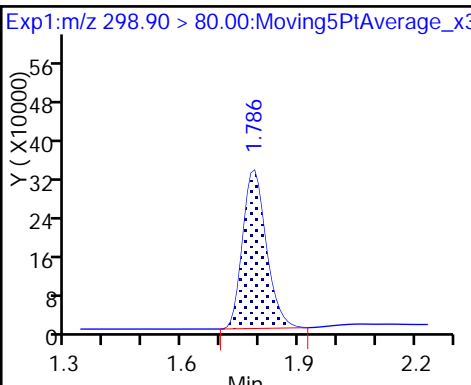
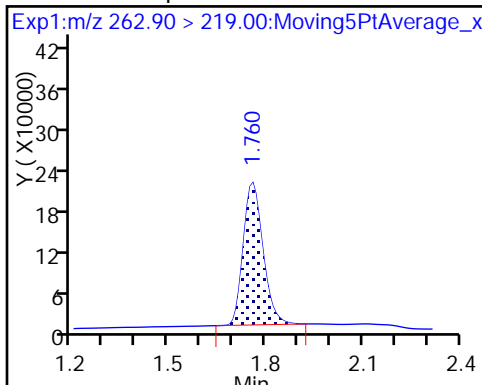
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

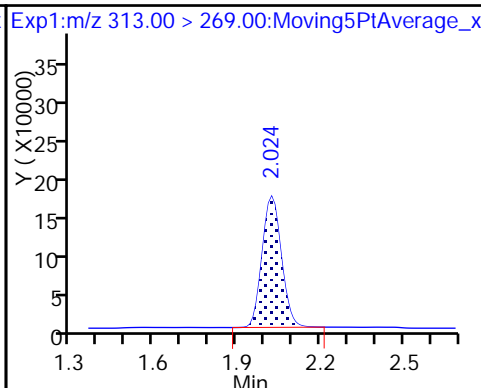
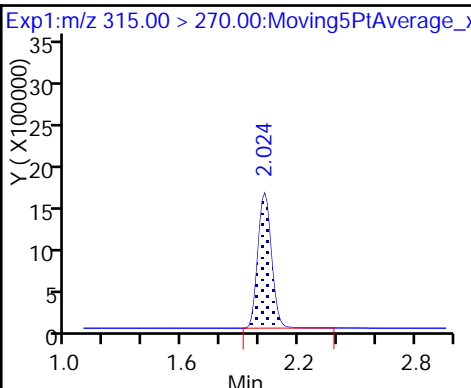
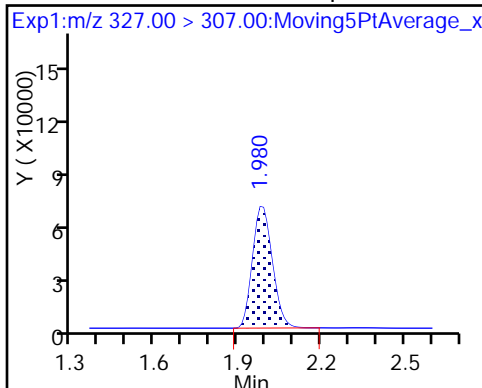
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

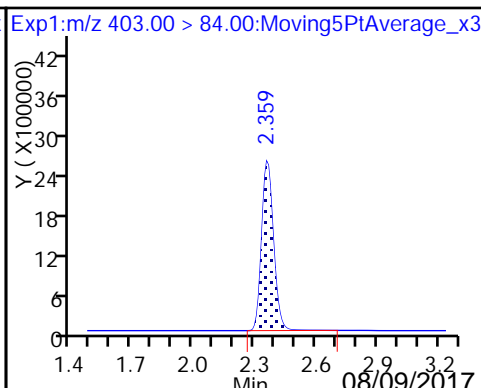
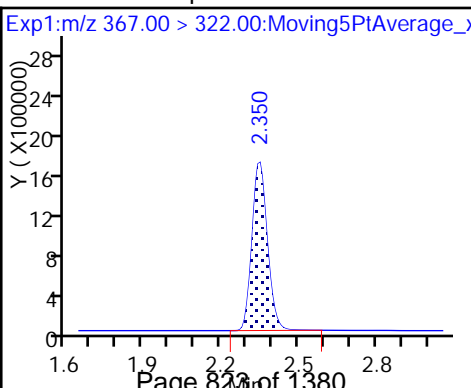
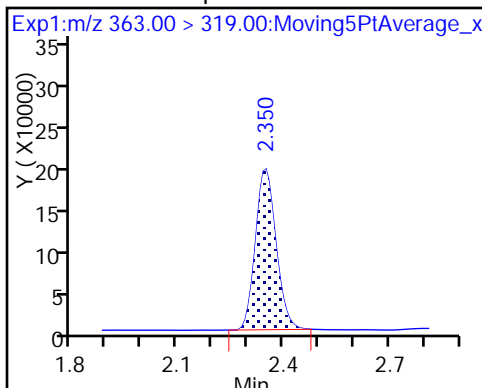
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

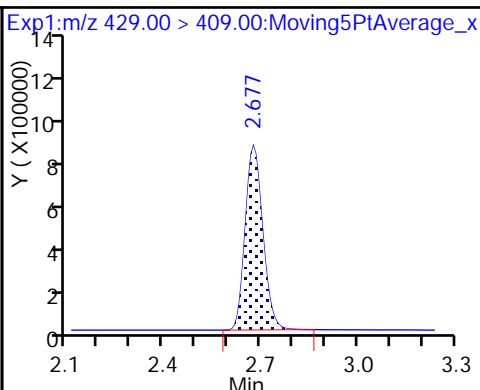
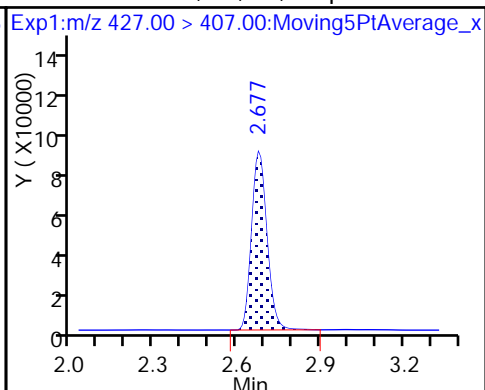
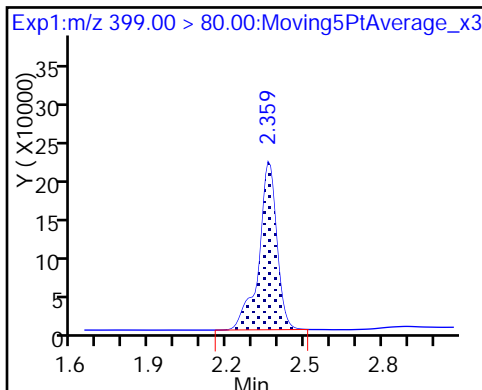
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

13 Sodium 1H,1H,2H,2H-perfluorooctanoate

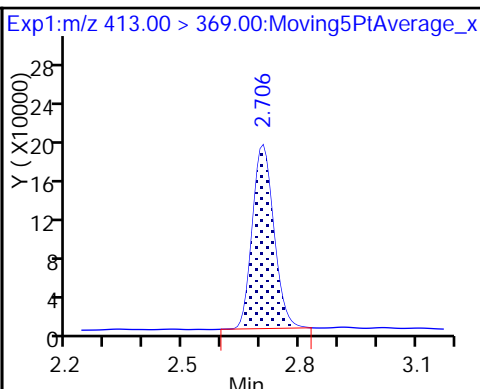
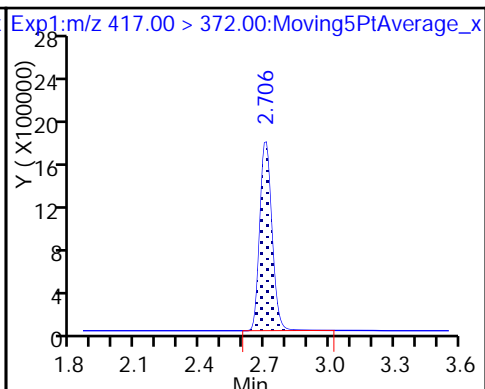
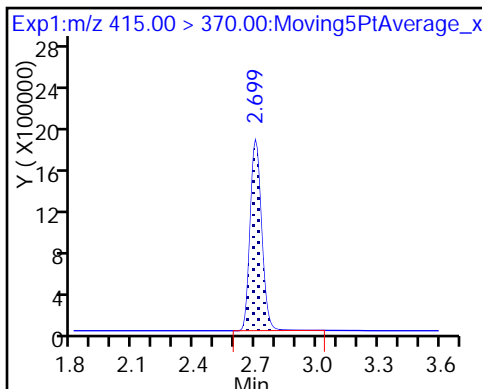
D 12 M2-6:2FTS



\* 62 13C2-PFOA

D 14 13C4 PFOA

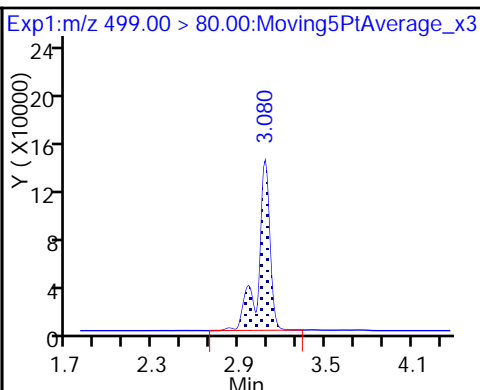
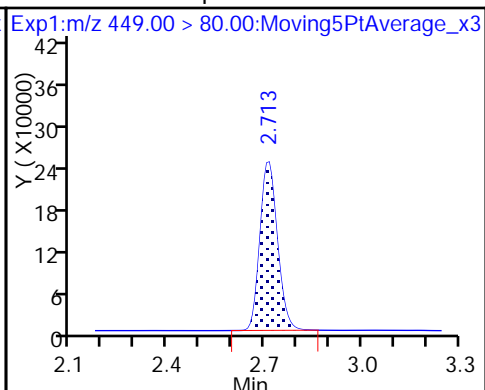
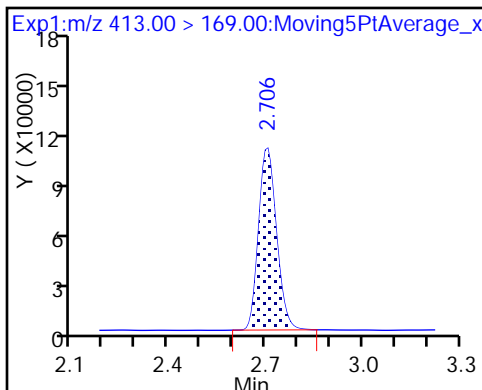
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

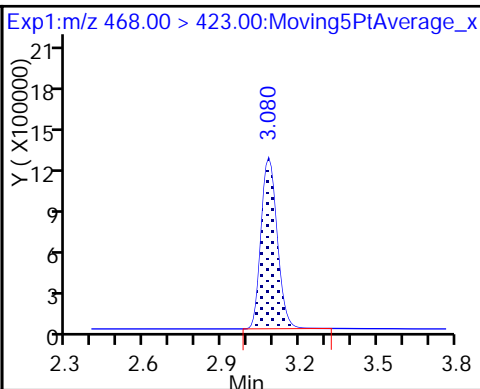
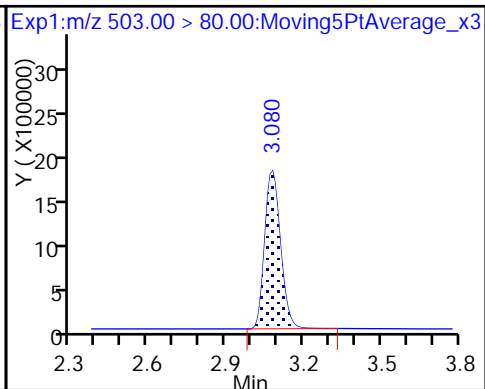
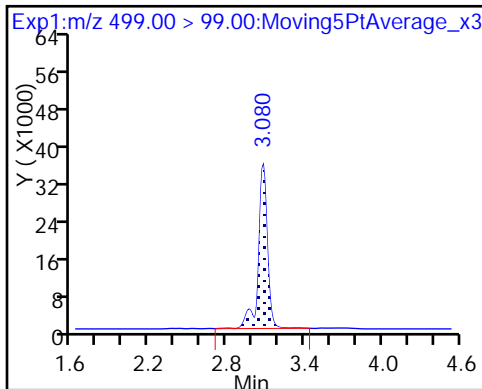
17 Perfluorooctane sulfonic acid

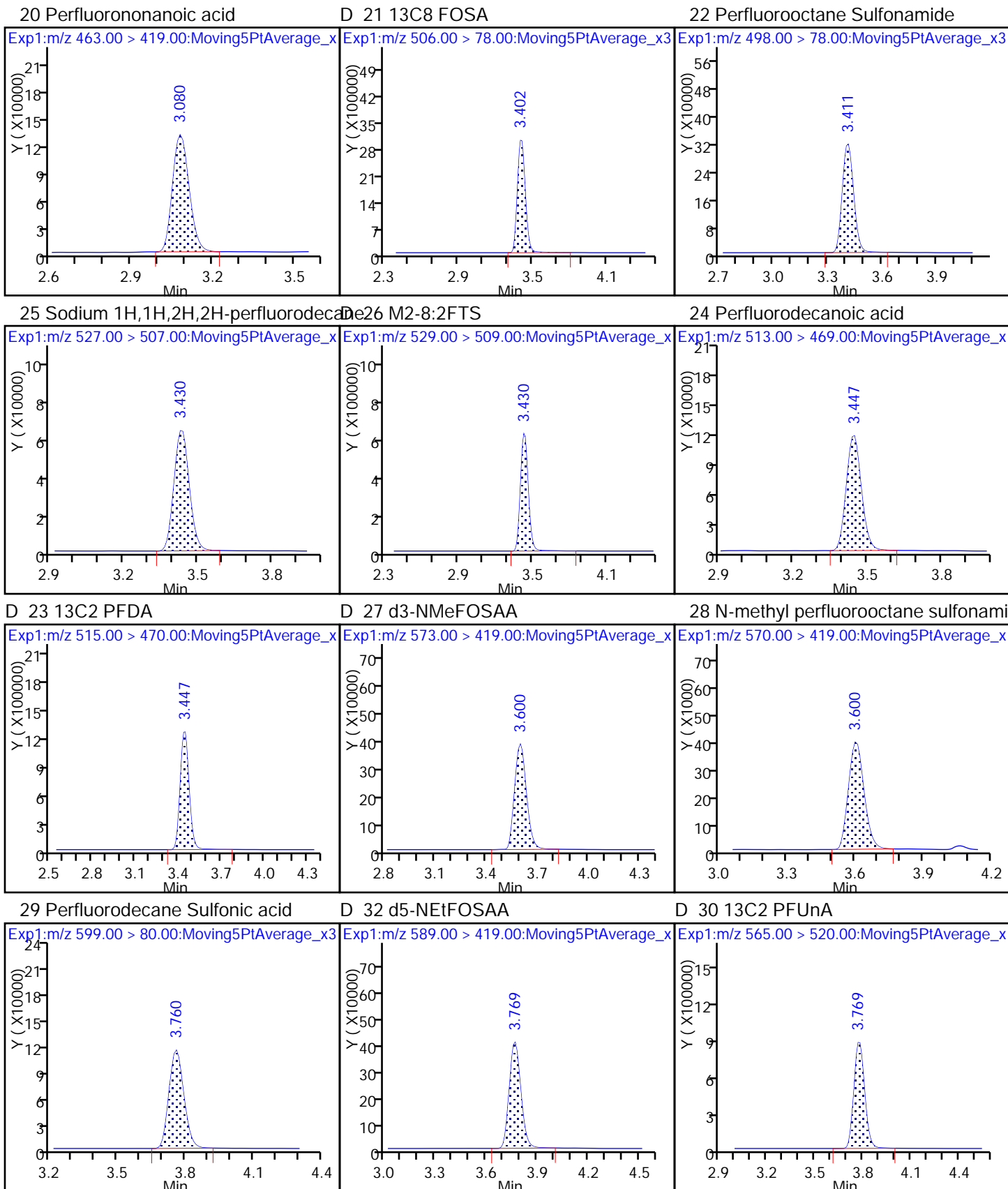


17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

D 19 13C5 PFNA

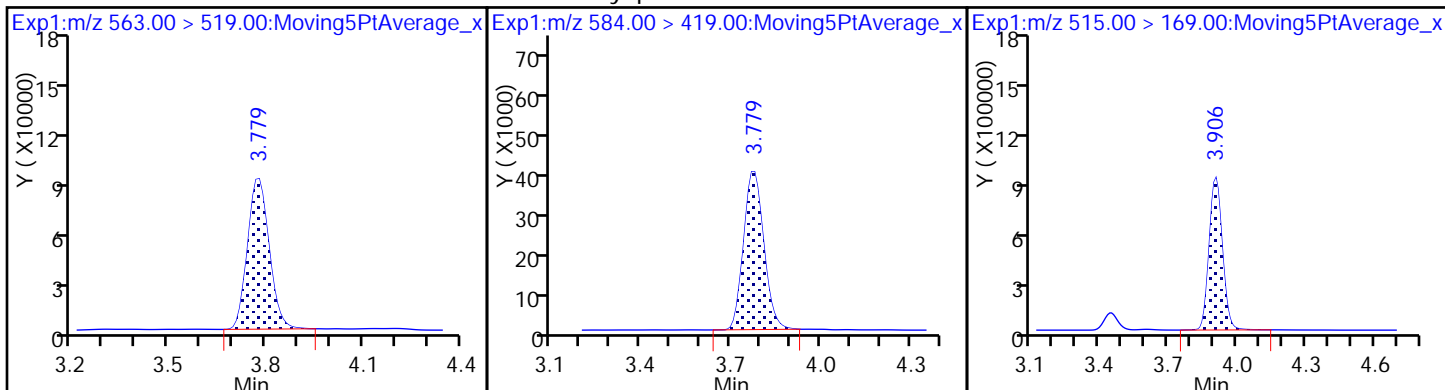




31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

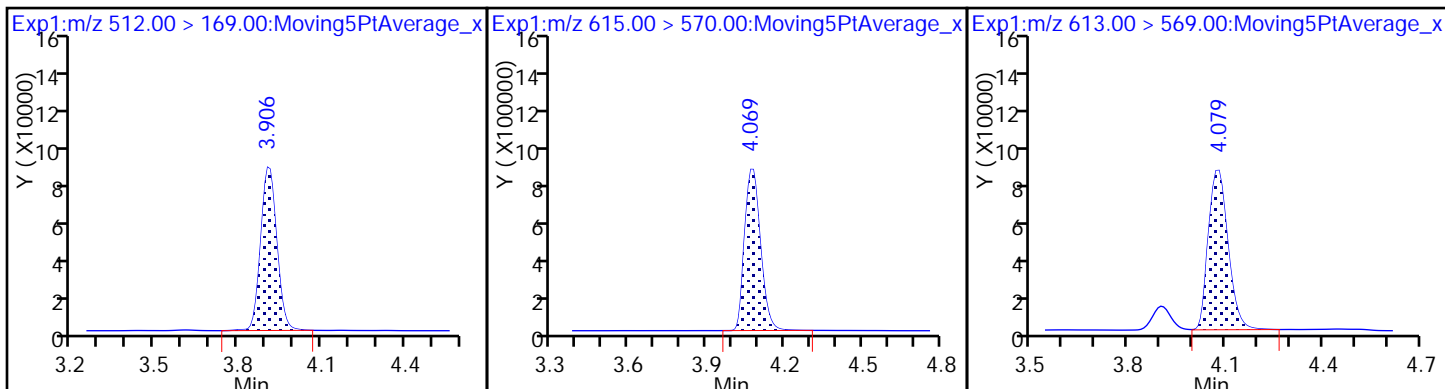
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

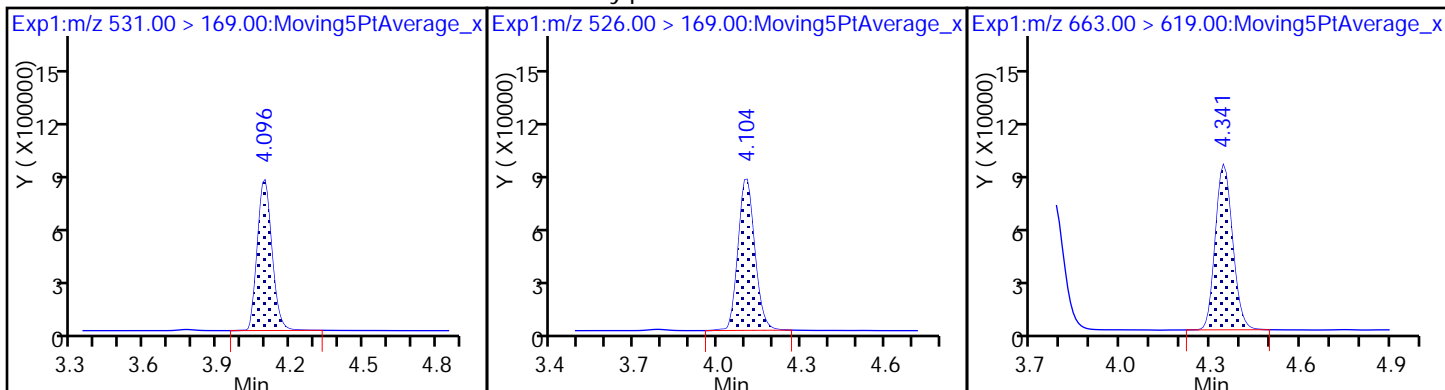
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

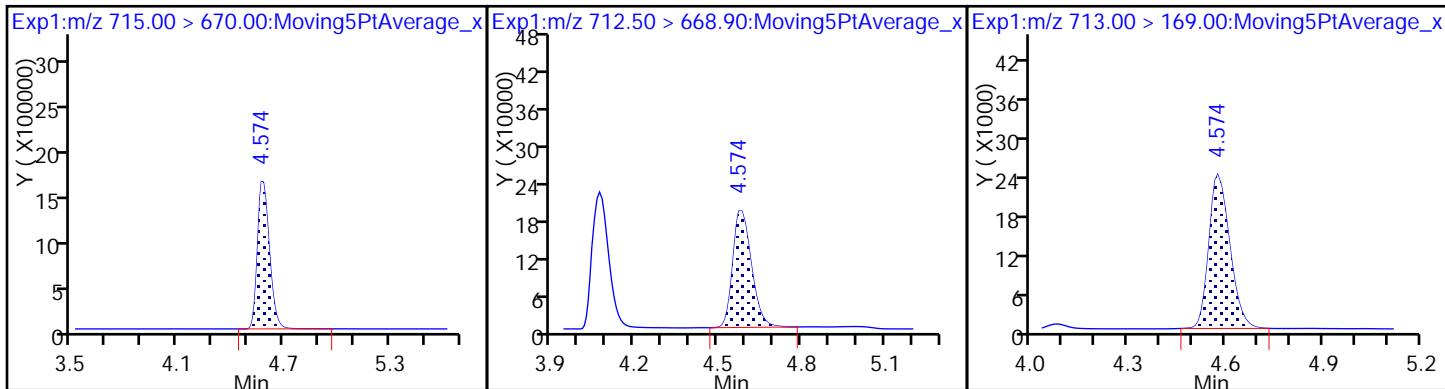
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

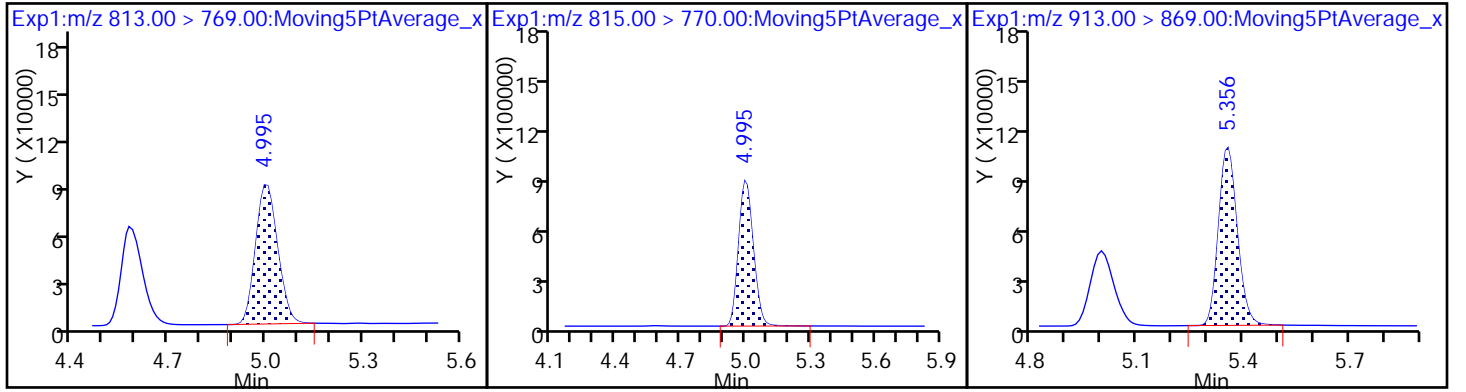
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_006.d  
 Lims ID: IC L4 Full  
 Client ID:  
 Sample Type: IC Calib Level: 4  
 Inject. Date: 28-Jun-2017 00:34:07 ALS Bottle#: 31 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L4-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:28:39 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 28-Jun-2017 08:17:53

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.543	1.546	-0.003	11549275	49.4		98.7	23520	
2 Perfluorobutyric acid	212.90 > 169.00	1.543	1.549	-0.006	4312576	20.7		104	1706	
D 3 13C5-PFPeA	267.90 > 223.00	1.753	1.755	-0.002	8090985	50.3		101	32090	
4 Perfluoropentanoic acid	262.90 > 219.00	1.753	1.756	-0.003	3404309	20.4		102	1731	
D 47 13C3-PFBS	301.90 > 83.00	1.770	1.776	-0.006	208624	NC			6289	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.779	1.783	-0.004	5713726	19.6		111	2969	
	298.90 > 99.00	1.770	1.783	-0.013	2202610		2.59(0.00-0.00)	111	2816	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.981	1.983	-0.002	1406942	21.3		114	14977	
6 Perfluorohexanoic acid	313.00 > 269.00	2.015	2.022	-0.007	3075492	20.3		102	4888	
D 7 13C2 PFHxA	315.00 > 270.00	2.015	2.022	-0.007	7441111	48.5		97.0	27966	
D 9 13C4-PFHpA	367.00 > 322.00	2.340	2.345	-0.005	7055297	51.5		103	25129	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.340	2.345	-0.005	3025785	20.1		100	3491	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.356	2.360	-0.004	4015290	17.3		95.3	2412	
D 11 18O2 PFHxS	403.00 > 84.00	2.356	2.360	-0.004	9911128	46.6		98.5	14752	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.669	2.674	-0.005	3309130	45.4	95.7	15688	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.669	2.674	-0.005	1.000	1309362	19.1	101	12315
* 62 13C2-PFOA	415.00	> 370.00	2.691	2.695	-0.004	6765741	50.0		14451	
D 14 13C4 PFOA	417.00	> 372.00	2.698	2.701	-0.003	6728822	51.5	103	14804	
15 Perfluorooctanoic acid	413.00	> 369.00	2.698	2.703	-0.005	1.000	2751243	19.3	96.4	710
16 Perfluoroheptanesulfonic Acid	413.00	> 169.00	2.698	2.703	-0.005	1.000	1641218	1.68(0.90-1.10)	96.4	4499
17 Perfluorooctane sulfonic acid	449.00	> 80.00	2.705	2.710	-0.005	1.000	3740530	20.2	106	13435
D 18 13C4 PFOS	503.00	> 80.00	3.071	3.076	-0.005	7707122	47.4	99.1	53853	
19 Perfluorooctane sulfonic acid	499.00	> 80.00	3.071	3.076	-0.005	1.000	3093407	18.3	98.5	6326
20 Perfluorononanoic acid	499.00	> 99.00	3.071	3.076	-0.005	1.000	650391	4.76(0.90-1.10)	98.5	5183
21 Perfluorononanoic acid	463.00	> 419.00	3.071	3.077	-0.006	1.000	2128228	19.9	99.7	4384
D 19 13C5 PFNA	468.00	> 423.00	3.071	3.077	-0.006	5381166	51.3	103	29190	
D 21 13C8 FOSA	506.00	> 78.00	3.402	3.405	-0.003	13211524	50.1	100	107310	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.402	3.408	-0.006	1.000	5472890	21.3	106	23430
D 26 M2-8:2FTS	529.00	> 509.00	3.421	3.429	-0.008	2518585	44.5	92.9	17259	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.421	3.429	-0.008	1.000	1078348	20.5	107	13462
D 23 13C2 PFDA	515.00	> 470.00	3.439	3.442	-0.003	4927623	49.3	98.5	21352	
24 Perfluorodecanoic acid	513.00	> 469.00	3.439	3.442	-0.003	1.000	1922781	20.2	101	7209
D 27 d3-NMeFOSAA	573.00	> 419.00	3.591	3.598	-0.007	1742910	47.1	94.1	8224	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.601	3.602	-0.001	1.003	762143	21.0	105	3844
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.749	3.755	-0.006	1.000	2048221	19.9	103	11551
D 32 d5-NEtFOSAA	589.00	> 419.00	3.759	3.765	-0.006	1820803	49.3	98.6	4621	
D 30 13C2 PFUnA	565.00	> 520.00	3.768	3.772	-0.004	3819175	51.4	103	14566	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.768	3.773	-0.005	1.000	1537226	18.9	94.6	3761
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.768	3.775	-0.007	1.003	715544	20.2	101	5719

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.899	3.904	-0.005	3567251	47.8	95.6	661	
35 MeFOSA	512.00	> 169.00	3.908	3.910	-0.002	1412678	20.8	104	6327	
D 36 13C2 PFDaA	615.00	> 570.00	4.070	4.071	-0.001	3705209	50.5	101	11647	
37 Perfluorododecanoic acid	613.00	> 569.00	4.070	4.072	-0.002	1374056	19.5	97.4	1566	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.087	4.092	-0.005	3521257	47.9	95.8	6464	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.096	4.101	-0.005	1495344	21.3	106	6149	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.333	4.341	-0.008	1446860	20.1	101	452	
D 43 13C2-PFTeDA	715.00	> 670.00	4.574	4.578	-0.004	7637411	50.4	101	48137	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.574	4.581	-0.007	3425461	19.8	99.1	262	
	713.00	> 169.00	4.566	4.581	-0.015	433629		7.90(0.00-0.00)	99.1	5454
D 44 13C2-PFHxDA	815.00	> 770.00	4.995	4.998	-0.003	4267397	50.9	102	7721	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.995	4.998	-0.003	1505434	19.5	97.7	253	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.343	5.351	-0.008	1592491	19.9	99.7	506	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L4\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_006.d

Injection Date: 28-Jun-2017 00:34:07

Instrument ID: A8\_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

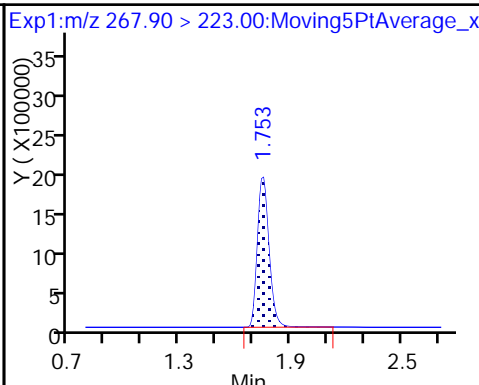
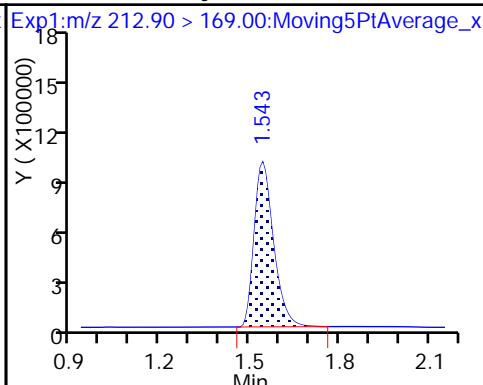
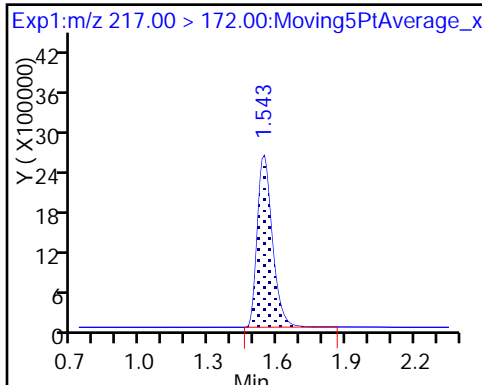
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

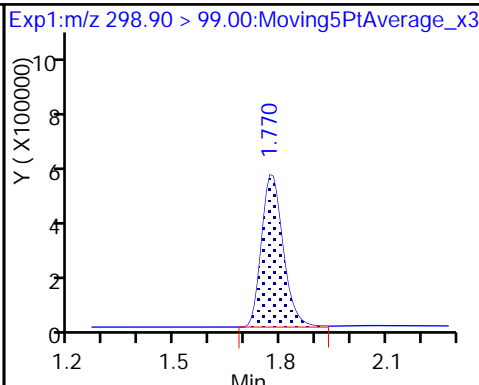
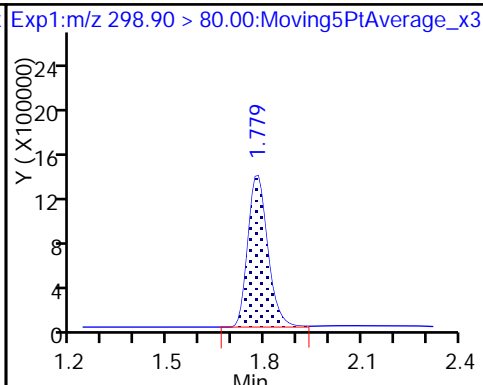
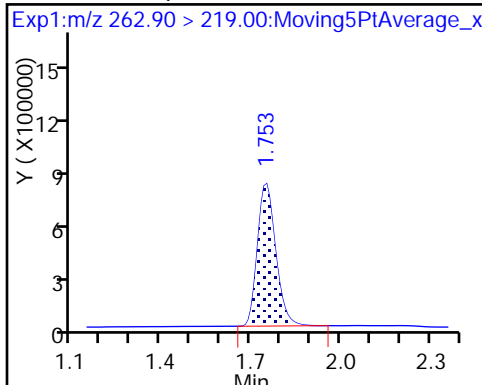
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

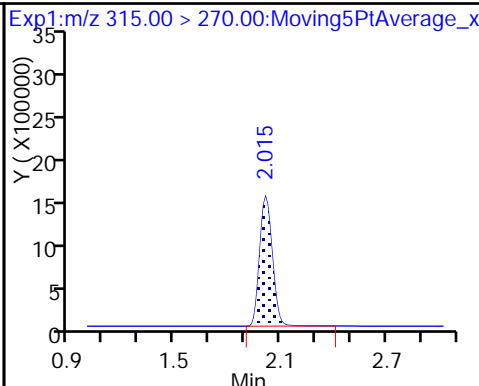
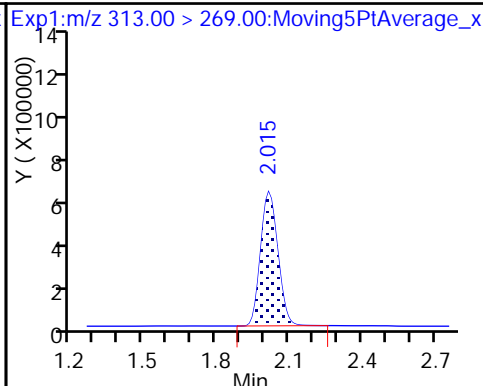
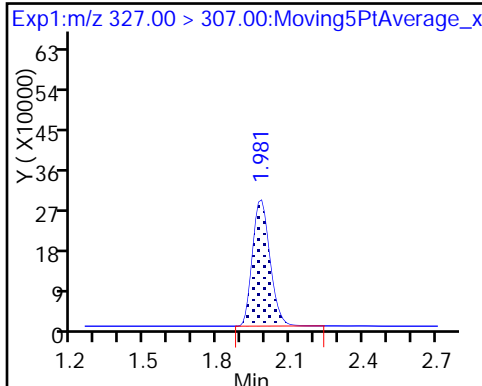
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

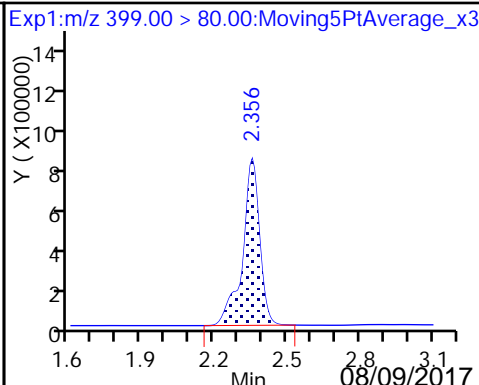
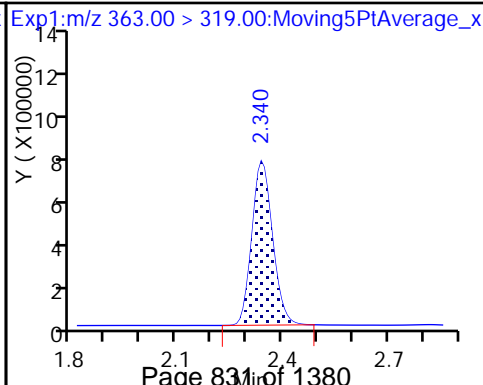
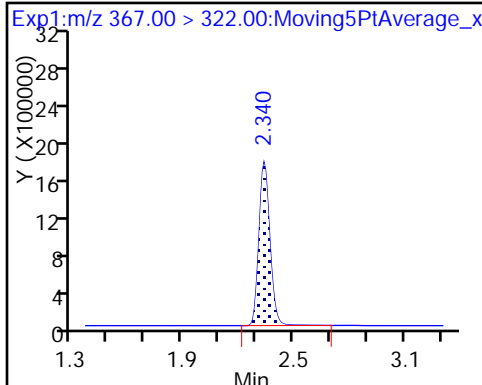
D 7 13C2 PFHxA



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

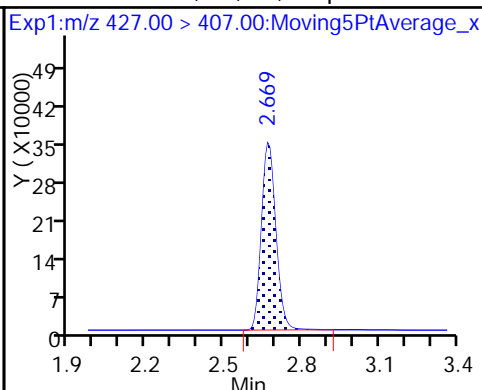
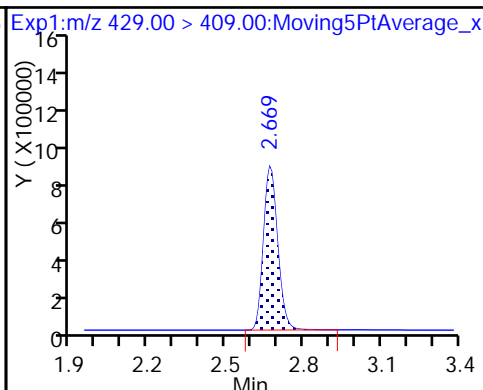
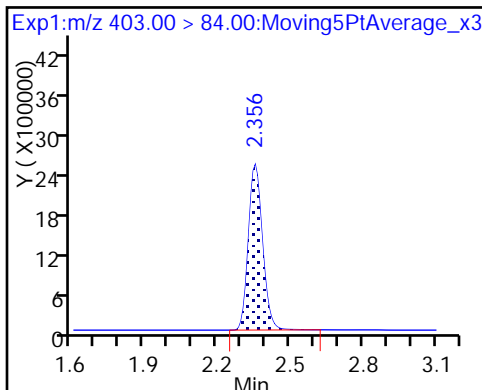
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

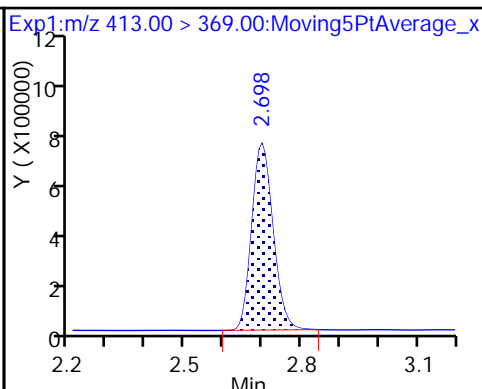
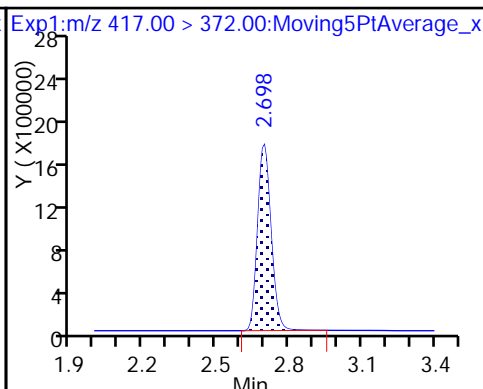
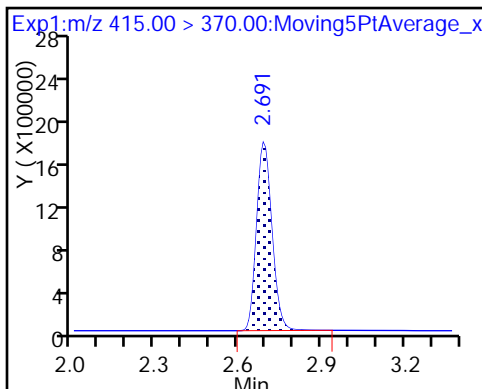
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

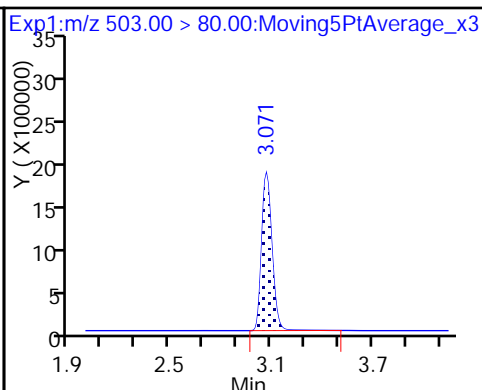
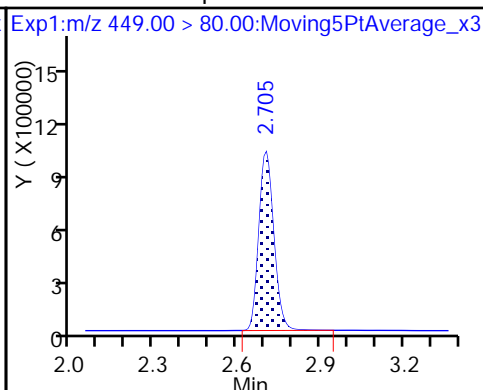
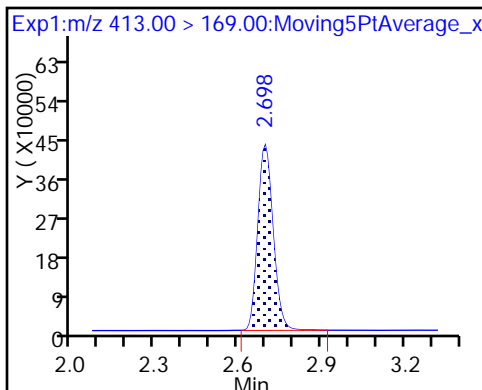
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

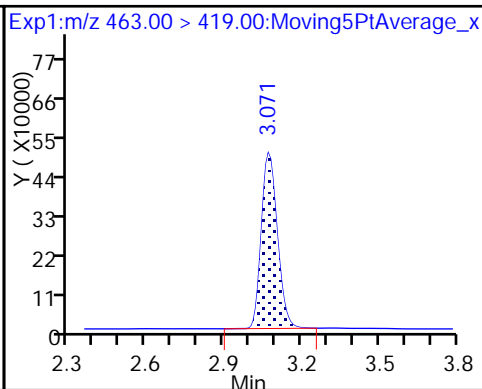
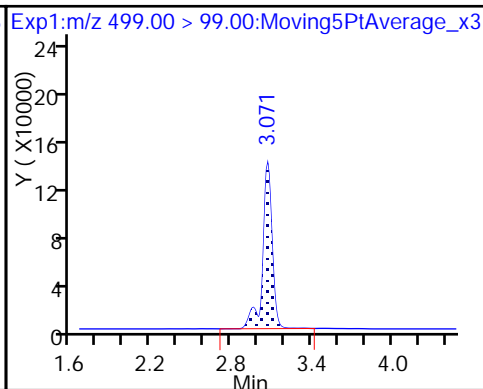
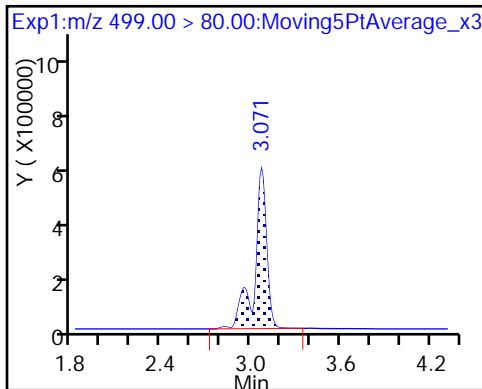
D 18 13C4 PFOS



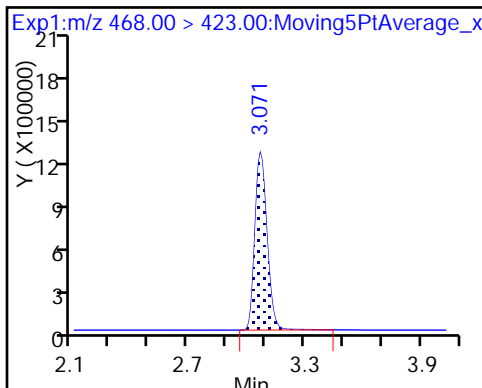
17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

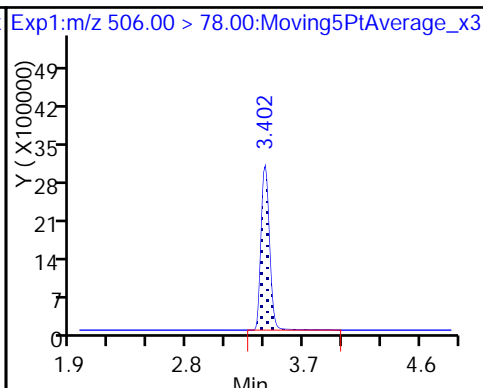
20 Perfluorononanoic acid



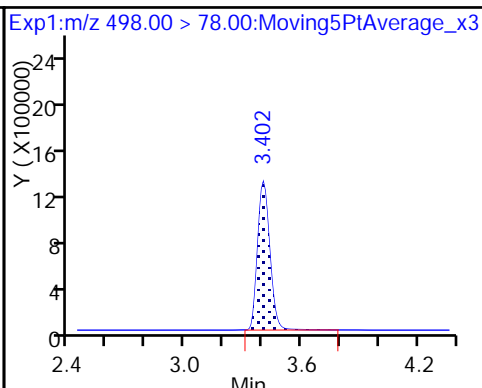
D 19 13C5 PFNA



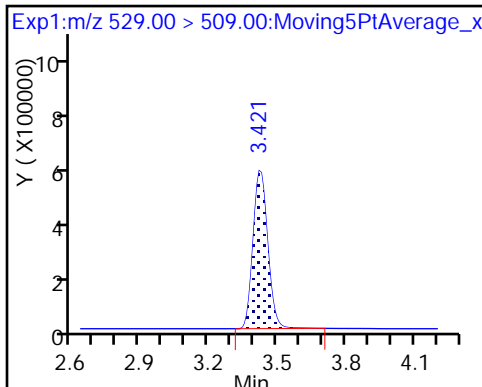
D 21 13C8 FOSA



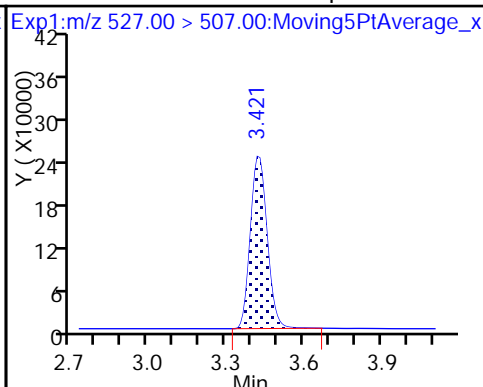
22 Perfluorooctane Sulfonamide



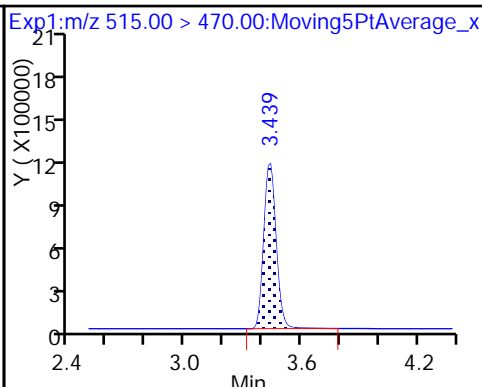
D 26 M2-8:2FTS



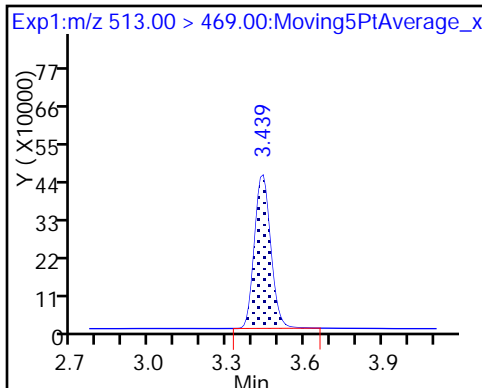
25 Sodium 1H,1H,2H,2H-perfluorodecanoate



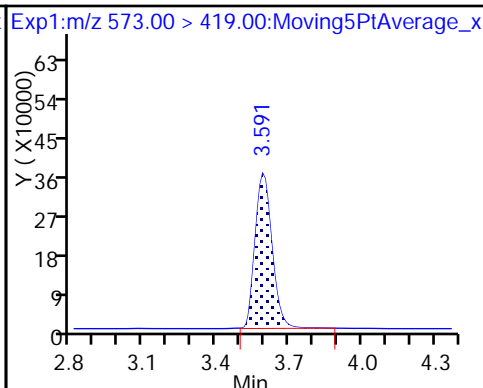
D 23 13C2 PFDA



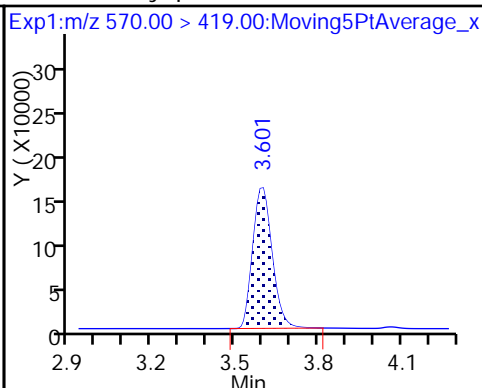
24 Perfluorodecanoic acid



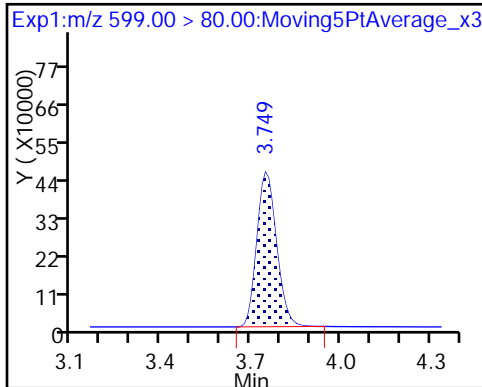
D 27 d3-NMeFOSAA



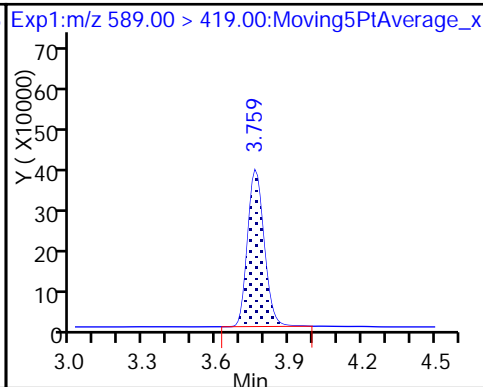
28 N-methyl perfluorooctane sulfonamide



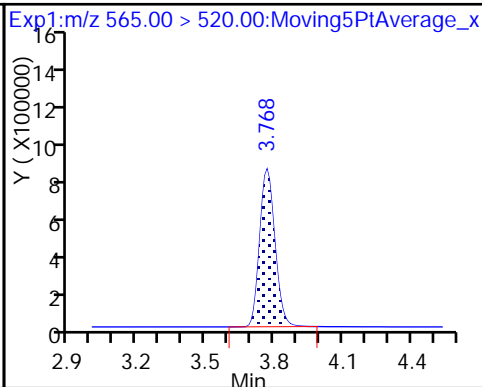
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



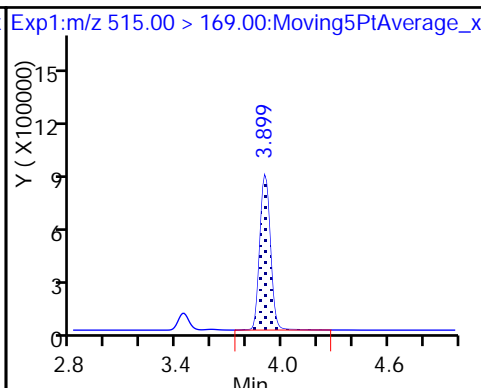
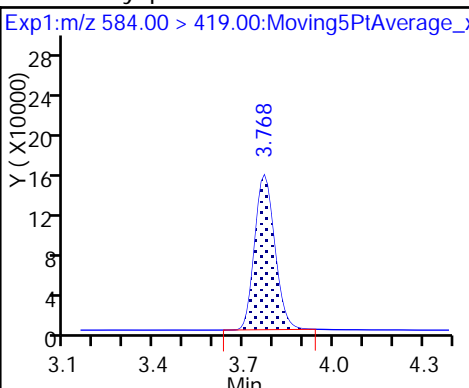
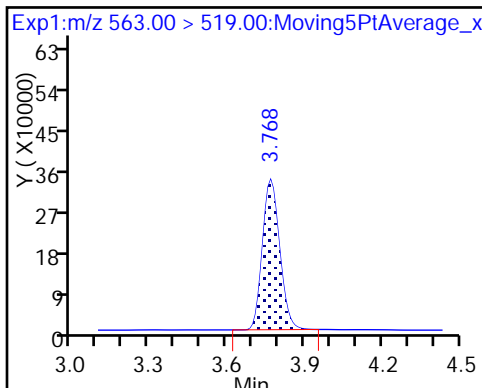
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

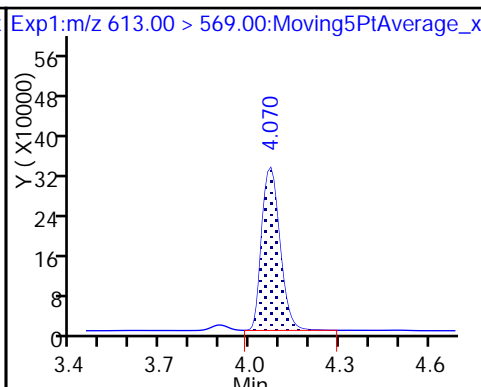
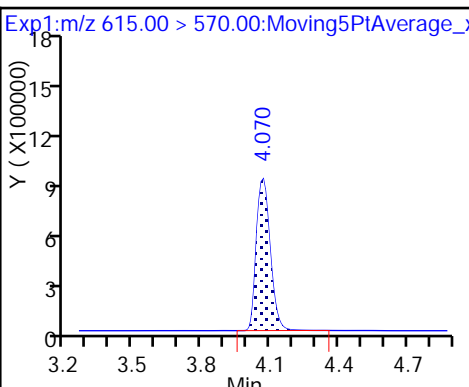
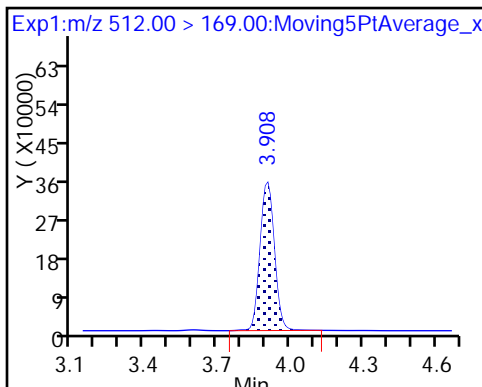
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

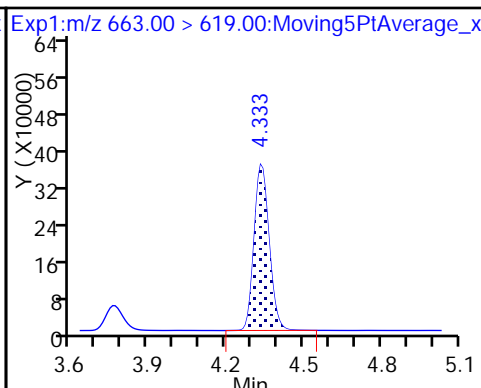
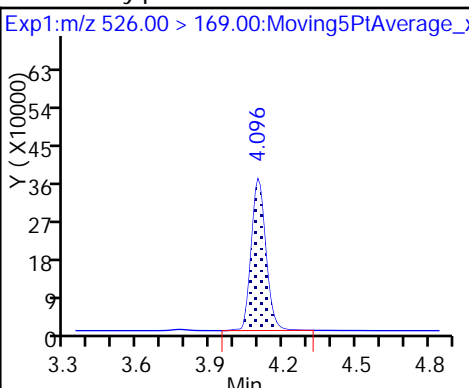
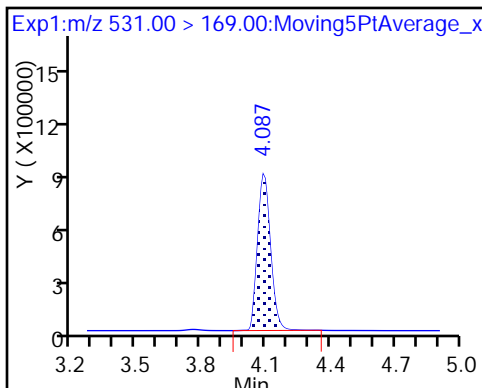
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

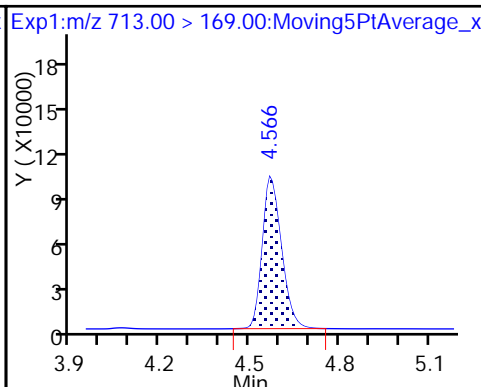
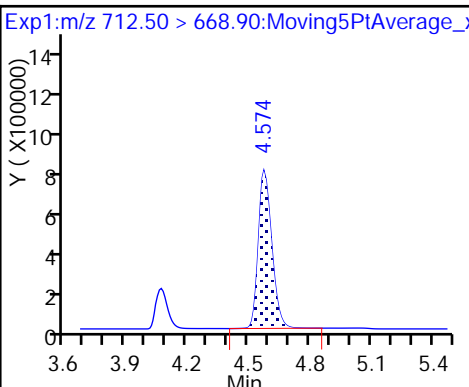
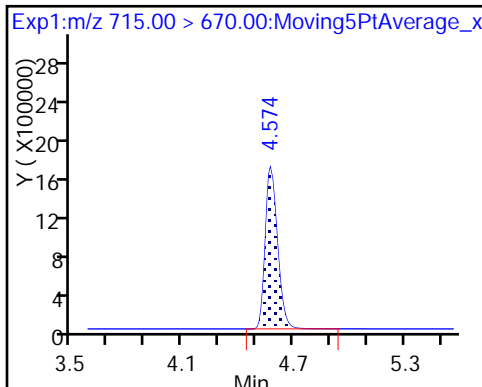
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

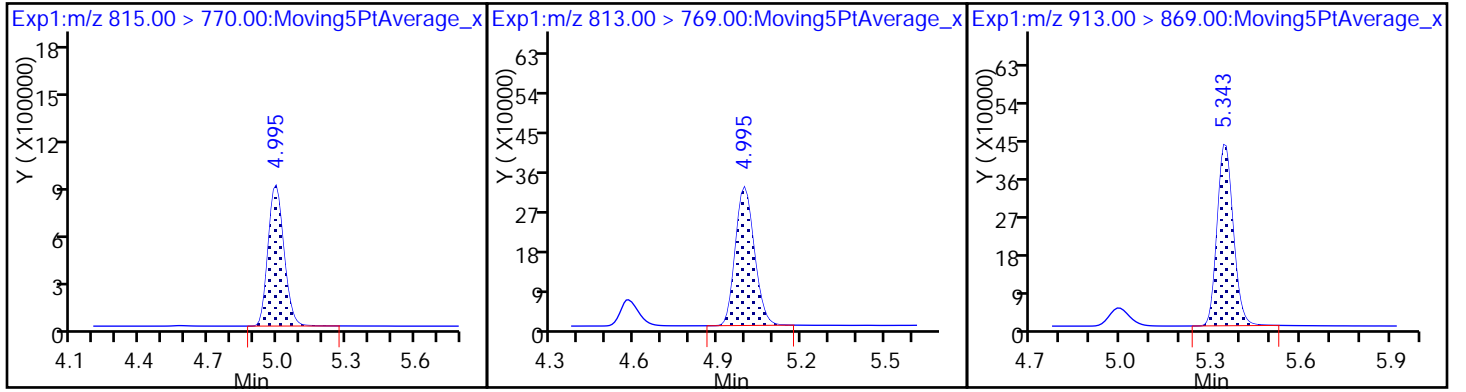
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_007.d  
 Lims ID: IC L5 Full  
 Client ID:  
 Sample Type: IC Calib Level: 5  
 Inject. Date: 28-Jun-2017 00:41:01 ALS Bottle#: 32 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L5-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:28:46 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 28-Jun-2017 08:19:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.546	-0.005	13205581	56.4		113	18943	
2 Perfluorobutyric acid	212.90 > 169.00	1.549	1.549	0.0	12656286	53.2		106	2928	
D 3 13C5-PFPeA	267.90 > 223.00	1.751	1.755	-0.004	8979957	55.8		112	21067	
4 Perfluoropentanoic acid	262.90 > 219.00	1.751	1.756	-0.005	9443251	51.1		102	4244	
D 47 13C3-PFBS	301.90 > 83.00	1.777	1.776	0.001	247453	NC			11592	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.777	1.783	-0.006	15607971	45.4		103	5605	
	298.90 > 99.00	1.777	1.783	-0.006	6551181		2.38(0.00-0.00)	103	5979	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.980	1.983	-0.003	3791195	46.6		99.8	44942	
D 7 13C2 PFHxA	315.00 > 270.00	2.013	2.022	-0.009	9110123	59.4		119	23549	
6 Perfluorohexanoic acid	313.00 > 269.00	2.013	2.022	-0.009	9309307	50.3		101	11704	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.339	2.345	-0.006	8411272	50.1		100	5446	
D 9 13C4-PFHpA	367.00 > 322.00	2.339	2.345	-0.006	7867238	57.5		115	13915	
D 11 18O2 PFHxS	403.00 > 84.00	2.356	2.360	-0.004	11663930	54.8		116	14284	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.356	2.360	-0.004	12045375	44.2		97.2	4549	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.667	2.674	-0.007	1.000	3869731	45.8	96.7	31097	
D 12 M2-6:2FTS	429.00	> 409.00	2.667	2.674	-0.007		4068086	55.9	118	13736	
* 62 13C2-PFOA	415.00	> 370.00	2.689	2.695	-0.006		7508691	50.0		14129	
D 14 13C4 PFOA	417.00	> 372.00	2.696	2.701	-0.005		7402051	56.7	113	13037	
15 Perfluorooctanoic acid	413.00	> 369.00	2.696	2.703	-0.007	1.000	7716902	49.2	98.3	1543	
	413.00	> 169.00	2.696	2.703	-0.007	1.000	4747487		1.63(0.90-1.10)	98.3	6488
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.703	2.710	-0.007	1.000	10861633	50.9	107	13141	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.071	3.076	-0.005	1.000	9350192	48.1	104	10933	
	499.00	> 99.00	3.071	3.076	-0.005	1.000	1991958		4.69(0.90-1.10)	104	12708
D 18 13C4 PFOS	503.00	> 80.00	3.071	3.076	-0.005		8858759	54.4	114	37330	
D 19 13C5 PFNA	468.00	> 423.00	3.071	3.077	-0.006		5808673	55.3	111	13273	
20 Perfluorononanoic acid	463.00	> 419.00	3.071	3.077	-0.006	1.000	6184063	53.7	107	8322	
D 21 13C8 FOSA	506.00	> 78.00	3.407	3.405	0.002		15024703	56.9	114	119972	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.407	3.408	-0.001	1.000	15383456	52.6	105	288606	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.425	3.429	-0.004	1.000	3186328	47.9	100	32548	
D 26 M2-8:2FTS	529.00	> 509.00	3.425	3.429	-0.004		3188751	56.3	118	34398	
24 Perfluorodecanoic acid	513.00	> 469.00	3.434	3.442	-0.008	1.000	5600678	51.4	103	22053	
D 23 13C2 PFDA	515.00	> 470.00	3.434	3.442	-0.008		5643784	56.4	113	25746	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.590	3.598	-0.008		2147247	58.0	116	8404	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.601	3.602	-0.001	1.003	2352348	52.5	105	7888	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.749	3.755	-0.006	1.000	6016476	50.9	106	34362	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.758	3.765	-0.007		2144747	58.1	116	7151	
D 30 13C2 PFUnA	565.00	> 520.00	3.768	3.772	-0.004		4104750	55.2	110	13634	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.768	3.773	-0.005	1.000	4251916	48.7	97.3	13882	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.768	3.775	-0.007	1.003	2099128	50.2	100	8453	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.900	3.904	-0.004		4387472		118	680	
35 MeFOSA	512.00 > 169.00	3.909	3.910	-0.001	1.000	4374026		105	7748	
D 36 13C2 PFDaA	615.00 > 570.00	4.064	4.071	-0.007		4227944		115	12240	
37 Perfluorododecanoic acid	613.00 > 569.00	4.064	4.072	-0.008	1.000	4068765		101	3867	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.091	4.092	-0.001		4353764		118	6693	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.099	4.101	-0.002	1.000	4627670		106	7035	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.332	4.341	-0.009	1.000	4262655		104	1187	
D 43 13C2-PFTeDA	715.00 > 670.00	4.571	4.578	-0.007		8914264		118	66421	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.571	4.581	-0.010	1.000	9941671		101	614	
	713.00 > 169.00	4.571	4.581	-0.010	1.000	1168835	8.51(0.00-0.00)	101	9454	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.995	4.998	-0.003	1.000	4360289		101	712	
D 44 13C2-PFHxDA	815.00 > 770.00	4.995	4.998	-0.003		4780592		114	9146	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.347	5.351	-0.004	1.000	4681812		103	1112	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L5\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_007.d

Injection Date: 28-Jun-2017 00:41:01

Instrument ID: A8\_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

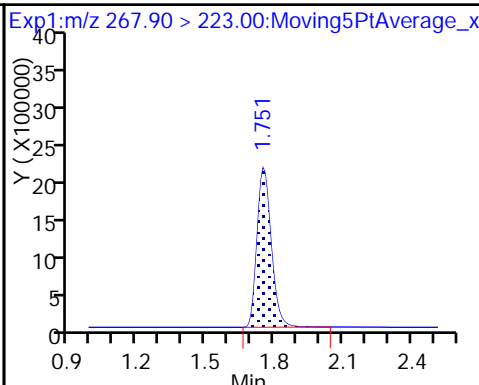
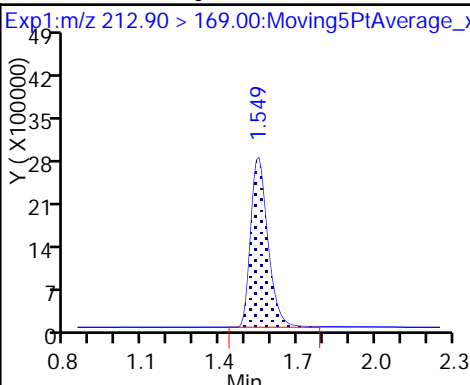
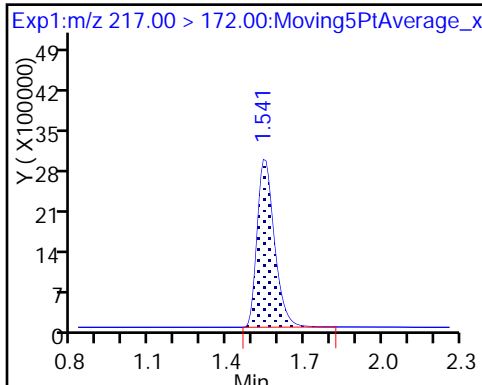
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

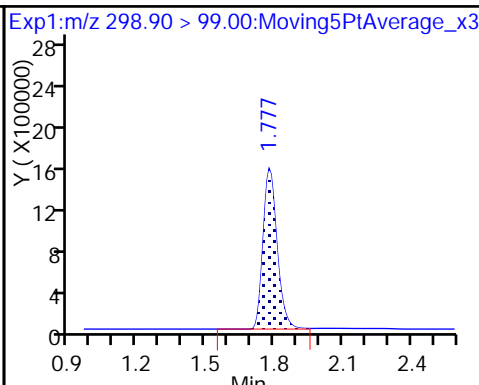
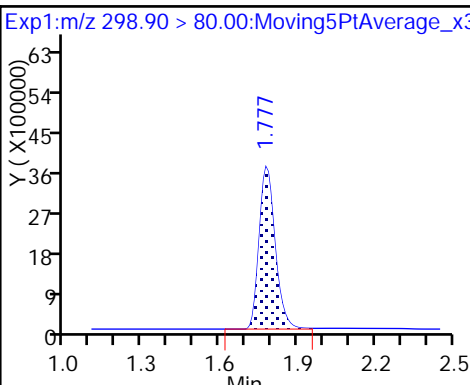
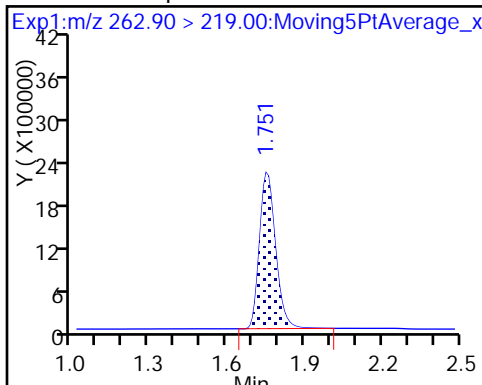
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

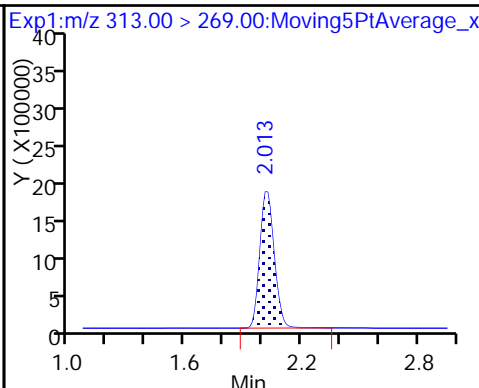
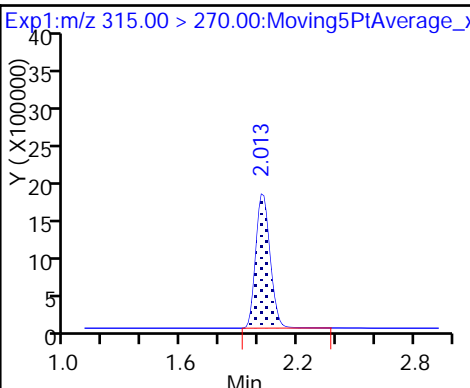
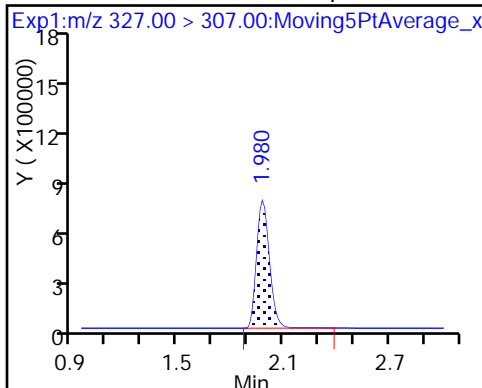
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

D 7 13C2 PFHxA

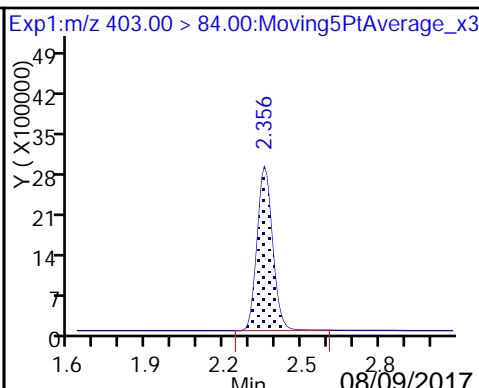
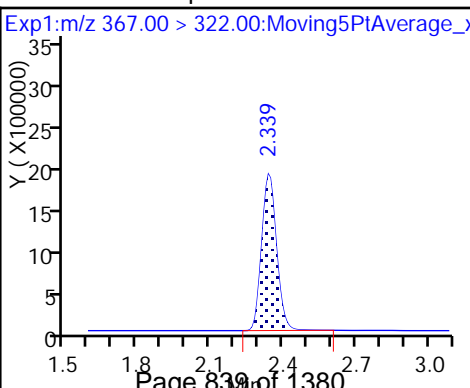
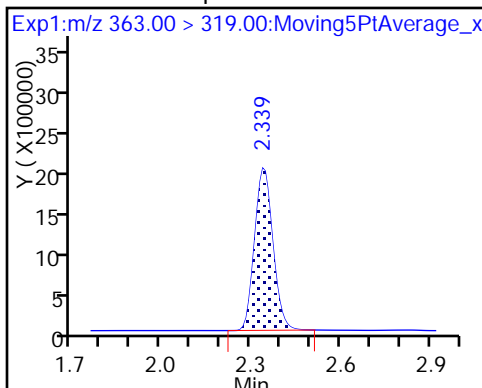
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

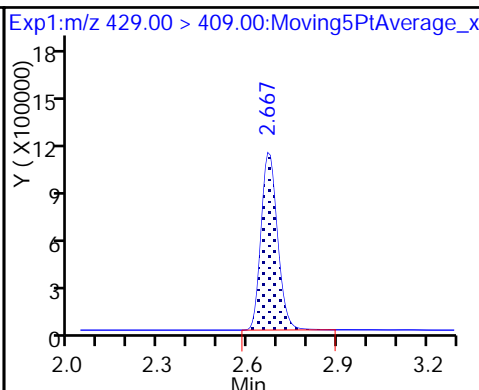
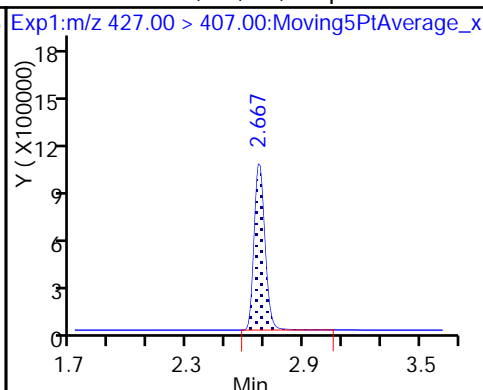
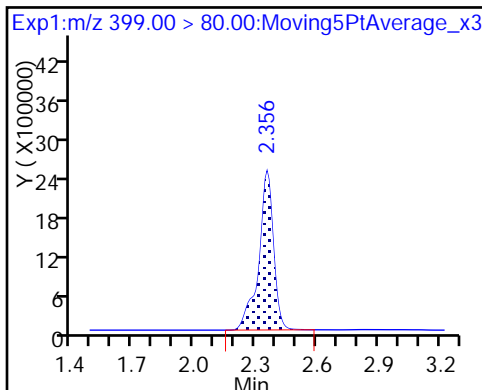
D 9 13C4-PFHpA

D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

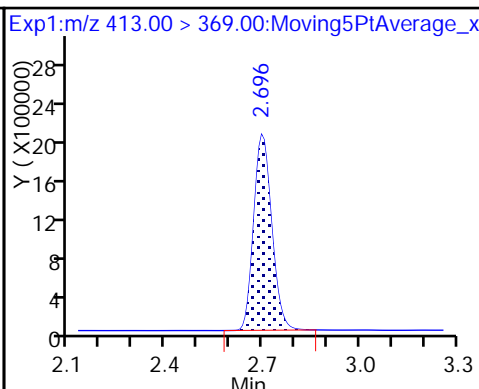
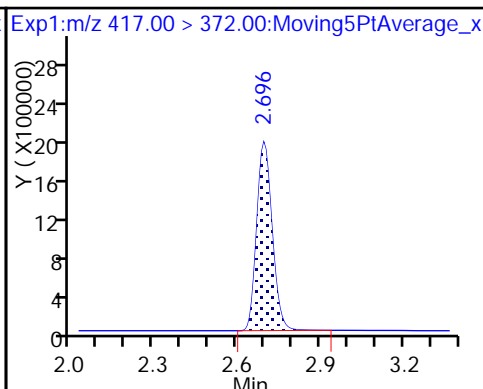
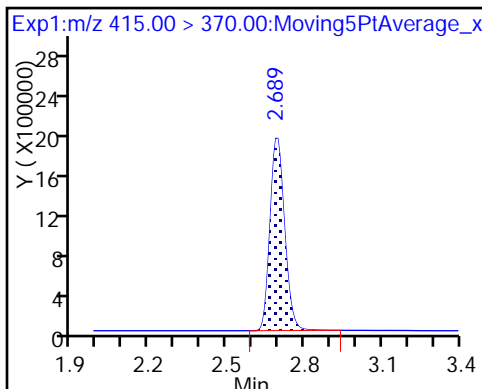
13 Sodium 1H,1H,2H,2H-perfluorooctadecane-12 M2-6:2FTS



\* 62 13C2-PFOA

D 14 13C4 PFOA

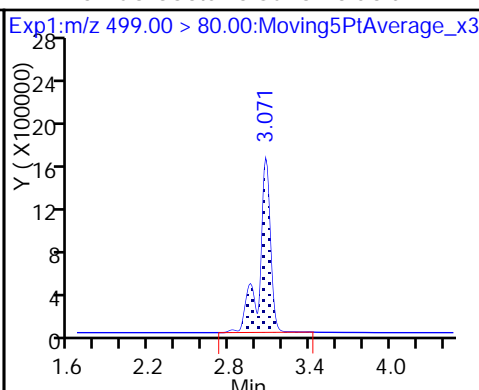
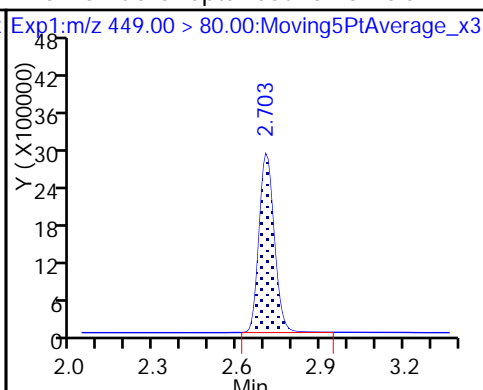
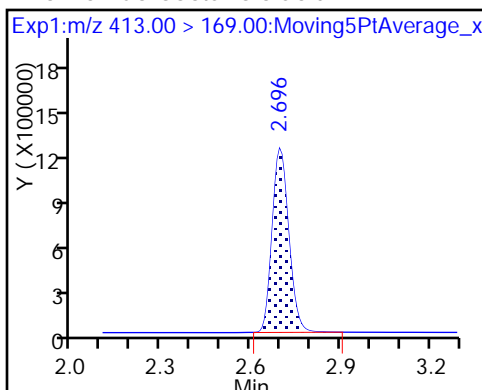
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

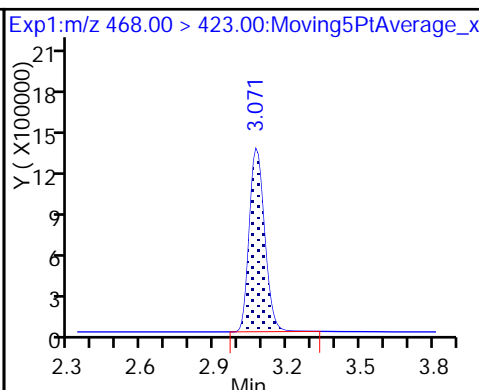
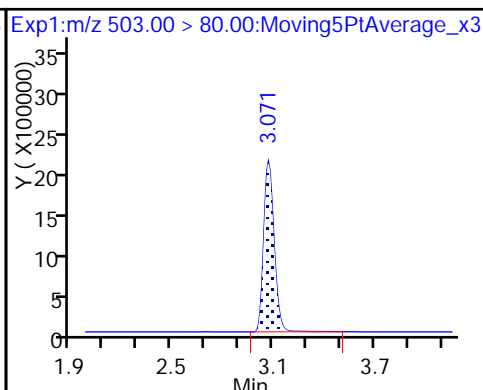
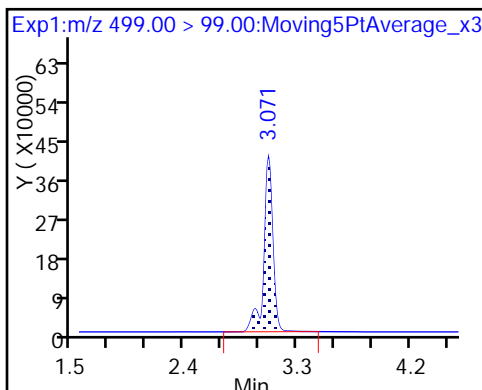
17 Perfluorooctane sulfonic acid

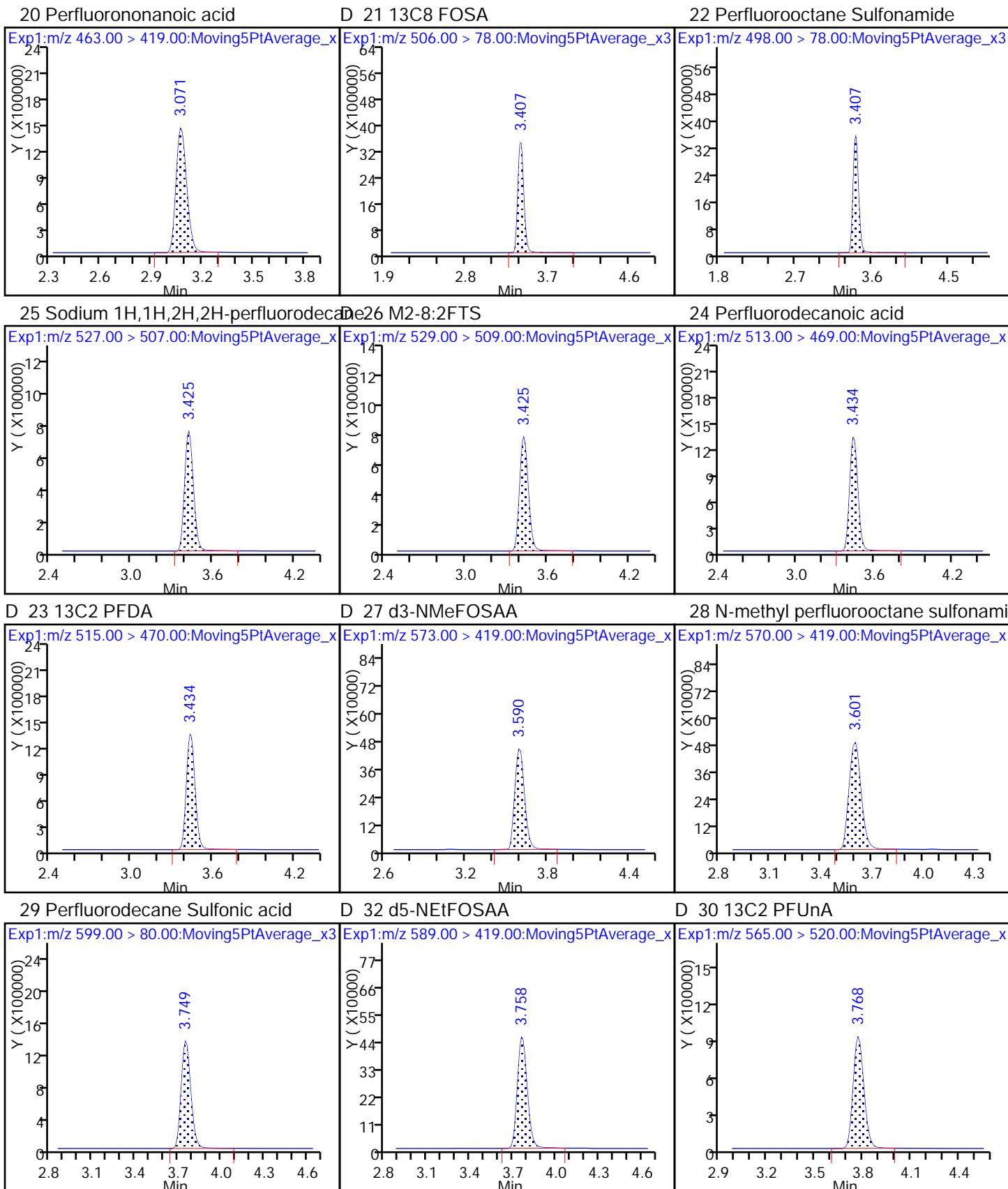


17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

D 19 13C5 PFNA

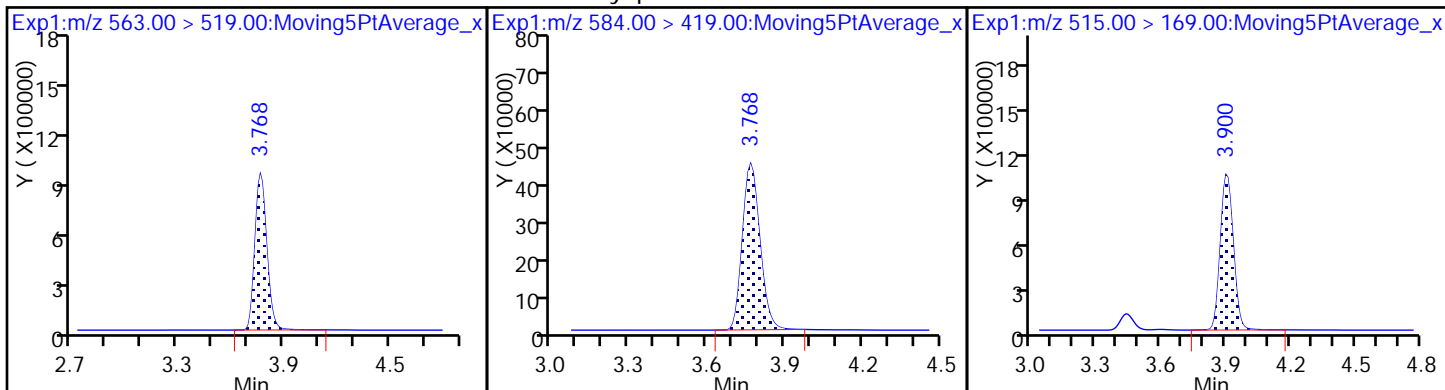




31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

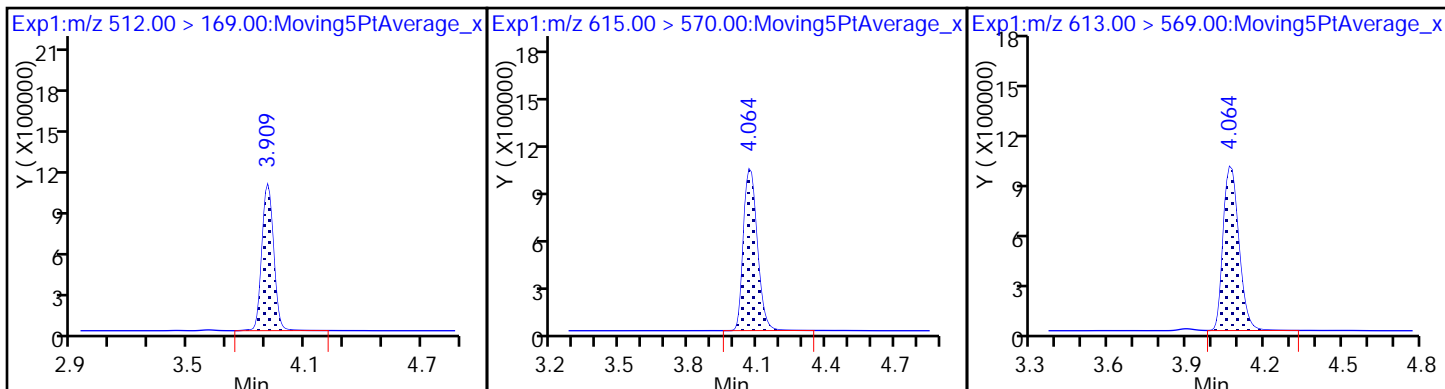
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

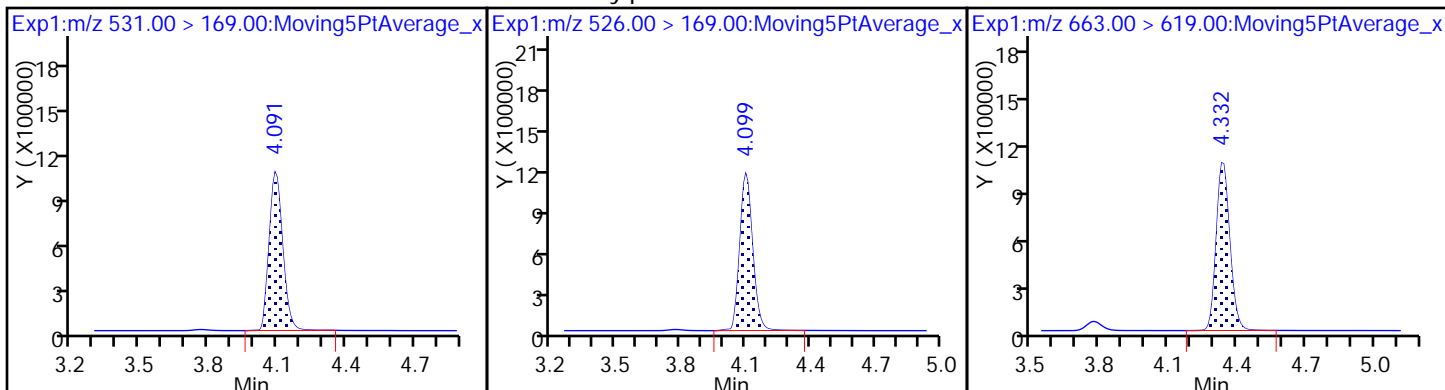
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

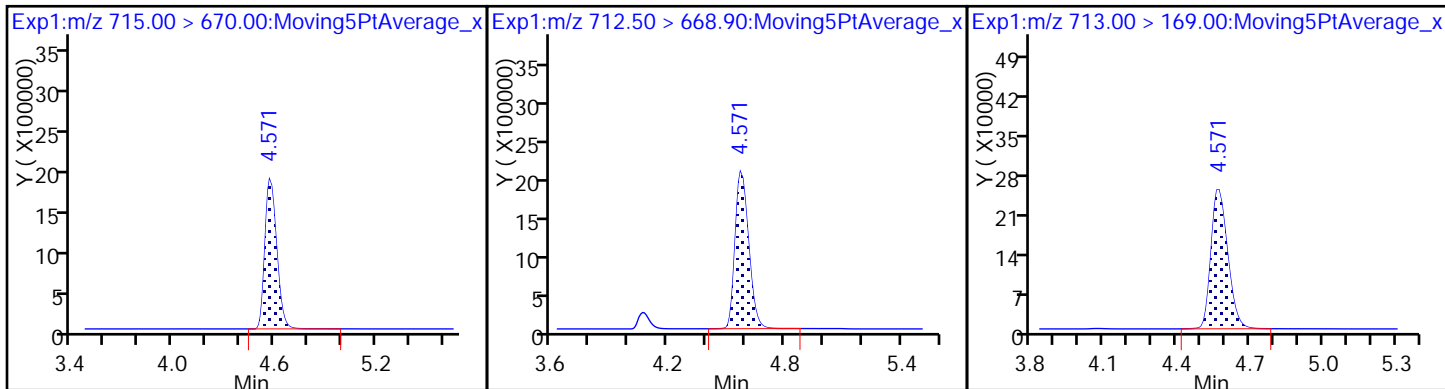
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

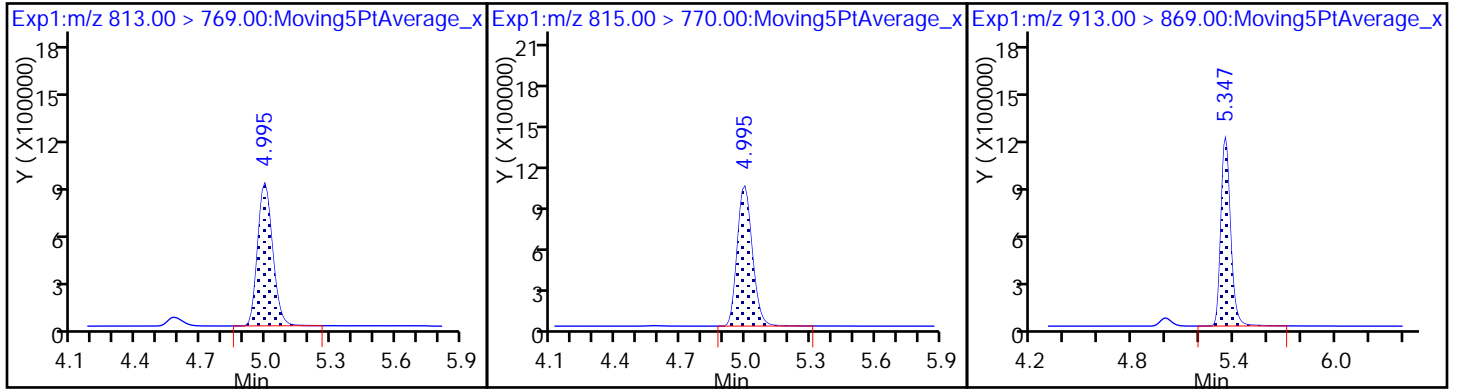
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_008.d  
 Lims ID: IC L6 Full  
 Client ID:  
 Sample Type: IC Calib Level: 6  
 Inject. Date: 28-Jun-2017 00:47:55 ALS Bottle#: 33 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L6-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:28:52 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.546	-0.005	10675010	45.6		91.2	15057	
2 Perfluorobutyric acid	212.90 > 169.00	1.549	1.549	0.0	19529228	101.6		102	3193	
D 3 13C5-PFPeA	267.90 > 223.00	1.750	1.755	-0.005	7124768	44.3		88.6	16993	
4 Perfluoropentanoic acid	262.90 > 219.00	1.750	1.756	-0.006	14509953	98.9		98.9	5716	
D 47 13C3-PFBS	301.90 > 83.00	1.777	1.776	0.001	207862	NC			6198	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.777	1.783	-0.006	22564944	81.8		92.5	6265	
	298.90 > 99.00	1.777	1.783	-0.006	10710211		2.11(0.00-0.00)	92.5	7639	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.979	1.983	-0.004	5811420	88.0		94.3	27900	
6 Perfluorohexanoic acid	313.00 > 269.00	2.024	2.022	0.002	14190069	97.5		97.5	13034	
D 7 13C2 PFHxA	315.00 > 270.00	2.024	2.022	0.002	7158780	46.7		93.3	19650	
D 9 13C4-PFHpA	367.00 > 322.00	2.339	2.345	-0.006	6089305	44.5		89.0	21687	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.339	2.345	-0.006	13145899	101.1		101	7711	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.356	2.360	-0.004	18845568	86.2		94.7	5935	
D 11 18O2 PFHxS	403.00 > 84.00	2.356	2.360	-0.004	9364216	44.0		93.1	23462	
D 12 M2-6:2FTS	429.00 > 409.00	2.669	2.674	-0.005	3302334	45.4		95.5	14750	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.669	2.674	-0.005	1.000	6433270	93.9	99.0	35921	
* 62 13C2-PFOA	415.00	> 370.00	2.691	2.695	-0.004		5816091	50.0		12243	
D 14 13C4 PFOA	417.00	> 372.00	2.691	2.701	-0.010		5715583	43.8	87.6	31674	
15 Perfluorooctanoic acid	413.00	> 369.00	2.698	2.703	-0.005	1.000	12113676	100.0		2317	
	413.00	> 169.00	2.698	2.703	-0.005	1.000	7283179		1.66(0.90-1.10)	100.0	7180
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.705	2.710	-0.005	1.000	16515521	91.6	96.2	11566	
D 18 13C4 PFOS	503.00	> 80.00	3.064	3.076	-0.012		7491053	46.0	96.3	23408	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.064	3.076	-0.012	1.000	15546912	94.6	102	12734	
	499.00	> 99.00	3.064	3.076	-0.012	1.000	3358116		4.63(0.90-1.10)	102	14438
20 Perfluorononanoic acid	463.00	> 419.00	3.073	3.077	-0.004	1.000	9739220	101.3	101	17714	
D 19 13C5 PFNA	468.00	> 423.00	3.073	3.077	-0.004		4847358	46.2	92.3	10527	
D 21 13C8 FOSA	506.00	> 78.00	3.399	3.405	-0.006		12336650	46.7	93.5	36797	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.399	3.408	-0.009	1.000	23148531	96.3	96.3	46026	
D 26 M2-8:2FTS	529.00	> 509.00	3.417	3.429	-0.012		2521442	44.5	93.0	16006	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.417	3.429	-0.012	1.000	5119791	97.4	102	43790	
D 23 13C2 PFDA	515.00	> 470.00	3.436	3.442	-0.006		4421659	44.2	88.4	20431	
24 Perfluorodecanoic acid	513.00	> 469.00	3.436	3.442	-0.006	1.000	8792931	103.0	103	24338	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.592	3.598	-0.006		1758767	47.5	95.0	8405	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.592	3.602	-0.010	1.000	3872343	105.6	106	7978	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.750	3.755	-0.005	1.000	9560988	95.7	99.2	137425	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.759	3.765	-0.006		1723727	46.7	93.3	5378	
D 30 13C2 PFUnA	565.00	> 520.00	3.769	3.772	-0.003		3243280	43.7	87.3	21468	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.769	3.773	-0.004	1.000	6498995	94.2	94.2	13614	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.769	3.775	-0.006	1.003	3396144	101.1	101	28269	
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.901	3.904	-0.003		3587709	48.1	96.2	723	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.910	3.910	0.0	1.000	7205455	105.5	105	8520	
D 36 13C2 PFDaA	615.00 > 570.00	4.064	4.071	-0.007		3379621	46.0	92.1	9541	
37 Perfluorododecanoic acid	613.00 > 569.00	4.064	4.072	-0.008	1.000	6470650	100.5	101	7588	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.091	4.092	-0.001		3526135	47.9	95.9	4766	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.100	4.101	-0.001	1.000	7435798	105.6	106	8768	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.334	4.341	-0.007	1.000	6616124	100.9	101	2054	
D 43 13C2-PFTeDA	715.00 > 670.00	4.573	4.578	-0.005		7188952	47.5	94.9	53791	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.573	4.581	-0.008	1.000	15879482	100.7	101	1641	
	713.00 > 169.00	4.564	4.581	-0.017	0.998	1975399		8.04(0.00-0.00)	101	15763
D 44 13C2-PFHxDA	815.00 > 770.00	4.985	4.998	-0.013		3907752	46.6	93.2	7015	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.985	4.998	-0.013	1.000	6914193	101.2	101	1055	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.341	5.351	-0.010	1.000	7409509	101.7	102	1994	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L6\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_008.d

Injection Date: 28-Jun-2017 00:47:55

Instrument ID: A8\_N

Lims ID: IC L6 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 33

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

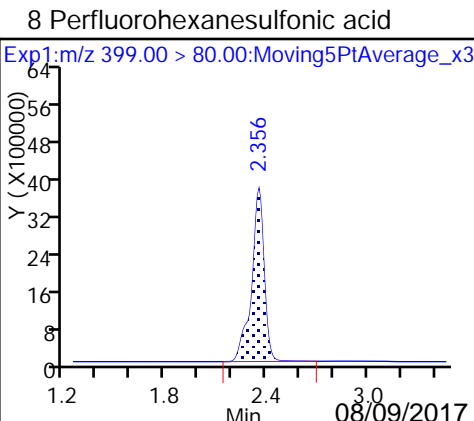
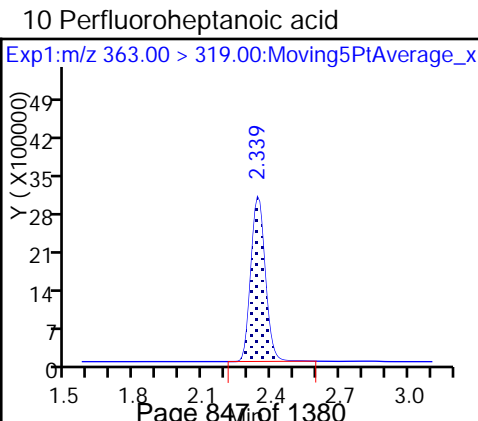
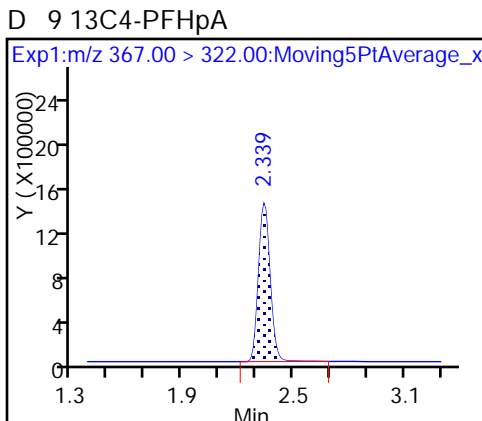
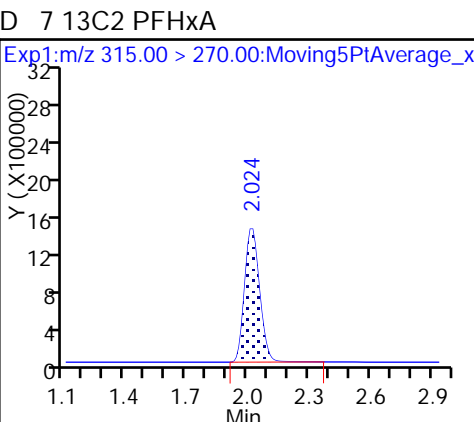
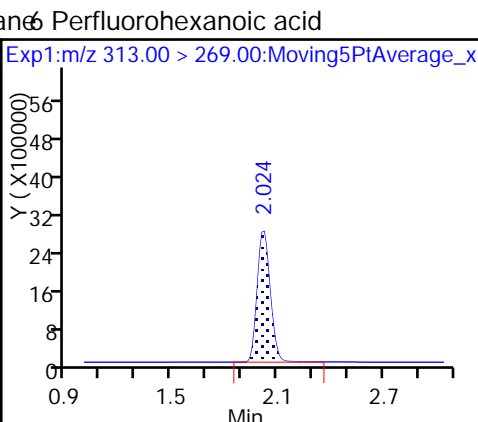
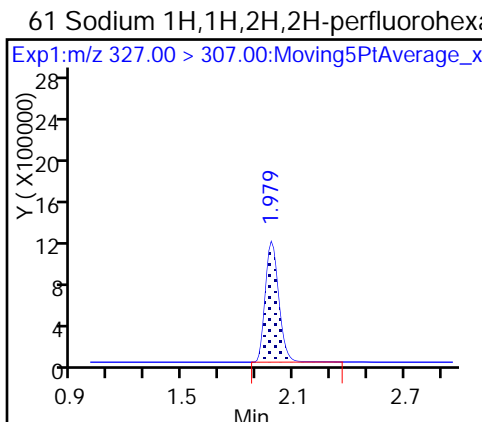
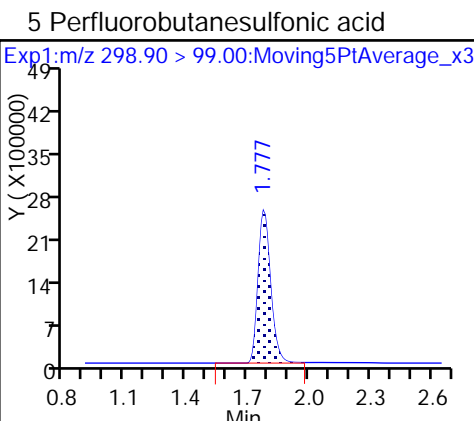
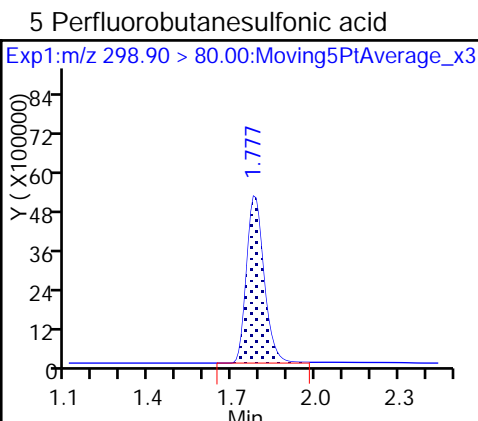
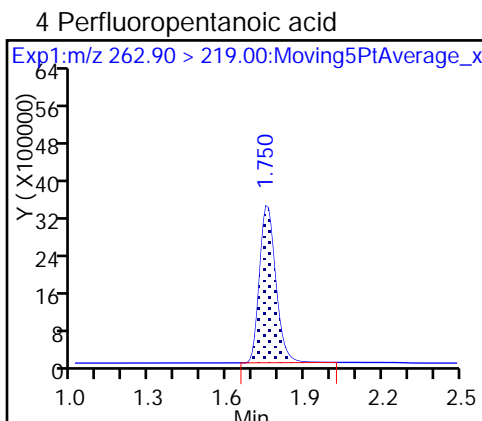
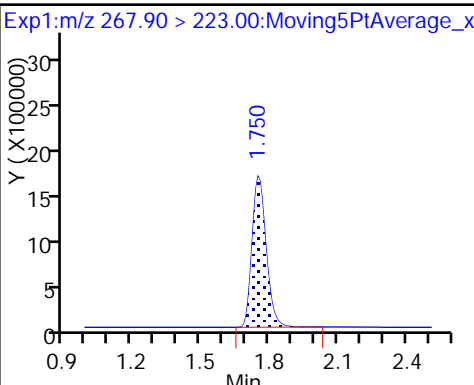
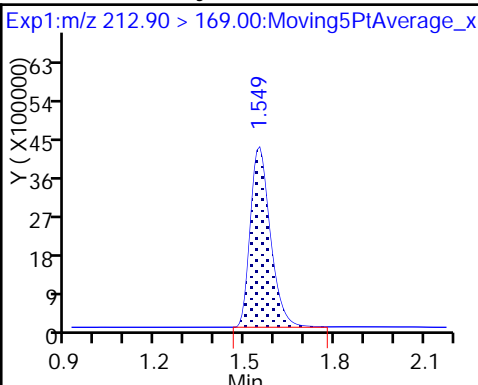
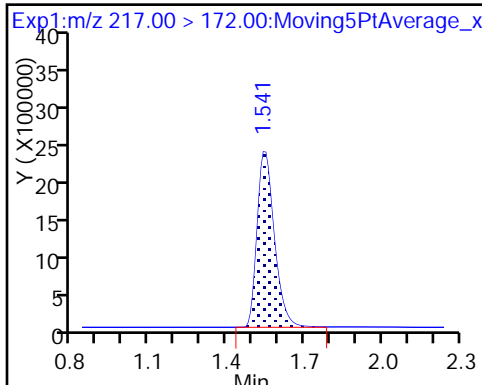
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

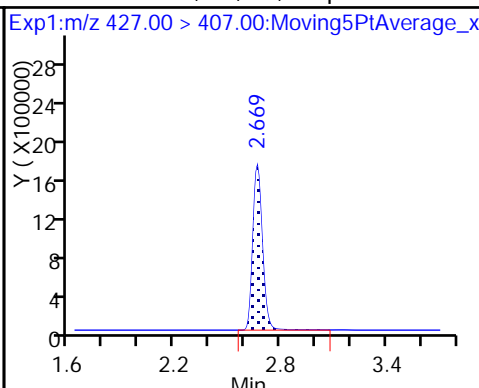
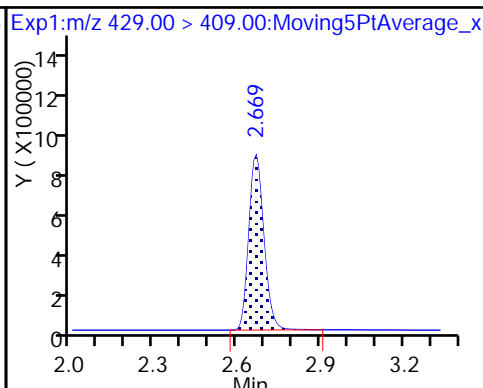
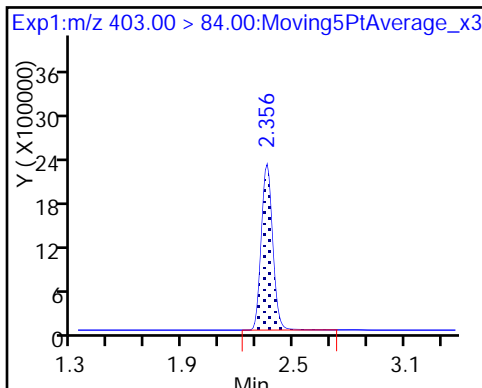
D 3 13C5-PFPeA



D 11 18O2 PFHxS

D 12 M2-6:2FTS

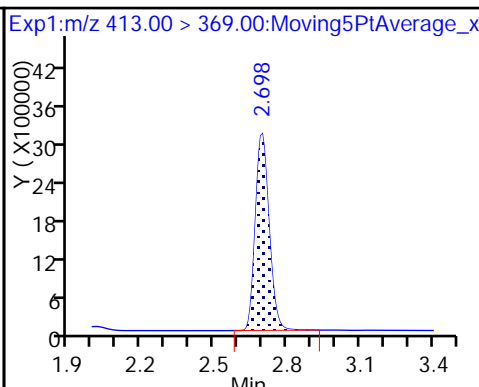
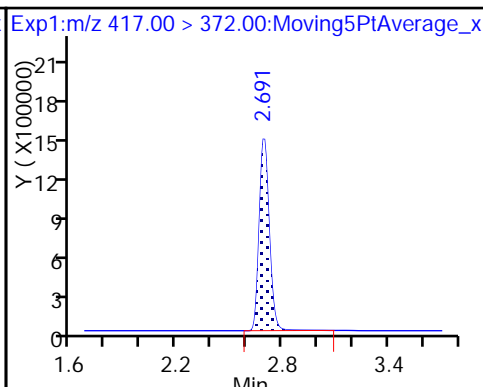
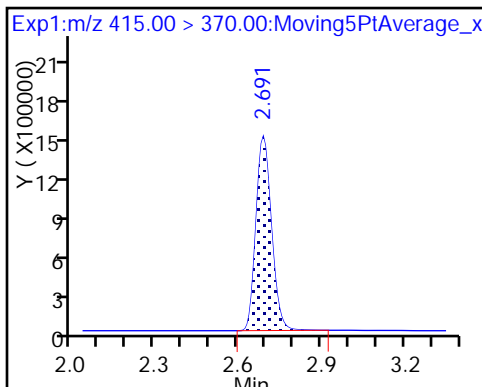
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

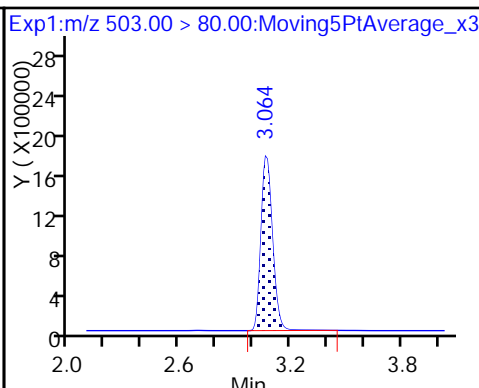
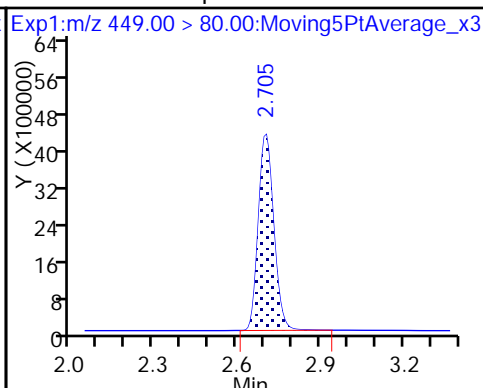
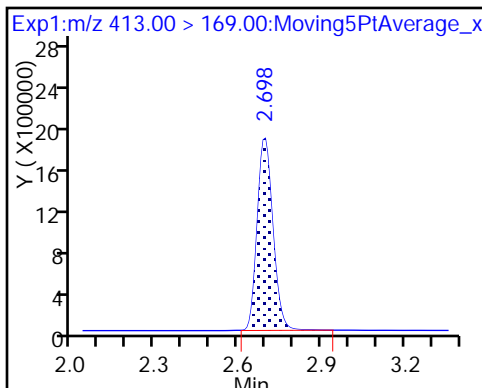
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

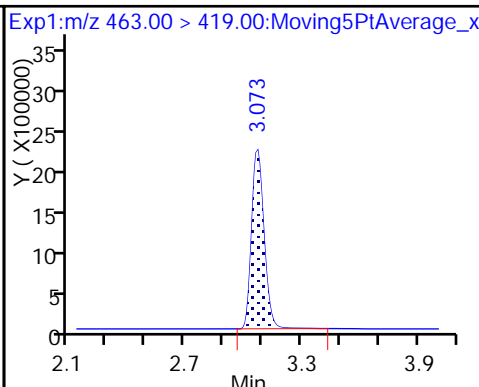
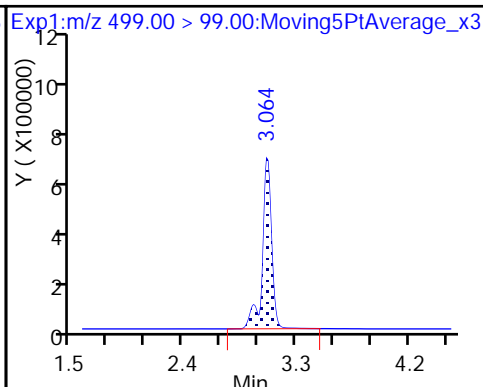
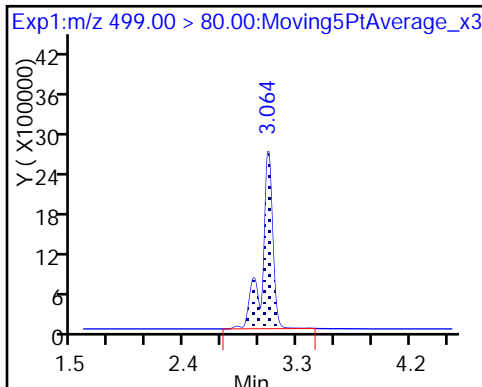
D 18 13C4 PFOS



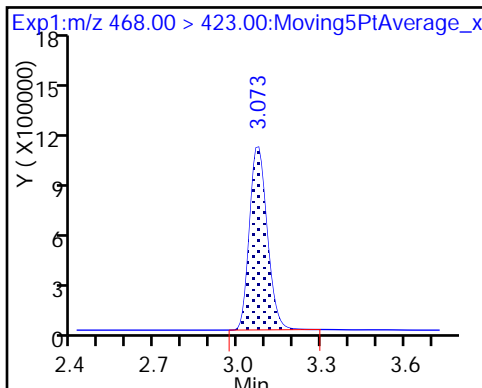
17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

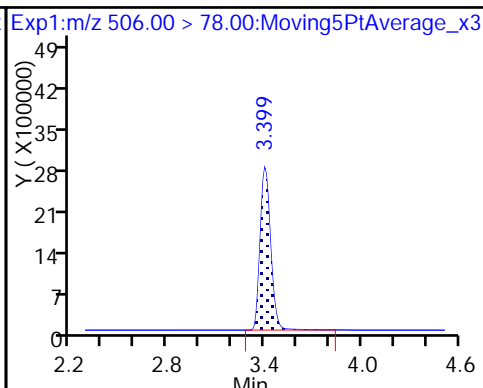
20 Perfluorononanoic acid



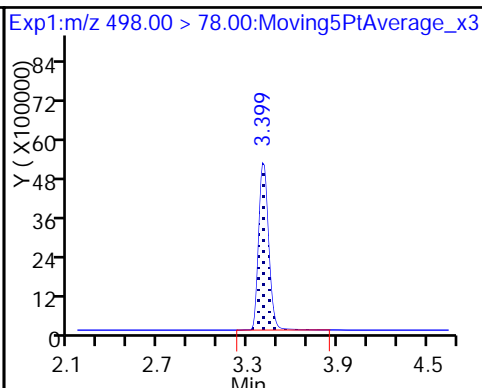
D 19 13C5 PFNA



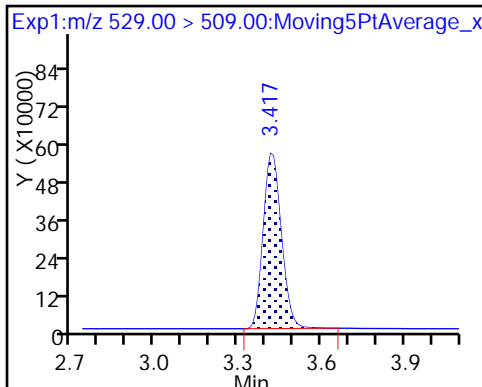
D 21 13C8 FOSA



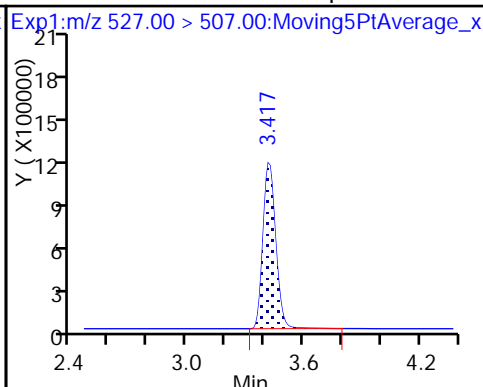
22 Perfluorooctane Sulfonamide



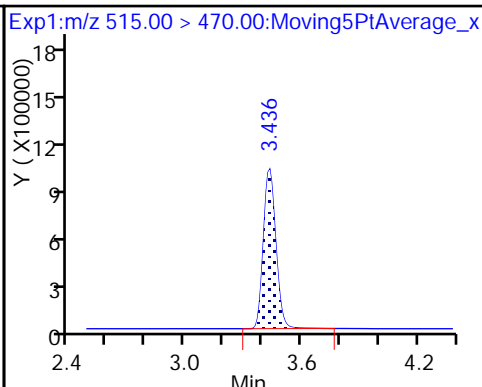
D 26 M2-8:2FTS



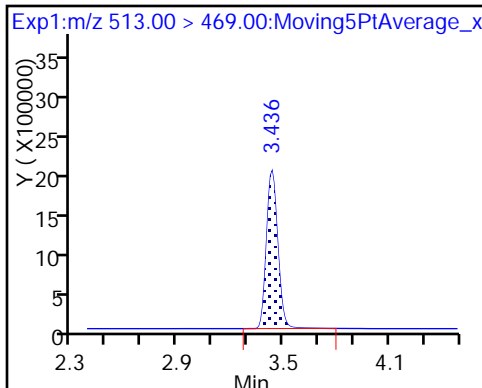
25 Sodium 1H,1H,2H,2H-perfluorodecanoate



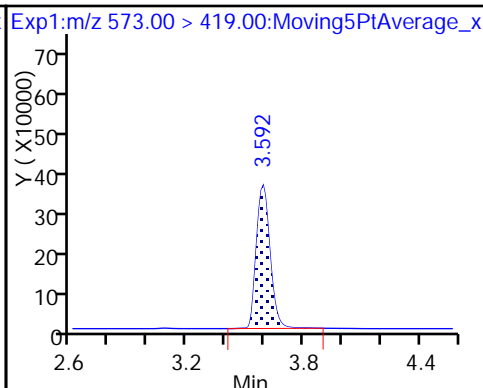
D 23 13C2 PFDA



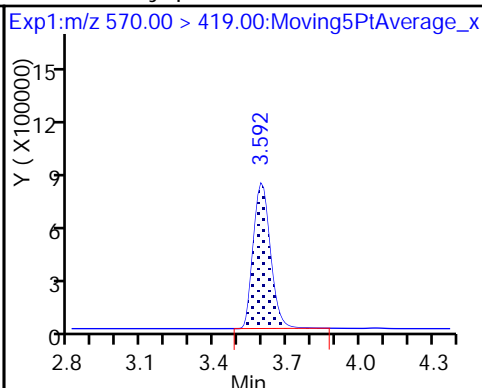
24 Perfluorodecanoic acid



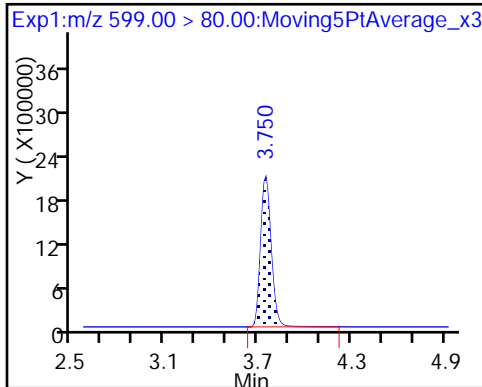
D 27 d3-NMeFOSAA



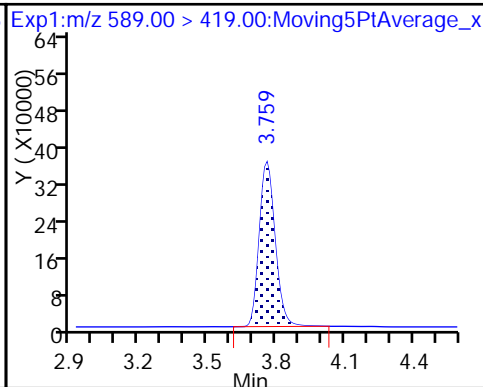
28 N-methyl perfluorooctane sulfonami



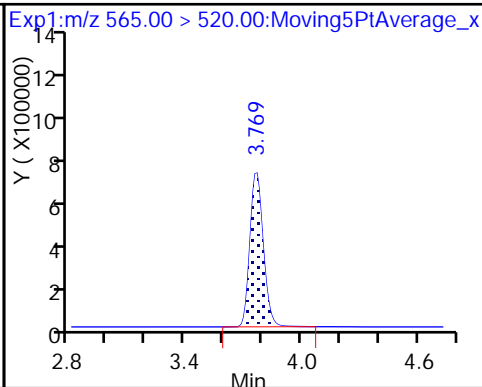
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



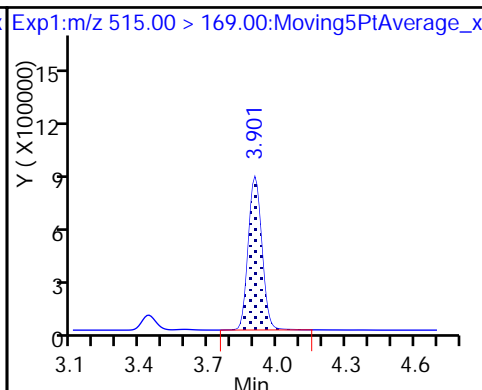
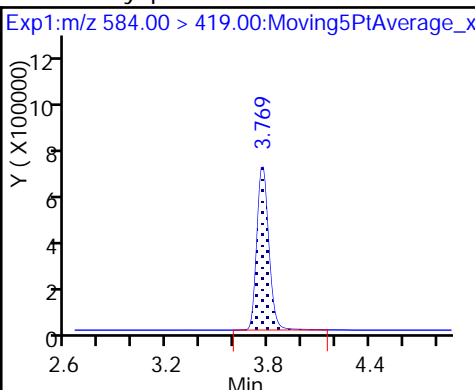
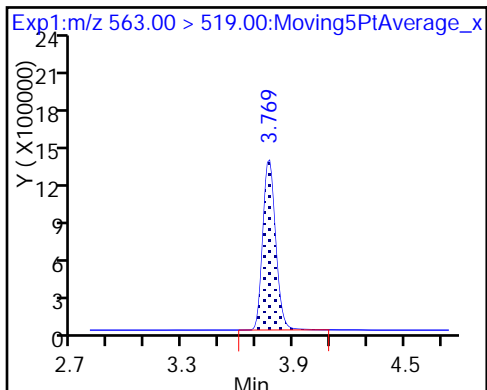
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

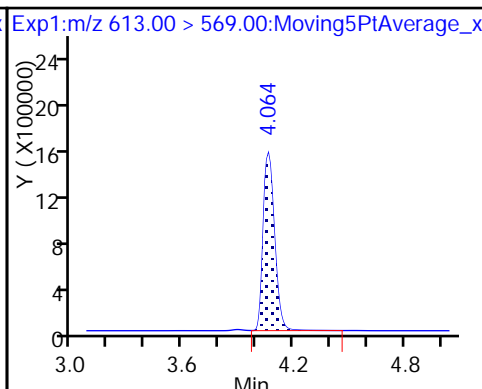
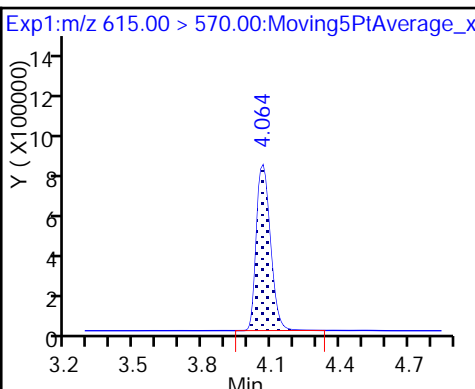
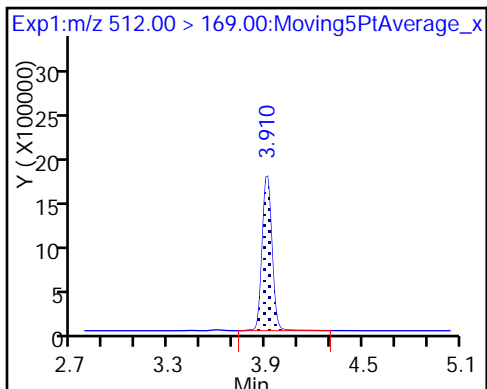
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

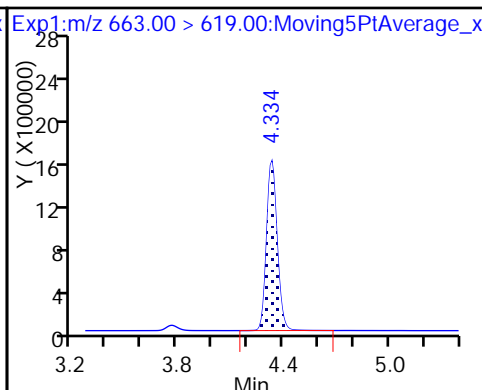
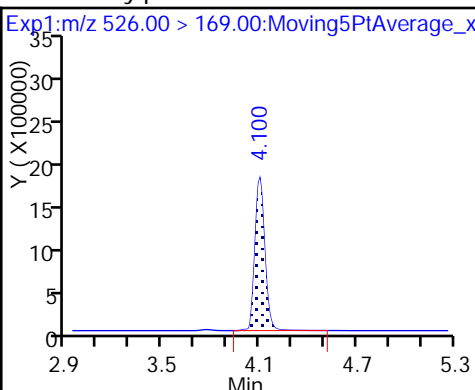
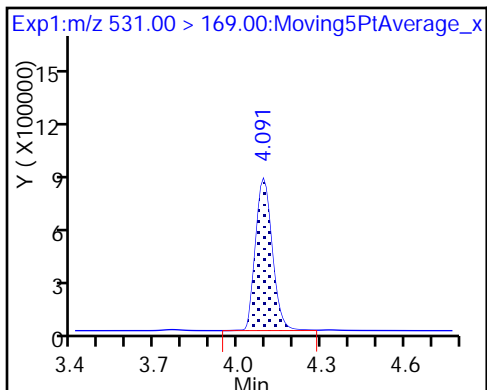
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

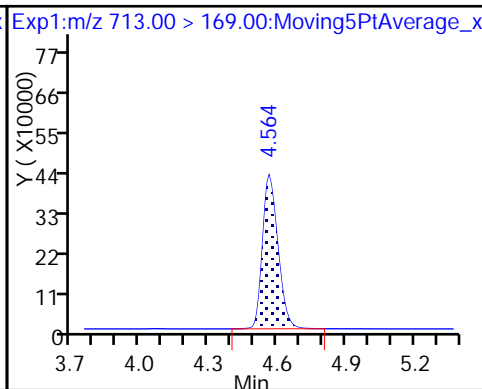
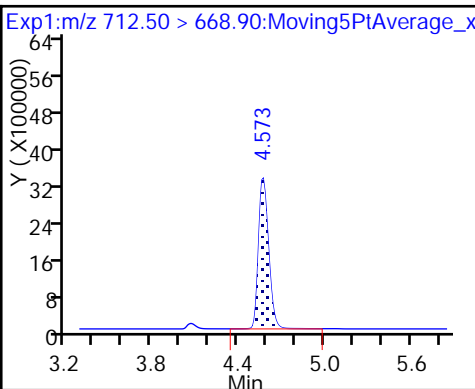
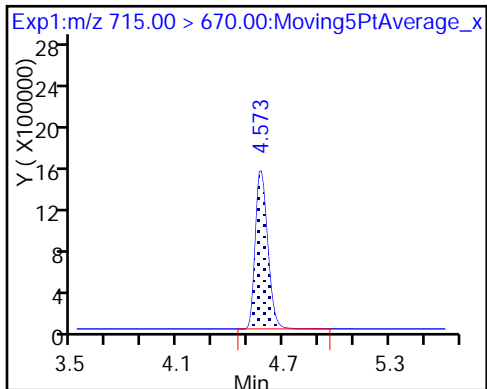
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

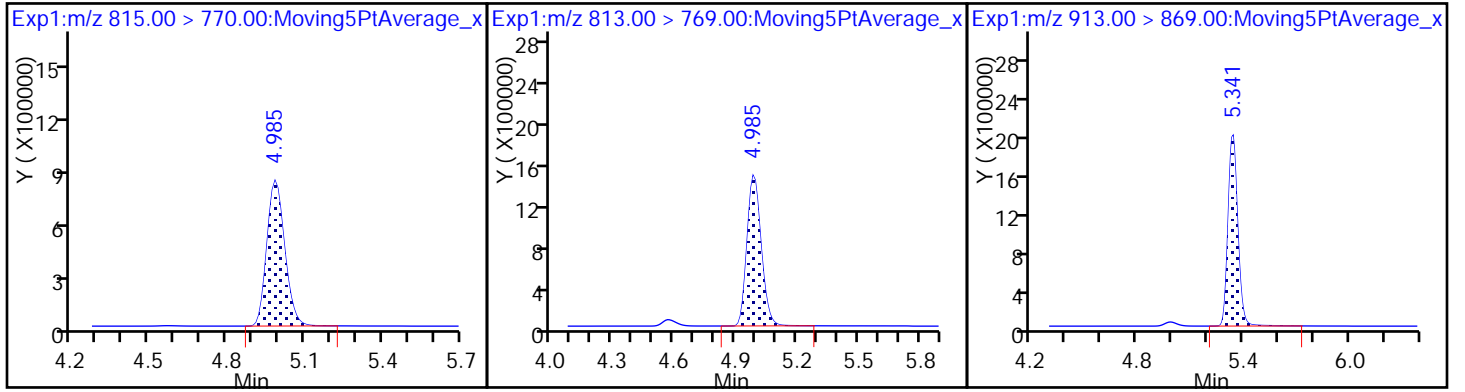
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_009.d  
 Lims ID: IC L7 Full  
 Client ID:  
 Sample Type: IC Calib Level: 7  
 Inject. Date: 28-Jun-2017 00:54:49 ALS Bottle#: 34 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L7-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:28:57 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 28-Jun-2017 08:20:01

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.549	1.546	0.003	10166691	43.4		86.9	14734	
2 Perfluorobutyric acid	212.90 > 169.00	1.549	1.549	0.0	31585487	172.5		86.2	3506	
D 3 13C5-PFPeA	267.90 > 223.00	1.751	1.755	-0.004	6591945	41.0		82.0	17917	
4 Perfluoropentanoic acid	262.90 > 219.00	1.759	1.756	0.003	23255486	171.4		85.7	9230	
D 47 13C3-PFBS	301.90 > 83.00	1.777	1.776	0.001	185336	NC			6253	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.786	1.783	0.003	36354753	139.5		78.9	1317724	
	298.90 > 99.00	1.777	1.783	-0.006	18874231		1.93(0.00-0.00)	78.9	20819	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.980	1.983	-0.003	10875967	165.1		88.4	23856	
D 7 13C2 PFHxA	315.00 > 270.00	2.024	2.022	0.002	6584505	42.9		85.8	24115	
6 Perfluorohexanoic acid	313.00 > 269.00	2.024	2.022	0.002	23166575	173.1		86.6	13245	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.343	2.345	-0.002	21372445	188.3		94.2	7708	
D 9 13C4-PFHpA	367.00 > 322.00	2.343	2.345	-0.002	5313908	38.8		77.6	17677	
D 11 18O2 PFHxS	403.00 > 84.00	2.361	2.360	0.001	8839903	41.6		87.9	19627	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.361	2.360	0.001	33084312	160.3		88.0	5991	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.673	2.674	-0.001	1.000	11321706	165.5	87.3	33874	
D 12 M2-6:2FTS	429.00	> 409.00	2.673	2.674	-0.001		3295055	45.3	95.3	16412	
* 62 13C2-PFOA	415.00	> 370.00	2.695	2.695	0.0		5010908	50.0		14208	
D 14 13C4 PFOA	417.00	> 372.00	2.695	2.701	-0.006		5115116	39.2	78.4	12399	
15 Perfluorooctanoic acid	413.00	> 369.00	2.702	2.703	-0.001	1.000	20052628	184.9	92.5	3424	
	413.00	> 169.00	2.702	2.703	-0.001	1.000	12853829		1.56(0.90-1.10)	92.5	11193
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.709	2.710	-0.001	1.000	27240352	160.3	84.2	10142	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.071	3.076	-0.005	1.000	28622131	184.7	99.5	11674	
	499.00	> 99.00	3.071	3.076	-0.005	1.000	6655370		4.30(0.90-1.10)	99.5	22087
D 18 13C4 PFOS	503.00	> 80.00	3.071	3.076	-0.005		7061626	43.4	90.8	17740	
D 19 13C5 PFNA	468.00	> 423.00	3.071	3.077	-0.006		4185731	39.9	79.7	10860	
20 Perfluorononanoic acid	463.00	> 419.00	3.071	3.077	-0.006	1.000	16886918	203.3	102	28906	
D 21 13C8 FOSA	506.00	> 78.00	3.399	3.405	-0.006		11557466	43.8	87.6	47221	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.408	3.408	0.0	1.000	36383951	161.6	80.8	311740	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.426	3.429	-0.003	1.000	8681158	168.1	87.7	31953	
D 26 M2-8:2FTS	529.00	> 509.00	3.426	3.429	-0.003		2477757	43.8	91.4	44996	
24 Perfluorodecanoic acid	513.00	> 469.00	3.436	3.442	-0.006	1.000	15560863	195.8	97.9	38144	
D 23 13C2 PFDA	515.00	> 470.00	3.436	3.442	-0.006		4118965	41.2	82.4	18933	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.594	3.598	-0.004		1721455	46.5	93.0	4913	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.594	3.602	-0.008	1.000	7466479	208.0	104	20274	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.743	3.755	-0.012	1.000	17816860	189.1	98.1	535860	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.752	3.765	-0.013		1513502	41.0	81.9	4065	
D 30 13C2 PFUnA	565.00	> 520.00	3.762	3.772	-0.010		2846934	38.3	76.6	13133	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.762	3.773	-0.011	1.000	11894686	196.3	98.2	39712	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.762	3.775	-0.013	1.003	6416477	217.5	109	26914	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.905	3.904	0.001	3701580	49.6		99.2	783	
35 MeFOSA	512.00 > 169.00	3.905	3.910	-0.005	1.000	13863578	196.7	98.3	9312	
D 36 13C2 PFDaA	615.00 > 570.00	4.061	4.071	-0.010	3158739	43.0		86.0	6898	
37 Perfluorododecanoic acid	613.00 > 569.00	4.061	4.072	-0.011	1.000	12283288	204.2	102	13783	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.088	4.092	-0.004	3563174	48.4		96.9	4300	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.097	4.101	-0.004	1.000	14398576	202.3	101	8946	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.332	4.341	-0.009	1.000	11996210	195.7	97.8	4464	
D 43 13C2-PFTeDA	715.00 > 670.00	4.562	4.578	-0.016	6840230	45.2		90.3	61858	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.572	4.581	-0.009	1.000	26789665	181.8	90.9	2048	
	713.00 > 169.00	4.562	4.581	-0.019	0.998	3695030	7.25(0.00-0.00)	90.9	31532	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.985	4.998	-0.013	1.000	12399383	194.8	97.4	1899	
D 44 13C2-PFHxDA	815.00 > 770.00	4.985	4.998	-0.013	3766939	44.9		89.8	9592	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.335	5.351	-0.016	1.000	13725574	201.5	101	3281	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L7\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_009.d

Injection Date: 28-Jun-2017 00:54:49

Instrument ID: A8\_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 34

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

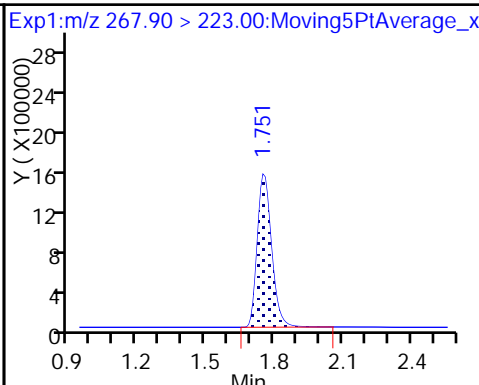
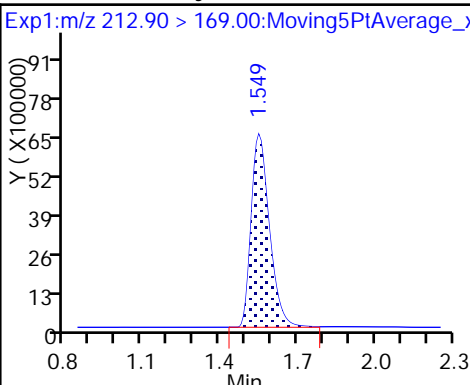
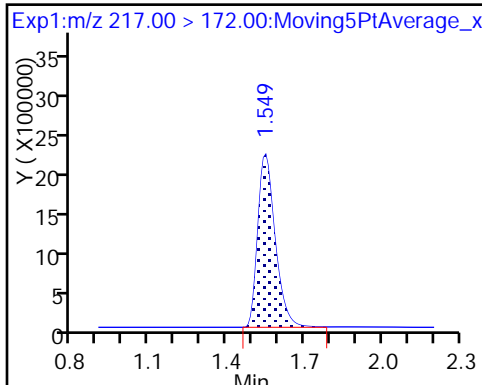
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

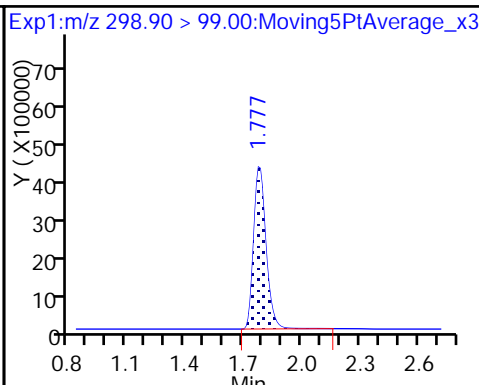
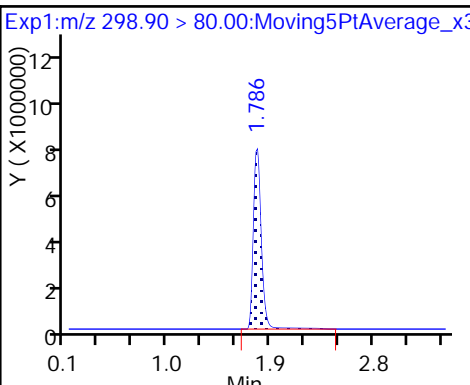
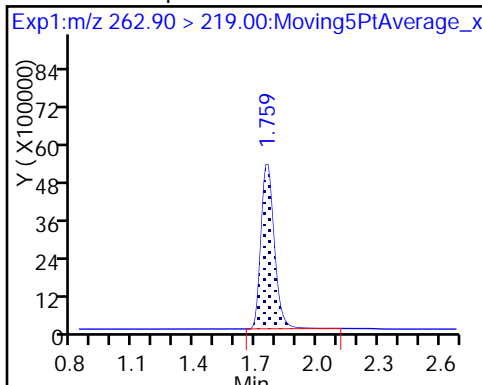
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

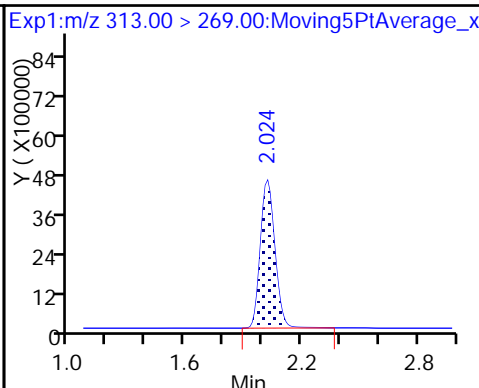
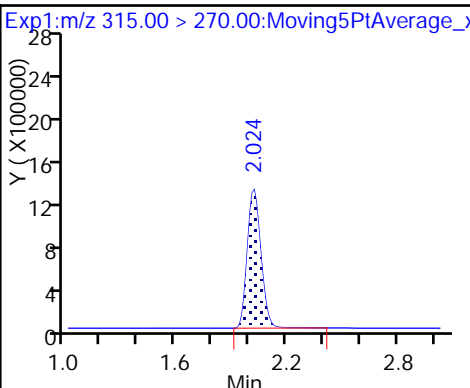
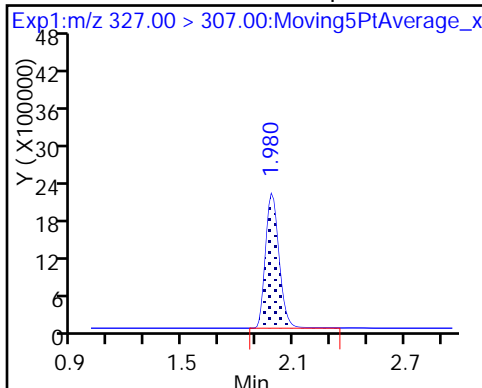
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

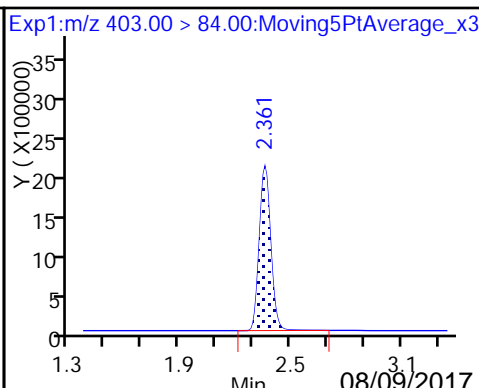
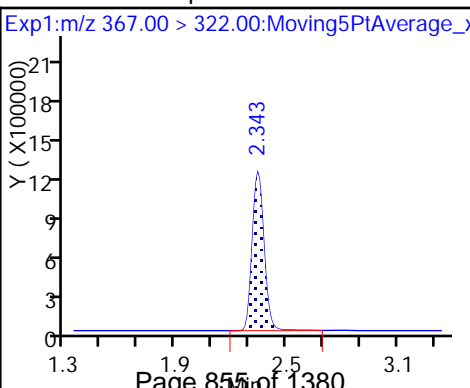
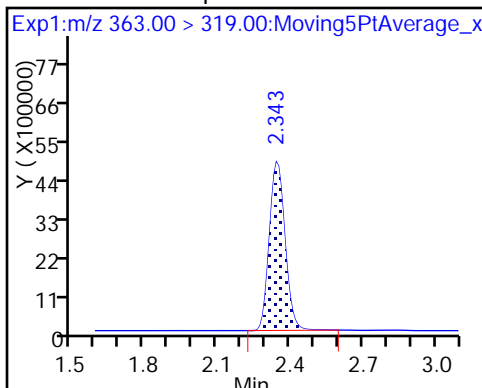
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

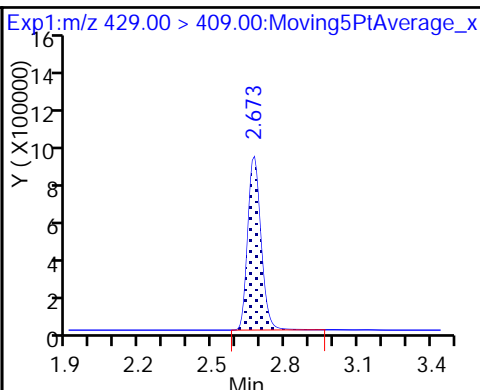
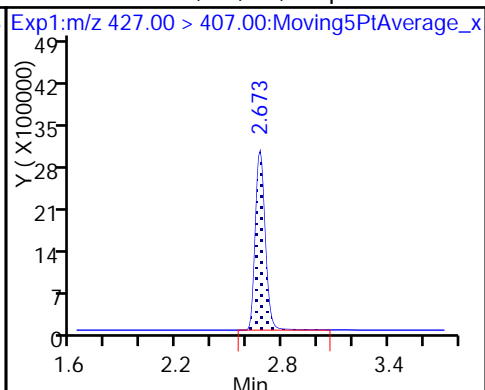
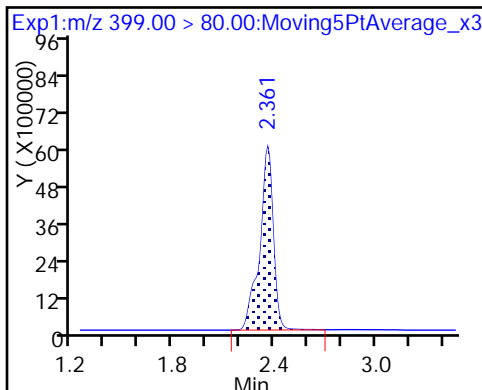
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

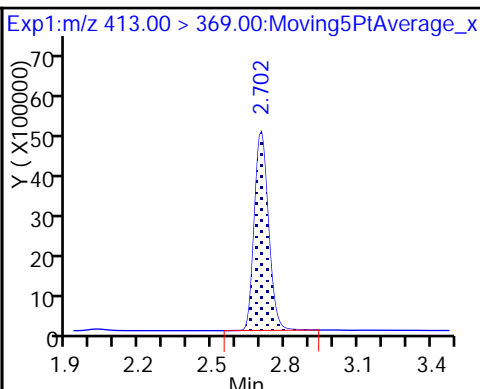
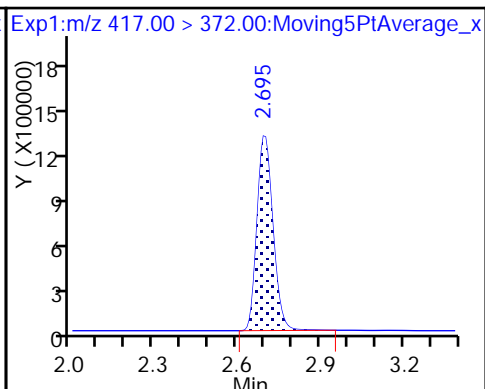
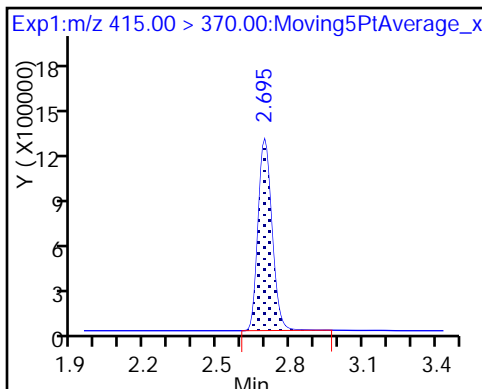
D 12 M2-6:2FTS



\* 62 13C2-PFOA

D 14 13C4 PFOA

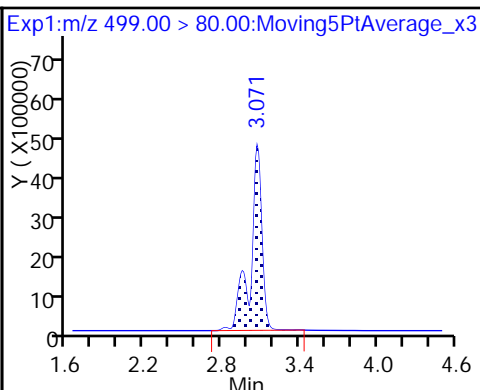
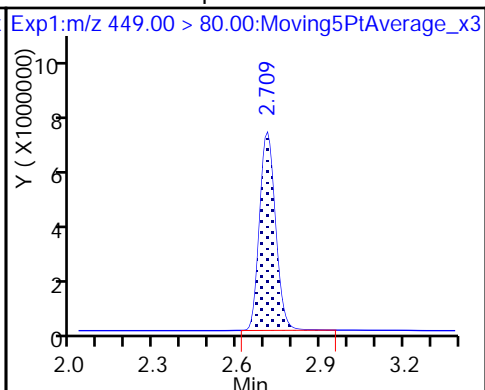
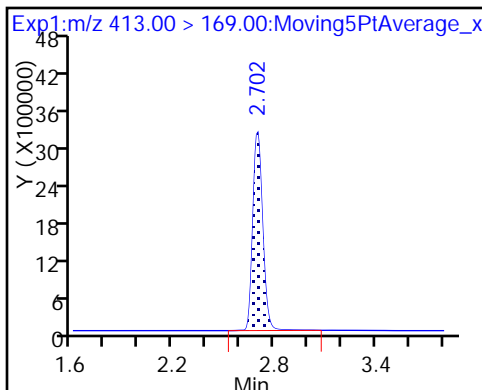
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

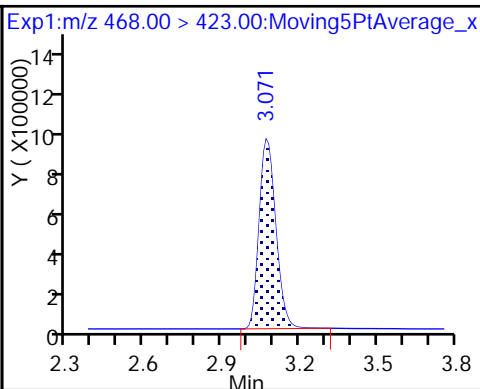
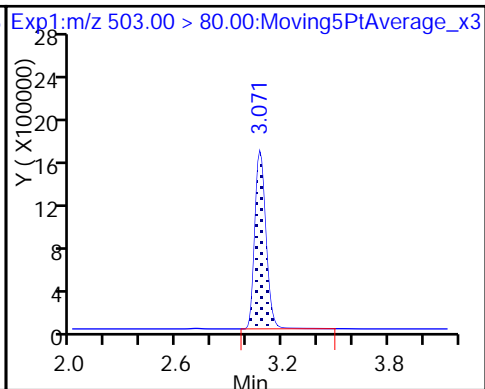
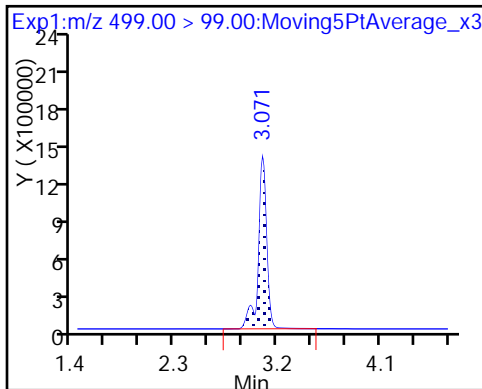
17 Perfluorooctane sulfonic acid

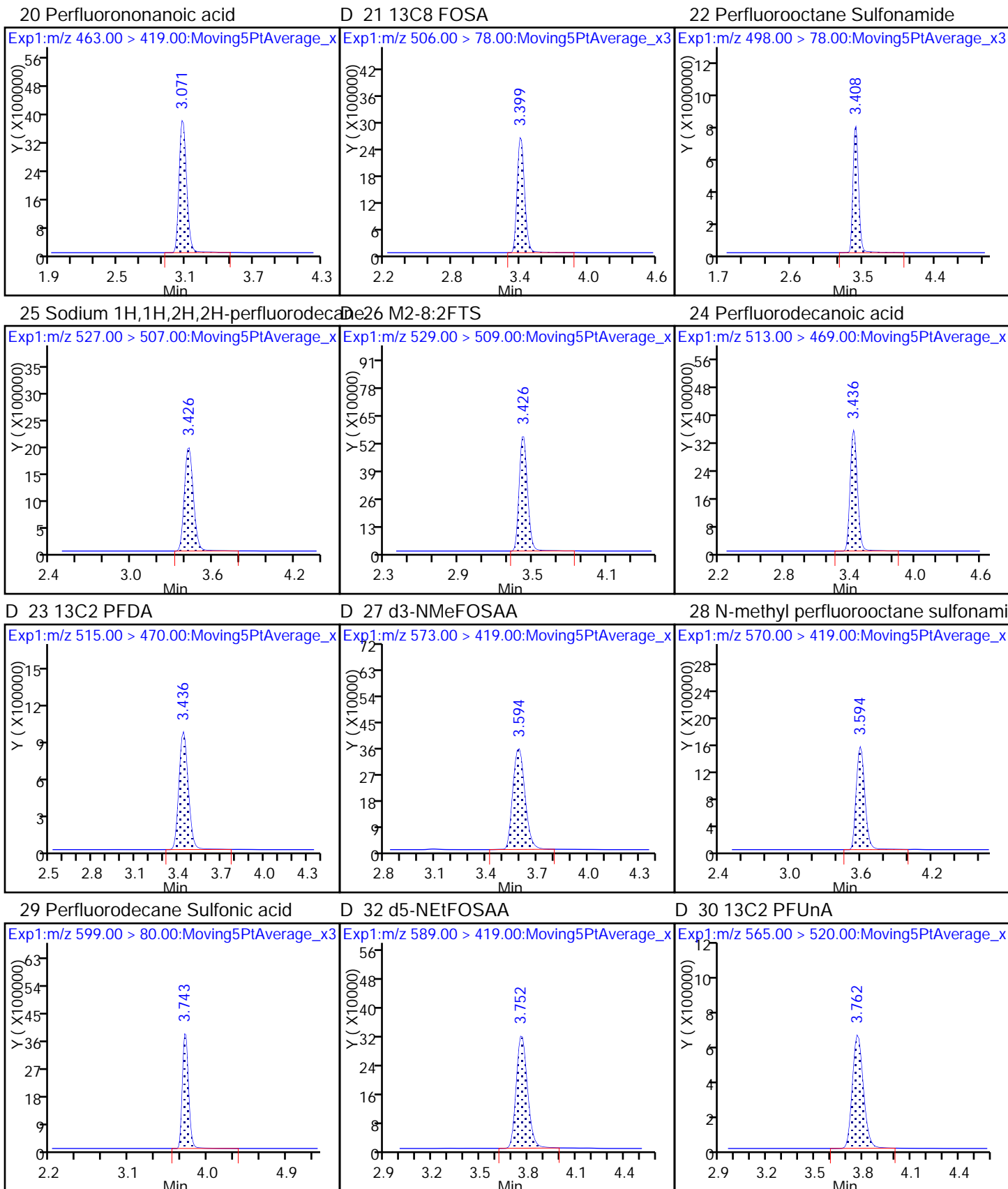


17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

D 19 13C5 PFNA

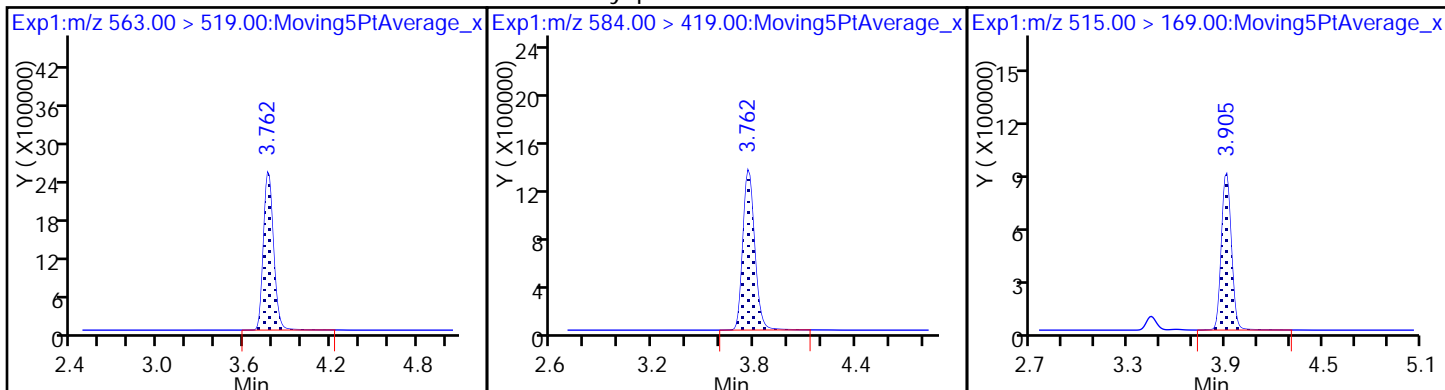




31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

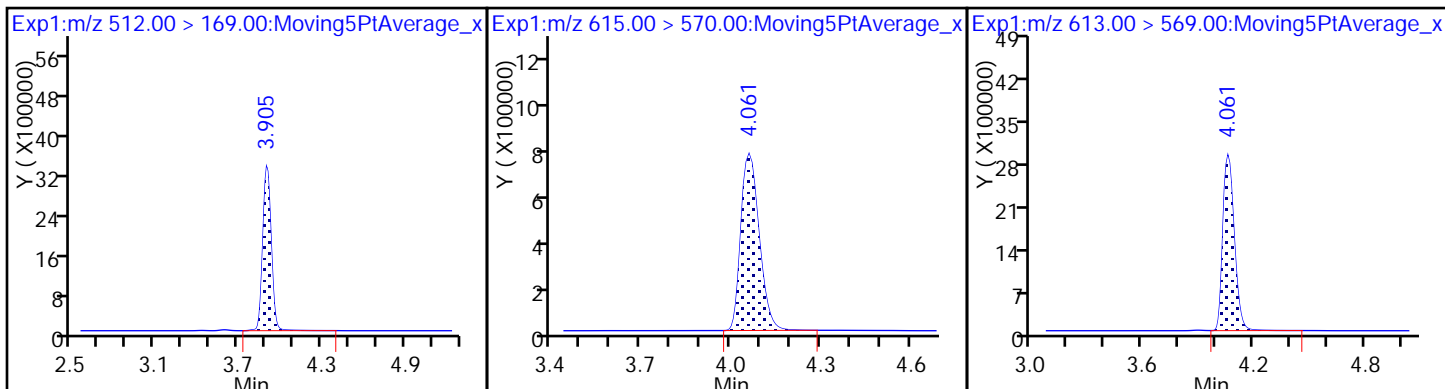
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

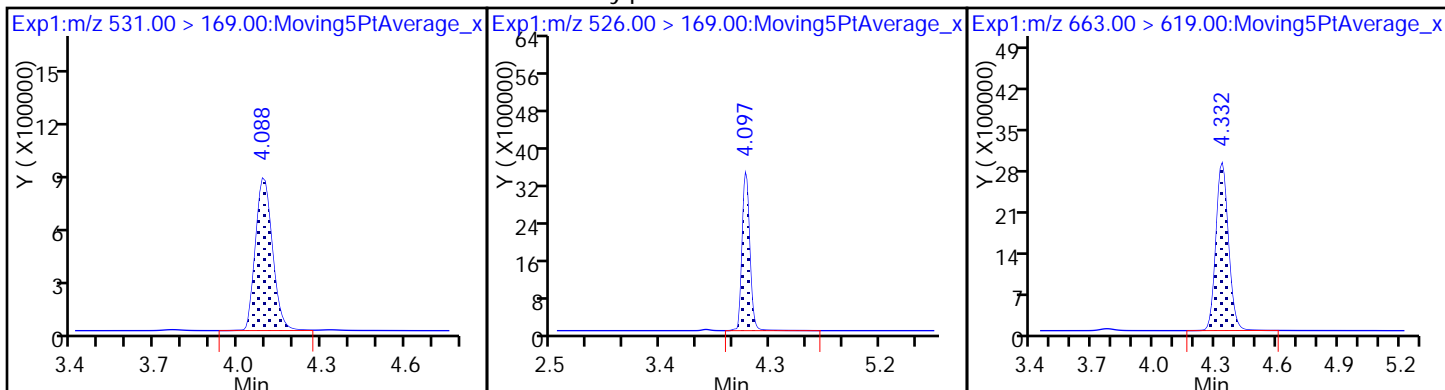
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

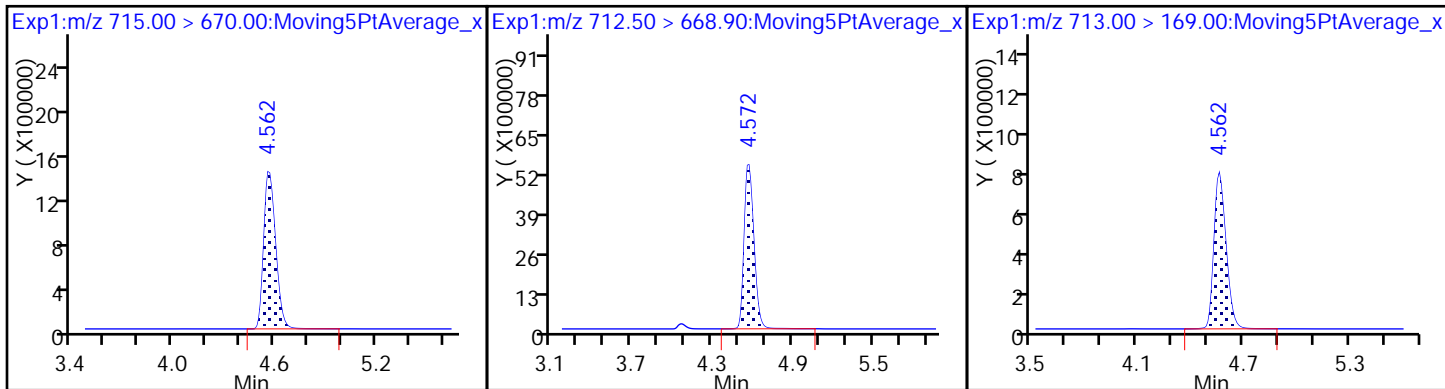
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

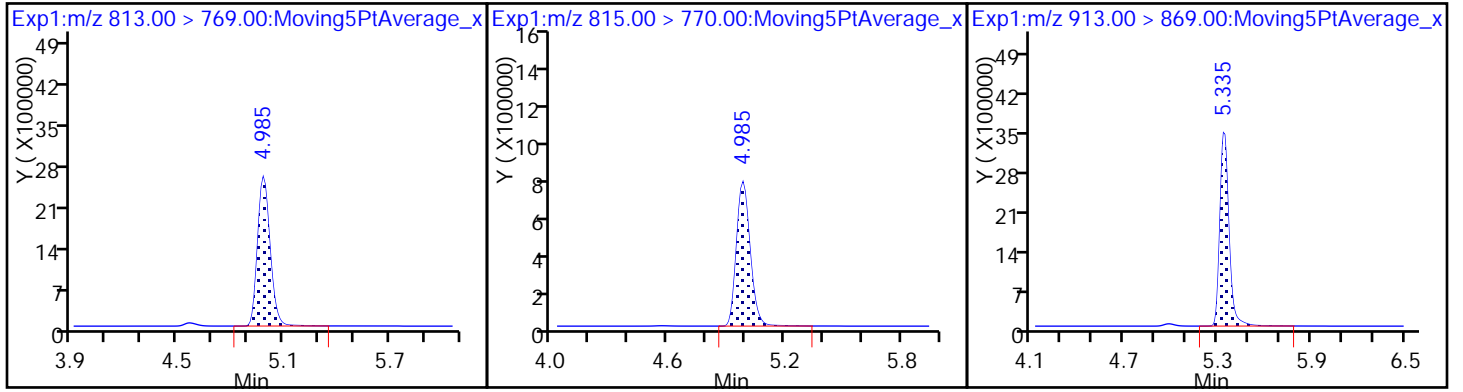
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Lims ID: IC M2-4:2FTS  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 28-Jun-2017 01:01:43 ALS Bottle#: 37 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: M2:4-2FTS Calibration Std  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:31:07 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 28-Jun-2017 08:27:46

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
--------	----	--------	--------	--------	----------	--------------	---------------	------	-----	-------

D 60 M2-4:2FTS										
329.00 > 309.00	1.977	1.977	0.0		3800214	NC			16979	
* 62 13C2-PFOA										
415.00 > 370.00	2.690	2.695	-0.005		8023221	50.0			20123	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCM2-4:2FTSIC\_00002 Amount Added: 1.00 Units: mL



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Injection Date: 28-Jun-2017 01:01:43

Instrument ID: A8\_N

Lims ID: IC M2-4:2FTS

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 37 Worklist Smp#: 10

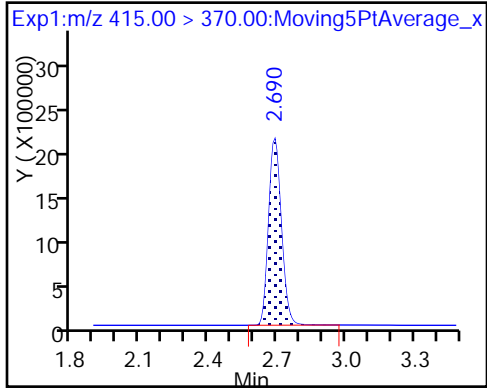
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

\* 62 13C2-PFOA



FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171897/3	2017.06.30CURVE_003.d
Level 2	IC 320-171897/4	2017.06.30CURVE_004.d
Level 3	IC 320-171897/5	2017.06.30CURVE_005.d
Level 4	IC 320-171897/6	2017.06.30CURVE_006.d
Level 5	IC 320-171897/7	2017.06.30CURVE_007.d
Level 6	IC 320-171897/8	2017.06.30CURVE_008.d
Level 7	IC 320-171897/9	2017.06.30CURVE_009.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.541	1.543	1.541	1.533	1.541	1.543	1.543				1.291 - 1.791	1.541
Perfluoropentanoic acid (PFPeA)	1.751	1.753	1.748	1.742	1.751	1.753	1.753				1.500 - 2.000	1.750
Perfluorobutanesulfonic acid (PFBS)	1.778	1.780	1.765	1.769	1.777	1.779	1.780				1.595 - 1.955	1.775
4:2 FTS	1.969	1.971	1.963	1.969	1.969	1.971	1.971				1.719 - 2.219	1.969
Perfluorohexanoic acid (PFHxA)	2.014	2.016	2.008	2.002	2.013	2.015	2.016				1.762 - 2.262	2.012
Perfluoroheptanoic acid (PFHpA)	2.332	2.337	2.326	2.321	2.331	2.335	2.336				2.081 - 2.581	2.331
Perfluorohexanesulfonic acid (PFHxS)	2.348	2.345	2.343	2.338	2.348	2.353	2.345				2.096 - 2.596	2.346
6:2FTS	2.659	2.663	2.654	2.643	2.659	2.664	2.660				2.407 - 2.907	2.657
Perfluorooctanoic acid (PFOA)	2.688	2.685	2.675	2.672	2.681	2.693	2.689				2.433 - 2.933	2.683
Perfluoroheptanesulfonic Acid (PFHpS)	2.696	2.692	2.683	2.680	2.688	2.701	2.696				2.441 - 2.941	2.691
Perfluorononanoic acid (PFNA)	3.058	3.061	3.051	3.045	3.060	3.060	3.061				2.807 - 3.307	3.057
Perfluorooctanesulfonic acid (PFOS)	3.058	3.061	3.051	3.045	3.060	3.060	3.061				2.807 - 3.307	3.057
Perfluorooctane Sulfonamide (FOSA)	3.383	3.386	3.382	3.375	3.398	3.402	3.404				3.140 - 3.640	3.390
8:2FTS	3.411	3.414	3.401	3.393	3.407	3.411	3.413				3.157 - 3.657	3.407
Perfluorodecanoic acid (PFDA)	3.429	3.423	3.410	3.402	3.425	3.421	3.422				3.169 - 3.669	3.419
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.589	3.581	3.567	3.568	3.578	3.586	3.588				3.329 - 3.829	3.580
Perfluorodecanesulfonic acid (PFDS)	3.737	3.739	3.725	3.716	3.737	3.734	3.736				3.482 - 3.982	3.732
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	3.757	3.749	3.745	3.736	3.756	3.754	3.756				3.500 - 4.000	3.750
Perfluoroundecanoic acid (PFUnA)	3.757	3.749	3.745	3.736	3.756	3.754	3.756				3.500 - 4.000	3.750
MeFOSA	3.886	3.888	3.884	3.885	3.906	3.905	3.907				3.645 - 4.145	3.894
Perfluorododecanoic acid (PFDoA)	4.061	4.044	4.039	4.033	4.051	4.047	4.044				3.795 - 4.295	4.046
N-EtFOSA-M	4.079	4.080	4.073	4.075	4.097	4.102	4.099				3.836 - 4.336	4.086
Perfluorotridecanoic Acid (PFTriA)	4.325	4.317	4.310	4.303	4.321	4.318	4.316				4.066 - 4.566	4.316
Perfluorotetradecanoic acid (PFTeA)	4.572	4.557	4.551	4.552	4.558	4.556	4.555				4.307 - 4.807	4.557
Perfluoro-n-hexadecanoic acid (PFHxDA)	+++	4.982	4.961	4.962	4.977	4.965	4.965				4.722 - 5.222	4.969
Perfluoro-n-octadecanoic acid (PFODA)	5.351	5.329	5.321	5.317	5.323	5.316	5.311				5.074 - 5.574	5.324
13C4 PFBA	1.541	1.543	1.541	1.533	1.541	1.543	1.543				1.291 - 1.791	1.541
13C5-PFPeA	1.751	1.753	1.748	1.742	1.751	1.744	1.744				1.498 - 1.998	1.748
13C2 PFHxA	2.014	2.016	2.008	2.002	2.013	2.015	2.016				1.762 - 2.262	2.012
13C4-PFHpA	2.332	2.337	2.326	2.321	2.331	2.335	2.336				2.081 - 2.581	2.331
18O2 PFHxS	2.348	2.345	2.343	2.338	2.348	2.353	2.345				2.096 - 2.596	2.346
M2-6:2FTS	2.659	2.656	2.654	2.643	2.659	2.664	2.660				2.406 - 2.906	2.656

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897  
 SDG No.: \_\_\_\_\_  
 Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N  
 Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFOA	2.688	2.685	2.675	2.672	2.681	2.686	2.689				2.432 - 2.932	2.682
13C4 PFOS	3.058	3.053	3.051	3.037	3.060	3.060	3.061				2.804 - 3.304	3.054
13C5 PFNA	3.058	3.061	3.051	3.045	3.060	3.060	3.061				2.807 - 3.307	3.057
13C8 FOSA	3.383	3.386	3.382	3.375	3.398	3.402	3.404				3.140 - 3.640	3.390
M2-8:2FTS	3.411	3.414	3.401	3.393	3.407	3.411	3.413				3.157 - 3.657	3.407
13C2 PFDA	3.420	3.423	3.410	3.402	3.425	3.421	3.422				3.167 - 3.667	3.418
d3-NMeFOSAA	3.578	3.581	3.567	3.557	3.578	3.586	3.576				3.325 - 3.825	3.575
d5-NEtFOSAA	3.747	3.749	3.735	3.726	3.746	3.744	3.746				3.492 - 3.992	3.742
13C2 PFUnA	3.757	3.749	3.745	3.736	3.756	3.754	3.756				3.500 - 4.000	3.750
d-N-MeFOSA-M	3.886	3.888	3.876	3.876	3.897	3.905	3.898				3.640 - 4.140	3.889
13C2 PFDoA	4.061	4.044	4.039	4.033	4.051	4.047	4.044				3.795 - 4.295	4.046
d-N-EtFOSA-M	4.070	4.072	4.064	4.065	4.088	4.093	4.090				3.827 - 4.327	4.077
13C2-PFTeDA	4.572	4.557	4.551	4.543	4.558	4.556	4.555				4.306 - 4.806	4.556
13C2-PFHxDA	4.992	4.972	4.961	4.962	4.966	4.965	4.965				4.719 - 5.219	4.969

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171897/3	2017.06.30CURVE_003.d
Level 2	IC 320-171897/4	2017.06.30CURVE_004.d
Level 3	IC 320-171897/5	2017.06.30CURVE_005.d
Level 4	IC 320-171897/6	2017.06.30CURVE_006.d
Level 5	IC 320-171897/7	2017.06.30CURVE_007.d
Level 6	IC 320-171897/8	2017.06.30CURVE_008.d
Level 7	IC 320-171897/9	2017.06.30CURVE_009.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C4 PFBA	253012 292371	268800 239816	262892 229335	257514	Ave		257677.049			7.9		50.0				
13C5-PFPeA	193163 209493	196486 168872	194502 153528	188818	Ave		186408.849			10.1		50.0				
13C2 PFHxA	173093 208247	186521 162819	176833 154462	188002	Ave		178568.160			10.0		50.0				
13C4-PFHpA	166863 180075	172003 144436	170938 124030	164618	Ave		160423.300			12.1		50.0				
18O2 PFHxS	234912 275744	245137 217227	241301 209343	244067	Ave		238247.315			9.0		50.0				
M2-6:2FTS	77271 87047	84529 75673	77308 75581	82510	Ave		79988.4421			5.8		50.0				
13C4 PFOA	163975 172961	171698 138652	162373 121150	164392	Ave		156457.154			12.3		50.0				
13C4 PFOS	178340 208985	188239 169065	176101 162302	178902	Ave		180276.429			8.3		50.0				
13C5 PFNA	133235 145885	137802 115979	128697 104618	129800	Ave		128002.126			10.8		50.0				
13C8 FOSA	269397 312823	291536 259063	275014 237276	278741	Ave		274835.700			8.7		50.0				
M2-8:2FTS	64436 73444	70908 60921	69440 61854	68676	Ave		67097.0206			7.1		50.0				
13C2 PFDA	120301 135957	127291 106948	116615 96577	124352	Ave		118291.677			11.1		50.0				
d3-NMeFOSAA	43607 57686	47706 45740	45881 45335	46707	Ave		47522.9714			9.8		50.0				
d5-NEtFOSAA	49299 56108	55718 42243	48445 40486	51542	Ave		49120.1229			12.3		50.0				

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C2 PFUnA	96619 108715	106001 80538	96641 71860	93520	Ave		93413.4143			14.1			50.0			
d-N-MeFOSA-M	69760 88634	77030 72878	73397 73439	72630	Ave		75395.4714			8.2			50.0			
13C2 PFDoA	90913 114844	100821 91448	99060 88952	101507	Ave		98220.8171			9.1			50.0			
d-N-EtFOSA-M	65576 85322	71500 73268	68571 74433	68200	Ave		72409.9829			8.9			50.0			
13C2-PFTEdA	212120 240941	227558 197363	210978 194469	212529	Ave		213708.389			7.6			50.0			
13C2-PFHxDA	118253 137733	122609 113194	119192 109306	119834	Ave		120017.494			7.5			50.0			

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897  
 SDG No.: \_\_\_\_\_  
 Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N  
 Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R <sup>2</sup> OR COD	#	MIN R <sup>2</sup> OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
Perfluorobutanoic acid (PFBA)	0.9161 0.8929	0.9320 0.7523	0.9122	0.9467	0.9792	AveID		0.9045			8.0		35.0				
Perfluoropentanoic acid (PFPeA)	1.0917 0.9809	1.0387 0.8521	1.0231	1.0365	1.0593	AveID		1.0117			7.7		35.0				
Perfluorobutanesulfonic acid (PFBS)	1.5156 1.3726	1.5883 1.0823	1.5260	1.5615	1.4952	AveID		1.4488			12.1		50.0				
4:2 FTS	0.8028 0.8329	0.8776 0.7565	0.9173	0.8930	0.9234	AveID		0.8576			7.3		35.0				
Perfluorohexanoic acid (PFHxA)	1.0307 1.0140	1.0192 0.8617	1.1098	0.9634	1.0159	AveID		1.0021			7.5		35.0				
Perfluoroheptanoic acid (PFHpA)	1.0661 1.0639	1.0443 0.9912	1.0910	1.1151	1.0955	AveID		1.0667			3.8		35.0				
Perfluorohexanesulfonic acid (PFHxS)	1.3453 1.0956	1.1672 0.9547	1.0991	1.0770	1.0892	AveID		1.1183			10.6		35.0				
6:2FTS	0.9929 0.9567	0.9986 0.8127	1.0208	1.0665	1.0301	AveID		0.9826			8.4		35.0				
Perfluorooctanoic acid (PFOA)	1.1163 1.0435	1.0985 0.9650	1.0981	1.0528	1.1069	AveID		1.0688			5.0		35.0				
Perfluoroheptanesulfonic Acid (PFHpS)	1.1300 1.1423	1.1040 0.9460	1.1823	1.2186	1.2425	AveID		1.1380			8.6		50.0				
Perfluorononanoic acid (PFNA)	0.9157 0.9945	1.0041 0.9653	0.9902	1.0349	0.9865	AveID		0.9844			3.7		35.0				
Perfluorooctanesulfonic acid (PFOS)	0.9826 1.0841	0.9946 1.0380	1.0673	1.0435	1.0983	AveID		1.0441			4.2		35.0				
Perfluorooctane Sulfonamide (FOSA)	1.0236 0.9181	0.9969 0.7809	1.0375	1.0553	1.0045	AveID		0.9739			9.8		35.0				
8:2FTS	0.9974 0.9619	1.0318 0.8177	0.9774	0.9658	1.0280	AveID		0.9686			7.5		35.0				
Perfluorodecanoic acid (PFDA)	0.9527 0.9435	0.9551 0.9123	1.0231	0.9696	0.9748	AveID		0.9616			3.5		35.0				
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	0.9772 1.0837	1.0141 1.1034	1.0431	1.0831	1.0346	AveID		1.0485			4.3		35.0				
Perfluorodecanesulfonic acid (PFDS)	0.5308 0.6659	0.5845 0.6136	0.6273	0.6492	0.6764	AveID		0.6211			8.2		50.0				
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.7733 1.0107	0.9106 1.0146	0.9934	0.9650	1.0332	AveID		0.9573			9.5		35.0				
Perfluoroundecanoic acid (PFUnA)	1.3028 1.0477	1.0053 0.9907	1.0316	1.0479	1.0205	AveID		1.0638			10.1		35.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897  
 SDG No.: \_\_\_\_\_  
 Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N  
 Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
MeFOSA	0.8959 0.9843	0.8807 0.9871	0.9234	0.9801	1.0175	AveID		0.9527			5.5		35.0				
Perfluorododecanoic acid (PFDoA)	0.9197 0.9635	0.9758 0.8736	0.9812	0.9494	0.9662	AveID		0.9471			4.0		35.0				
N-EtFOSA-M	0.9574 1.0081	0.9585 0.9961	1.0208	1.0371	1.0699	AveID		1.0069			4.1		35.0				
Perfluorotridecanoic Acid (PFTriA)	0.9954 0.9857	0.9524 0.8897	0.9569	0.9181	0.9892	AveID		0.9553			4.1		50.0				
Perfluorotetradecanoic acid (PFTeA)	2.9098 2.3545	2.5585 1.9253	2.5302	2.4376	2.4541	AveID		2.4529			11.9		50.0				
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++ 1.0712	1.8741 0.9789	1.2373	1.0295	1.0684	L2ID	0.8534	1.0271						0.9980		0.9900	
Perfluoro-n-octadecanoic acid (PFODA)	1.2240 1.1748	1.1251 1.0784	1.1343	1.0961	1.1581	AveID		1.1415			4.3		50.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171897/3	2017.06.30CURVE_003.d
Level 2	IC 320-171897/4	2017.06.30CURVE_004.d
Level 3	IC 320-171897/5	2017.06.30CURVE_005.d
Level 4	IC 320-171897/6	2017.06.30CURVE_006.d
Level 5	IC 320-171897/7	2017.06.30CURVE_007.d
Level 6	IC 320-171897/8	2017.06.30CURVE_008.d
Level 7	IC 320-171897/9	2017.06.30CURVE_009.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	Ave	12650592 11990780	13439977 11466763	13144582	12875701	14618572	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C5-PFPeA	Ave	9658138 8443620	9824287 7676398	9725113	9440896	10474645	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFHxA	Ave	8654673 8140933	9326070 7723101	8841668	9400080	10412331	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C4-PFHpA	Ave	8343160 7221784	8600127 6201515	8546923	8230907	9003739	50.0 50.0	50.0 50.0	50.0	50.0	50.0
18O2 PFHxS	Ave	11111328 10274859	11594960 9901933	11413519	11544384	13042703	47.3 47.3	47.3 47.3	47.3	47.3	47.3
M2-6:2FTS	Ave	3670352 3594466	4015150 3590082	3672136	3919216	4134755	47.5 47.5	47.5 47.5	47.5	47.5	47.5
13C4 PFOA	Ave	8198729 6932607	8584877 6057508	8118667	8219585	8648031	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C4 PFOS	Ave	8524656 8081310	8997837 7758031	8417651	8551531	9989477	47.8 47.8	47.8 47.8	47.8	47.8	47.8
13C5 PFNA	Ave	6661733 5798959	6890078 5230889	6434869	6489979	7294237	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C8 FOSA	Ave	13469851 12953173	14576781 11863819	13750681	13937046	15641144	50.0 50.0	50.0 50.0	50.0	50.0	50.0
M2-8:2FTS	Ave	3086507 2918098	3396492 2962805	3326188	3289592	3517949	47.9 47.9	47.9 47.9	47.9	47.9	47.9
13C2 PFDA	Ave	6015051 5347422	6364543 4828868	5830770	6217587	6797846	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d3-NMeFOSAA	Ave	2180334 2286992	2385307 2266735	2294062	2335329	2884281	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d5-NEtFOSAA	Ave	2464927 2112166	2785878 2024301	2422232	2577116	2805423	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFUnA	Ave	4830967 4026905	5300048 3592980	4832025	4676014	5435756	50.0 50.0	50.0 50.0	50.0	50.0	50.0



FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
d-N-MeFOSA-M	Ave	3488020 3643905	3851513 3671952	3669826	3631518	4431681	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFDoA	Ave	4545636 4572408	5041064 4447602	4953018	5075363	5742195	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d-N-EtFOSA-M	Ave	3278797 3663378	3575012 3721663	3428540	3410024	4266080	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2-PFTeDA	Ave	10606019 9868130	11377908 9723473	10548900	10626456	12047050	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2-PFHxDA	Ave	5912668 5659675	6130461 5465319	5959624	5991703	6886673	50.0 50.0	50.0 50.0	50.0	50.0	50.0

Curve Type Legend:

Ave = Average

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-171897/3	2017.06.30CURVE_003.d
Level 2	IC 320-171897/4	2017.06.30CURVE_004.d
Level 3	IC 320-171897/5	2017.06.30CURVE_005.d
Level 4	IC 320-171897/6	2017.06.30CURVE_006.d
Level 5	IC 320-171897/7	2017.06.30CURVE_007.d
Level 6	IC 320-171897/8	2017.06.30CURVE_008.d
Level 7	IC 320-171897/9	2017.06.30CURVE_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7				LVL 6	LVL 7			
Perfluorobutanoic acid (PFBA)		AveID	115888 21413074	250534 34504872	1199054	4875595	14314560	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoropentanoic acid (PFPeA)		AveID	105435 16564174	204095 26164239	994988	3914008	11095345	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorobutanesulfonic acid (PFBS)		AveID	157362 26357188	344194 40057961	1627552	6737969	18223176	0.442 88.4	0.884 177	4.42	17.7	44.2
4:2 FTS		AveID	28968 5886874	69285 10681185	331160	1376350	3753539	0.467 93.4	0.934 187	4.67	18.7	46.7
Perfluorohexanoic acid (PFHxA)		AveID	89201 16510571	190110 26618514	981263	3622300	10578131	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoroheptanoic acid (PFHpA)		AveID	88947 15366143	179616 24588362	932481	3671393	9863696	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorohexanesulfonic acid (PFHxS)		AveID	143793 21657467	260363 36375944	1206704	4784038	13665062	0.455 91.0	0.910 182	4.55	18.2	45.5
6:2FTS		AveID	36367 6862996	80023 11645419	374079	1668417	4250388	0.474 94.8	0.948 190	4.74	19.0	47.4
Perfluorooctanoic acid (PFOA)		AveID	91526 14468380	188610 23382806	891543	3461508	9572634	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	95924 18384762	173748 29234315	991058	4150773	12359803	0.476 95.2	0.952 190	4.76	19.0	47.6
Perfluorononanoic acid (PFNA)		AveID	60999 11533790	138371 20197684	637157	2686511	7196023	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorooctanesulfonic acid (PFOS)		AveID	81310 17007951	173748 31268915	872137	3464853	10649701	0.464 92.8	0.928 186	4.64	18.6	46.4
Perfluorooctane Sulfonamide (FOSA)		AveID	137881 23785437	290646 37058119	1426651	5883358	15711533	0.500 100	1.00 200	5.00	20.0	50.0
8:2FTS		AveID	30784 5613578	70092 9690733	325113	1270850	3616423	0.479 95.8	0.958 192	4.79	19.2	47.9
Perfluorodecanoic acid (PFDA)		AveID	57303 10090700	121574 17620826	596562	2411538	6626313	0.500 100	1.00 200	5.00	20.0	50.0

FORM VI  
 LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 171897

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 06/30/2017 09:20 Calibration End Date: 06/30/2017 10:08 Calibration ID: 32123

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	21307 4956785	48381 10004810	239300	1011725	2983962	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorodecanesulfonic acid (PFDS)		AveID	45625 10852456	106063 19199757	532486	2239202	6813406	0.482 96.4	0.964 193	4.82	19.3	48.2
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	19061 4269496	50739 8215650	240619	994761	2898535	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoroundecanoic acid (PFUnA)		AveID	62936 8438025	106562 14238431	498452	1960043	5547021	0.500 100	1.00 200	5.00	20.0	50.0
MeFOSA		AveID	31250 7173099	67837 14498749	338879	1423741	4509328	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorododecanoic acid (PFDoA)		AveID	41804 8811380	98386 15541758	485978	1927447	5547939	0.500 100	1.00 200	5.00	20.0	50.0
N-EtFOSA-M		AveID	31391 7385820	68535 14828836	349996	1414625	4564333	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorotridecanoic Acid (PFTriA)		AveID	45247 9013731	96019 15827473	473936	1863811	5679976	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorotetradecanoic acid (PFTeA)		AveID	132269 21531693	257950 34252041	1253223	4948592	14091657	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	+++++ 9795559	188947 17414582	612820	2090025	6134934	+++++ 100	1.00 200	5.00	20.0	50.0
Perfluoro-n-octadecanoic acid (PFODA)		AveID	55638 10742900	113433 19184310	561820	2225209	6650048	0.500 100	1.00 200	5.00	20.0	50.0

Curve Type Legend:

AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_003.d  
 Lims ID: IC L1 Full  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 30-Jun-2017 09:20:32 ALS Bottle#: 28 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L1-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:48:30 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

First Level Reviewer: westendorfc Date: 30-Jun-2017 10:45:09

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.541	1.541	0.0	1.000	115888	0.5064	101	58.2	
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.541	0.0		12650592	49.1	98.2	99881	
D 3 13C5-PFPeA	267.90 > 223.00	1.751	1.748	0.003		9658138	51.8	104	58007	
4 Perfluoropentanoic acid	262.90 > 219.00	1.751	1.750	0.001	1.000	105435	0.5395	108	56.3	
D 47 13C3-PFBS	301.90 > 83.00	1.769	1.768	0.001		249862	NC		6549	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.778	1.775	0.003	1.000	157362	0.4624	105	110	
	298.90 > 99.00	1.769	1.775	-0.006	0.995	63226	2.49(0.00-0.00)	105	101	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.969	1.969	0.0	1.000	28968	0.4371	93.6	1924	
D 7 13C2 PFHxA	315.00 > 270.00	2.014	2.012	0.002		8654673	48.5	96.9	21371	
6 Perfluorohexanoic acid	313.00 > 269.00	2.014	2.012	0.002	1.000	89201	0.5143	103	168	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.332	2.331	0.001	1.000	88947	0.4997	99.9	140	
D 9 13C4-PFHpA	367.00 > 322.00	2.332	2.331	0.001		8343160	52.0	104	33047	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.348	2.346	0.002	1.000	143793	0.5474	120	151	
D 11 18O2 PFHxS	403.00 > 84.00	2.348	2.346	0.002		11111328	46.6	98.6	35648	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.659	2.656	0.003	3670352	45.9	96.6	11305	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.659	2.657	0.002	1.000	36367	0.4790	101	1211
* 62 13C2-PFOA	415.00	> 370.00	2.681	2.679	0.002		8409953	50.0		25886
D 14 13C4 PFOA	417.00	> 372.00	2.688	2.682	0.006		8198729	52.4	105	22555
15 Perfluorooctanoic acid	413.00	> 369.00	2.688	2.683	0.005	1.000	91526	0.5223	104	25.0
	413.00	> 169.00	2.688	2.683	0.005	1.000	57358	1.60(0.90-1.10)	104	203
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.696	2.691	0.005	1.000	95924	0.4727	99.3	2159
D 18 13C4 PFOS	503.00	> 80.00	3.058	3.054	0.004		8524656	47.3	98.9	13576
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.058	3.057	0.001	1.000	81310	0.4367	94.1	606
	499.00	> 99.00	3.058	3.057	0.001	1.000	17386	4.68(0.90-1.10)	94.1	152
D 19 13C5 PFNA	468.00	> 423.00	3.058	3.057	0.001		6661733	52.0	104	14406
20 Perfluorononanoic acid	463.00	> 419.00	3.058	3.057	0.001	1.000	60999	0.4651	93.0	179
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.383	3.390	-0.007	1.000	137881	0.5256	105	2040
D 21 13C8 FOSA	506.00	> 78.00	3.383	3.390	-0.007		13469851	49.0	98.0	236284
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.411	3.407	0.004	1.000	30784	0.4932	103	1432
D 26 M2-8:2FTS	529.00	> 509.00	3.411	3.407	0.004		3086507	46.0	96.0	24483
D 23 13C2 PFDA	515.00	> 470.00	3.420	3.417	0.003		6015051	50.8	102	29403
24 Perfluorodecanoic acid	513.00	> 469.00	3.429	3.419	0.010	1.000	57303	0.4954	99.1	394
D 27 d3-NMeFOSAA	573.00	> 419.00	3.578	3.575	0.003		2180334	45.9	91.8	8894
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.589	3.579	0.010	1.003	21307	0.4660	93.2	147
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.737	3.732	0.005	1.000	45625	0.4119	85.5	1418
D 32 d5-NEtFOSAA	589.00	> 419.00	3.747	3.742	0.005		2464927	50.2	100	5498
D 30 13C2 PFUnA	565.00	> 520.00	3.757	3.750	0.007		4830967	51.7	103	18871
31 Perfluoroundecanoic acid	563.00	> 519.00	3.757	3.750	0.007	1.000	62936	0.6123	122	222
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.757	3.750	0.007	1.003	19061	0.4039	80.8	408

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.886	3.890	-0.004	3488020	46.3	92.5	536	
35 MeFOSA	512.00	> 169.00	3.886	3.895	-0.009	1.000	31250	0.4702	94.0	972
D 36 13C2 PFDaA	615.00	> 570.00	4.061	4.045	0.016	4545636	46.3	92.6	15829	
37 Perfluorododecanoic acid	613.00	> 569.00	4.061	4.045	0.016	1.000	41804	0.4855	97.1	48.7
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.070	4.077	-0.007	3278797	45.3	90.6	5763	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.079	4.086	-0.007	1.000	31391	0.4754	95.1	864
41 Perfluorotridecanoic acid	663.00	> 619.00	4.325	4.316	0.009	1.000	45247	0.5210	104	17.2
D 43 13C2-PFTeDA	715.00	> 670.00	4.572	4.556	0.016	10606019	49.6	99.3	85824	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.572	4.557	0.015	1.000	132269	0.5931	119	12.8
	713.00	> 169.00	4.564	4.557	0.007	0.998	17865	7.40(0.00-0.00)	119	378
D 44 13C2-PFHxDA	815.00	> 770.00	4.992	4.969	0.023	5912668	49.3	98.5	11862	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.992	4.972	0.020	1.000	126956	0.5287	106	31.7
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.351	5.324	0.027	1.000	55638	0.5361	107	26.9

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L1\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_003.d

Injection Date: 30-Jun-2017 09:20:32

Instrument ID: A8\_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 28

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

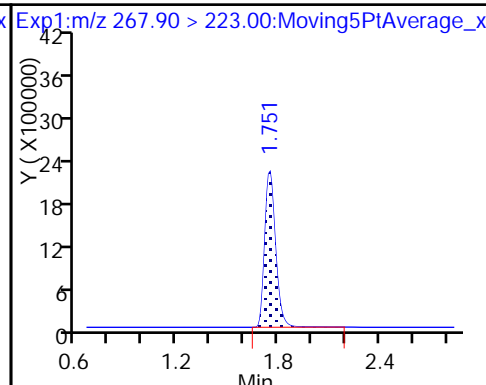
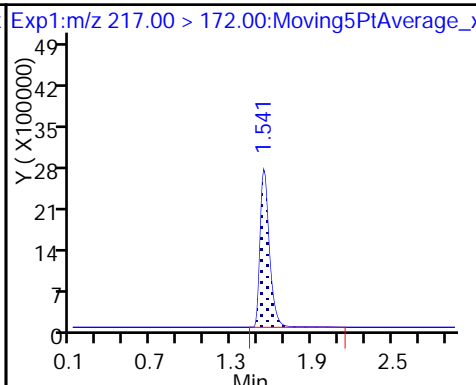
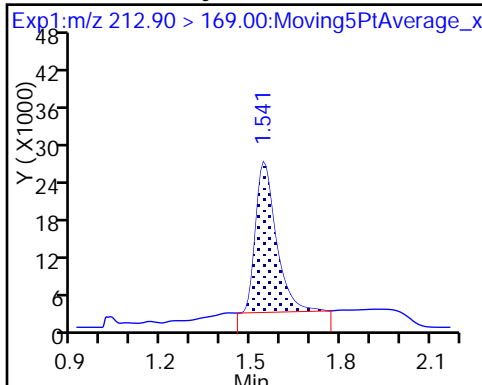
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

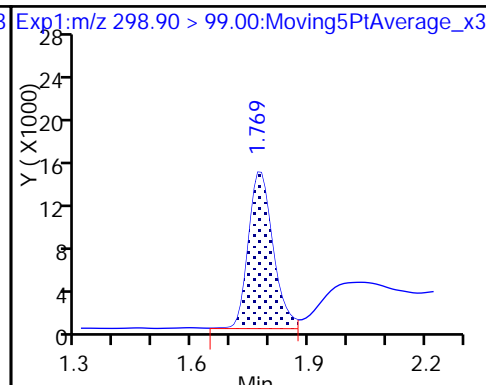
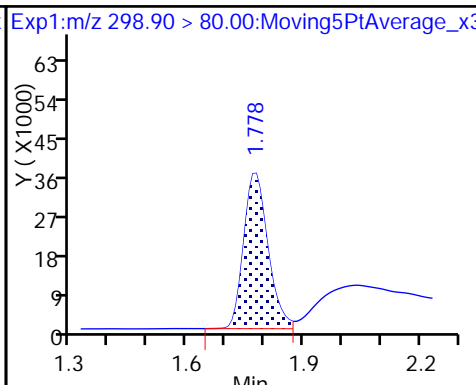
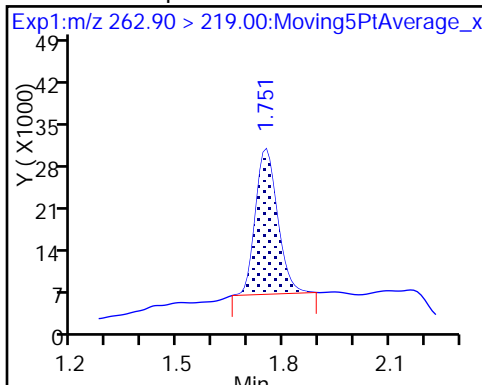
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

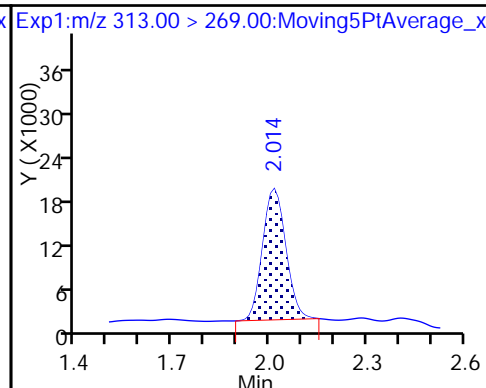
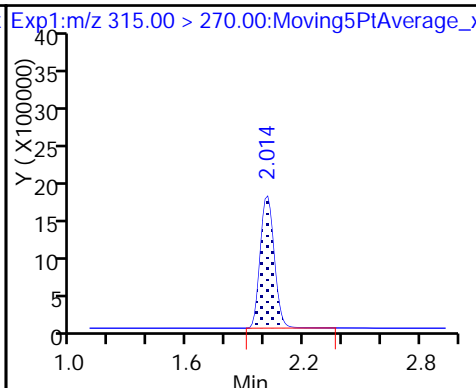
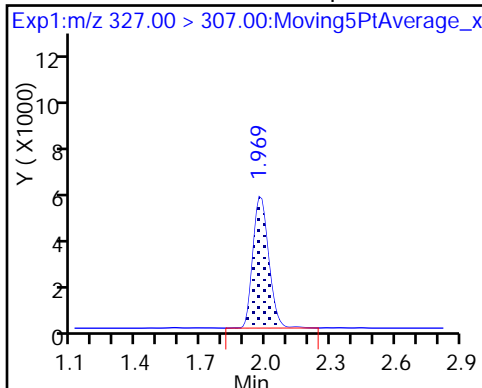
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

De 7 13C2 PFHxA

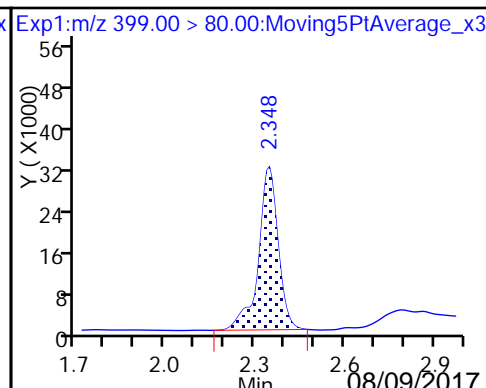
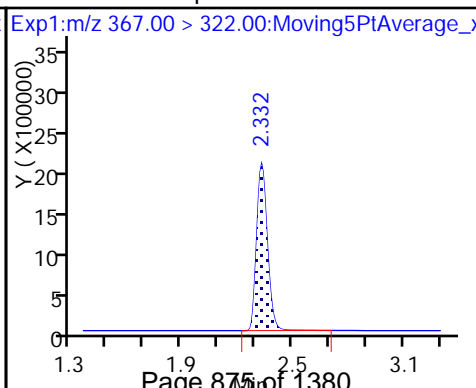
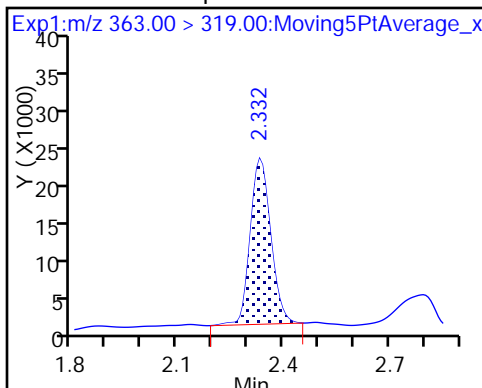
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

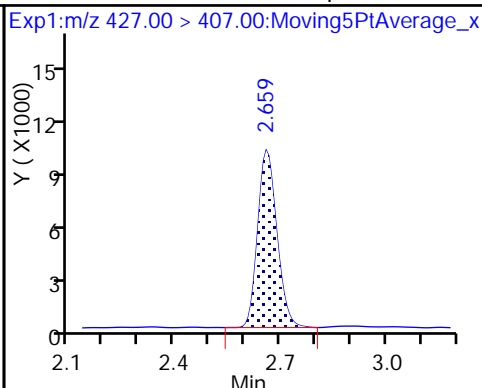
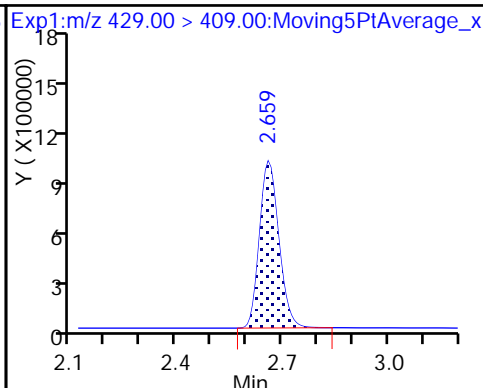
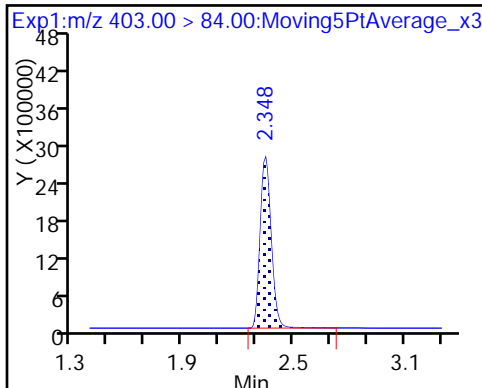
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

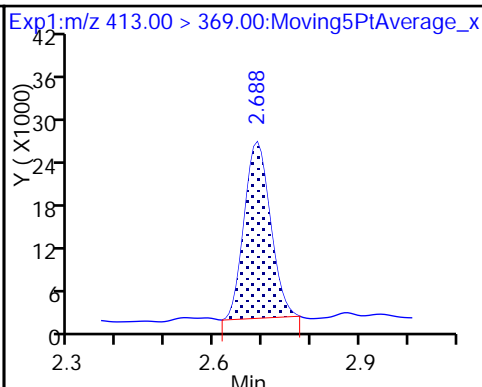
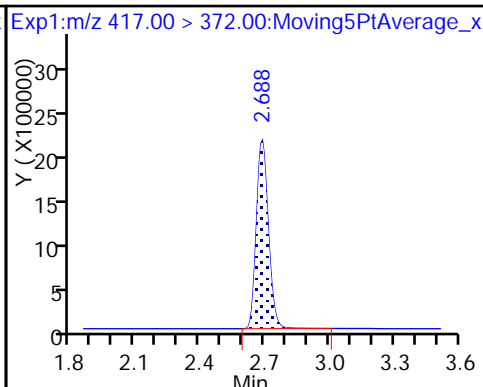
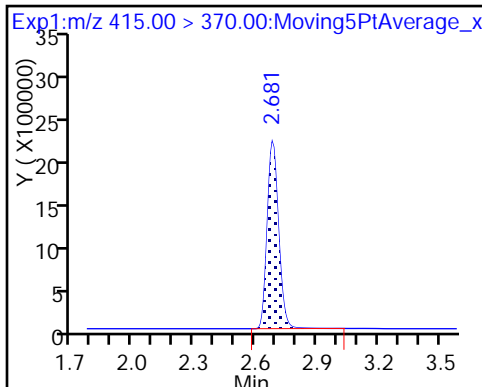
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

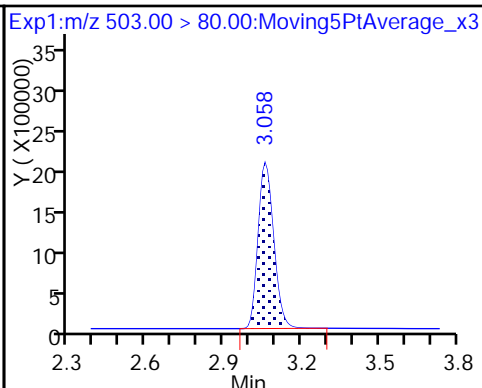
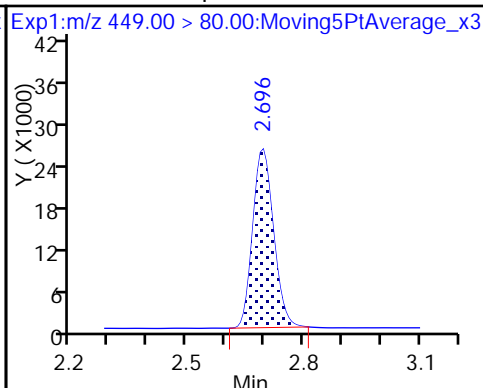
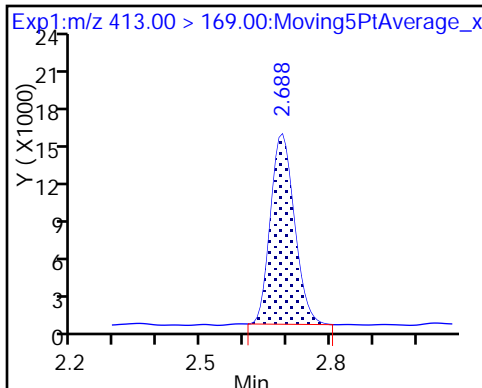
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

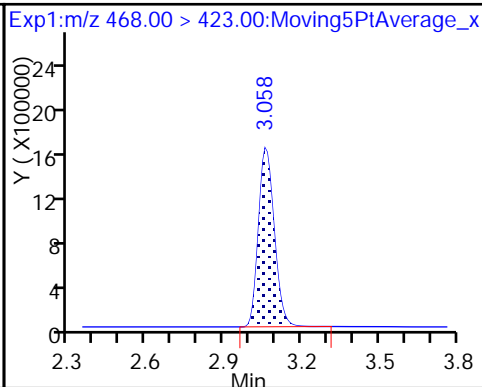
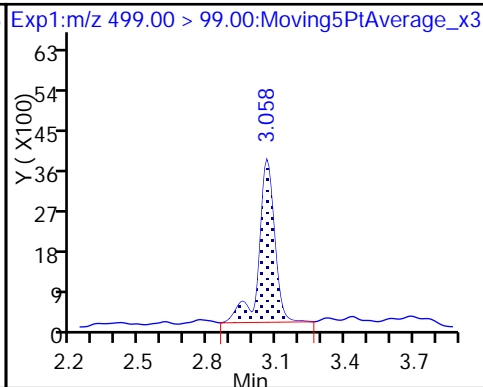
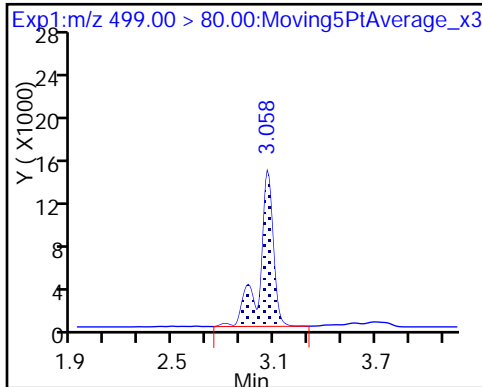
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

D 19 13C5 PFNA

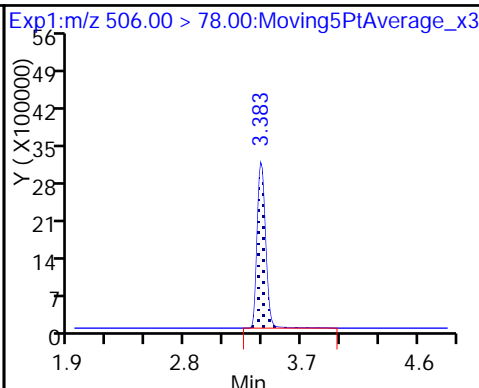
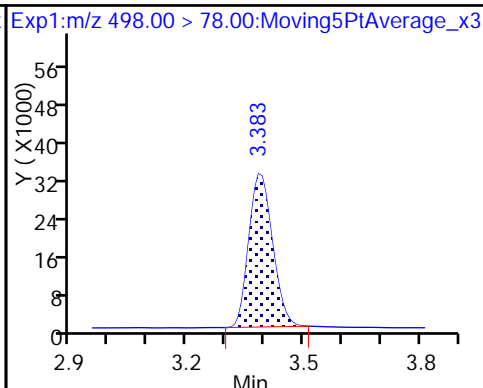
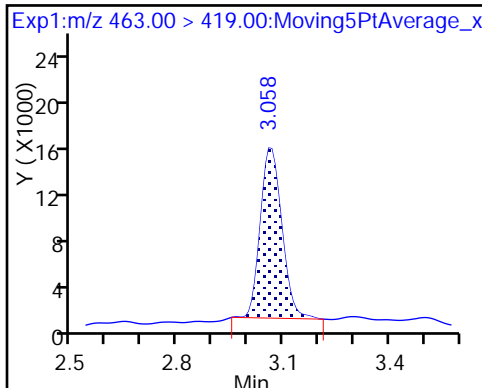




20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

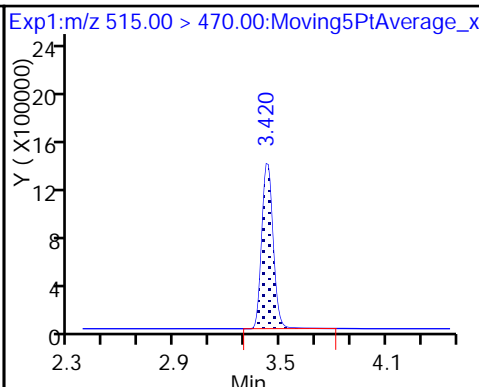
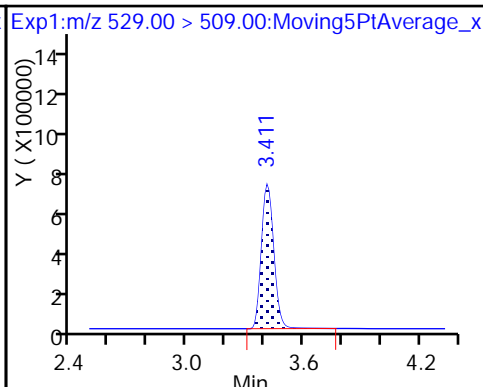
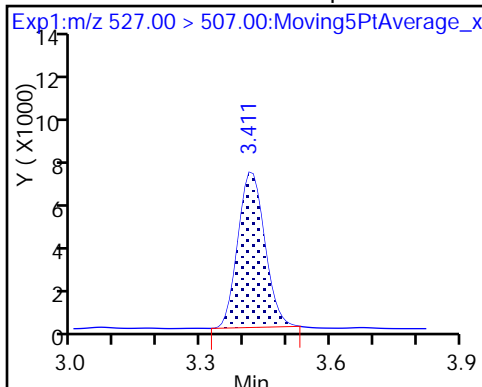
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

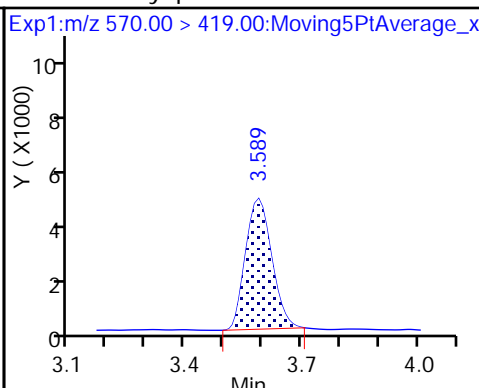
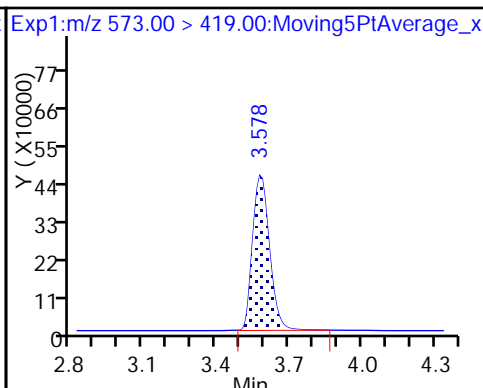
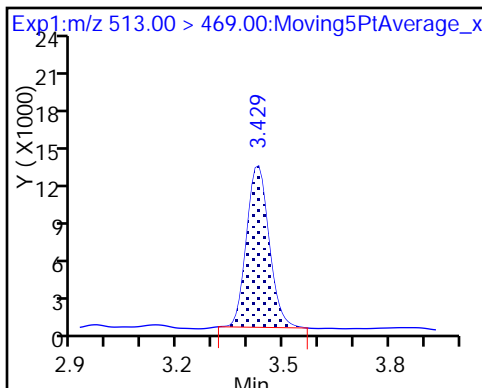
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

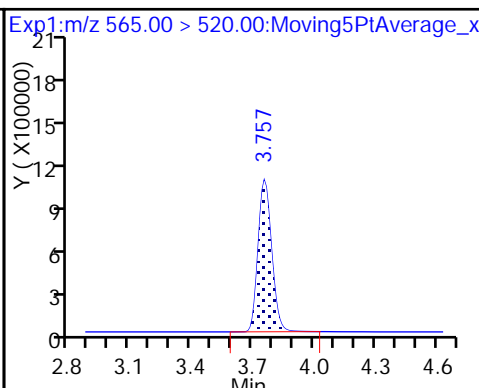
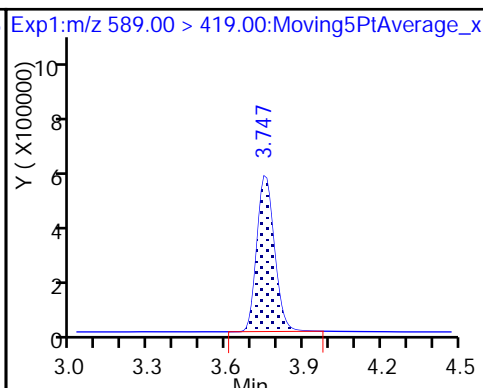
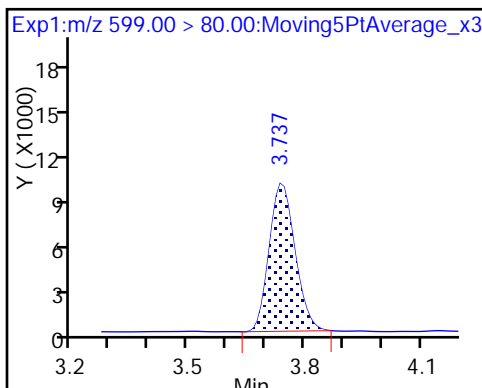
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

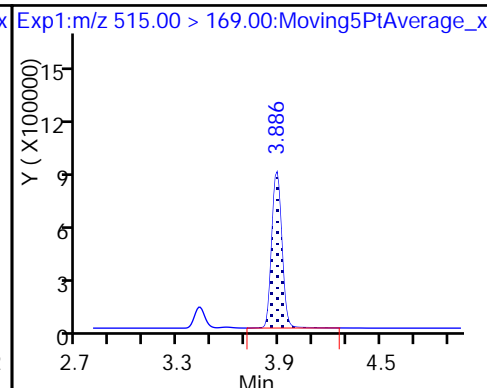
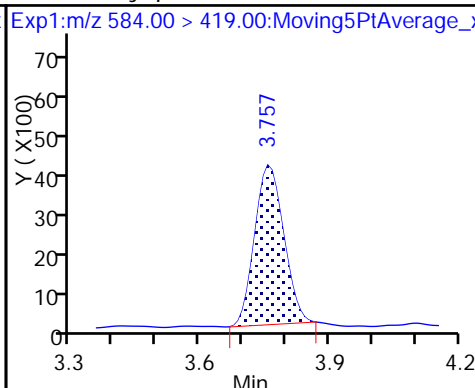
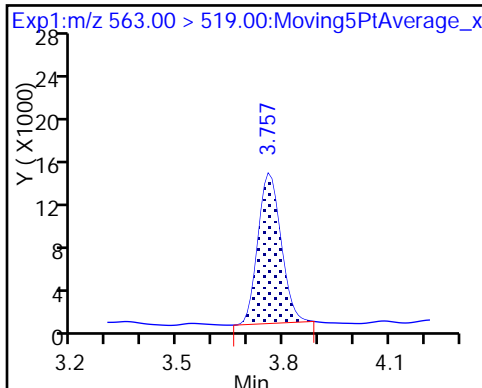
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

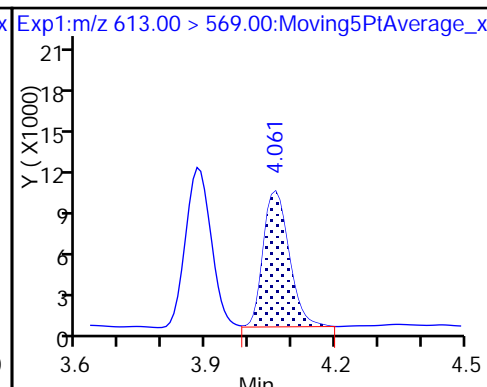
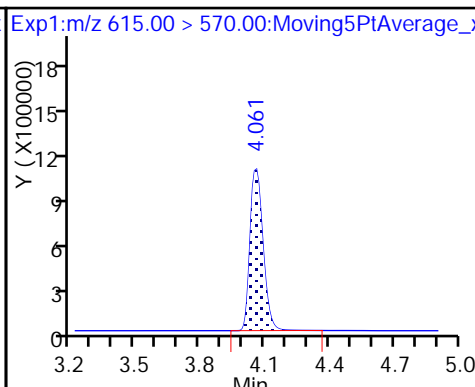
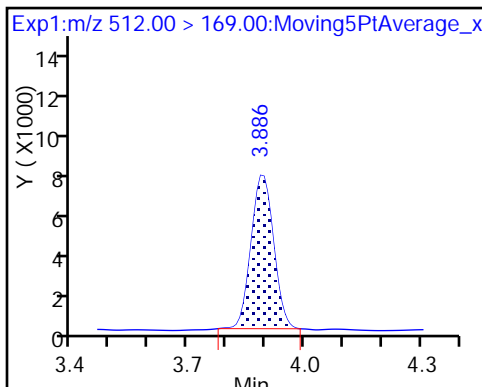
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

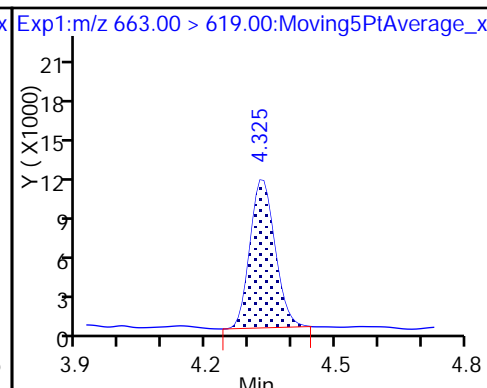
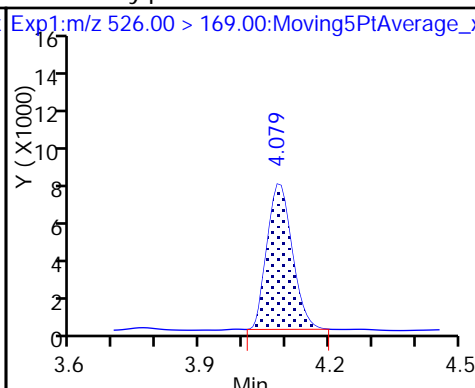
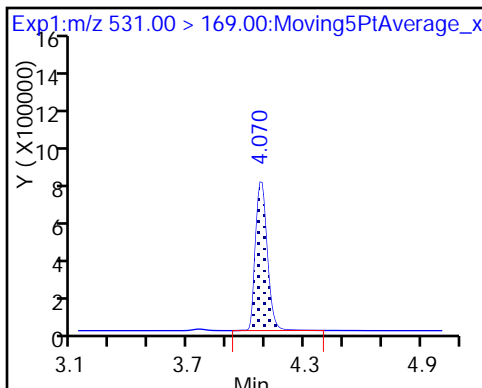
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

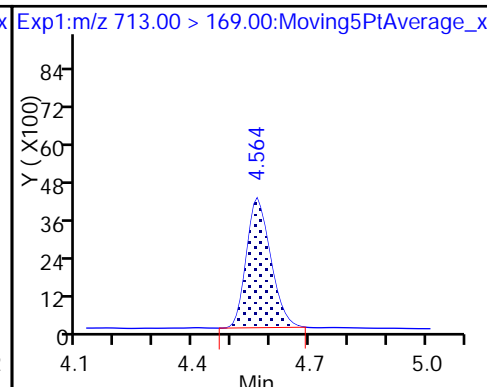
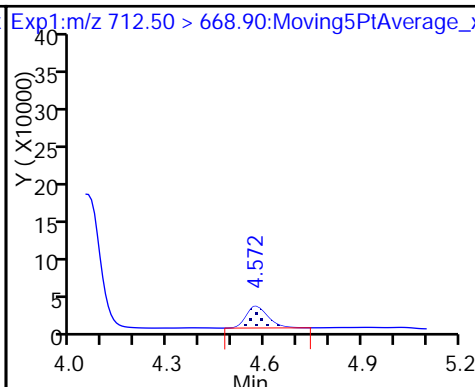
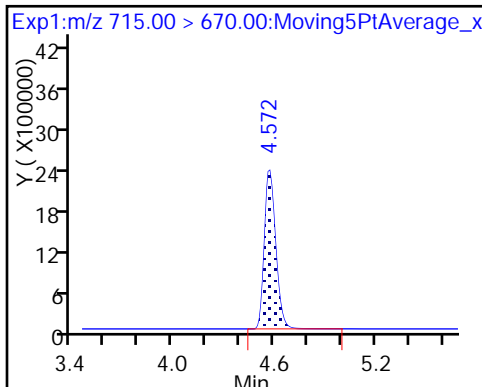
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

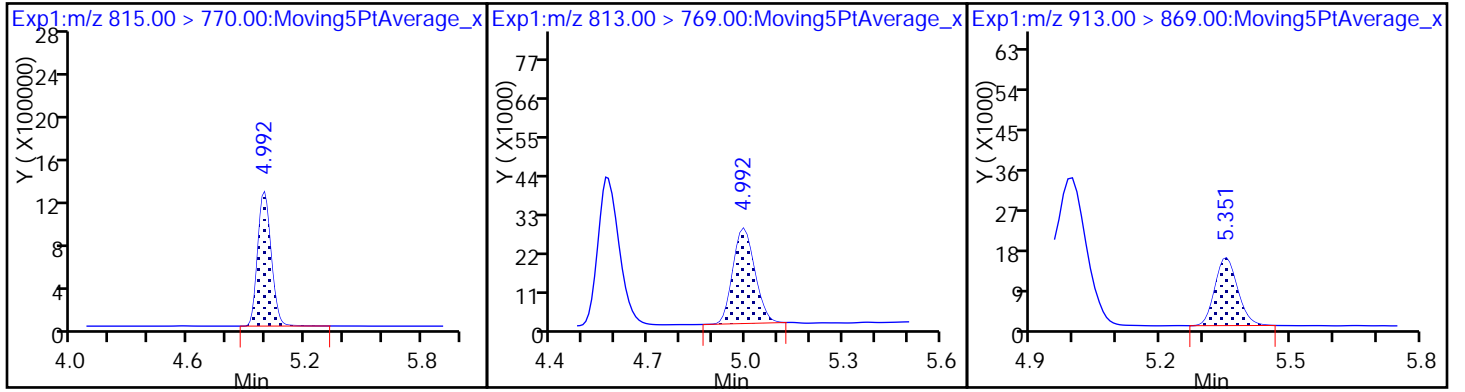
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_004.d  
 Lims ID: IC L2 Full  
 Client ID:  
 Sample Type: IC Calib Level: 2  
 Inject. Date: 30-Jun-2017 09:27:30 ALS Bottle#: 29 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L2-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:48:35 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

First Level Reviewer: westendorfc Date: 30-Jun-2017 10:45:41

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.543	1.541	0.002	13439977	52.2		104	21798	
2 Perfluorobutyric acid	212.90 > 169.00	1.543	1.541	0.002	1.000	250534	1.03	103	117	
D 3 13C5-PFPeA	267.90 > 223.00	1.753	1.748	0.005	9824287	52.7		105	29613	
4 Perfluoropentanoic acid	262.90 > 219.00	1.753	1.750	0.003	1.000	204095	1.03	103	110	
D 47 13C3-PFBS	301.90 > 83.00	1.771	1.768	0.003	262276	NC			6224	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.780	1.775	0.005	1.000	344194	0.9692	110	212	
	298.90 > 99.00	1.780	1.775	0.005	1.000	137462	2.50(0.00-0.00)	110	221	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.971	1.969	0.002	1.000	69285	0.9557	102	2819	
6 Perfluorohexanoic acid	313.00 > 269.00	2.016	2.012	0.004	1.000	190110	1.02	102	324	
D 7 13C2 PFHxA	315.00 > 270.00	2.016	2.012	0.004	9326070	52.2		104	13642	
D 9 13C4-PFHpA	367.00 > 322.00	2.337	2.331	0.006	8600127	53.6		107	34686	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.337	2.331	0.006	1.000	179616	0.9789	97.9	253	
D 11 18O2 PFHxS	403.00 > 84.00	2.345	2.346	-0.001	11594960	48.7		103	31651	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.345	2.346	-0.001	1.000	260363	0.9498	104	256	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.656	2.656	0.0	4015150	50.2	106	14438	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.663	2.657	0.006	1.000	80023	0.9634	102	1941
* 62 13C2-PFOA	415.00	> 370.00	2.685	2.679	0.006		8730973	50.0		21332
D 14 13C4 PFOA	417.00	> 372.00	2.685	2.682	0.003		8584877	54.9	110	21016
15 Perfluorooctanoic acid	413.00	> 369.00	2.685	2.683	0.002	1.000	188610	1.03	103	47.1
	413.00	> 169.00	2.685	2.683	0.002	1.000	113405	1.66(0.90-1.10)	103	358
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.692	2.691	0.001	1.000	197848	0.9236	97.0	3515
D 18 13C4 PFOS	503.00	> 80.00	3.053	3.054	-0.001		8997837	49.9	104	356710
20 Perfluorononanoic acid	463.00	> 419.00	3.061	3.057	0.004	1.000	138371	1.02	102	384
D 19 13C5 PFNA	468.00	> 423.00	3.061	3.057	0.004		6890078	53.8	108	11310
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.061	3.057	0.004	1.000	173748	0.8841	95.3	1020
	499.00	> 99.00	3.053	3.057	-0.004	0.997	38713	4.49(0.90-1.10)	95.3	348
D 21 13C8 FOSA	506.00	> 78.00	3.386	3.390	-0.004		14576781	53.0	106	196121
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.386	3.390	-0.004	1.000	290646	1.02	102	4021
D 26 M2-8:2FTS	529.00	> 509.00	3.414	3.407	0.007		3396492	50.6	106	26511
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.414	3.407	0.007	1.000	70092	1.02	107	2027
D 23 13C2 PFDA	515.00	> 470.00	3.423	3.417	0.006		6364543	53.8	108	24356
24 Perfluorodecanoic acid	513.00	> 469.00	3.423	3.419	0.004	1.000	121574	0.99	99.3	748
D 27 d3-NMeFOSAA	573.00	> 419.00	3.581	3.575	0.006		2385307	50.2	100	10451
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.581	3.579	0.002	1.000	48381	0.9673	96.7	258
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.739	3.732	0.007	1.000	106063	0.9072	94.1	2588
D 32 d5-NEtFOSAA	589.00	> 419.00	3.749	3.742	0.007		2785878	56.7	113	7965
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.749	3.750	-0.001	1.000	50739	0.9513	95.1	1372
31 Perfluoroundecanoic acid	563.00	> 519.00	3.749	3.750	-0.001	1.000	106562	0.9450	94.5	392
D 30 13C2 PFUnA	565.00	> 520.00	3.749	3.750	-0.001		5300048	56.7	113	19941

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.888	3.890	-0.002	3851513	51.1	102	557	
35 MeFOSA	512.00	> 169.00	3.888	3.895	-0.007	1.000	67837	0.9244	92.4	2146
37 Perfluorododecanoic acid	613.00	> 569.00	4.044	4.045	-0.001	1.000	98386	1.03	103	106
D 36 13C2 PFDaA	615.00	> 570.00	4.044	4.045	-0.001		5041064	51.3	103	22559
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.072	4.077	-0.005		3575012	49.4	98.7	5985
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.080	4.086	-0.006	1.000	68535	0.9520	95.2	1687
41 Perfluorotridecanoic acid	663.00	> 619.00	4.317	4.316	0.001	1.000	96019	1.00	99.7	29.6
D 43 13C2-PFTeDA	715.00	> 670.00	4.557	4.556	0.001		11377908	53.2	106	41238
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.557	4.557	0.0	1.000	257950	1.04	104	32.8
	713.00	> 169.00	4.557	4.557	0.0	1.000	32997	7.82(0.00-0.00)	104	685
D 44 13C2-PFHxDA	815.00	> 770.00	4.972	4.969	0.003		6130461	51.1	102	11962
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.982	4.972	0.010	1.000	188947	0.99	99.4	40.1
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.329	5.324	0.005	1.000	113433	0.9856	98.6	47.3

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L2\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_004.d

Injection Date: 30-Jun-2017 09:27:30

Instrument ID: A8\_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 29

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

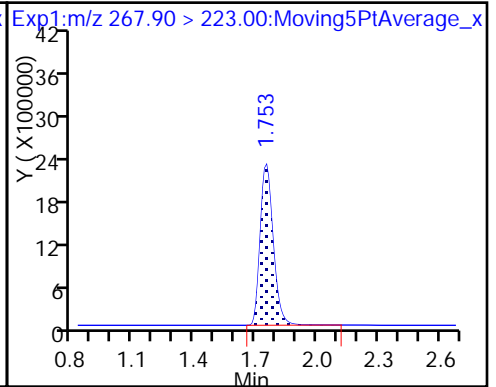
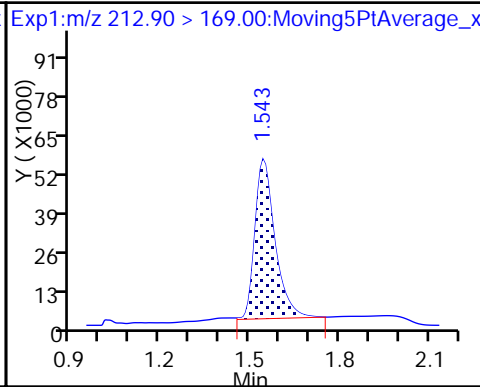
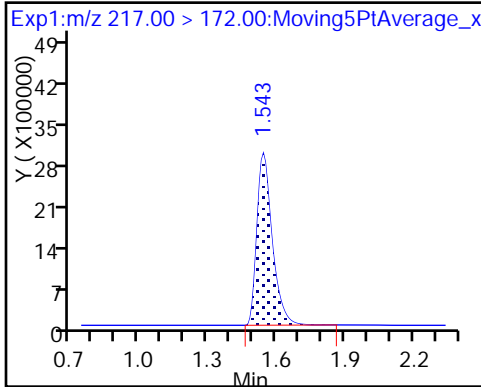
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

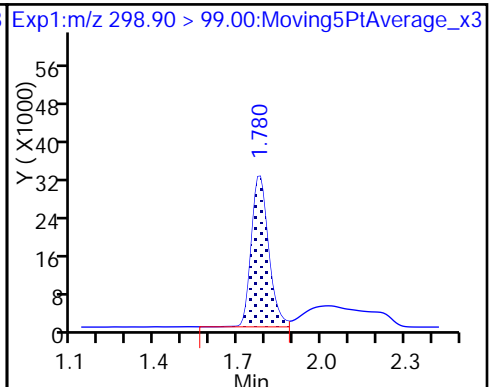
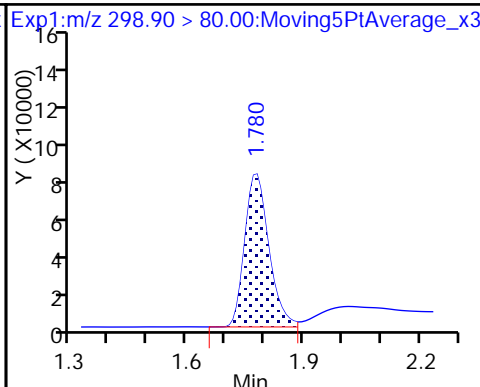
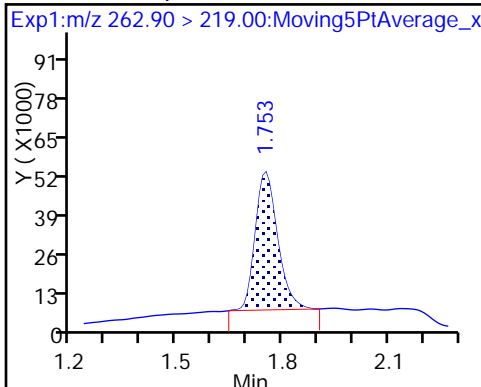
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

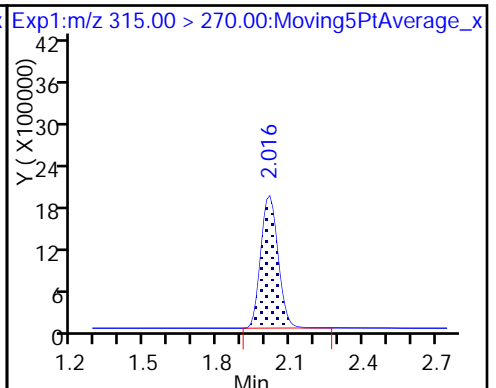
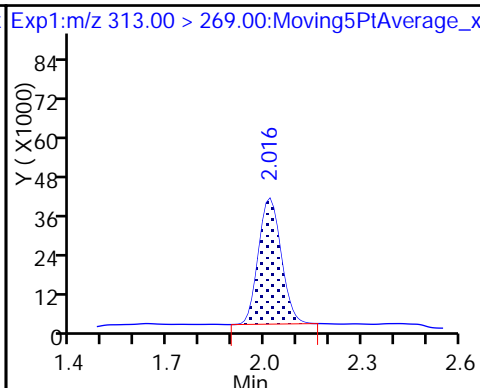
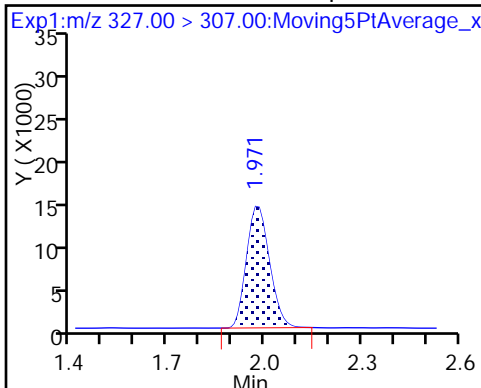
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

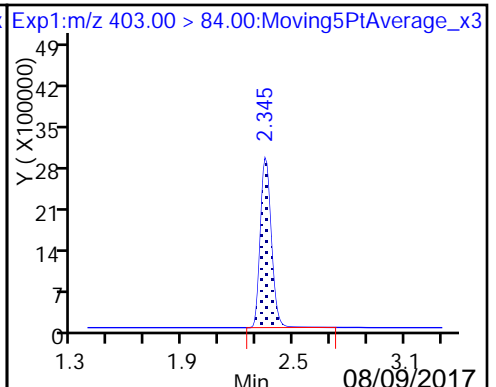
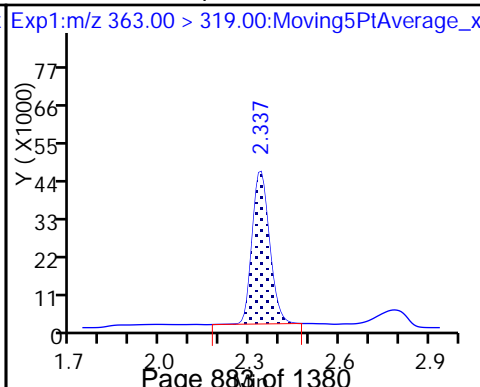
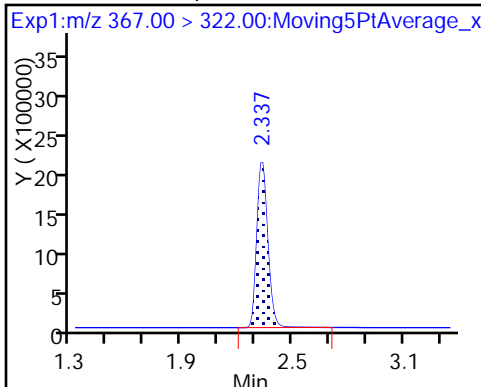
D 7 13C2 PFHxA



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

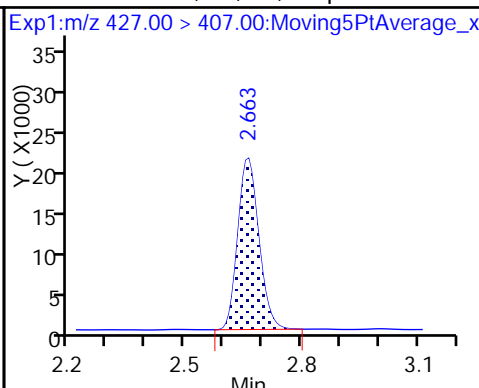
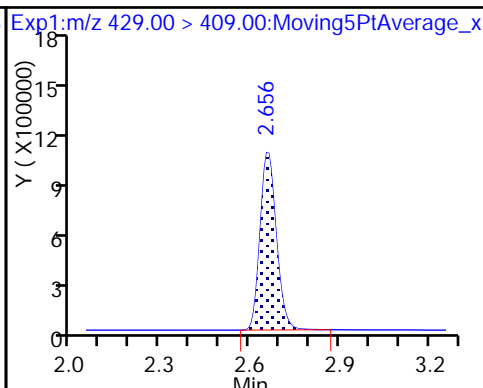
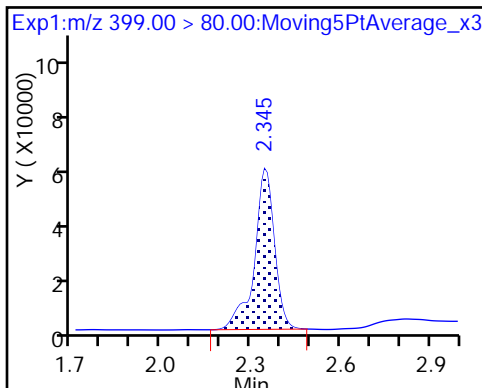
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

D 12 M2-6:2FTS

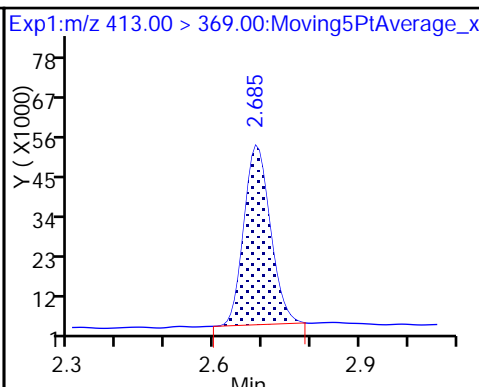
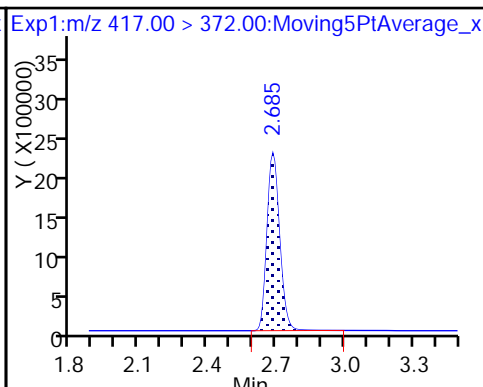
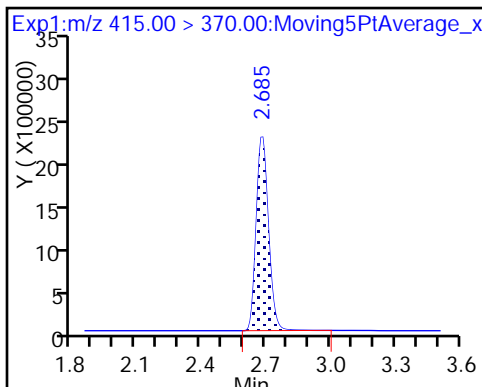
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

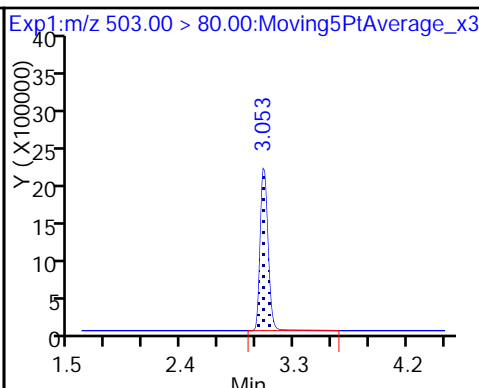
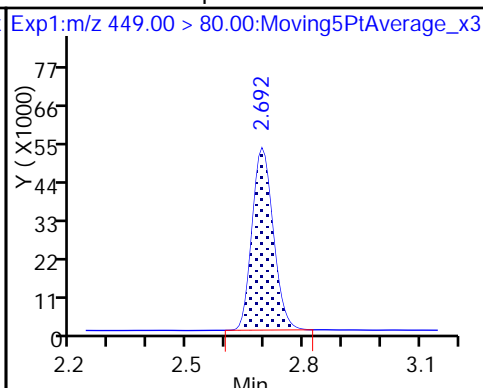
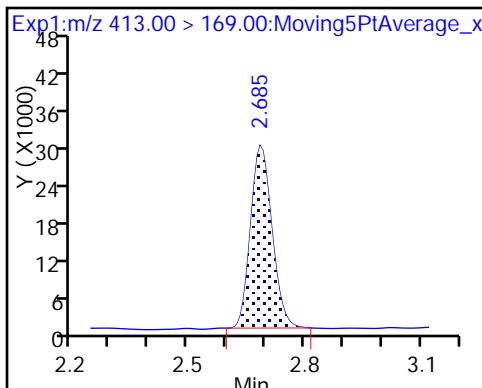
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

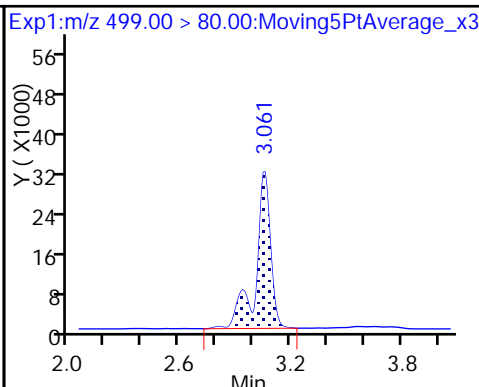
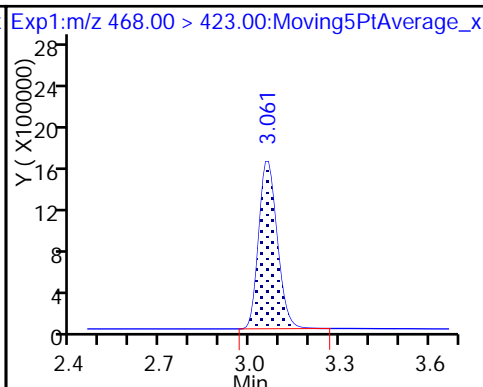
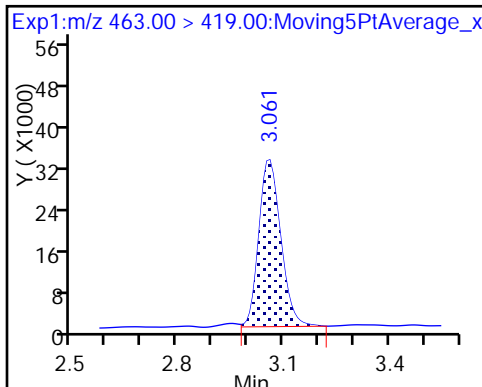
D 18 13C4 PFOS



20 Perfluorononanoic acid

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid

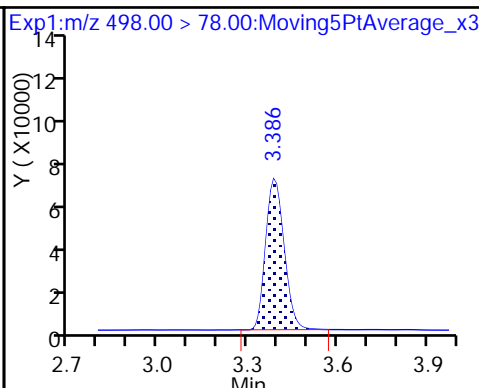
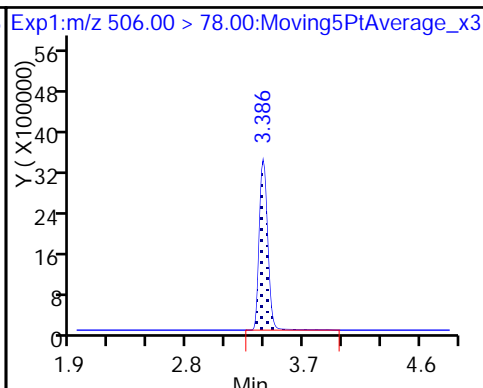
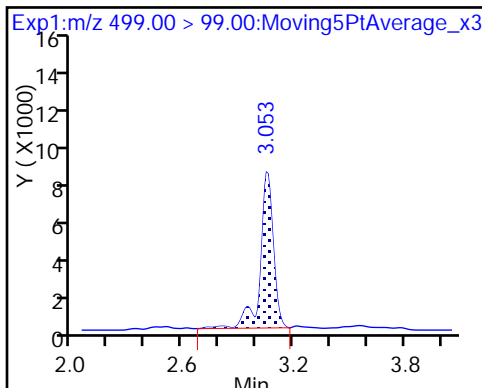




17 Perfluorooctane sulfonic acid

D 21 13C8 FOSA

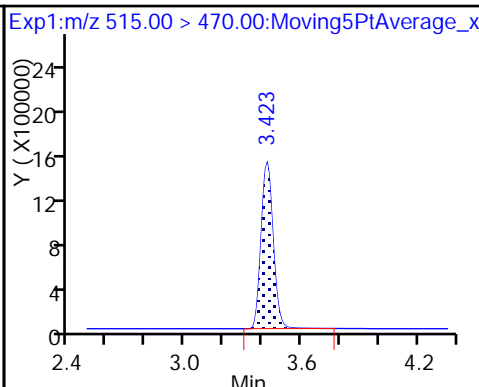
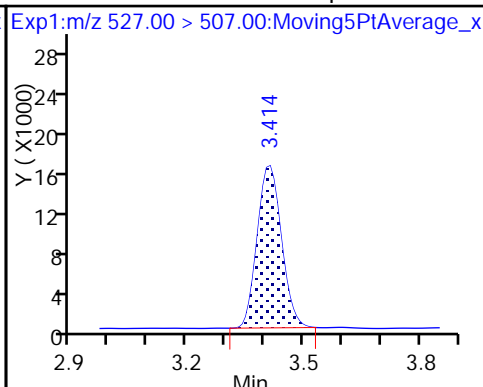
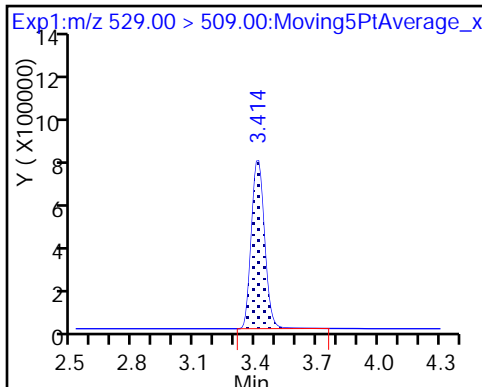
22 Perfluorooctane Sulfonamide



D 26 M2-8:2FTS

25 Sodium 1H,1H,2H,2H-perfluorodeca

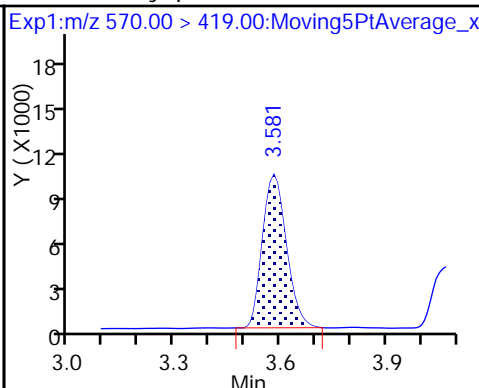
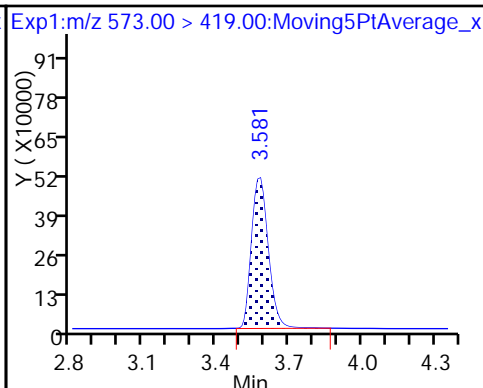
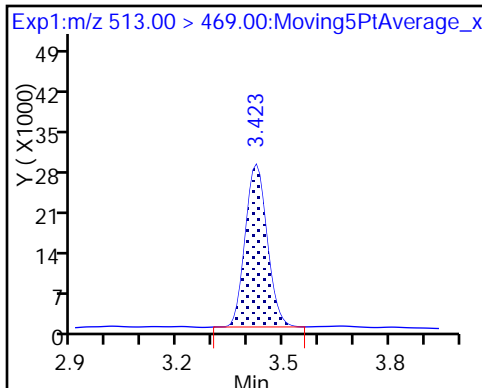
De23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

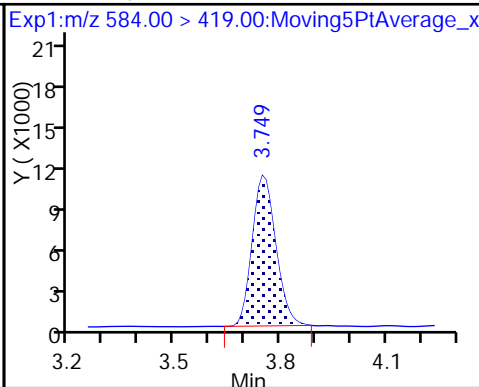
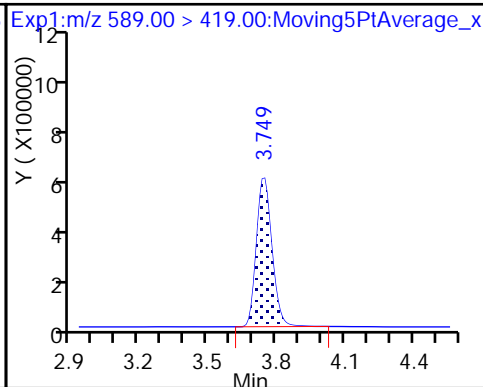
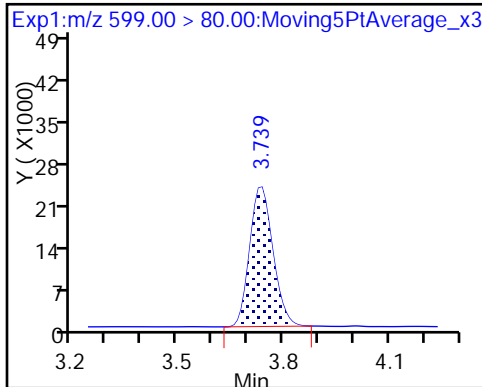
28 N-methyl perfluorooctane sulfonami

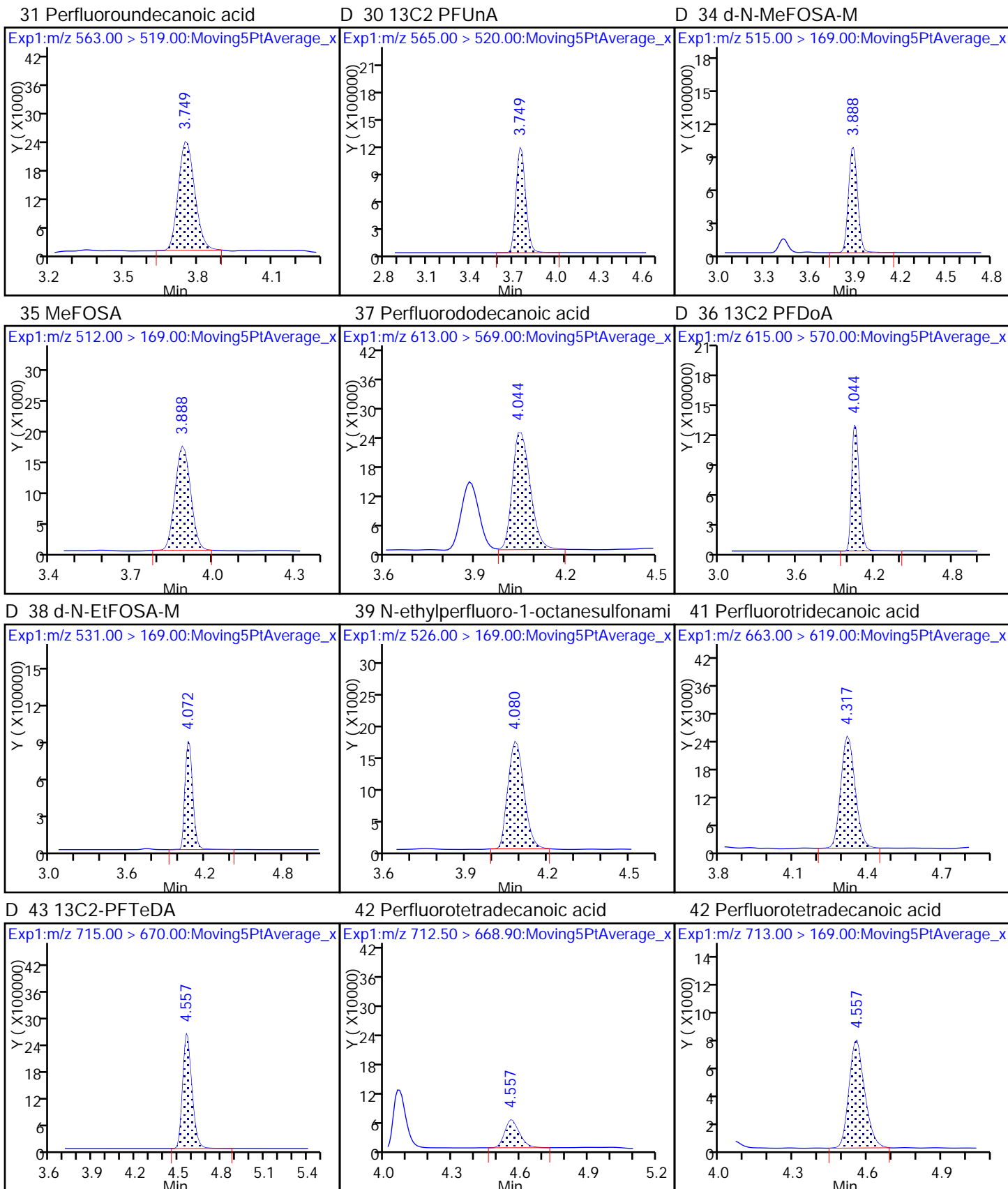


29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

33 N-ethyl perfluorooctane sulfonamid

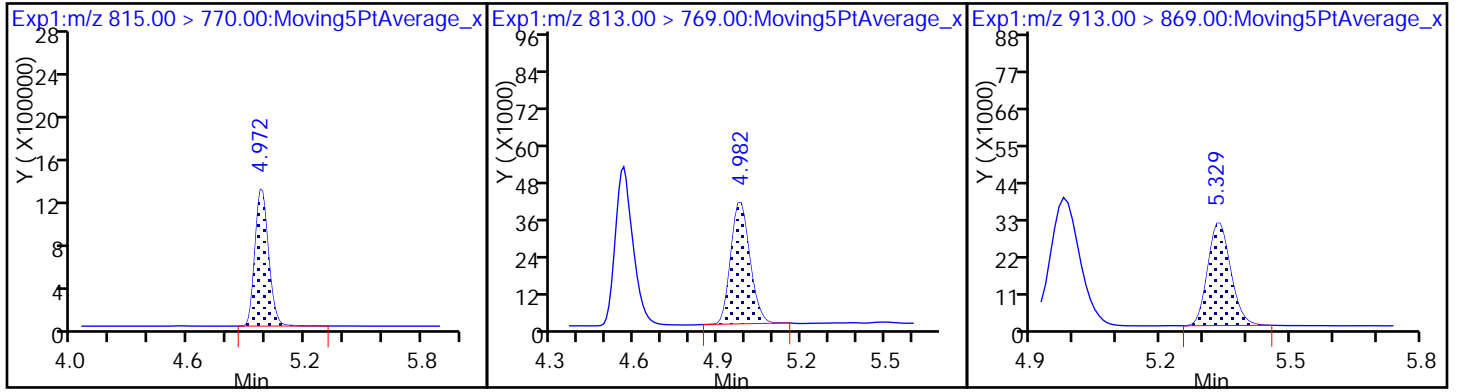




D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_005.d  
 Lims ID: IC L3 Full  
 Client ID:  
 Sample Type: IC Calib Level: 3  
 Inject. Date: 30-Jun-2017 09:34:26 ALS Bottle#: 30 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L3-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:48:44 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.541	1.541	0.0	1.000	1199054	5.04	101	529	
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.541	0.0		13144582	51.0	102	84142	
D 3 13C5-PFPeA	267.90 > 223.00	1.748	1.748	0.0		9725113	52.2	104	35332	
4 Perfluoropentanoic acid	262.90 > 219.00	1.748	1.750	-0.002	1.000	994988	5.06	101	586	
D 47 13C3-PFBS	301.90 > 83.00	1.765	1.768	-0.003		242854	NC		6360	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.765	1.775	-0.010	1.000	1627552	4.66	105	912	
	298.90 > 99.00	1.765	1.775	-0.010	1.000	692510	2.35(0.00-0.00)	105	954	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.963	1.969	-0.006	1.000	331160	4.99	107	7512	
D 7 13C2 PFHxA	315.00 > 270.00	2.008	2.012	-0.004		8841668	49.5	99.0	13132	
6 Perfluorohexanoic acid	313.00 > 269.00	2.008	2.012	-0.004	1.000	981263	5.54	111	1565	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.326	2.331	-0.005	1.000	932481	5.11	102	1177	
D 9 13C4-PFHpA	367.00 > 322.00	2.326	2.331	-0.005		8546923	53.3	107	17992	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.343	2.346	-0.003	1.000	1206704	4.47	98.3	1027	
D 11 18O2 PFHxS	403.00 > 84.00	2.343	2.346	-0.003		11413519	47.9	101	47621	
D 12 M2-6:2FTS	429.00 > 409.00	2.654	2.656	-0.002		3672136	45.9	96.6	13927	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.654	2.657	-0.003	1.000	374079	4.92	104	5907	
* 62 13C2-PFOA	415.00	> 370.00	2.675	2.679	-0.004		8164479	50.0		27649	
D 14 13C4 PFOA	417.00	> 372.00	2.675	2.682	-0.007		8118667	51.9	104	15527	
15 Perfluorooctanoic acid	413.00	> 369.00	2.675	2.683	-0.008	1.000	891543	5.14	103	222	
	413.00	> 169.00	2.675	2.683	-0.008	1.000	514402		1.73(0.90-1.10)	103	1334
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.683	2.691	-0.008	1.000	991058	4.95	104	7504	
D 18 13C4 PFOS	503.00	> 80.00	3.051	3.054	-0.003		8417651	46.7	97.7	18040	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.051	3.057	-0.006	1.000	872137	4.74	102	3523	
	499.00	> 99.00	3.051	3.057	-0.006	1.000	187528		4.65(0.90-1.10)	102	1559
D 19 13C5 PFNA	468.00	> 423.00	3.051	3.057	-0.006		6434869	50.3	101	11013	
20 Perfluorononanoic acid	463.00	> 419.00	3.051	3.057	-0.006	1.000	637157	5.03	101	1489	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.382	3.390	-0.008	1.000	1426651	5.33	107	9476	
D 21 13C8 FOSA	506.00	> 78.00	3.382	3.390	-0.008		13750681	50.0	100	164708	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.401	3.407	-0.006	1.000	325113	4.83	101	6133	
D 26 M2-8:2FTS	529.00	> 509.00	3.401	3.407	-0.006		3326188	49.6	103	37696	
D 23 13C2 PFDA	515.00	> 470.00	3.410	3.417	-0.007		5830770	49.3	98.6	22124	
24 Perfluorodecanoic acid	513.00	> 469.00	3.410	3.419	-0.009	1.000	596562	5.32	106	2776	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.567	3.575	-0.008		2294062	48.3	96.5	10775	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.567	3.579	-0.012	1.000	239300	4.97	99.5	969	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.725	3.732	-0.007	1.000	532486	4.87	101	7689	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.735	3.742	-0.007		2422232	49.3	98.6	5018	
D 30 13C2 PFUnA	565.00	> 520.00	3.745	3.750	-0.005		4832025	51.7	103	23711	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.745	3.750	-0.005	1.000	498452	4.85	97.0	1437	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.745	3.750	-0.005	1.003	240619	5.19	104	3233	
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.876	3.890	-0.014		3669826	48.7	97.3	561	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.884	3.895	-0.011	1.000	338879	4.85	96.9	3361	
D 36 13C2 PFDaA	615.00 > 570.00	4.039	4.045	-0.006		4953018	50.4	101	20196	
37 Perfluorododecanoic acid	613.00 > 569.00	4.039	4.045	-0.006	1.000	485978	5.18	104	597	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.064	4.077	-0.013		3428540	47.3	94.7	5229	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.073	4.086	-0.013	1.000	349996	5.07	101	2952	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.310	4.316	-0.006	1.000	473936	5.01	100	155	
D 43 13C2-PFTeDA	715.00 > 670.00	4.551	4.556	-0.005		10548900	49.4	98.7	90061	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.551	4.557	-0.006	1.000	1253223	5.16	103	343	
	713.00 > 169.00	4.542	4.557	-0.015	0.998	156613	8.00(0.00-0.00)	103	4104	
D 44 13C2-PFHxDA	815.00 > 770.00	4.961	4.969	-0.008		5959624	49.7	99.3	10230	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.961	4.972	-0.011	1.000	612820	5.19	104	138	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.321	5.324	-0.003	1.000	561820	4.97	99.4	216	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L3\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_005.d

Injection Date: 30-Jun-2017 09:34:26

Instrument ID: A8\_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 30

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

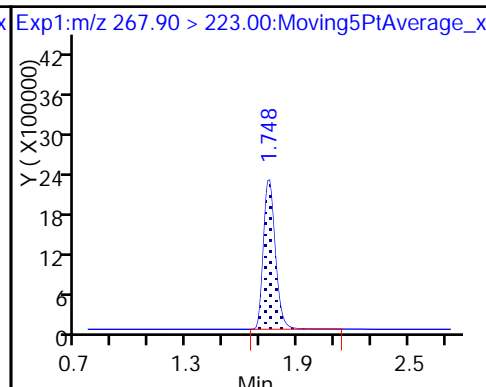
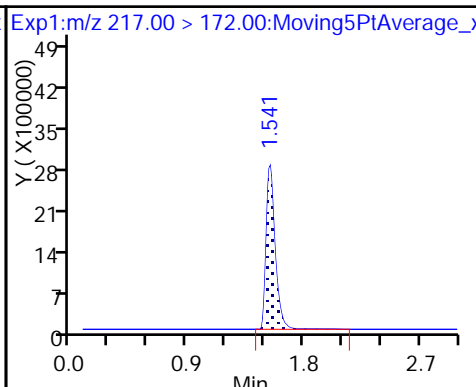
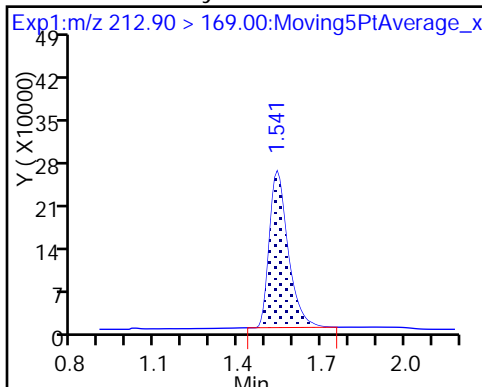
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

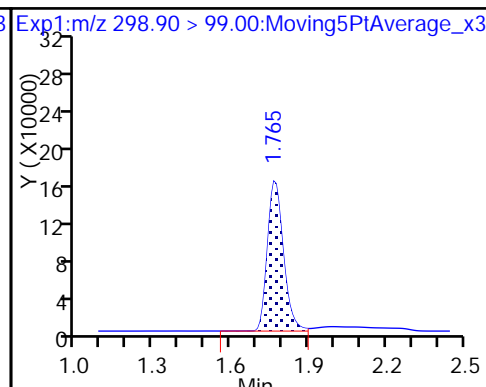
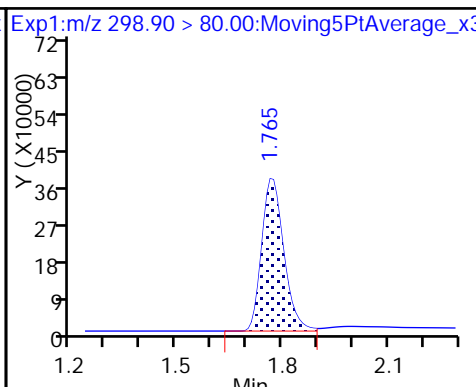
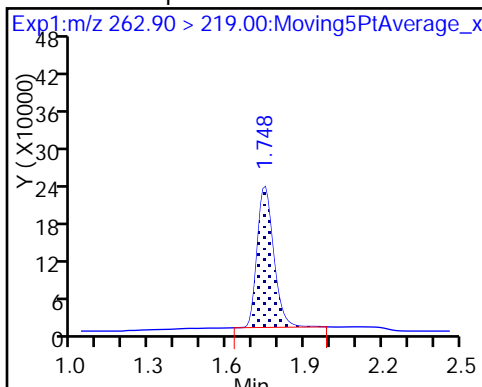
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

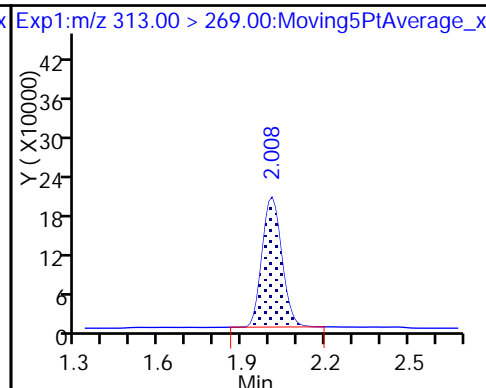
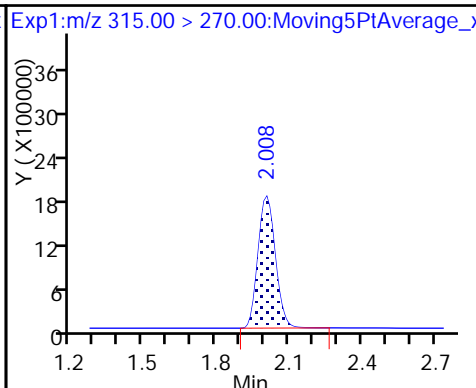
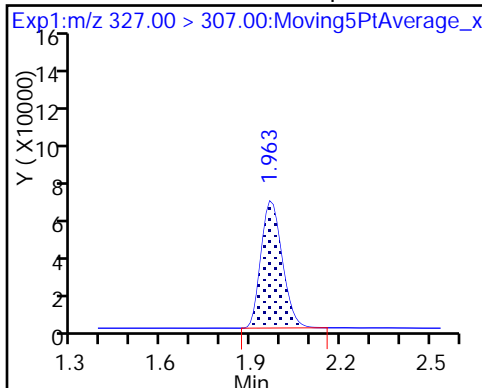
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

De 7 13C2 PFHxA

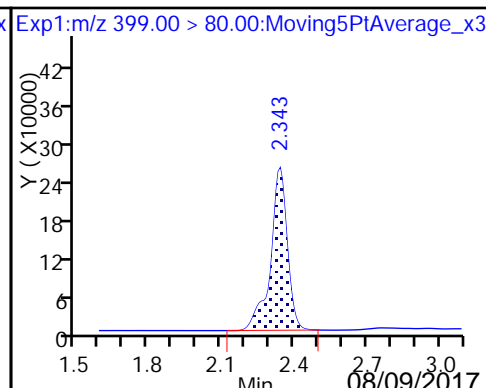
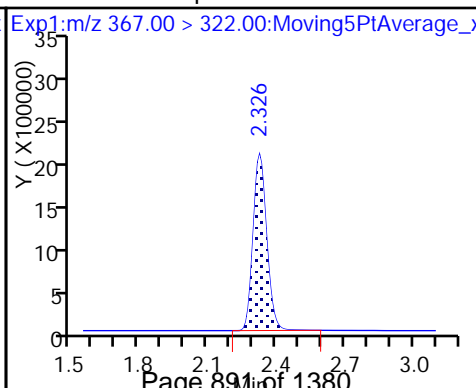
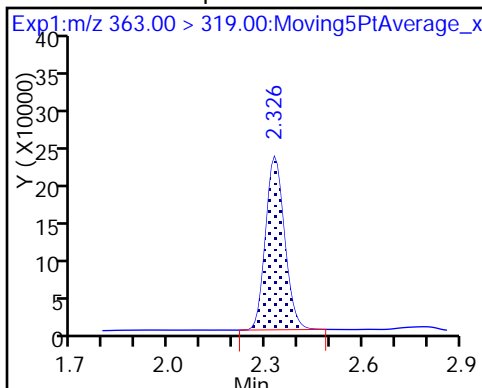
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

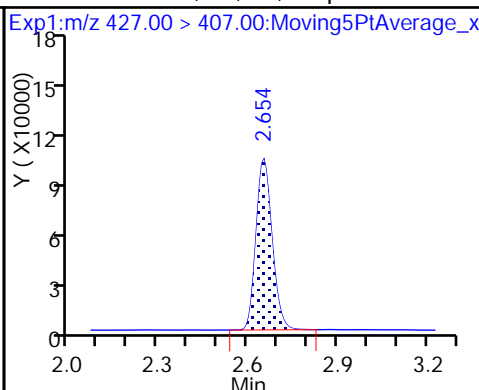
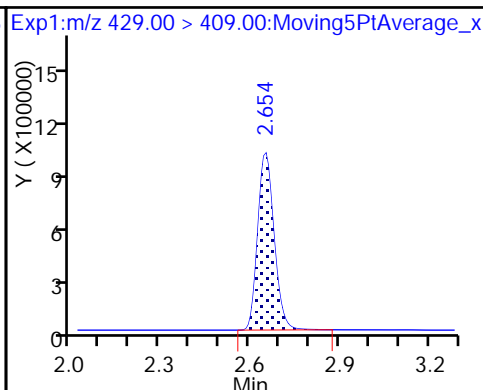
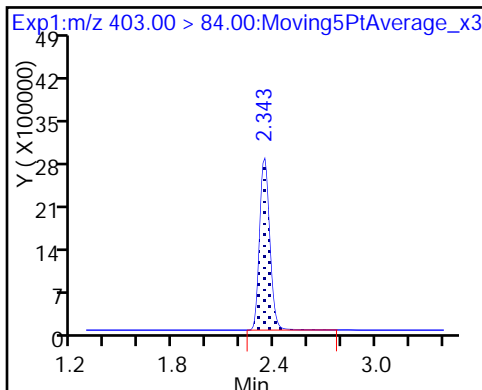
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

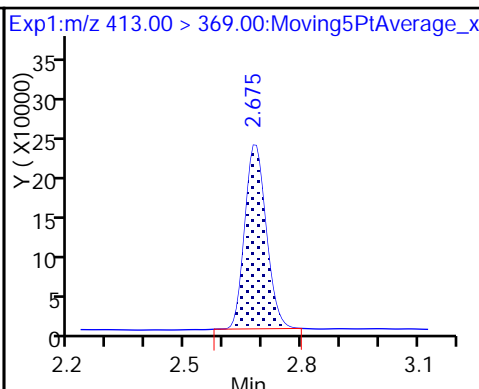
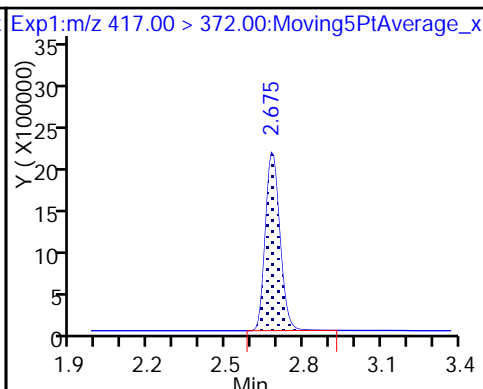
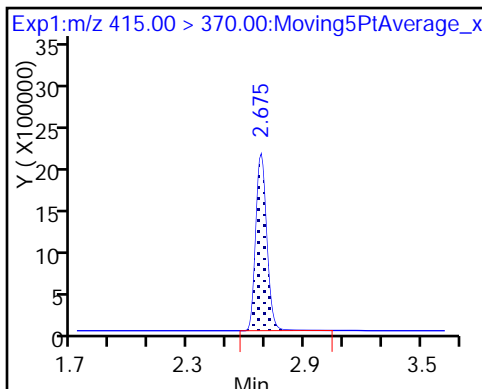
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

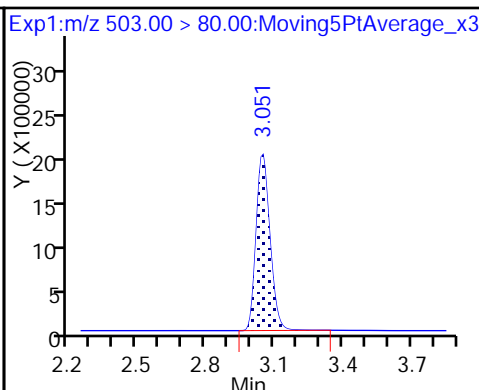
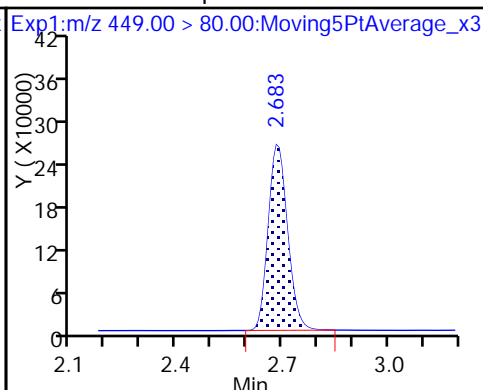
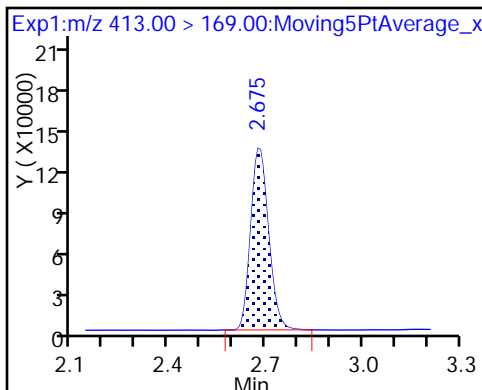
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

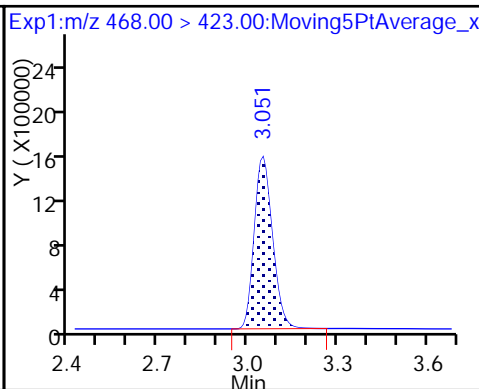
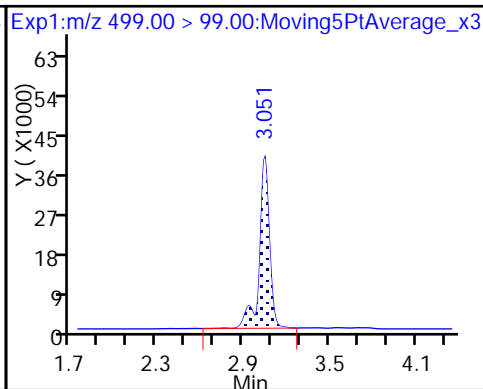
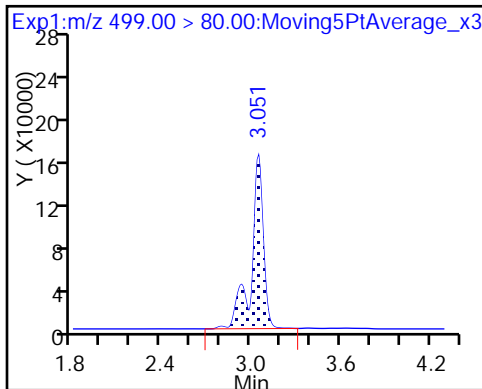
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

D 19 13C5 PFNA

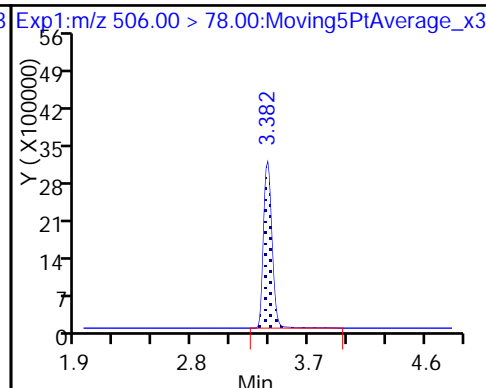
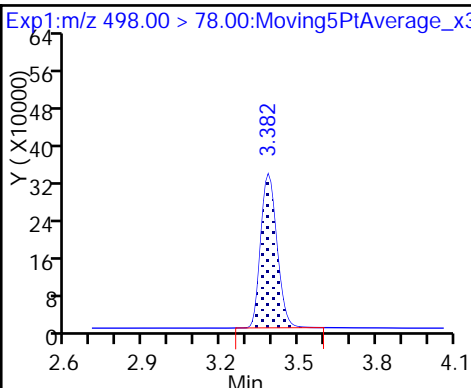
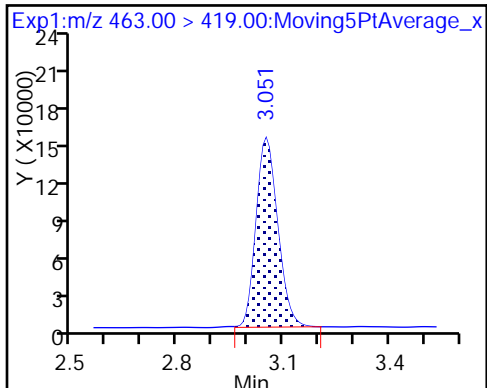




20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

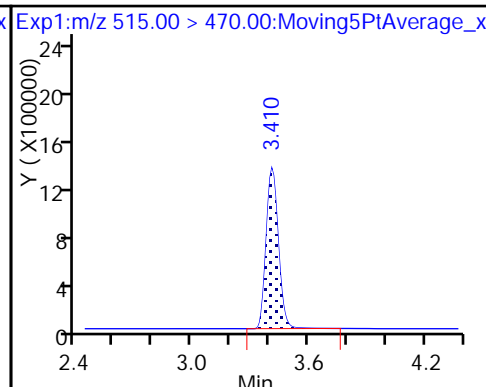
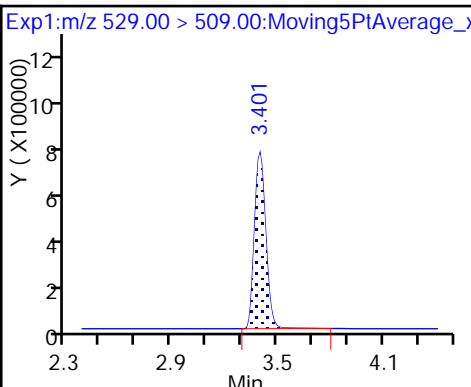
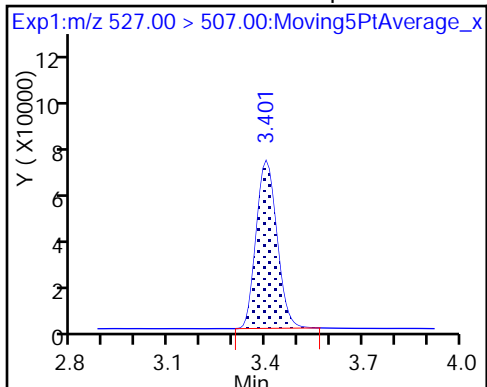
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

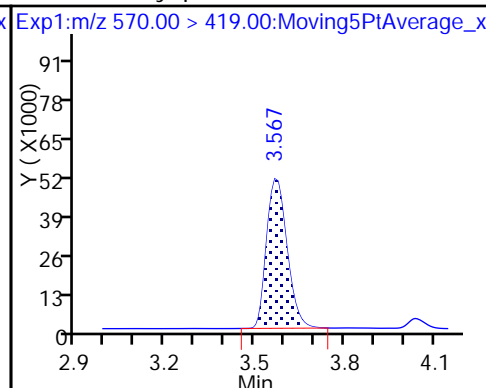
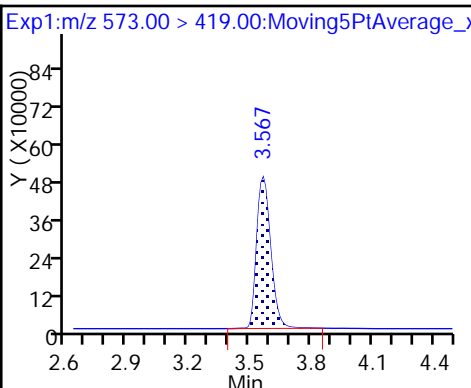
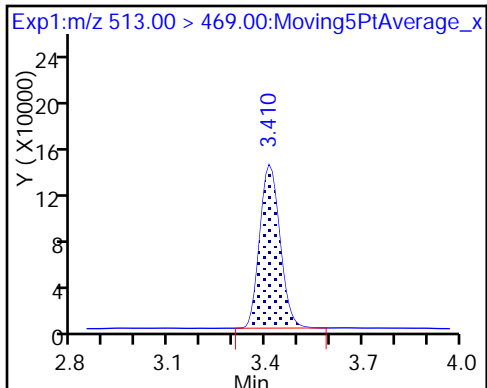
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

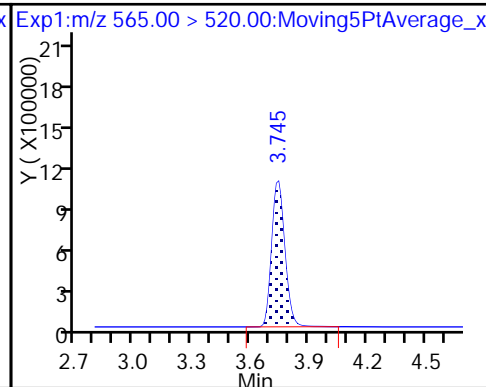
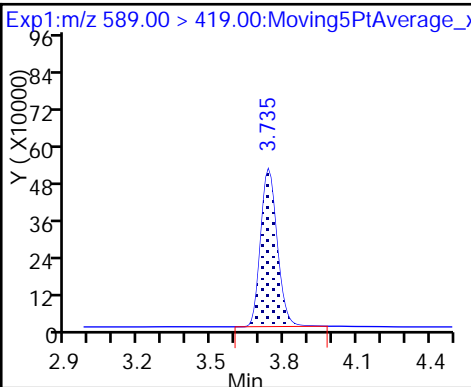
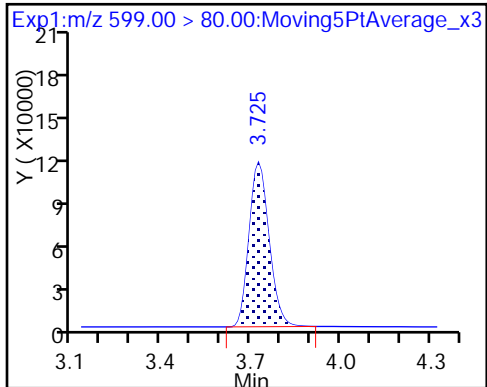
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

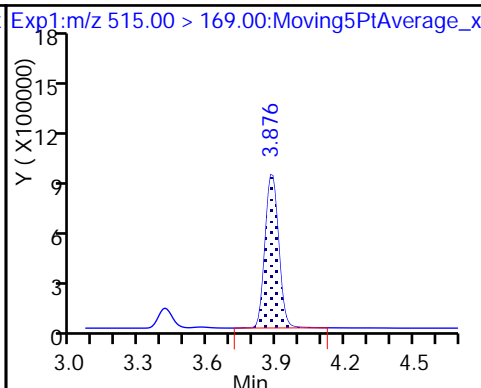
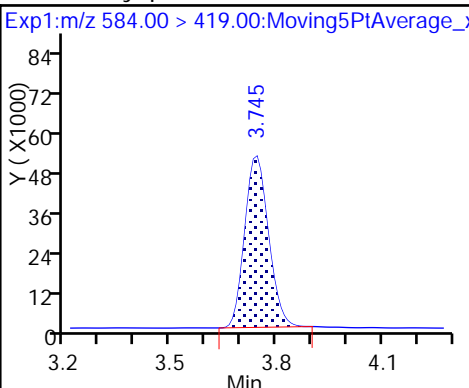
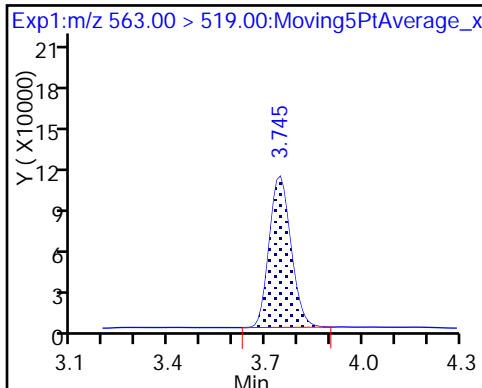
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

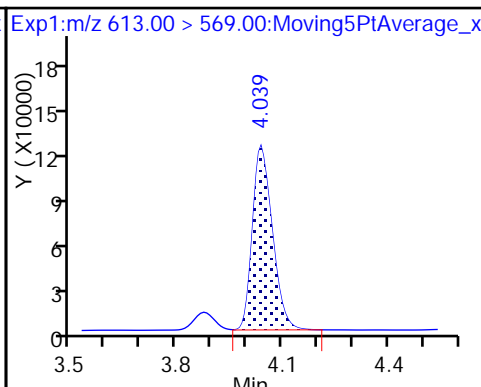
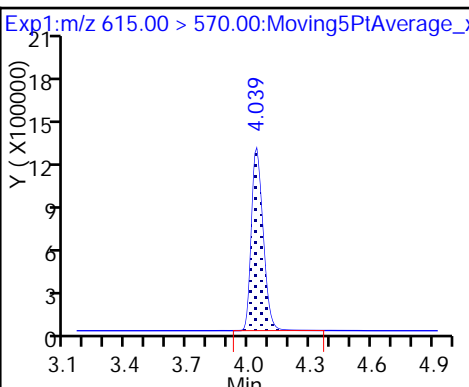
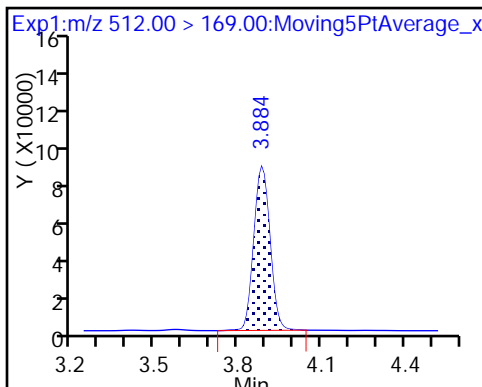
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

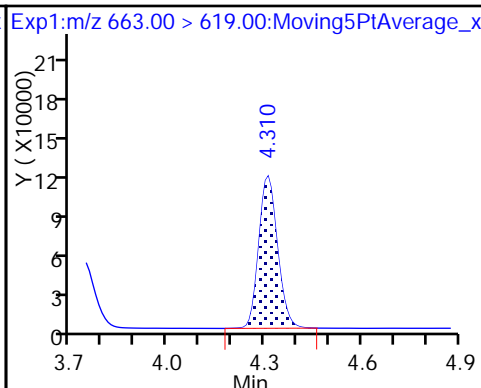
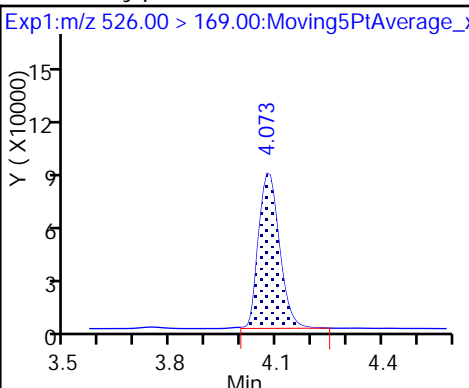
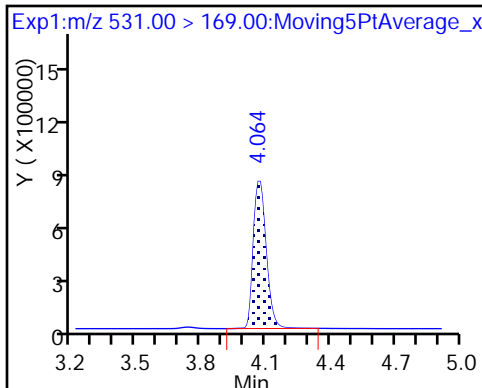
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

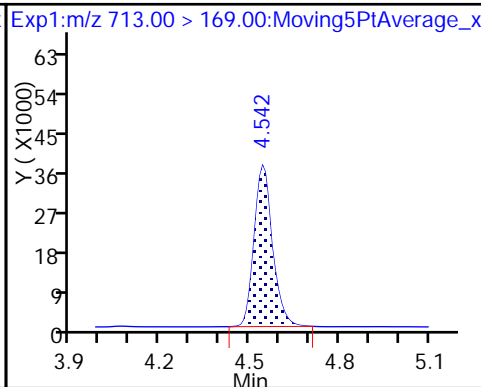
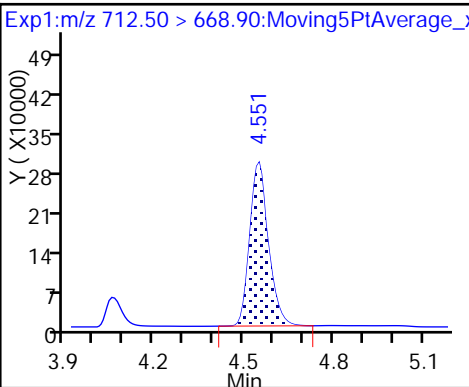
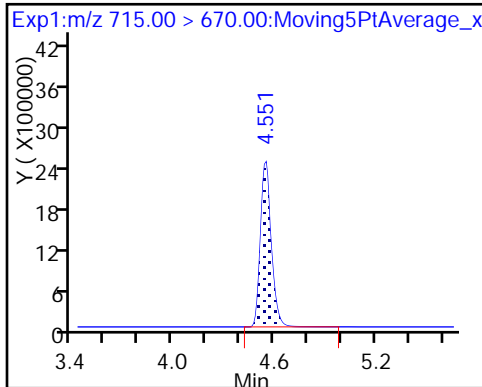
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

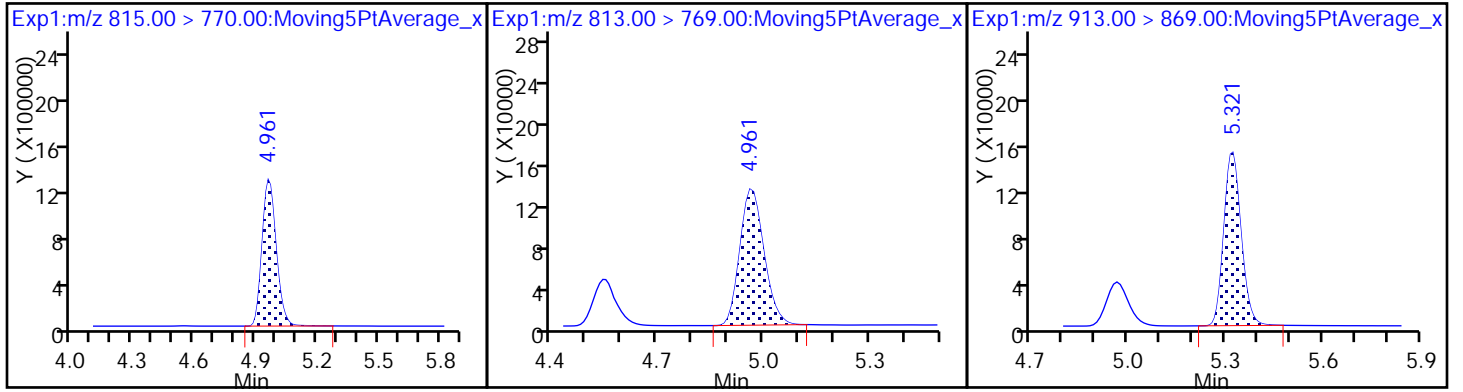
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_006.d  
 Lims ID: IC L4 Full  
 Client ID:  
 Sample Type: IC Calib Level: 4  
 Inject. Date: 30-Jun-2017 09:41:20 ALS Bottle#: 31 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L4-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:48:54 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.533	1.541	-0.008	12875701	50.0		99.9	15036	
2 Perfluorobutyric acid	212.90 > 169.00	1.533	1.541	-0.008	1.000	4875595	20.9	105	2324	
D 3 13C5-PFPeA	267.90 > 223.00	1.742	1.748	-0.006	9440896	50.6		101	35290	
4 Perfluoropentanoic acid	262.90 > 219.00	1.742	1.750	-0.008	1.000	3914008	20.5	102	2125	
D 47 13C3-PFBS	301.90 > 83.00	1.760	1.768	-0.008	247475	NC			7241	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.769	1.775	-0.006	1.000	6737969	19.1	108	3218	
	298.90 > 99.00	1.769	1.775	-0.006	1.000	2685906	2.51(0.00-0.00)	108	3168	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.969	1.969	0.0	1.000	1376350	19.5	104	25089	
6 Perfluorohexanoic acid	313.00 > 269.00	2.002	2.012	-0.010	1.000	3622300	19.2	96.1	4352	
D 7 13C2 PFHxA	315.00 > 270.00	2.002	2.012	-0.010	9400080	52.6		105	29528	
D 9 13C4-PFHpA	367.00 > 322.00	2.321	2.331	-0.010	8230907	51.3		103	13202	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.321	2.331	-0.010	1.000	3671393	20.9	105	3674	
D 11 18O2 PFHxS	403.00 > 84.00	2.338	2.346	-0.008	11544384	48.5		102	35794	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.338	2.346	-0.008	1.000	4784038	17.5	96.3	2847	
D 12 M2-6:2FTS	429.00 > 409.00	2.643	2.656	-0.013	3919216	49.0		103	22242	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.643	2.657	-0.014	1.000	1668417	20.6	109	13918	
* 62 13C2-PFOA	415.00	> 370.00	2.665	2.679	-0.014		8290378	50.0		16464	
D 14 13C4 PFOA	417.00	> 372.00	2.672	2.682	-0.010		8219585	52.5	105	21582	
15 Perfluorooctanoic acid	413.00	> 369.00	2.672	2.683	-0.011	1.000	3461508	19.7	98.5	810	
	413.00	> 169.00	2.672	2.683	-0.011	1.000	1983397		1.75(0.90-1.10)	98.5	3604
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.680	2.691	-0.011	1.000	4150773	20.4	107	19206	
D 18 13C4 PFOS	503.00	> 80.00	3.037	3.054	-0.017		8551531	47.4	99.2	11041	
20 Perfluorononanoic acid	463.00	> 419.00	3.045	3.057	-0.012	1.000	2686511	21.0	105	4709	
D 19 13C5 PFNA	468.00	> 423.00	3.045	3.057	-0.012		6489979	50.7	101	12917	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.045	3.057	-0.012	1.000	3464853	18.5	99.9	5491	
	499.00	> 99.00	3.045	3.057	-0.012	1.000	751172		4.61(0.90-1.10)	99.9	5380
D 21 13C8 FOSA	506.00	> 78.00	3.375	3.390	-0.015		13937046	50.7	101	61348	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.375	3.390	-0.015	1.000	5883358	21.7	108	16052	
D 26 M2-8:2FTS	529.00	> 509.00	3.393	3.407	-0.014		3289592	49.0	102	16294	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.393	3.407	-0.014	1.000	1270850	19.1	99.7	11508	
D 23 13C2 PFDA	515.00	> 470.00	3.402	3.417	-0.015		6217587	52.6	105	32424	
24 Perfluorodecanoic acid	513.00	> 469.00	3.402	3.419	-0.017	1.000	2411538	20.2	101	11385	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.557	3.575	-0.018		2335329	49.1	98.3	11563	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.568	3.579	-0.011	1.003	1011725	20.7	103	2899	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.716	3.732	-0.016	1.000	2239202	20.2	105	12176	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.726	3.742	-0.016		2577116	52.5	105	5909	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.736	3.750	-0.014	1.003	994761	20.2	101	6665	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.736	3.750	-0.014	1.000	1960043	19.7	98.5	5989	
D 30 13C2 PFUnA	565.00	> 520.00	3.736	3.750	-0.014		4676014	50.1	100	13849	
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.876	3.890	-0.014		3631518	48.2	96.3	555	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.885	3.895	-0.010	1.000	1423741	20.6	103	4623	
37 Perfluorododecanoic acid	613.00 > 569.00	4.033	4.045	-0.012	1.000	1927447	20.0	100	2279	
D 36 13C2 PFDaA	615.00 > 570.00	4.033	4.045	-0.012		5075363	51.7	103	17149	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.065	4.077	-0.012		3410024	47.1	94.2	5449	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.075	4.086	-0.011	1.000	1414625	20.6	103	3733	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.303	4.316	-0.013	1.000	1863811	19.2	96.1	545	
D 43 13C2-PFTeDA	715.00 > 670.00	4.543	4.556	-0.013		10626456	49.7	99.4	81183	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.552	4.557	-0.005	1.000	4948592	19.9	99.4	1626	
	713.00 > 169.00	4.543	4.557	-0.014	0.998	575159		8.60(0.00-0.00)	99.4	11194
D 44 13C2-PFHxDA	815.00 > 770.00	4.962	4.969	-0.007		5991703	49.9	99.8	12095	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.962	4.972	-0.010	1.000	2090025	19.2	96.1	429	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.317	5.324	-0.007	1.000	2225209	19.2	96.0	747	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L4\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_006.d

Injection Date: 30-Jun-2017 09:41:20

Instrument ID: A8\_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

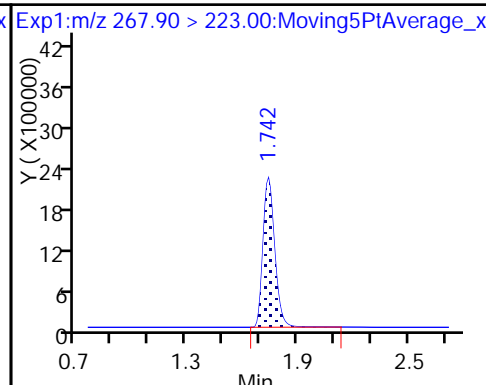
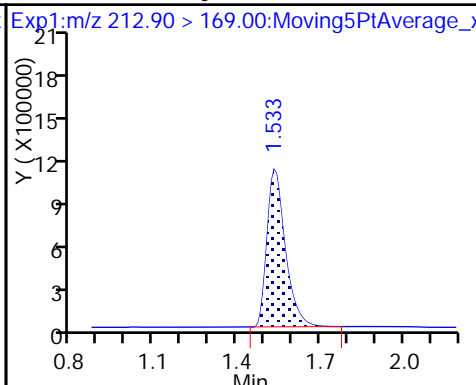
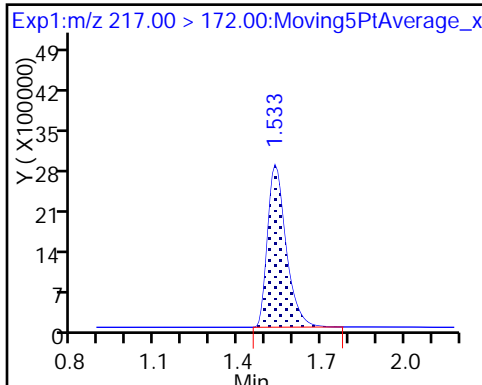
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

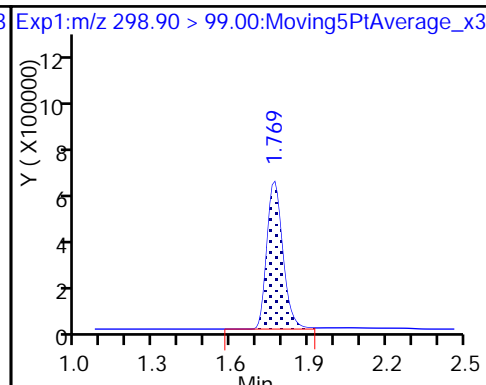
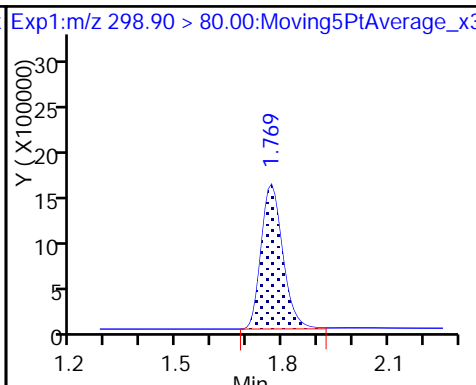
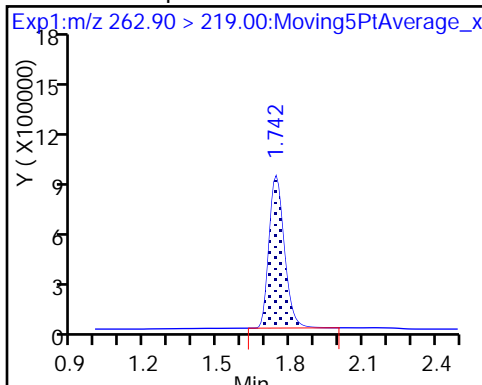
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

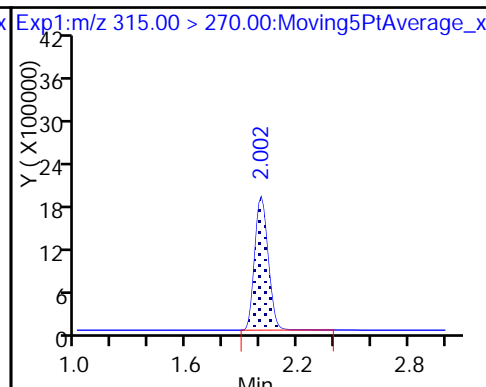
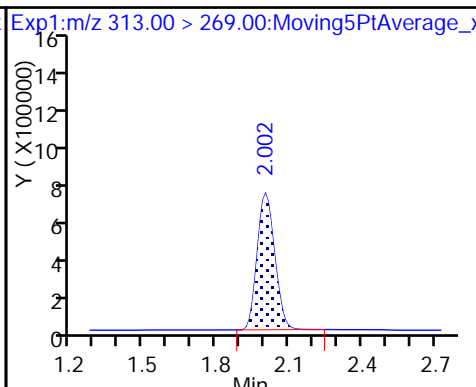
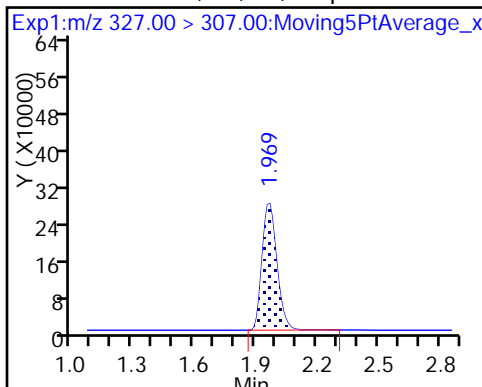
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

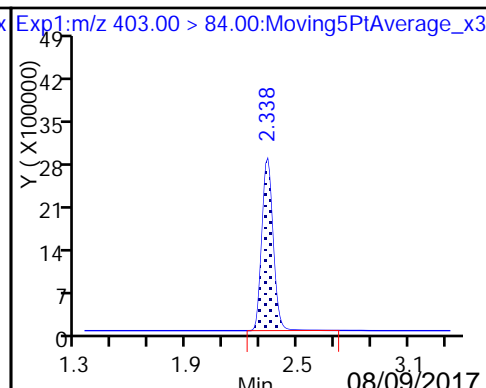
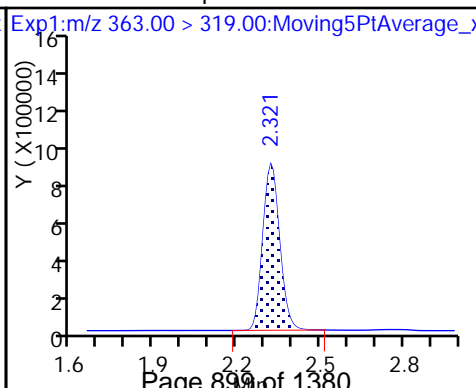
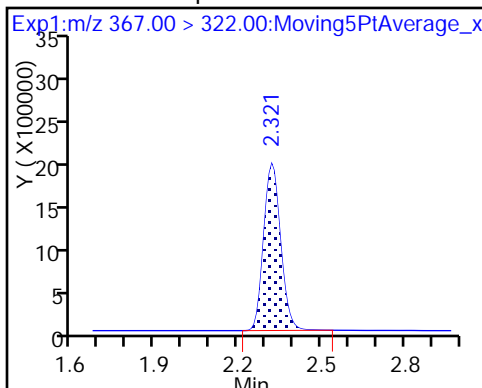
D 7 13C2 PFHxA



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

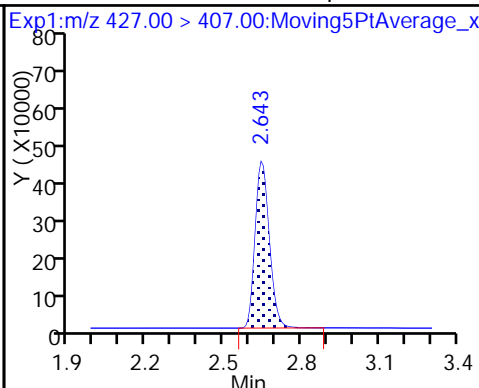
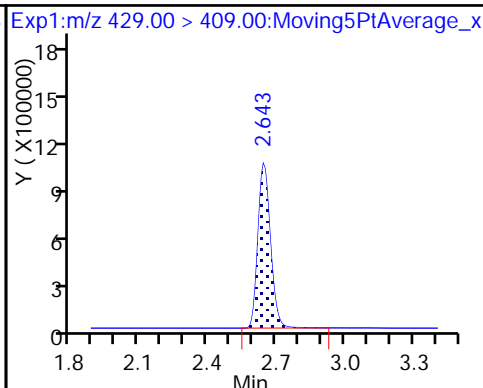
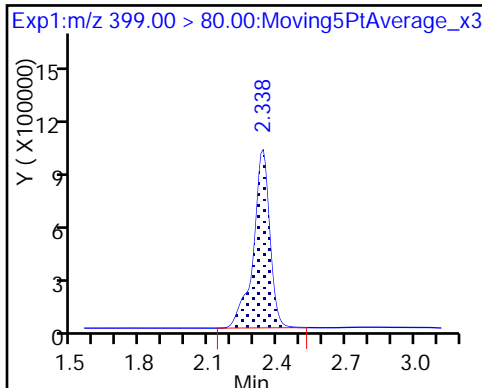
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

D 12 M2-6:2FTS

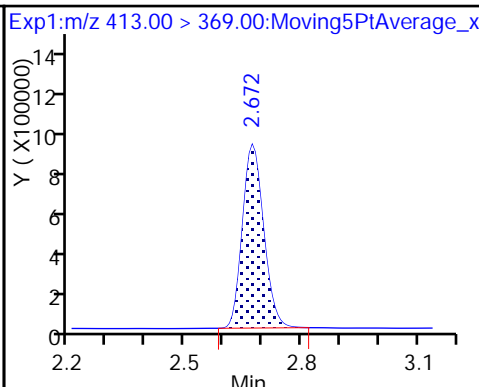
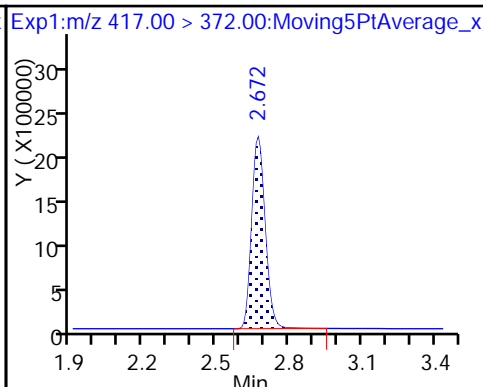
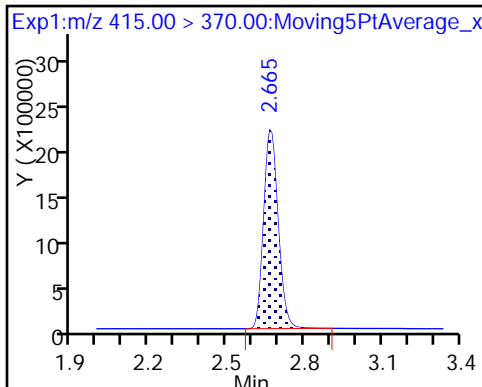
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

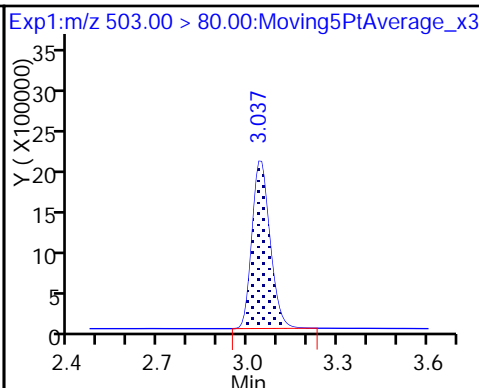
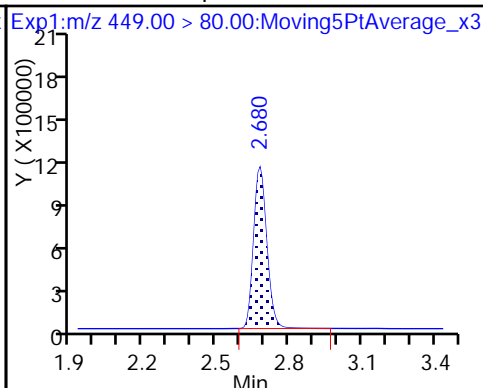
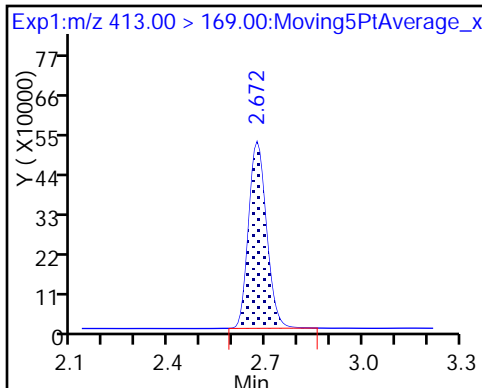
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

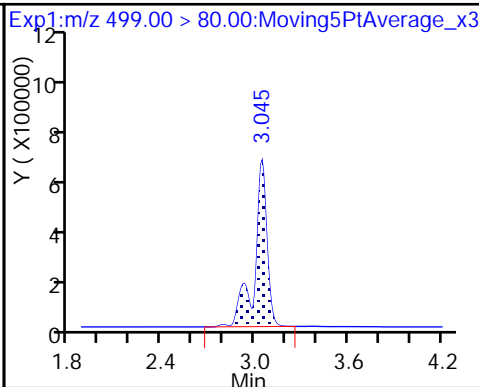
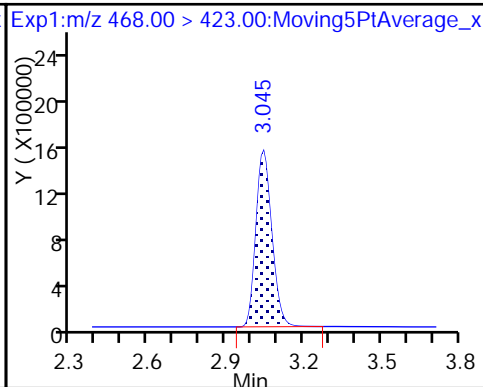
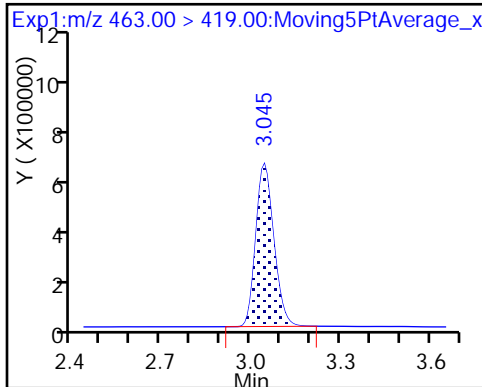
D 18 13C4 PFOS



20 Perfluorononanoic acid

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid

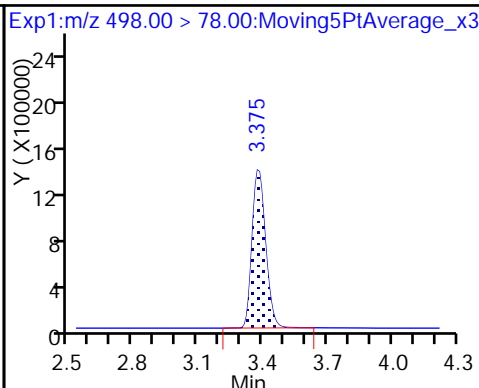
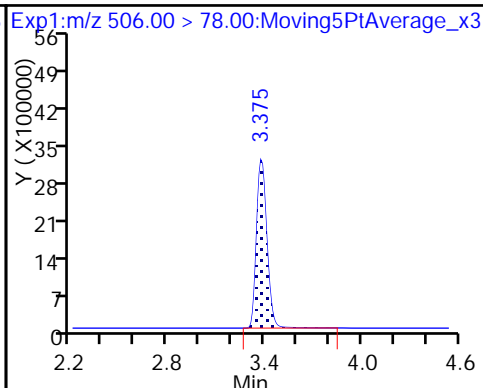
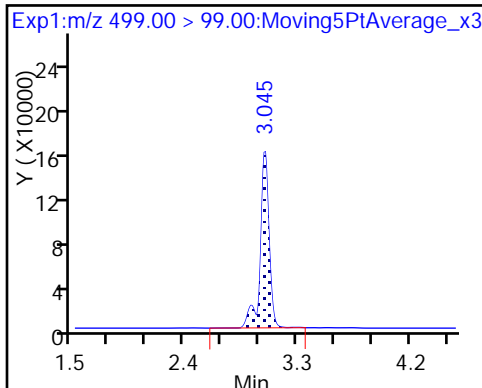




17 Perfluorooctane sulfonic acid

D 21 13C8 FOSA

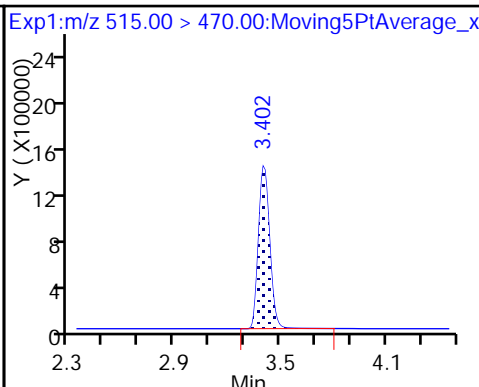
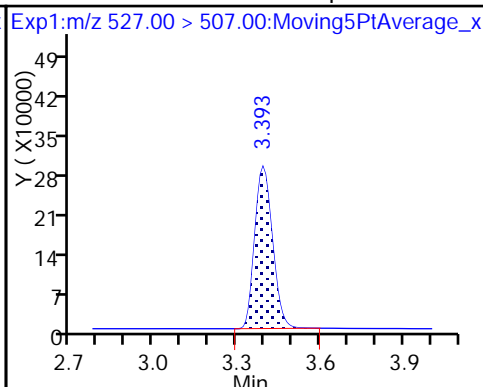
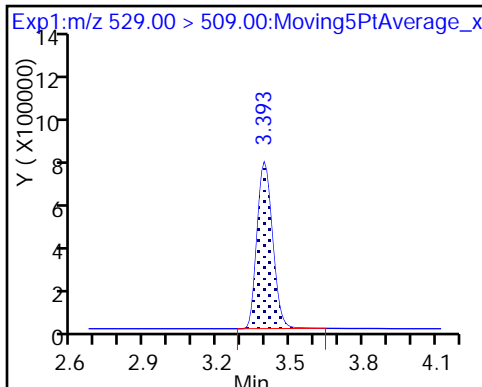
22 Perfluorooctane Sulfonamide



D 26 M2-8:2FTS

25 Sodium 1H,1H,2H,2H-perfluorodeca

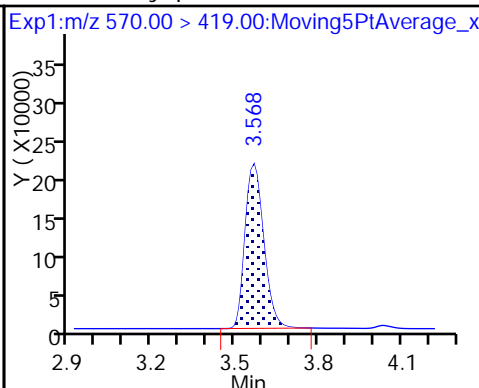
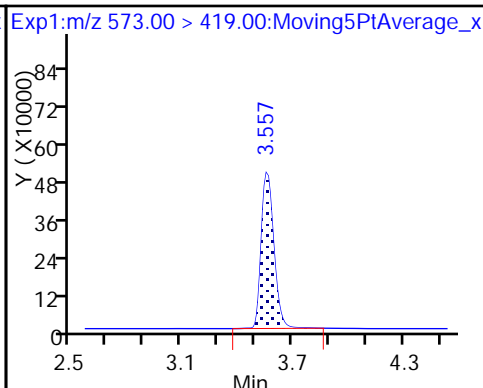
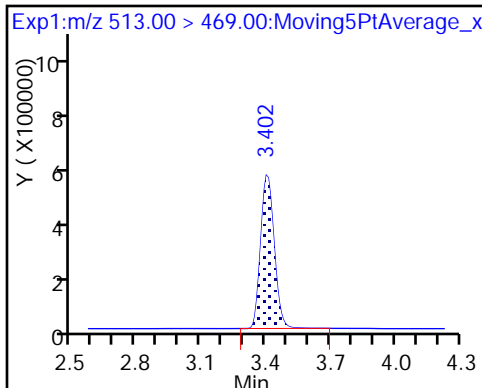
De23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

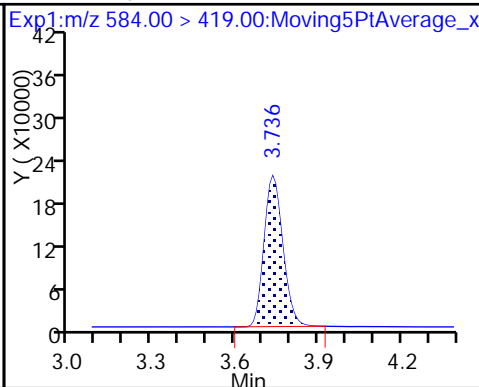
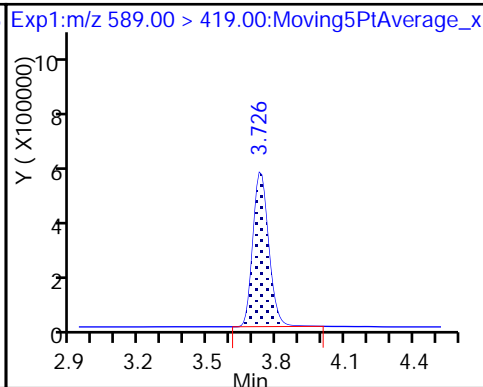
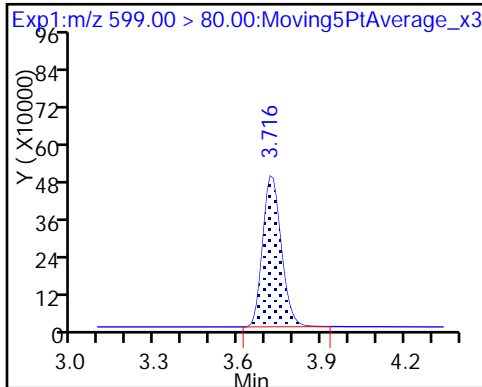
28 N-methyl perfluorooctane sulfonami

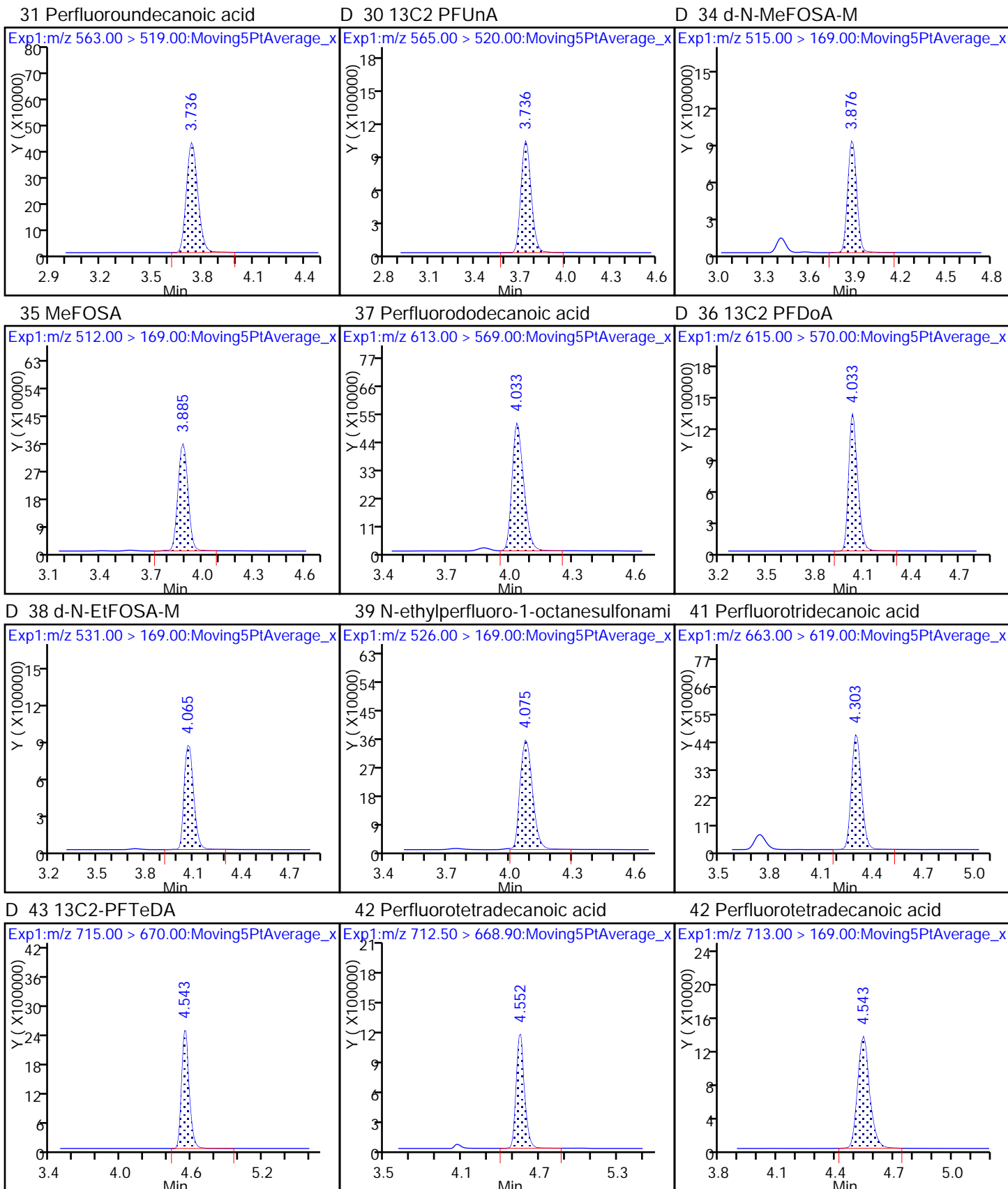


29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

33 N-ethyl perfluorooctane sulfonamid

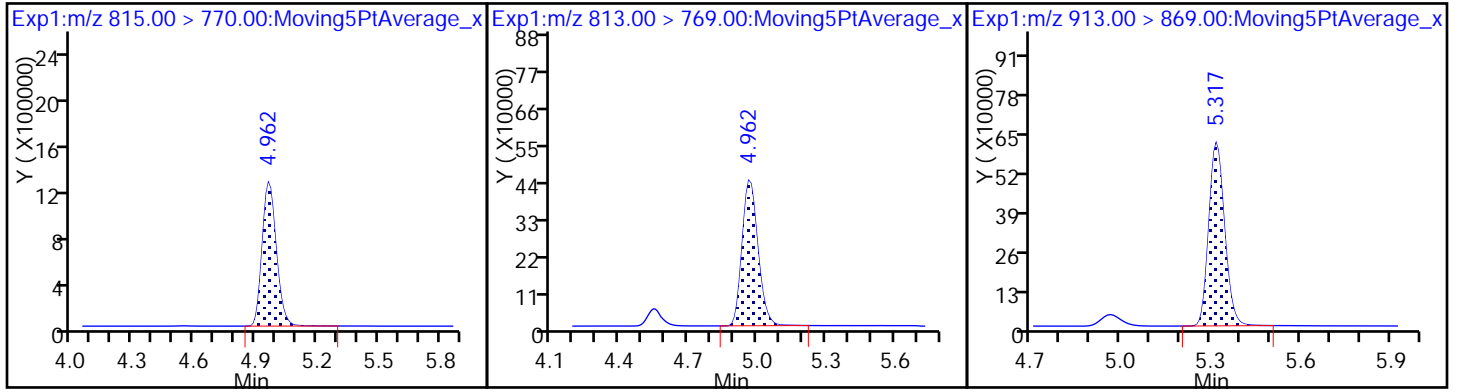




D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_007.d  
 Lims ID: IC L5 Full  
 Client ID:  
 Sample Type: IC Calib Level: 5  
 Inject. Date: 30-Jun-2017 09:48:14 ALS Bottle#: 32 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L5-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:49:01 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.541	1.541	0.0	1.000	14314560	54.1	108	4732	
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.541	0.0		14618572	56.7	113	19336	
D 3 13C5-PFPeA	267.90 > 223.00	1.751	1.748	0.003		10474645	56.2	112	110371	
4 Perfluoropentanoic acid	262.90 > 219.00	1.751	1.750	0.001	1.000	11095345	52.3	105	5217	
D 47 13C3-PFBS	301.90 > 83.00	1.769	1.768	0.001		293564	NC		7527	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.777	1.775	0.002	1.000	18223176	45.6	103	29389	
	298.90 > 99.00	1.769	1.775	-0.006	0.995	8123362	2.24(0.00-0.00)	103	363364	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.969	1.969	0.0	1.000	3753539	50.3	108	18335	
D 7 13C2 PFHxA	315.00 > 270.00	2.013	2.012	0.001		10412331	58.3	117	25375	
6 Perfluorohexanoic acid	313.00 > 269.00	2.013	2.012	0.001	1.000	10578131	50.7	101	14290	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.331	2.331	0.0	1.000	9863696	51.3	103	8899	
D 9 13C4-PFHpA	367.00 > 322.00	2.331	2.331	0.0		9003739	56.1	112	12909	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.348	2.346	0.002	1.000	13665062	44.3	97.4	4793	
D 11 18O2 PFHxS	403.00 > 84.00	2.348	2.346	0.002		13042703	54.7	116	29603	
D 12 M2-6:2FTS	429.00 > 409.00	2.659	2.656	0.003		4134755	51.7	109	14949	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.659	2.657	0.002	1.000	4250388	49.7	105	29177	
* 62 13C2-PFOA	415.00	> 370.00	2.681	2.679	0.002		9224481	50.0		19304	
D 14 13C4 PFOA	417.00	> 372.00	2.681	2.682	-0.001		8648031	55.3	111	25068	
15 Perfluorooctanoic acid	413.00	> 369.00	2.681	2.683	-0.002	1.000	9572634	51.8	104	1874	
	413.00	> 169.00	2.681	2.683	-0.002	1.000	5497657		1.74(0.90-1.10)	104	6410
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.688	2.691	-0.003	1.000	12359803	52.0	109	15949	
D 18 13C4 PFOS	503.00	> 80.00	3.060	3.054	0.006		9989477	55.4	116	13303	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.060	3.057	0.003	1.000	10649701	48.8	105	7379	
	499.00	> 99.00	3.060	3.057	0.003	1.000	2275895		4.68(0.90-1.10)	105	9143
D 19 13C5 PFNA	468.00	> 423.00	3.060	3.057	0.003		7294237	57.0	114	14856	
20 Perfluorononanoic acid	463.00	> 419.00	3.060	3.057	0.003	1.000	7196023	50.1	100	7324	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.398	3.390	0.008	1.000	15711533	51.6	103	23767	
D 21 13C8 FOSA	506.00	> 78.00	3.398	3.390	0.008		15641144	56.9	114	206560	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.407	3.407	0.0	1.000	3616423	50.8	106	17017	
D 26 M2-8:2FTS	529.00	> 509.00	3.407	3.407	0.0		3517949	52.4	109	25255	
D 23 13C2 PFDA	515.00	> 470.00	3.425	3.417	0.008		6797846	57.5	115	31468	
24 Perfluorodecanoic acid	513.00	> 469.00	3.425	3.419	0.006	1.000	6626313	50.7	101	21161	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.578	3.575	0.003		2884281	60.7	121	17020	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.578	3.579	-0.001	1.000	2983962	49.3	98.7	7954	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.737	3.732	0.004	1.000	6813406	52.5	109	20571	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.746	3.742	0.004		2805423	57.1	114	5790	
D 30 13C2 PFUnA	565.00	> 520.00	3.756	3.750	0.006		5435756	58.2	116	44624	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.756	3.750	0.006	1.000	5547021	48.0	95.9	11687	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.756	3.750	0.006	1.003	2898535	54.0	108	11053	
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.897	3.890	0.007		4431681	58.8	118	604	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.906	3.895	0.011	1.000	4509328	53.4	107	6213	
D 36 13C2 PFDaA	615.00 > 570.00	4.051	4.045	0.006		5742195	58.5	117	19135	
37 Perfluorododecanoic acid	613.00 > 569.00	4.051	4.045	0.006	1.000	5547939	51.0	102	5557	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.088	4.077	0.011		4266080	58.9	118	4682	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.097	4.086	0.011	1.000	4564333	53.1	106	6308	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.321	4.316	0.004	1.000	5679976	51.8	104	1532	
D 43 13C2-PFTeDA	715.00 > 670.00	4.558	4.556	0.002		12047050	56.4	113	153296	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.558	4.557	0.001	1.000	14091657	50.0	100	1578	
	713.00 > 169.00	4.549	4.557	-0.008	0.998	1705943	8.26(0.00-0.00)	100	15029	
D 44 13C2-PFHxDA	815.00 > 770.00	4.966	4.969	-0.003		6886673	57.4	115	13598	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.977	4.972	0.005	1.000	6134934	51.2	102	975	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.323	5.324	-0.001	1.000	6650048	50.7	101	1666	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L5\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_007.d

Injection Date: 30-Jun-2017 09:48:14

Instrument ID: A8\_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

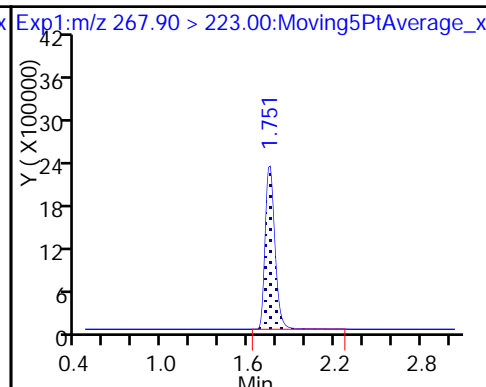
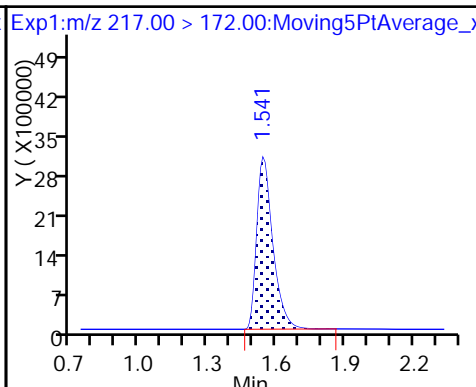
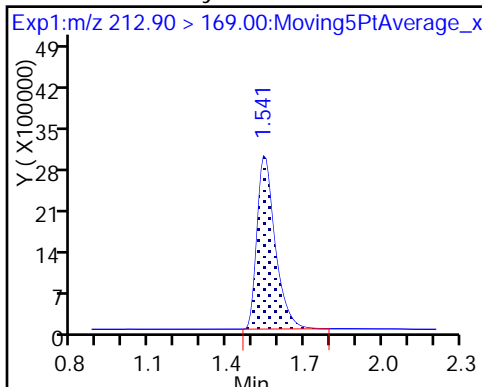
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

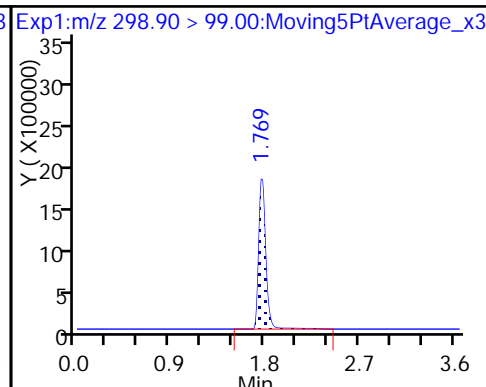
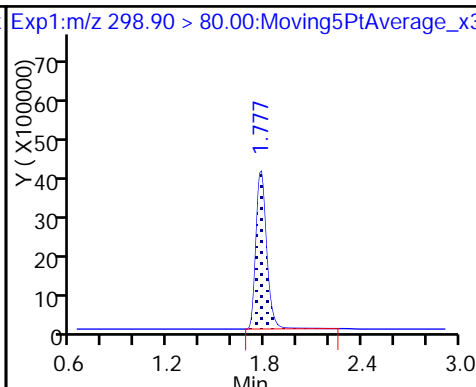
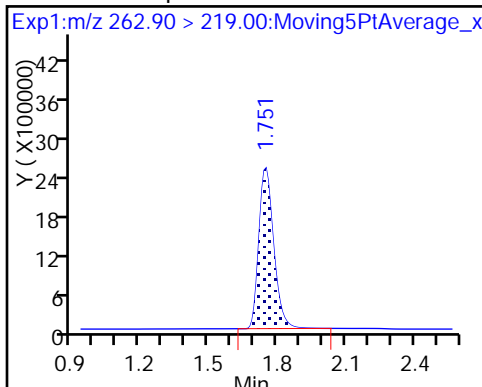
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

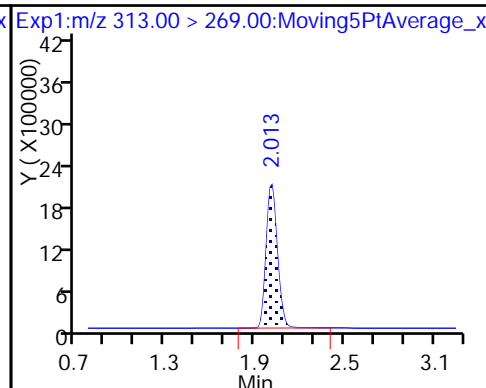
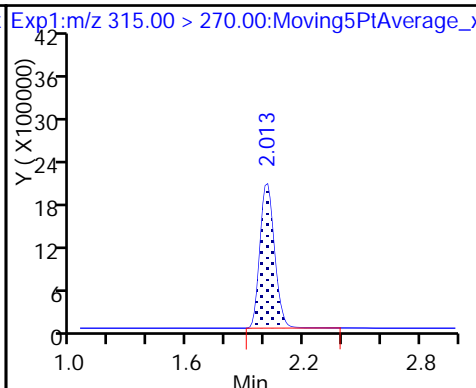
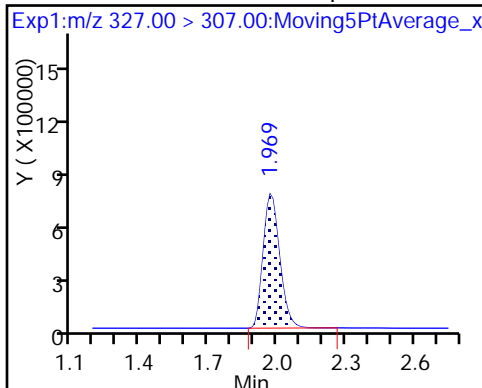
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

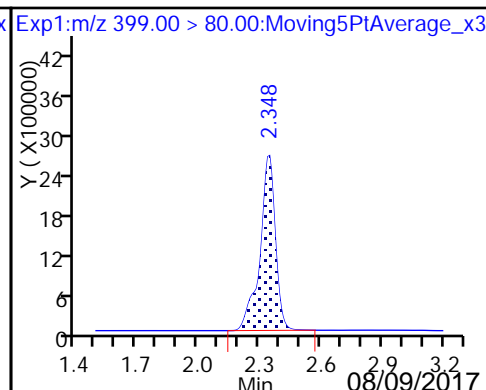
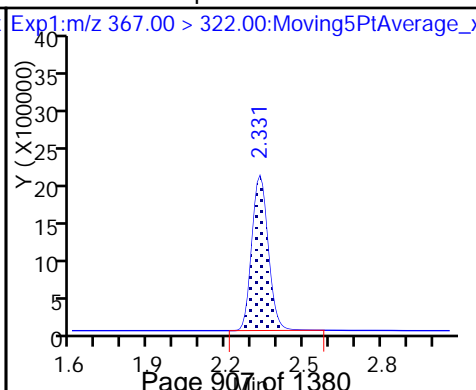
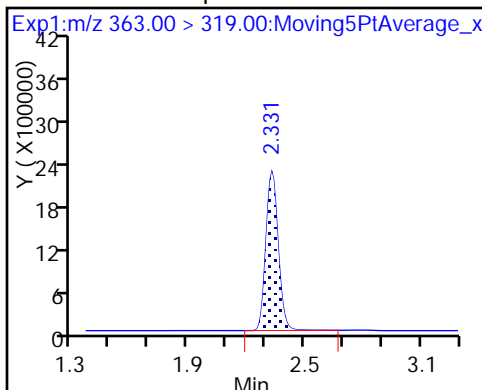
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

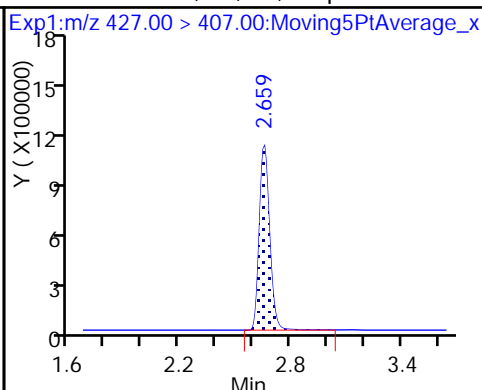
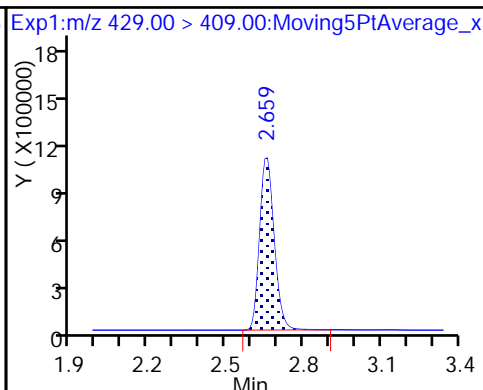
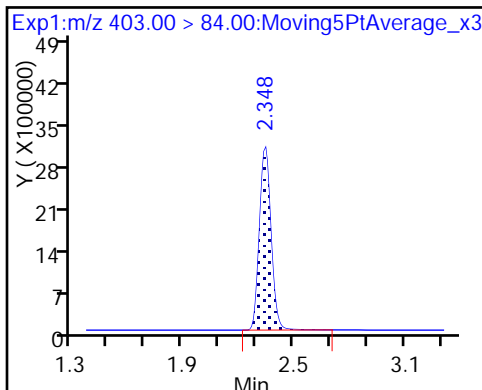
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2F7S

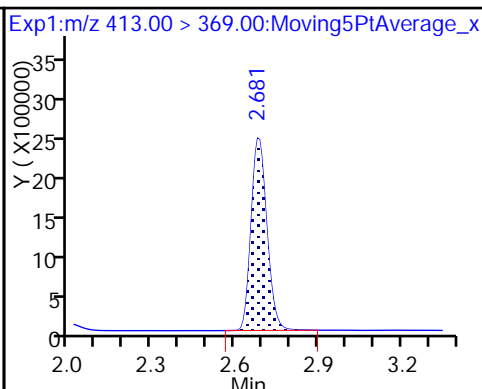
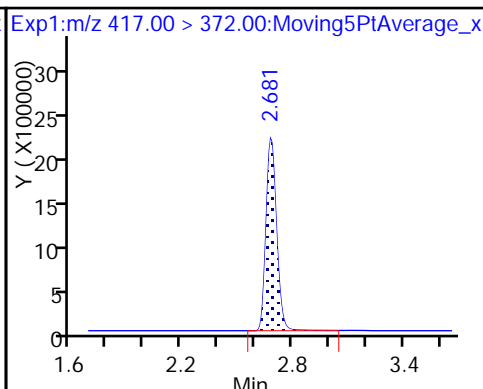
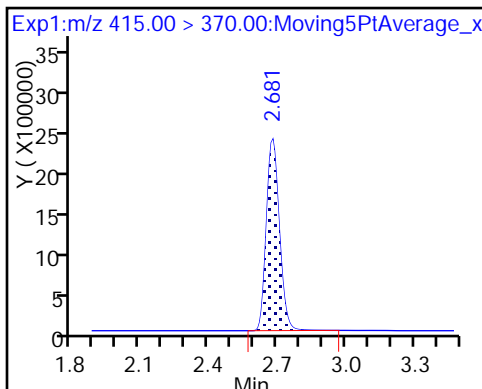
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

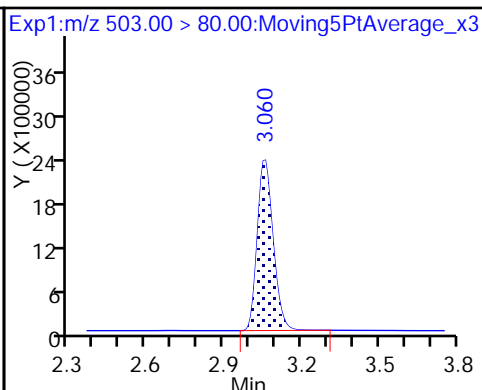
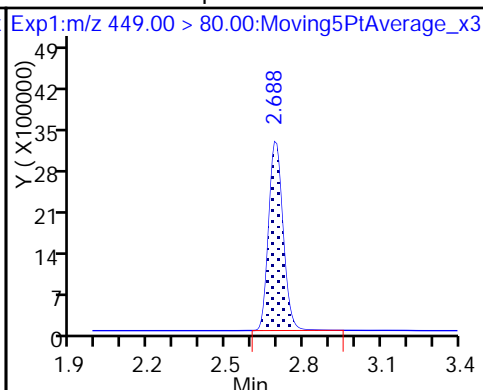
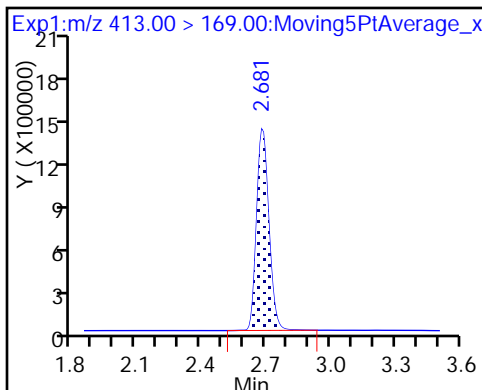
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

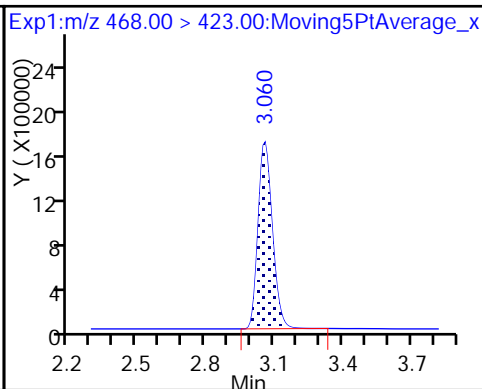
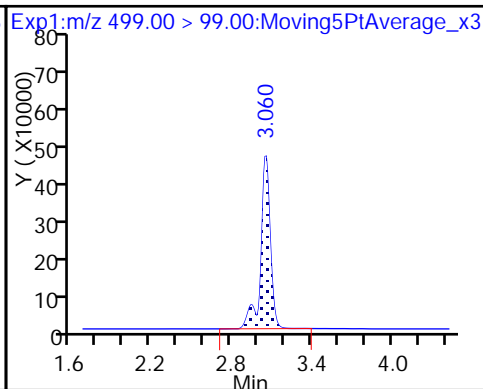
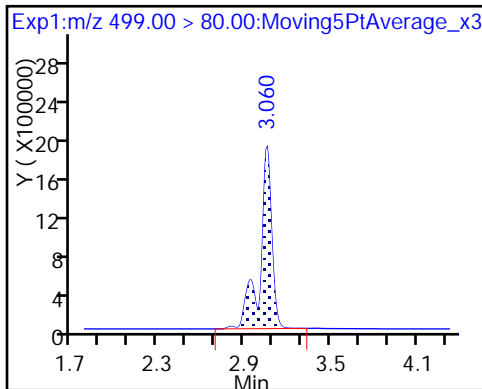
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

D 19 13C5 PFNA

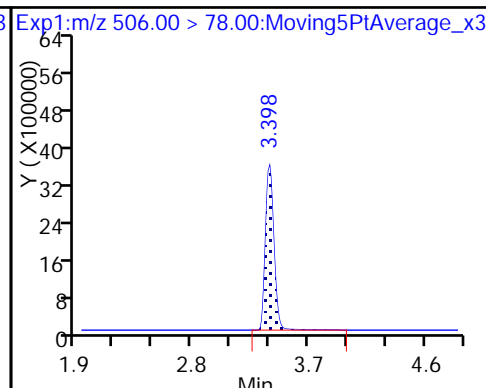
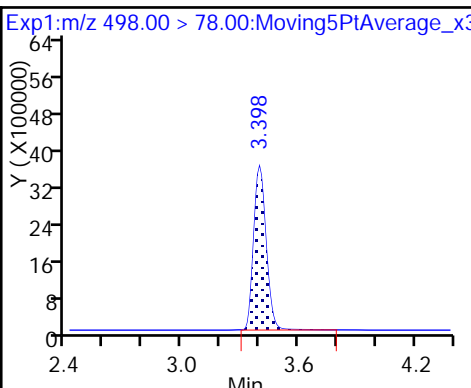
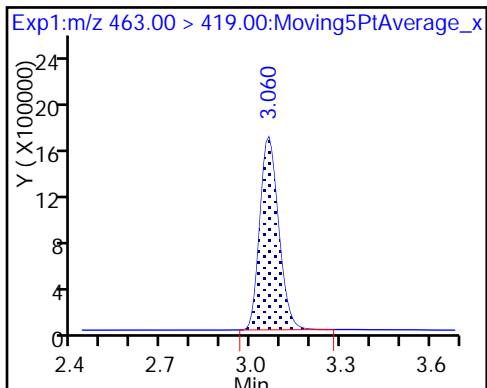




20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

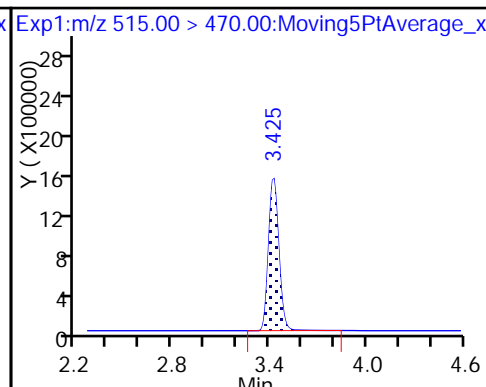
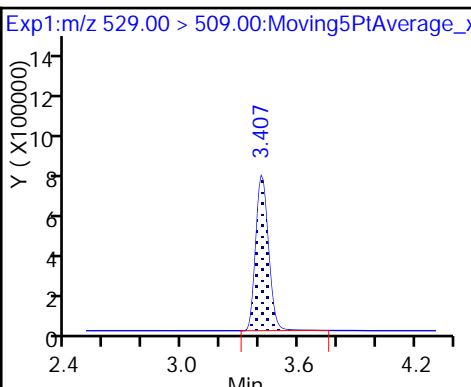
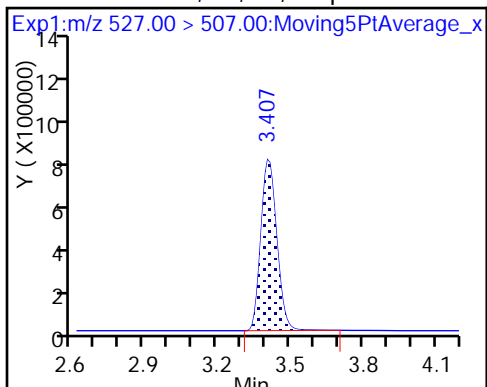
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

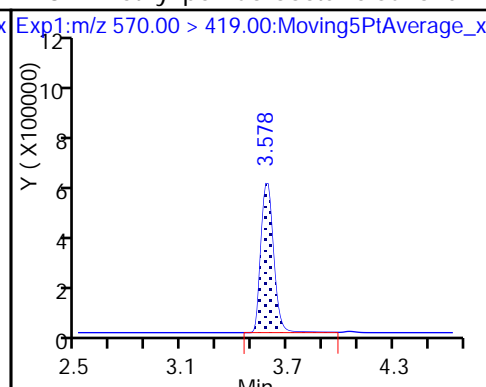
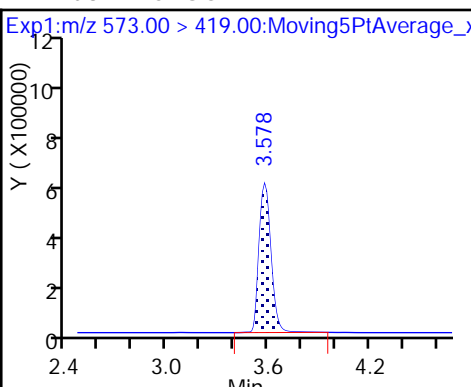
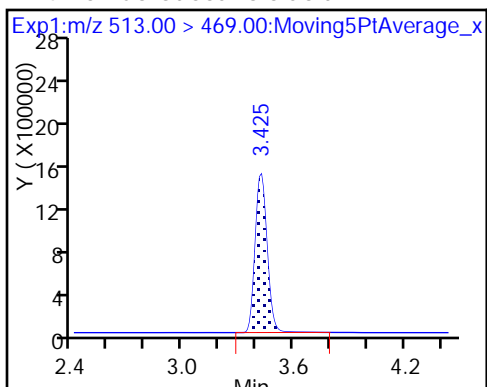
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

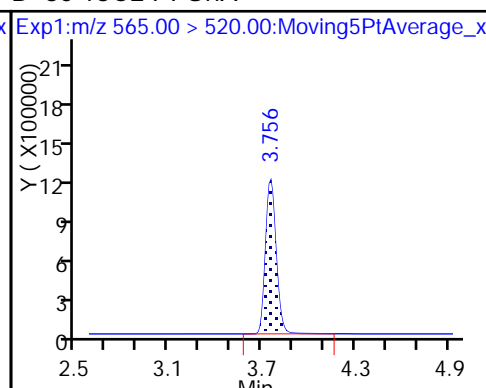
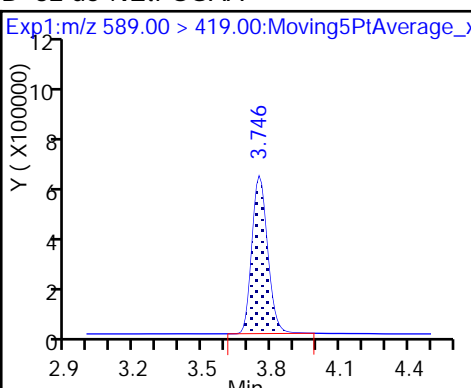
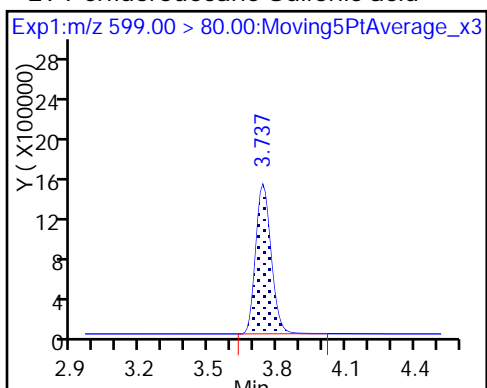
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

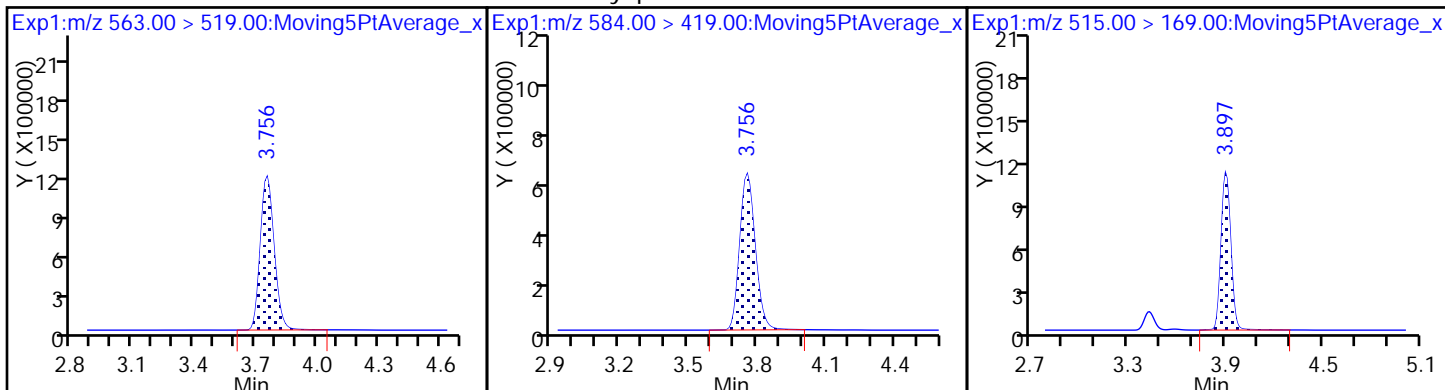
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

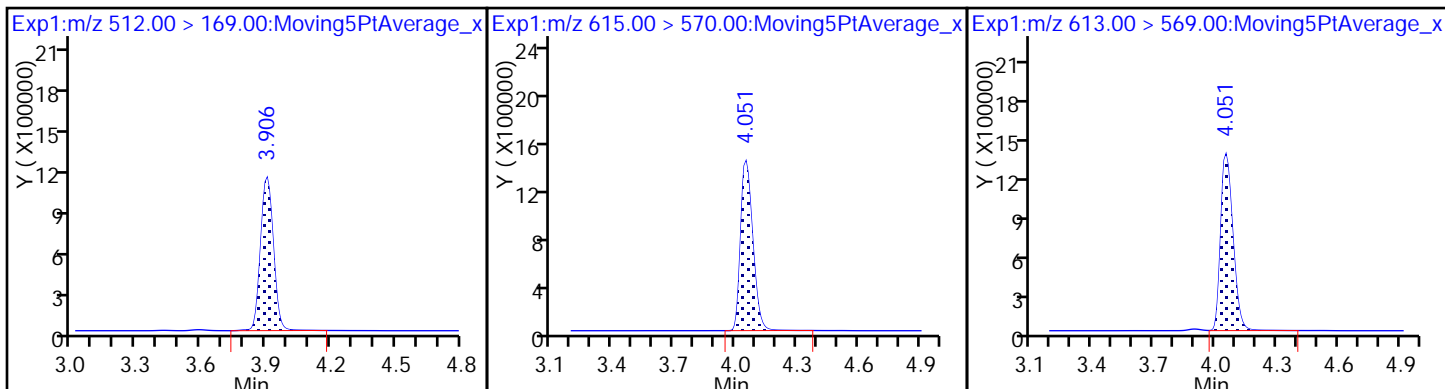
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

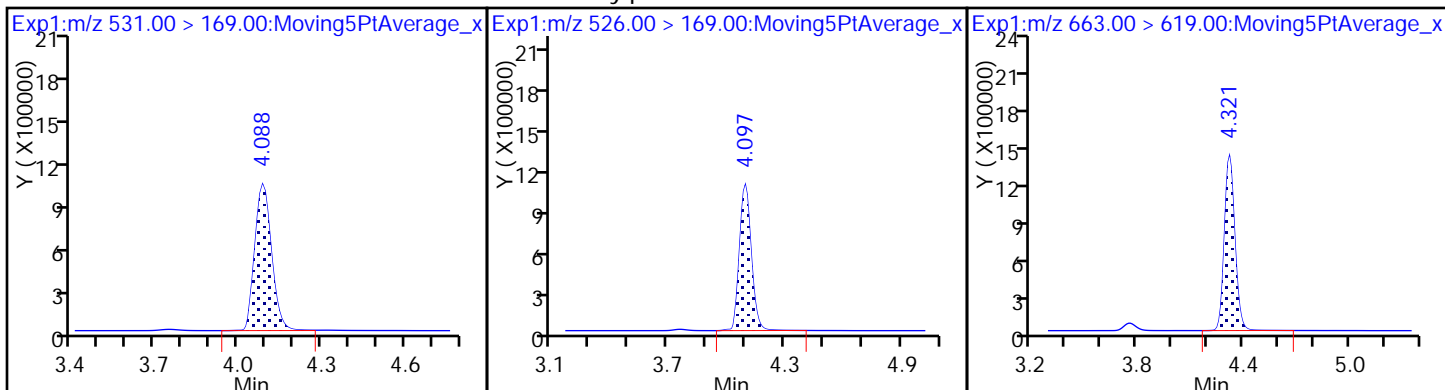
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

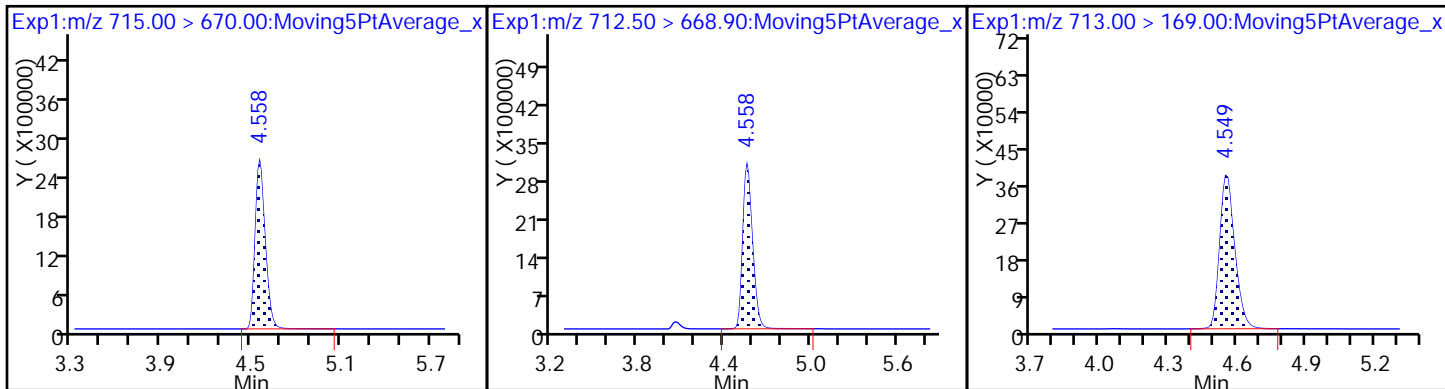
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

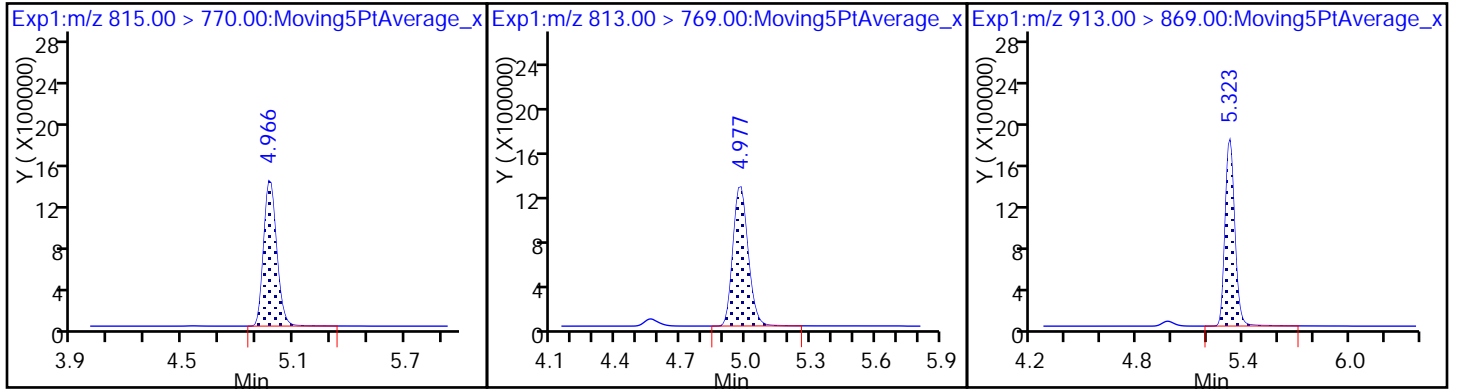
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_008.d  
 Lims ID: IC L6 Full  
 Client ID:  
 Sample Type: IC Calib Level: 6  
 Inject. Date: 30-Jun-2017 09:55:08 ALS Bottle#: 33 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L6-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:49:08 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.543	1.541	0.002	11990780	46.5		93.1	15315	
2 Perfluorobutyric acid	212.90 > 169.00	1.543	1.541	0.002	1.000	21413074	98.7	98.7	5106	
D 3 13C5-PFPeA	267.90 > 223.00	1.744	1.748	-0.004	8443620	45.3		90.6	18881	
4 Perfluoropentanoic acid	262.90 > 219.00	1.753	1.750	0.003	1.000	16564174	96.9	96.9	5816	
D 47 13C3-PFBS	301.90 > 83.00	1.771	1.768	0.003	233138	NC			6765	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.779	1.775	0.004	1.000	26357188	83.7	94.7	1159249	
	298.90 > 99.00	1.771	1.775	-0.004	0.995	12667058	2.08(0.00-0.00)	94.7	356449	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.971	1.969	0.002	1.000	5886874	90.7	97.1	24284	
6 Perfluorohexanoic acid	313.00 > 269.00	2.015	2.012	0.003	1.000	16510571	101.2	101	15047	
D 7 13C2 PFHxA	315.00 > 270.00	2.015	2.012	0.003	8140933	45.6		91.2	12574	
D 9 13C4-PFHpA	367.00 > 322.00	2.335	2.331	0.004	7221784	45.0		90.0	21641	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.335	2.331	0.004	1.000	15366143	99.7	99.7	10784	
D 11 18O2 PFHxS	403.00 > 84.00	2.353	2.346	0.007	10274859	43.1		91.2	28547	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.353	2.346	0.007	1.000	21657467	89.2	98.0	6482	
D 12 M2-6:2FTS	429.00 > 409.00	2.664	2.656	0.008	3594466	44.9		94.6	20073	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.664	2.657	0.007	1.000	6862996	92.3	97.4	258167	
* 62 13C2-PFOA	415.00	> 370.00	2.686	2.679	0.007		7003886	50.0		26837	
D 14 13C4 PFOA	417.00	> 372.00	2.686	2.682	0.004		6932607	44.3	88.6	18333	
15 Perfluorooctanoic acid	413.00	> 369.00	2.693	2.683	0.010	1.000	14468380	97.6	97.6	2994	
	413.00	> 169.00	2.686	2.683	0.003	0.997	8899376		1.63(0.90-1.10)	97.6	9652
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.701	2.691	0.010	1.000	18384762	95.6	100	30678	
D 18 13C4 PFOS	503.00	> 80.00	3.060	3.054	0.006		8081310	44.8	93.8	12416	
20 Perfluorononanoic acid	463.00	> 419.00	3.060	3.057	0.003	1.000	11533790	101.0	101	9772	
D 19 13C5 PFNA	468.00	> 423.00	3.060	3.057	0.003		5798959	45.3	90.6	14923	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.060	3.057	0.003	1.000	17007951	96.4	104	7831	
	499.00	> 99.00	3.060	3.057	0.003	1.000	3728197		4.56(0.90-1.10)	104	11005
D 21 13C8 FOSA	506.00	> 78.00	3.402	3.390	0.012		12953173	47.1	94.3	42896	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.402	3.390	0.012	1.000	23785437	94.3	94.3	402946	
D 26 M2-8:2FTS	529.00	> 509.00	3.411	3.407	0.004		2918098	43.5	90.8	24809	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.411	3.407	0.004	1.000	5613578	95.1	99.3	24837	
D 23 13C2 PFDA	515.00	> 470.00	3.421	3.417	0.004		5347422	45.2	90.4	21515	
24 Perfluorodecanoic acid	513.00	> 469.00	3.421	3.419	0.002	1.000	10090700	98.1	98.1	19286	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.586	3.575	0.011		2286992	48.1	96.2	6937	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.586	3.579	0.007	1.000	4956785	103.4	103	11218	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.734	3.732	0.002	1.000	10852456	103.4	107	93262	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.744	3.742	0.002		2112166	43.0	86.0	3622	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.754	3.750	0.004	1.003	4269496	105.6	106	49430	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.754	3.750	0.004	1.000	8438025	98.5	98.5	15269	
D 30 13C2 PFUnA	565.00	> 520.00	3.754	3.750	0.004		4026905	43.1	86.2	17586	
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.905	3.890	0.015		3643905	48.3	96.7	622	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.905	3.895	0.010	1.000	7173099	103.3	103	6844	
37 Perfluorododecanoic acid	613.00 > 569.00	4.047	4.045	0.002	1.000	8811380	101.7	102	8847	
D 36 13C2 PFDaA	615.00 > 570.00	4.047	4.045	0.002		4572408	46.6	93.1	13634	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.093	4.077	0.016		3663378	50.6	101	4540	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.102	4.086	0.016	1.000	7385820	100.1	100	6626	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.318	4.316	0.002	1.000	9013731	103.2	103	3173	
D 43 13C2-PFTeDA	715.00 > 670.00	4.556	4.556	0.0		9868130	46.2	92.4	48465	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.556	4.557	-0.001	1.000	21531693	96.0	96.0	3379	
	713.00 > 169.00	4.547	4.557	-0.010	0.998	2791547	7.71(0.00-0.00)	96.0	26618	
D 44 13C2-PFHxDA	815.00 > 770.00	4.965	4.969	-0.004		5659675	47.2	94.3	11150	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.965	4.972	-0.007	1.000	9795559	103.5	103	1802	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.316	5.324	-0.008	1.000	10742900	102.9	103	2653	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L6\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_008.d

Injection Date: 30-Jun-2017 09:55:08

Instrument ID: A8\_N

Lims ID: IC L6 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 33

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

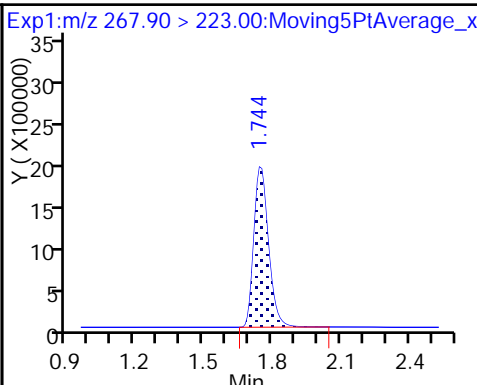
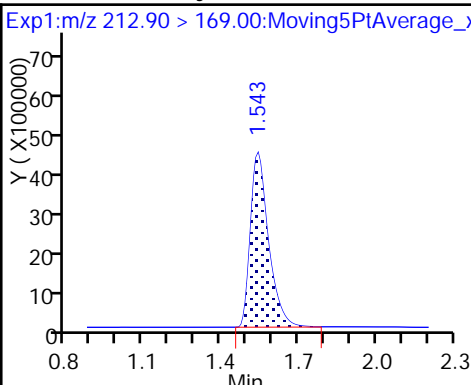
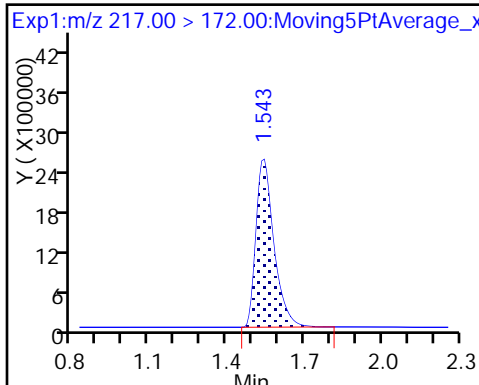
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

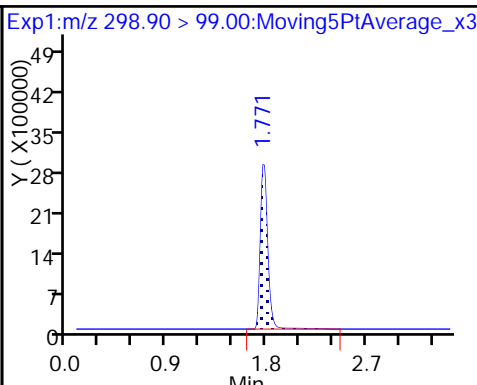
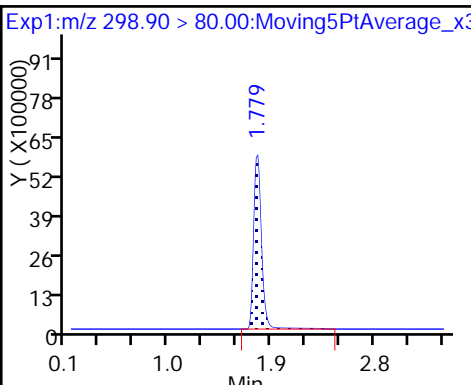
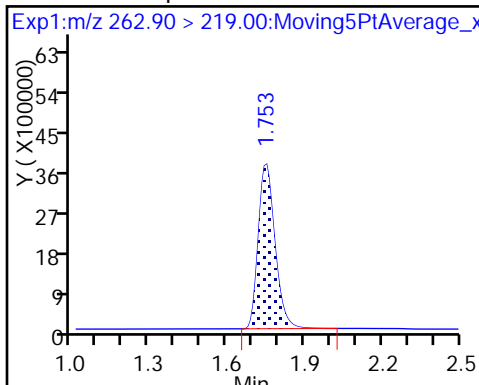
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

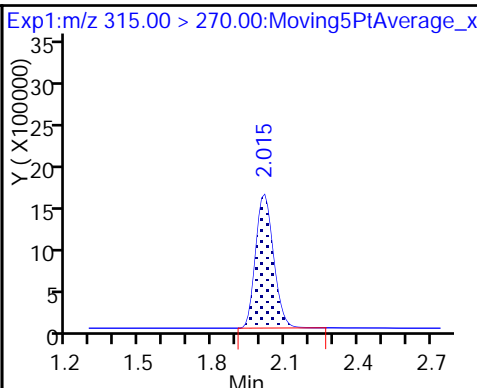
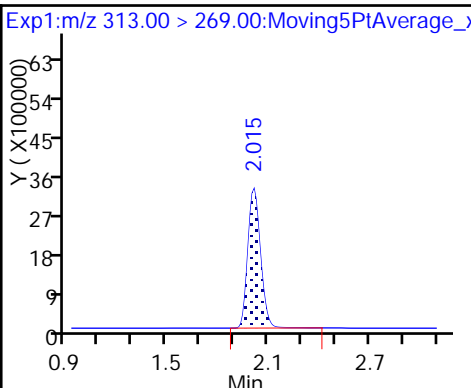
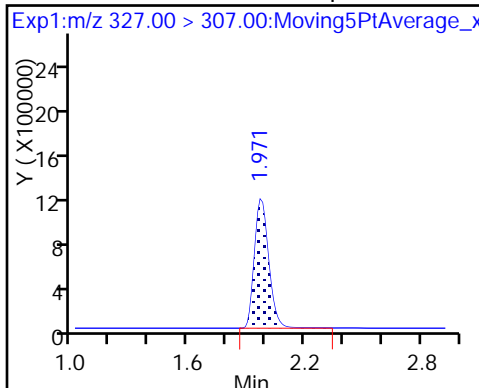
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

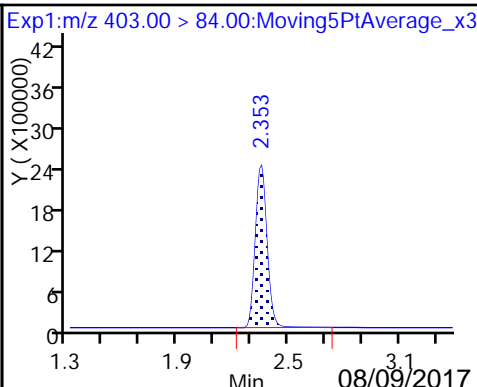
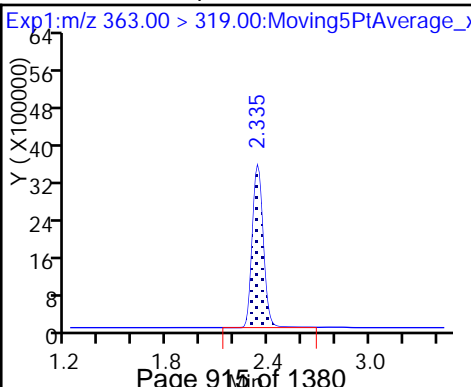
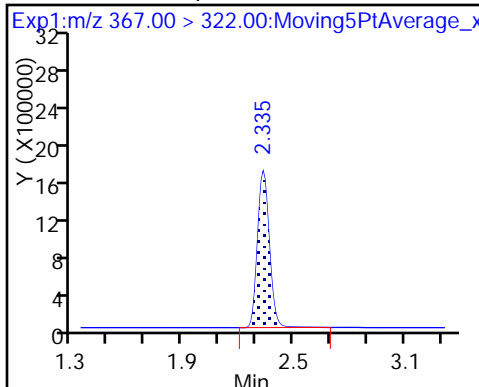
D 7 13C2 PFHxA



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

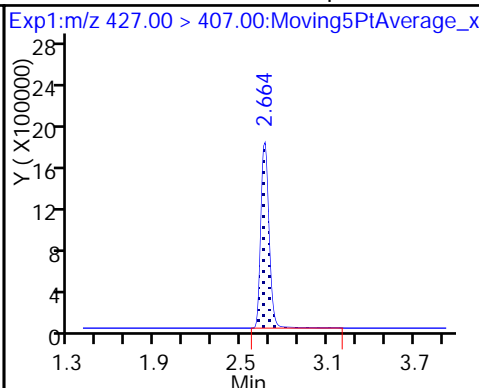
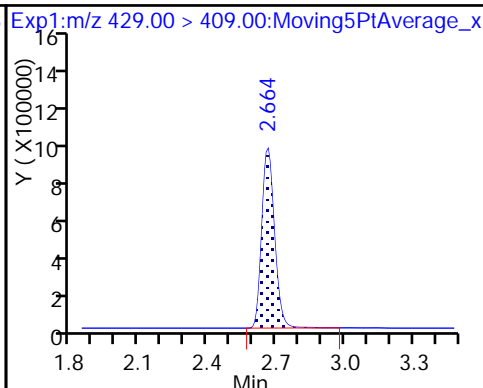
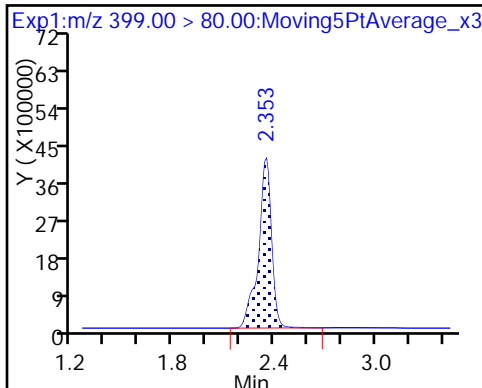
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

D 12 M2-6:2FTS

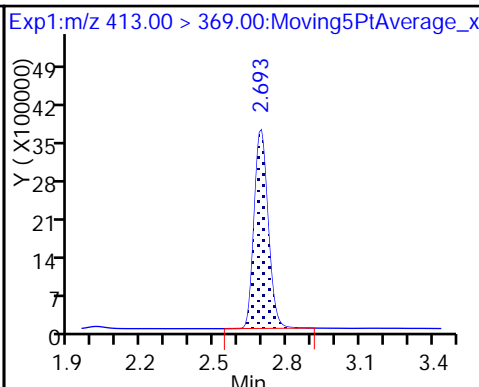
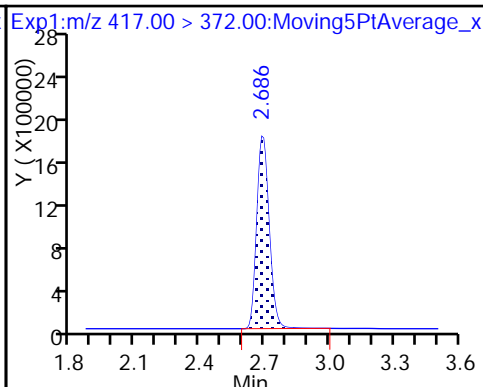
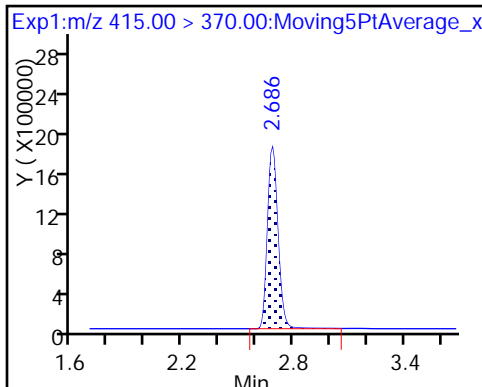
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

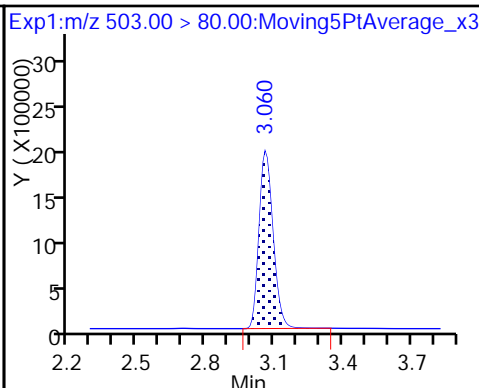
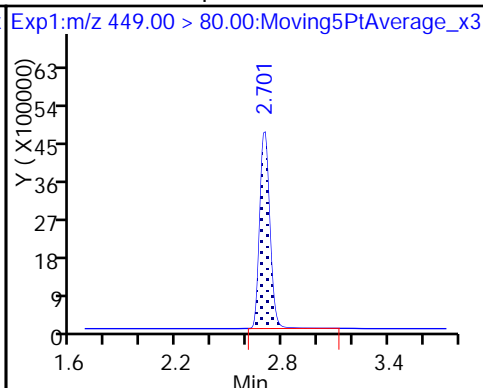
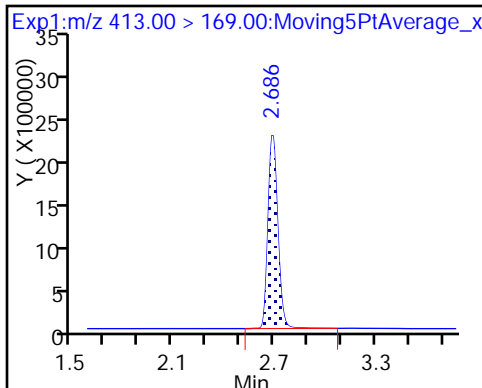
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

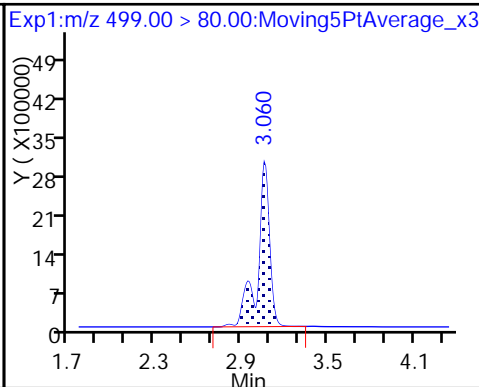
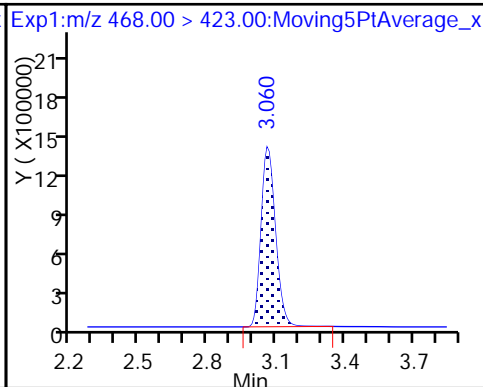
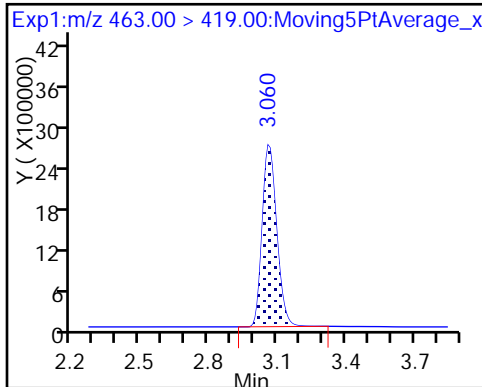
D 18 13C4 PFOS



20 Perfluorononanoic acid

D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid

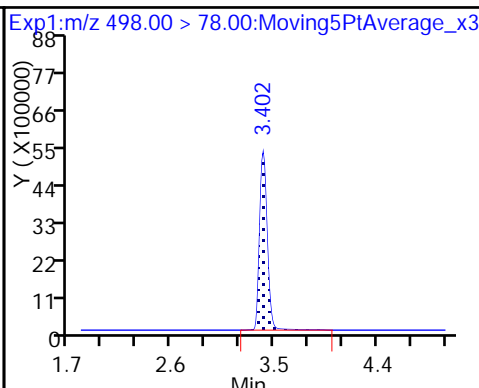
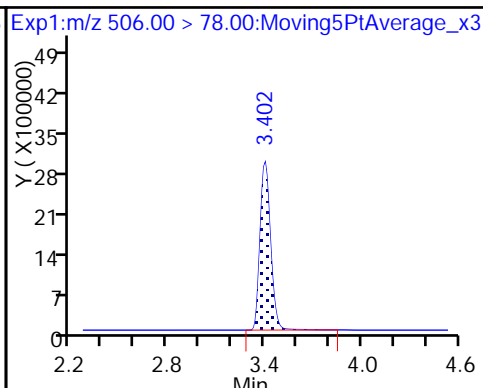
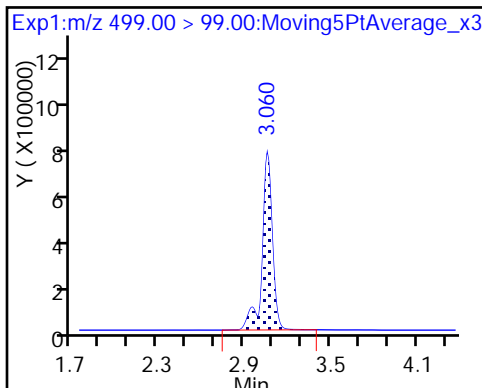




17 Perfluorooctane sulfonic acid

D 21 13C8 FOSA

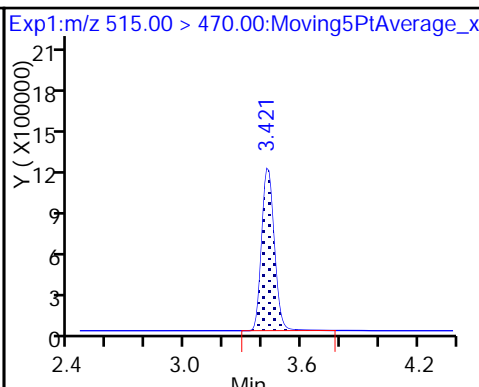
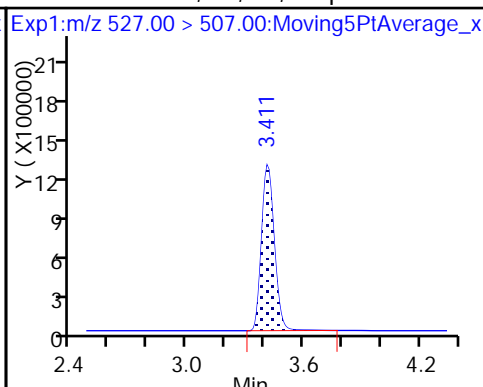
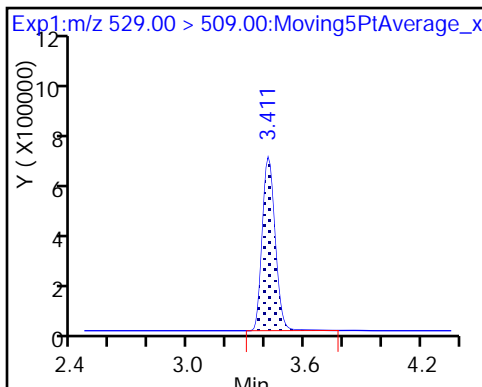
22 Perfluorooctane Sulfonamide



D 26 M2-8:2FTS

25 Sodium 1H,1H,2H,2H-perfluorodeca

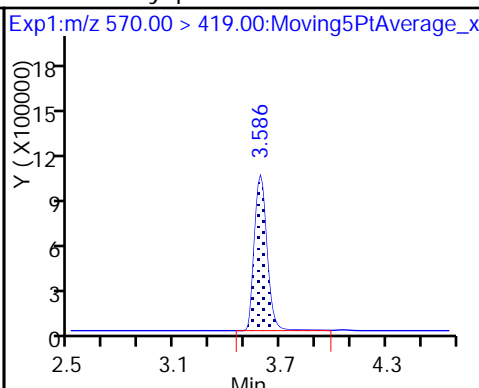
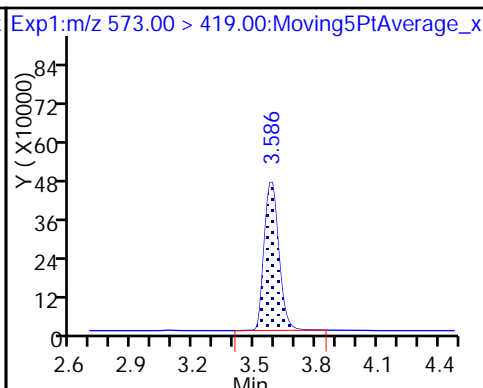
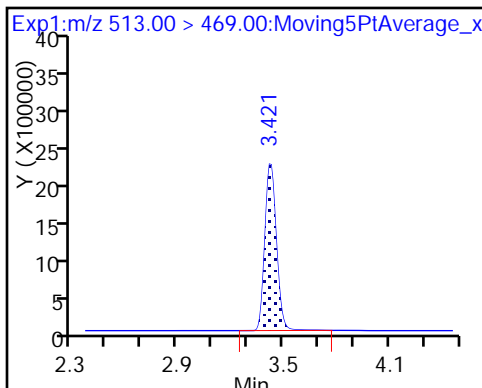
De23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

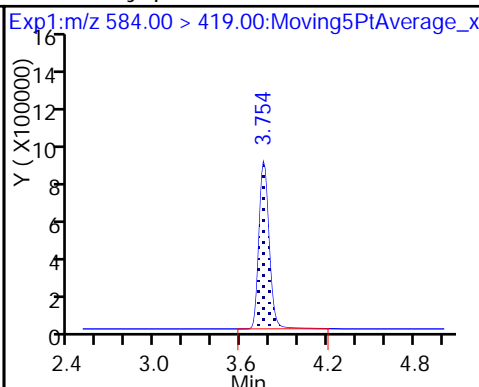
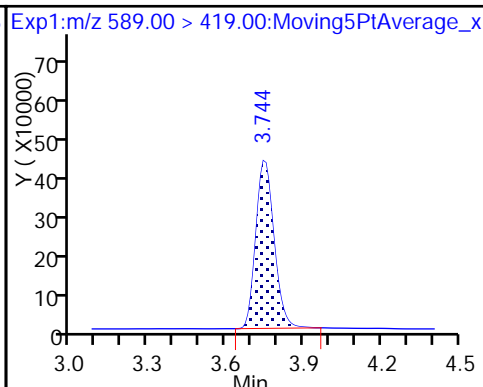
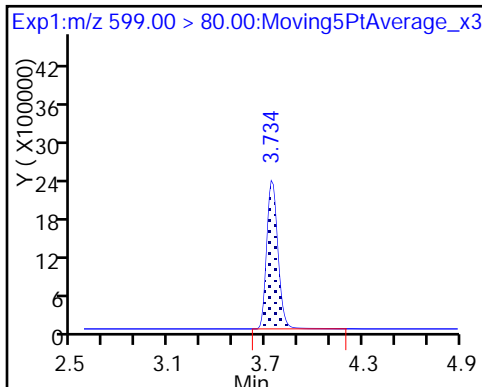
28 N-methyl perfluorooctane sulfonami

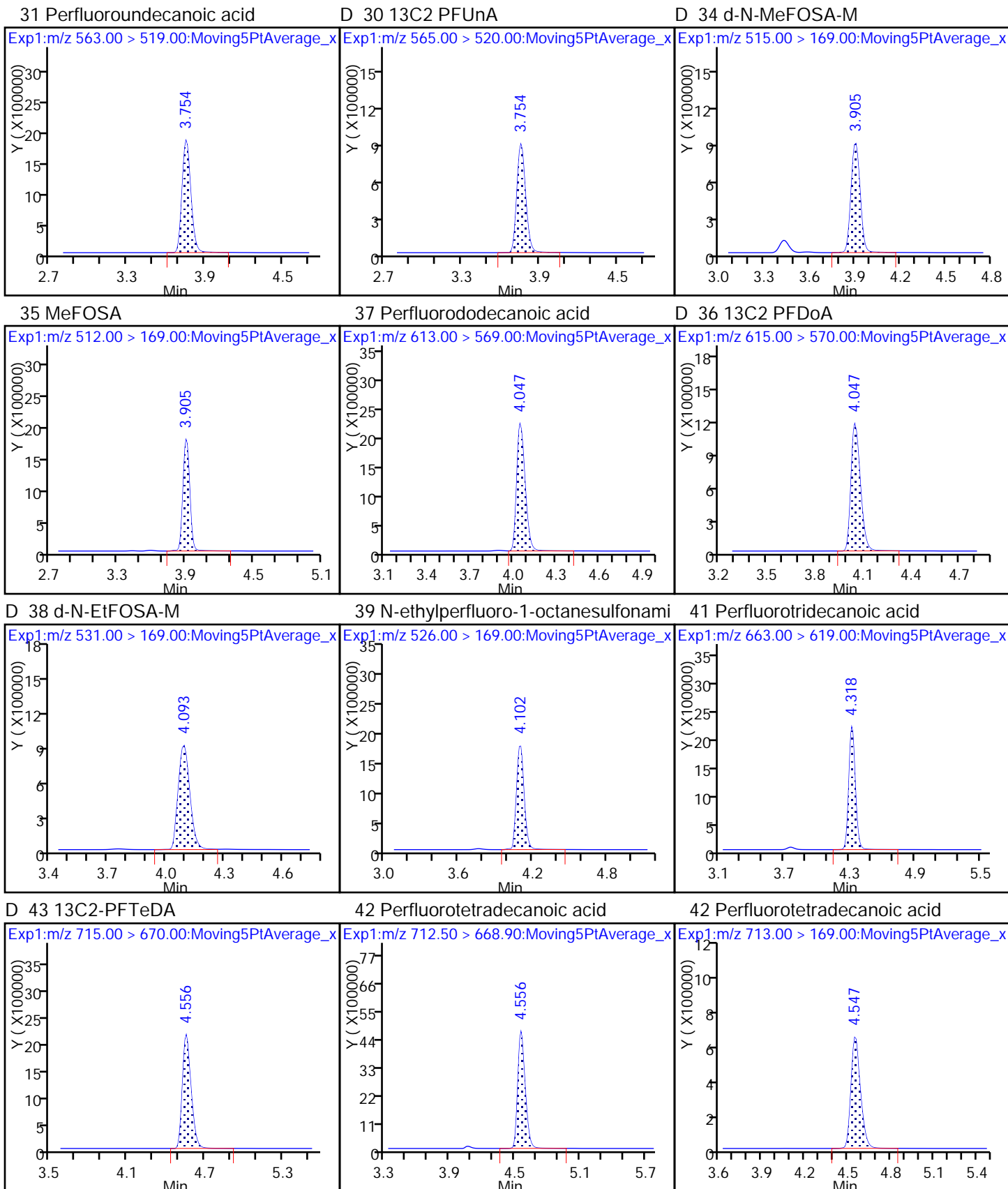


29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

33 N-ethyl perfluorooctane sulfonamid

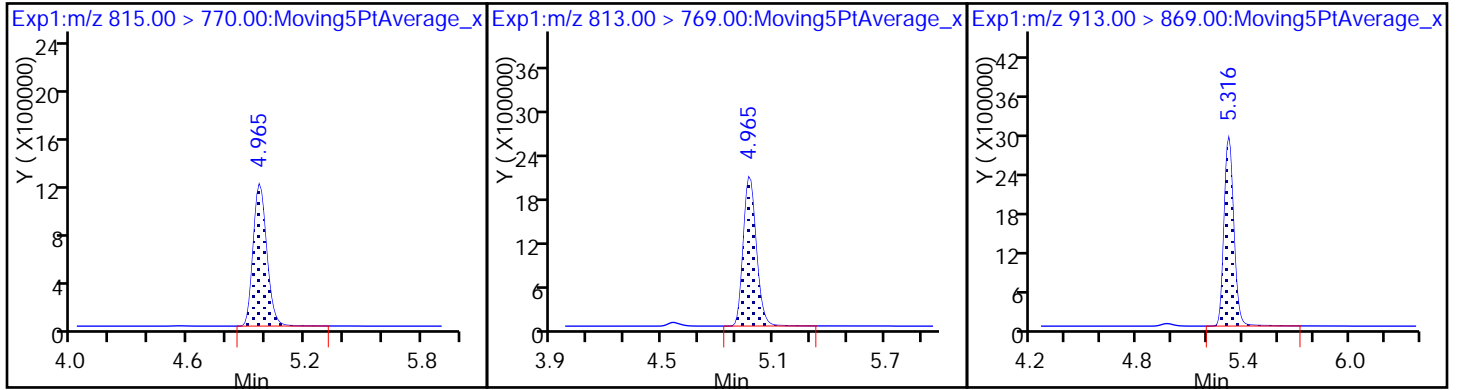




D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_009.d  
 Lims ID: IC L7 Full  
 Client ID:  
 Sample Type: IC Calib Level: 7  
 Inject. Date: 30-Jun-2017 10:02:02 ALS Bottle#: 34 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L7-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:49:13 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.543	1.541	0.002	1.000	34504872	166.3	83.2	4404	
D 1 13C4 PFBA	217.00 > 172.00	1.543	1.541	0.002		11466763	44.5	89.0	12799	
D 3 13C5-PFPeA	267.90 > 223.00	1.744	1.748	-0.004		7676398	41.2	82.4	20214	
4 Perfluoropentanoic acid	262.90 > 219.00	1.753	1.750	0.003	1.000	26164239	168.4	84.2	6891	
D 47 13C3-PFBS	301.90 > 83.00	1.771	1.768	0.003		208937	NC		6061	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.780	1.775	0.005	1.000	40057961	132.1	74.7	1074210	
	298.90 > 99.00	1.771	1.775	-0.004	0.995	20873605	1.92(0.00-0.00)	74.7	20520	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.971	1.969	0.002	1.000	10681185	164.8	88.2	22806	
D 7 13C2 PFHxA	315.00 > 270.00	2.016	2.012	0.004		7723101	43.3	86.5	18004	
6 Perfluorohexanoic acid	313.00 > 269.00	2.016	2.012	0.004	1.000	26618514	172.0	86.0	12101	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.336	2.331	0.005	1.000	24588362	185.8	92.9	11766	
D 9 13C4-PFHpA	367.00 > 322.00	2.336	2.331	0.005		6201515	38.7	77.3	21504	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.345	2.346	-0.001	1.000	36375944	155.4	85.4	6086	
D 11 18O2 PFHxS	403.00 > 84.00	2.345	2.346	-0.001		9901933	41.6	87.9	35638	
D 12 M2-6:2FTS	429.00 > 409.00	2.660	2.656	0.004		3590082	44.9	94.5	19659	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.660	2.657	0.003	1.000	11645419	156.8	82.7	28006	
* 62 13C2-PFOA	415.00	> 370.00	2.682	2.679	0.003		6031681	50.0		18253	
D 14 13C4 PFOA	417.00	> 372.00	2.689	2.682	0.007		6057508	38.7	77.4	21604	
15 Perfluorooctanoic acid	413.00	> 369.00	2.689	2.683	0.006	1.000	23382806	180.6	90.3	3724	
	413.00	> 169.00	2.689	2.683	0.006	1.000	14838864		1.58(0.90-1.10)	90.3	8502
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.696	2.691	0.005	1.000	29234315	158.3	83.1	32372	
D 18 13C4 PFOS	503.00	> 80.00	3.061	3.054	0.007		7758031	43.0	90.0	14095	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.061	3.057	0.004	1.000	31268915	184.5	99.4	6745	
	499.00	> 99.00	3.061	3.057	0.004	1.000	7342601		4.26(0.90-1.10)	99.4	24967
D 19 13C5 PFNA	468.00	> 423.00	3.061	3.057	0.004		5230889	40.9	81.7	10406	
20 Perfluorononanoic acid	463.00	> 419.00	3.061	3.057	0.004	1.000	20197684	196.1	98.1	30736	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.404	3.390	0.014	1.000	37058119	160.4	80.2	25560	
D 21 13C8 FOSA	506.00	> 78.00	3.404	3.390	0.014		11863819	43.2	86.3	21791	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.413	3.407	0.006	1.000	9690733	161.8	84.4	21136	
D 26 M2-8:2FTS	529.00	> 509.00	3.413	3.407	0.006		2962805	44.2	92.2	20949	
D 23 13C2 PFDA	515.00	> 470.00	3.422	3.417	0.005		4828868	40.8	81.6	27551	
24 Perfluorodecanoic acid	513.00	> 469.00	3.422	3.419	0.003	1.000	17620826	189.7	94.9	29832	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.576	3.575	0.001		2266735	47.7	95.4	4925	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.588	3.579	0.009	1.003	10004810	210.5	105	15983	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.736	3.732	0.004	1.000	19199757	190.5	98.8	451974	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.746	3.742	0.004		2024301	41.2	82.4	6027	
D 30 13C2 PFUnA	565.00	> 520.00	3.756	3.750	0.006		3592980	38.5	76.9	14629	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.756	3.750	0.006	1.000	14238431	186.3	93.1	17854	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.756	3.750	0.006	1.003	8215650	212.0	106	85421	
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.898	3.890	0.008		3671952	48.7	97.4	665	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.907	3.895	0.012	1.000	14498749	207.2	104	8261	
D 36 13C2 PFDaA	615.00 > 570.00	4.044	4.045	-0.001		4447602	45.3	90.6	13028	
37 Perfluorododecanoic acid	613.00 > 569.00	4.044	4.045	-0.001	1.000	15541758	184.5	92.2	10063	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.090	4.077	0.013		3721663	51.4	103	3791	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.099	4.086	0.013	1.000	14828836	197.9	98.9	8464	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.316	4.316	0.0	1.000	15827473	186.3	93.1	6084	
D 43 13C2-PFTeDA	715.00 > 670.00	4.555	4.556	-0.001		9723473	45.5	91.0	87309	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.555	4.557	-0.002	1.000	34252041	157.0	78.5	4789	
	713.00 > 169.00	4.546	4.557	-0.011	0.998	5334365		6.42(0.00-0.00)	78.5	30028
D 44 13C2-PFHxDA	815.00 > 770.00	4.965	4.969	-0.004		5465319	45.5	91.1	12326	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.965	4.972	-0.007	1.000	17414582	189.8	94.9	2867	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.311	5.324	-0.013	1.000	19184310	188.9	94.5	4128	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L7\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_009.d

Injection Date: 30-Jun-2017 10:02:02

Instrument ID: A8\_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 34

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

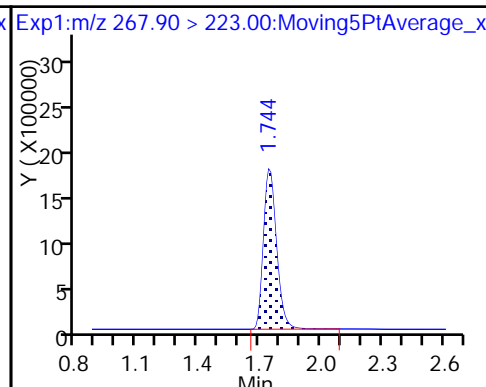
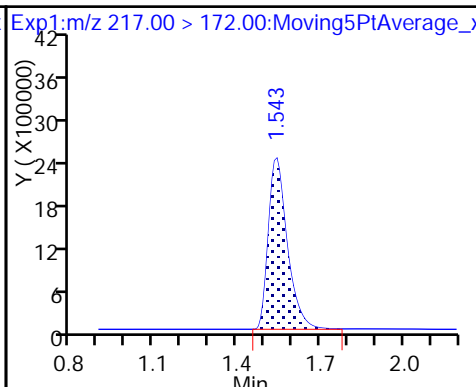
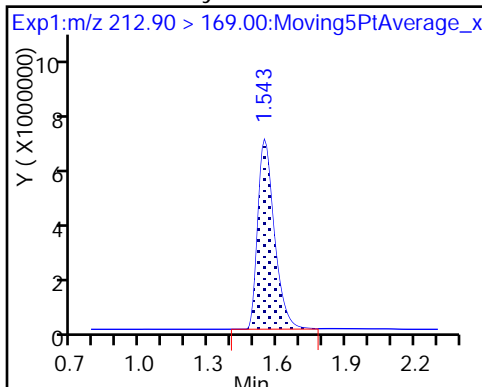
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

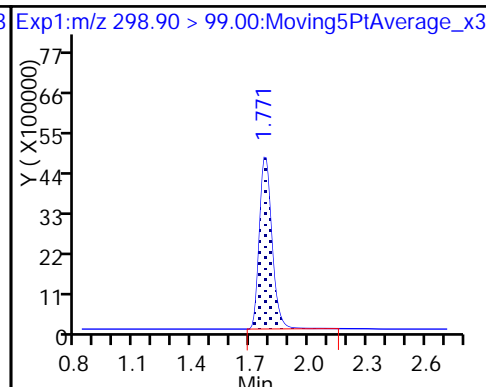
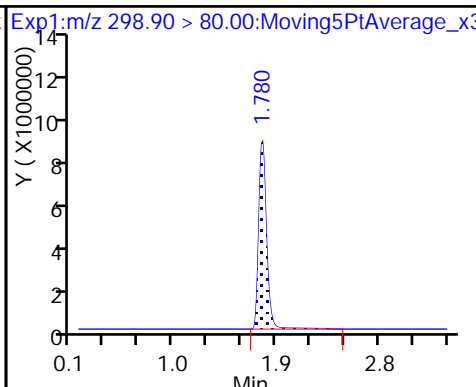
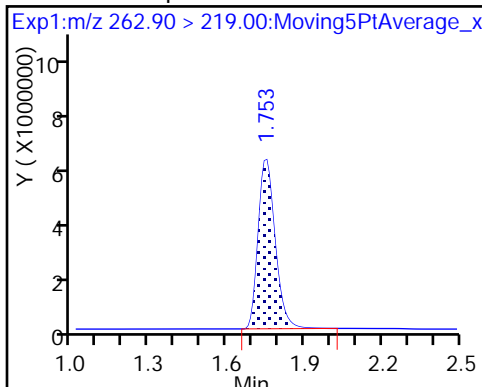
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

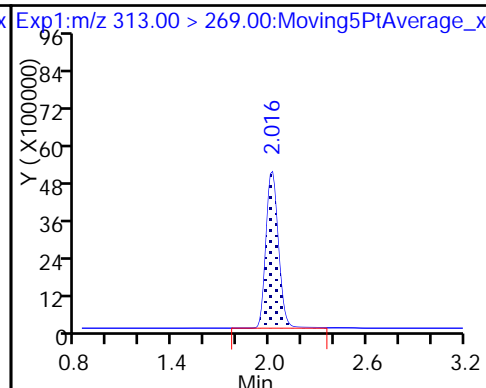
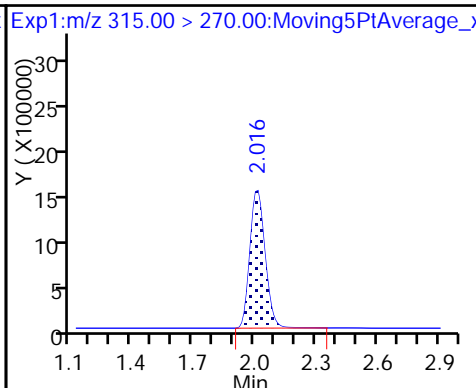
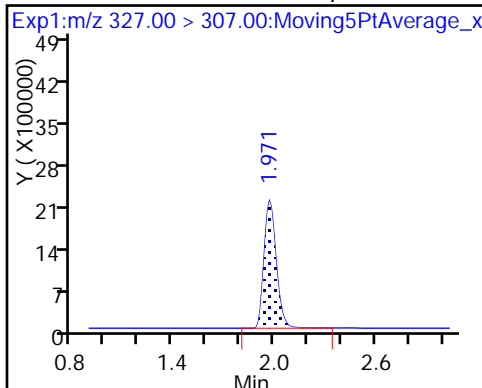
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

De 7 13C2 PFHxA

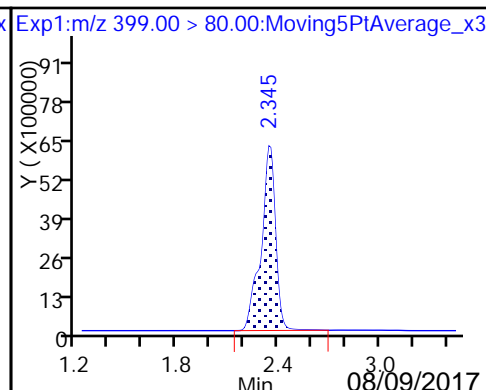
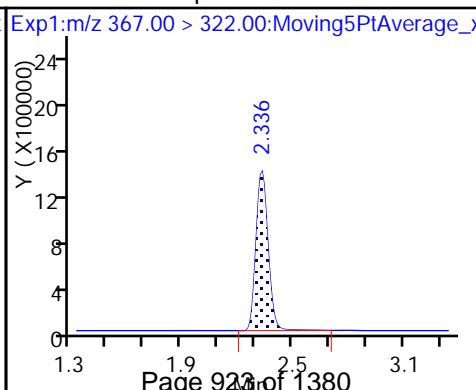
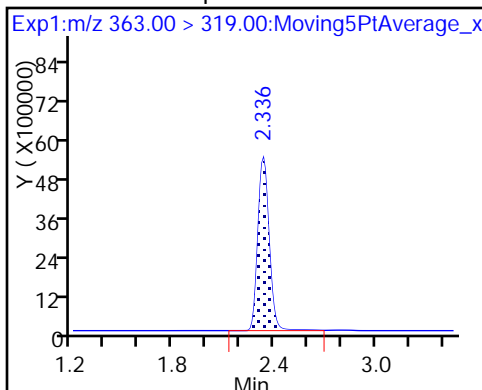
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

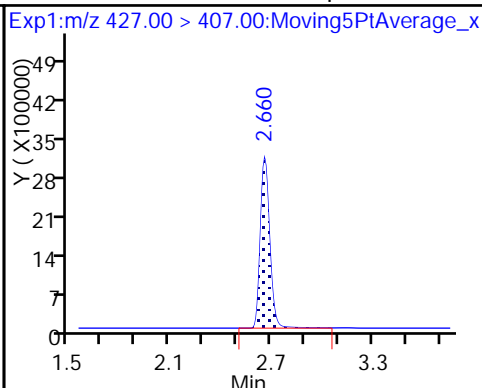
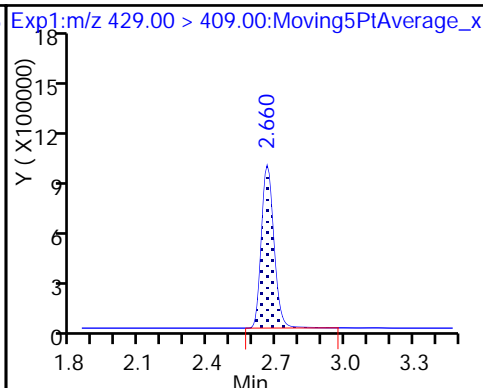
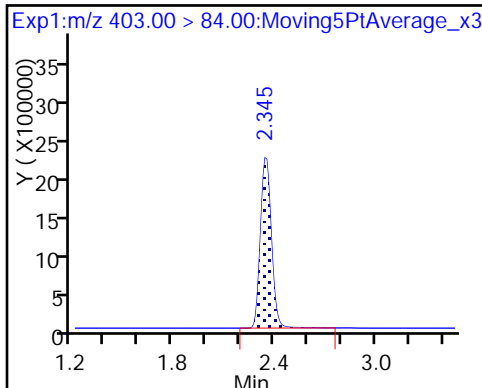
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

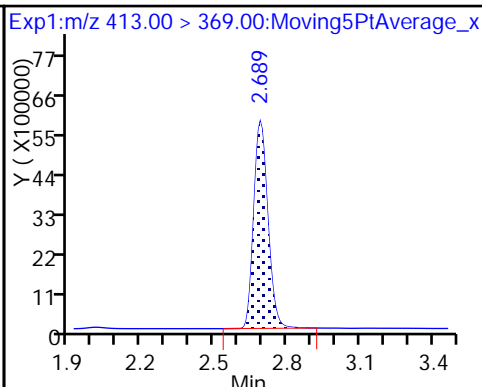
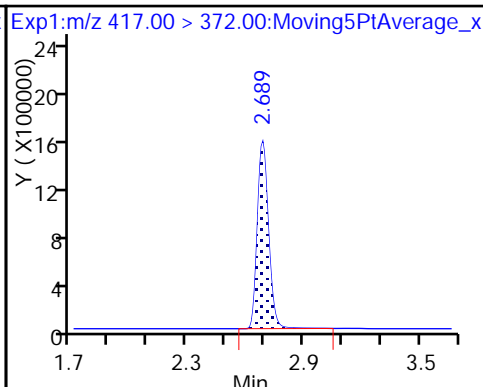
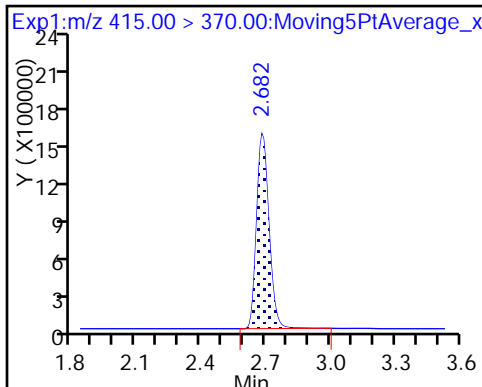
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

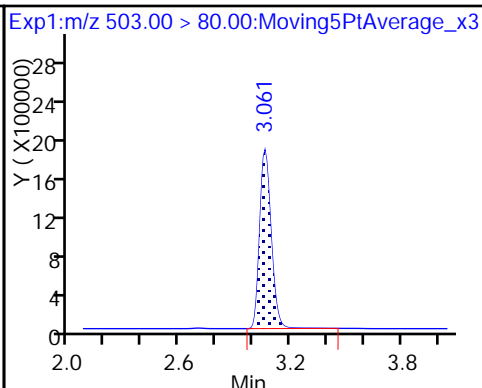
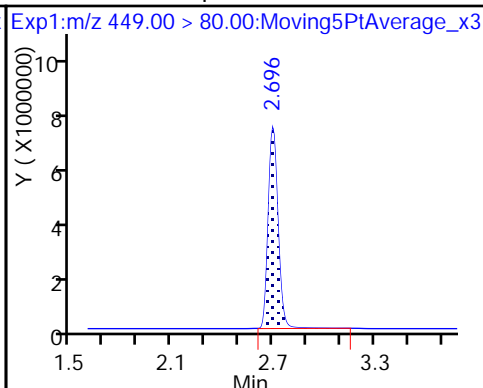
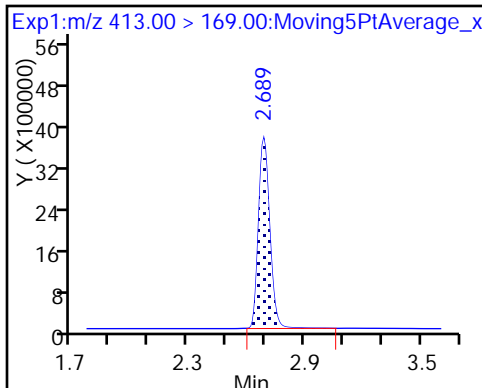
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

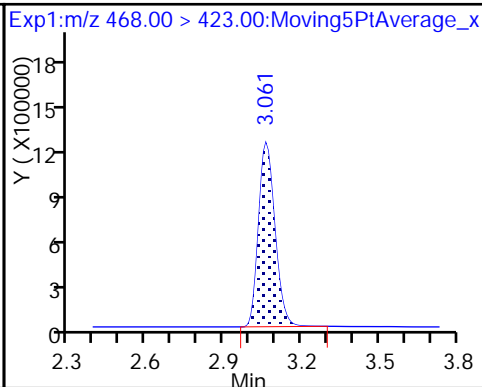
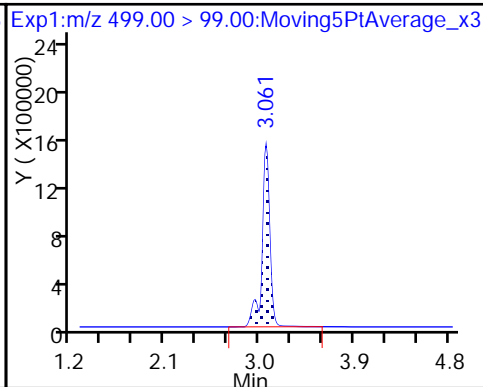
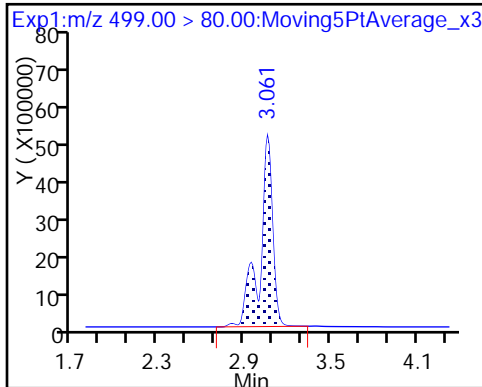
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

D 19 13C5 PFNA

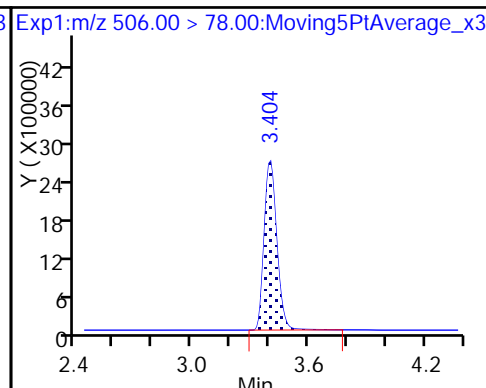
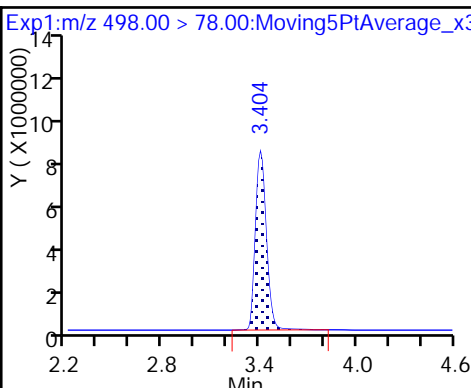
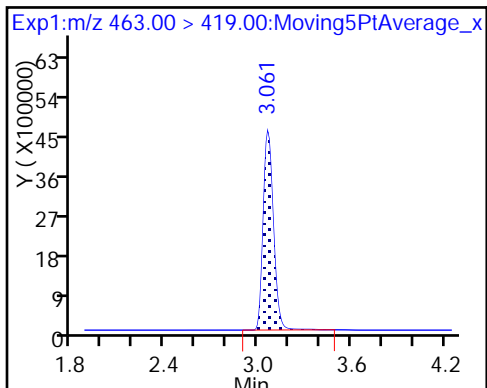




20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

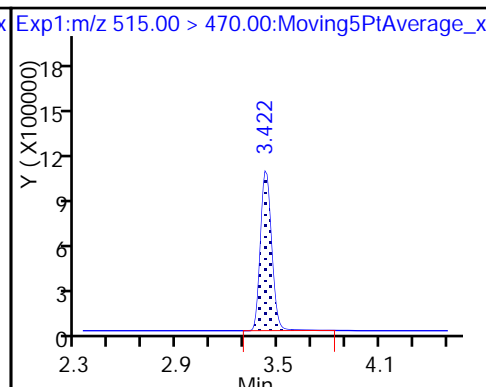
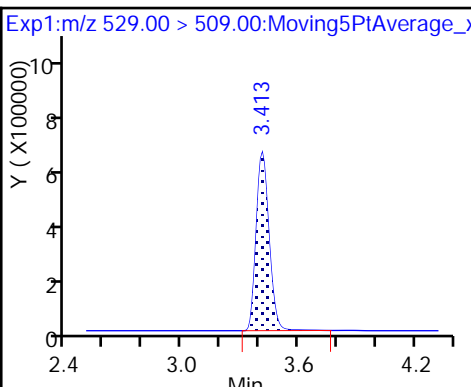
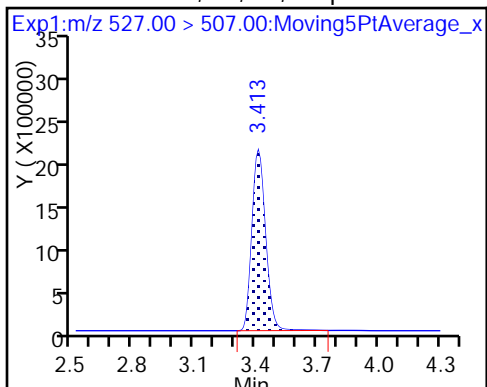
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecanoate

D 26 M2-8:2FTS

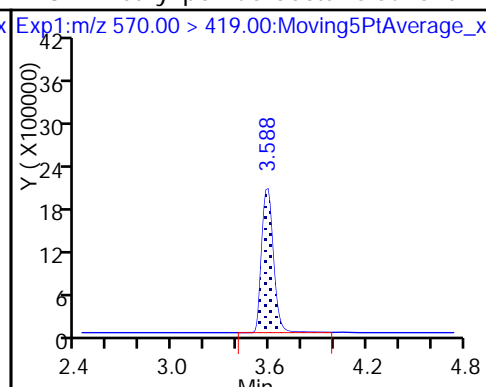
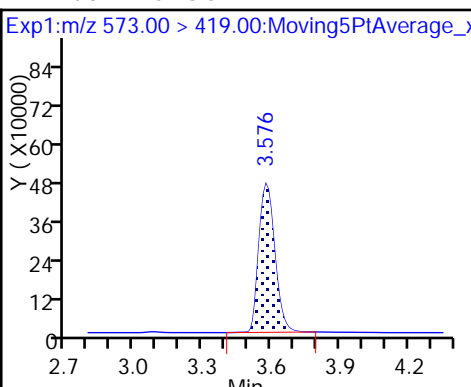
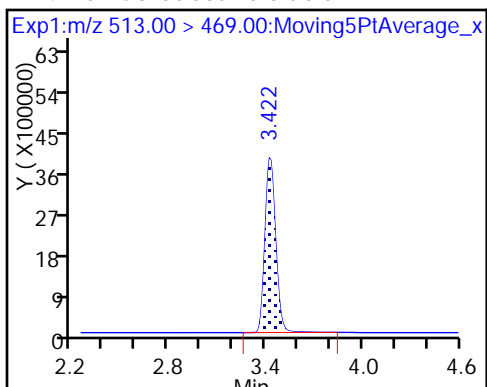
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

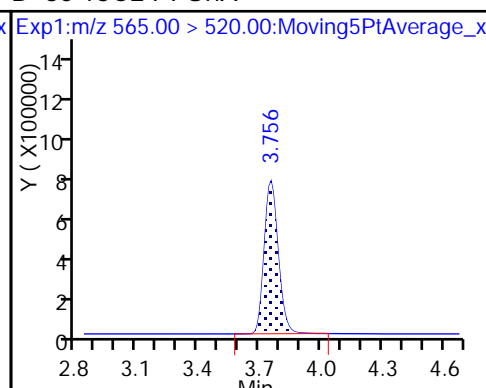
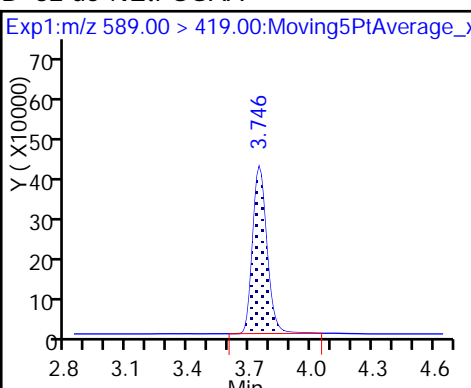
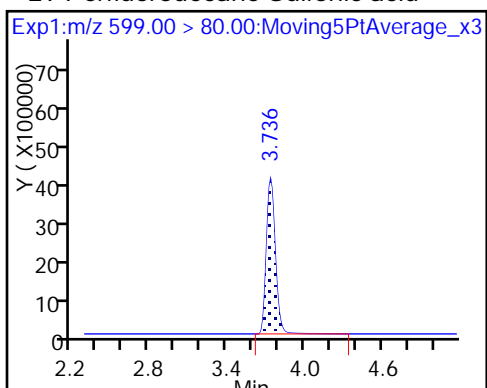
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

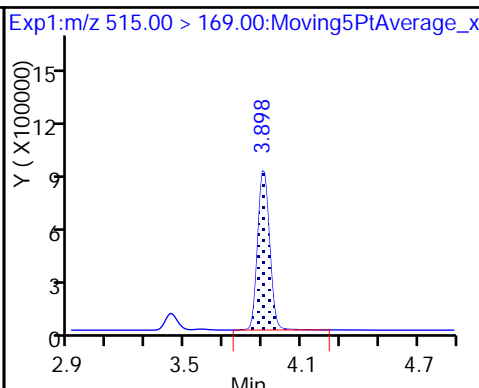
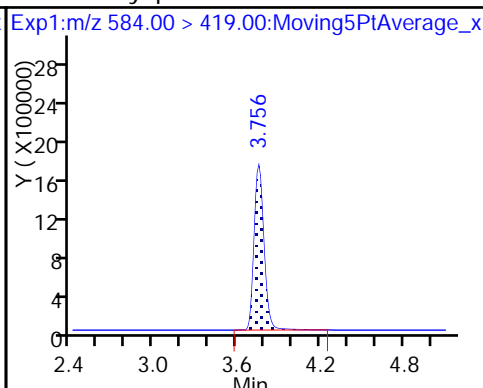
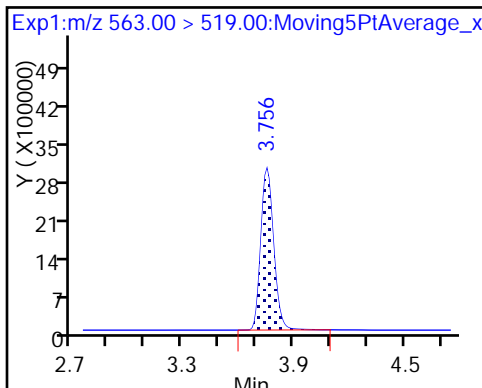
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

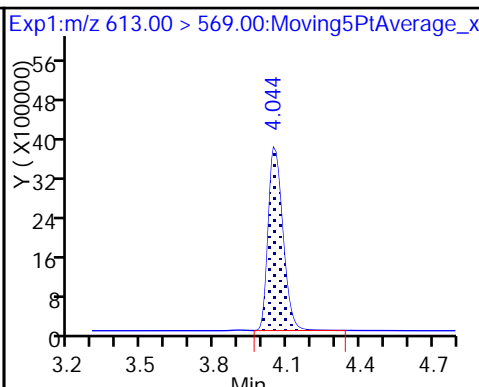
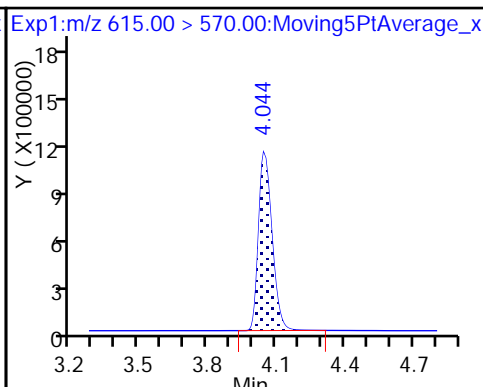
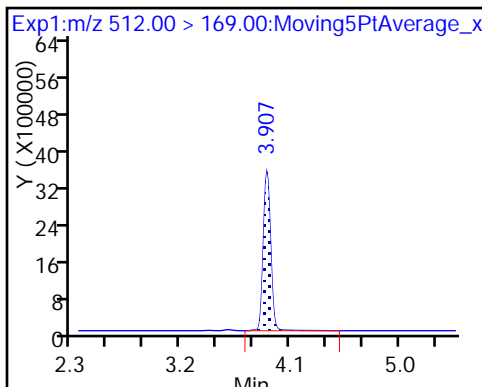
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

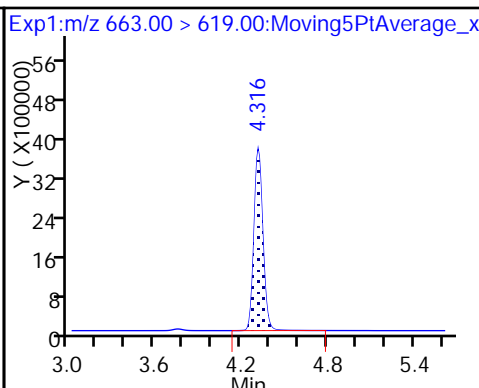
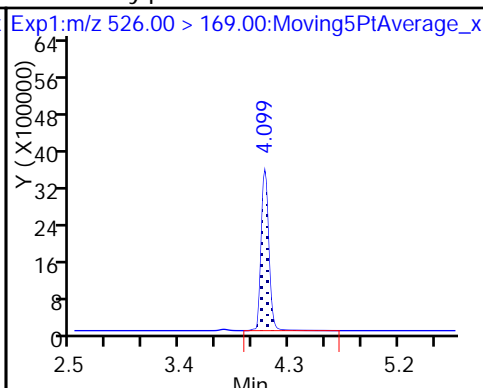
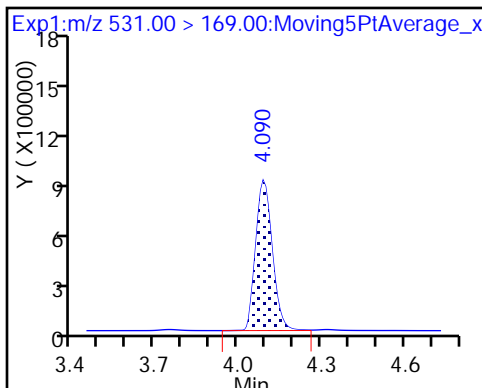
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

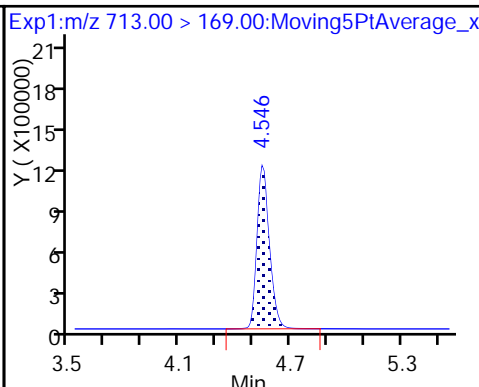
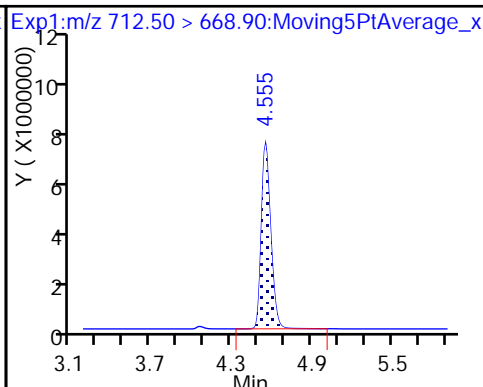
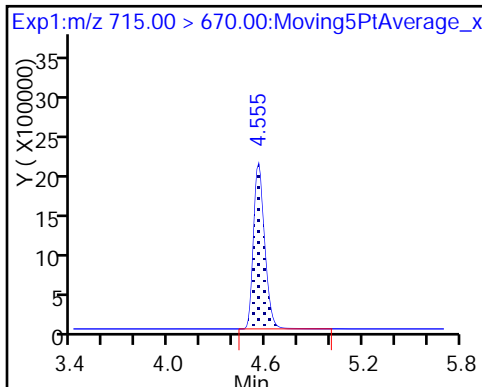
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

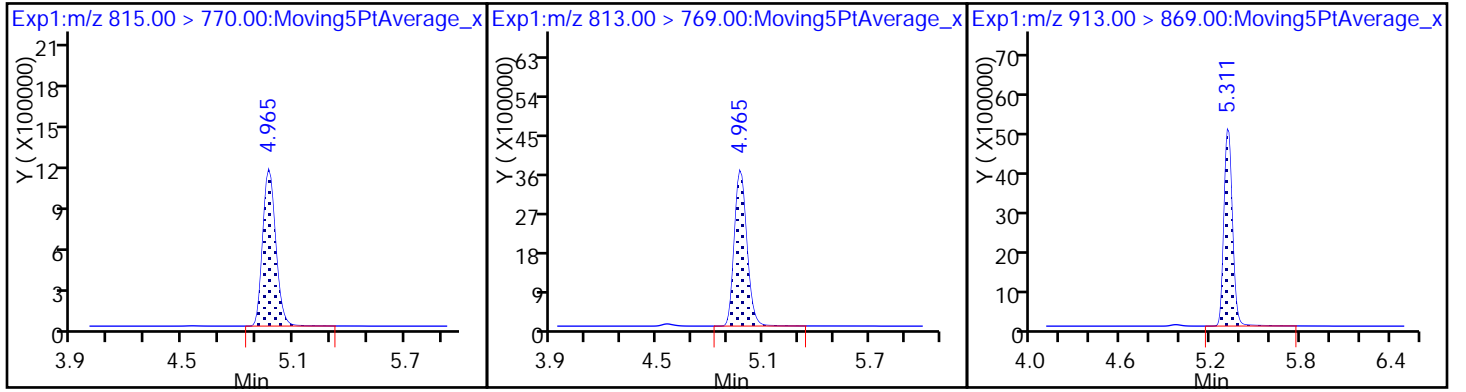
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d  
 Lims ID: IC M2-4:2FTS  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 30-Jun-2017 10:08:55 ALS Bottle#: 37 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: M2:4-2FTS Calibration Std  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:49:20 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 60 M2-4:2FTS	329.00 > 309.00	1.969	1.969	0.0	3882655	NC			15607	
* 62 13C2-PFOA	415.00 > 370.00	2.676	2.679	-0.003	10400945	50.0			27647	

QC Flag Legend

Processing Flags

NC - Not Calibrated

Reagents:

LCM2-4:2FTSIC\_00002 Amount Added: 1.00 Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Injection Date: 30-Jun-2017 10:08:55

Instrument ID: A8\_N

Lims ID: IC M2-4:2FTS

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 37 Worklist Smp#: 10

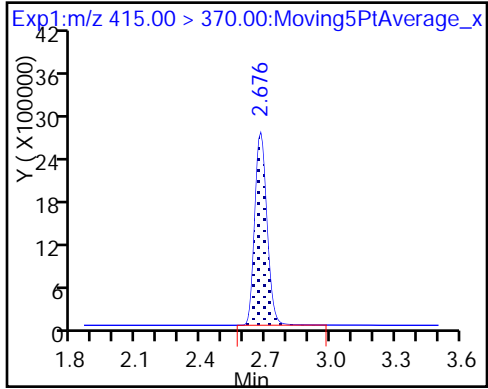
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

\* 62 13C2-PFOA



FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-174751/3	2017.07.18ICAL_003.d
Level 2	IC 320-174751/4	2017.07.18ICAL_004.d
Level 3	IC 320-174751/5	2017.07.18ICAL_005.d
Level 4	IC 320-174751/6	2017.07.18ICAL_006.d
Level 5	IC 320-174751/7	2017.07.18ICAL_007.d
Level 6	IC 320-174751/8	2017.07.18ICAL_008.d
Level 7	IC 320-174751/9	2017.07.18ICAL_009.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Perfluorobutanoic acid (PFBA)	1.547	1.547	1.545	1.545	1.545	1.546	1.536				1.294 - 1.794	1.544
Perfluoropentanoic acid (PFPeA)	1.765	1.765	1.763	1.763	1.754	1.755	1.754				1.510 - 2.010	1.760
Perfluorobutanesulfonic acid (PFBS)	1.784	1.793	1.791	1.791	1.781	1.782	1.781				1.606 - 1.966	1.786
4:2 FTS	1.986	1.986	1.983	1.983	1.982	1.983	1.982				1.734 - 2.234	1.984
Perfluorohexanoic acid (PFHxA)	2.020	2.020	2.028	2.028	2.017	2.017	2.017				1.771 - 2.271	2.021
Perfluoroheptanoic acid (PFHpA)	2.344	2.347	2.342	2.340	2.339	2.333	2.332				2.090 - 2.590	2.340
Perfluorohexanesulfonic acid (PFHxS)	++++	2.355	2.358	2.356	2.347	2.350	2.350				2.104 - 2.604	2.353
6:2 FTS	2.667	2.670	2.667	2.666	2.655	2.650	2.653				2.411 - 2.911	2.661
Perfluorooctanoic acid (PFOA)	2.689	2.692	2.696	2.695	2.683	2.679	2.682				2.438 - 2.938	2.688
Perfluoroheptanesulfonic Acid (PFHpS)	2.696	2.699	2.703	2.695	2.691	2.687	2.689				2.444 - 2.944	2.694
Perfluorononanoic acid (PFNA)	3.062	3.057	3.062	3.059	3.049	3.045	3.049				2.805 - 3.305	3.055
Perfluorooctanesulfonic acid (PFOS)	3.062	3.057	3.062	3.059	3.049	3.045	3.049				2.805 - 3.305	3.055
Perfluorooctane Sulfonamide (FOSA)	3.392	3.396	3.402	3.394	3.390	3.386	3.385				3.142 - 3.642	3.392
8:2 FTS	3.411	3.405	3.411	3.403	3.398	3.394	3.402				3.153 - 3.653	3.403
Perfluorodecanoic acid (PFDA)	3.420	3.423	3.420	3.421	3.407	3.403	3.411				3.165 - 3.665	3.415
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	3.579	3.583	3.578	3.580	3.568	3.565	3.565				3.324 - 3.824	3.574
Perfluorodecanesulfonic acid (PFDS)	3.735	3.730	3.736	3.726	3.724	3.722	3.722				3.478 - 3.978	3.728
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	3.745	3.749	3.745	3.746	3.734	3.741	3.732				3.492 - 3.992	3.742
Perfluoroundecanoic acid (PFUnA)	3.745	3.749	3.745	3.746	3.734	3.741	3.732				3.492 - 3.992	3.742
MeFOSA	3.900	3.904	3.901	3.901	3.892	3.890	3.892				3.647 - 4.147	3.897
Perfluorododecanoic acid (PFDoA)	4.042	4.039	4.036	4.037	4.030	4.030	4.026				3.784 - 4.284	4.034
N-EtFOSA-M	4.087	4.091	4.088	4.088	4.088	4.080	4.083				3.836 - 4.336	4.086
Perfluorotridecanoic Acid (PFTriA)	4.307	4.310	4.306	4.307	4.300	4.301	4.298				4.054 - 4.554	4.304
Perfluorotetradecanoic acid (PFTeA)	++++	4.551	4.548	4.548	4.538	4.538	4.536				4.294 - 4.794	4.543
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++	4.962	4.960	4.960	4.952	4.943	4.943				4.704 - 5.204	4.953
Perfluoro-n-octadecanoic acid (PFODA)	5.306	5.308	5.306	5.306	5.293	5.293	5.294				5.051 - 5.551	5.301
13C4 PFBA	1.547	1.547	1.545	1.545	1.536	1.537	1.536				1.292 - 1.792	1.542
13C5-PFPeA	1.756	1.756	1.763	1.763	1.754	1.755	1.754				1.507 - 2.007	1.757
13C2 PFHxA	2.020	2.020	2.028	2.028	2.017	2.017	2.017				1.771 - 2.271	2.021
13C4-PFHpA	2.344	2.347	2.342	2.340	2.339	2.333	2.332				2.090 - 2.590	2.340
18O2 PFHxS	2.360	2.355	2.358	2.356	2.347	2.350	2.350				2.104 - 2.604	2.354
M2-6:2 FTS	2.667	2.663	2.667	2.666	2.655	2.650	2.653				2.410 - 2.910	2.660

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RETENTION TIME SUMMARY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751  
 SDG No.: \_\_\_\_\_  
 Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N  
 Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
13C4 PFOA	2.689	2.692	2.696	2.688	2.683	2.679	2.682				2.437 - 2.937	2.687
13C4 PFOS	3.062	3.057	3.062	3.059	3.049	3.045	3.049				2.805 - 3.305	3.055
13C5 PFNA	3.062	3.057	3.062	3.059	3.049	3.045	3.049				2.805 - 3.305	3.055
13C8 FOSA	3.392	3.396	3.402	3.394	3.390	3.386	3.385				3.142 - 3.642	3.392
M2-8:2FTS	3.411	3.405	3.411	3.403	3.398	3.394	3.393				3.152 - 3.652	3.402
13C2 PFDA	3.420	3.423	3.420	3.421	3.407	3.403	3.411				3.165 - 3.665	3.415
d3-NMeFOSAA	3.579	3.573	3.578	3.569	3.568	3.565	3.565				3.321 - 3.821	3.571
d5-NEtFOSAA	3.745	3.739	3.745	3.736	3.734	3.731	3.732				3.488 - 3.988	3.737
13C2 PFUnA	3.745	3.749	3.745	3.746	3.734	3.731	3.732				3.490 - 3.990	3.740
d-N-MeFOSA-M	3.892	3.896	3.892	3.892	3.892	3.890	3.883				3.641 - 4.141	3.891
13C2 PFDoA	4.042	4.039	4.036	4.037	4.030	4.030	4.026				3.784 - 4.284	4.034
d-N-EtFOSA-M	4.079	4.082	4.079	4.080	4.079	4.080	4.074				3.829 - 4.329	4.079
13C2-PFTeDA	4.548	4.551	4.548	4.548	4.538	4.538	4.536				4.294 - 4.794	4.544
13C2-PFHxDA	4.960	4.962	4.960	4.960	4.952	4.943	4.943				4.704 - 5.204	4.954

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-174751/3	2017.07.18ICAL_003.d
Level 2	IC 320-174751/4	2017.07.18ICAL_004.d
Level 3	IC 320-174751/5	2017.07.18ICAL_005.d
Level 4	IC 320-174751/6	2017.07.18ICAL_006.d
Level 5	IC 320-174751/7	2017.07.18ICAL_007.d
Level 6	IC 320-174751/8	2017.07.18ICAL_008.d
Level 7	IC 320-174751/9	2017.07.18ICAL_009.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R <sup>2</sup> OR COD	#	MIN R <sup>2</sup> OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C4 PFBA	186778 172446	186853 168356	188349 154102	182701	Ave		177083.511			7.2		50.0				
13C5-PFPeA	136330 113610	134526 116051	137095 105241	123777	Ave		123804.146			10.2		50.0				
13C2 PFHxA	124834 113446	128102 110003	126060 103188	122136	Ave		118252.726			8.0		50.0				
13C4-PFHpA	111562 108647	111027 96626	121395 89439	112406	Ave		107300.386			10.0		50.0				
18O2 PFHxS	180838 175174	178982 178011	190723 163075	181961	Ave		178395.026			4.7		50.0				
M2-6:2FTS	53663 52509	55121 49619	54048 49756	51296	Ave		52287.4586			4.1		50.0				
13C4 PFOA	100707 91831	103338 84446	103314 76166	99291	Ave		94156.1514			11.1		50.0				
13C4 PFOS	135150 123209	139486 124400	136593 118062	124740	Ave		128805.968			6.3		50.0				
13C5 PFNA	81215 72012	81430 70824	83754 63449	79193	Ave		75982.3114			9.7		50.0				
13C8 FOSA	209265 208688	222365 198574	219464 187097	212410	Ave		208266.191			5.8		50.0				
M2-8:2FTS	37946 38901	39970 36971	39495 35609	40844	Ave		38533.6505			4.7		50.0				
13C2 PFDA	67126 66066	69950 60027	67893 56656	63605	Ave		64474.9029			7.3		50.0				
d3-NMeFOSAA	25650 24775	25376 25972	25965 25651	25151	Ave		25505.6800			1.7		50.0				
d5-NEtFOSAA	27035 24220	27252 23029	27030 22824	26795	Ave		25454.9114			7.9		50.0				

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.



FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
13C2 PFUnA	51625 46734	54049 42617	53636 41458	47779	Ave		48271.3000			10.5		50.0				
d-N-MeFOSA-M	49853 52524	51470 52117	54068 54822	51137	Ave		52284.3257			3.3		50.0				
13C2 PFDoA	47482 49047	48145 44804	52019 44525	45799	Ave		47402.9886			5.6		50.0				
d-N-EtFOSA-M	50139 52993	51216 52051	54819 53779	50394	Ave		52198.7286			3.4		50.0				
13C2-PFTEdA	88547 95140	88927 88837	88958 79566	90539	Ave		88644.7000			5.2		50.0				
13C2-PFHxDA	44521 47807	44437 43178	45379 44611	46488	Ave		45203.0600			3.4		50.0				

Note: The M1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento

Job No.: 320-29267-1

Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N

GC Column: GeminiC18 3 ID: 3(mm)

Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08

Calibration End Date: 07/18/2017 14:56

Calibration ID: 32521

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
Perfluorobutanoic acid (PFBA)	0.9761 0.8758	0.9339 0.7550	0.9711	0.9505	0.9271	AveID		0.9128			8.5		35.0				
Perfluoropentanoic acid (PFPeA)	1.2153 0.9717	1.0185 0.8818	1.0587	1.0337	1.0298	AveID		1.0299			9.8		35.0				
Perfluorobutanesulfonic acid (PFBS)	1.4621 1.2352	1.3471 1.0556	1.4269	1.4982	1.2972	AveID		1.3318			11.5		50.0				
4:2 FTS	1.0656 0.9413	1.0538 0.8906	1.1079	1.0883	0.9577	AveID		1.0150			8.3		35.0				
Perfluorohexanoic acid (PFHxA)	1.0711 0.9343	0.9399 0.8537	0.9788	0.9238	0.9144	AveID		0.9452			7.1		35.0				
Perfluoroheptanoic acid (PFHpA)	1.1761 1.0171	0.9581 0.9543	1.0396	1.0367	0.9527	AveID		1.0193			7.8		35.0				
Perfluorohexanesulfonic acid (PFHxS)	++++ 0.9684	1.1146 0.9460	1.0465	0.9921	1.0001	AveID		1.0113			6.0		35.0				
6:2FTS	0.8843 0.8329	0.9451 0.7984	0.8955	0.8978	0.8230	AveID		0.8681			5.9		35.0				
Perfluorooctanoic acid (PFOA)	1.2554 1.0186	0.9749 0.9823	1.1056	1.0522	1.0473	AveID		1.0623			9.0		35.0				
Perfluoroheptanesulfonic Acid (PFHpS)	1.1755 1.1218	1.0017 1.0513	1.2174	1.2223	1.1444	AveID		1.1335			7.3		50.0				
Perfluorononanoic acid (PFNA)	1.0891 0.9665	0.9990 0.9945	1.0288	0.9779	1.0164	AveID		1.0103			4.0		35.0				
Perfluorooctanesulfonic acid (PFOS)	1.1118 1.0329	1.0168 1.0624	1.0321	1.0476	0.9956	AveID		1.0428			3.6		35.0				
Perfluorooctane Sulfonamide (FOSA)	1.0176 0.8999	0.9096 0.7853	0.9594	0.9428	0.9328	AveID		0.9210			7.7		35.0				
8:2FTS	1.0154 0.8943	0.9916 0.7751	1.0070	0.8694	0.8454	AveID		0.9140			10.1		35.0				
Perfluorodecanoic acid (PFDA)	1.1441 1.0012	0.9438 0.9119	1.0756	0.9883	0.8910	AveID		0.9937			9.1		35.0				
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	1.0190 0.9092	0.8192 0.9089	0.9552	0.8899	0.8815	AveID		0.9118			6.8		35.0				
Perfluorodecanesulfonic acid (PFDS)	0.6366 0.6173	0.5944 0.5900	0.6391	0.6502	0.6373	AveID		0.6236			3.8		50.0				
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	0.8252 0.8874	0.8531 0.8783	0.8577	0.7878	0.8619	AveID		0.8502			4.0		35.0				
Perfluoroundecanoic acid (PFUnA)	1.2890 1.0472	1.0751 0.9658	1.0055	1.0010	0.9863	AveID		1.0528			10.5		35.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
CURVE EVALUATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3 (mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5		B	M1	M2								
	LVL 6	LVL 7															
MeFOSA	1.0090 0.9354	0.8239 0.8688	0.9264	0.9064	0.8869	AveID		0.9081			6.4		35.0				
Perfluorododecanoic acid (PFDoA)	1.1075 0.9409	0.9529 0.9038	0.9063	0.9658	0.9133	AveID		0.9558			7.4		35.0				
N-EtFOSA-M	0.9920 0.9568	0.8825 0.9232	0.9568	0.9342	0.9163	AveID		0.9374			3.7		35.0				
Perfluorotridecanoic Acid (PFTriA)	0.9508 0.8625	0.8536 0.8240	0.8405	0.8723	0.7970	AveID		0.8572			5.6		50.0				
Perfluorotetradecanoic acid (PFTeA)	++++ 1.9307	2.3708 1.7975	1.9688	1.9625	1.9624	AveID		1.9988			9.7		50.0				
Perfluoro-n-hexadecanoic acid (PFHxDA)	++++ 0.8338	1.4525 0.7676	0.9591	0.8731	0.8515	L2ID	0.6360	0.8200						0.9990		0.9900	
Perfluoro-n-octadecanoic acid (PFODA)	0.7763 0.8108	0.7392 0.7526	0.8054	0.8210	0.8128	AveID		0.7883			4.1		50.0				

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI  
LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-174751/3	2017.07.18ICAL_003.d
Level 2	IC 320-174751/4	2017.07.18ICAL_004.d
Level 3	IC 320-174751/5	2017.07.18ICAL_005.d
Level 4	IC 320-174751/6	2017.07.18ICAL_006.d
Level 5	IC 320-174751/7	2017.07.18ICAL_007.d
Level 6	IC 320-174751/8	2017.07.18ICAL_008.d
Level 7	IC 320-174751/9	2017.07.18ICAL_009.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
13C4 PFBA	Ave	9338889 8417809	9342639 7705099	9417432	9135042	8622319	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C5-PFPeA	Ave	6816508 5802553	6726300 5262031	6854758	6188826	5680475	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFHxA	Ave	6241724 5500174	6405094 5159383	6302980	6106784	5672315	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C4-PFHpA	Ave	5578105 4831322	5551339 4471961	6069728	5620315	5432365	50.0 50.0	50.0 50.0	50.0	50.0	50.0
18O2 PFHxS	Ave	8553618 8419939	8465859 7713461	9021211	8606759	8285746	47.3 47.3	47.3 47.3	47.3	47.3	47.3
M2-6:2FTS	Ave	2548975 2356924	2618225 2363396	2567289	2436573	2494198	47.5 47.5	47.5 47.5	47.5	47.5	47.5
13C4 PFOA	Ave	5035327 4222319	5166899 3808301	5165712	4964567	4591528	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C4 PFOS	Ave	6460189 5946316	6667448 5643382	6529167	5962587	5889388	47.8 47.8	47.8 47.8	47.8	47.8	47.8
13C5 PFNA	Ave	4060730 3541217	4071484 3172432	4187690	3959663	3600593	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C8 FOSA	Ave	10463261 9928697	11118256 9354849	10973195	10620520	10434389	50.0 50.0	50.0 50.0	50.0	50.0	50.0
M2-8:2FTS	Ave	1817593 1770908	1914553 1705692	1891789	1956443	1863355	47.9 47.9	47.9 47.9	47.9	47.9	47.9
13C2 PFDA	Ave	3356309 3001369	3497515 2832789	3394667	3180245	3303322	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d3-NMeFOSAA	Ave	1282514 1298593	1268800 1282546	1298233	1257538	1238764	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d5-NEtFOSAA	Ave	1351741 1151458	1362576 1141201	1351477	1339751	1211015	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFUnA	Ave	2581267 2130852	2702434 2072913	2681804	2388963	2336722	50.0 50.0	50.0 50.0	50.0	50.0	50.0

FORM VI  
 LCMS BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA  
 RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
d-N-MeFOSA-M	Ave	2492625 2605861	2573510 2741111	2703379	2556828	2626200	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2 PFDoA	Ave	2374124 2240202	2407229 2226260	2600949	2289940	2452342	50.0 50.0	50.0 50.0	50.0	50.0	50.0
d-N-EtFOSA-M	Ave	2506963 2602554	2560816 2688955	2740943	2519682	2649642	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2-PFTeDA	Ave	4427356 4441830	4446352 3978301	4447890	4526933	4756983	50.0 50.0	50.0 50.0	50.0	50.0	50.0
13C2-PFHxDA	Ave	2226050 2158909	2221871 2230557	2268946	2324410	2390328	50.0 50.0	50.0 50.0	50.0	50.0	50.0

Curve Type Legend:

Ave = Average

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 320-174751/3	2017.07.18ICAL_003.d
Level 2	IC 320-174751/4	2017.07.18ICAL_004.d
Level 3	IC 320-174751/5	2017.07.18ICAL_005.d
Level 4	IC 320-174751/6	2017.07.18ICAL_006.d
Level 5	IC 320-174751/7	2017.07.18ICAL_007.d
Level 6	IC 320-174751/8	2017.07.18ICAL_008.d
Level 7	IC 320-174751/9	2017.07.18ICAL_009.d

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5
			LVL 6	LVL 7				LVL 6	LVL 7			
Perfluorobutanoic acid (PFBA)		AveID	91161 14744297	174505 23268186	914493	3473204	7993569	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoropentanoic acid (PFPeA)		AveID	82838 11277076	137019 18560976	725746	2558846	5849685	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorobutanesulfonic acid (PFBS)		AveID	116866 19437143	213145 30435352	1202839	4819736	10043907	0.442 88.4	0.884 177	4.42	17.7	44.2
4:2 FTS		AveID	26705 4362598	54251 8277274	279630	1042858	2348558	0.467 93.4	0.934 187	4.67	18.7	46.7
Perfluorohexanoic acid (PFHxA)		AveID	66857 10277351	120398 17618951	616921	2256693	5186997	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoroheptanoic acid (PFHpA)		AveID	65605 9828236	106378 17070868	631037	2330705	5175419	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorohexanesulfonic acid (PFHxS)		AveID	++++ 15687390	181547 28076313	908142	3285552	7970862	++++ 91.0	0.910 182	4.55	18.2	45.5
6:2FTS		AveID	22492 3917884	49384 7532318	229420	873136	2048364	0.474 94.8	0.948 190	4.74	19.0	47.4
Perfluorooctanoic acid (PFOA)		AveID	63214 8601794	100740 14963510	571143	2089557	4808873	0.500 100	1.00 200	5.00	20.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)		AveID	75621 13285880	133017 23631679	791560	2903113	6711328	0.476 95.2	0.952 190	4.76	19.0	47.6
Perfluorononanoic acid (PFNA)		AveID	44225 6845358	81352 12620489	430827	1548871	3659572	0.500 100	1.00 200	5.00	20.0	50.0
Perfluorooctanesulfonic acid (PFOS)		AveID	69721 11924019	131624 23280610	654159	2425408	5691767	0.464 92.8	0.928 186	4.64	18.6	46.4
Perfluorooctane Sulfonamide (FOSA)		AveID	106479 17869001	202258 29384654	1052763	4005268	9732736	0.500 100	1.00 200	5.00	20.0	50.0
8:2FTS		AveID	18455 3167476	37970 5288353	190502	680373	1575338	0.479 95.8	0.958 192	4.79	19.2	47.9
Perfluorodecanoic acid (PFDA)		AveID	38398 6009894	66020 10332753	365147	1257164	2943161	0.500 100	1.00 200	5.00	20.0	50.0

FORM VI  
LCMS BY ISOTOPIC DILUTION - INITIAL CALIBRATION DATA  
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1 Analy Batch No.: 174751

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N GC Column: GeminiC18 3 ID: 3(mm) Heated Purge: (Y/N) N

Calibration Start Date: 07/18/2017 14:08 Calibration End Date: 07/18/2017 14:56 Calibration ID: 32521

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (NG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)		AveID	13069	20787	124008	447614	1092013	0.500	1.00	5.00	20.0	50.0
			2361307	4662707				100	200			
Perfluorodecanesulfonic acid (PFDS)		AveID	41470	79929	420751	1563787	3784908	0.482	0.964	4.82	19.3	48.2
			7402981	13429846				96.4	193			
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)		AveID	11155	23248	115913	422193	1043788	0.500	1.00	5.00	20.0	50.0
			2043701	4009428				100	200			
Perfluoroundecanoic acid (PFUnA)		AveID	33273	58107	269646	956507	2304741	0.500	1.00	5.00	20.0	50.0
			4462938	8007682				100	200			
MeFOSA		AveID	25150	42404	250444	927006	2329138	0.500	1.00	5.00	20.0	50.0
			4874922	9526442				100	200			
Perfluorododecanoic acid (PFDoA)		AveID	26293	45878	235724	884609	2239783	0.500	1.00	5.00	20.0	50.0
			4215733	8048609				100	200			
N-EtFOSA-M		AveID	24870	45199	262260	941522	2427895	0.500	1.00	5.00	20.0	50.0
			4980148	9930111				100	200			
Perfluorotridecanoic Acid (PFTriA)		AveID	22572	41096	218598	799038	1954622	0.500	1.00	5.00	20.0	50.0
			3864422	7337982				100	200			
Perfluorotetradecanoic acid (PFTeA)		AveID	+++++	114139	512071	1797591	4812589	+++++	1.00	5.00	20.0	50.0
			8650251	16007076				100	200			
Perfluoro-n-hexadecanoic acid (PFHxDA)		L2ID	+++++	69929	249459	799721	2088140	+++++	1.00	5.00	20.0	50.0
			3735847	6835601				100	200			
Perfluoro-n-octadecanoic acid (PFODA)		AveID	18430	35589	209482	752003	1993259	0.500	1.00	5.00	20.0	50.0
			3632765	6701735				100	200			

Curve Type Legend:

AveID = Average isotope dilution
L2ID = Linear 1/conc^2 IsoDil

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_003.d  
 Lims ID: IC L1 Full  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 18-Jul-2017 14:08:14 ALS Bottle#: 28 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L1-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:34:55 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:29:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.547	1.542	0.005	9338889	52.7		105	36616	
2 Perfluorobutyric acid	212.90 > 169.00	1.547	1.544	0.003	91161	0.5347		107	44.1	
D 3 13C5-PFPeA	267.90 > 223.00	1.756	1.757	-0.001	6816508	55.1		110	61703	
4 Perfluoropentanoic acid	262.90 > 219.00	1.765	1.760	0.005	82838	0.5900		118	53.8	
D 47 13C3-PFBS	301.90 > 83.00	1.784	1.778	0.006	164744	NC			7630	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.784	1.786	-0.002	116866	0.4853		110	106	
	298.90 > 99.00	1.784	1.786	-0.002	53314		2.19(0.00-0.00)	110	104	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.986	1.984	0.002	26705	0.4903		105	1781	
6 Perfluorohexanoic acid	313.00 > 269.00	2.020	2.021	-0.001	66857	0.5666		113	159	
D 7 13C2 PFHxA	315.00 > 270.00	2.020	2.021	-0.001	6241724	52.8		106	49166	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.344	2.340	0.004	65605	0.5769		115	98.9	
D 9 13C4-PFHpA	367.00 > 322.00	2.344	2.340	0.004	5578105	52.0		104	35160	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.360	2.354	0.006	112545	0.6154		135	128	
D 11 18O2 PFHxS	403.00 > 84.00	2.360	2.354	0.006	8553618	47.9		101	43403	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.667	2.660	0.007	2548975	48.7	103	31185	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.667	2.661	0.006	1.000	22492	0.4828	102	1009
* 62 13C2-PFOA	415.00	> 370.00	2.689	2.682	0.007		4941292	50.0		35269
D 14 13C4 PFOA	417.00	> 372.00	2.689	2.687	0.002		5035327	53.5	107	28935
15 Perfluorooctanoic acid	413.00	> 369.00	2.689	2.688	0.001	1.000	63214	0.5909	118	13.6
	413.00	> 169.00	2.689	2.688	0.001	1.000	38887	1.63(0.90-1.10)	118	196
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.696	2.694	0.002	1.000	75621	0.4936	104	2507
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.062	3.055	0.007	1.000	69721	0.4947	107	804
	499.00	> 99.00	3.062	3.055	0.007	1.000	14087	4.95(0.90-1.10)	107	116
20 Perfluorononanoic acid	463.00	> 419.00	3.062	3.055	0.007	1.000	44225	0.5390	108	129
D 18 13C4 PFOS	503.00	> 80.00	3.062	3.055	0.007		6460189	50.2	105	49856
D 19 13C5 PFNA	468.00	> 423.00	3.062	3.055	0.007		4060730	53.4	107	18990
D 21 13C8 FOSA	506.00	> 78.00	3.392	3.392	0.0		10463261	50.2	100	19539
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.392	3.392	0.0	1.000	106479	0.5524	110	2492
D 26 M2-8:2FTS	529.00	> 509.00	3.411	3.402	0.009		1817593	47.2	98.5	23350
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.411	3.403	0.008	1.000	18455	0.5321	111	860
24 Perfluorodecanoic acid	513.00	> 469.00	3.420	3.415	0.005	1.000	38398	0.5757	115	234
D 23 13C2 PFDA	515.00	> 470.00	3.420	3.415	0.005		3356309	52.1	104	14449
D 27 d3-NMeFOSAA	573.00	> 419.00	3.579	3.571	0.008		1282514	50.3	101	9495
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.579	3.574	0.005	1.000	13069	0.5588	112	145
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.735	3.728	0.007	1.000	41470	0.4921	102	1507
D 32 d5-NEtFOSAA	589.00	> 419.00	3.745	3.738	0.007		1351741	53.1	106	2869
D 30 13C2 PFUnA	565.00	> 520.00	3.745	3.740	0.005		2581267	53.5	107	10314
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.745	3.742	0.003	1.000	11155	0.4853	97.1	274
31 Perfluoroundecanoic acid	563.00	> 519.00	3.745	3.742	0.003	1.000	33273	0.6122	122	65.6

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.892	3.891	0.001	2492625	47.7		95.3	654	
35 MeFOSA	512.00 > 169.00	3.900	3.897	0.003	1.000	25150	0.5555	111	1099	
37 Perfluorododecanoic acid	613.00 > 569.00	4.042	4.034	0.008	1.000	26293	0.5794	116	36.7	
D 36 13C2 PFDaA	615.00 > 570.00	4.042	4.034	0.008	2374124	50.1		100	5661	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.079	4.079	0.0	2506963	48.0		96.1	6145	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.087	4.086	0.001	1.000	24870	0.5291	106	1235	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.307	4.304	0.003	1.000	22572	0.5545	111	6.9	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.548	4.544	0.004	1.000	63356	0.6676	134	7.4	
	713.00 > 169.00	4.536	4.544	-0.008	0.997	8032	7.89(0.00-0.00)	134	217	
D 43 13C2-PFTeDA	715.00 > 670.00	4.548	4.544	0.004	4427356	49.9		99.9	13947	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.960	4.954	0.006	1.000	54450	0.6228	125	11.7	
D 44 13C2-PFHxDA	815.00 > 770.00	4.960	4.954	0.006	2226050	49.2		98.5	3498	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.306	5.301	0.005	1.000	18430	0.4924	98.5	7.9	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L1\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_003.d

Injection Date: 18-Jul-2017 14:08:14

Instrument ID: A8\_N

Lims ID: IC L1 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 28

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

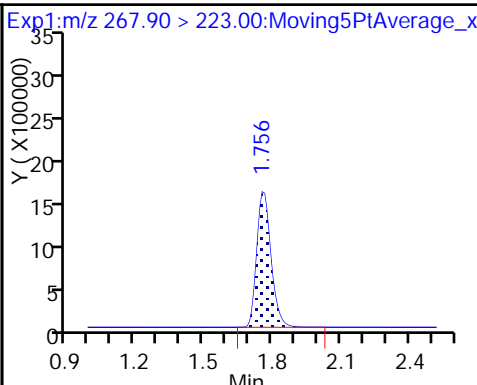
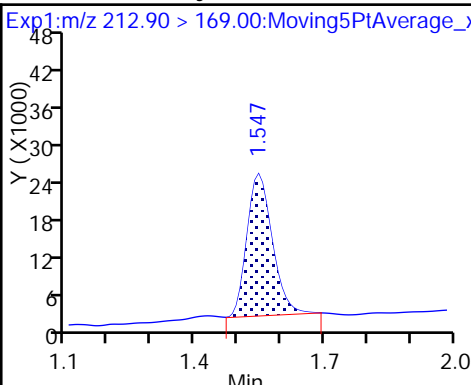
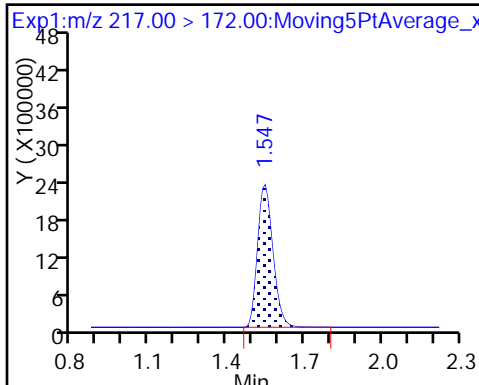
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

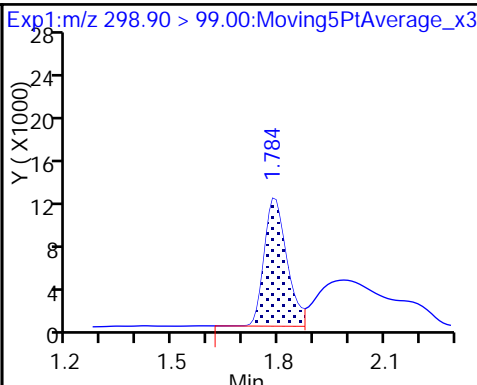
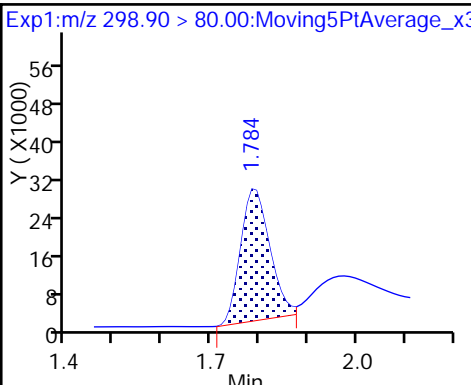
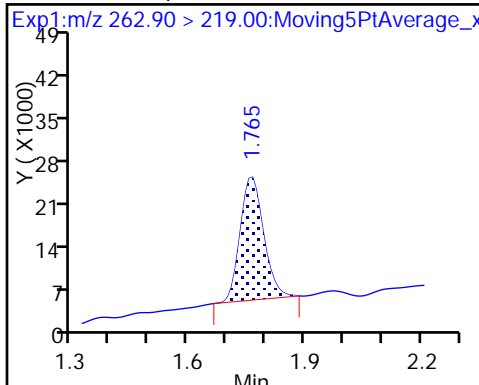
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

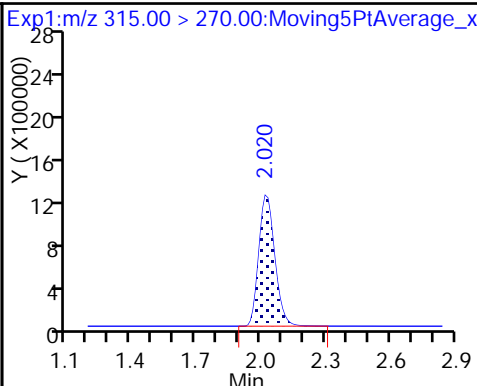
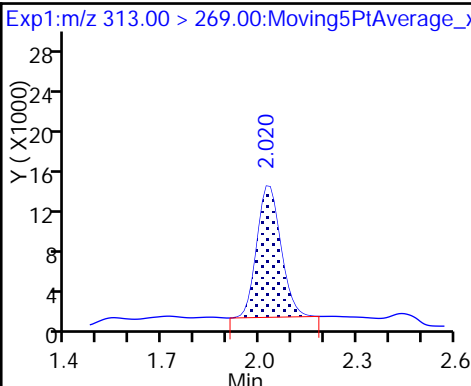
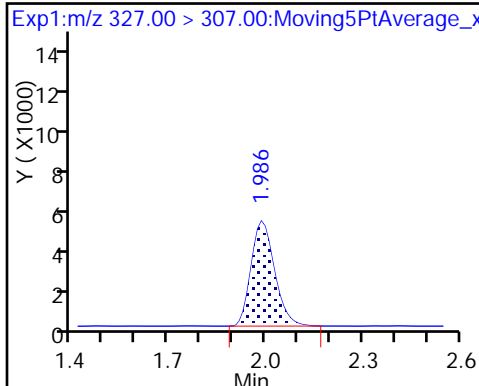
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

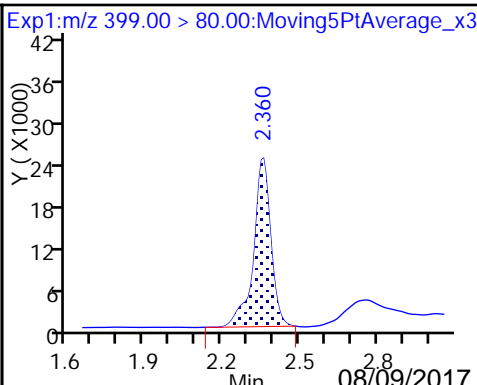
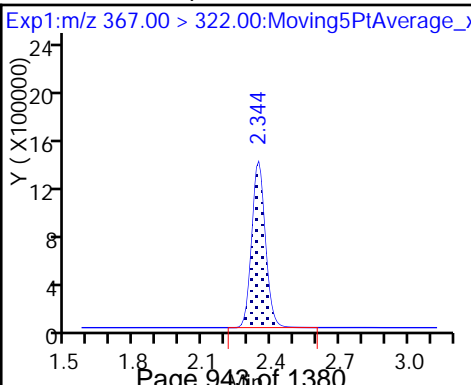
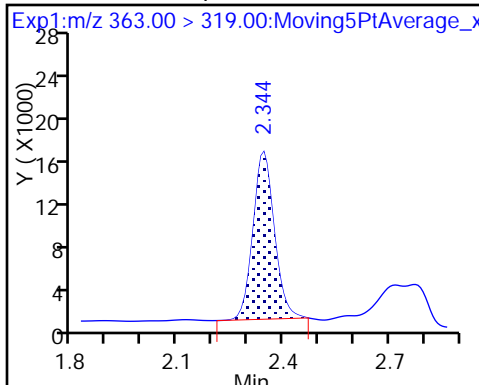
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

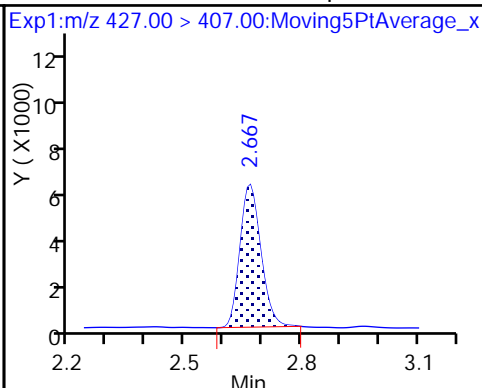
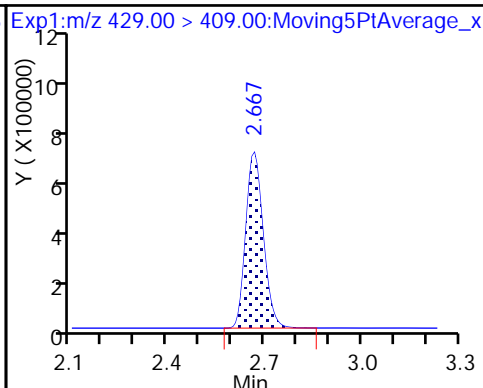
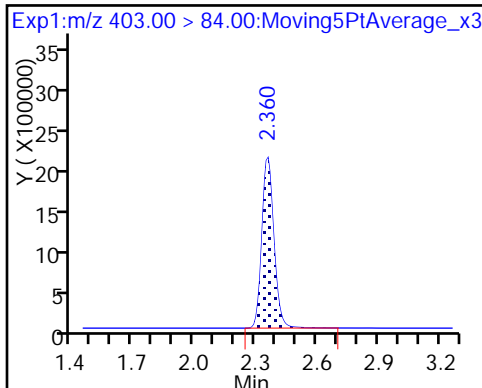
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

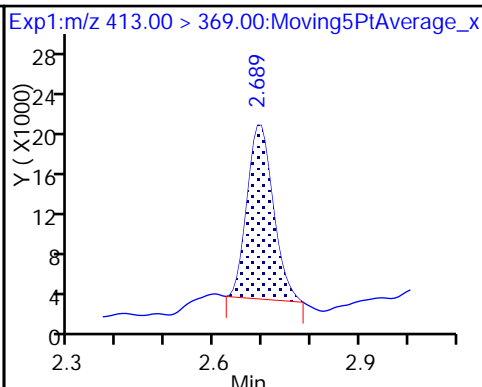
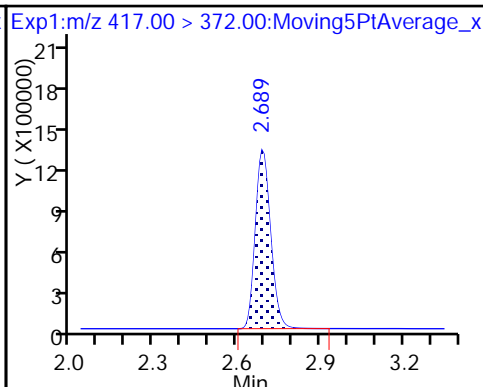
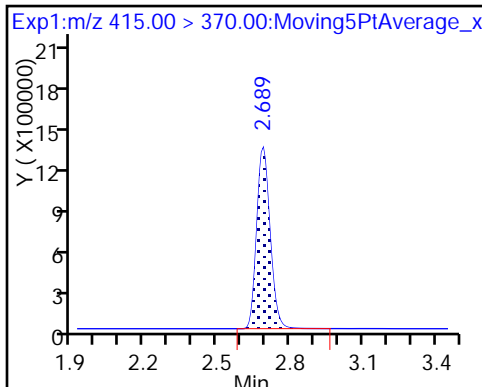
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

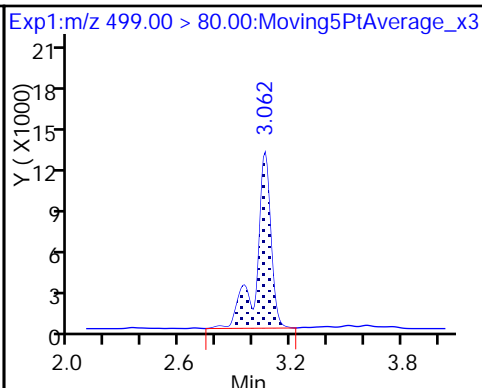
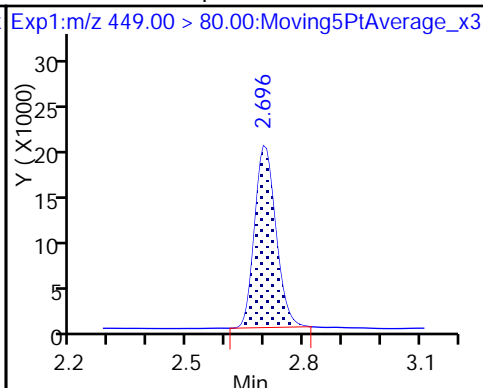
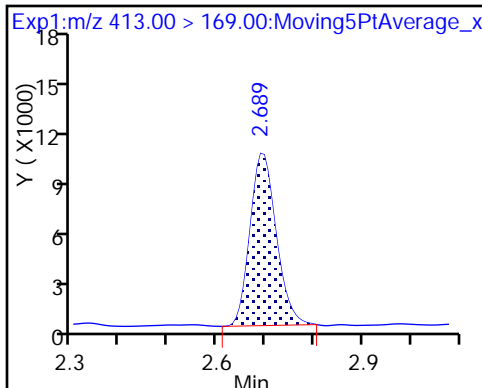
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

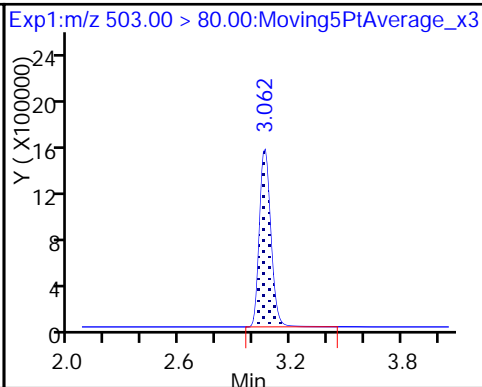
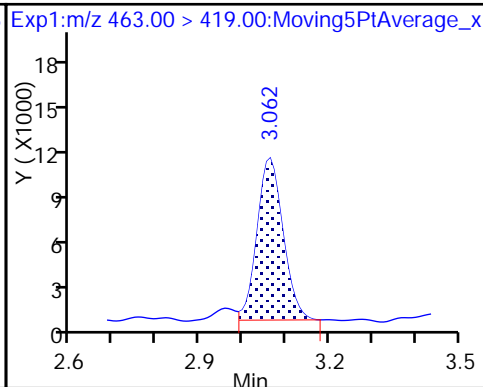
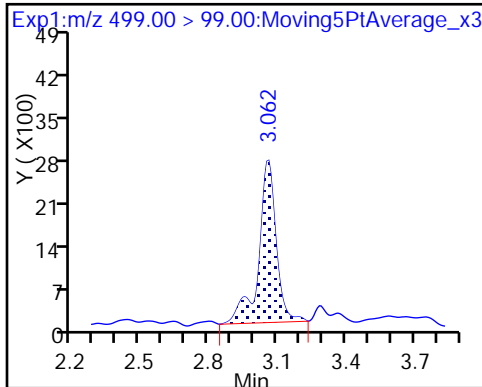
17 Perfluorooctane sulfonic acid



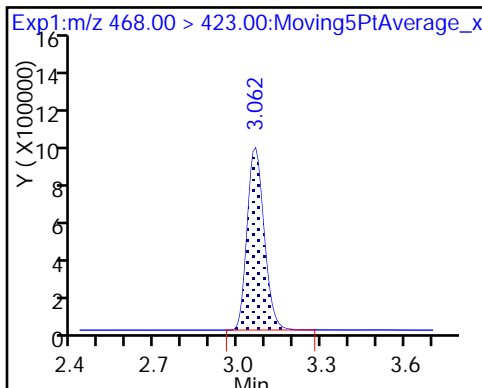
17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

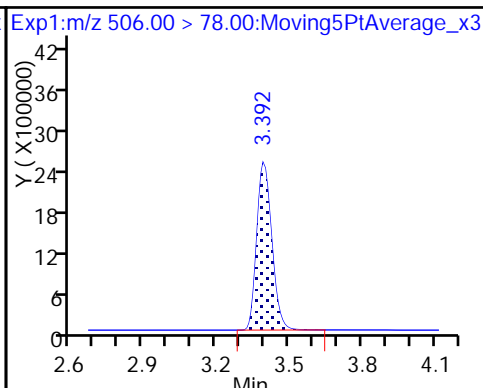
D 18 13C4 PFOS



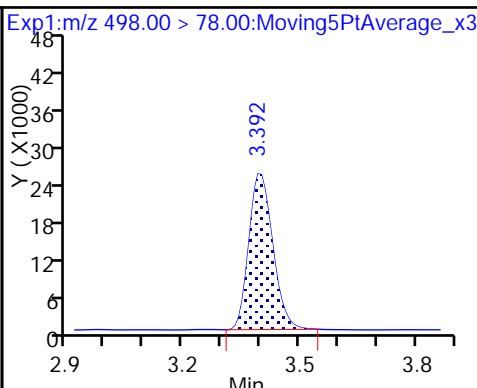
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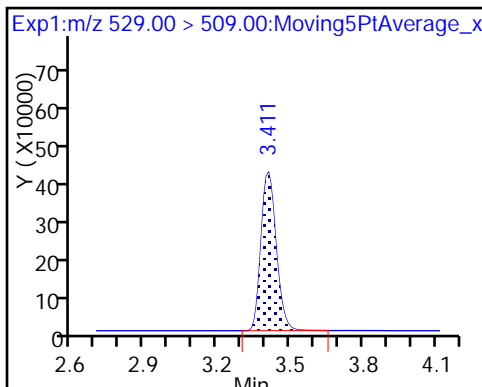
D 21 13C8 FOSA



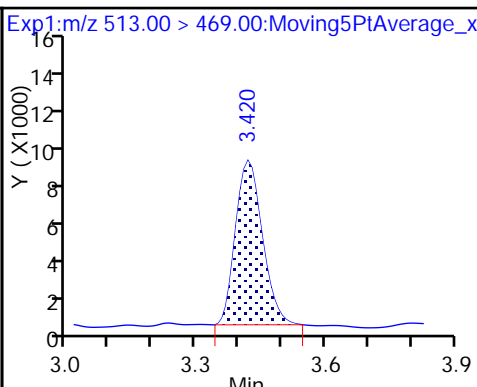
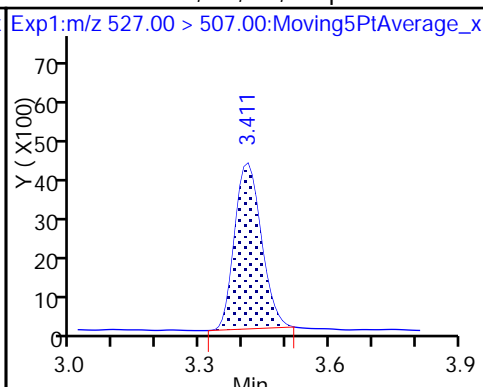
22 Perfluorooctane Sulfonamide



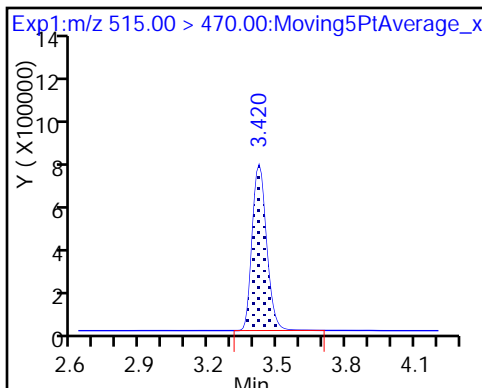
D 26 M2-8:2FTS



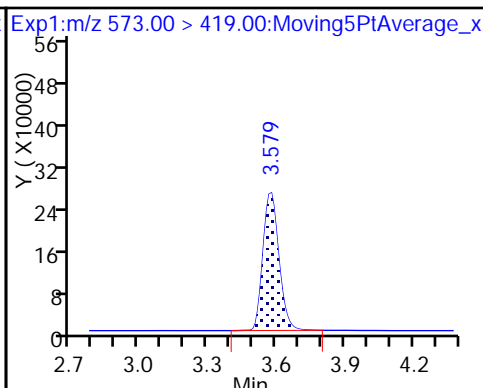
25 Sodium 1H,1H,2H,2H-perfluorodecan-2-yl Perfluorodecanoic acid



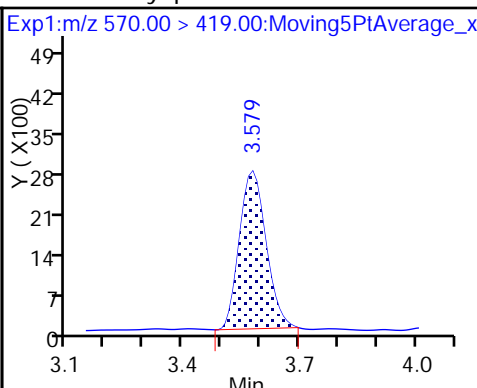
D 23 13C2 PFDA



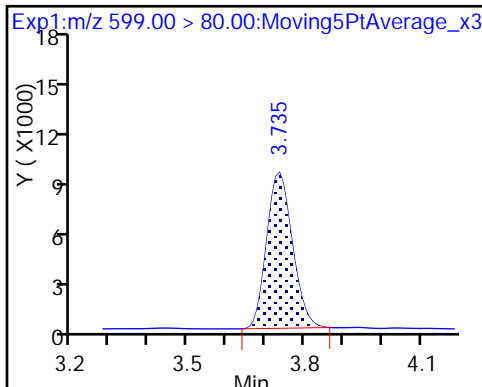
D 27 d3-NMeFOSAA



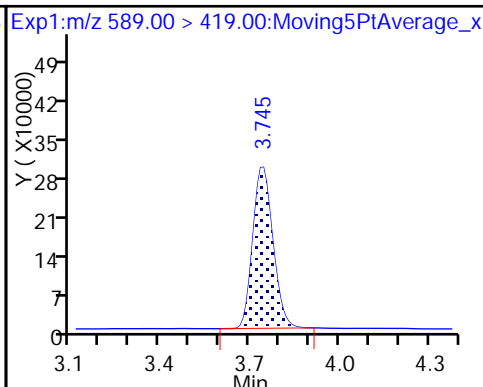
28 N-methyl perfluorooctane sulfonamide



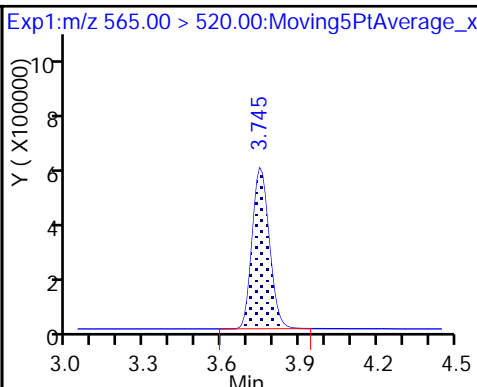
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



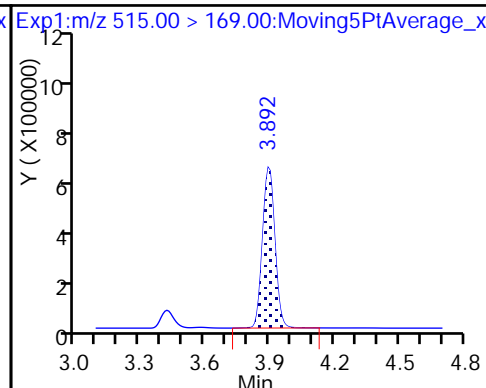
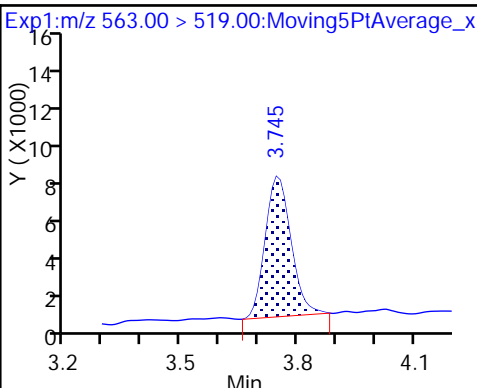
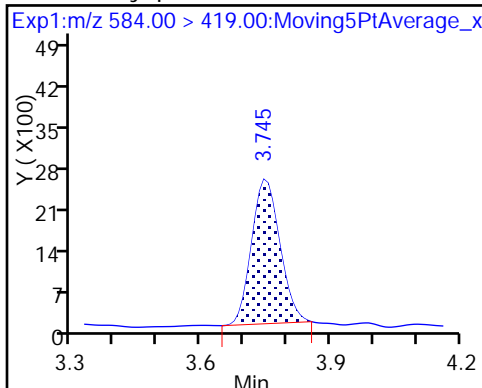
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

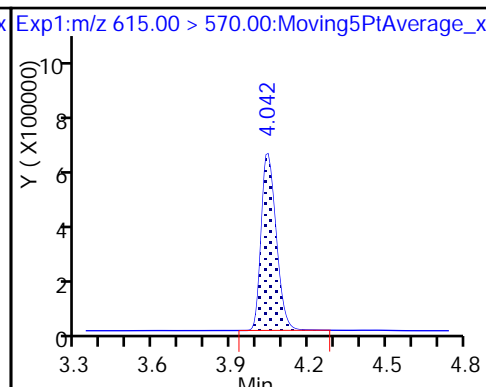
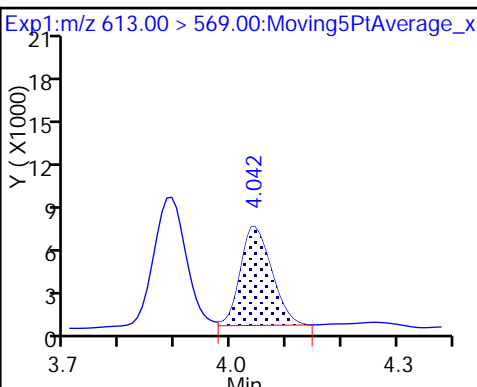
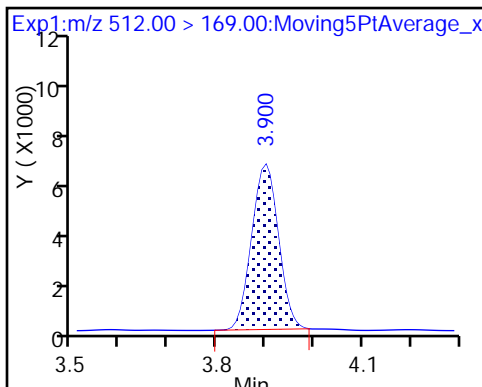
D 34 d-N-MeFOSA-M



35 MeFOSA

37 Perfluorododecanoic acid

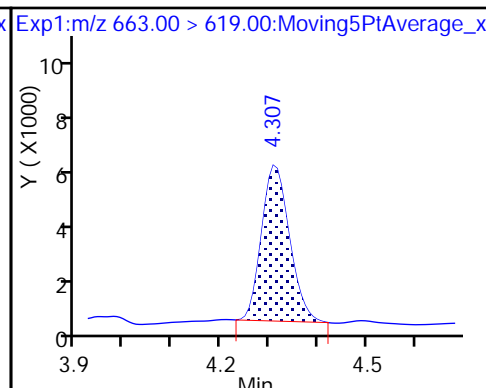
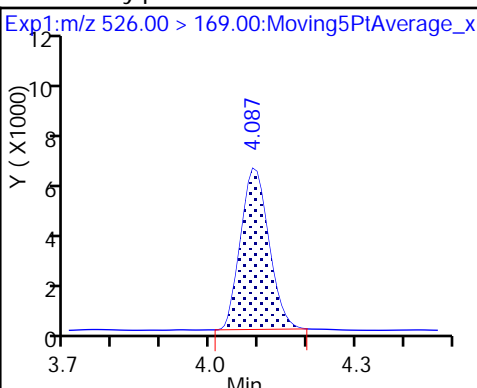
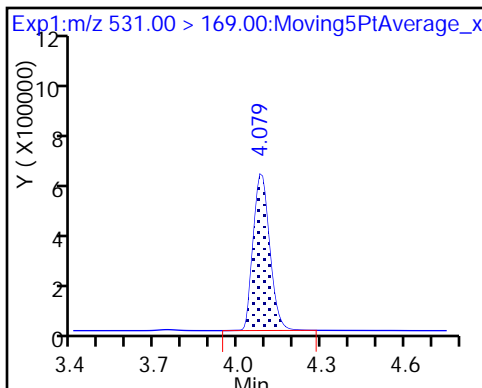
D 36 13C2 PFDa



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

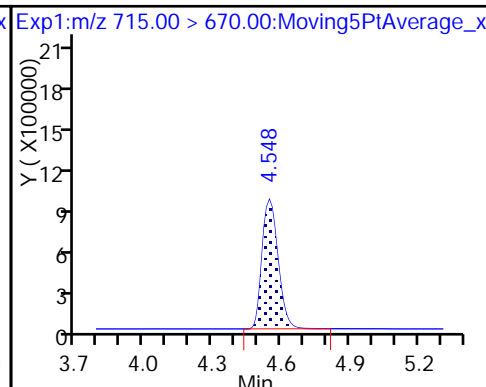
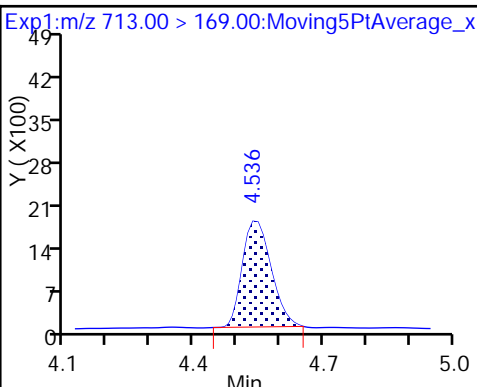
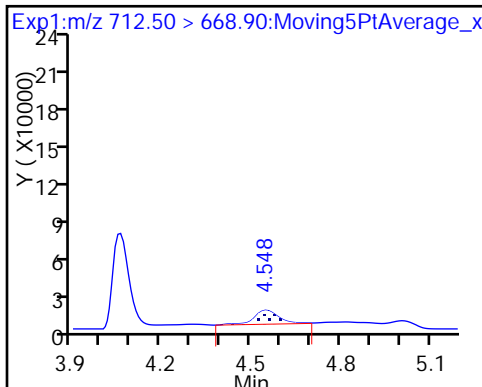
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

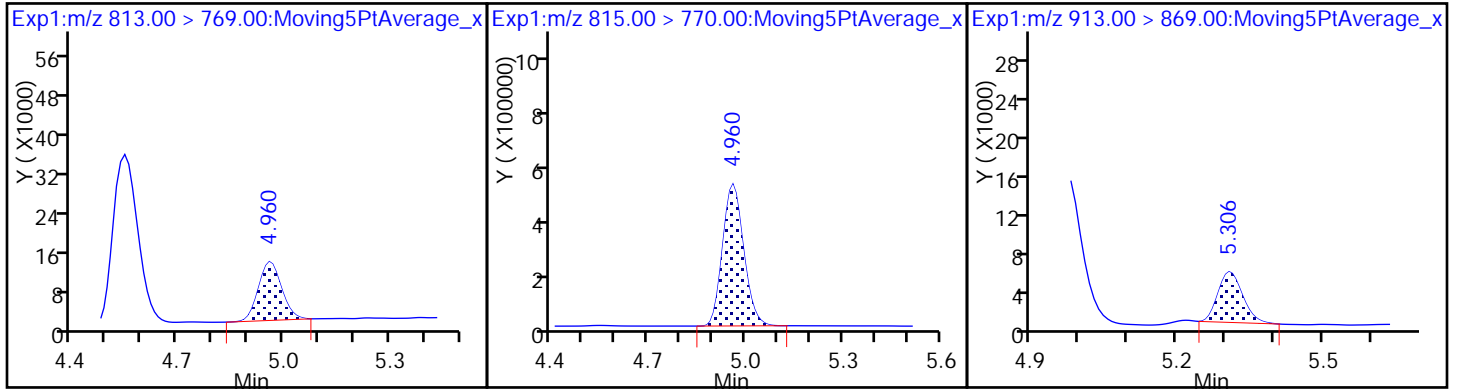
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_004.d  
 Lims ID: IC L2 Full  
 Client ID:  
 Sample Type: IC Calib Level: 2  
 Inject. Date: 18-Jul-2017 14:15:08 ALS Bottle#: 29 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L2-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:34:58 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:29:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.547	1.542	0.005	9342639	52.8		106	34887	
2 Perfluorobutyric acid	212.90 > 169.00	1.547	1.544	0.003	174505	1.02		102	96.0	
D 3 13C5-PFPeA	267.90 > 223.00	1.756	1.757	-0.001	6726300	54.3		109	66073	
4 Perfluoropentanoic acid	262.90 > 219.00	1.765	1.760	0.005	137019	0.9889		98.9	87.0	
D 47 13C3-PFBS	301.90 > 83.00	1.784	1.778	0.006	170452	NC			9728	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.793	1.786	0.007	213145	0.8942		101	168	
	298.90 > 99.00	1.784	1.786	-0.002	89224		2.39(0.00-0.00)	101	176	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.986	1.984	0.002	54251	0.9696		104	3668	
D 7 13C2 PFHxA	315.00 > 270.00	2.020	2.021	-0.001	6405094	54.2		108	40578	
6 Perfluorohexanoic acid	313.00 > 269.00	2.020	2.021	-0.001	120398	0.99		99.4	304	
D 9 13C4-PFHpA	367.00 > 322.00	2.347	2.340	0.007	5551339	51.7		103	36725	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.347	2.340	0.007	106378	0.9400		94.0	150	
D 11 18O2 PFHxS	403.00 > 84.00	2.355	2.354	0.001	8465859	47.5		100	47752	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.355	2.354	0.001	181547	1.00		110	191	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.663	2.660	0.003	2618225	50.1	105	33383	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.670	2.661	0.009	1.000	49384	1.03	109	2656
* 62 13C2-PFOA	415.00	> 370.00	2.685	2.682	0.003	4918230	50.0		28612	
D 14 13C4 PFOA	417.00	> 372.00	2.692	2.687	0.005	5166899	54.9		110	36936
15 Perfluorooctanoic acid	413.00	> 369.00	2.692	2.688	0.004	1.000	100740	0.9177	91.8	22.1
	413.00	> 169.00	2.692	2.688	0.004	1.000	67182	1.50(0.90-1.10)	91.8	365
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.699	2.694	0.005	1.000	133017	0.8413	88.4	4469
D 18 13C4 PFOS	503.00	> 80.00	3.057	3.055	0.002	6667448	51.8		108	31906
D 19 13C5 PFNA	468.00	> 423.00	3.057	3.055	0.002	4071484	53.6		107	21213
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.057	3.055	0.002	1.000	131624	0.9049	97.5	1425
	499.00	> 99.00	3.057	3.055	0.002	1.000	28302	4.65(0.90-1.10)	97.5	303
20 Perfluorononanoic acid	463.00	> 419.00	3.057	3.055	0.002	1.000	81352	0.9888	98.9	238
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.396	3.392	0.004	1.000	202258	0.9875	98.8	4421
D 21 13C8 FOSA	506.00	> 78.00	3.396	3.392	0.004	11118256	53.4		107	24399
D 26 M2-8:2FTS	529.00	> 509.00	3.405	3.402	0.003	1914553	49.7		104	17224
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.405	3.403	0.002	1.000	37970	1.04	108	1786
D 23 13C2 PFDA	515.00	> 470.00	3.423	3.415	0.008	3497515	54.2		108	10867
24 Perfluorodecanoic acid	513.00	> 469.00	3.423	3.415	0.008	1.000	66020	0.9498	95.0	433
D 27 d3-NMeFOSAA	573.00	> 419.00	3.573	3.571	0.002	1268800	49.7		99.5	7554
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.583	3.574	0.009	1.003	20787	0.8984	89.8	218
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.730	3.728	0.002	1.000	79929	0.9189	95.3	3475
D 32 d5-NEtFOSAA	589.00	> 419.00	3.739	3.738	0.001	1362576	53.5		107	3422
D 30 13C2 PFUnA	565.00	> 520.00	3.749	3.740	0.009	2702434	56.0		112	9801
31 Perfluoroundecanoic acid	563.00	> 519.00	3.749	3.742	0.007	1.000	58107	1.02	102	131
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.749	3.742	0.007	1.003	23248	1.00	100	651

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.896	3.891	0.005	2573510	49.2	98.4	692	
35 MeFOSA	512.00	> 169.00	3.904	3.897	0.007	1.000	42404	0.9072	90.7	1364
D 36 13C2 PFDaA	615.00	> 570.00	4.039	4.034	0.005	2407229	50.8	102	5288	
37 Perfluorododecanoic acid	613.00	> 569.00	4.039	4.034	0.005	1.000	45878	1.00	99.7	56.6
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.082	4.079	0.003	2560816	49.1	98.1	6469	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.091	4.086	0.005	1.000	45199	0.9414	94.1	1422
41 Perfluorotridecanoic acid	663.00	> 619.00	4.310	4.304	0.006	1.000	41096	1.00	99.6	13.3
D 43 13C2-PFTeDA	715.00	> 670.00	4.551	4.544	0.007	4446352	50.2	100	19238	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.551	4.544	0.007	1.000	114139	1.19	119	16.7
	713.00	> 169.00	4.539	4.544	-0.005	0.997	13621	8.38(0.00-0.00)	119	419
D 44 13C2-PFHxDA	815.00	> 770.00	4.962	4.954	0.008	2221871	49.2	98.3	3793	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.962	4.954	0.008	1.000	69929	1.00	99.6	15.0
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.308	5.301	0.007	1.000	35589	0.9377	93.8	13.9

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L2\_00006

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_004.d

Injection Date: 18-Jul-2017 14:15:08

Instrument ID: A8\_N

Lims ID: IC L2 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 29

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

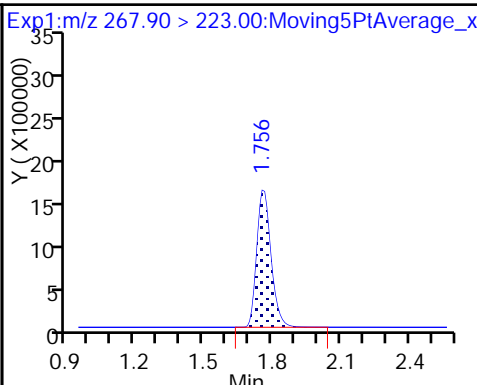
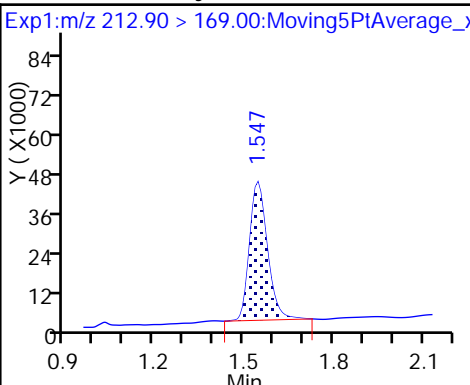
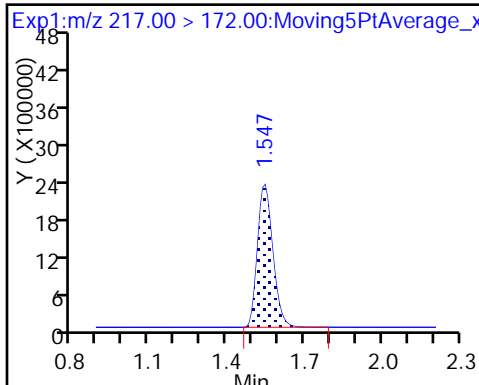
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

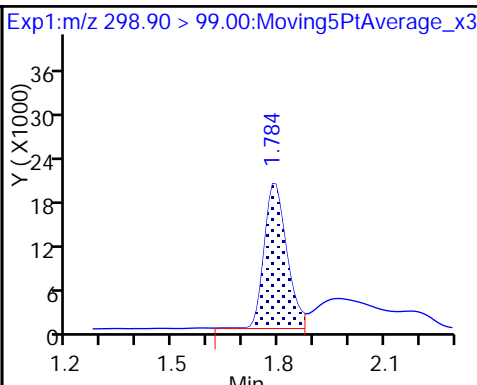
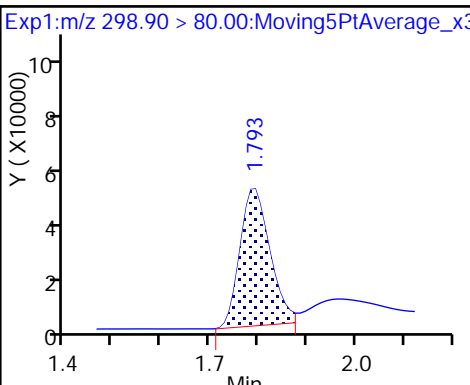
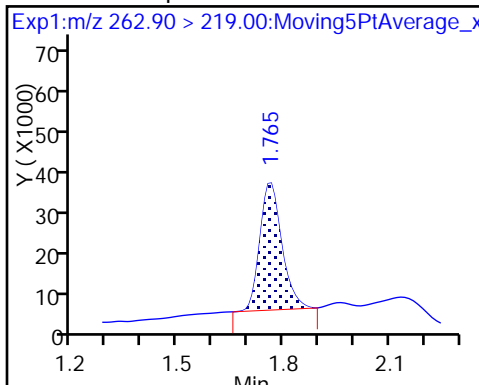
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

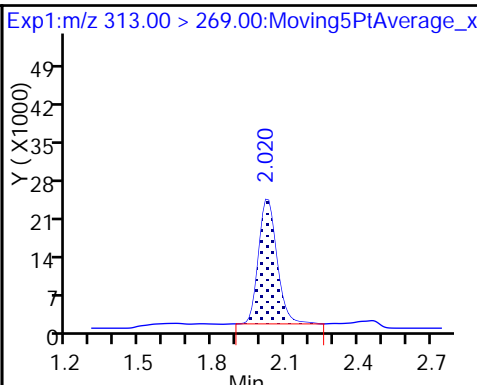
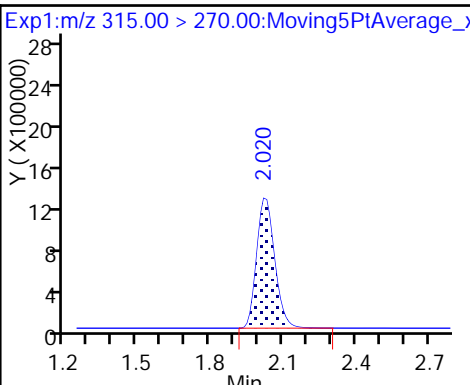
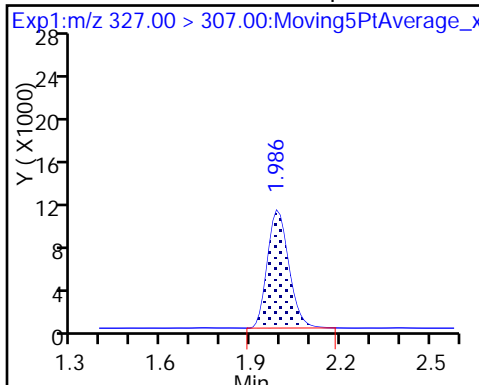
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

De 7 13C2 PFHxA

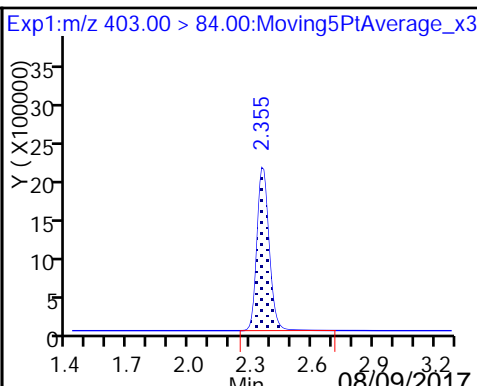
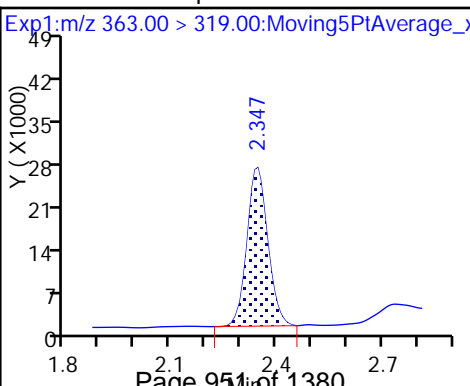
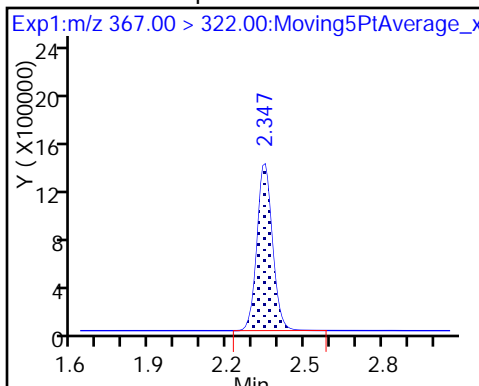
6 Perfluorohexanoic acid



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

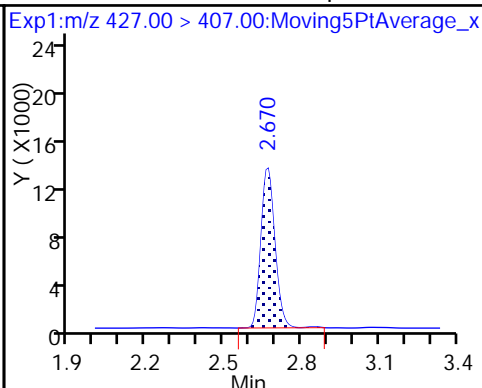
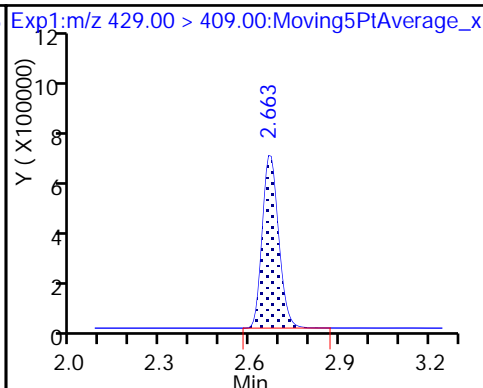
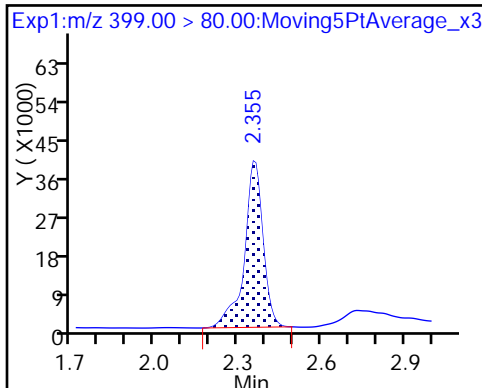
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

D 12 M2-6:2FTS

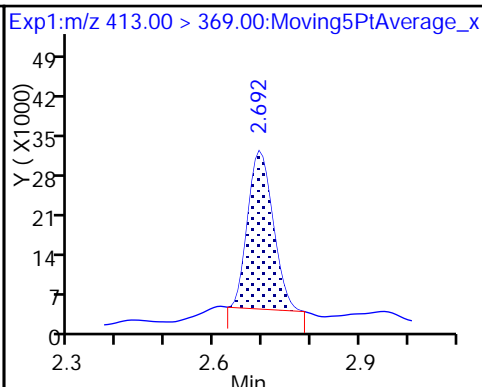
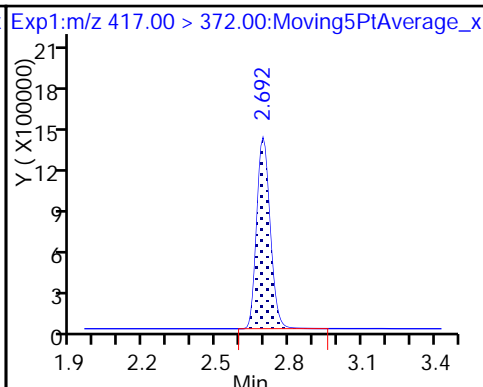
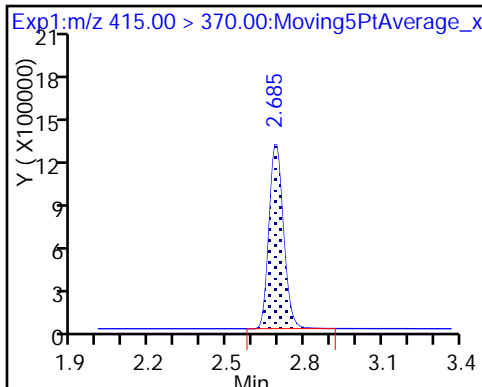
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

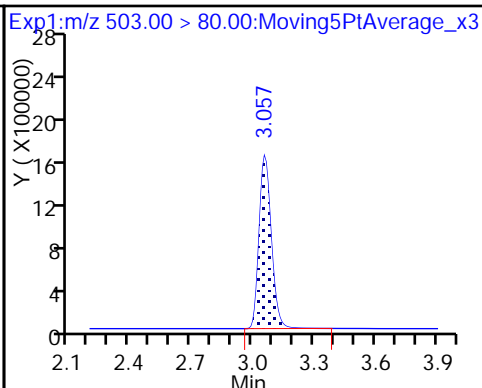
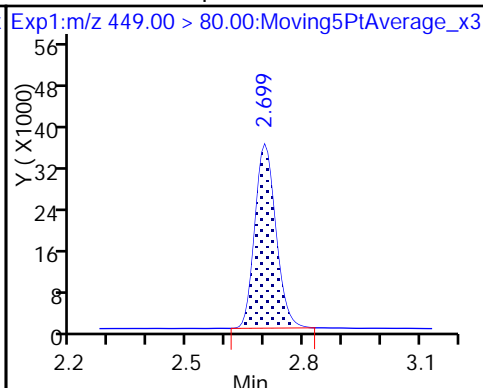
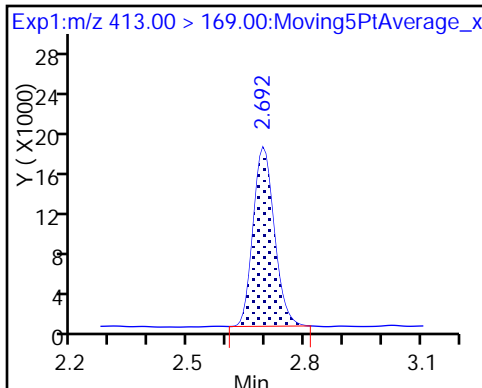
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

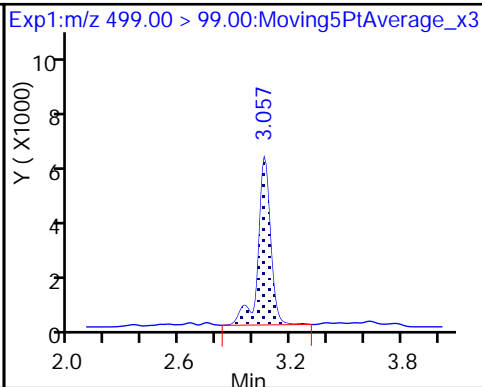
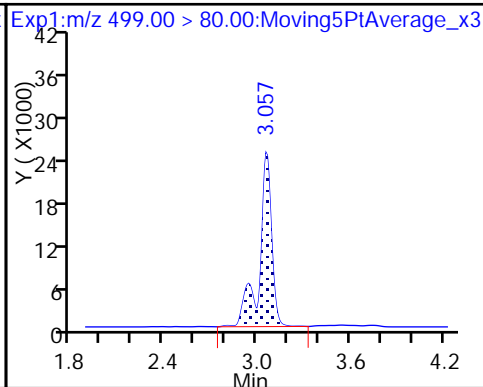
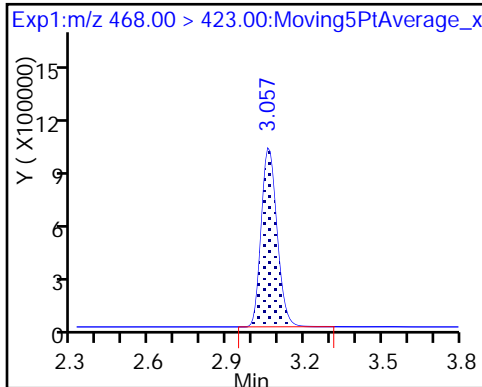
D 18 13C4 PFOS



D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid

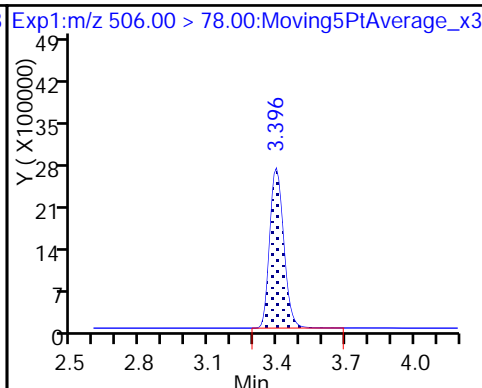
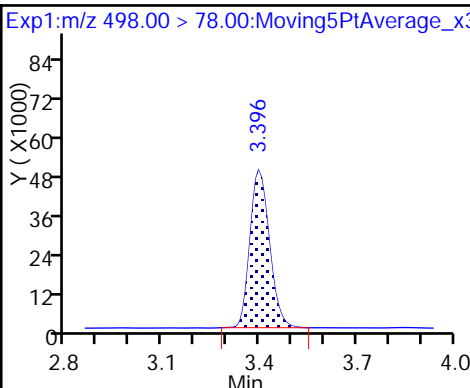
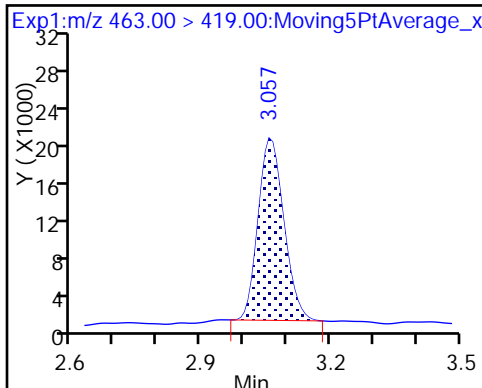
17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

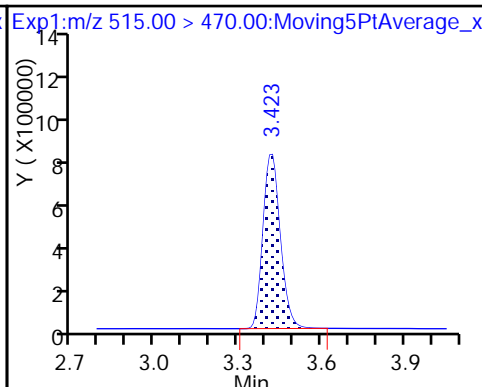
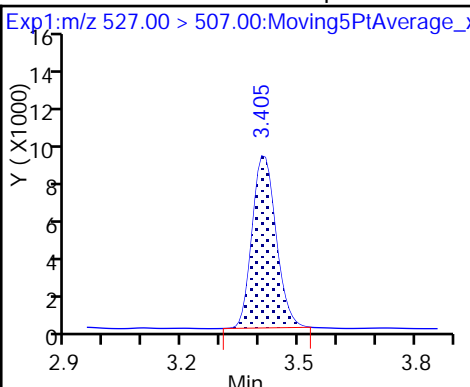
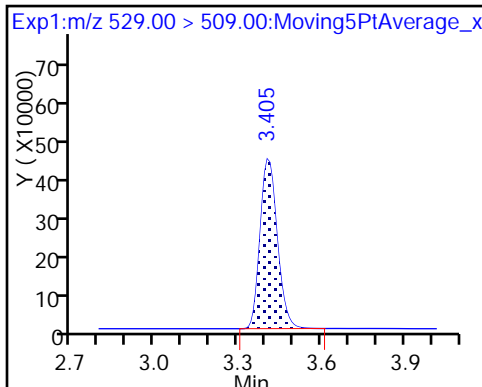
D 21 13C8 FOSA



D 26 M2-8:2FTS

25 Sodium 1H,1H,2H,2H-perfluorodeca

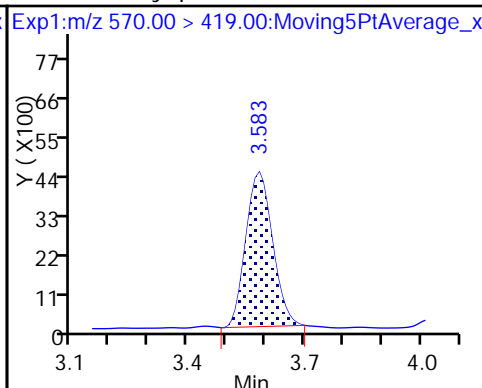
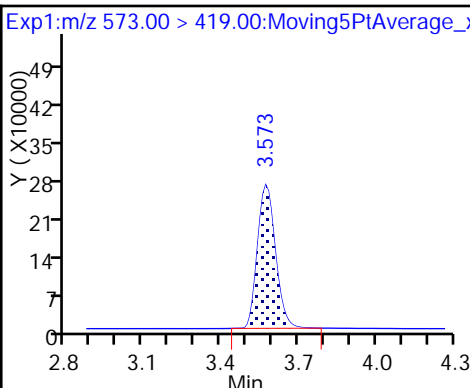
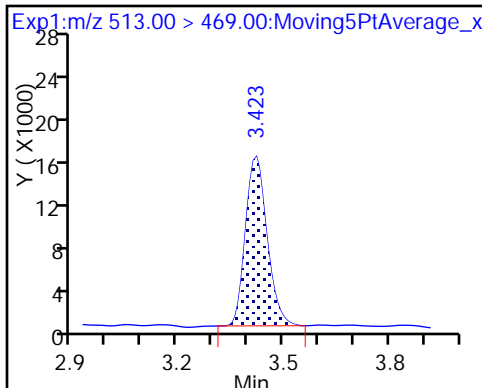
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

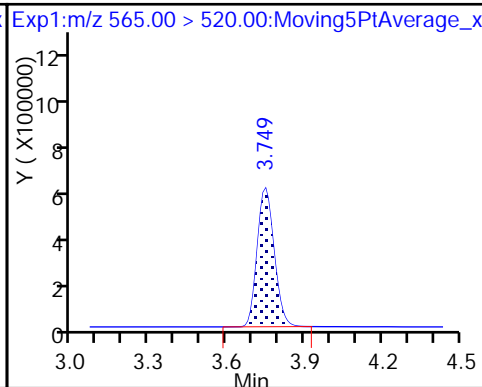
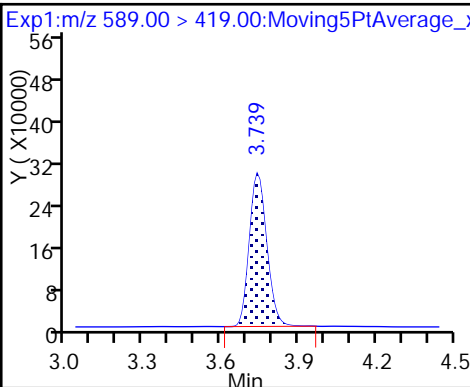
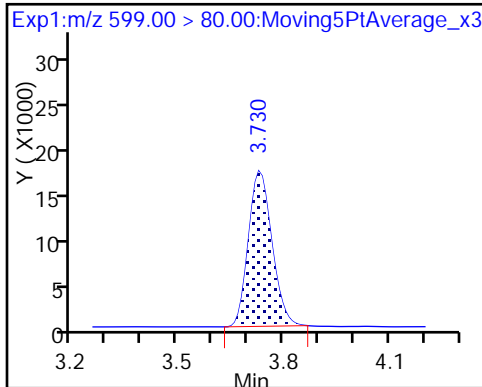
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

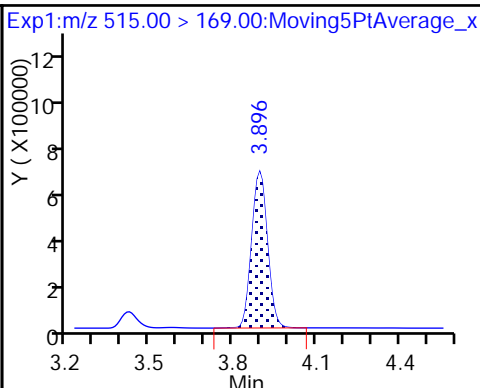
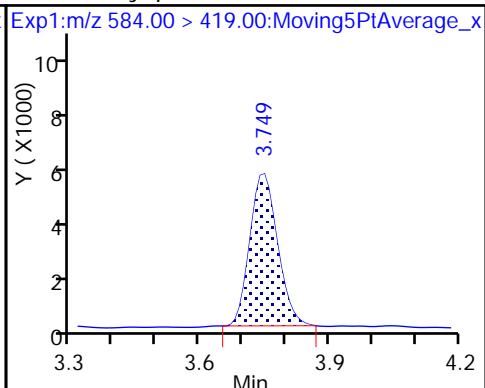
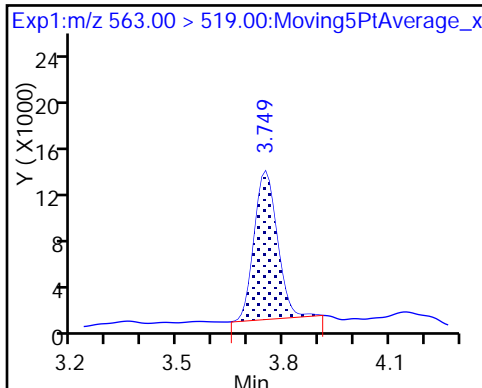
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

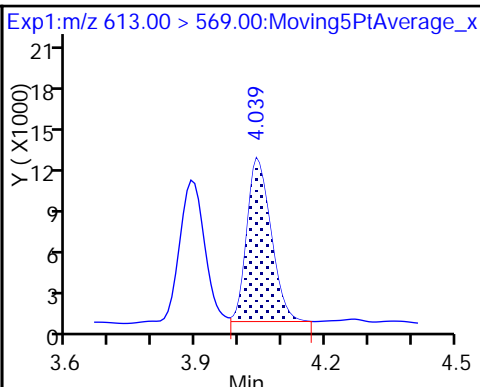
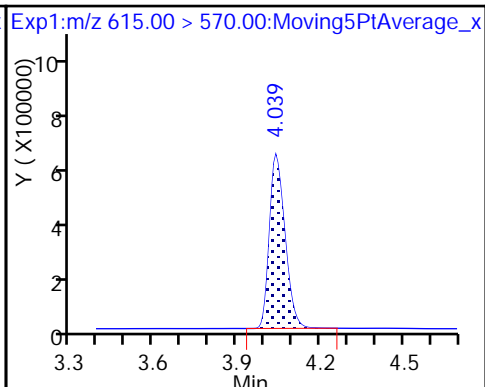
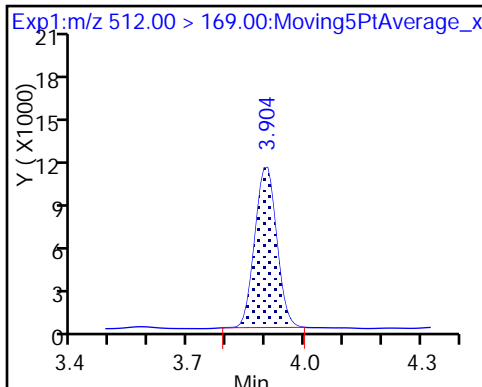
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDoA

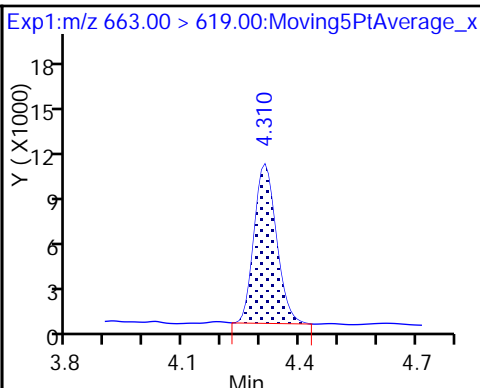
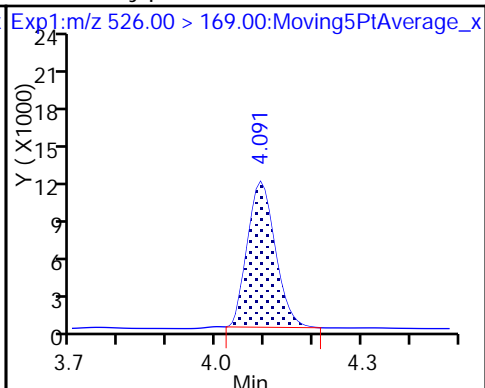
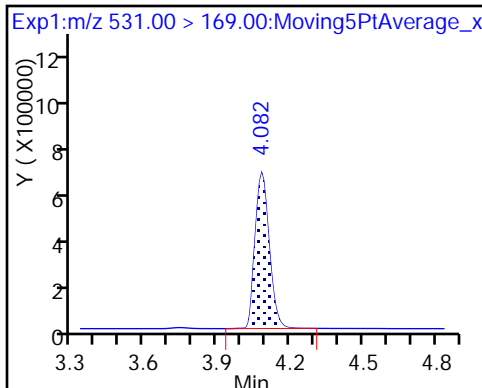
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

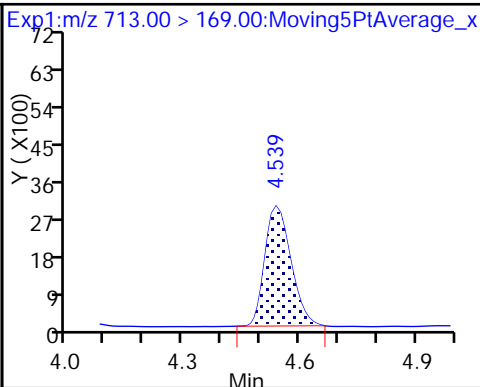
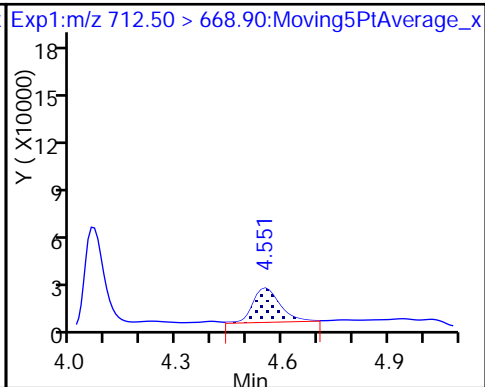
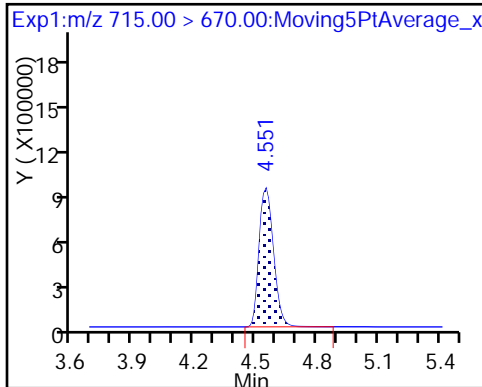
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

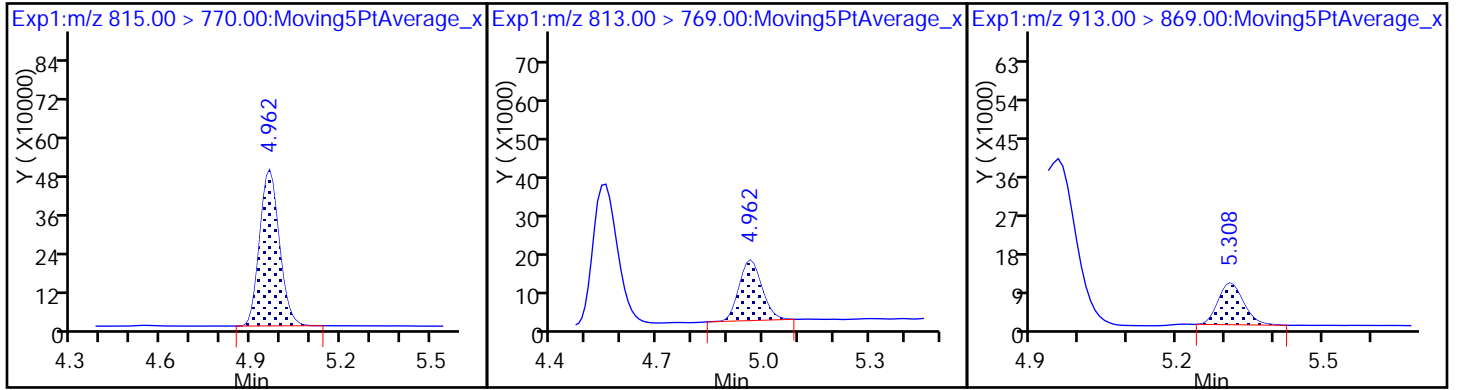
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_005.d  
 Lims ID: IC L3 Full  
 Client ID:  
 Sample Type: IC Calib Level: 3  
 Inject. Date: 18-Jul-2017 14:22:02 ALS Bottle#: 30 Worklist Smp#: 5  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L3-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:35:01 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:29:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.545	1.542	0.003	9417432	53.2		106	36751	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.544	0.001	914493	5.32		106	432	
D 3 13C5-PFPeA	267.90 > 223.00	1.763	1.757	0.006	6854758	55.4		111	68149	
4 Perfluoropentanoic acid	262.90 > 219.00	1.763	1.760	0.003	725746	5.14		103	553	
D 47 13C3-PFBS	301.90 > 83.00	1.782	1.778	0.004	182585	NC			8408	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.791	1.786	0.005	1202839	4.74		107	924	
	298.90 > 99.00	1.791	1.786	0.005	464411		2.59(0.00-0.00)	107	838	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.983	1.984	-0.001	279630	5.10		109	18450	
6 Perfluorohexanoic acid	313.00 > 269.00	2.028	2.021	0.007	616921	5.18		104	1608	
D 7 13C2 PFHxA	315.00 > 270.00	2.028	2.021	0.007	6302980	53.3		107	42860	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.342	2.340	0.002	631037	5.10		102	1019	
D 9 13C4-PFHpA	367.00 > 322.00	2.342	2.340	0.002	6069728	56.6		113	40286	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.358	2.354	0.004	908142	4.71		103	944	
D 11 18O2 PFHxS	403.00 > 84.00	2.358	2.354	0.004	9021211	50.6		107	54110	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.667	2.660	0.007	2567289	49.1	103	31137	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.667	2.661	0.006	1.000	229420	4.89	103	8755
* 62 13C2-PFOA	415.00	> 370.00	2.689	2.682	0.007	4927478	50.0		38218	
D 14 13C4 PFOA	417.00	> 372.00	2.696	2.687	0.009	5165712	54.9		110	45065
15 Perfluorooctanoic acid	413.00	> 369.00	2.696	2.688	0.008	1.000	571143	5.20	104	140
	413.00	> 169.00	2.689	2.688	0.001	0.997	329318	1.73(0.90-1.10)	104	1758
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.703	2.694	0.009	1.000	791560	5.11	107	14904
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.062	3.055	0.007	1.000	654159	4.59	99.0	4986
	499.00	> 99.00	3.062	3.055	0.007	1.000	147717	4.43(0.90-1.10)	99.0	1727
20 Perfluorononanoic acid	463.00	> 419.00	3.062	3.055	0.007	1.000	430827	5.09	102	1465
D 18 13C4 PFOS	503.00	> 80.00	3.062	3.055	0.007	6529167	50.7		106	37553
D 19 13C5 PFNA	468.00	> 423.00	3.062	3.055	0.007	4187690	55.1		110	27060
D 21 13C8 FOSA	506.00	> 78.00	3.402	3.392	0.010	10973195	52.7		105	28210
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.402	3.392	0.010	1.000	1052763	5.21	104	11904
D 26 M2-8:2FTS	529.00	> 509.00	3.411	3.402	0.009	1891789	49.1		102	22026
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.411	3.403	0.008	1.000	190502	5.28	110	6383
24 Perfluorodecanoic acid	513.00	> 469.00	3.420	3.415	0.005	1.000	365147	5.41	108	2473
D 23 13C2 PFDA	515.00	> 470.00	3.420	3.415	0.005	3394667	52.7		105	13139
D 27 d3-NMeFOSAA	573.00	> 419.00	3.578	3.571	0.007	1298233	50.9		102	9231
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.578	3.574	0.004	1.000	124008	5.24	105	964
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.736	3.728	0.008	1.000	420751	4.94	102	7626
D 32 d5-NEtFOSAA	589.00	> 419.00	3.745	3.738	0.007	1351477	53.1		106	2954
D 30 13C2 PFUnA	565.00	> 520.00	3.745	3.740	0.005	2681804	55.6		111	12611
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.745	3.742	0.003	1.000	115913	5.04	101	2288
31 Perfluoroundecanoic acid	563.00	> 519.00	3.745	3.742	0.003	1.000	269646	4.78	95.5	620

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.892	3.891	0.001	2703379	51.7		103	675	
35 MeFOSA	512.00 > 169.00	3.901	3.897	0.004	1.000	250444	5.10	102	4642	
37 Perfluorododecanoic acid	613.00 > 569.00	4.036	4.034	0.002	1.000	235724	4.74	94.8	329	
D 36 13C2 PFDaA	615.00 > 570.00	4.036	4.034	0.002	2600949	54.9		110	6549	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.079	4.079	0.0	2740943	52.5		105	6596	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.088	4.086	0.002	1.000	262260	5.10	102	4581	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.306	4.304	0.002	1.000	218598	4.90	98.0	65.9	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.548	4.544	0.004	1.000	512071	4.92	98.5	64.5	
	713.00 > 169.00	4.536	4.544	-0.008	0.997	59389	8.62(0.00-0.00)	98.5	1575	
D 43 13C2-PFTeDA	715.00 > 670.00	4.548	4.544	0.004	4447890	50.2		100	19913	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.960	4.954	0.006	1.000	249459	5.07	101	47.2	
D 44 13C2-PFHxDA	815.00 > 770.00	4.960	4.954	0.006	2268946	50.2		100	4022	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.306	5.301	0.005	1.000	209482	5.11	102	81.2	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L3\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_005.d

Injection Date: 18-Jul-2017 14:22:02

Instrument ID: A8\_N

Lims ID: IC L3 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 30

Worklist Smp#: 5

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

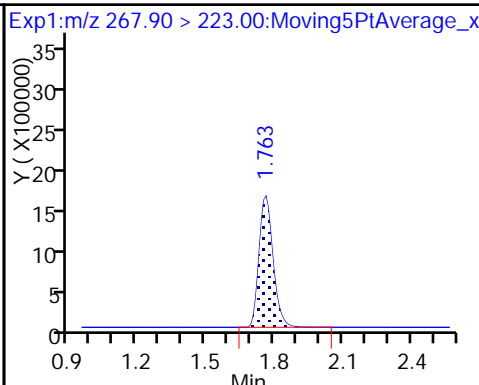
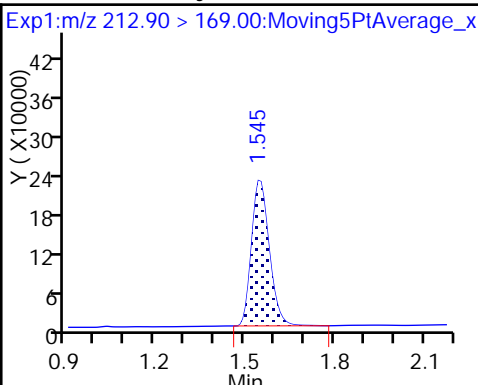
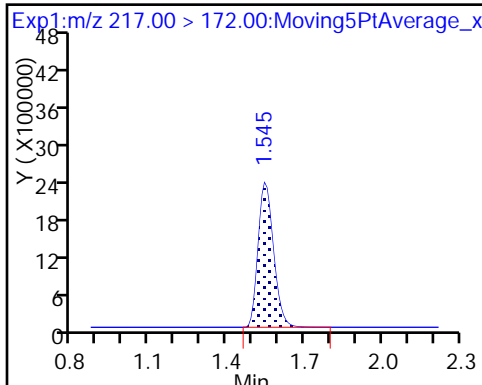
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

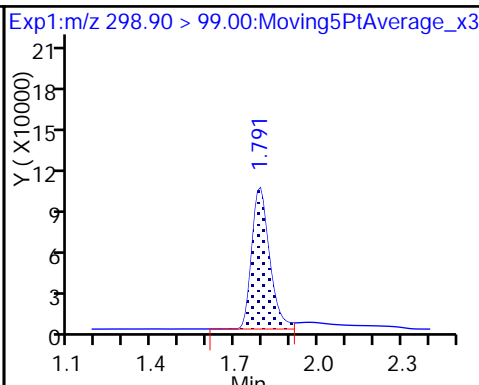
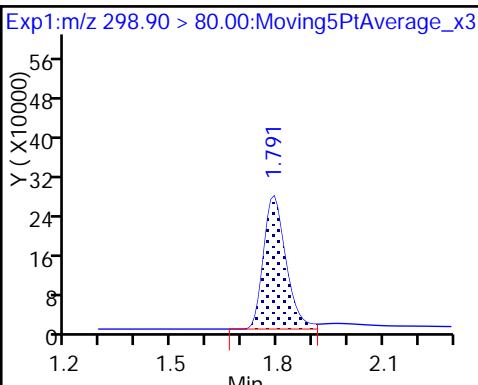
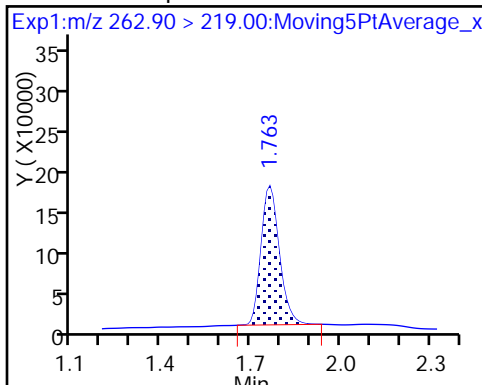
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

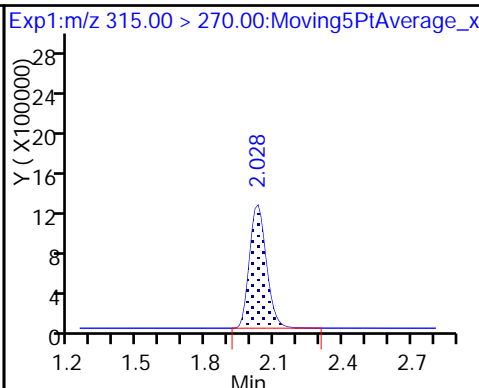
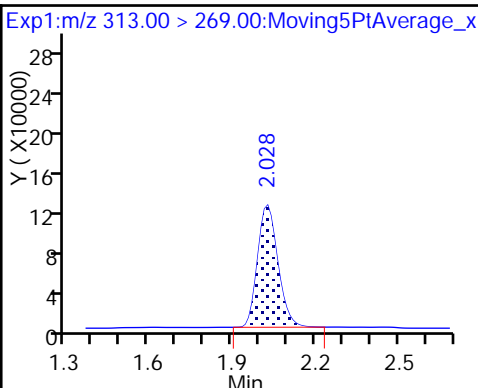
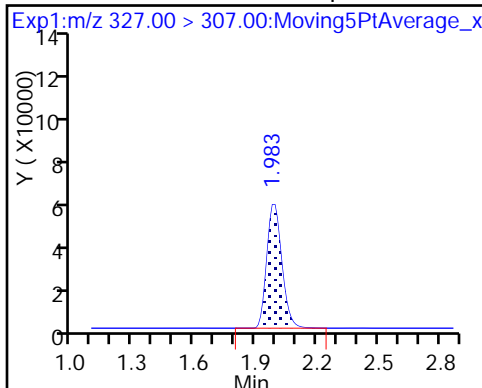
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorhexanoic acid

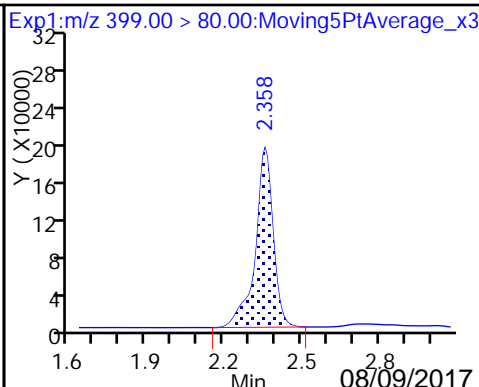
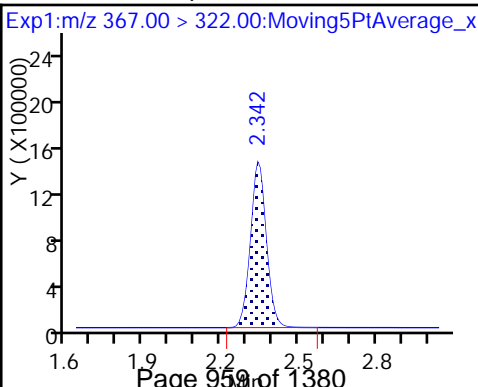
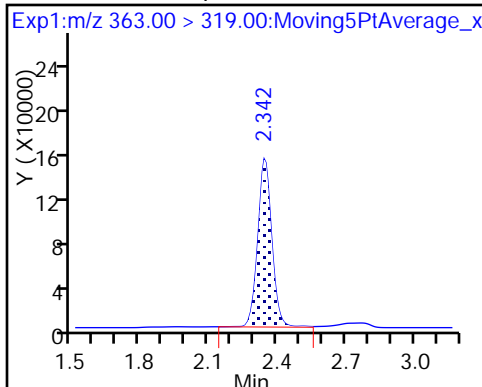
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

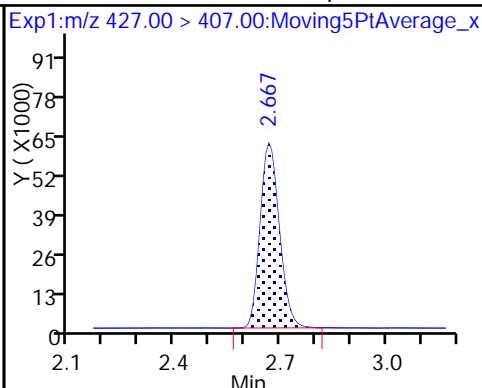
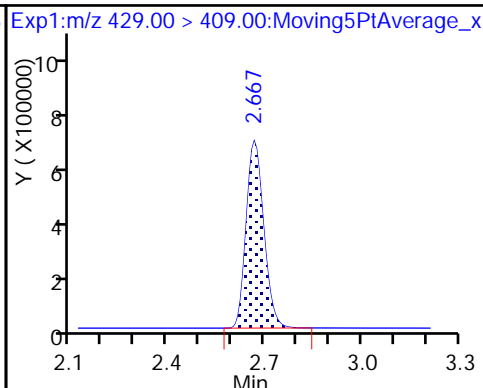
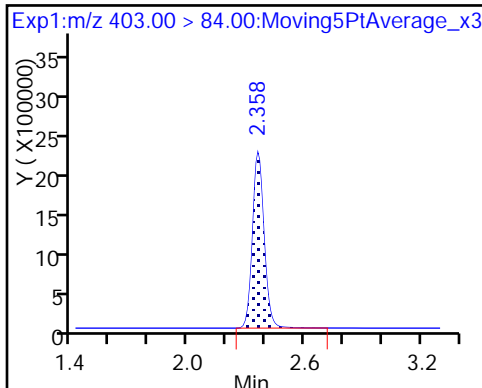
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

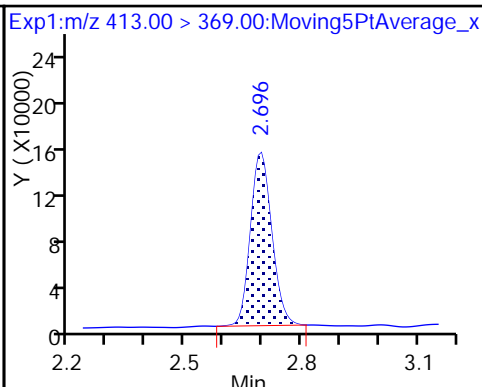
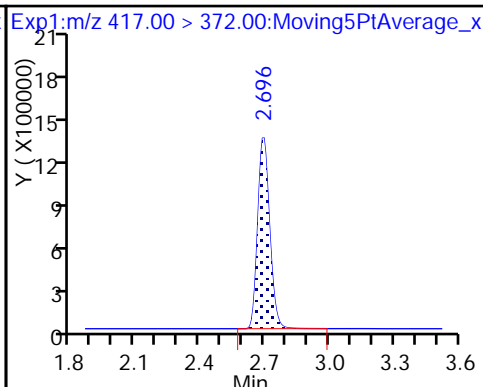
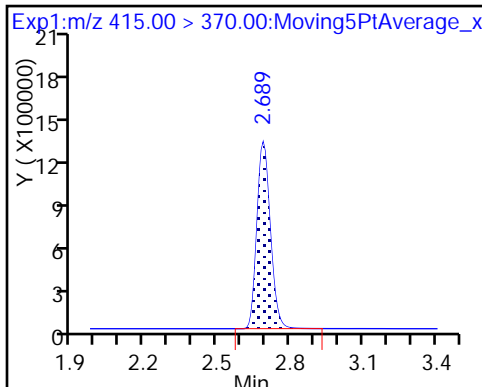
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

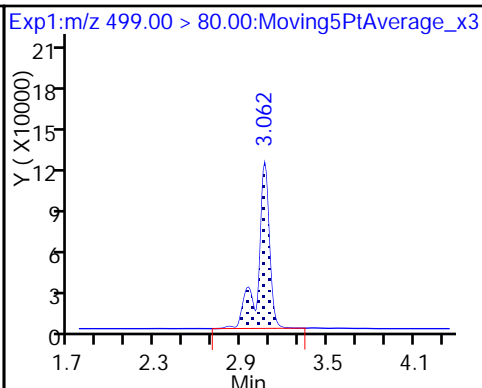
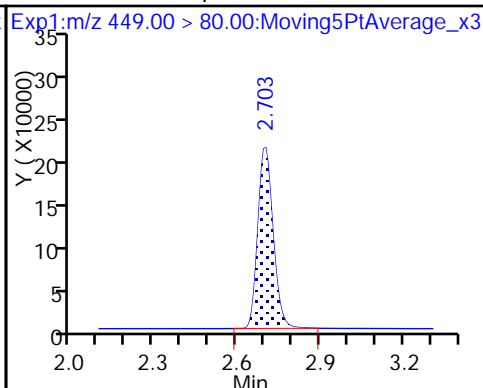
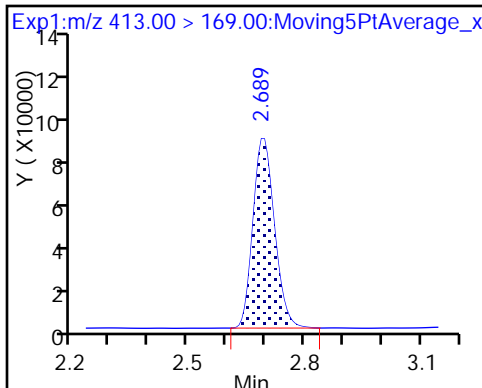
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

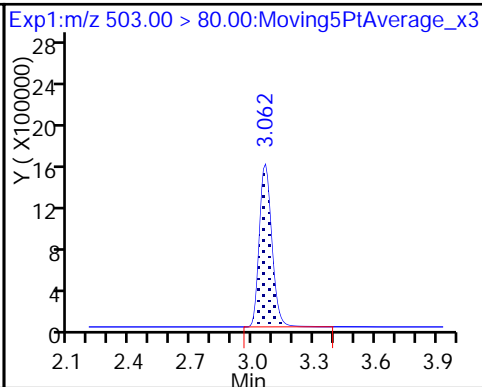
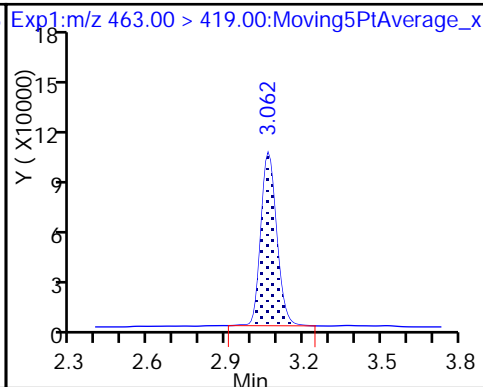
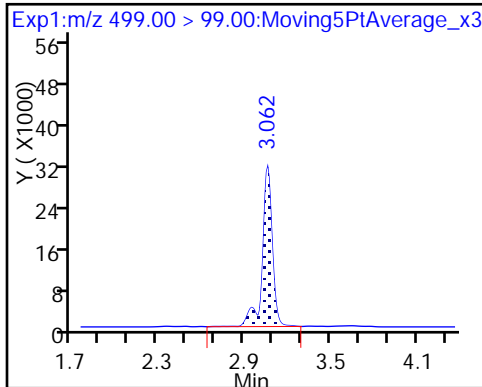
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

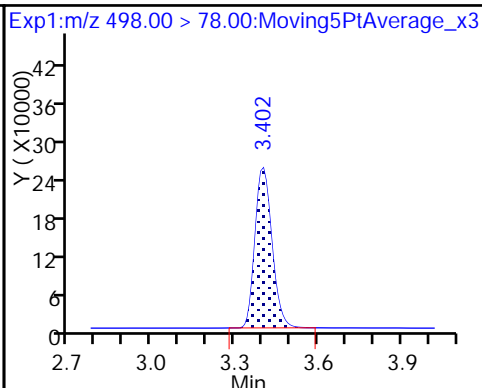
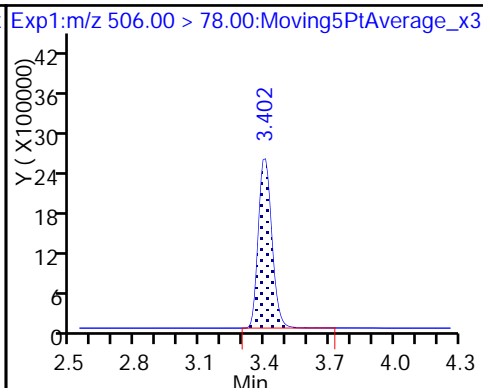
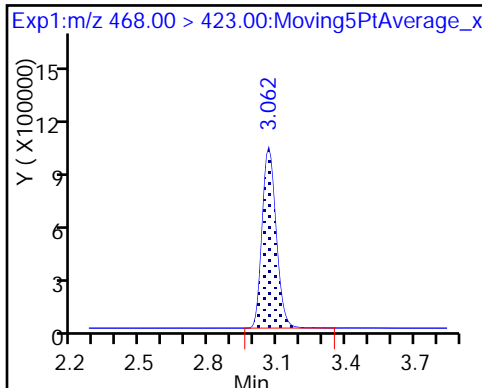
D 18 13C4 PFOS



D 19 13C5 PFNA

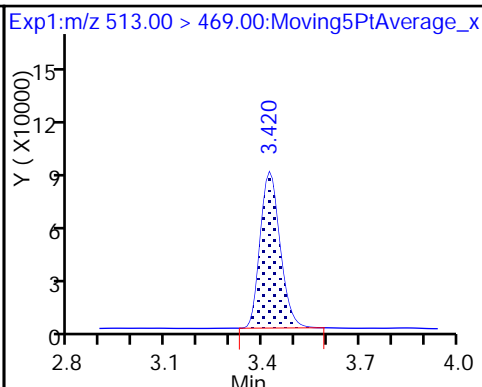
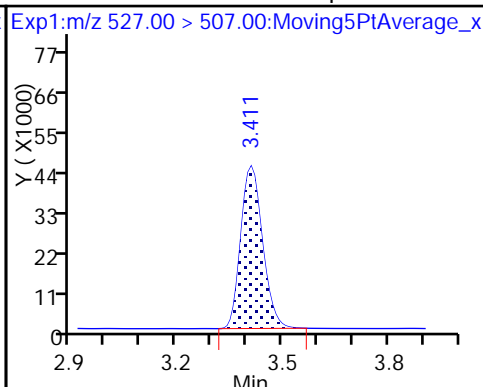
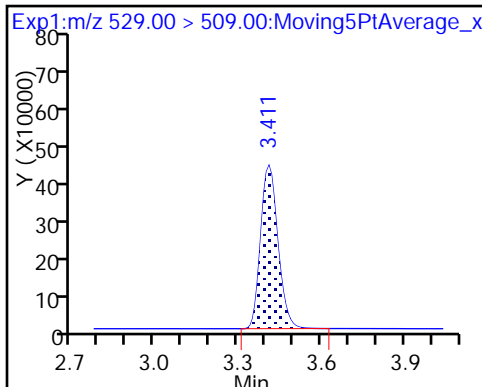
D 21 13C8 FOSA

22 Perfluorooctane Sulfonamide



D 26 M2-8:2FTS

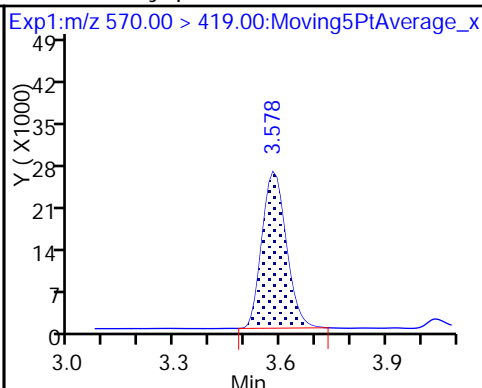
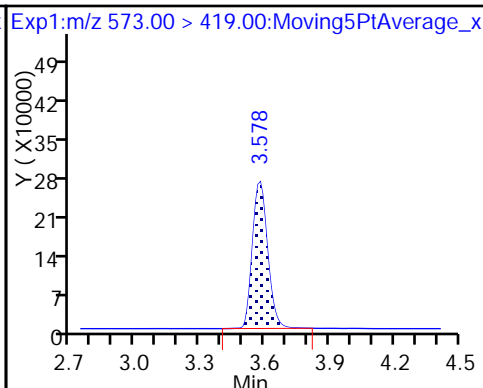
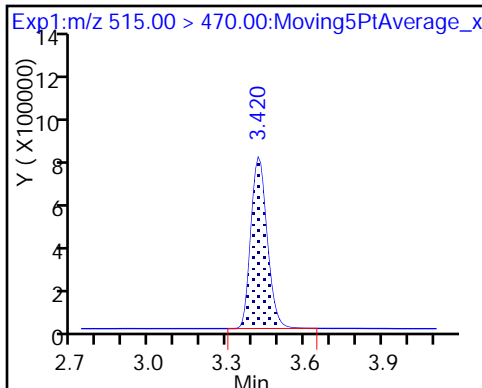
25 Sodium 1H,1H,2H,2H-perfluorodecan-2-yl Perfluorodecanoic acid



D 23 13C2 PFDA

D 27 d3-NMeFOSAA

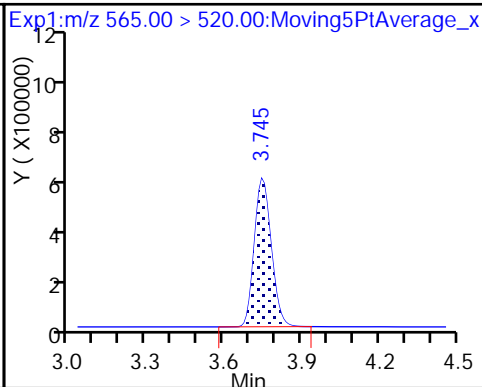
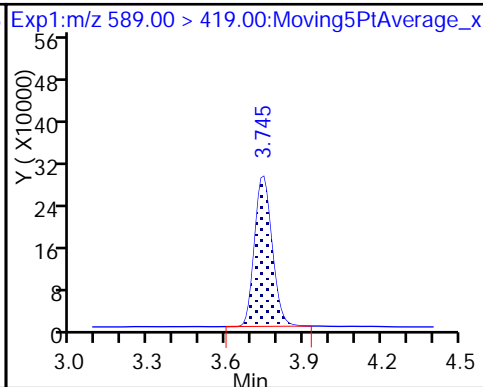
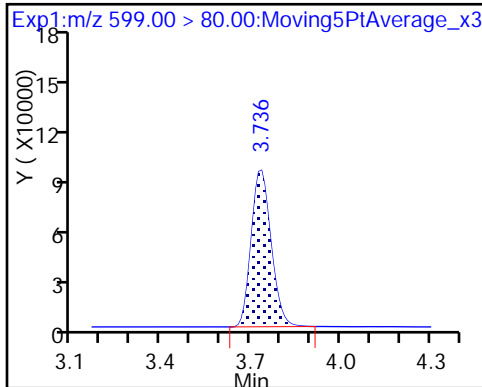
28 N-methyl perfluorooctane sulfonamide



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

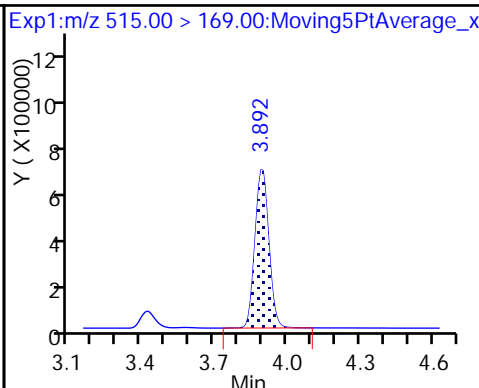
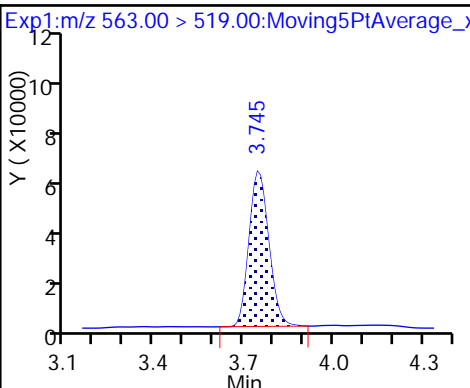
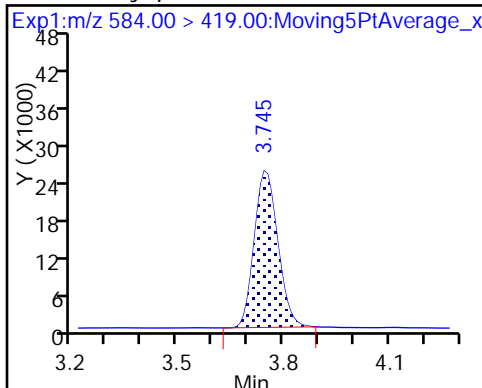
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

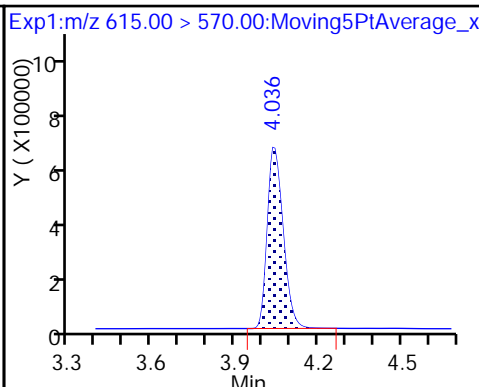
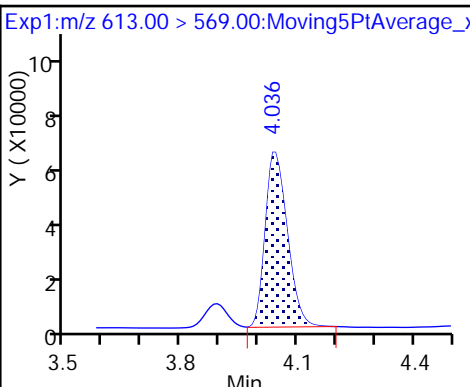
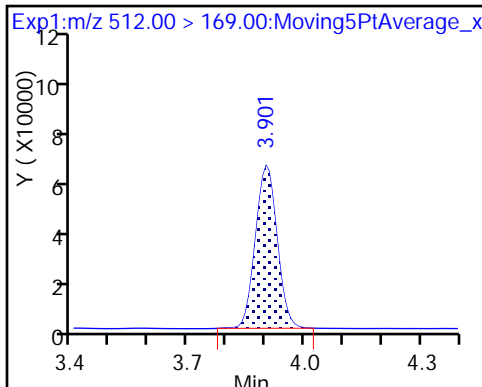
D 34 d-N-MeFOSA-M



35 MeFOSA

37 Perfluorododecanoic acid

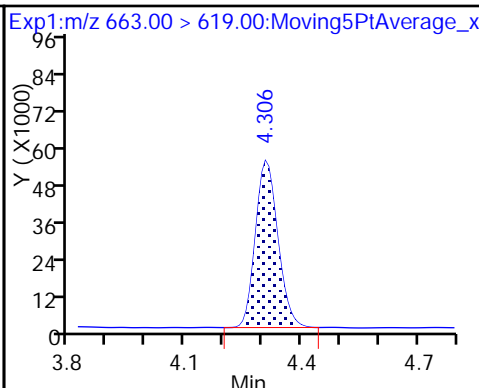
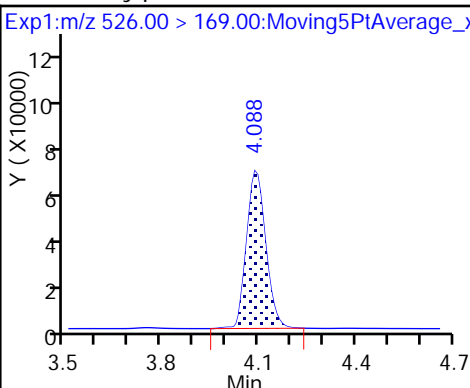
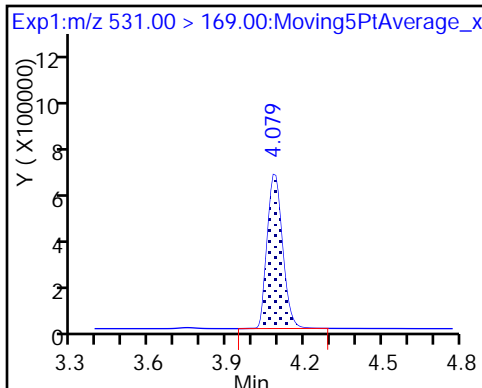
D 36 13C2 PFDa



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

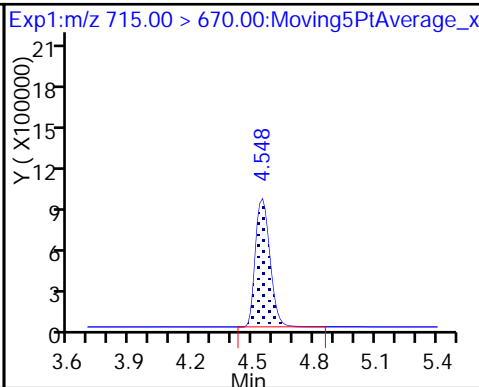
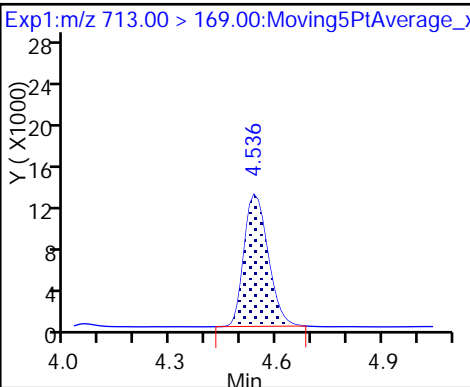
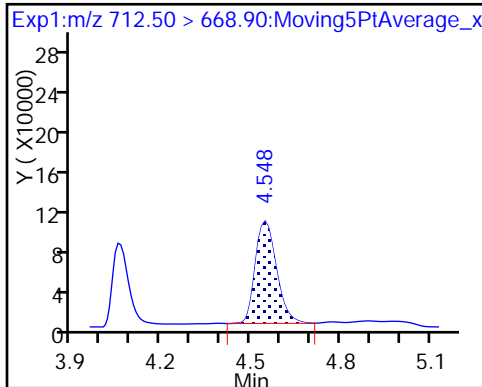
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

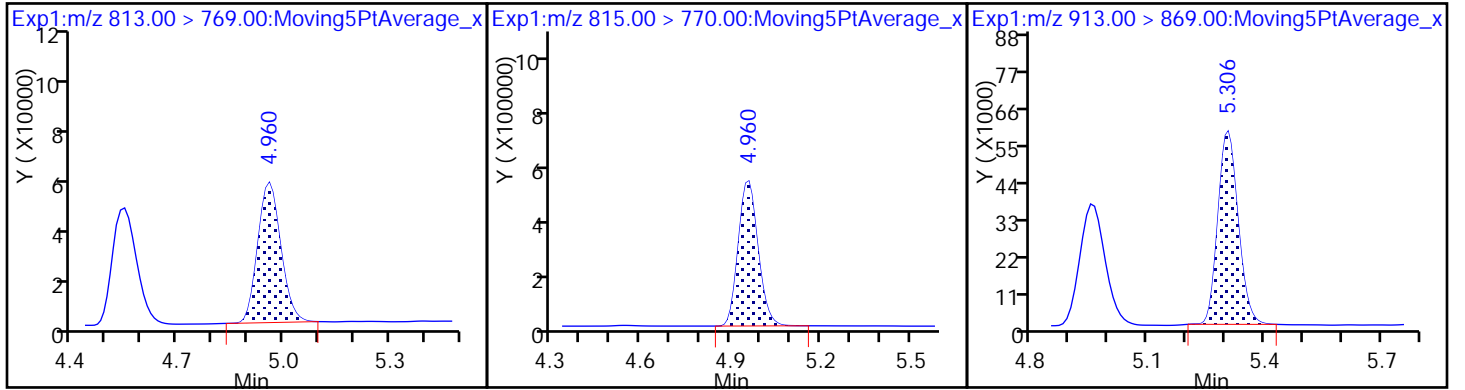
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_006.d  
 Lims ID: IC L4 Full  
 Client ID:  
 Sample Type: IC Calib Level: 4  
 Inject. Date: 18-Jul-2017 14:28:56 ALS Bottle#: 31 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L4-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:35:05 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:29:50

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.545	1.542	0.003	9135042	51.6		103	38341	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.544	0.001	3473204	20.8		104	1580	
D 3 13C5-PFPeA	267.90 > 223.00	1.763	1.757	0.006	6188826	50.0		100.0	69402	
4 Perfluoropentanoic acid	262.90 > 219.00	1.763	1.760	0.003	2558846	20.1		100	1703	
D 47 13C3-PFBS	301.90 > 83.00	1.782	1.778	0.004	174215	NC			10073	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.791	1.786	0.005	4819736	19.9		112	175669	
	298.90 > 99.00	1.791	1.786	0.005	1907666		2.53(0.00-0.00)	112	51904	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.983	1.984	-0.001	1042858	20.0		107	52281	
D 7 13C2 PFHxA	315.00 > 270.00	2.028	2.021	0.007	6106784	51.6		103	49863	
6 Perfluorohexanoic acid	313.00 > 269.00	2.028	2.021	0.007	2256693	19.5		97.7	5215	
D 9 13C4-PFHpA	367.00 > 322.00	2.340	2.340	0.0	5620315	52.4		105	33804	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.340	2.340	0.0	2330705	20.3		102	3254	
D 11 18O2 PFHxS	403.00 > 84.00	2.356	2.354	0.002	8606759	48.2		102	51853	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.356	2.354	0.002	3285552	17.9		98.1	2824	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.666	2.660	0.006	2436573	46.6	98.1	33319	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.666	2.661	0.005	1.000	873136	19.6	103	25461
* 62 13C2-PFOA	415.00	> 370.00	2.688	2.682	0.006	5019950	50.0		36344	
D 14 13C4 PFOA	417.00	> 372.00	2.688	2.687	0.001	4964567	52.7	105	34451	
15 Perfluorooctanoic acid	413.00	> 369.00	2.695	2.688	0.007	1.000	2089557	19.8	99.0	507
16 Perfluoroheptanesulfonic Acid	413.00	> 169.00	2.688	2.688	0.0	0.997	1288730	1.62(0.90-1.10)	99.0	5766
17 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.695	2.694	0.001	1.000	2903113	20.5	108	29257
D 18 13C4 PFOS	503.00	> 80.00	3.059	3.055	0.004	5962587	46.3	96.8	29626	
D 19 13C5 PFNA	468.00	> 423.00	3.059	3.055	0.004	3959663	52.1	104	28472	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.059	3.055	0.004	1.000	2425408	18.6	100	7991
20 Perfluorononanoic acid	499.00	> 99.00	3.059	3.055	0.004	1.000	540595	4.49(0.90-1.10)	100	5100
22 Perfluorooctane Sulfonamide	463.00	> 419.00	3.059	3.055	0.004	1.000	1548871	19.4	96.8	4345
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.394	3.392	0.002	1.000	4005268	20.5	102	24423
D 21 13C8 FOSA	506.00	> 78.00	3.394	3.392	0.002	10620520	51.0	102	31547	
D 26 M2-8:2FTS	529.00	> 509.00	3.403	3.402	0.001	1956443	50.8	106	21799	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.403	3.403	0.0	1.000	680373	18.2	95.1	14374
D 23 13C2 PFDA	515.00	> 470.00	3.421	3.415	0.006	3180245	49.3	98.7	13245	
24 Perfluorodecanoic acid	513.00	> 469.00	3.421	3.415	0.006	1.000	1257164	19.9	99.5	6828
D 27 d3-NMeFOSAA	573.00	> 419.00	3.569	3.571	-0.002	1257538	49.3	98.6	9105	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.580	3.574	0.006	1.003	447614	19.5	97.6	2850
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.726	3.728	-0.002	1.000	1563787	20.1	104	12179
D 32 d5-NEtFOSAA	589.00	> 419.00	3.736	3.738	-0.002	1339751	52.6	105	3980	
D 30 13C2 PFUnA	565.00	> 520.00	3.746	3.740	0.006	2388963	49.5	99.0	12489	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.746	3.742	0.004	1.000	956507	19.0	95.1	2278
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.746	3.742	0.004	1.003	422193	18.5	92.7	4609

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.892	3.891	0.001		2556828		48.9	97.8	701
35 MeFOSA	512.00 > 169.00	3.901	3.897	0.004	1.000	927006		20.0	99.8	5407
D 36 13C2 PFDaA	615.00 > 570.00	4.037	4.034	0.003		2289940		48.3	96.6	5157
37 Perfluorododecanoic acid	613.00 > 569.00	4.037	4.034	0.003	1.000	884609		20.2	101	1120
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.080	4.079	0.001		2519682		48.3	96.5	6102
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.088	4.086	0.002	1.000	941522		19.9	99.7	6562
41 Perfluorotridecanoic acid	663.00 > 619.00	4.307	4.304	0.003	1.000	799038		20.4	102	243
D 43 13C2-PFTeDA	715.00 > 670.00	4.548	4.544	0.004		4526933		51.1	102	21498
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.548	4.544	0.004	1.000	1797591		19.6	98.2	276
	713.00 > 169.00	4.536	4.544	-0.008	0.998	213840	8.41(0.00-0.00)		98.2	4084
D 44 13C2-PFHxDA	815.00 > 770.00	4.960	4.954	0.006		2324410		51.4	103	3810
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.960	4.954	0.006	1.000	799721		20.5	103	153
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.306	5.301	0.005	1.000	752003		20.8	104	299

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L4\_00008

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_006.d

Injection Date: 18-Jul-2017 14:28:56

Instrument ID: A8\_N

Lims ID: IC L4 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

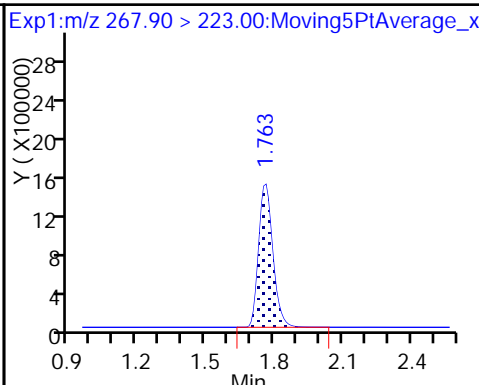
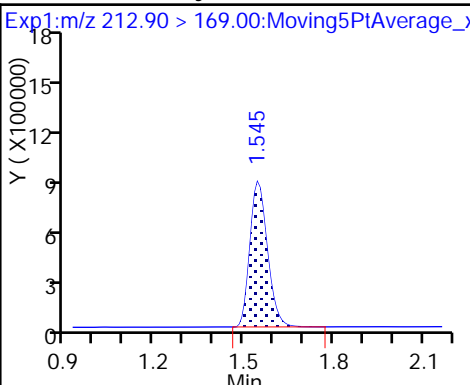
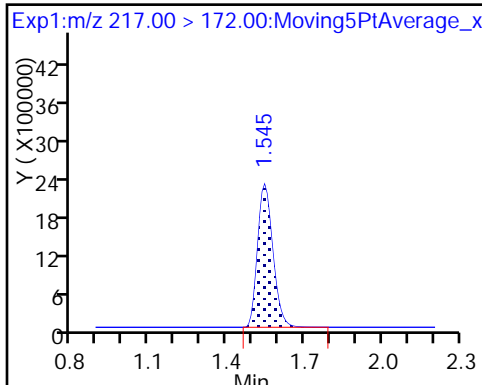
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

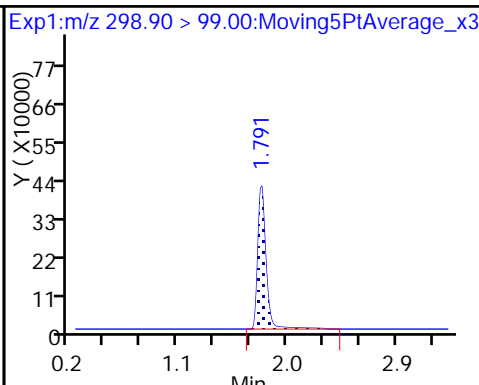
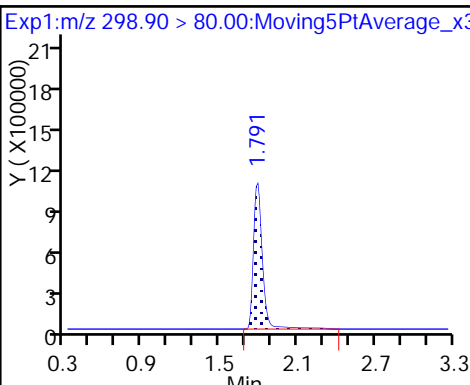
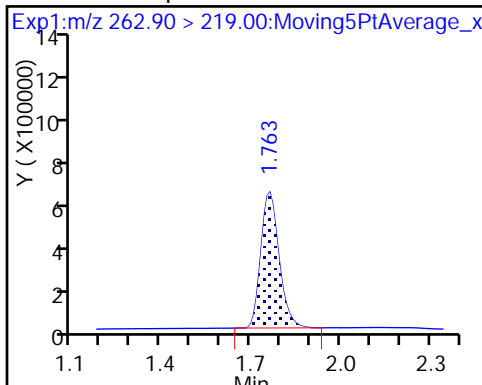
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

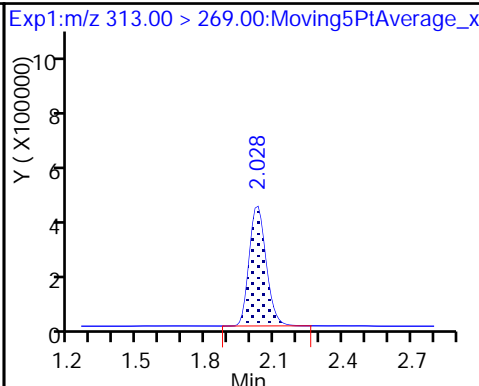
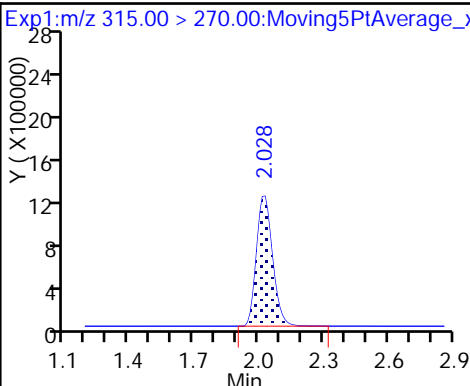
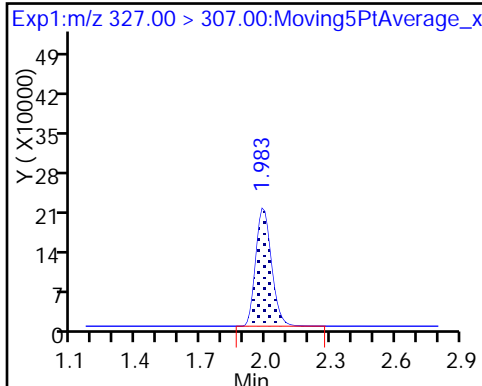
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

De 7 13C2 PFHxA

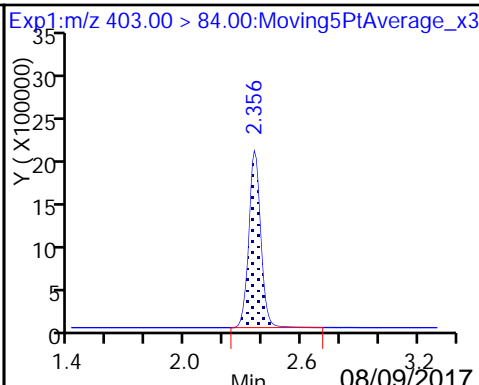
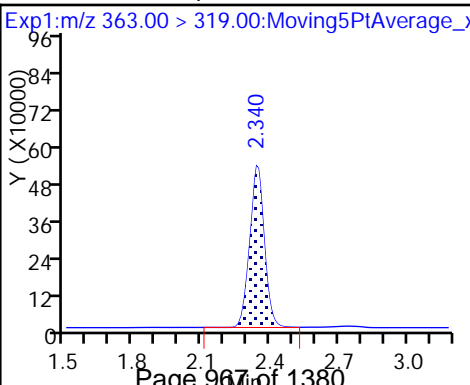
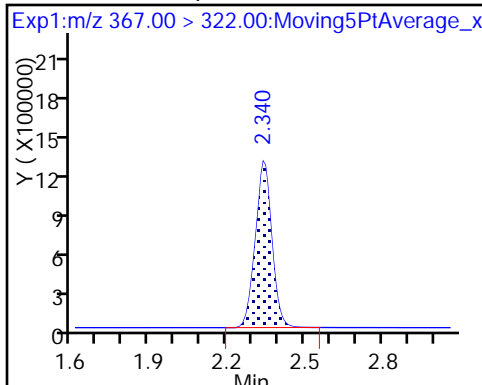
6 Perfluorohexanoic acid



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

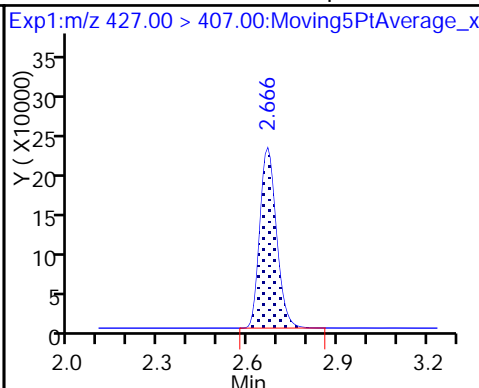
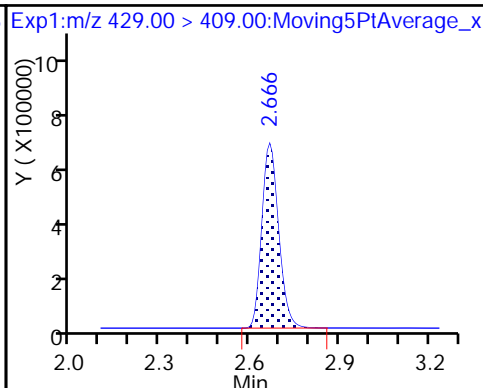
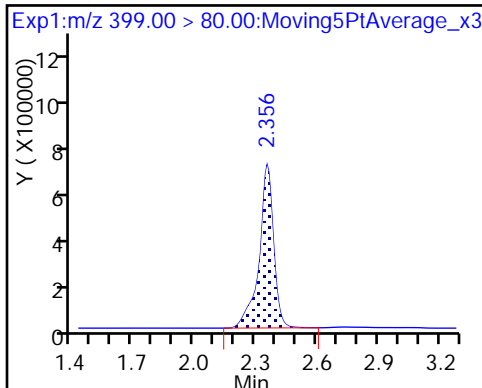
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

D 12 M2-6:2FTS

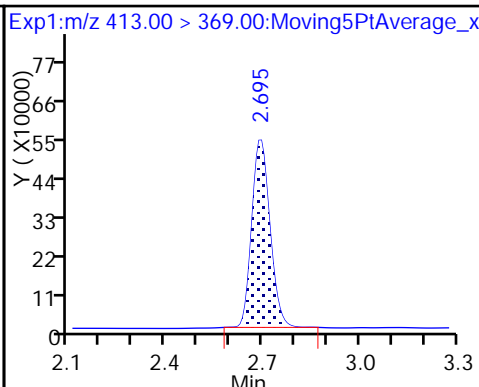
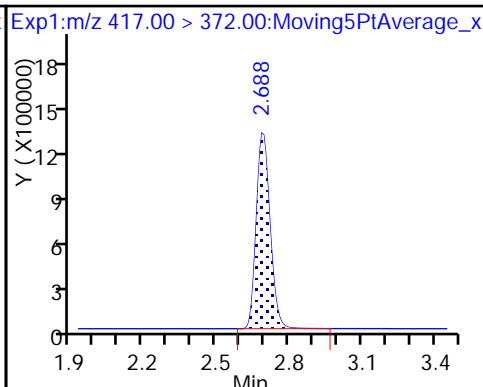
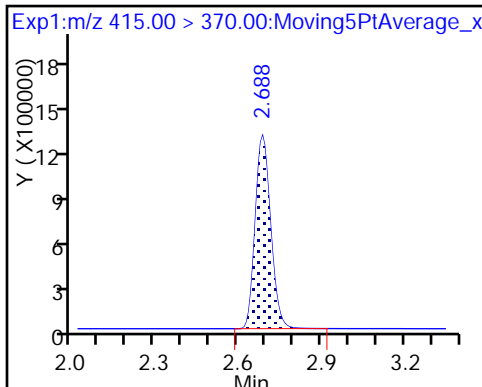
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

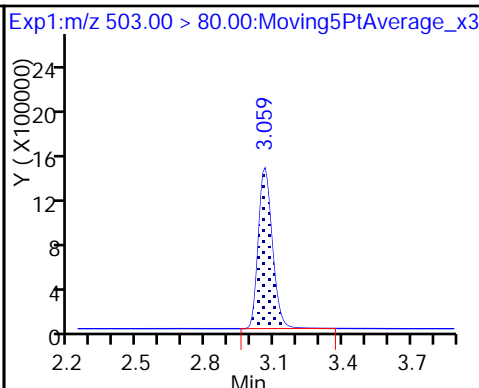
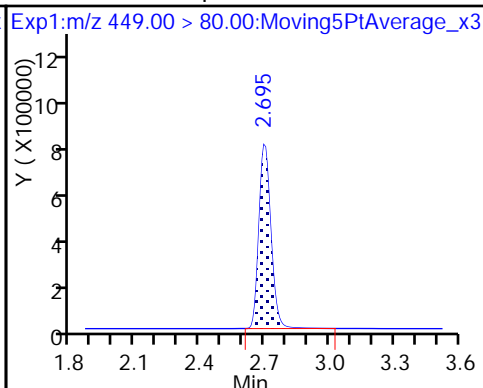
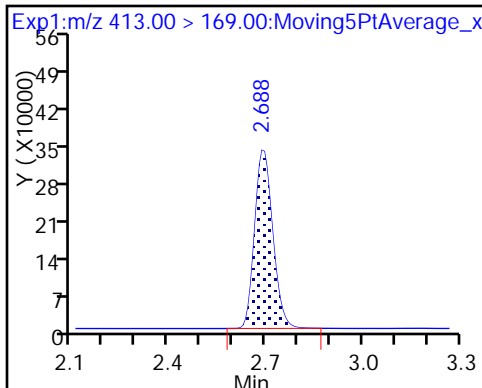
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

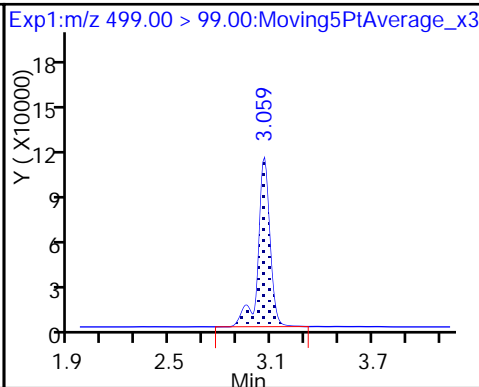
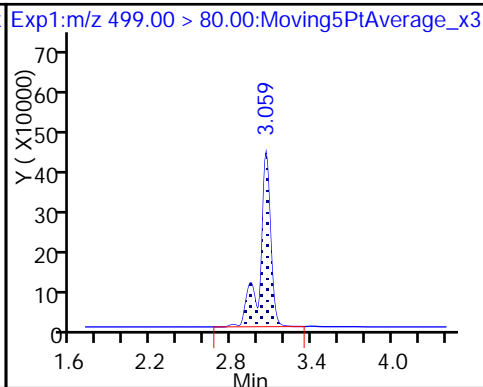
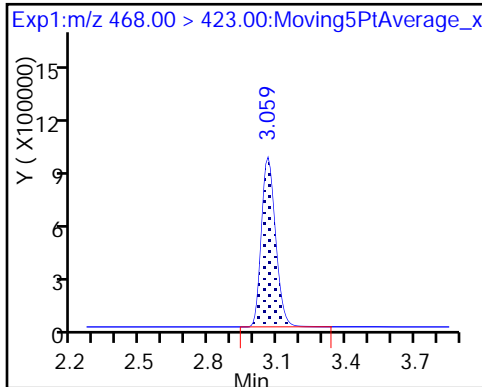
D 18 13C4 PFOS



D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid

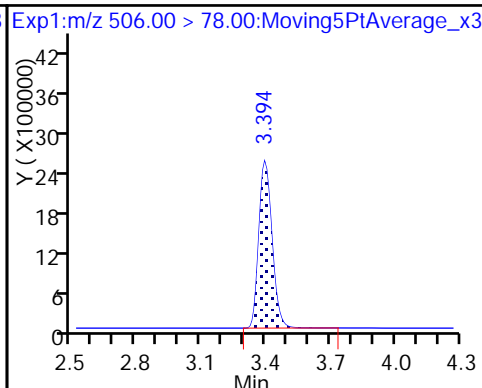
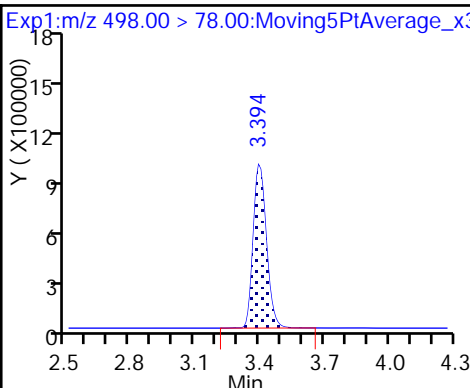
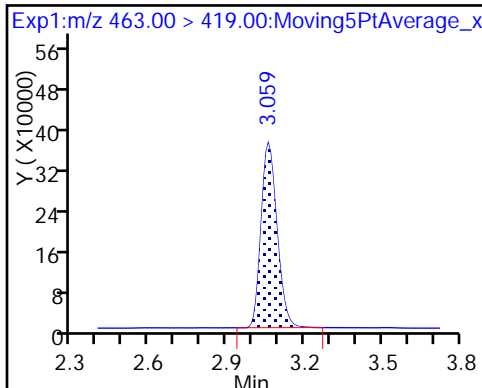
17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

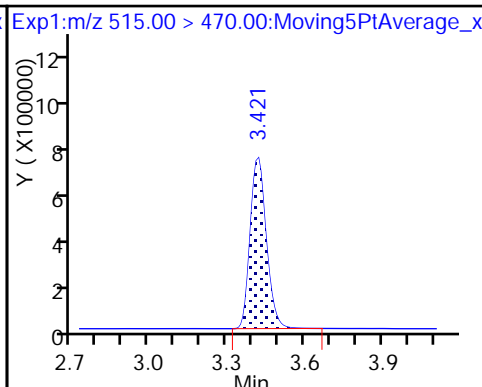
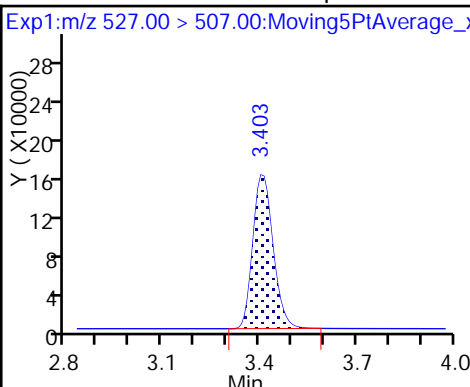
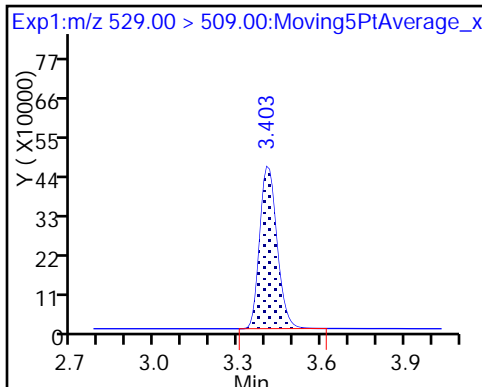
D 21 13C8 FOSA



D 26 M2-8:2FTS

25 Sodium 1H,1H,2H,2H-perfluorodeca

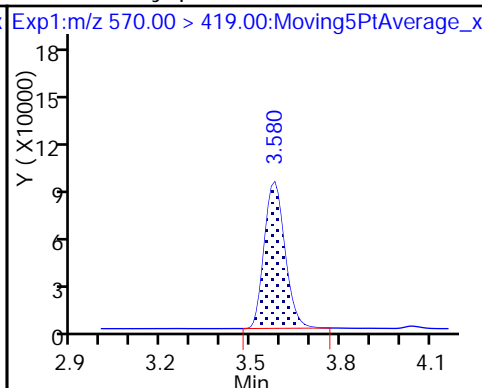
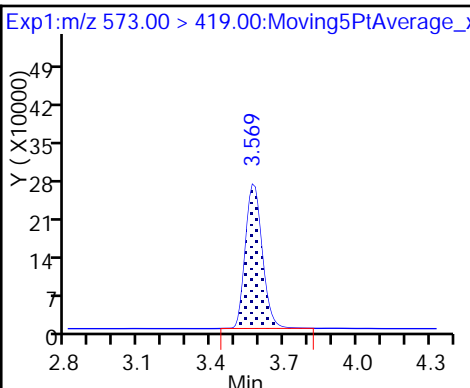
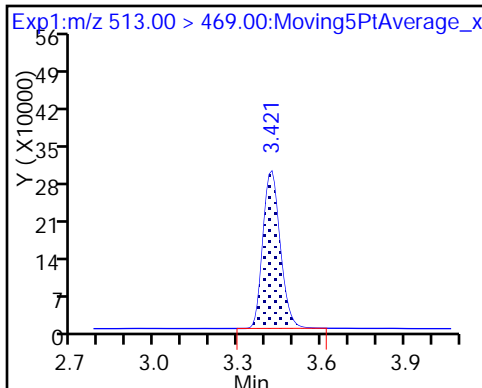
De23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

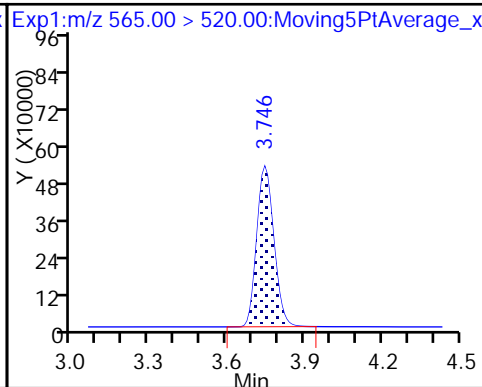
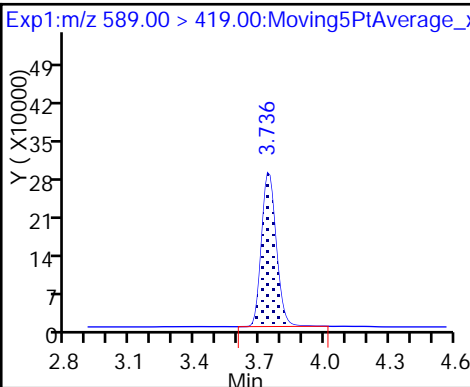
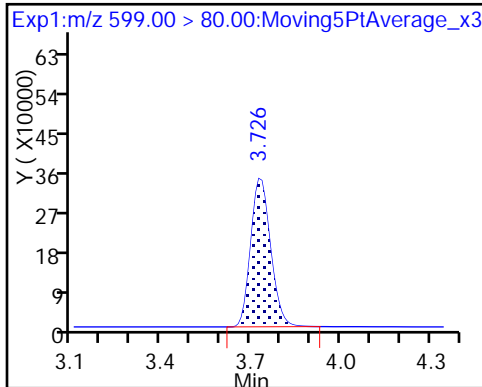
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

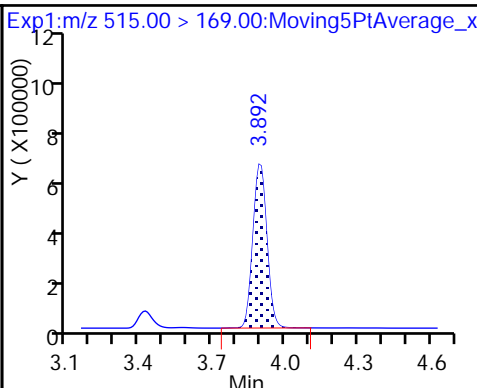
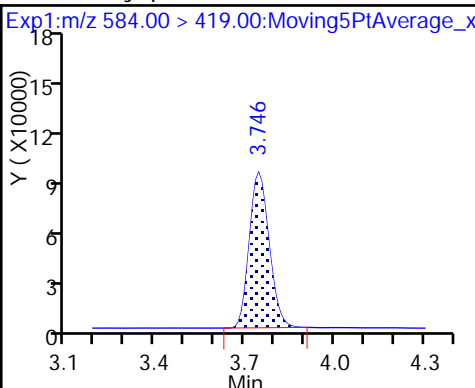
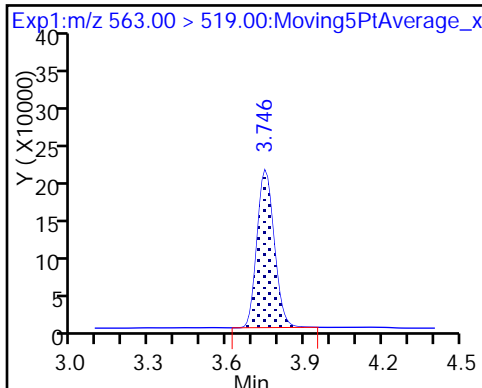
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

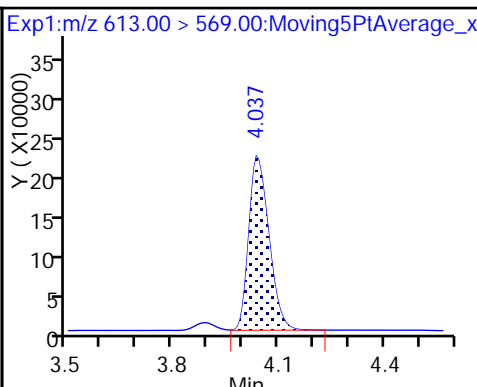
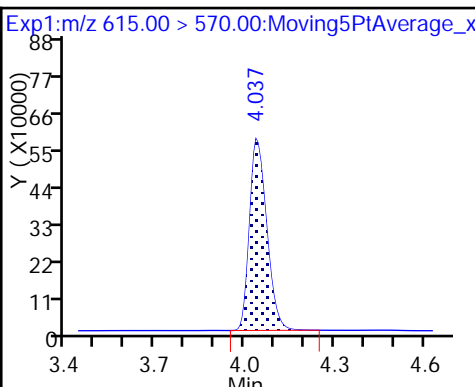
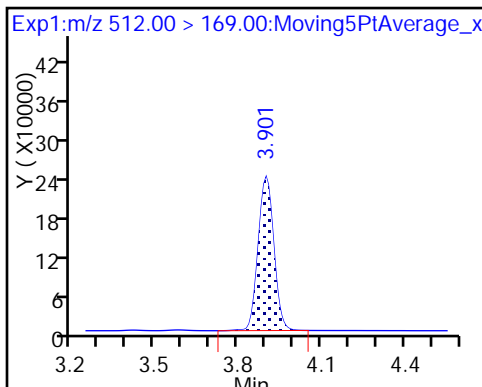
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

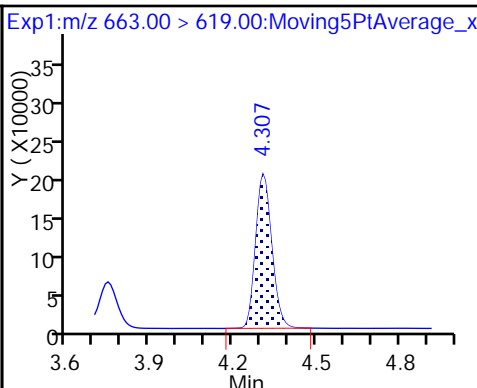
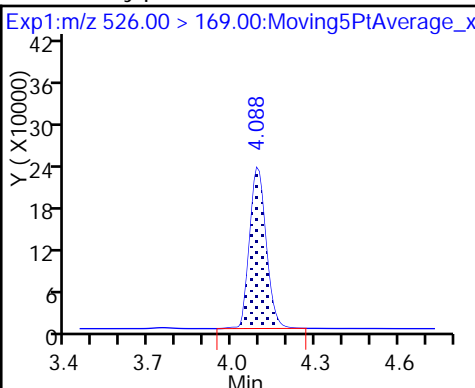
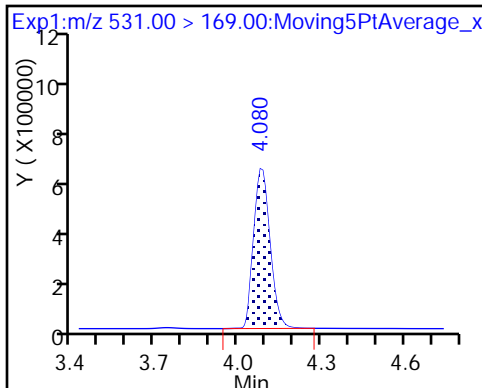
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

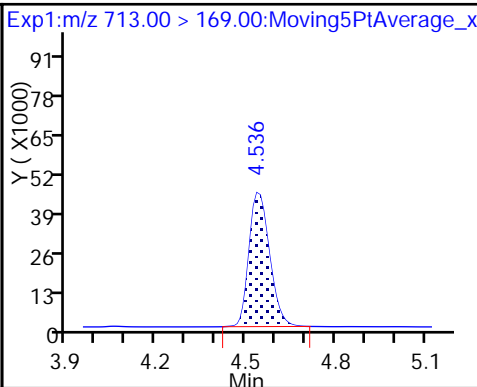
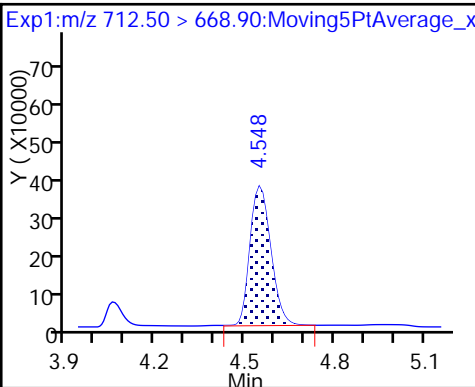
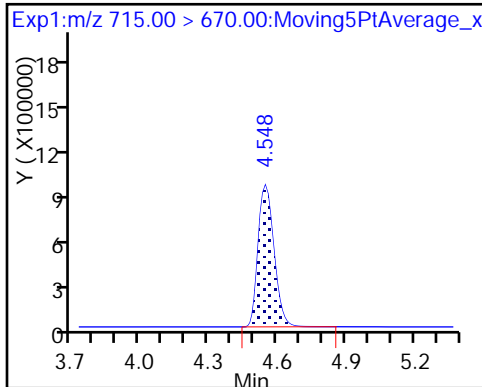
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

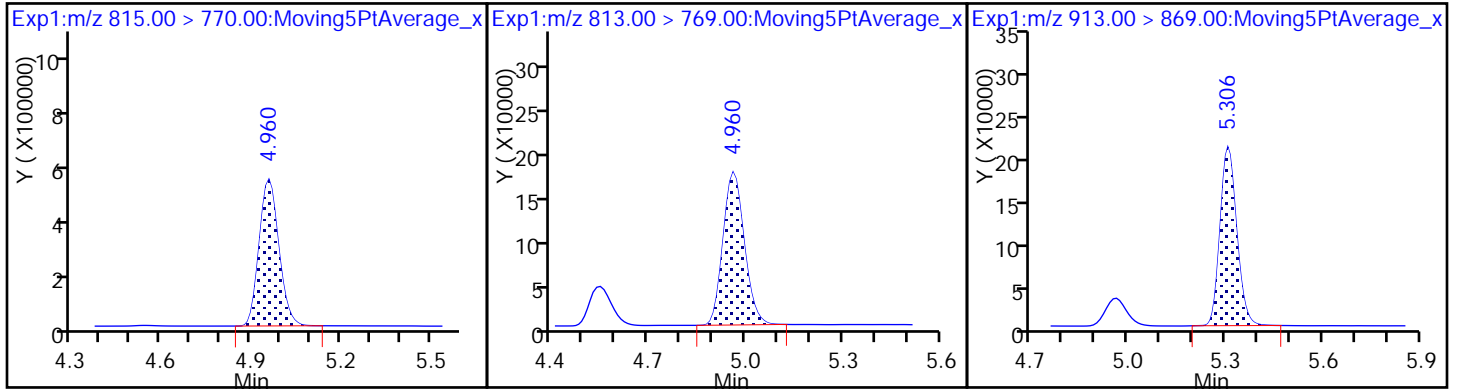
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_007.d  
 Lims ID: IC L5 Full  
 Client ID:  
 Sample Type: IC Calib Level: 5  
 Inject. Date: 18-Jul-2017 14:35:50 ALS Bottle#: 32 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L5-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:35:08 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:30:02

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.536	1.542	-0.006	8622319	48.7		97.4	21678	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.544	0.001	7993569	50.8		102	3267	
D 3 13C5-PFPeA	267.90 > 223.00	1.754	1.757	-0.003	5680475	45.9		91.8	42016	
4 Perfluoropentanoic acid	262.90 > 219.00	1.754	1.760	-0.006	5849685	50.0		100.0	3943	
D 47 13C3-PFBS	301.90 > 83.00	1.772	1.778	-0.006	152875	NC			5835	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.781	1.786	-0.005	10043907	43.1		97.4	374004	
	298.90 > 99.00	1.781	1.786	-0.005	4229121		2.37(0.00-0.00)	97.4	118941	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.982	1.984	-0.002	2348558	44.1		94.4	36140	
6 Perfluorohexanoic acid	313.00 > 269.00	2.017	2.021	-0.004	5186997	48.4		96.8	9715	
D 7 13C2 PFHxA	315.00 > 270.00	2.017	2.021	-0.004	5672315	48.0		95.9	24821	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.339	2.340	-0.001	5175419	46.7		93.5	4966	
D 9 13C4-PFHpA	367.00 > 322.00	2.339	2.340	-0.001	5432365	50.6		101	18745	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.347	2.354	-0.007	7970862	45.0		98.9	4122	
D 11 18O2 PFHxS	403.00 > 84.00	2.347	2.354	-0.007	8285746	46.4		98.2	25034	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.655	2.660	-0.005	2494198	47.7	100	20997	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.655	2.661	-0.006	1.000	2048364	44.9	94.8	19118
* 62 13C2-PFOA	415.00	> 370.00	2.683	2.682	0.001	4494533	50.0		23833	
D 14 13C4 PFOA	417.00	> 372.00	2.683	2.687	-0.004	4591528	48.8	97.5	20205	
15 Perfluorooctanoic acid	413.00	> 369.00	2.683	2.688	-0.005	1.000	4808873	49.3	98.6	962
	413.00	> 169.00	2.683	2.688	-0.005	1.000	2881584	1.67(0.90-1.10)	98.6	6865
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.691	2.694	-0.003	1.000	6711328	48.1	101	18140
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.049	3.055	-0.006	1.000	5691767	44.3	95.5	9709
	499.00	> 99.00	3.049	3.055	-0.006	1.000	1298748	4.38(0.90-1.10)	95.5	7305
20 Perfluorononanoic acid	463.00	> 419.00	3.049	3.055	-0.006	1.000	3659572	50.3	101	7431
D 18 13C4 PFOS	503.00	> 80.00	3.049	3.055	-0.006	5889388	45.7	95.7	18030	
D 19 13C5 PFNA	468.00	> 423.00	3.049	3.055	-0.006	3600593	47.4	94.8	10080	
D 21 13C8 FOSA	506.00	> 78.00	3.390	3.392	-0.002	10434389	50.1	100	14557	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.390	3.392	-0.002	1.000	9732736	50.6	101	22088
D 26 M2-8:2FTS	529.00	> 509.00	3.398	3.402	-0.004	1863355	48.4	101	12666	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.398	3.403	-0.005	1.000	1575338	44.3	92.5	10634
24 Perfluorodecanoic acid	513.00	> 469.00	3.407	3.415	-0.008	1.000	2943161	44.8	89.7	8368
D 23 13C2 PFDA	515.00	> 470.00	3.407	3.415	-0.008	3303322	51.2	102	13313	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.568	3.571	-0.003	1238764	48.6	97.1	4870	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.568	3.574	-0.006	1.000	1092013	48.3	96.7	4179
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.724	3.728	-0.004	1.000	3784908	49.3	102	10806
D 32 d5-NEtFOSAA	589.00	> 419.00	3.734	3.738	-0.004	1211015	47.6	95.1	2219	
D 30 13C2 PFUnA	565.00	> 520.00	3.734	3.740	-0.006	2336722	48.4	96.8	6835	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.734	3.742	-0.008	1.000	1043788	50.7	101	5545
31 Perfluoroundecanoic acid	563.00	> 519.00	3.734	3.742	-0.008	1.000	2304741	46.8	93.7	3596

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.892	3.891	0.001	2626200	50.2		100	865	
35 MeFOSA	512.00 > 169.00	3.892	3.897	-0.005	1.000	2329138	48.8	97.7	4567	
37 Perfluorododecanoic acid	613.00 > 569.00	4.030	4.034	-0.004	1.000	2239783	47.8	95.6	2648	
D 36 13C2 PFDaA	615.00 > 570.00	4.030	4.034	-0.004		2452342	51.7	103	5147	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.079	4.079	0.0		2649642	50.8	102	4380	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.088	4.086	0.002	1.000	2427895	48.9	97.7	3771	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.300	4.304	-0.004	1.000	1954622	46.5	93.0	566	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.538	4.544	-0.006	1.000	4812589	49.1	98.2	813	
	713.00 > 169.00	4.526	4.544	-0.018	0.997	558594	8.62(0.00-0.00)	98.2	4889	
D 43 13C2-PFTeDA	715.00 > 670.00	4.538	4.544	-0.006		4756983	53.7	107	22322	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.952	4.954	-0.002	1.000	2088140	51.1	102	394	
D 44 13C2-PFHxDA	815.00 > 770.00	4.952	4.954	-0.002		2390328	52.9	106	3127	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.293	5.301	-0.008	1.000	1993259	51.6	103	570	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L5\_00008

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_007.d

Injection Date: 18-Jul-2017 14:35:50

Instrument ID: A8\_N

Lims ID: IC L5 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

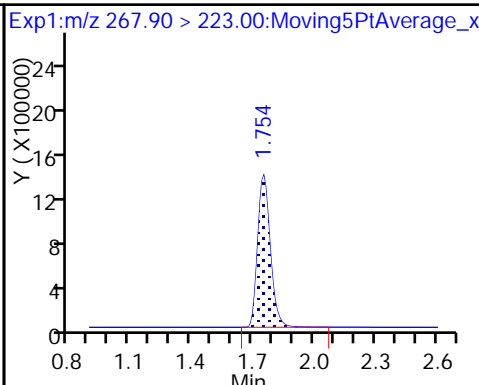
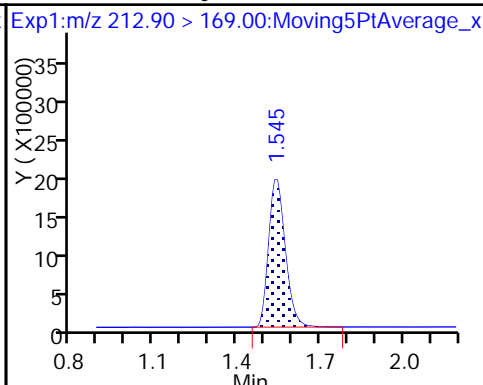
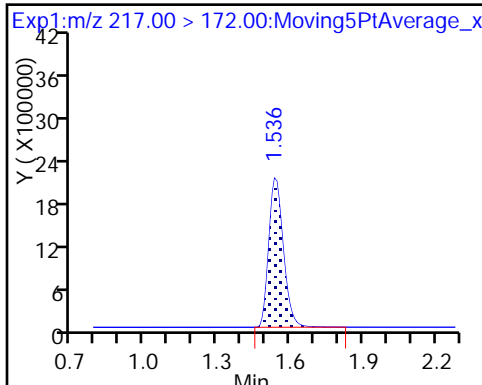
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

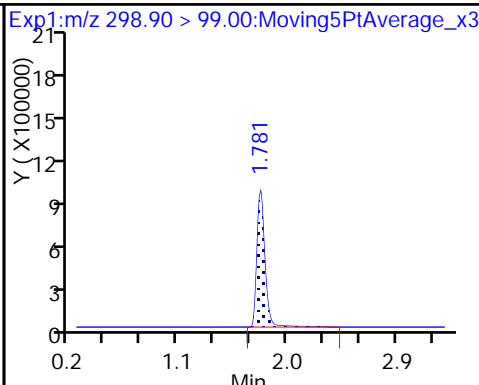
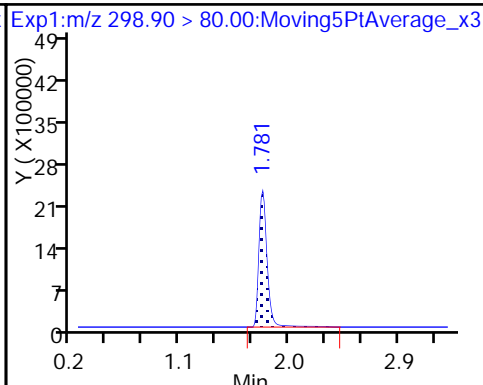
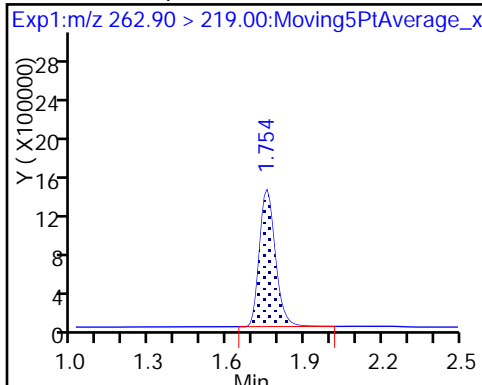
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

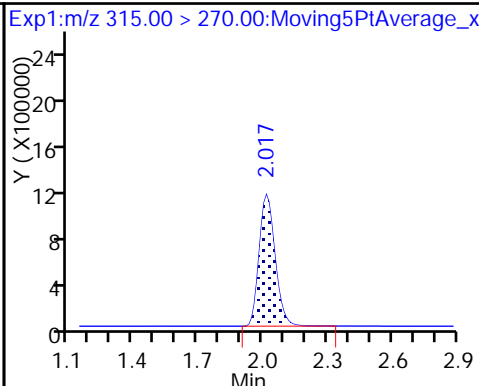
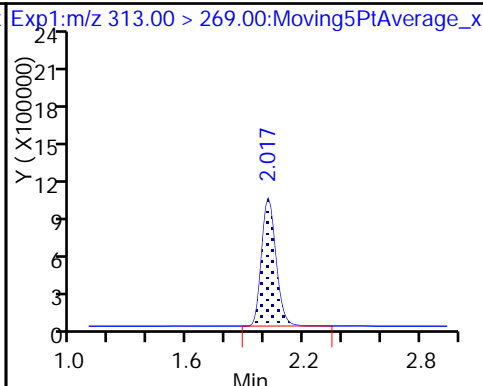
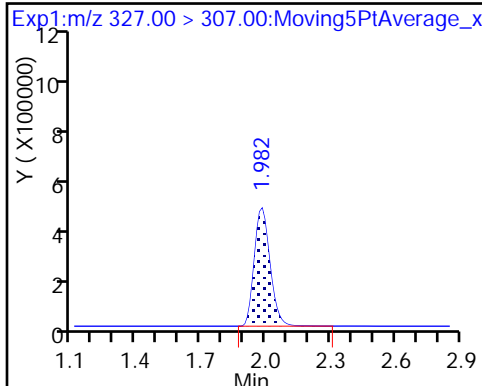
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

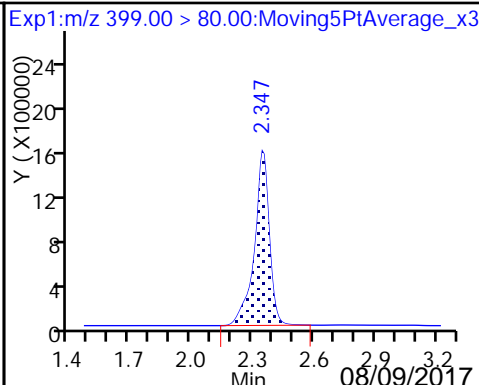
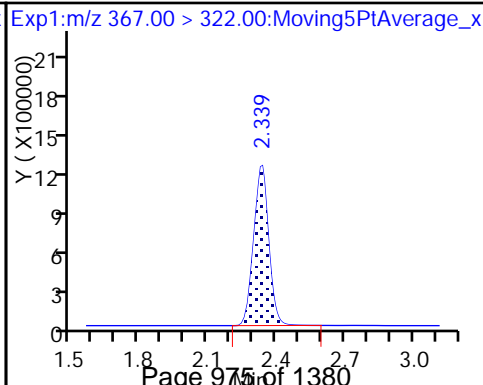
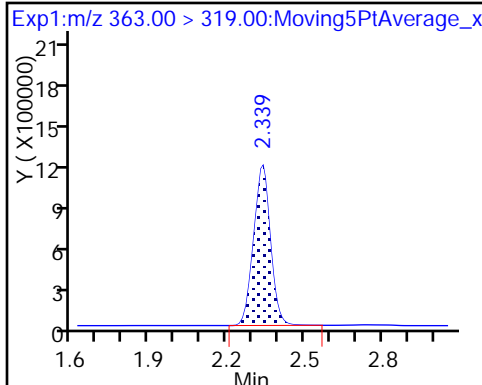
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

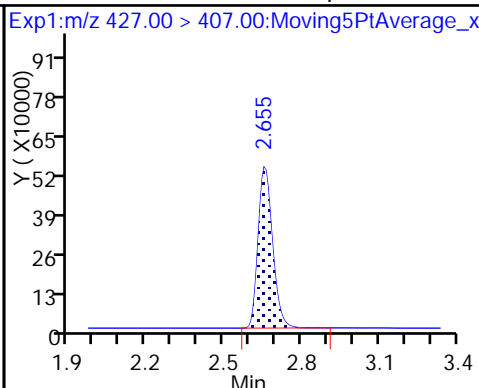
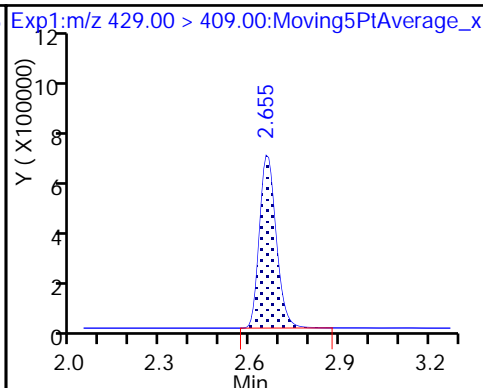
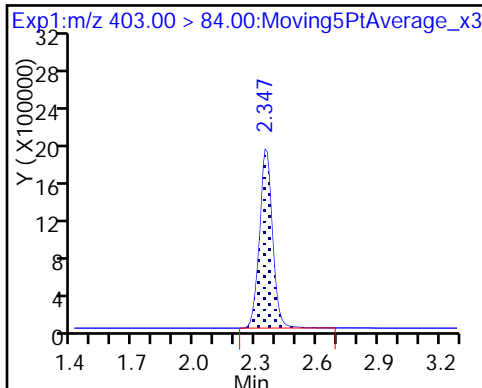
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

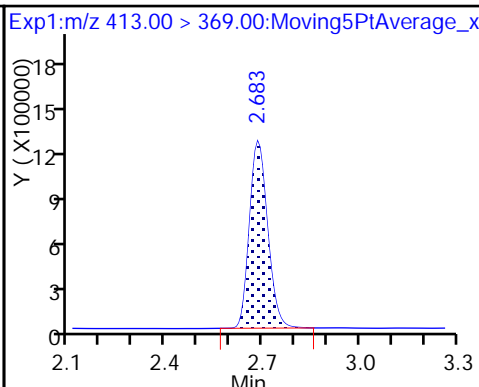
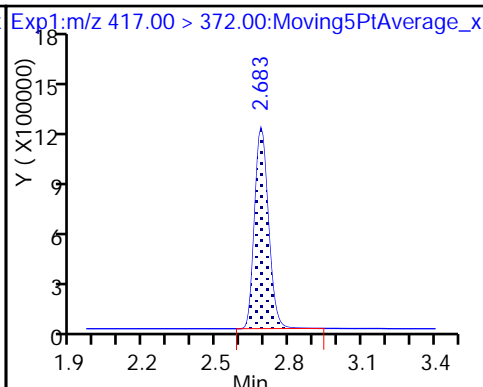
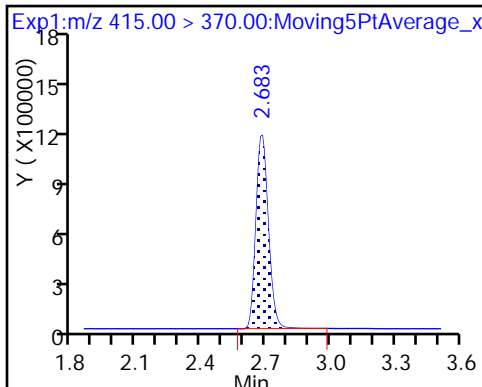
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

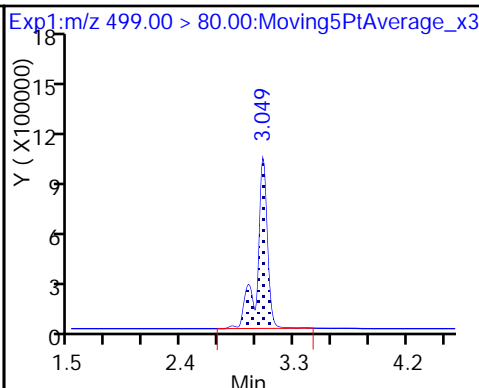
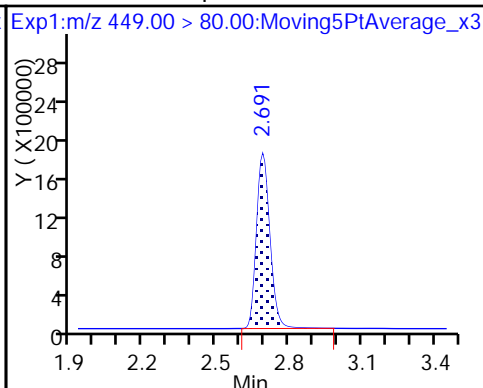
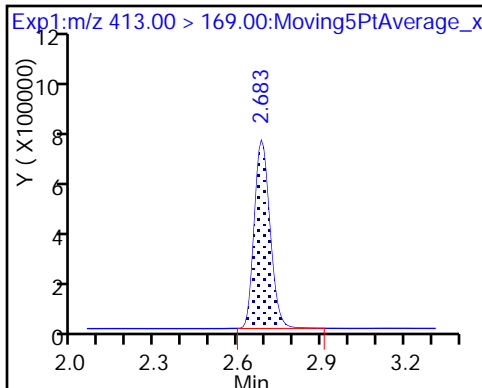
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

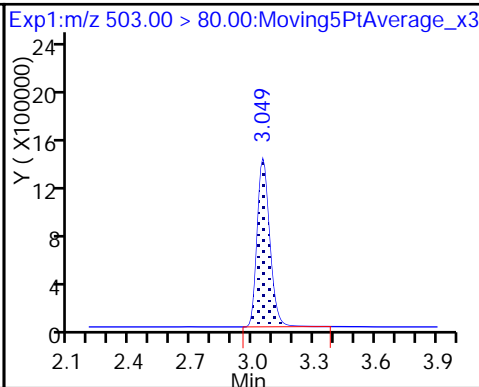
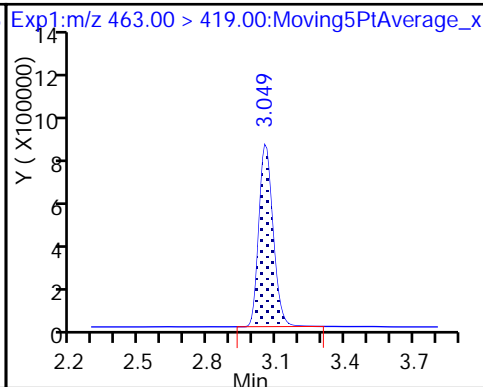
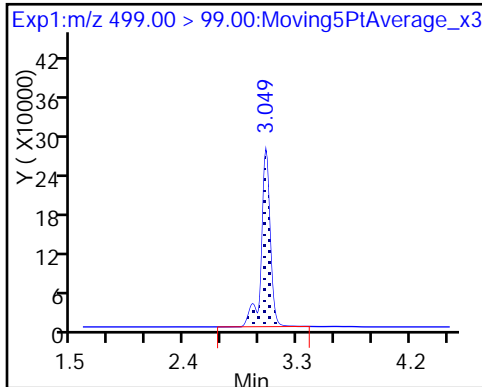
17 Perfluorooctane sulfonic acid



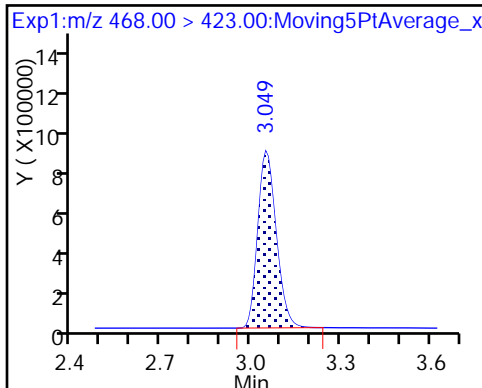
17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

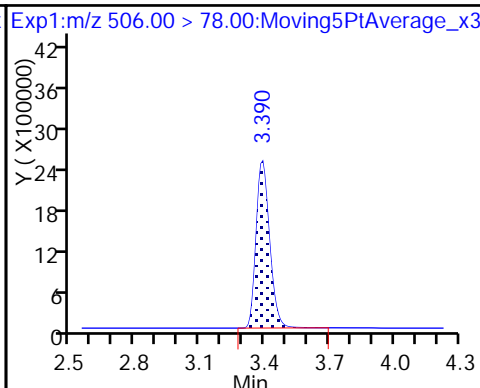
D 18 13C4 PFOS



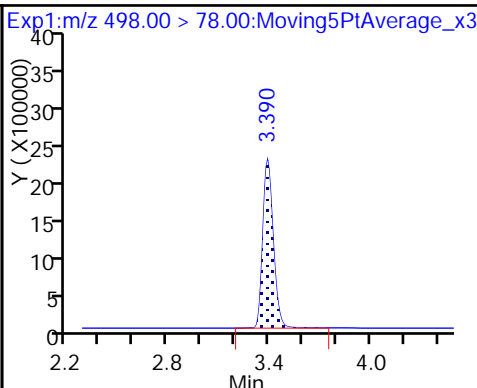
D 19 13C5 PFNA



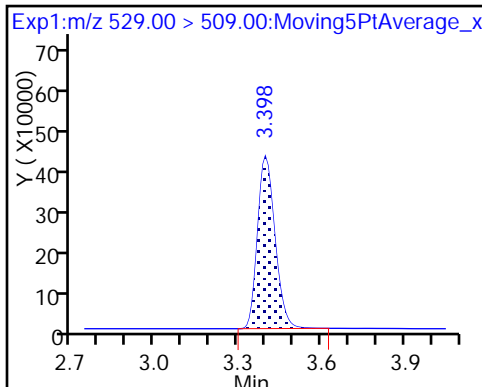
D 21 13C8 FOSA



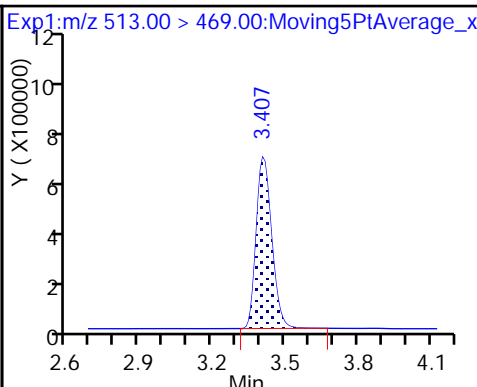
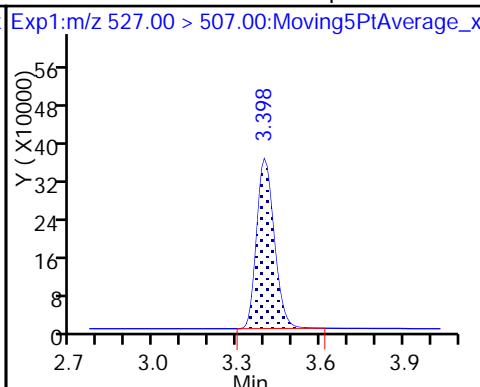
22 Perfluorooctane Sulfonamide



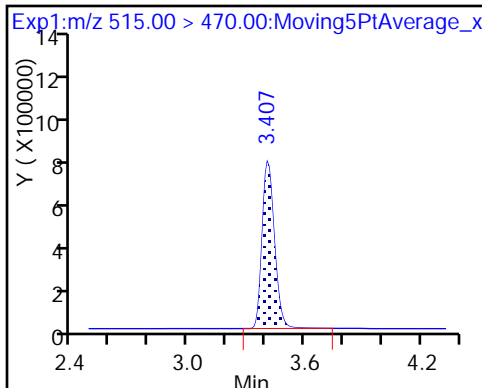
D 26 M2-8:2FTS



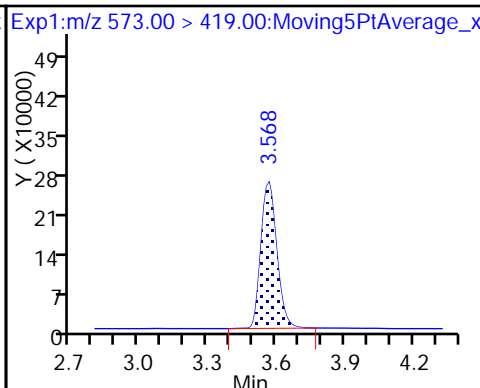
25 Sodium 1H,1H,2H,2H-perfluorodecan-2-yl Perfluorodecanoic acid



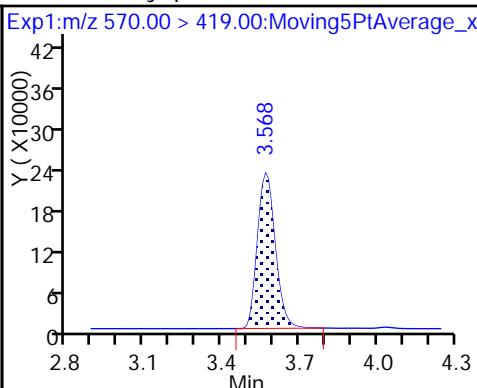
D 23 13C2 PFDA



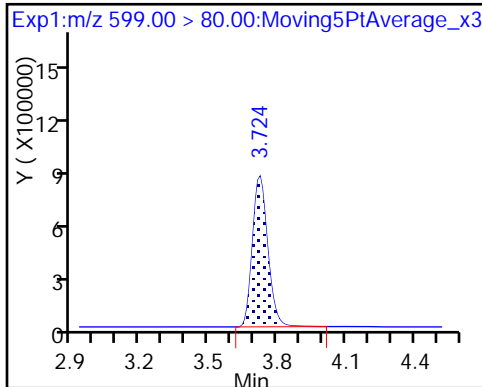
D 27 d3-NMeFOSAA



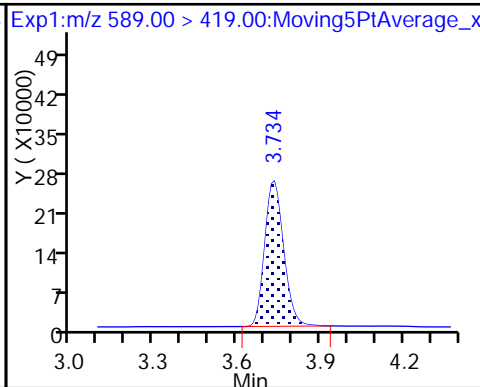
28 N-methyl perfluorooctane sulfonamide



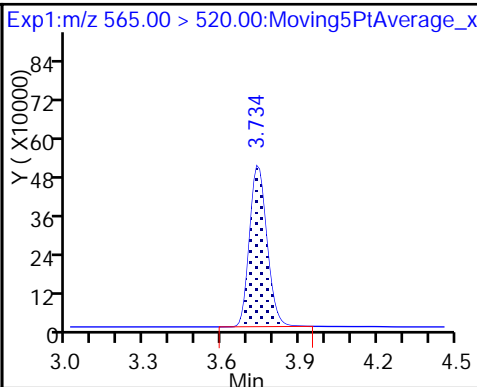
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



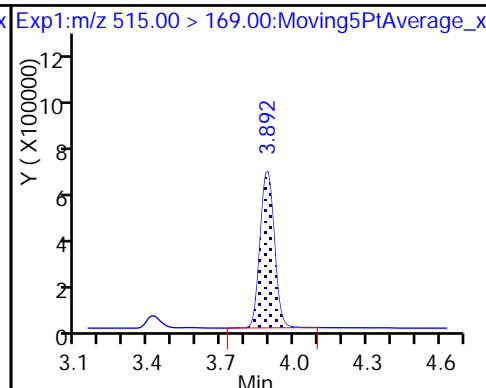
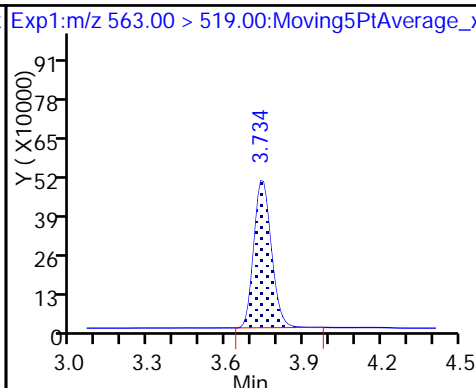
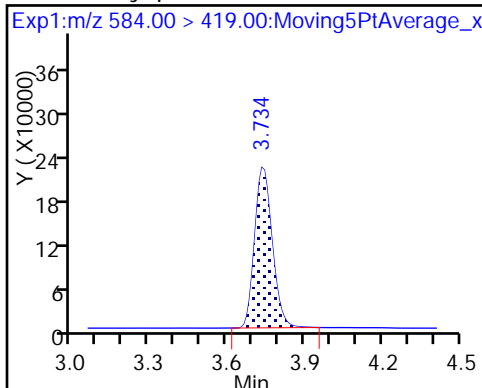
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

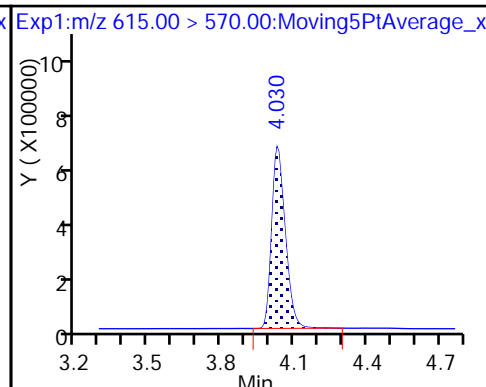
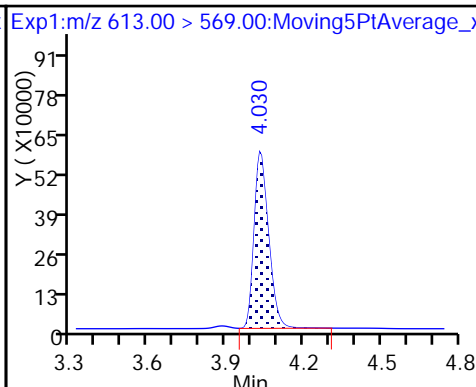
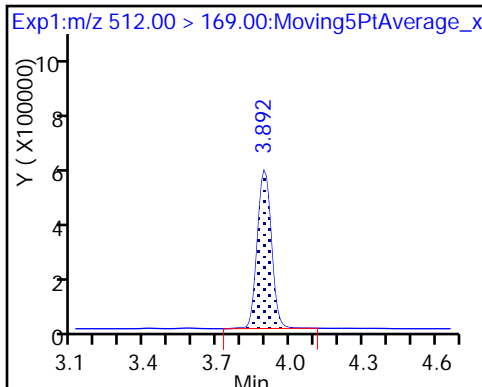
D 34 d-N-MeFOSA-M



35 MeFOSA

37 Perfluorododecanoic acid

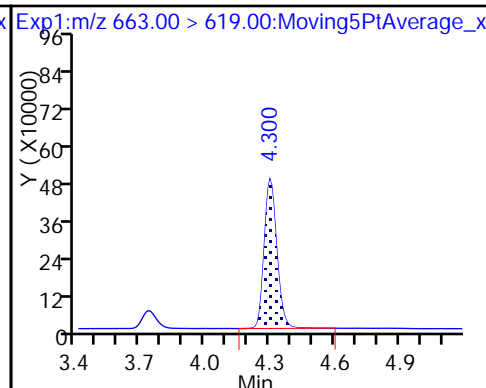
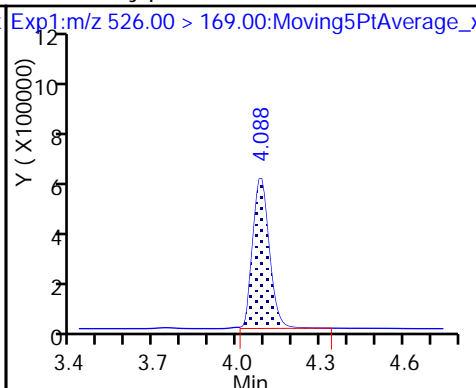
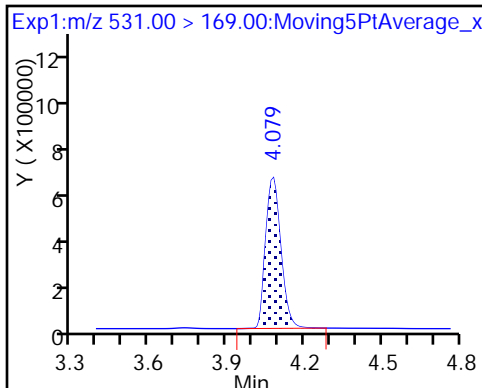
D 36 13C2 PFDa



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

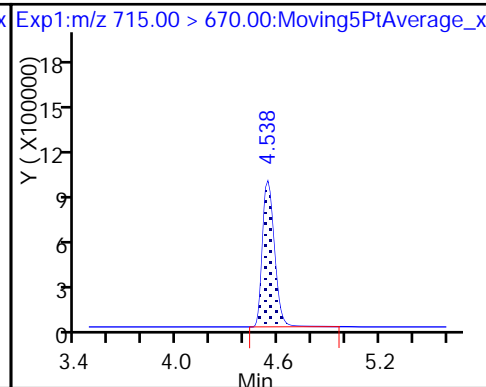
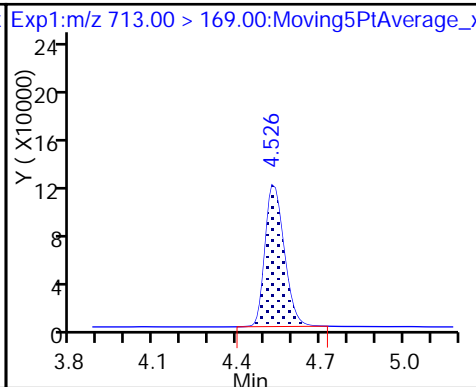
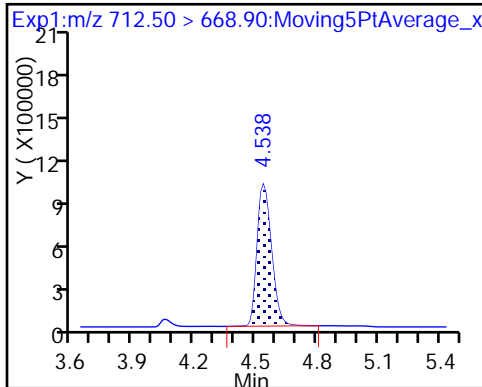
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

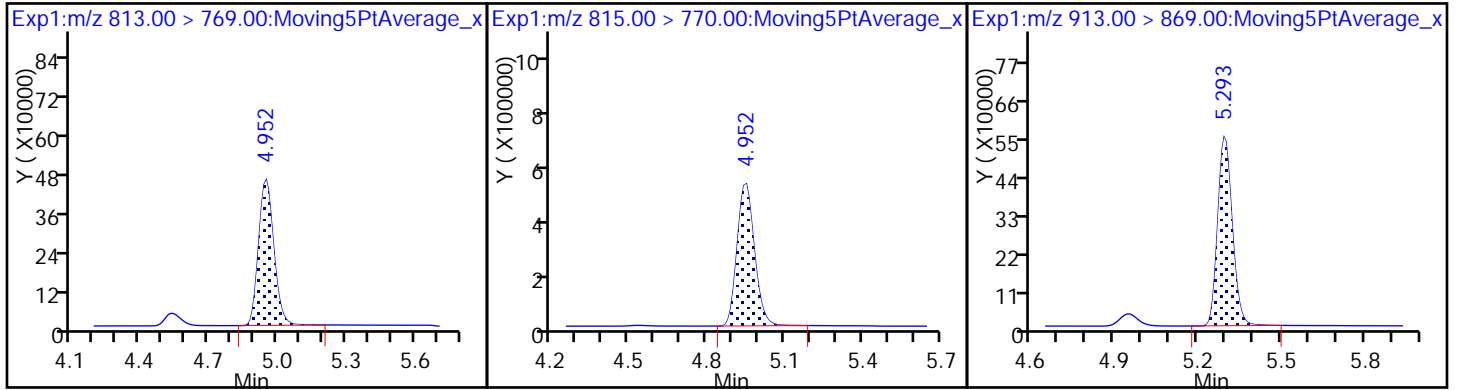
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_008.d  
 Lims ID: IC L6 Full  
 Client ID:  
 Sample Type: IC Calib Level: 6  
 Inject. Date: 18-Jul-2017 14:42:44 ALS Bottle#: 33 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L6-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:35:11 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:30:21

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.537	1.542	-0.005	8417809	47.5		95.1	22492	
2 Perfluorobutyric acid	212.90 > 169.00	1.546	1.544	0.002	14744297	95.9		95.9	4498	
D 3 13C5-PFPeA	267.90 > 223.00	1.755	1.757	-0.002	5802553	46.9		93.7	76613	
4 Perfluoropentanoic acid	262.90 > 219.00	1.755	1.760	-0.005	11277076	94.3		94.3	7544	
D 47 13C3-PFBS	301.90 > 83.00	1.773	1.778	-0.005	160284	NC			6147	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.782	1.786	-0.004	19437143	82.0		92.7	729499	
	298.90 > 99.00	1.782	1.786	-0.004	8820034		2.20(0.00-0.00)	92.7	287085	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.983	1.984	-0.001	4362598	86.6		92.7	78128	
D 7 13C2 PFHxA	315.00 > 270.00	2.017	2.021	-0.004	5500174	46.5		93.0	51608	
6 Perfluorohexanoic acid	313.00 > 269.00	2.017	2.021	-0.004	10277351	98.8		98.8	21036	
D 9 13C4-PFHpA	367.00 > 322.00	2.333	2.340	-0.007	4831322	45.0		90.1	34706	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.333	2.340	-0.007	9828236	99.8		99.8	9654	
D 11 18O2 PFHxS	403.00 > 84.00	2.350	2.354	-0.004	8419939	47.2		99.8	56170	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.350	2.354	-0.004	15687390	87.1		95.8	8335	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
D 12 M2-6:2FTS	429.00	> 409.00	2.650	2.660	-0.010	2356924	45.1	94.9	31357		
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.650	2.661	-0.011	1.000	3917884	91.0	95.9	55139	
* 62 13C2-PFOA	415.00	> 370.00	2.672	2.682	-0.010		4033021	50.0		31461	
D 14 13C4 PFOA	417.00	> 372.00	2.679	2.687	-0.008		4222319	44.8	89.7	28166	
15 Perfluorooctanoic acid	413.00	> 369.00	2.679	2.688	-0.009	1.000	8601794	95.9	95.9	1855	
	413.00	> 169.00	2.679	2.688	-0.009	1.000	5291084		1.63(0.90-1.10)	95.9	10954
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.687	2.694	-0.007	1.000	13285880	94.2	99.0	42529	
D 18 13C4 PFOS	503.00	> 80.00	3.045	3.055	-0.010		5946316	46.2	96.6	22194	
D 19 13C5 PFNA	468.00	> 423.00	3.045	3.055	-0.010		3541217	46.6	93.2	15221	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.045	3.055	-0.010	1.000	11924019	91.9	99.1	8488	
	499.00	> 99.00	3.045	3.055	-0.010	1.000	2616231		4.56(0.90-1.10)	99.1	11935
20 Perfluorononanoic acid	463.00	> 419.00	3.045	3.055	-0.010	1.000	6845358	95.7	95.7	11782	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.386	3.392	-0.006	1.000	17869001	97.7	97.7	15984	
D 21 13C8 FOSA	506.00	> 78.00	3.386	3.392	-0.006		9928697	47.7	95.3	17389	
D 26 M2-8:2FTS	529.00	> 509.00	3.394	3.402	-0.008		1770908	46.0	95.9	12821	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.394	3.403	-0.009	1.000	3167476	93.7	97.8	19363	
D 23 13C2 PFDA	515.00	> 470.00	3.403	3.415	-0.012		3001369	46.6	93.1	10430	
24 Perfluorodecanoic acid	513.00	> 469.00	3.403	3.415	-0.012	1.000	6009894	100.8	101	17025	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.565	3.571	-0.006		1298593	50.9	102	7303	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.565	3.574	-0.009	1.000	2361307	99.7	99.7	7799	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.722	3.728	-0.006	1.000	7402981	95.4	99.0	16861	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.731	3.738	-0.007		1151458	45.2	90.5	2693	
D 30 13C2 PFUnA	565.00	> 520.00	3.731	3.740	-0.009		2130852	44.1	88.3	10043	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.741	3.742	-0.001	1.000	4462938	99.5	99.5	5938	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.741	3.742	-0.001	1.003	2043701	104.4	104	7863	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.890	3.891	-0.001	2605861	49.8	99.7	921	
35 MeFOSA	512.00	> 169.00	3.890	3.897	-0.007	1.000	4874922	103	6793	
D 36 13C2 PFDaA	615.00	> 570.00	4.030	4.034	-0.004	2240202	47.3	94.5	4543	
37 Perfluorododecanoic acid	613.00	> 569.00	4.030	4.034	-0.004	1.000	4215733	98.4	4950	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.080	4.079	0.001	2602554	49.9	99.7	4793	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.080	4.086	-0.006	1.000	4980148	102	5302	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.301	4.304	-0.003	1.000	3864422	100.6	1531	
D 43 13C2-PFTeDA	715.00	> 670.00	4.538	4.544	-0.006	4441830	50.1	100	14858	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.538	4.544	-0.006	1.000	8650251	96.6	2138	
	713.00	> 169.00	4.526	4.544	-0.018	0.997	1049868	8.24(0.00-0.00)	96.6	8904
D 44 13C2-PFHxDA	815.00	> 770.00	4.943	4.954	-0.011	2158909	47.8	95.5	3159	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.943	4.954	-0.011	1.000	3735847	100.9	612	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.293	5.301	-0.008	1.000	3632765	102.9	1087	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L6\_00006

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_008.d

Injection Date: 18-Jul-2017 14:42:44

Instrument ID: A8\_N

Lims ID: IC L6 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 33

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

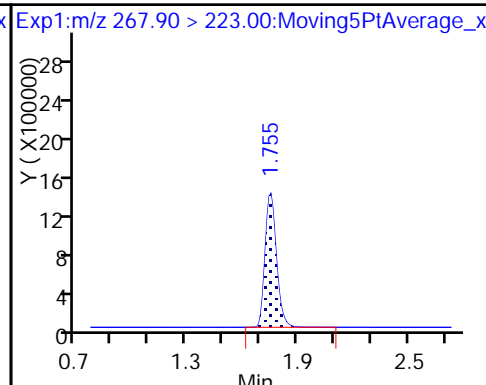
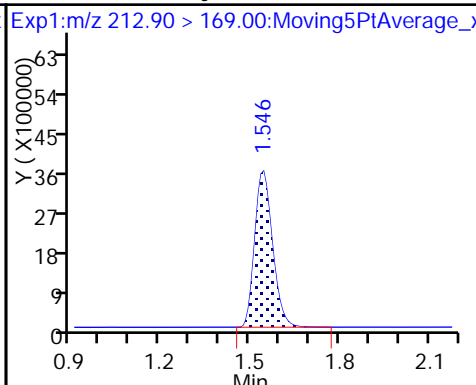
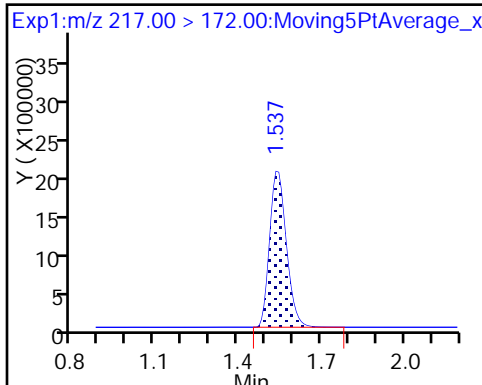
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

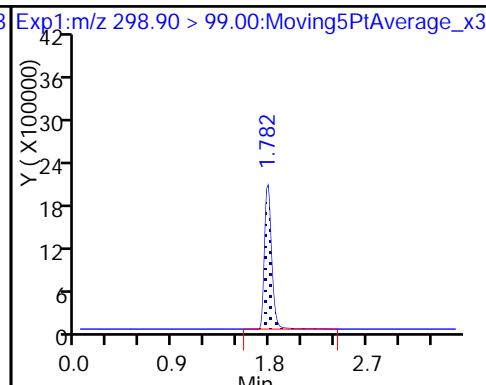
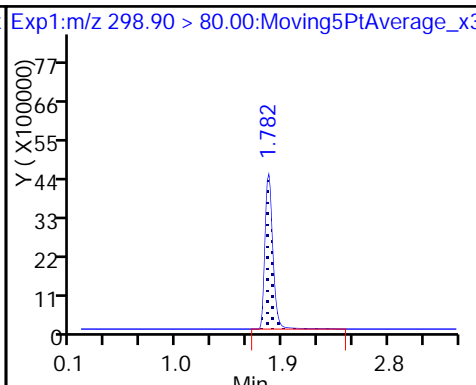
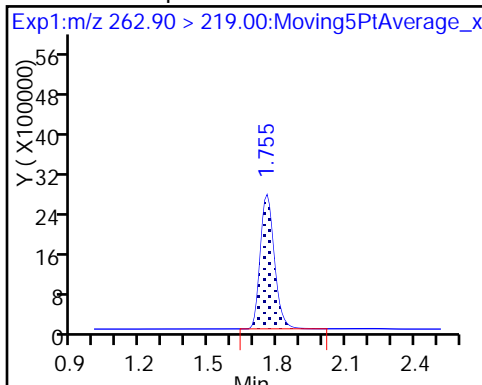
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

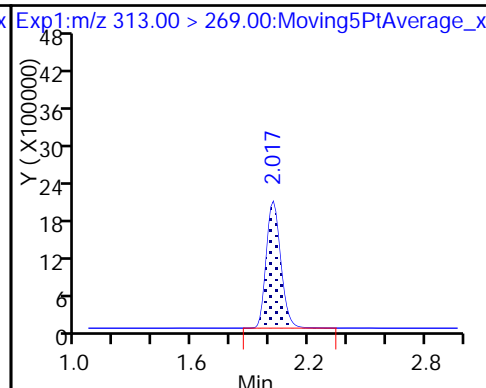
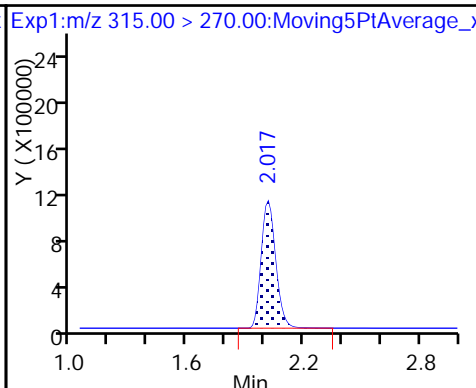
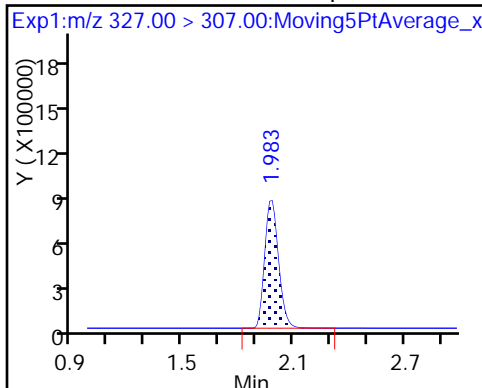
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

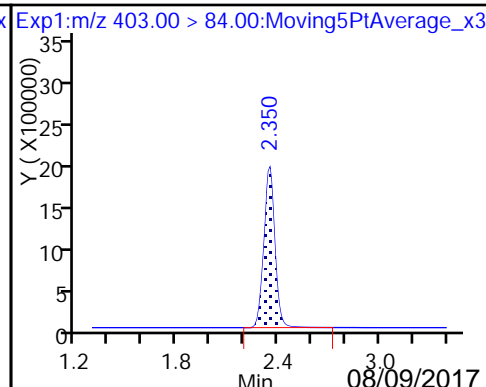
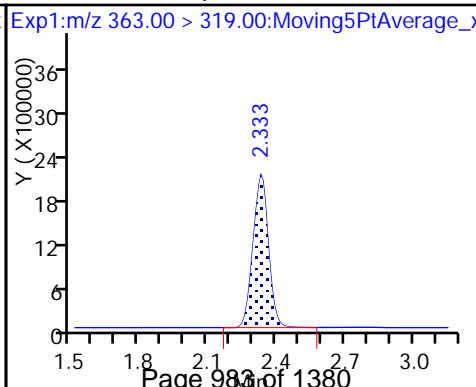
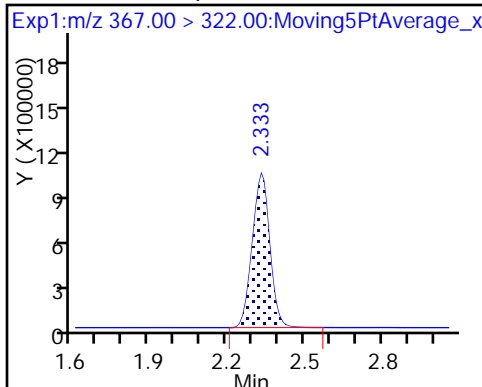
6 Perfluorohexanoic acid



D 9 13C4-PFHpA

10 Perfluoroheptanoic acid

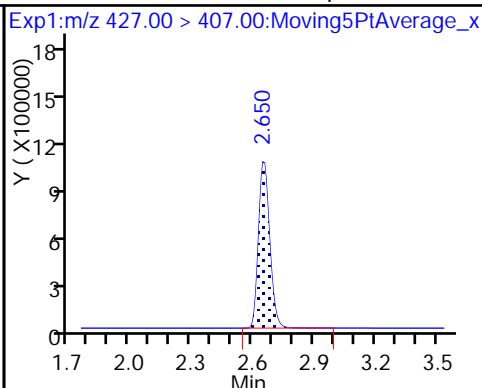
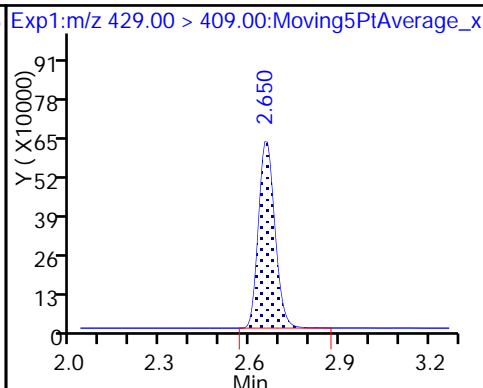
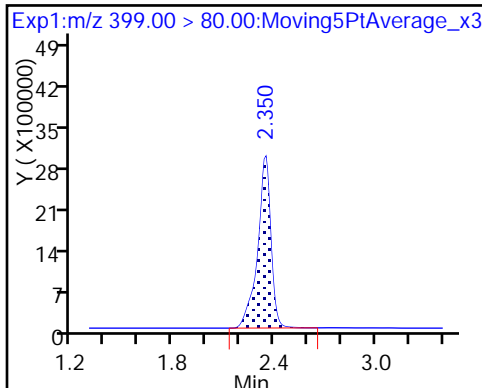
D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

D 12 M2-6:2FTS

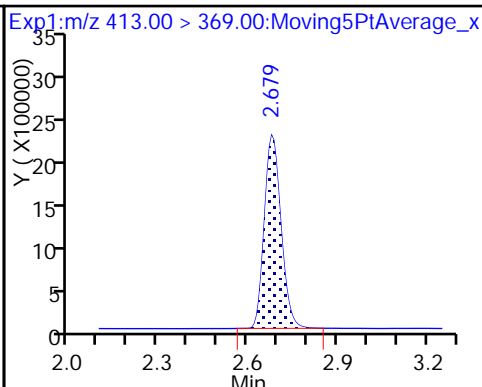
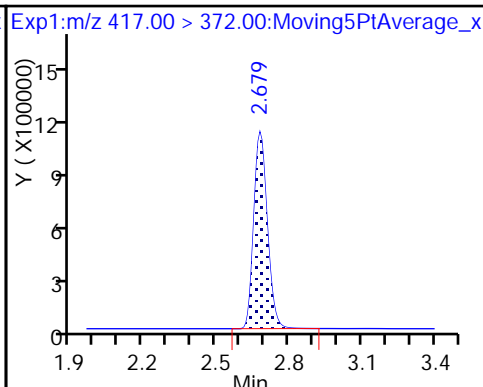
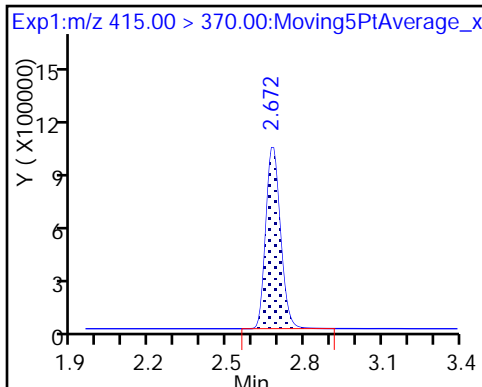
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

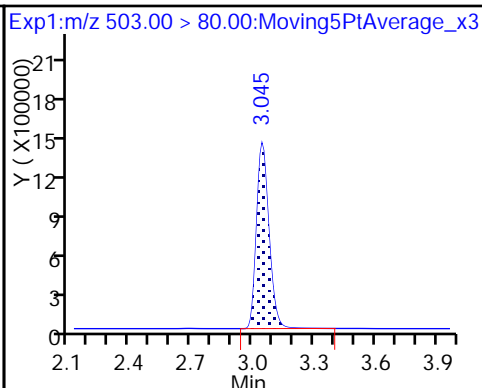
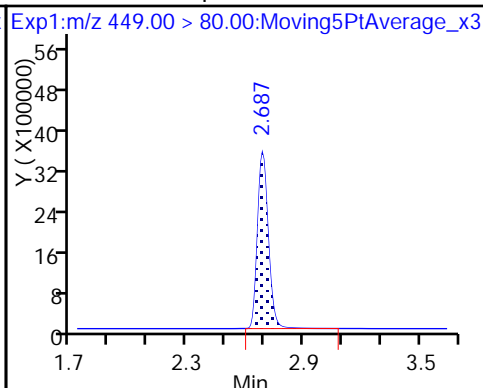
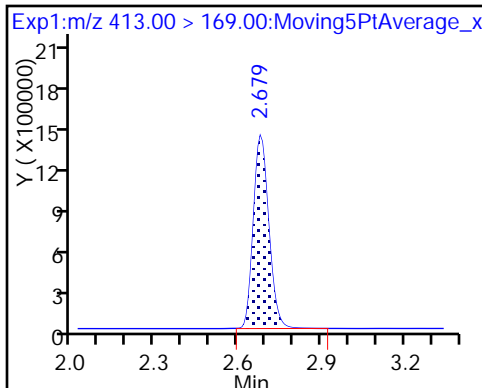
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

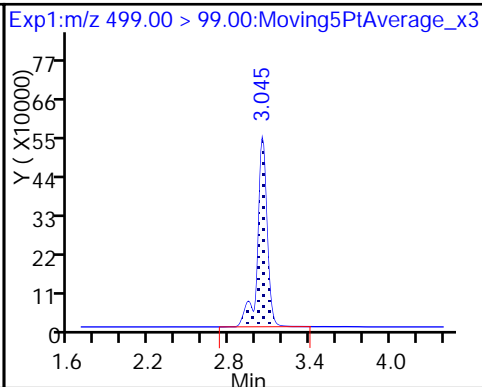
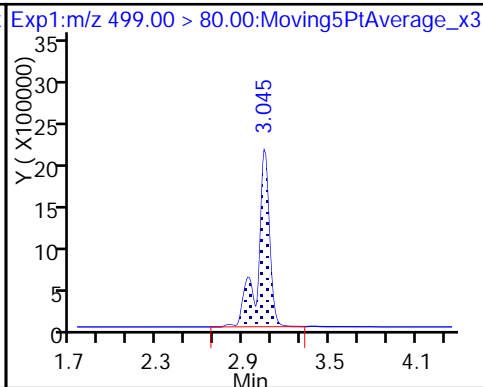
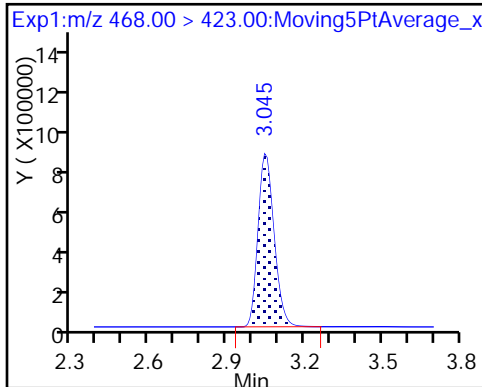
D 18 13C4 PFOS



D 19 13C5 PFNA

17 Perfluorooctane sulfonic acid

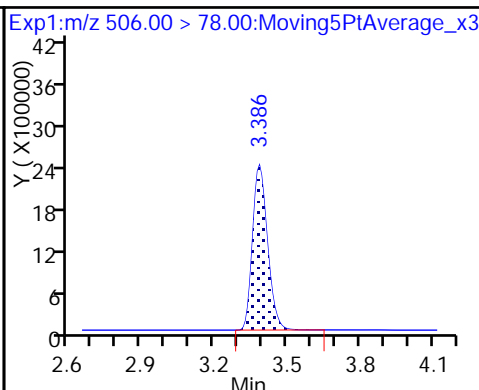
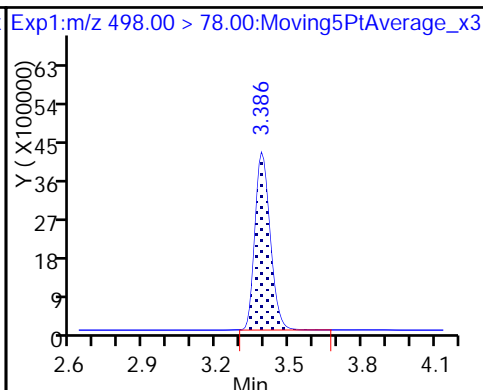
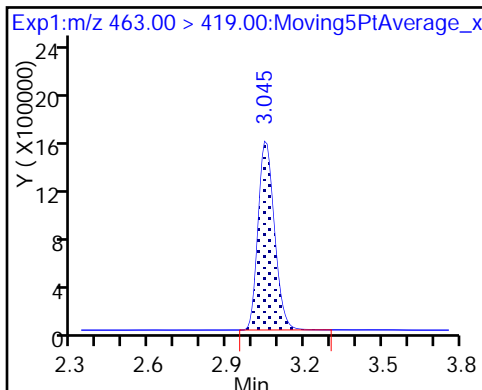
17 Perfluorooctane sulfonic acid



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

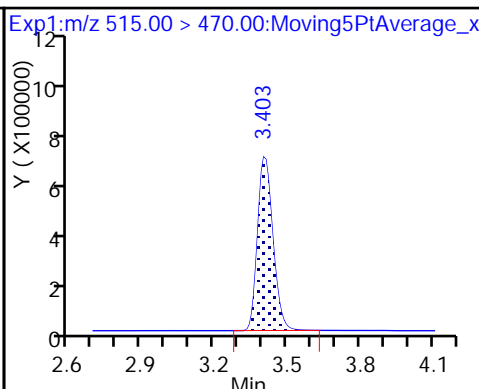
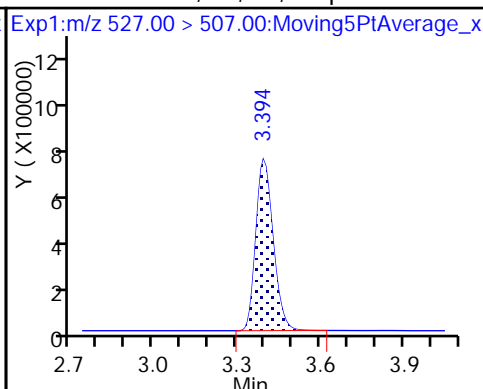
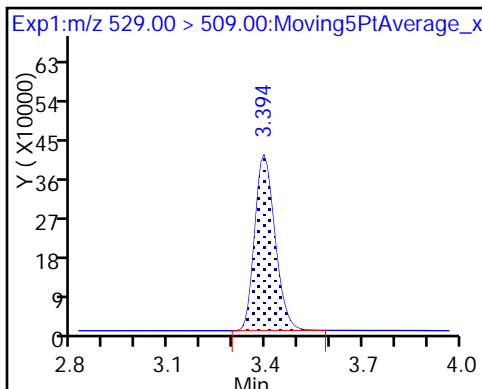
D 21 13C8 FOSA



D 26 M2-8:2FTS

25 Sodium 1H,1H,2H,2H-perfluorodeca

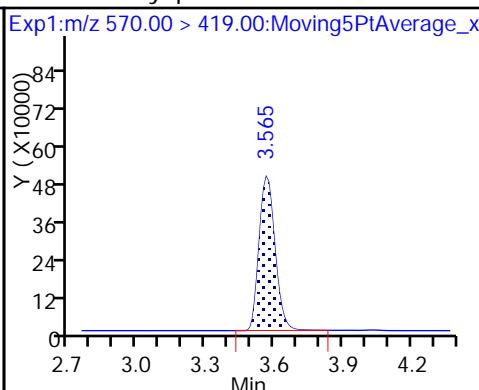
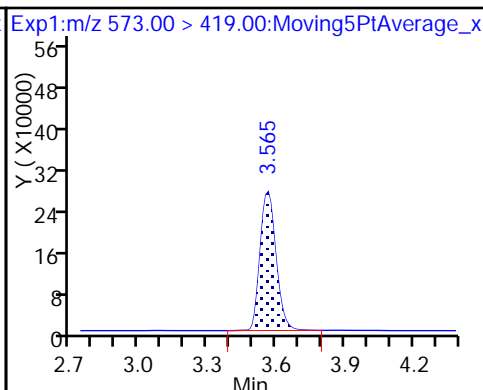
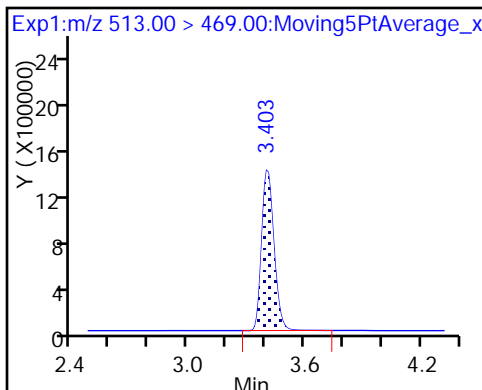
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

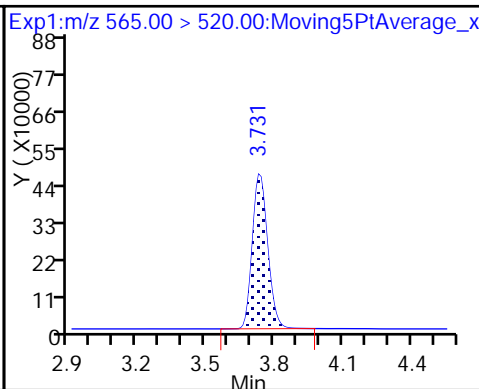
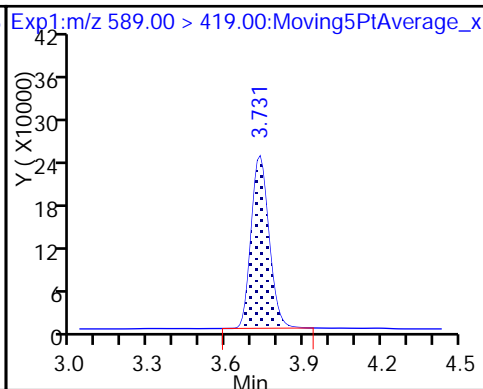
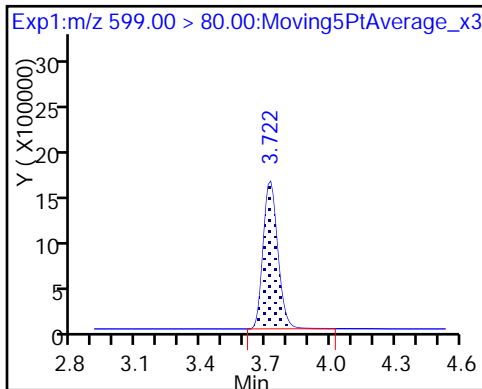
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

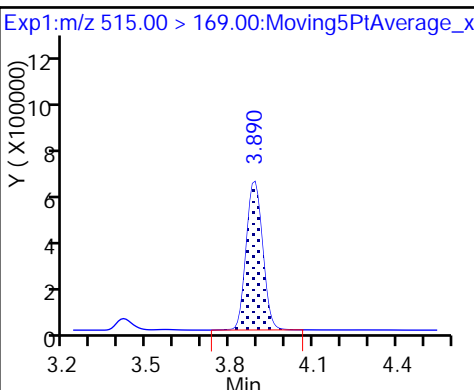
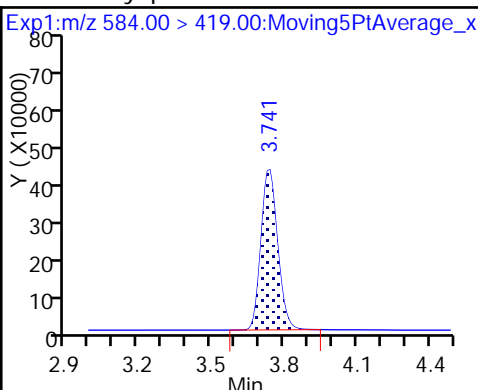
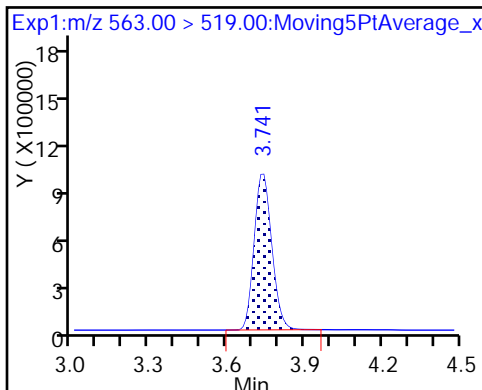
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

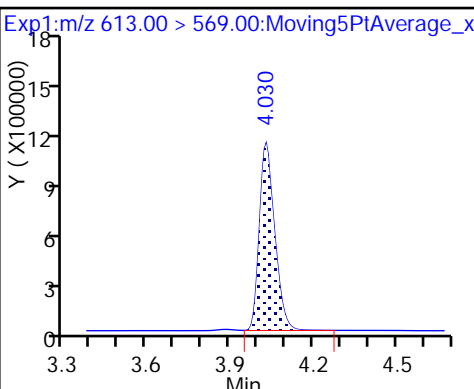
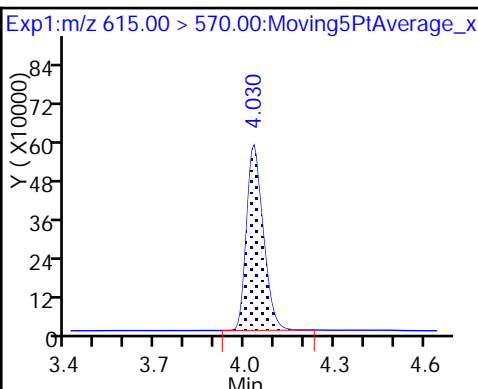
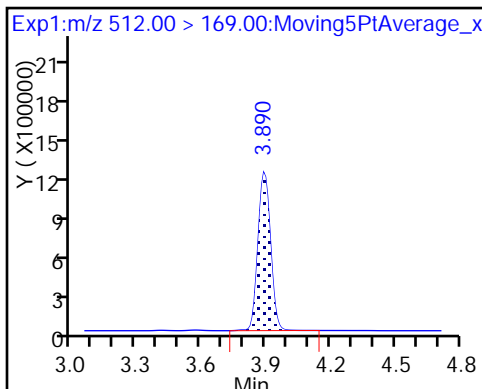
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

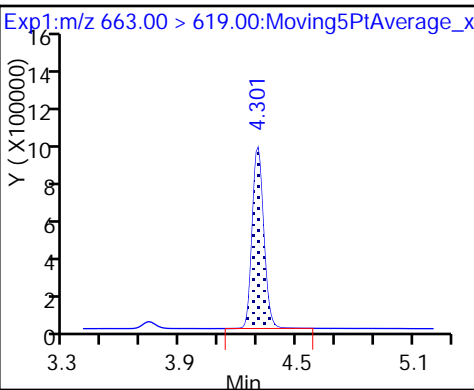
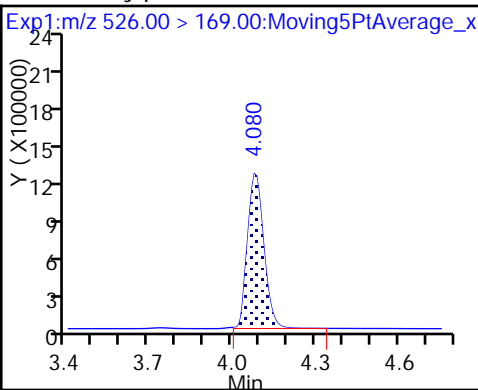
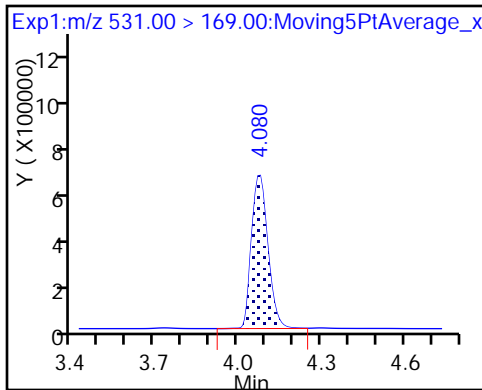
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

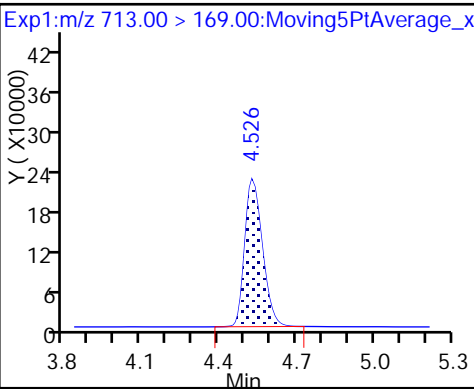
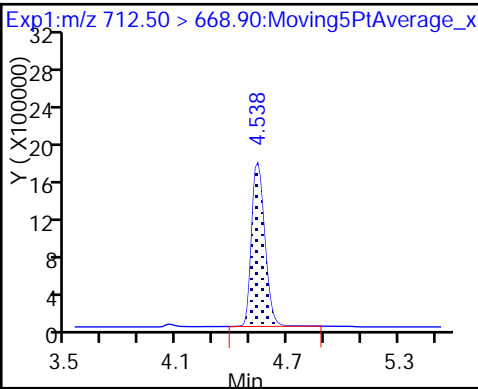
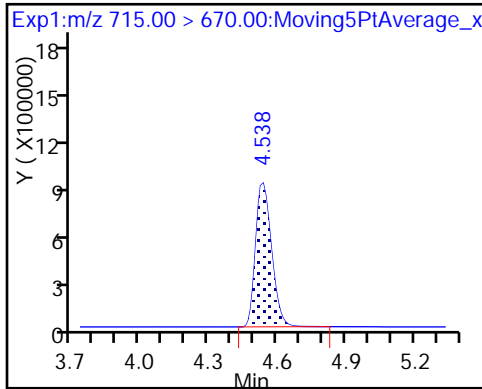
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

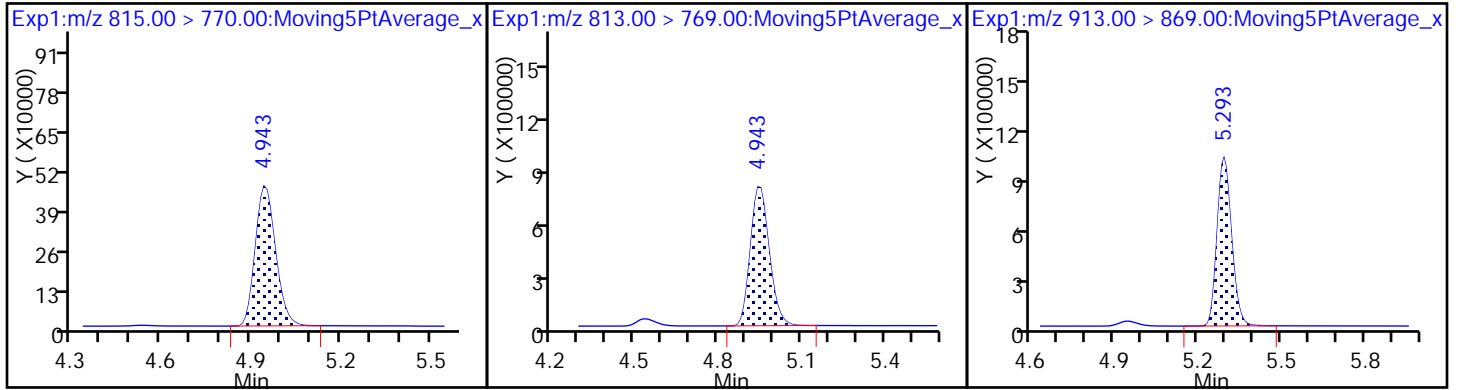
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_009.d  
 Lims ID: IC L7 Full  
 Client ID:  
 Sample Type: IC Calib Level: 7  
 Inject. Date: 18-Jul-2017 14:49:38 ALS Bottle#: 34 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: L7-FULL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:35:14 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:32:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.536	1.542	-0.006	7705099	43.5		87.0	29086	
2 Perfluorobutyric acid	212.90 > 169.00	1.536	1.544	-0.008	1.000	23268186	165.4	82.7	7539	
D 3 13C5-PFPeA	267.90 > 223.00	1.754	1.757	-0.003	5262031	42.5		85.0	56775	
4 Perfluoropentanoic acid	262.90 > 219.00	1.754	1.760	-0.006	1.000	18560976	171.2	85.6	12108	
D 47 13C3-PFBS	301.90 > 83.00	1.772	1.778	-0.006	154552	NC			5891	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.781	1.786	-0.005	1.000	30435352	140.1	79.3	958107	
	298.90 > 99.00	1.781	1.786	-0.005	1.000	15240231	2.00(0.00-0.00)	79.3	383879	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.982	1.984	-0.002	1.000	8277274	163.9	87.7	102968	
6 Perfluorohexanoic acid	313.00 > 269.00	2.017	2.021	-0.004	1.000	17618951	180.7	90.3	29253	
D 7 13C2 PFHxA	315.00 > 270.00	2.017	2.021	-0.004	5159383	43.6		87.3	40603	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.332	2.340	-0.008	1.000	17070868	187.3	93.6	14175	
D 9 13C4-PFHpA	367.00 > 322.00	2.332	2.340	-0.008	4471961	41.7		83.4	30492	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.350	2.354	-0.004	1.000	28076313	170.2	93.5	9756	
D 11 18O2 PFHxS	403.00 > 84.00	2.350	2.354	-0.004	7713461	43.2		91.4	42297	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.653	2.660	-0.007	2363396	45.2	95.2	26553	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.653	2.661	-0.008	1.000	7532318	174.4	92.0	55087
* 62 13C2-PFOA	415.00	> 370.00	2.675	2.682	-0.007	3671325	50.0		30462	
D 14 13C4 PFOA	417.00	> 372.00	2.682	2.687	-0.005	3808301	40.4	80.9	20637	
15 Perfluorooctanoic acid	413.00	> 369.00	2.682	2.688	-0.006	1.000	14963510	184.9	92.5	3409
16 Perfluoroheptanesulfonic Acid	413.00	> 169.00	2.682	2.688	-0.006	1.000	9431365	1.59(0.90-1.10)	92.5	13288
17 Perfluorooctane sulfonic acid	449.00	> 80.00	2.689	2.694	-0.005	1.000	23631679	176.6	92.7	31761
20 Perfluorononanoic acid	499.00	> 80.00	3.049	3.055	-0.006	1.000	23280610	189.1	102	7834
	499.00	> 99.00	3.049	3.055	-0.006	1.000	5178292	4.50(0.90-1.10)	102	17648
D 18 13C4 PFOS	503.00	> 80.00	3.049	3.055	-0.006	5643382	43.8	91.7	15122	
D 19 13C5 PFNA	468.00	> 423.00	3.049	3.055	-0.006	3172432	41.8	83.5	22951	
D 21 13C8 FOSA	506.00	> 78.00	3.385	3.392	-0.007	9354849	44.9	89.8	16826	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.385	3.392	-0.007	1.000	29384654	170.5	85.3	19862
D 26 M2-8:2FTS	529.00	> 509.00	3.393	3.402	-0.009	1705692	44.3	92.4	19834	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.402	3.403	-0.001	1.003	5288353	162.5	84.8	17264
24 Perfluorodecanoic acid	513.00	> 469.00	3.411	3.415	-0.004	1.000	10332753	183.5	91.8	20836
D 23 13C2 PFDA	515.00	> 470.00	3.411	3.415	-0.004	2832789	43.9	87.9	13082	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.565	3.571	-0.006	1282546	50.3	101	6644	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.565	3.574	-0.009	1.000	4662707	199.4	99.7	8417
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.722	3.728	-0.006	1.000	13429846	182.4	94.6	16419
D 32 d5-NEtFOSAA	589.00	> 419.00	3.732	3.738	-0.006	1141201	44.8	89.7	2958	
D 30 13C2 PFUnA	565.00	> 520.00	3.732	3.740	-0.008	2072913	42.9	85.9	10123	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.732	3.742	-0.010	1.000	4009428	206.6	103	8623
31 Perfluoroundecanoic acid	563.00	> 519.00	3.732	3.742	-0.010	1.000	8007682	183.5	91.7	10359

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.883	3.891	-0.008		2741111		105	930	
35 MeFOSA	512.00 > 169.00	3.892	3.897	-0.005	1.000	9526442		95.7	7795	
37 Perfluorododecanoic acid	613.00 > 569.00	4.026	4.034	-0.008	1.000	8048609		94.6	8979	
D 36 13C2 PFDaA	615.00 > 570.00	4.026	4.034	-0.008		2226260		93.9	5815	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.074	4.079	-0.005		2688955		103	4239	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.083	4.086	-0.003	1.000	9930111		98.5	5384	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.298	4.304	-0.006	1.000	7337982		96.1	2902	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.536	4.544	-0.008	1.000	16007076		89.9	4640	
	713.00 > 169.00	4.524	4.544	-0.020	0.997	2130620	7.51(0.00-0.00)	89.9	14984	
D 43 13C2-PFTeDA	715.00 > 670.00	4.536	4.544	-0.008		3978301		89.8	20215	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.943	4.954	-0.011	1.000	6835601		93.2	1091	
D 44 13C2-PFHxDA	815.00 > 770.00	4.943	4.954	-0.011		2230557		98.7	3755	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.294	5.301	-0.007	1.000	6701735		95.5	1699	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L7\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_009.d

Injection Date: 18-Jul-2017 14:49:38

Instrument ID: A8\_N

Lims ID: IC L7 Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 34

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

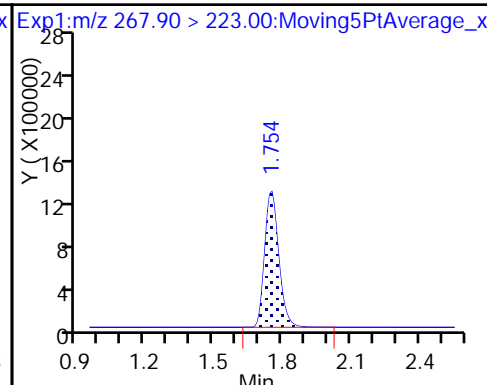
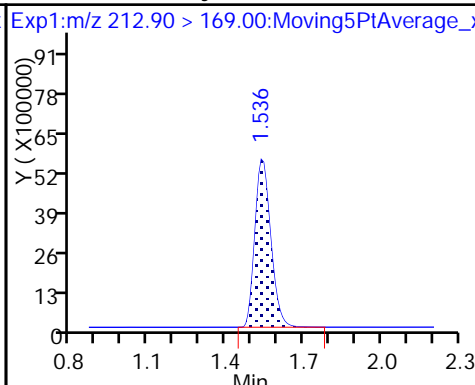
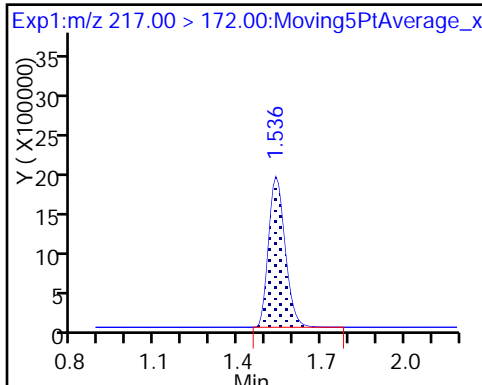
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

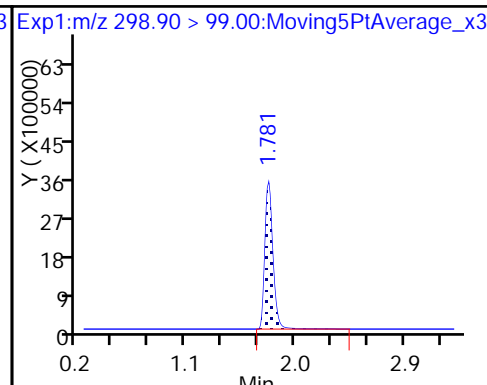
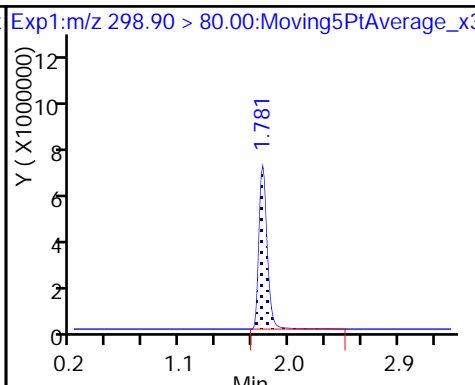
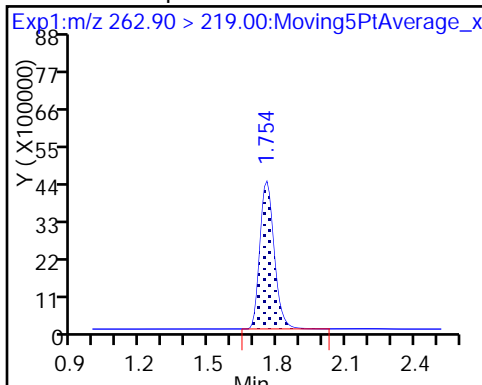
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

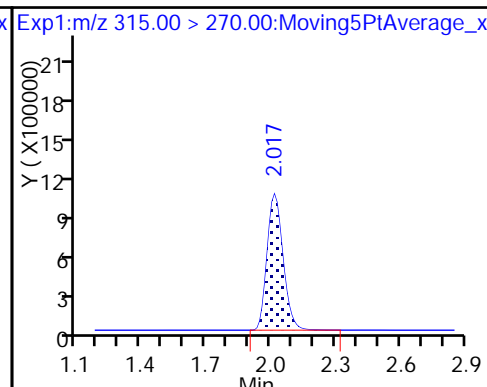
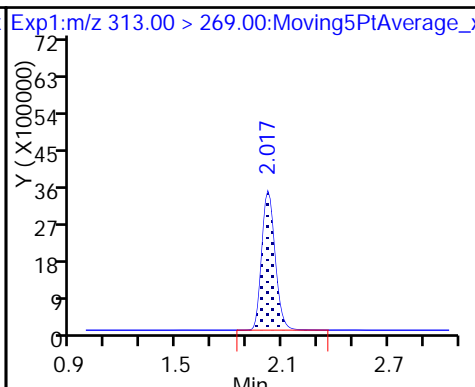
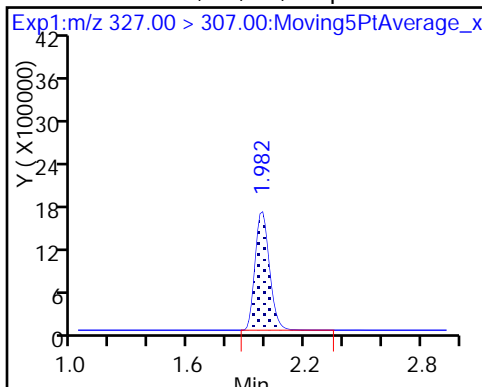
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

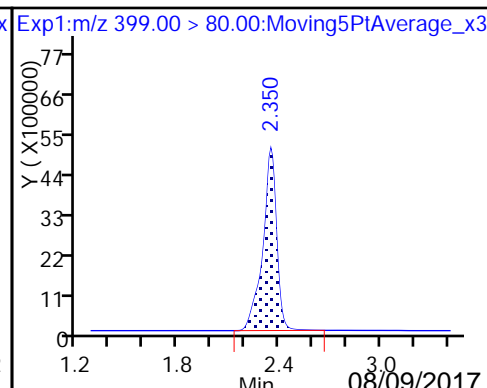
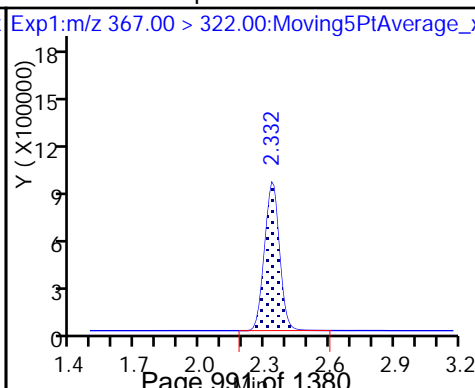
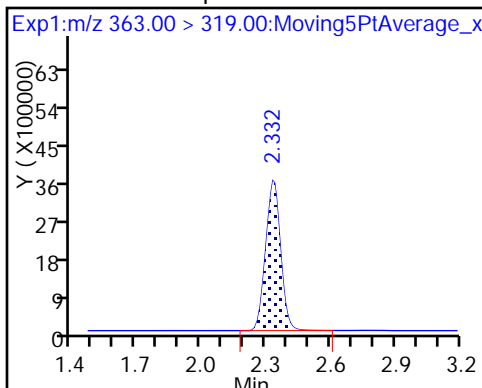
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

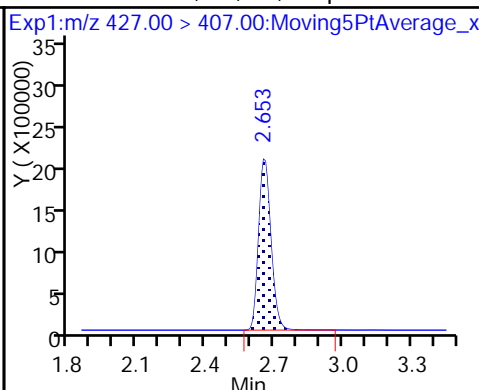
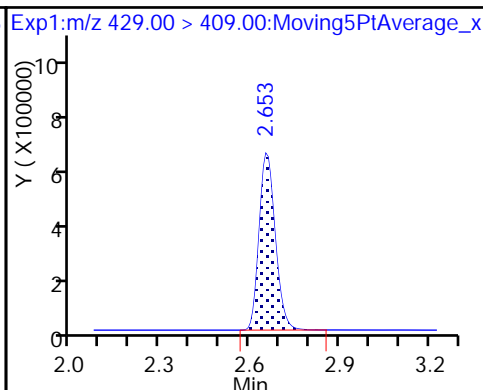
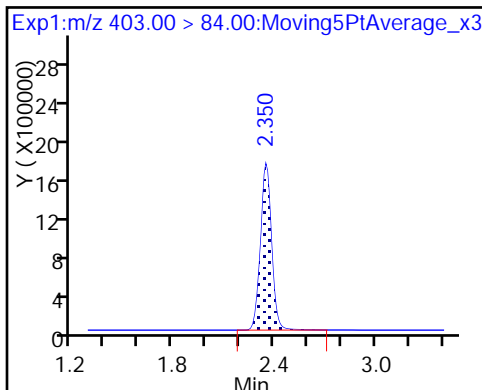
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

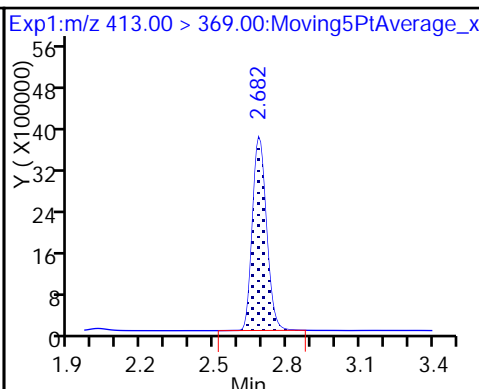
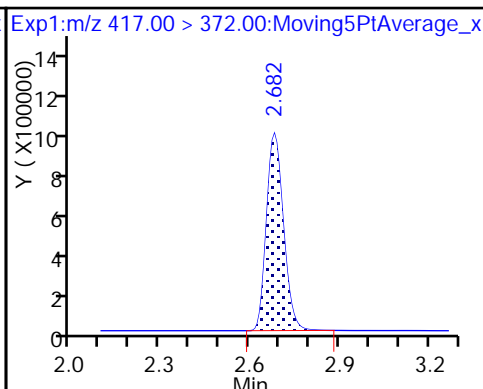
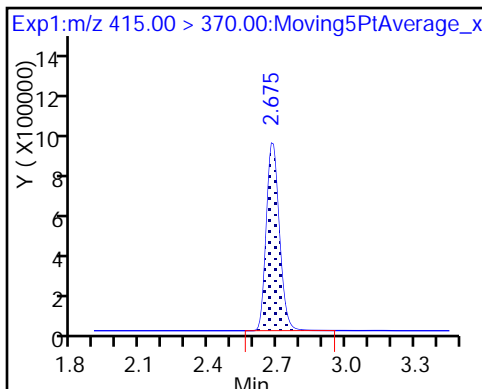
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

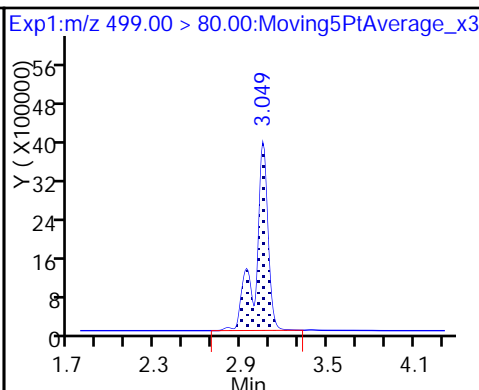
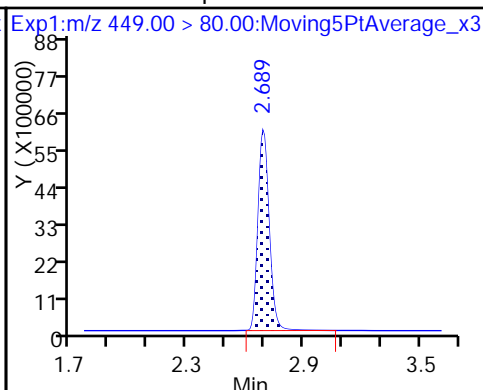
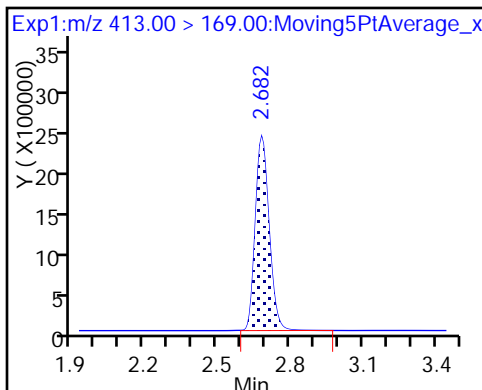
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

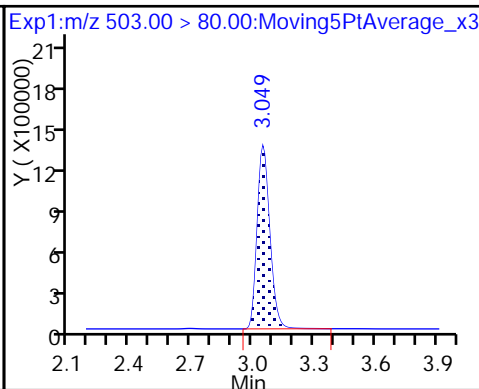
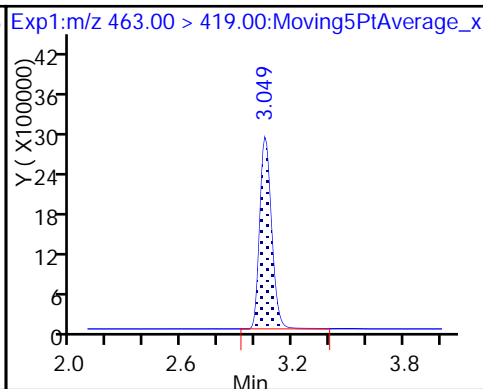
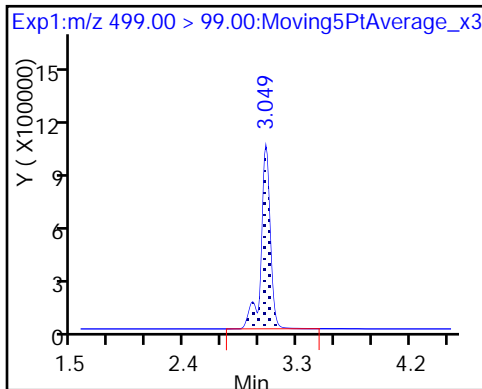
17 Perfluorooctane sulfonic acid



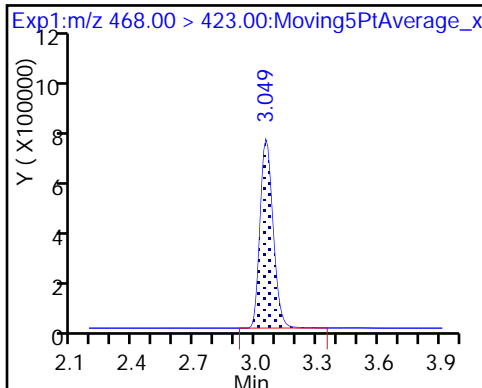
17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

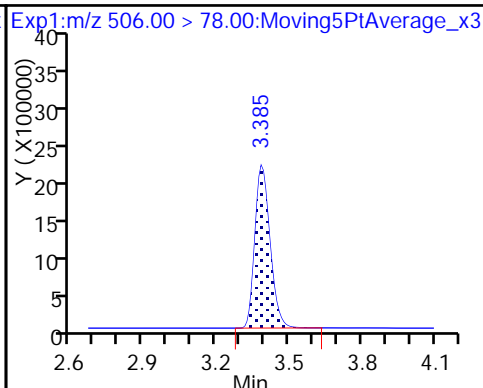
D 18 13C4 PFOS



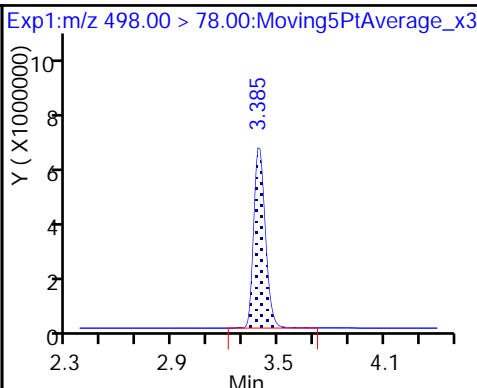
D 19 13C5 PFNA



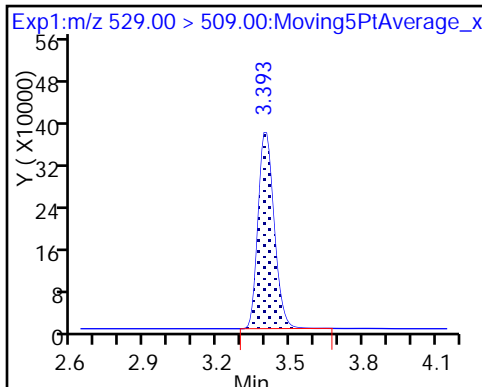
D 21 13C8 FOSA



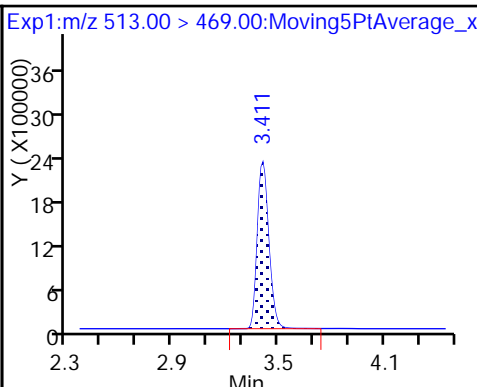
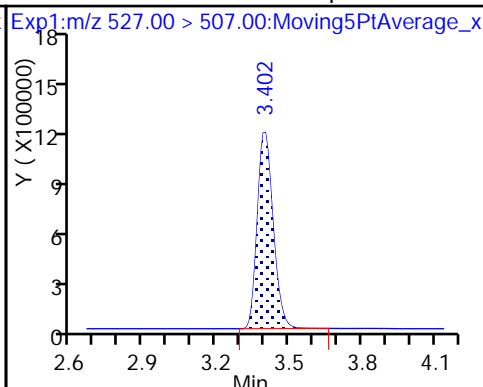
22 Perfluorooctane Sulfonamide



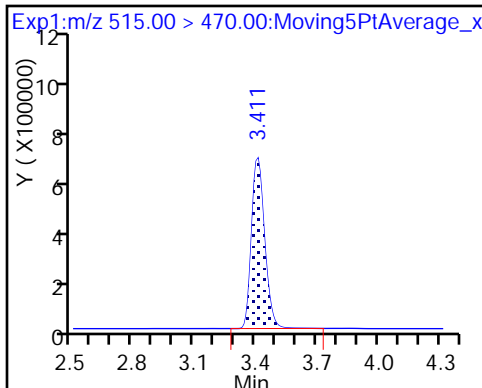
D 26 M2-8:2FTS



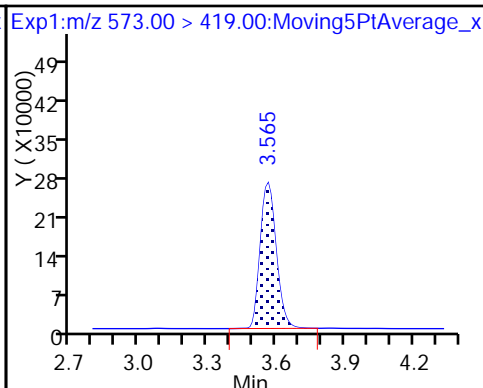
25 Sodium 1H,1H,2H,2H-perfluorodecan-2-yl Perfluorodecanoic acid



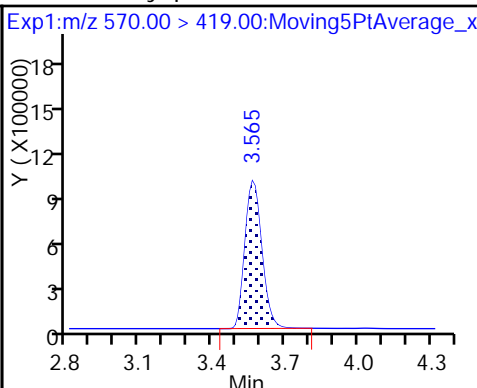
D 23 13C2 PFDA



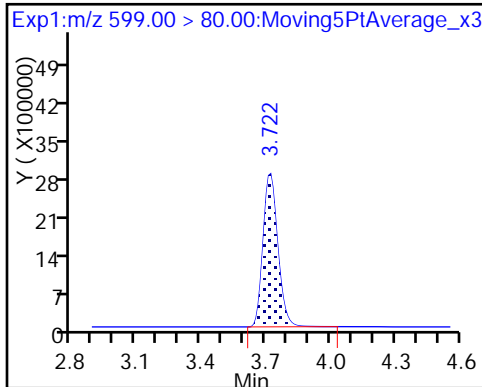
D 27 d3-NMeFOSAA



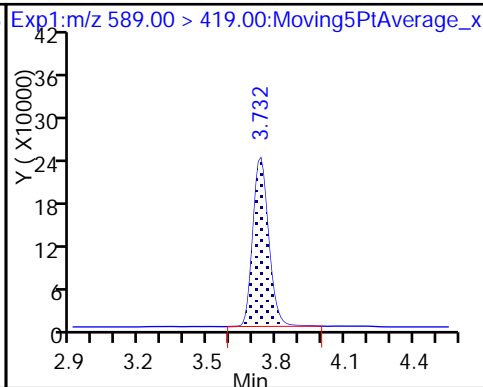
28 N-methyl perfluorooctane sulfonamide



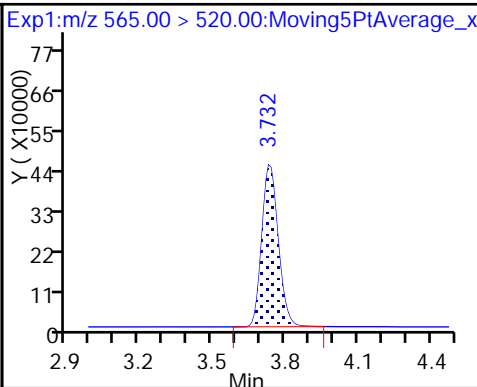
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



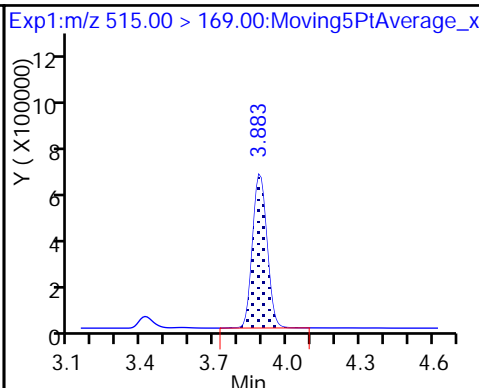
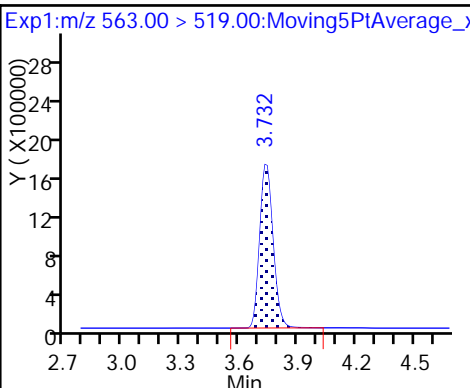
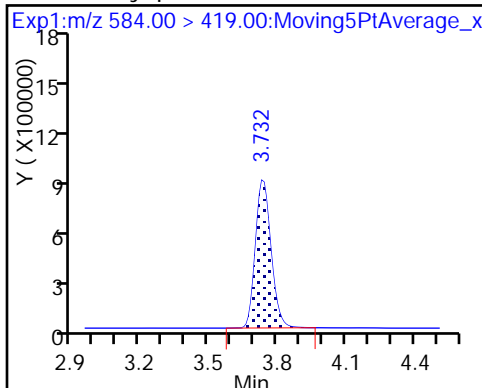
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

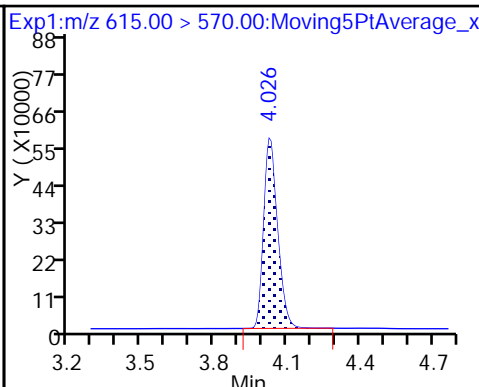
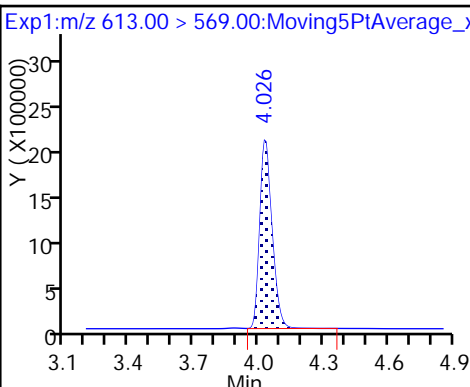
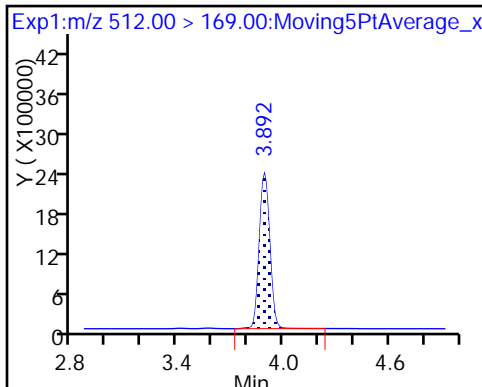
D 34 d-N-MeFOSA-M



35 MeFOSA

37 Perfluorododecanoic acid

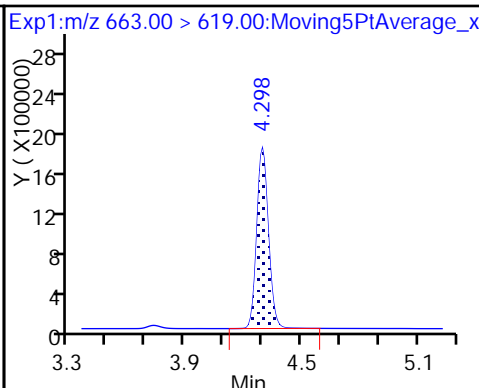
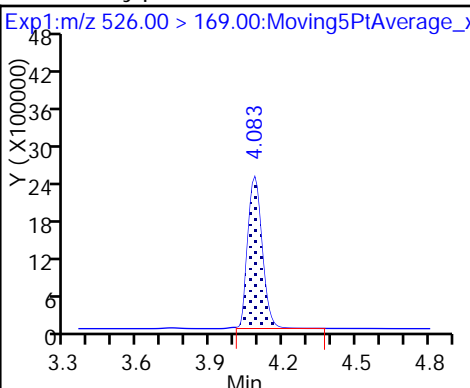
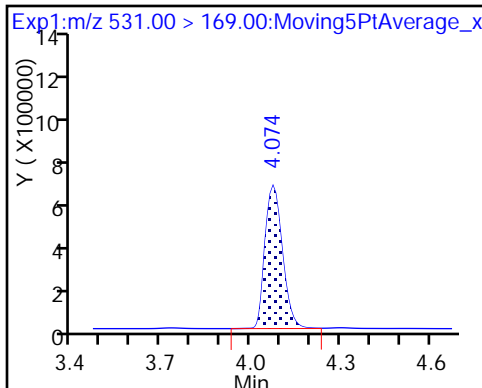
D 36 13C2 PFDaA



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

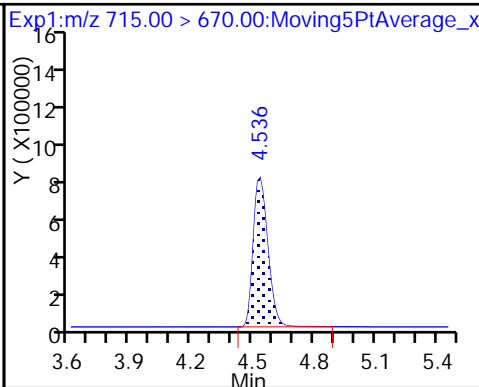
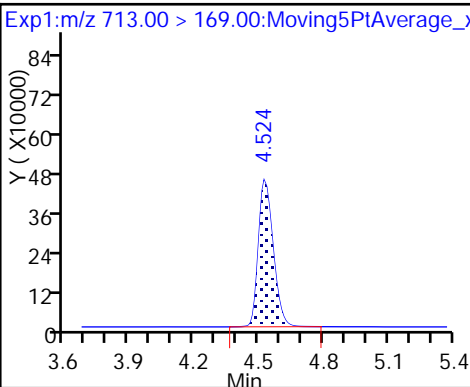
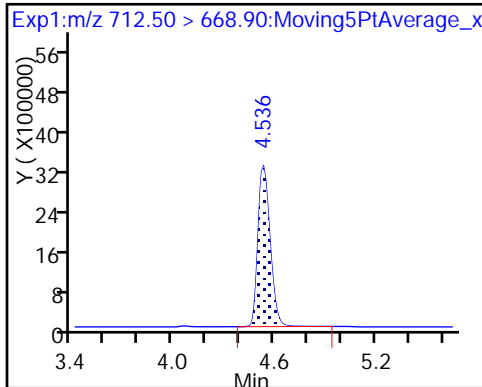
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

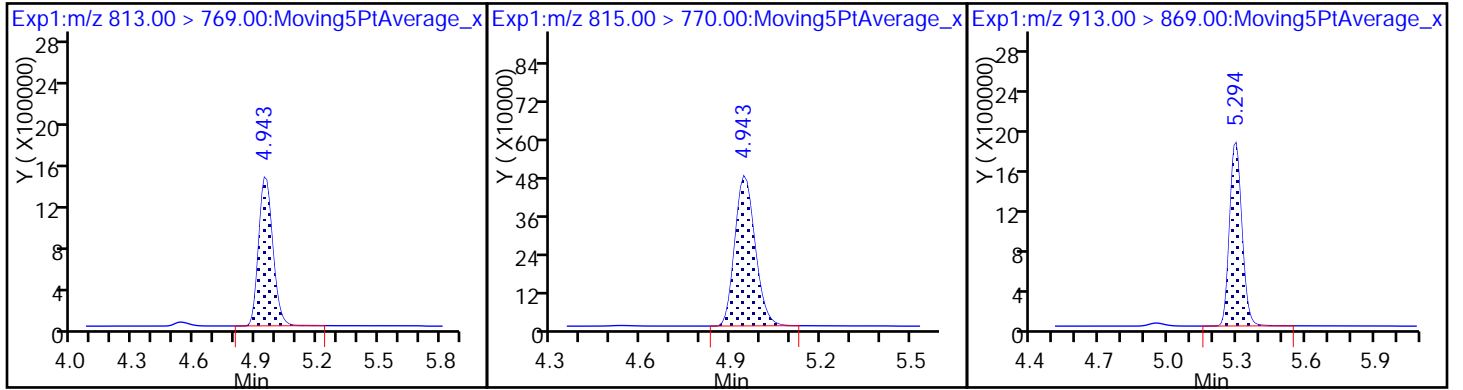
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Lims ID: IC M2-4:2FTS  
 Client ID:  
 Sample Type: IC Calib Level: 1  
 Inject. Date: 18-Jul-2017 14:56:32 ALS Bottle#: 37 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: M2:4-2FTS Calibration Std  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub19  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:35:17 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:33:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
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D 60 M2-4:2FTS  
 329.00 > 309.00 1.986 1.986 0.0 4312147 NC 65743  
 \* 62 13C2-PFOA  
 415.00 > 370.00 2.676 2.682 -0.006 7445436 50.0 41680

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCM2-4:2FTSIC\_00002 Amount Added: 1.00 Units: mL



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d

Injection Date: 18-Jul-2017 14:56:32

Instrument ID: A8\_N

Lims ID: IC M2-4:2FTS

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 37 Worklist Smp#: 10

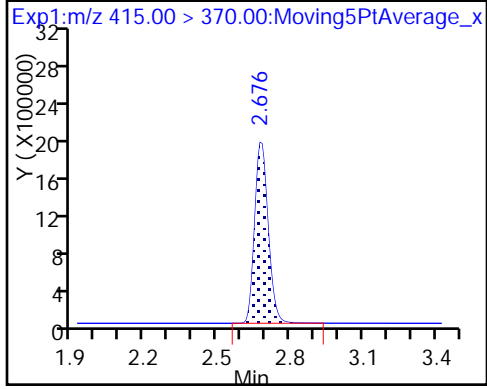
Injection Vol: 2.0 ul

Dil. Factor: 1.0000

Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

\* 62 13C2-PFOA



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 320-171299/12 Calibration Date: 06/28/2017 01:15  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.27\_PFC\_CURVE\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9530		52.4	49.5	5.8	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.054		50.7	49.5	2.4	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.550		48.7	43.8	11.2	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.017		49.6	49.5	0.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.109		51.4	49.5	3.9	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.059		44.9	46.8	-4.1	25.0
6:2FTS	AveID	0.9859	0.9300		44.3	46.9	-5.7	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.208		49.5	47.1	5.0	25.0
Perfluorooctanoic acid (FOA)	AveID	1.060	1.128		52.7	49.5	6.4	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	1.075		53.7	49.5	8.4	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.014		45.7	47.3	-3.3	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	0.9947		50.6	49.5	2.1	25.0
8:2FTS	AveID	0.999	1.027		48.8	47.4	2.9	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	1.052		54.0	49.5	9.1	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.053		50.0	49.5	1.0	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6903		51.7	47.8	8.3	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.8865		45.0	49.5	-9.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.029		47.9	49.5	-3.3	25.0
MeFOSA	AveID	0.9522	0.9521		49.5	49.5	-0.0	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9759		50.7	49.5	2.5	25.0
N-EtFOSA-M	AveID	0.999	1.034		51.3	49.5	3.6	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9419		48.0	49.5	-2.9	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.287		48.5	49.5	-2.0	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.034		50.3	49.5	1.6	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	1.050		48.2	49.5	-2.6	25.0
13C4 PFBA	Ave	233991	233290		49.4	49.5	-0.3	50.0
13C5-PFPeA	Ave	160811	156992		48.3	49.5	-2.4	50.0
13C2 PFHxA	Ave	153401	152081		49.1	49.5	-0.9	50.0
13C4-PFHpA	Ave	136899	132594		47.9	49.5	-3.1	50.0
18O2 PFHxS	Ave	212697	213415		47.0	46.8	0.3	50.0
M2-6:2FTS	Ave	72814	72781		47.0	47.0	-0.0	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 320-171299/12 Calibration Date: 06/28/2017 01:15  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.27\_PFC\_CURVE\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	125529		47.6	49.5	-3.8	50.0
13C4 PFOS	Ave	162716	159419		46.4	47.3	-2.0	50.0
13C5 PFNA	Ave	104991	104300		49.2	49.5	-0.7	50.0
13C8 FOSA	Ave	263963	266081		49.9	49.5	0.8	50.0
M2-8:2FTS	Ave	56620	57500		48.2	47.4	1.6	50.0
13C2 PFDA	Ave	100020	93526		46.3	49.5	-6.5	50.0
d3-NMeFOSAA	Ave	37033	38773		51.8	49.5	4.7	50.0
d5-NEtFOSAA	Ave	36944	38038		51.0	49.5	3.0	50.0
13C2 PFUnA	Ave	74302	75283		50.2	49.5	1.3	50.0
d-N-MeFOSA-M	Ave	74603	76095		50.5	49.5	2.0	50.0
13C2 PFDoA	Ave	73421	76489		51.6	49.5	4.2	50.0
d-N-EtFOSA-M	Ave	73544	75192		50.6	49.5	2.2	50.0
13C2-PFTEtDA	Ave	151466	154386		50.5	49.5	1.9	50.0
13C2-PFHxDA	Ave	83886	83725		49.4	49.5	-0.2	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_012.d  
 Lims ID: ICV Full  
 Client ID:  
 Sample Type: ICV  
 Inject. Date: 28-Jun-2017 01:15:31 ALS Bottle#: 36 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: ICV  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist:

Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 08:31:34 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK004

First Level Reviewer: westendorfc Date: 28-Jun-2017 08:28:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.546	-0.005	11549014	49.4		99.7	13753	
2 Perfluorobutyric acid	212.90 > 169.00	1.541	1.549	-0.008	11006397	52.4			2593	
D 3 13C5-PFPeA	267.90 > 223.00	1.742	1.755	-0.013	7771882	48.3		97.6	17916	
4 Perfluoropentanoic acid	262.90 > 219.00	1.742	1.756	-0.014	8189358	50.7			4957	
D 47 13C3-PFBS	301.90 > 83.00	1.769	1.776	-0.007	204223	NC			6030	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.769	1.783	-0.014	14489553	48.7			5318	
	298.90 > 99.00	1.769	1.783	-0.014	6010314		2.41(0.00-0.00)		5546	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.969	1.983	-0.014	3177192	46.0			17770	
D 7 13C2 PFHxA	315.00 > 270.00	2.013	2.022	-0.009	7528760	49.1		99.1	31164	
6 Perfluorohexanoic acid	313.00 > 269.00	2.013	2.022	-0.009	7659484	49.6			7209	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.334	2.345	-0.011	7280879	51.4			7060	
D 9 13C4-PFHpA	367.00 > 322.00	2.334	2.345	-0.011	6564048	47.9		96.9	21618	
D 11 18O2 PFHxS	403.00 > 84.00	2.350	2.360	-0.010	9994595	47.0		100	25194	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.350	2.360	-0.010	10574445	44.9			4731	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.659	2.674	-0.015	1.000	3176550	44.3		29819	
D 12 M2-6:2FTS	429.00	> 409.00	2.659	2.674	-0.015		3422877	47.0		100.0	11821
* 62 13C2-PFOA	415.00	> 370.00	2.681	2.695	-0.014		6424078	49.5			14355
D 14 13C4 PFOA	417.00	> 372.00	2.681	2.701	-0.020		6214322	47.6		96.2	19131
15 Perfluorooctanoic acid	413.00	> 369.00	2.689	2.703	-0.014	1.000	7011091	52.7			1497
	413.00	> 169.00	2.681	2.703	-0.022	0.997	4207494		1.67(0.90-1.10)		7067
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.689	2.710	-0.021	1.000	9077038	49.5			12265
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.060	3.076	-0.016	1.000	7643326	45.7			9738
	499.00	> 99.00	3.060	3.076	-0.016	1.000	1796306		4.26(0.90-1.10)		9364
D 18 13C4 PFOS	503.00	> 80.00	3.060	3.076	-0.016		7544763	46.4		98.0	36678
D 19 13C5 PFNA	468.00	> 423.00	3.060	3.077	-0.017		5163357	49.2		99.3	9934
20 Perfluorononanoic acid	463.00	> 419.00	3.060	3.077	-0.017	1.000	5553123	53.7			10865
D 21 13C8 FOSA	506.00	> 78.00	3.389	3.405	-0.016		13172342	49.9		101	50601
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.398	3.408	-0.010	1.000	13102606	50.6			140798
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.408	3.429	-0.021	1.000	2801957	48.8			15965
D 26 M2-8:2FTS	529.00	> 509.00	3.408	3.429	-0.021		2726994	48.2		102	30878
24 Perfluorodecanoic acid	513.00	> 469.00	3.417	3.442	-0.025	1.000	4872599	54.0			12184
D 23 13C2 PFDA	515.00	> 470.00	3.417	3.442	-0.025		4630014	46.3		93.5	22751
D 27 d3-NMeFOSAA	573.00	> 419.00	3.578	3.598	-0.020		1919474	51.8		105	7806
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.578	3.602	-0.024	1.000	2020380	50.0			5467
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.736	3.755	-0.019	1.000	5257352	51.7			17780
D 32 d5-NEtFOSAA	589.00	> 419.00	3.746	3.765	-0.019		1883087	51.0		103	5492
D 30 13C2 PFUnA	565.00	> 520.00	3.755	3.772	-0.017		3726861	50.2		101	27505
31 Perfluoroundecanoic acid	563.00	> 519.00	3.755	3.773	-0.018	1.000	3833659	47.9			7418
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.755	3.775	-0.020	1.003	1668302	45.0			8644

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.896	3.904	-0.008	3767066	50.5	102	709	
35 MeFOSA	512.00	> 169.00	3.896	3.910	-0.014	1.000	3586748	49.5		6430
D 36 13C2 PFDaA	615.00	> 570.00	4.046	4.071	-0.025	3786597	51.6	104	11893	
37 Perfluorododecanoic acid	613.00	> 569.00	4.046	4.072	-0.026	1.000	3695182	50.7		4281
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.083	4.092	-0.009	3722352	50.6	102	5305	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.092	4.101	-0.009	1.000	3850542	51.3		5593
41 Perfluorotridecanoic acid	663.00	> 619.00	4.314	4.341	-0.027	1.000	3566711	48.0		1100
D 43 13C2-PFTeDA	715.00	> 670.00	4.560	4.578	-0.018	7642874	50.5	102	72600	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.560	4.581	-0.021	1.000	8659116	48.5		1272
	713.00	> 169.00	4.551	4.581	-0.030	0.998	1067841	8.11(0.00-0.00)		13235
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.978	4.998	-0.020	1.000	3916180	50.3		639
D 44 13C2-PFHxDA	815.00	> 770.00	4.967	4.998	-0.031	4144784	49.4	99.8	6971	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.323	5.351	-0.028	1.000	3976763	48.2		1209

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFCIC\_FULL\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_012.d

Injection Date: 28-Jun-2017 01:15:31

Instrument ID: A8\_N

Lims ID: ICV Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 36

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

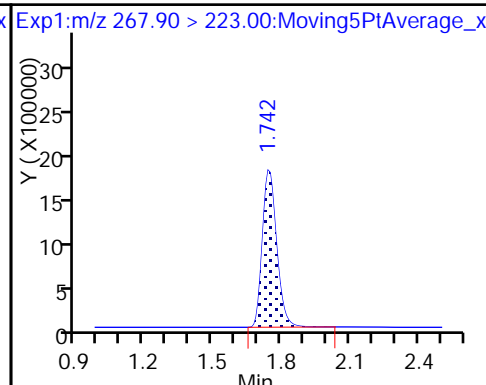
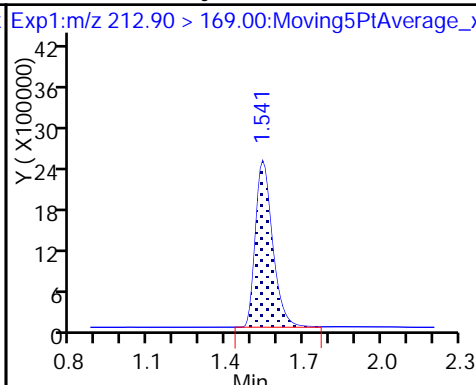
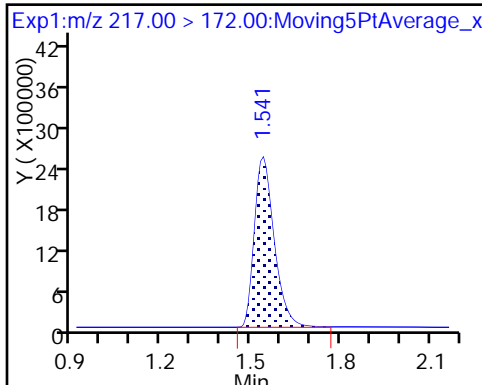
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

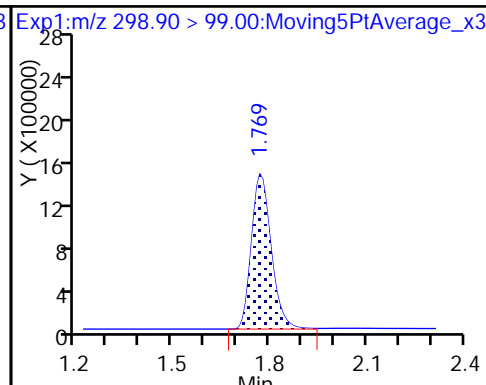
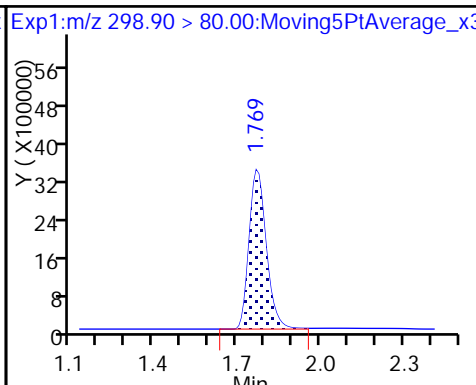
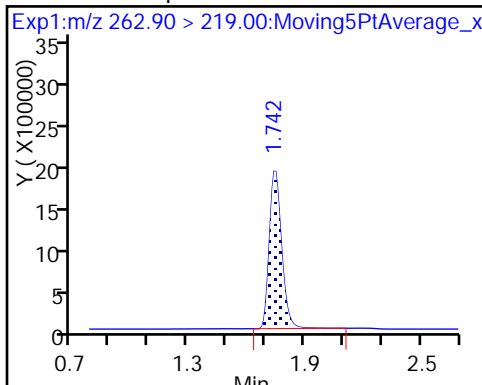
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

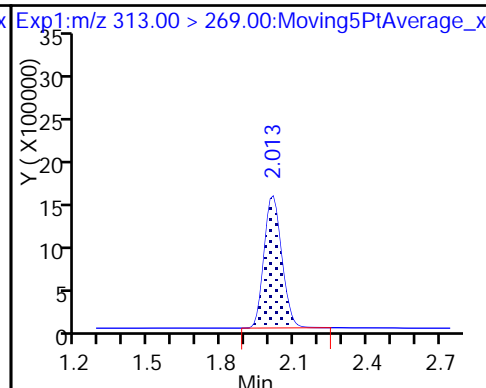
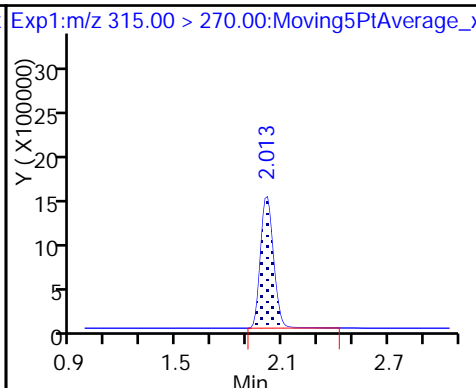
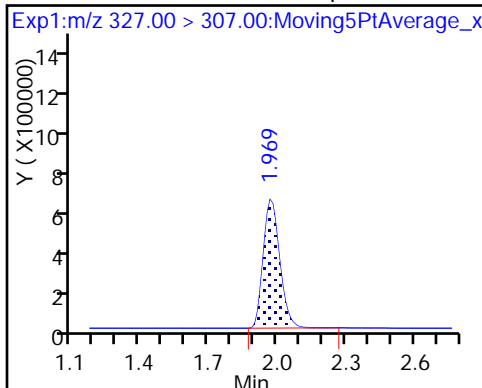
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

D 7 13C2 PFHxA

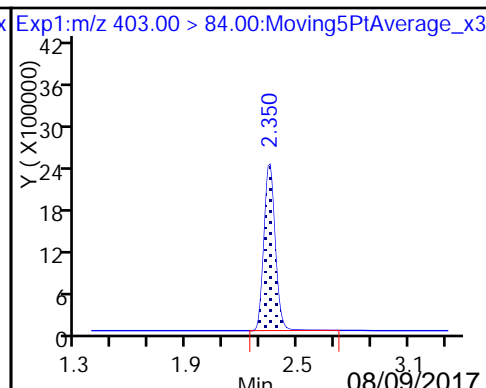
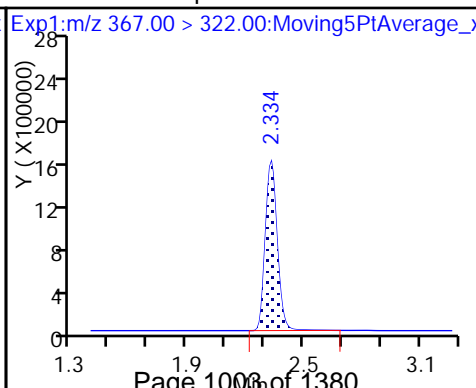
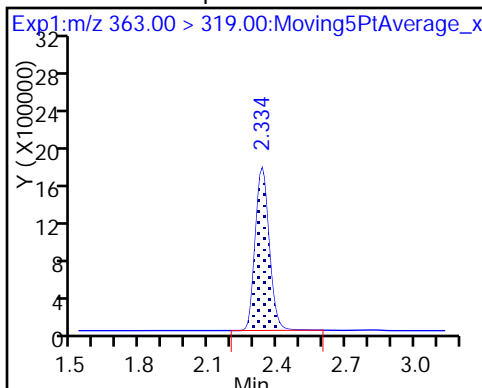
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

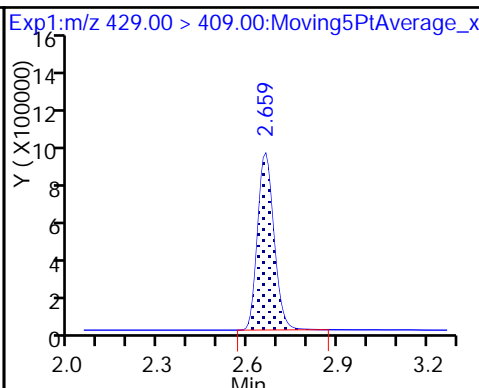
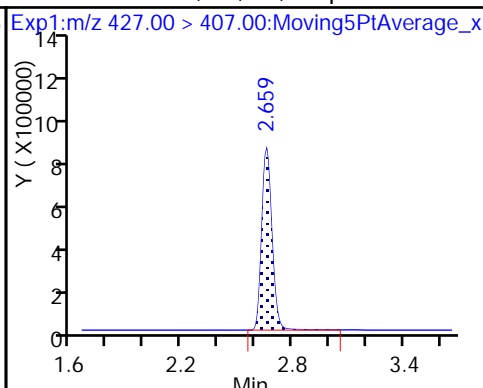
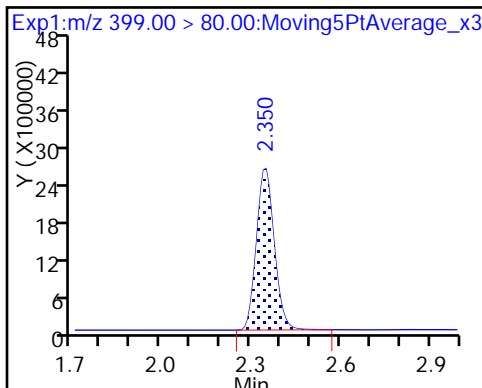
D 9 13C4-PFHpA

D 11 18O2 PFHxS



8 Perfluorohexanesulfonic acid

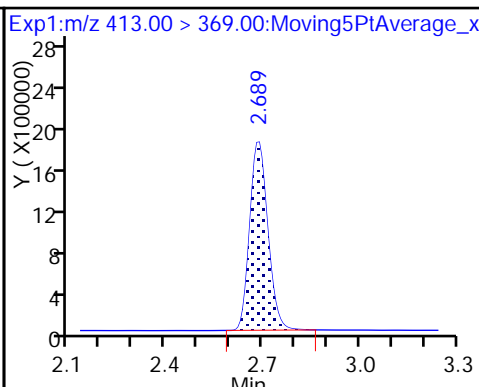
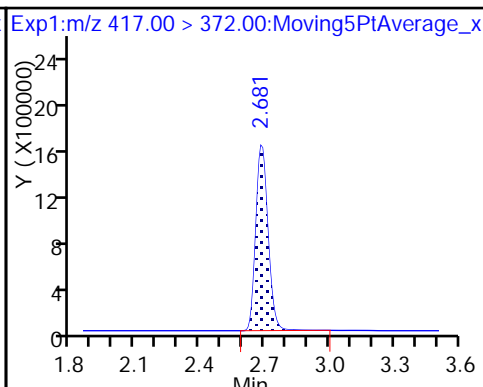
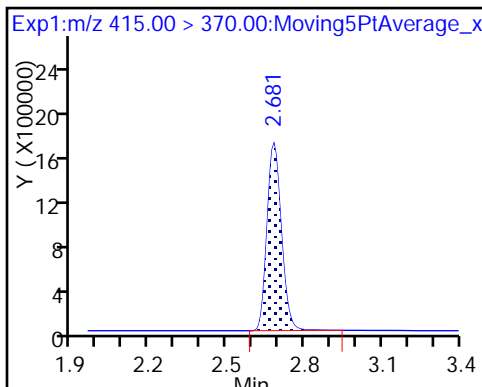
13 Sodium 1H,1H,2H,2H-perfluorooctadecane-12 M2-6:2FTS



\* 62 13C2-PFOA

D 14 13C4 PFOA

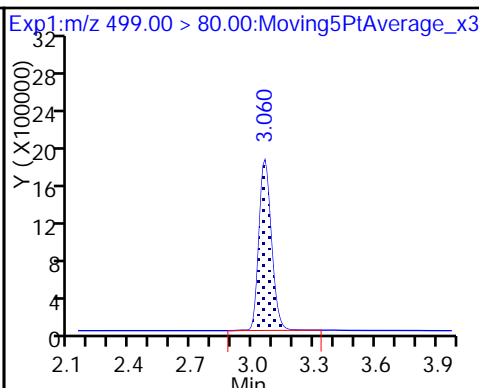
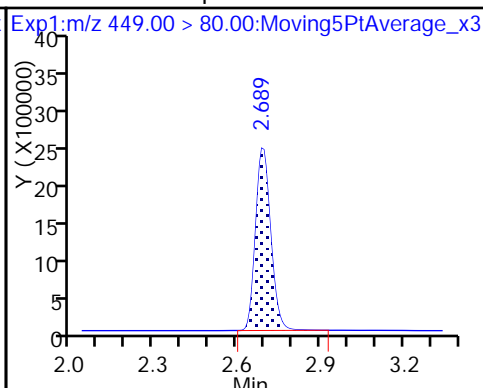
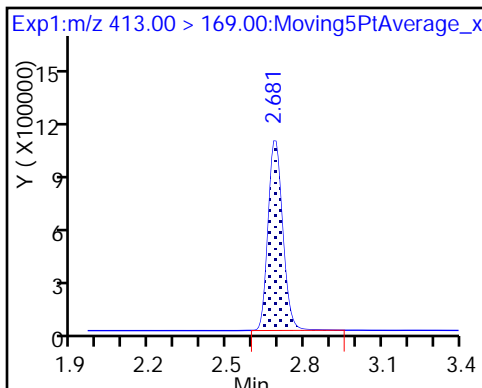
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

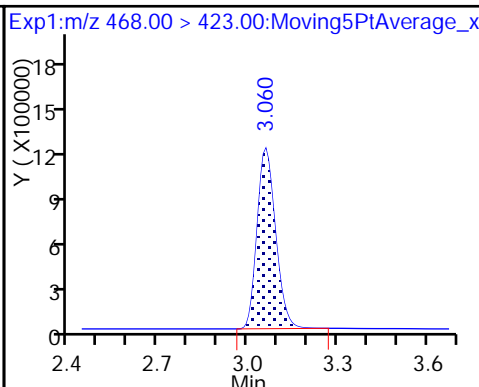
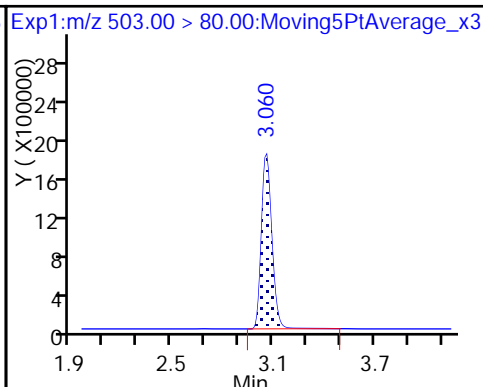
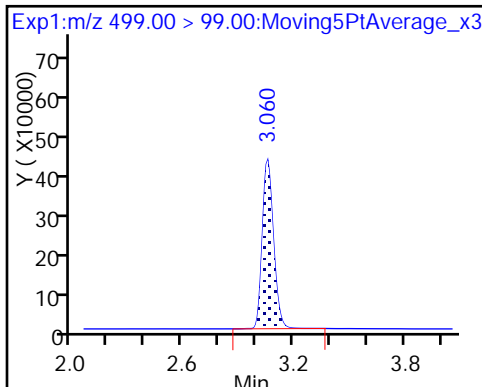
17 Perfluorooctane sulfonic acid



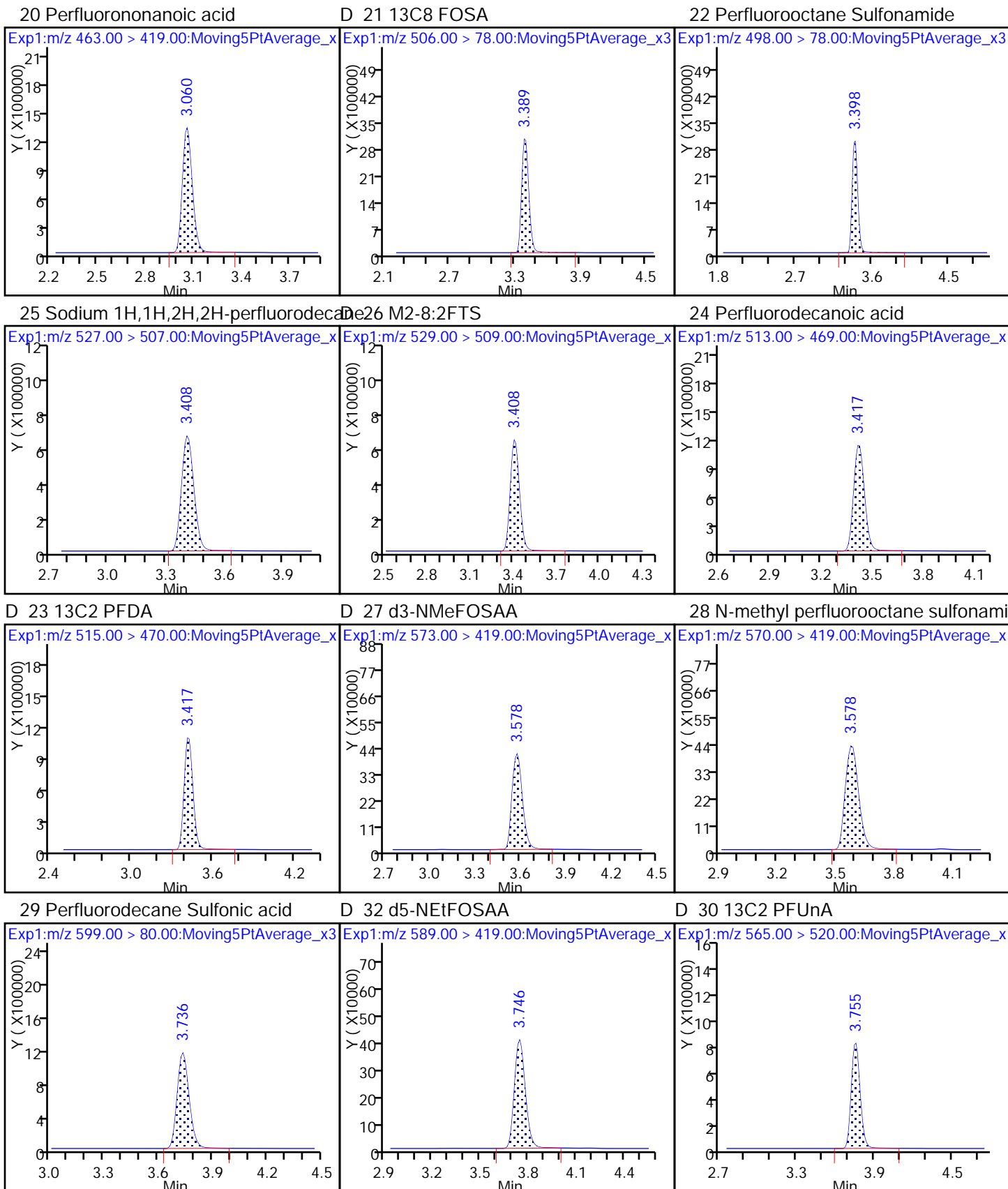
17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

D 19 13C5 PFNA



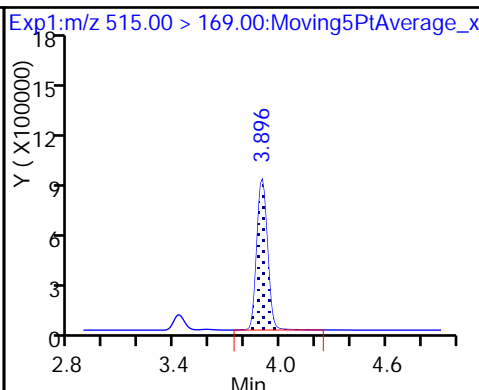
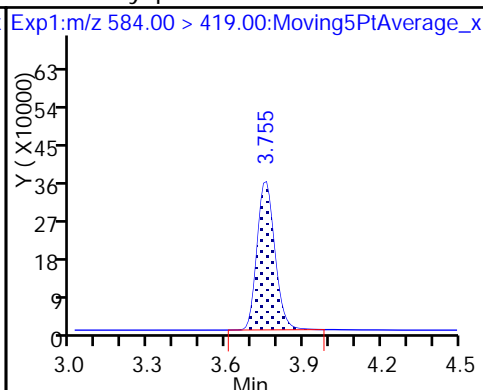
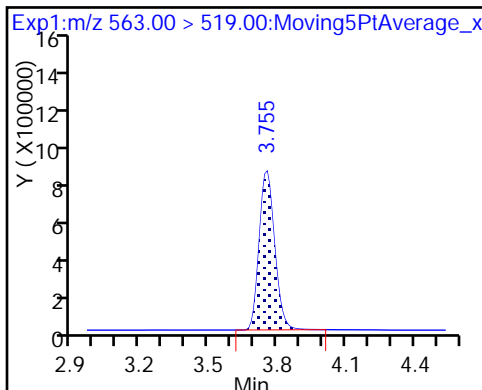




31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

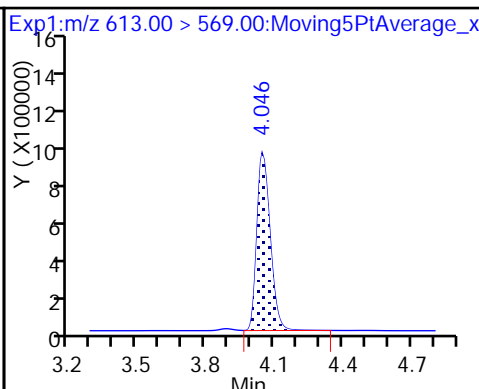
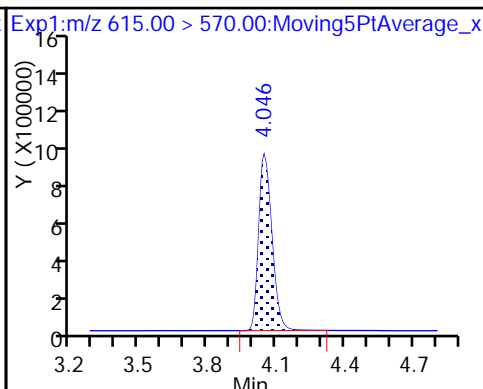
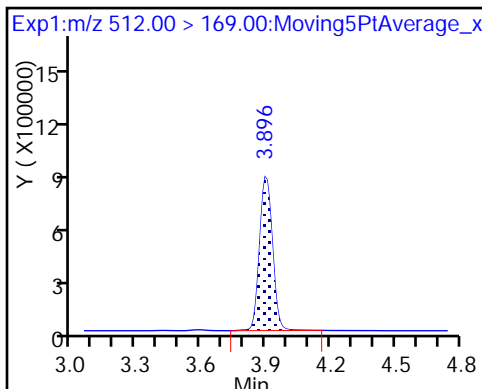
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

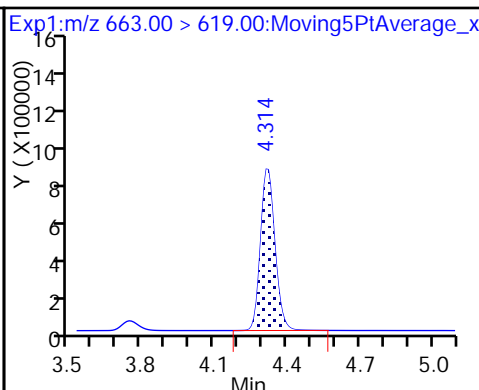
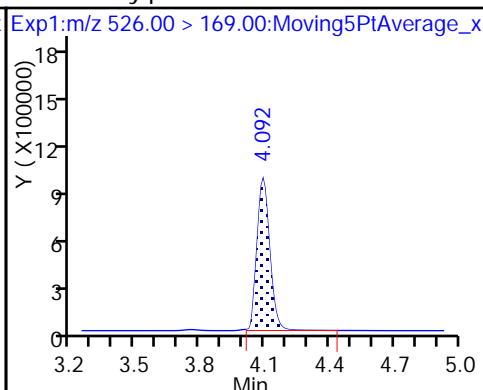
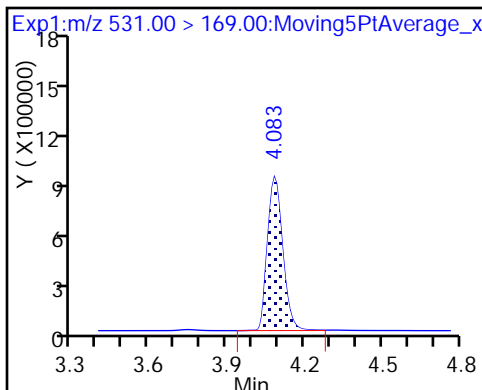
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

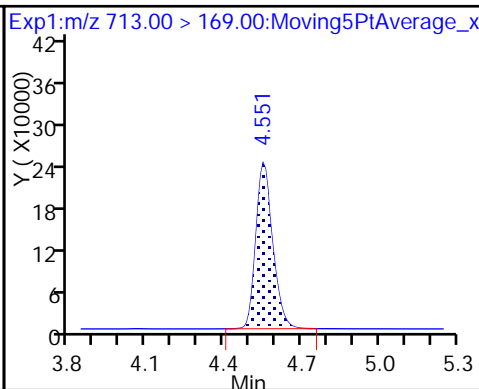
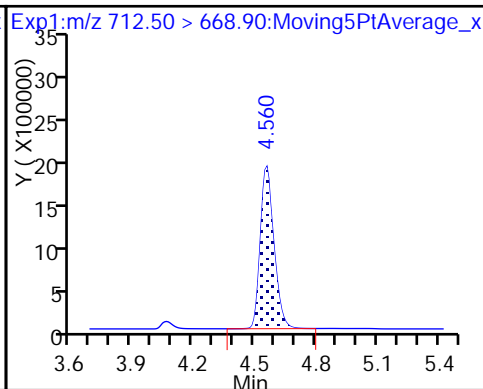
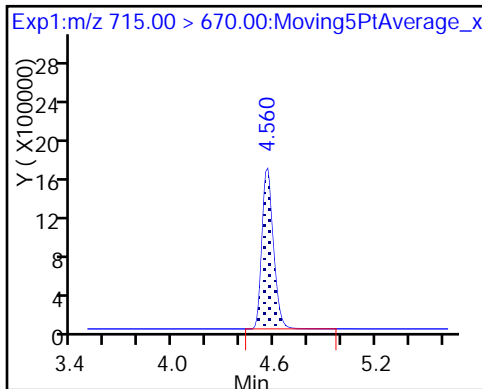
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

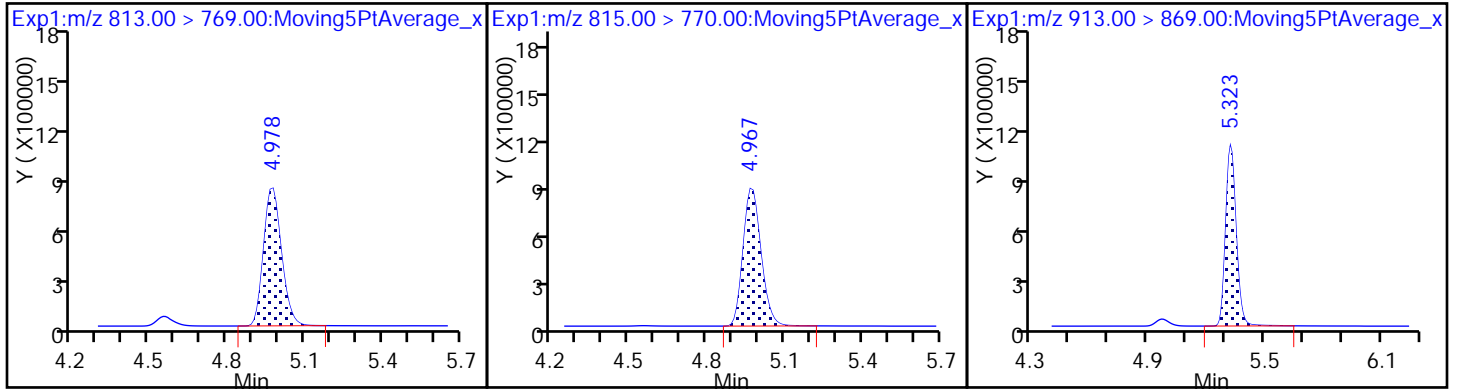
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171335/1 Calibration Date: 06/28/2017 08:44  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.27\_PFC\_B\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9339		20.5	19.8	3.7	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.021		19.6	19.8	-0.8	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.510		19.0	17.5	8.3	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.022		19.9	19.8	0.6	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.066		19.8	19.8	-0.2	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.037		16.9	18.0	-6.2	25.0
6:2FTS	AveID	0.9859	1.039		19.8	18.8	5.4	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.089		20.3	19.8	2.7	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.200		19.7	18.9	4.3	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	0.9712		19.4	19.8	-2.1	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.021		17.9	18.4	-2.6	25.0
8:2FTS	AveID	0.999	1.049		19.9	19.0	5.1	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.031		21.0	19.8	5.8	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9361		19.2	19.8	-3.0	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.088		20.7	19.8	4.3	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6719		20.1	19.1	5.4	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.9909		20.1	19.8	1.7	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	0.996		18.5	19.8	-6.4	25.0
MeFOSA	AveID	0.9522	0.9551		19.9	19.8	0.3	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9246		19.2	19.8	-2.9	25.0
N-EtFOSA-M	AveID	0.999	1.038		20.6	19.8	4.0	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9023		18.4	19.8	-7.0	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	1.887		16.0	19.8	-19.1	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8405		15.9	19.8	-19.8	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	0.8053		14.8	19.8	-25.3*	25.0
13C4 PFBA	Ave	233991	247769		52.4	49.5	5.9	50.0
13C5-PFPeA	Ave	160811	171956		52.9	49.5	6.9	50.0
13C2 PFHxA	Ave	153401	168302		54.3	49.5	9.7	50.0
13C4-PFHpA	Ave	136899	150979		54.6	49.5	10.3	50.0
18O2 PFHxS	Ave	212697	221616		48.8	46.8	4.2	50.0
M2-6:2FTS	Ave	72814	86485		55.9	47.0	18.8	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171335/1 Calibration Date: 06/28/2017 08:44  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.27\_PFC\_B\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	139947		53.1	49.5	7.2	50.0
13C4 PFOS	Ave	162716	165105		48.0	47.3	1.5	50.0
13C5 PFNA	Ave	104991	119507		56.3	49.5	13.8	50.0
13C8 FOSA	Ave	263963	267168		50.1	49.5	1.2	50.0
M2-8:2FTS	Ave	56620	60550		50.7	47.4	6.9	50.0
13C2 PFDA	Ave	100020	104504		51.7	49.5	4.5	50.0
d3-NMeFOSAA	Ave	37033	40610		54.3	49.5	9.7	50.0
d5-NEtFOSAA	Ave	36944	41322		55.4	49.5	11.9	50.0
13C2 PFUnA	Ave	74302	85230		56.8	49.5	14.7	50.0
d-N-MeFOSA-M	Ave	74603	72805		48.3	49.5	-2.4	50.0
13C2 PFDoA	Ave	73421	88171		59.5	49.5	20.1	50.0
d-N-EtFOSA-M	Ave	73544	69917		47.1	49.5	-4.9	50.0
13C2-PFTEtDA	Ave	151466	156704		51.2	49.5	3.5	50.0
13C2-PFHxDA	Ave	83886	84594		49.9	49.5	0.8	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_001.d  
 Lims ID: CCV L4  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 28-Jun-2017 08:44:06 ALS Bottle#: 31 Worklist Smp#: 1  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L4  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 15:52:02 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK008

First Level Reviewer: barnettj Date: 28-Jun-2017 14:25:51

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.541	0.0	12265771	52.4		106	114437	
2 Perfluorobutyric acid	212.90 > 169.00	1.541	1.541	0.0	1.000	4581779	20.5	104	2986	
D 3 13C5-PFPeA	267.90 > 223.00	1.742	1.742	0.0	8512668	52.9		107	33954	
4 Perfluoropentanoic acid	262.90 > 219.00	1.742	1.742	0.0	1.000	3476437	19.6	99.2	2280	
D 47 13C3-PFBS	301.90 > 83.00	1.760	1.760	0.0	212946	NC			6226	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.769	1.769	0.0	1.000	5858754	19.0	108	2692	
	298.90 > 99.00	1.769	1.769	0.0	1.000	2260809	2.59(0.00-0.00)		2084	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.958	1.958	0.0	1.000	1552967	18.9	102	16515	
D 7 13C2 PFHxA	315.00 > 270.00	2.002	2.002	0.0	8331765	54.3		110	31192	
6 Perfluorohexanoic acid	313.00 > 269.00	2.002	2.002	0.0	1.000	3407468	19.9	101	8691	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.312	2.312	0.0	1.000	3185813	19.8	99.8	3953	
D 9 13C4-PFHpA	367.00 > 322.00	2.312	2.312	0.0	7474197	54.6		110	20497	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.329	2.329	0.0	1.000	4139950	16.9	93.8	2477	
D 11 18O2 PFHxS	403.00 > 84.00	2.329	2.329	0.0	10378663	48.8		104	40321	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.634	2.634	0.0	4067343	55.9	119	13324	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.634	2.634	0.0	1.000	1687530	19.8	105	11013
D 14 13C4 PFOA	417.00	> 372.00	2.656	2.656	0.0	6928055	53.1	107	12779	
15 Perfluorooctanoic acid	413.00	> 369.00	2.656	2.656	0.0	1.000	3016816	20.3	103	711
	413.00	> 169.00	2.656	2.656	0.0	1.000	1781903	1.69(0.90-1.10)		4567
* 62 13C2-PFOA	415.00	> 370.00	2.656	2.656	0.0	7452939	49.5	100	13573	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.664	2.664	0.0	1.000	3735187	19.7	104	10051
D 19 13C5 PFNA	468.00	> 423.00	3.026	3.026	0.0	5916190	56.3	114	26122	
D 18 13C4 PFOS	503.00	> 80.00	3.026	3.026	0.0	7813872	48.0	101	50660	
20 Perfluorononanoic acid	463.00	> 419.00	3.026	3.026	0.0	1.000	2298224	19.4	97.9	4683
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.026	3.026	0.0	1.000	3098748	17.9	97.4	4946
	499.00	> 99.00	3.026	3.026	0.0	1.000	677010	4.58(0.90-1.10)		3352
D 21 13C8 FOSA	506.00	> 78.00	3.377	3.377	0.0	13226156	50.1	101	177716	
D 26 M2-8:2FTS	529.00	> 509.00	3.377	3.377	0.0	2871632	50.7	107	23284	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.377	3.377	0.0	1.000	5453584	21.0	106	28645
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.377	3.377	0.0	1.000	1205343	19.9	105	8823
D 23 13C2 PFDA	515.00	> 470.00	3.386	3.386	0.0	5173466	51.7	104	56120	
24 Perfluorodecanoic acid	513.00	> 469.00	3.386	3.386	0.0	1.000	1937202	19.2	97.0	6179
D 27 d3-NMeFOSAA	573.00	> 419.00	3.540	3.540	0.0	2010417	54.3	110	9317	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.540	3.540	0.0	1.000	874681	20.7	104	3197
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.698	3.698	0.0	1.000	2117642	20.1	105	11513
D 32 d5-NEtFOSAA	589.00	> 419.00	3.707	3.707	0.0	2045668	55.4	112	4511	
D 30 13C2 PFUnA	565.00	> 520.00	3.717	3.717	0.0	4219291	56.8	115	23809	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.717	3.717	0.0	1.000	1681410	18.5	93.6	3743
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.717	3.717	0.0	1.003	810852	20.1	102	5956

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.887	3.887	0.0	3604229	48.3	97.6	688	
35 MeFOSA	512.00	> 169.00	3.887	3.887	0.0	1.000	1376994	19.9	100	5033
D 36 13C2 PFDaA	615.00	> 570.00	4.013	4.013	0.0	4364916	59.5	120	17389	
37 Perfluorododecanoic acid	613.00	> 569.00	4.013	4.013	0.0	1.000	1614294	19.2	97.1	1885
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.075	4.075	0.0	3461230	47.1	95.1	6666	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.083	4.083	0.0	1.000	1437716	20.6	104	3710
41 Perfluorotridecanoic acid	663.00	> 619.00	4.277	4.277	0.0	1.000	1575456	18.4	93.0	538
D 43 13C2-PFTeDA	715.00	> 670.00	4.515	4.515	0.0	7757643	51.2	103	65282	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.515	4.515	0.0	1.000	3294267	16.0	80.9	3076
	713.00	> 169.00	4.515	4.515	0.0	1.000	435292	7.57(0.00-0.00)		8517
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.929	4.929	0.0	1.000	1467543	15.9	80.2	332
D 44 13C2-PFHxDA	815.00	> 770.00	4.929	4.929	0.0	4187830	49.9	101	9873	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.275	5.275	0.0	1.000	1405988	14.8	74.7	508

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L4\_00003

Amount Added: 1.00

Units: mL



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_001.d

Injection Date: 28-Jun-2017 08:44:06

Instrument ID: A8\_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

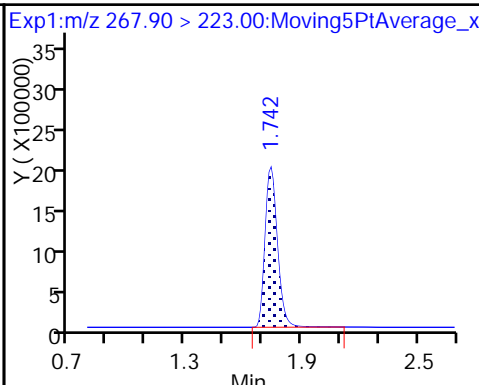
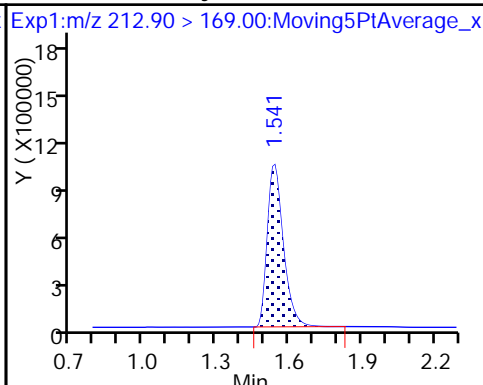
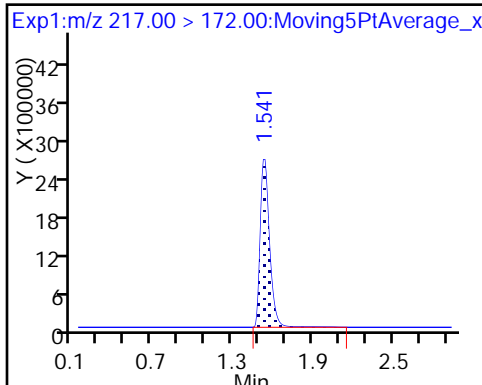
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

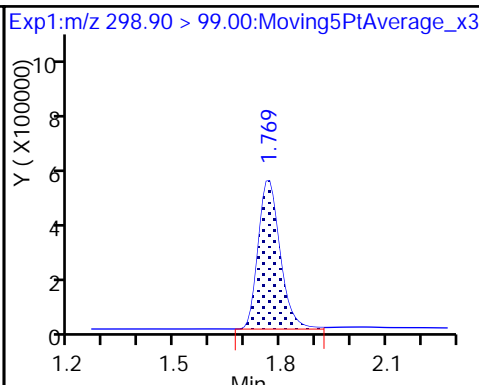
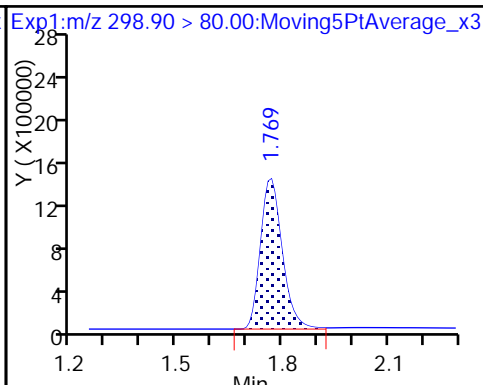
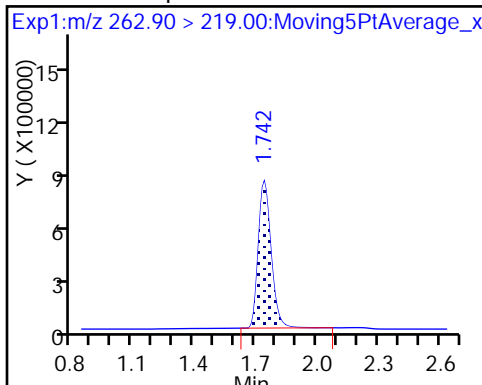
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

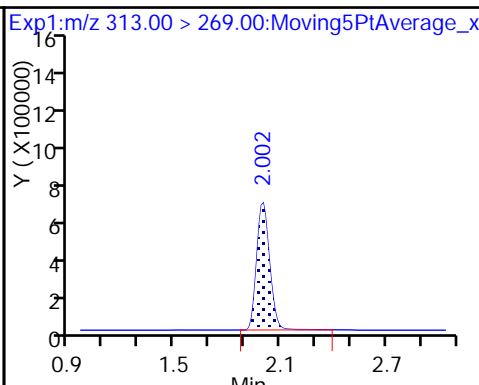
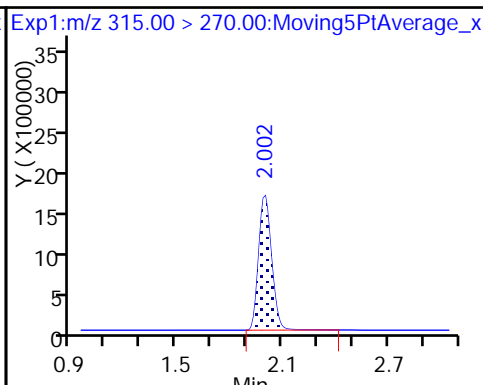
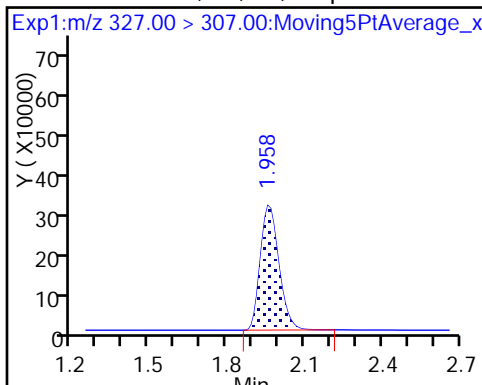
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

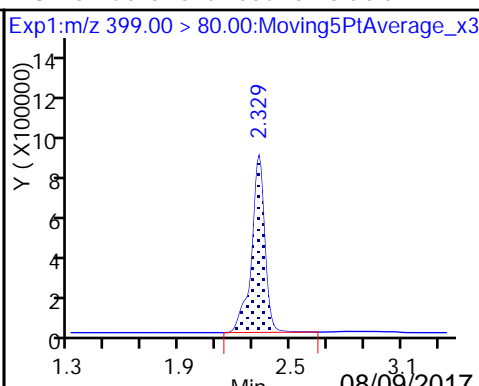
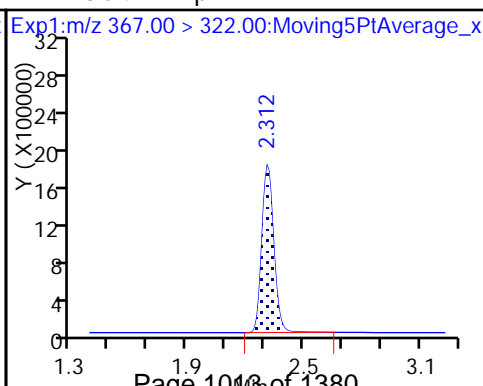
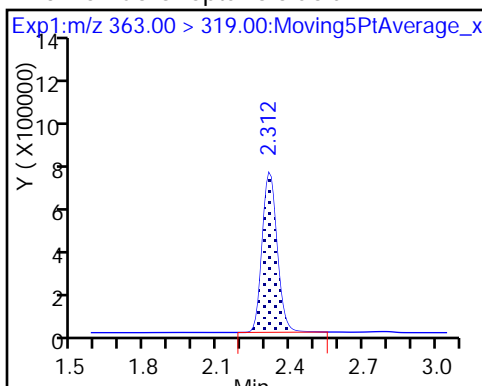
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

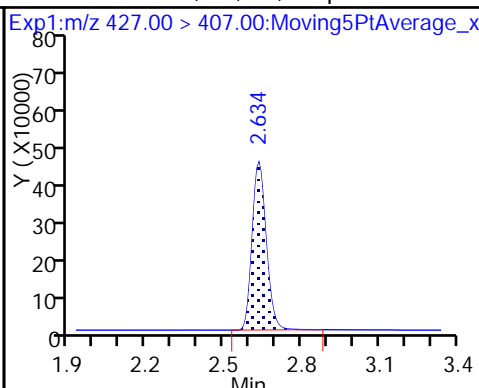
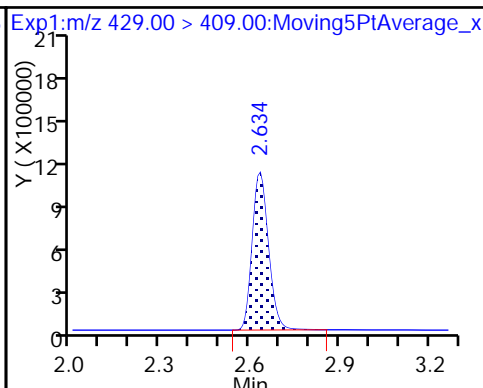
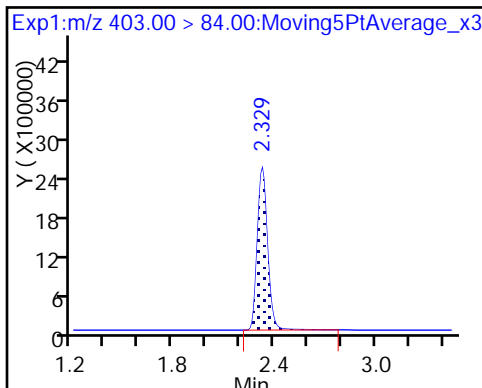
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

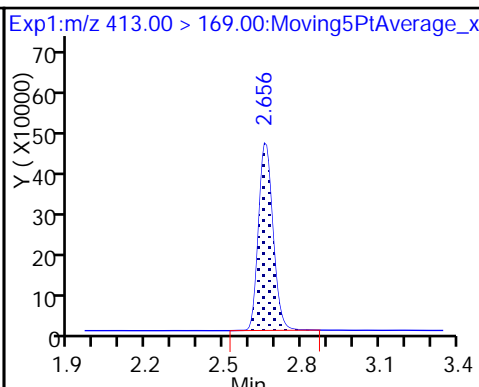
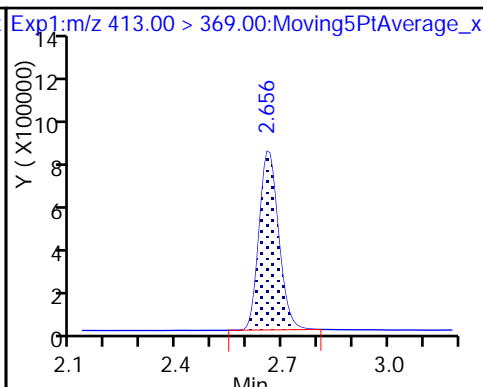
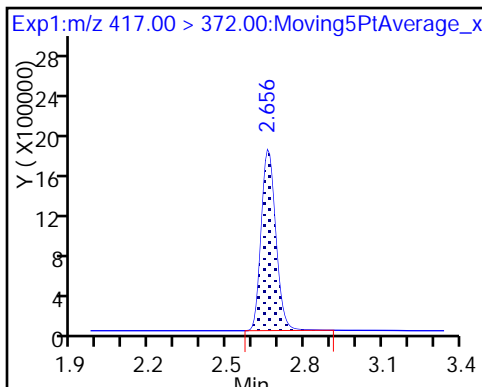
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 14 13C4 PFOA

15 Perfluorooctanoic acid

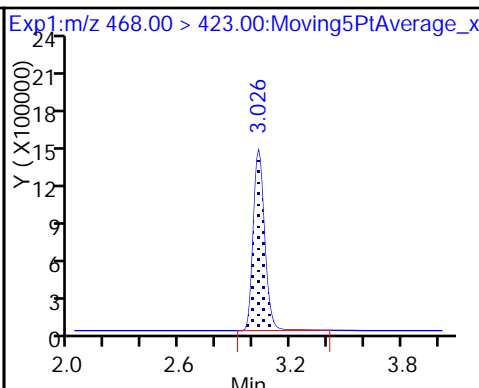
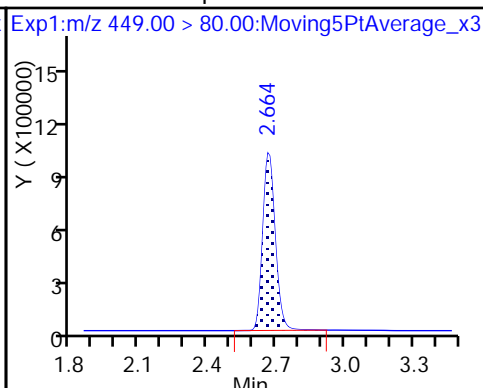
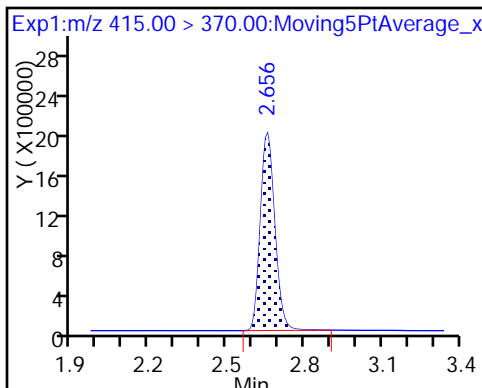
15 Perfluorooctanoic acid



\* 62 13C2-PFOA

16 Perfluoroheptanesulfonic Acid

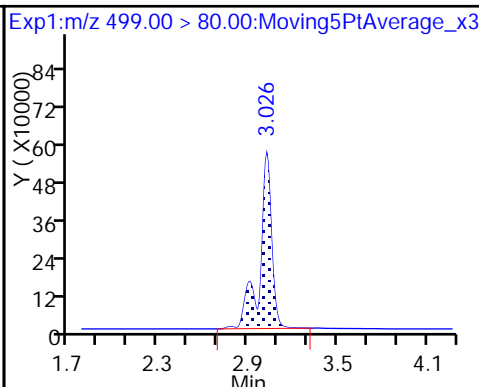
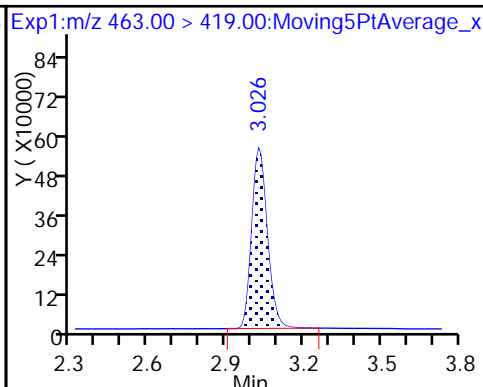
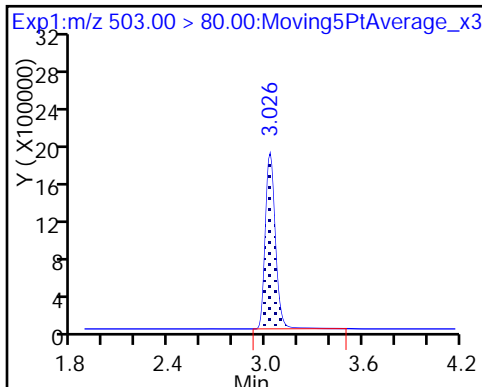
D 19 13C5 PFNA



D 18 13C4 PFOS

20 Perfluorononanoic acid

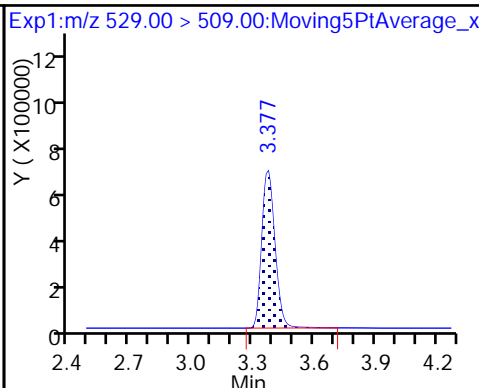
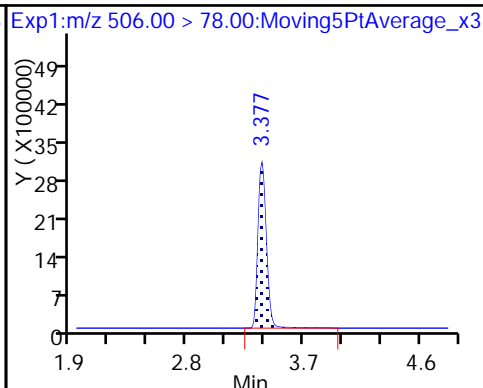
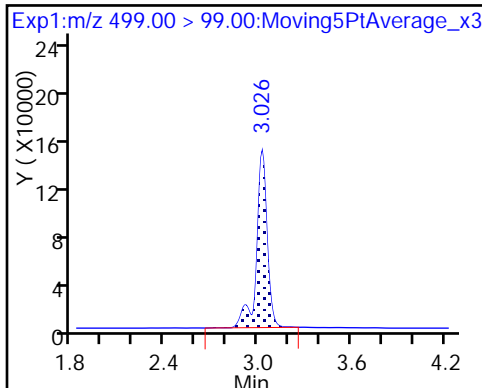
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 21 13C8 FOSA

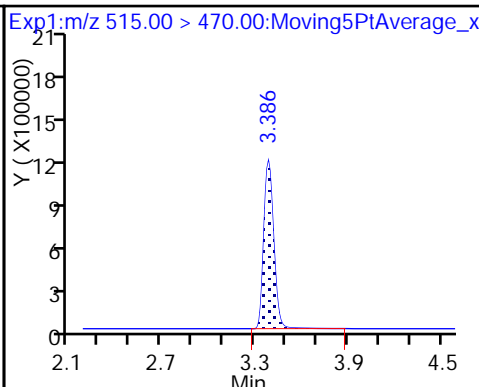
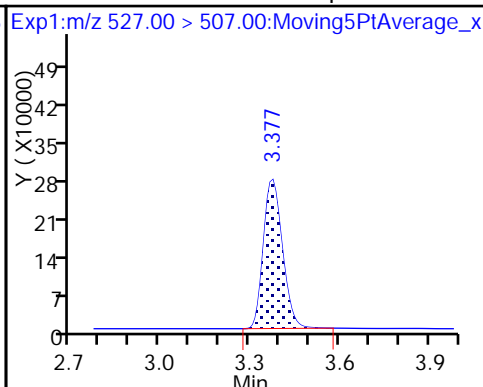
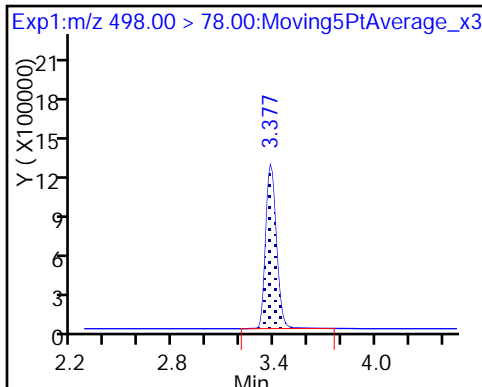
D 26 M2-8:2FTS



22 Perfluorooctane Sulfonamide

25 Sodium 1H,1H,2H,2H-perfluorodeca

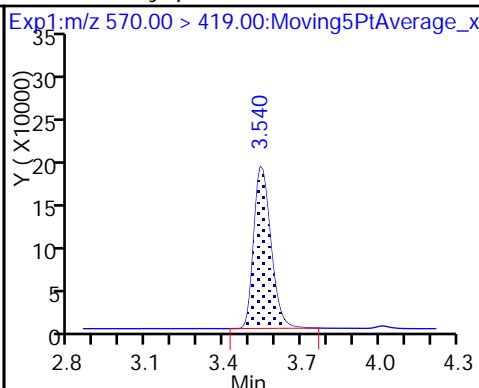
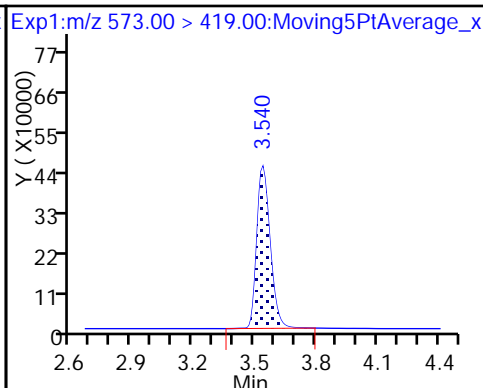
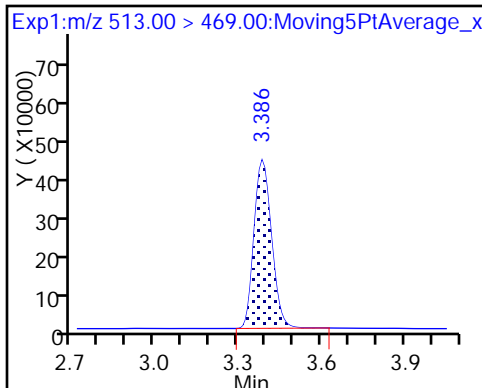
De23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

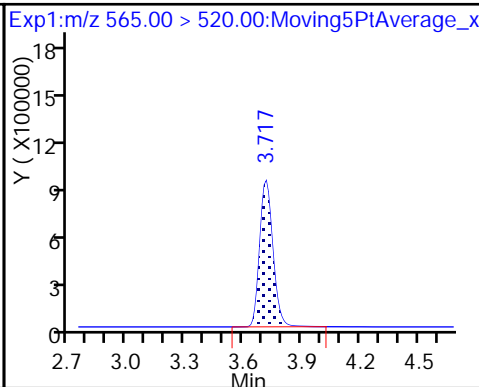
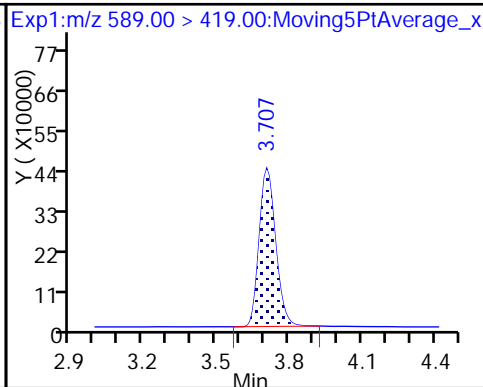
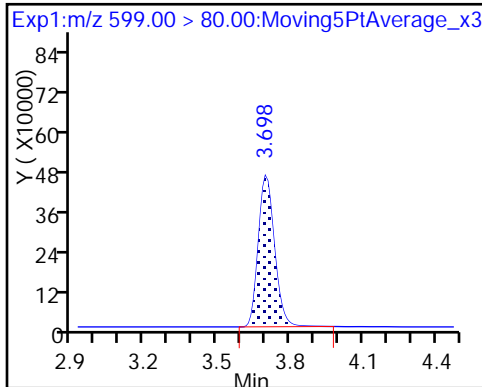
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

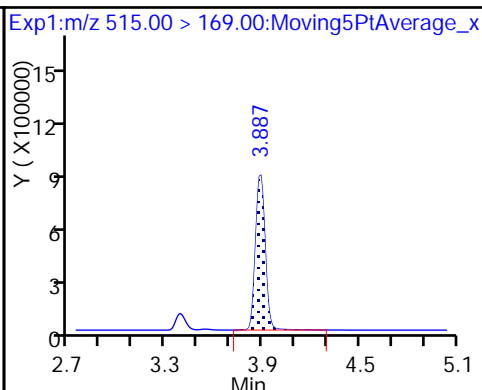
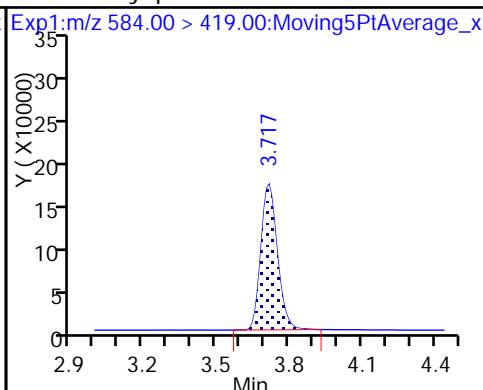
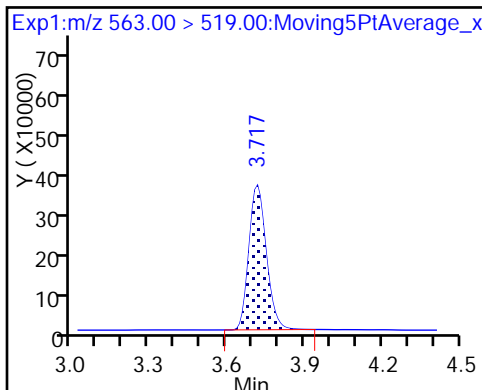
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

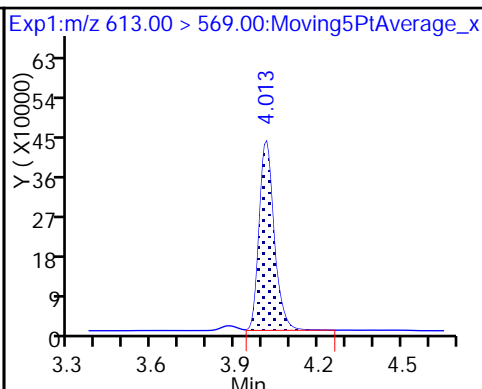
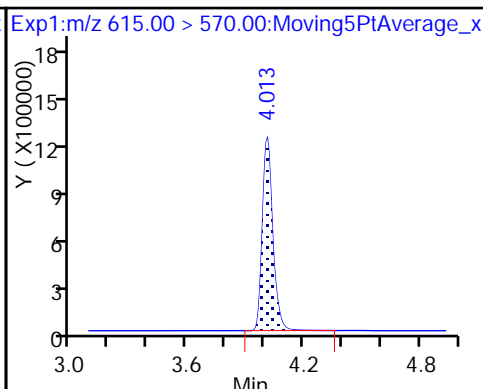
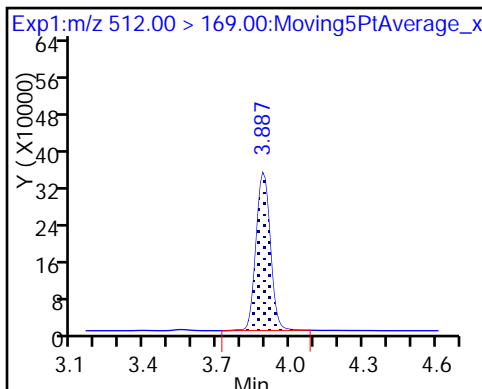
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

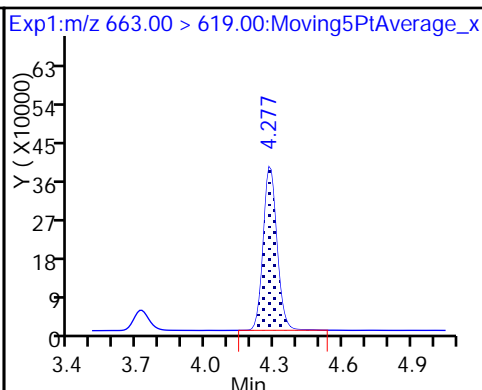
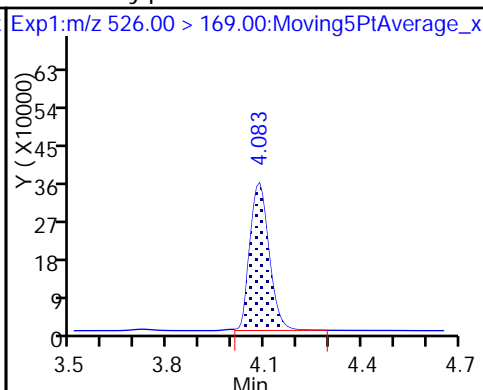
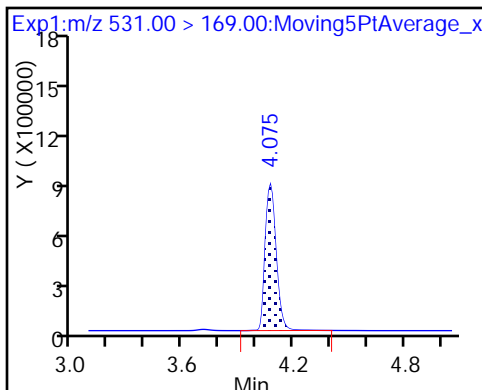
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

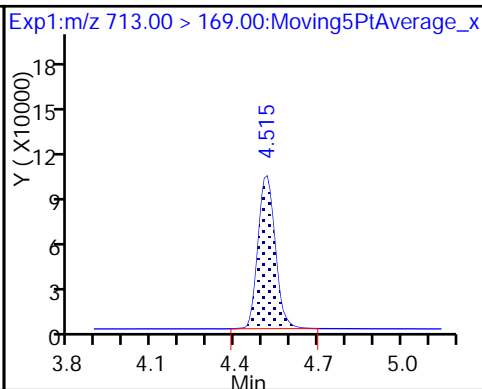
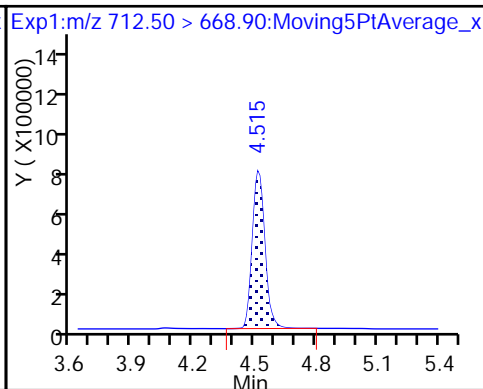
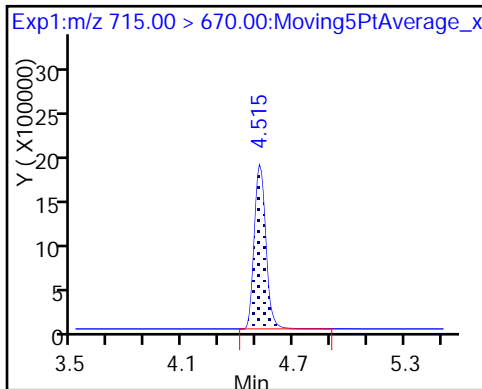
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

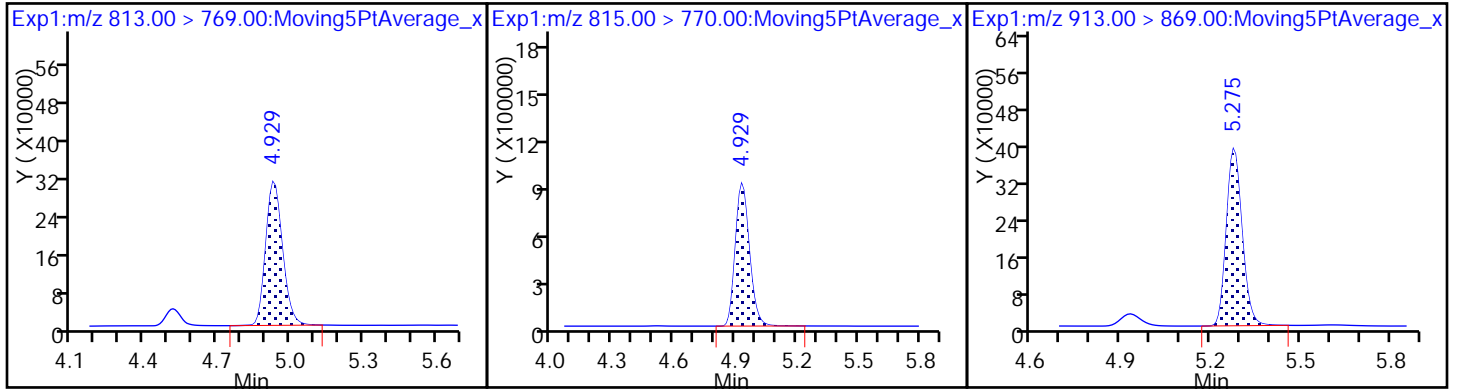
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171335/10 Calibration Date: 06/28/2017 09:53  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.27\_PFC\_B1B\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9717		53.4	49.5	7.9	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.054		50.7	49.5	2.4	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.436		45.1	43.8	3.0	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.036		50.5	49.5	2.0	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.148		53.2	49.5	7.5	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.053		43.0	45.0	-4.6	25.0
6:2FTS	AveID	0.9859	1.036		49.3	46.9	5.1	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.054		49.2	49.5	-0.6	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.191		48.8	47.1	3.6	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	1.027		51.3	49.5	3.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.111		48.6	45.9	5.9	25.0
8:2FTS	AveID	0.999	1.033		49.0	47.4	3.4	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9833		50.5	49.5	1.9	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.026		52.2	49.5	5.4	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.067		50.7	49.5	2.4	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6977		52.2	47.7	9.4	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.9700		49.3	49.5	-0.5	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.053		49.0	49.5	-1.1	25.0
MeFOSA	AveID	0.9522	0.9850		51.2	49.5	3.4	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9629		50.1	49.5	1.1	25.0
N-EtFOSA-M	AveID	0.999	1.055		52.3	49.5	5.6	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9230		47.1	49.5	-4.9	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	1.986		42.1	49.5	-14.9	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9115		44.3	49.5	-10.6	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	1.025		47.1	49.5	-4.9	25.0
13C4 PFBA	Ave	233991	269812		57.1	49.5	15.3	50.0
13C5-PFPeA	Ave	160811	186091		57.3	49.5	15.7	50.0
13C2 PFHxA	Ave	153401	185626		59.9	49.5	21.0	50.0
13C4-PFHpA	Ave	136899	156654		56.6	49.5	14.4	50.0
18O2 PFHxS	Ave	212697	254988		56.1	46.8	19.9	50.0
M2-6:2FTS	Ave	72814	90511		58.5	47.0	24.3	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171335/10 Calibration Date: 06/28/2017 09:53  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.27\_PFC\_B1B\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	158004		59.9	49.5	21.0	50.0
13C4 PFOS	Ave	162716	191217		55.6	47.3	17.5	50.0
13C5 PFNA	Ave	104991	129178		60.9	49.5	23.0	50.0
13C8 FOSA	Ave	263963	294635		55.3	49.5	11.6	50.0
M2-8:2FTS	Ave	56620	64279		53.8	47.4	13.5	50.0
13C2 PFDA	Ave	100020	113134		56.0	49.5	13.1	50.0
d3-NMeFOSAA	Ave	37033	46924		62.7	49.5	26.7	50.0
d5-NEtFOSAA	Ave	36944	47313		63.4	49.5	28.1	50.0
13C2 PFUnA	Ave	74302	90444		60.3	49.5	21.7	50.0
d-N-MeFOSA-M	Ave	74603	87377		58.0	49.5	17.1	50.0
13C2 PFDoA	Ave	73421	98943		66.7	49.5	34.8	50.0
d-N-EtFOSA-M	Ave	73544	86027		57.9	49.5	17.0	50.0
13C2-PFTEtDA	Ave	151466	176288		57.6	49.5	16.4	50.0
13C2-PFHxDA	Ave	83886	99821		58.9	49.5	19.0	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B1B\_001.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 28-Jun-2017 09:53:09 ALS Bottle#: 32 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 15:52:14 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK008

First Level Reviewer: barnettj Date: 28-Jun-2017 14:26:23

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.541	0.0	13357029	57.1		115	24055	
2 Perfluorobutyric acid	212.90 > 169.00	1.541	1.541	0.0	12978914	53.4		108	4895	
D 3 13C5-PFPeA	267.90 > 223.00	1.742	1.742	0.0	9212426	57.3		116	49652	
4 Perfluoropentanoic acid	262.90 > 219.00	1.742	1.742	0.0	9706211	50.7		102	4491	
D 47 13C3-PFBS	301.90 > 83.00	1.768	1.760	0.008	254739	NC			14745	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.768	1.769	-0.001	16018646	45.1		103	603909	
	298.90 > 99.00	1.768	1.769	-0.001	6872000		2.33(0.00-0.00)		25966	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.968	1.958	0.010	4072280	47.4		102	82383	
D 7 13C2 PFHxA	315.00 > 270.00	2.002	2.002	0.0	9189411	59.9		121	25728	
6 Perfluorohexanoic acid	313.00 > 269.00	2.002	2.002	0.0	9524337	50.5		102	12042	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.316	2.312	0.004	8901253	53.2		107	9597	
D 9 13C4-PFHpA	367.00 > 322.00	2.316	2.312	0.004	7755140	56.6		114	30718	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.334	2.329	0.005	12099947	43.0		95.4	4547	
D 11 18O2 PFHxS	403.00 > 84.00	2.334	2.329	0.005	11941519	56.1		120	22419	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.637	2.634	0.003	4256714	58.5	124	15239	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.637	2.634	0.003	1.000	4400228	49.3	105	144886
D 14 13C4 PFOA	417.00	> 372.00	2.666	2.656	0.010	7821973	59.9	121	25673	
15 Perfluorooctanoic acid	413.00	> 369.00	2.666	2.656	0.010	1.000	8242954	49.2	99.4	1489
	413.00	> 169.00	2.666	2.656	0.010	1.000	4971051	1.66(0.90-1.10)		10568
* 62 13C2-PFOA	415.00	> 370.00	2.659	2.656	0.003	7963840	49.5	100	49413	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.673	2.664	0.009	1.000	10737015	48.8	104	41633
D 19 13C5 PFNA	468.00	> 423.00	3.032	3.026	0.006	6394973	60.9	123	39404	
D 18 13C4 PFOS	503.00	> 80.00	3.032	3.026	0.006	9049683	55.6	118	93036	
20 Perfluorononanoic acid	463.00	> 419.00	3.032	3.026	0.006	1.000	6570442	51.3	104	18047
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.032	3.026	0.006	1.000	9756992	48.6	106	24224
	499.00	> 99.00	3.032	3.026	0.006	1.000	2021496	4.83(0.90-1.10)		7660
D 21 13C8 FOSA	506.00	> 78.00	3.378	3.377	0.001	14585905	55.3	112	26604	
D 26 M2-8:2FTS	529.00	> 509.00	3.378	3.377	0.001	3048459	53.8	114	32700	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.388	3.377	0.011	1.000	14969833	52.2	105	84024
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.378	3.377	0.001	1.000	3147613	49.0	103	25955
D 23 13C2 PFDA	515.00	> 470.00	3.388	3.386	0.002	5600700	56.0	113	28996	
24 Perfluorodecanoic acid	513.00	> 469.00	3.388	3.386	0.002	1.000	5507397	50.5	102	16167
D 27 d3-NMeFOSAA	573.00	> 419.00	3.542	3.540	0.002	2322984	62.7	127	9659	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.553	3.540	0.013	1.003	2479321	50.7	102	5939
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.702	3.698	0.004	1.000	6366564	52.2	109	13844
D 32 d5-NEtFOSAA	589.00	> 419.00	3.711	3.707	0.004	2342241	63.4	128	6437	
D 30 13C2 PFUnA	565.00	> 520.00	3.721	3.717	0.004	4477423	60.3	122	21730	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.721	3.717	0.004	1.000	4713035	49.0	98.9	12559
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.721	3.717	0.004	1.003	2272005	49.3	99.5	12566

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.891	3.887	0.004		4325587		117	731	
35 MeFOSA	512.00 > 169.00	3.891	3.887	0.004	1.000	4260676		103	6407	
D 36 13C2 PFDaA	615.00 > 570.00	4.017	4.013	0.004		4898161		135	16251	
37 Perfluorododecanoic acid	613.00 > 569.00	4.017	4.013	0.004	1.000	4716429		101	4966	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.081	4.075	0.006		4258769		117	6290	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.089	4.083	0.006	1.000	4491349		106	4927	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.283	4.277	0.006	1.000	4520751		95.1	1127	
D 43 13C2-PFTeDA	715.00 > 670.00	4.525	4.515	0.010		8727112		116	74203	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.525	4.515	0.010	1.000	9726997		85.1	4779	
	713.00 > 169.00	4.516	4.515	0.001	0.998	1273292	7.64(0.00-0.00)		14765	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.933	4.929	0.004	1.000	4464679		89.4	583	
D 44 13C2-PFHxDA	815.00 > 770.00	4.933	4.929	0.004		4941641		119	8839	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.279	5.275	0.004	1.000	5020263		95.1	1215	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L5\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B1B\_001.d

Injection Date: 28-Jun-2017 09:53:09

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

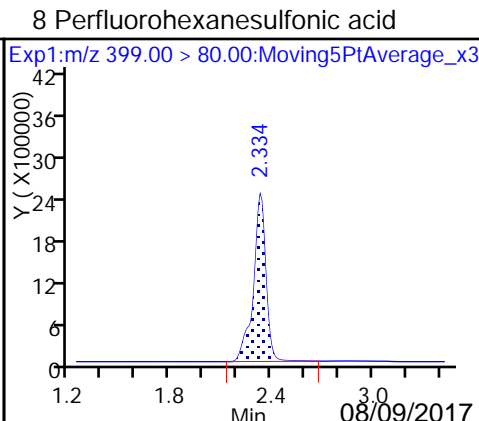
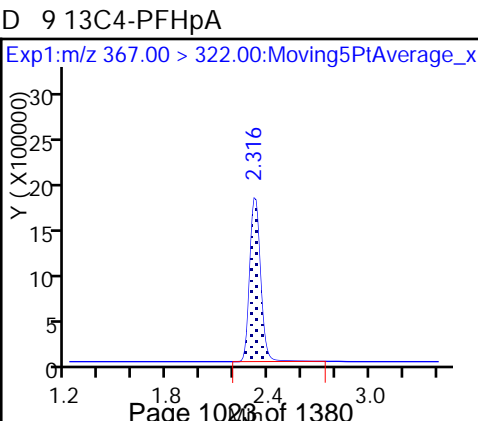
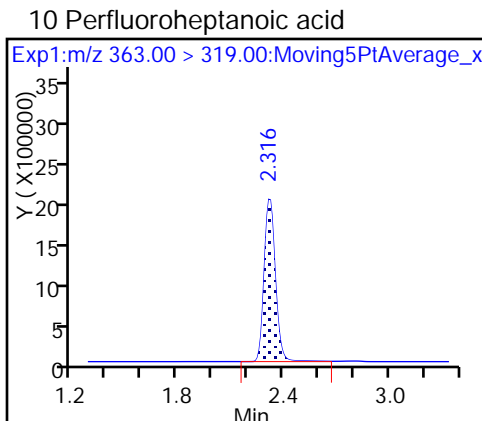
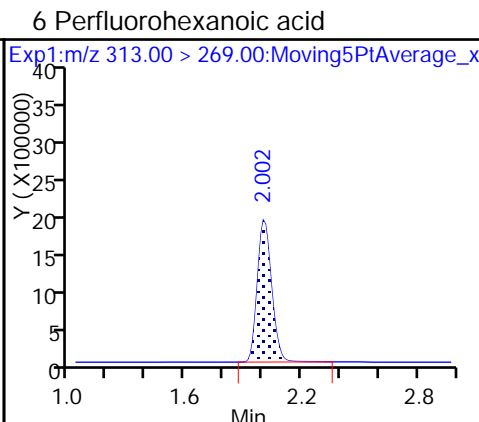
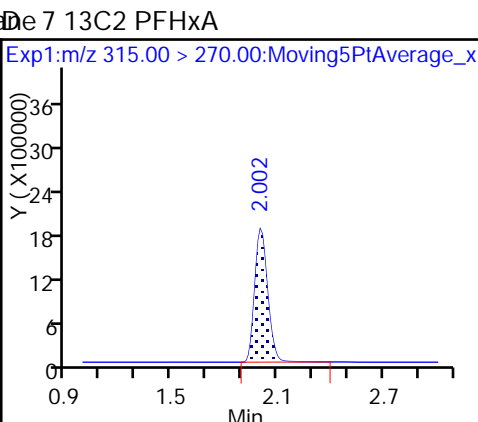
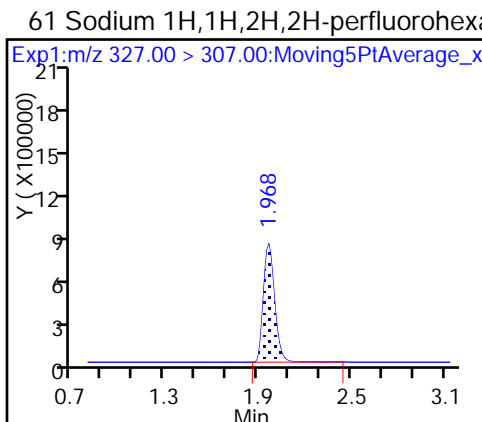
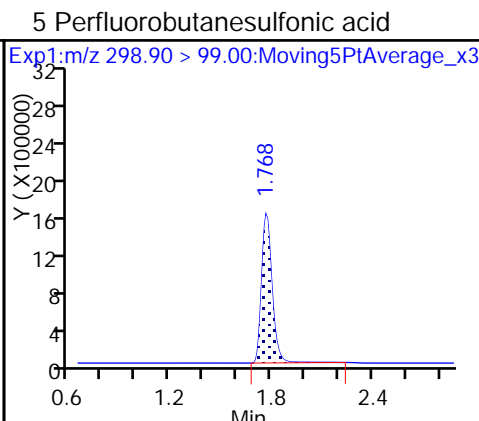
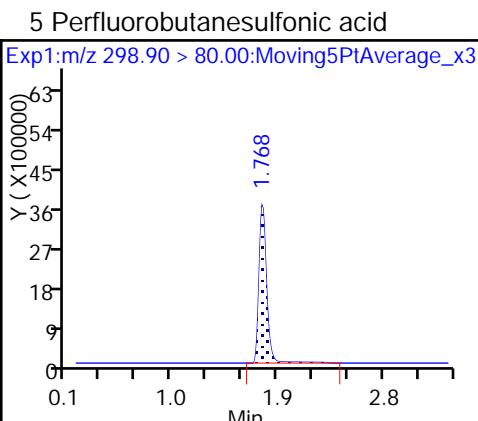
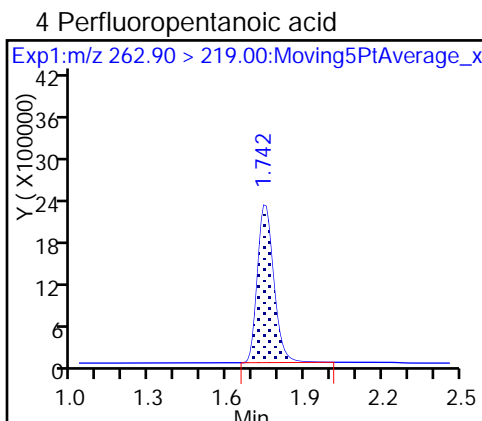
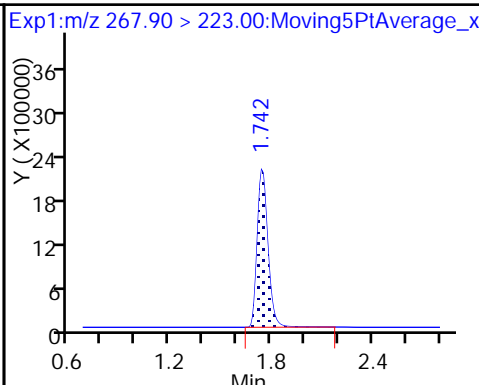
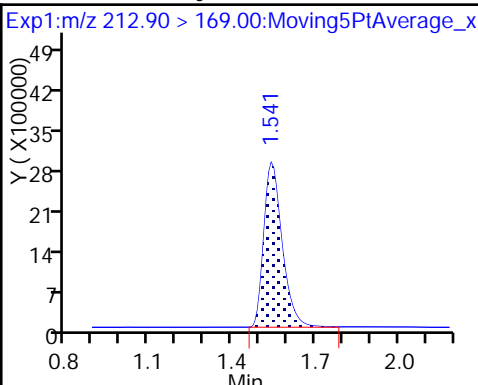
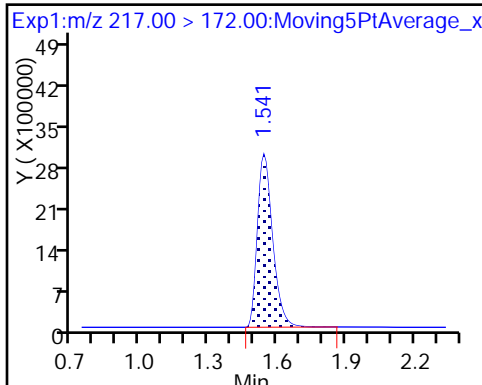
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

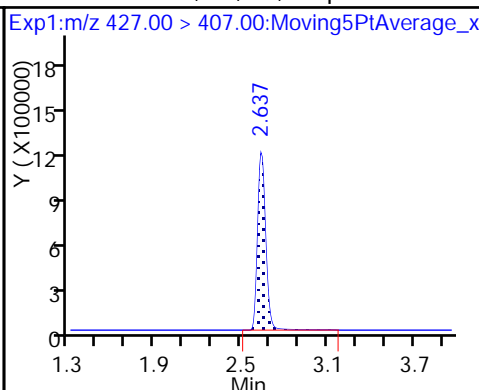
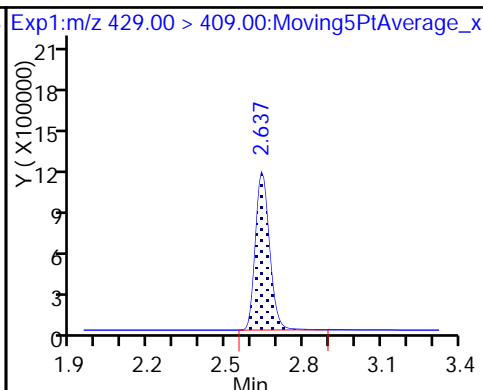
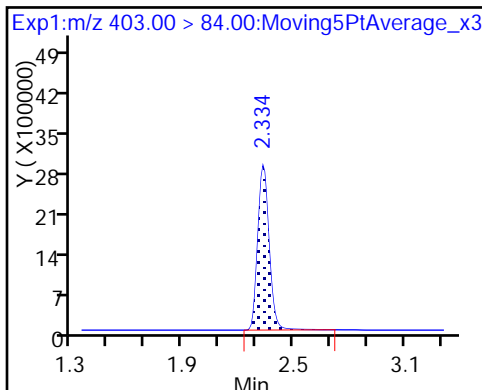
D 3 13C5-PFPeA



D 11 18O2 PFHxS

D 12 M2-6:2FTS

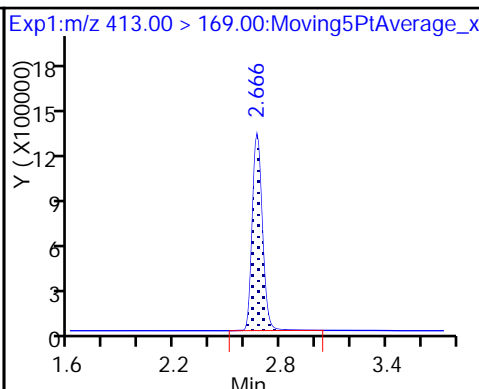
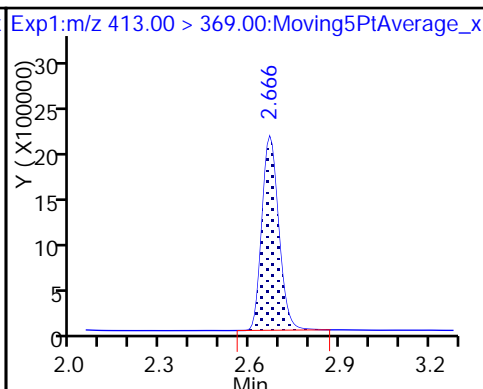
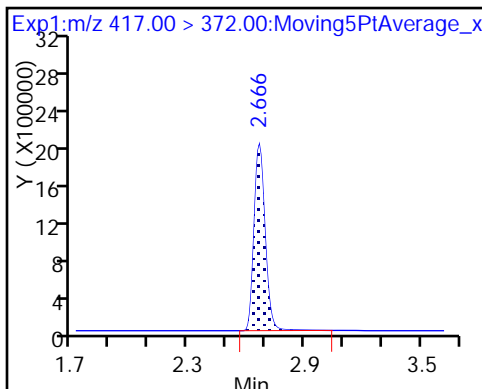
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 14 13C4 PFOA

15 Perfluorooctanoic acid

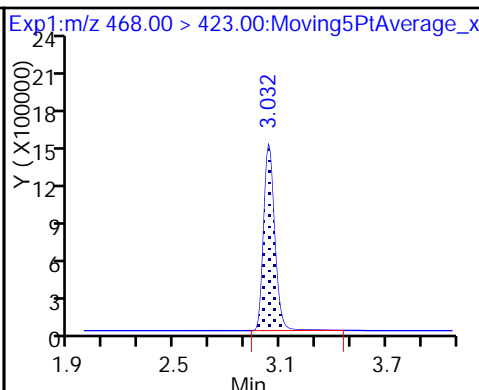
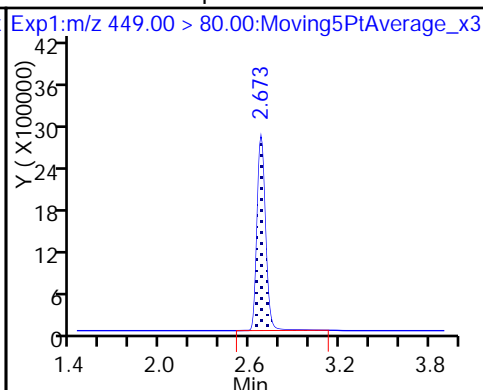
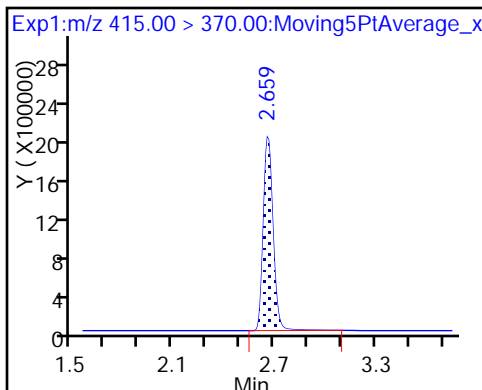
15 Perfluorooctanoic acid



\* 62 13C2-PFOA

16 Perfluoroheptanesulfonic Acid

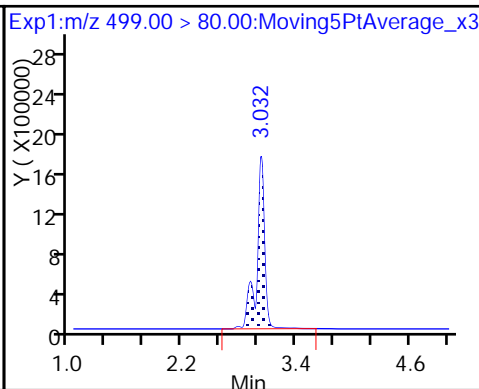
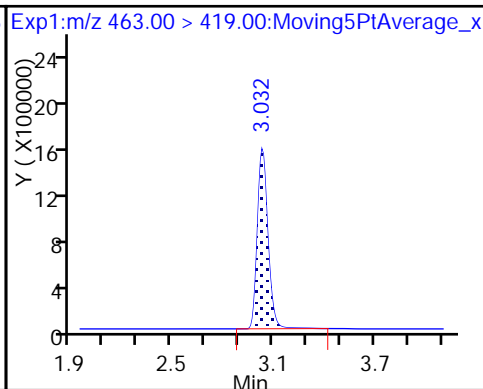
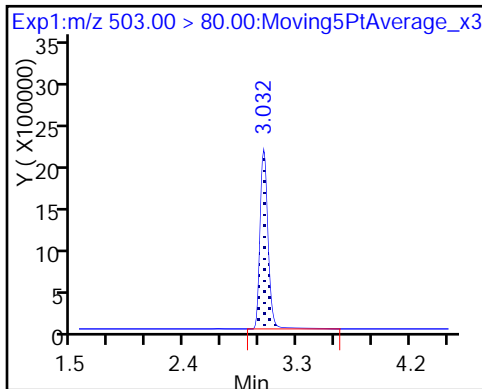
D 19 13C5 PFNA



D 18 13C4 PFOS

20 Perfluorononanoic acid

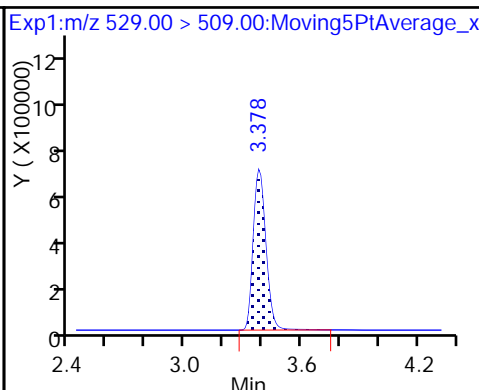
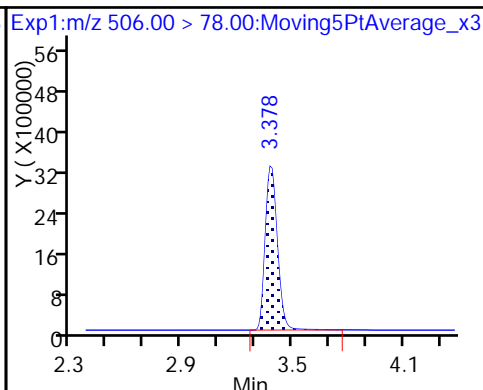
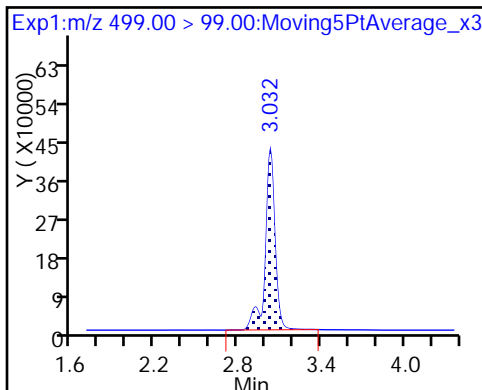
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 21 13C8 FOSA

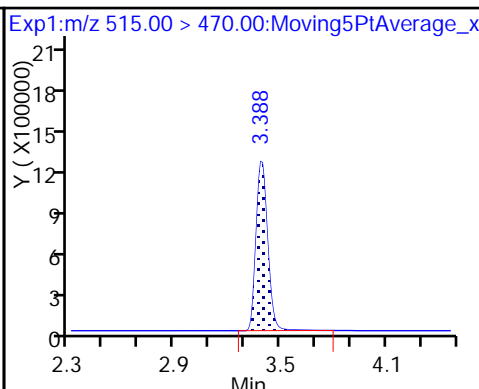
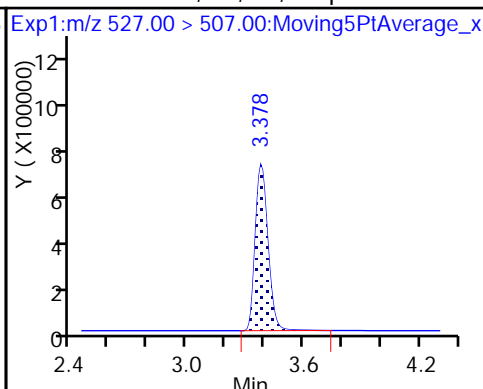
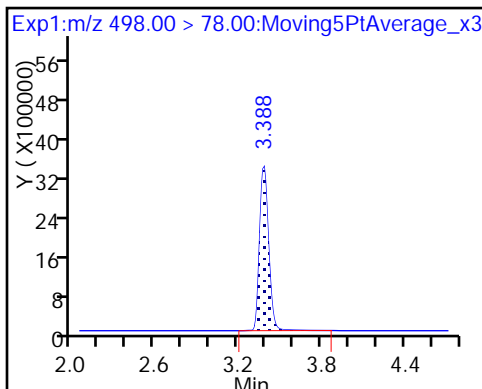
D 26 M2-8:2FTS



22 Perfluorooctane Sulfonamide

25 Sodium 1H,1H,2H,2H-perfluorodeca

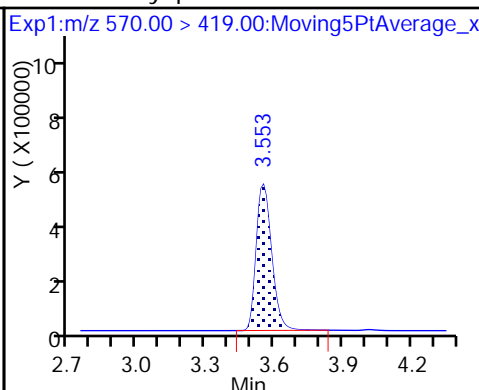
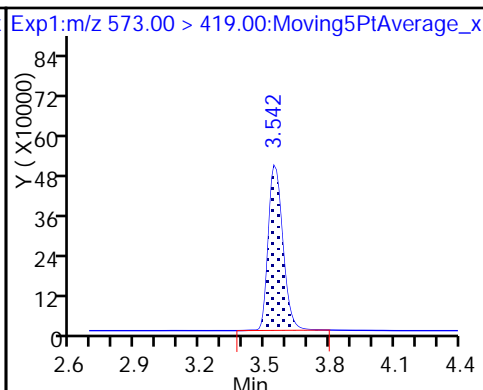
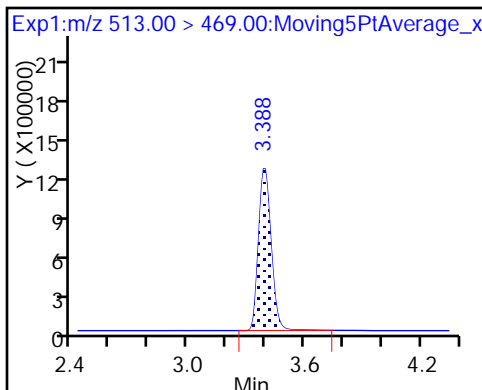
De23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

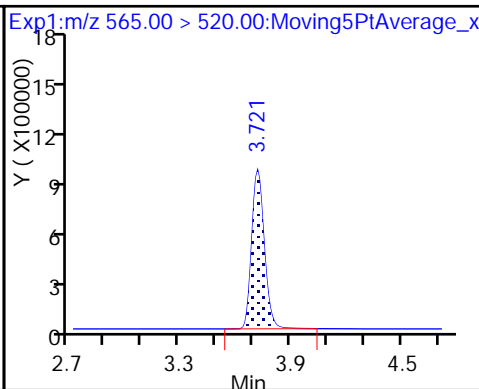
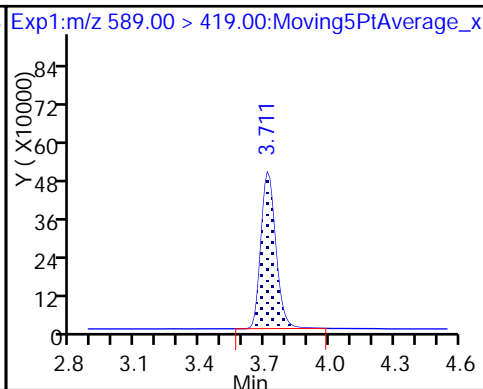
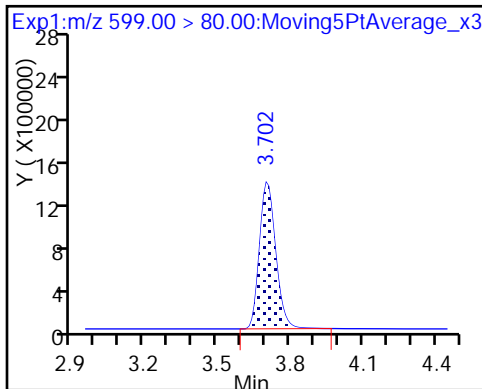
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

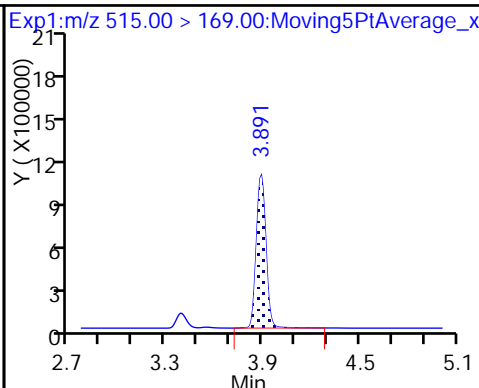
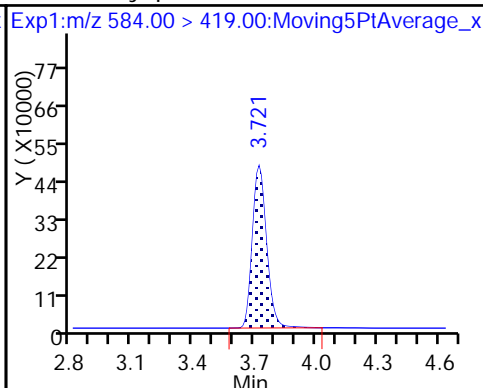
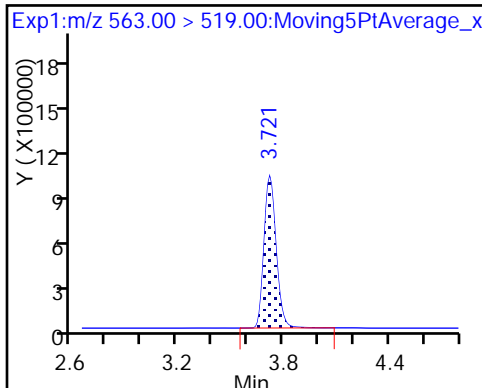
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

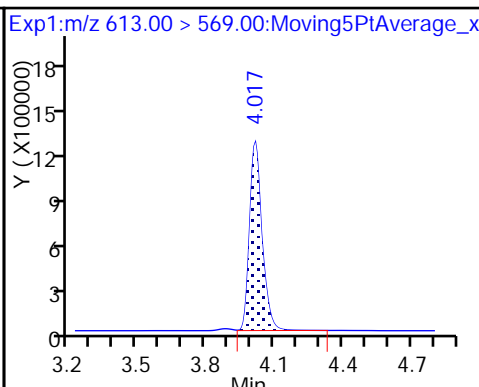
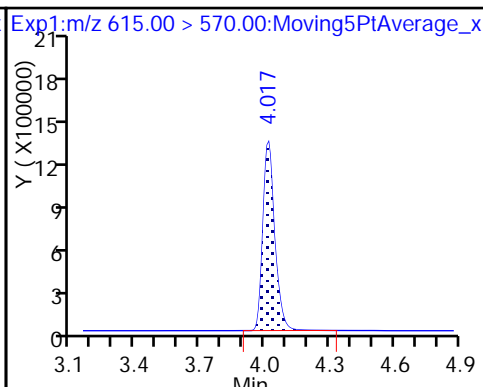
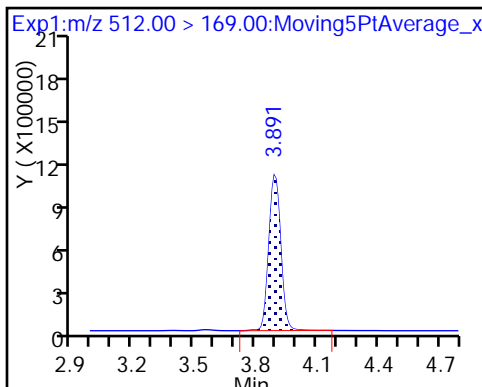
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

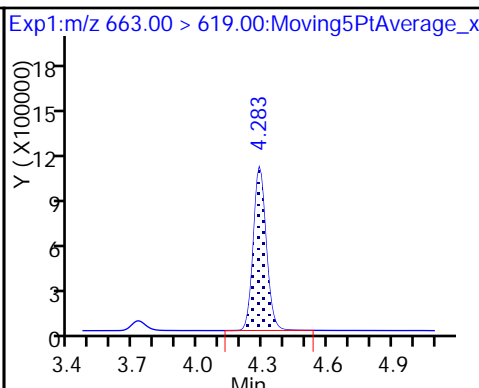
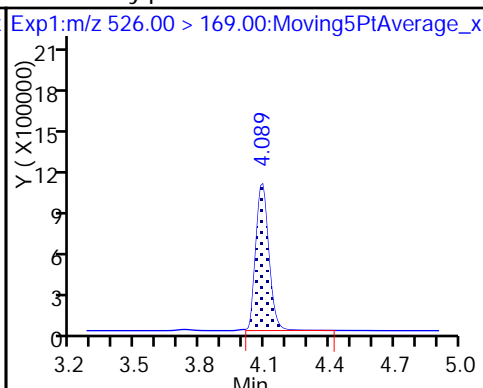
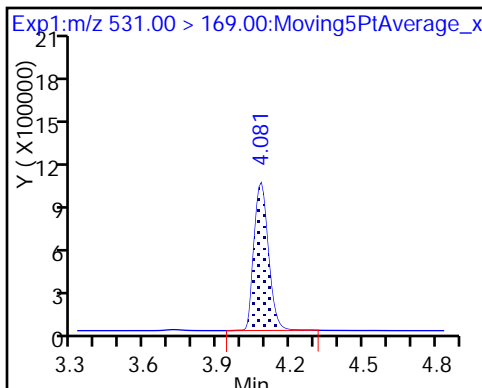
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

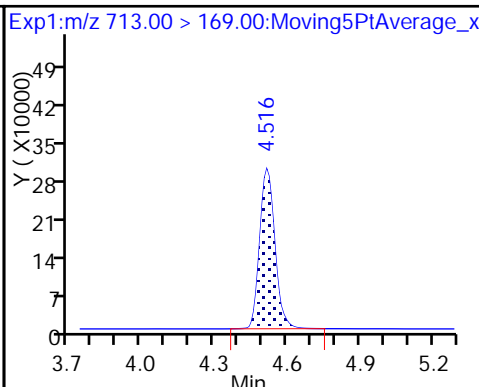
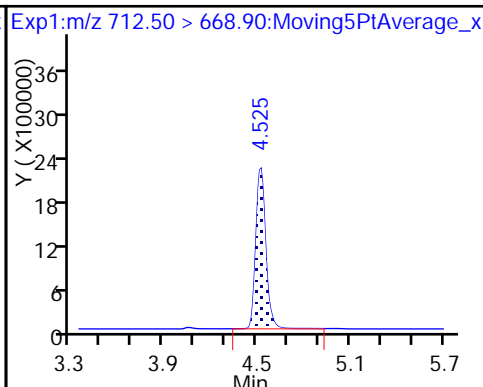
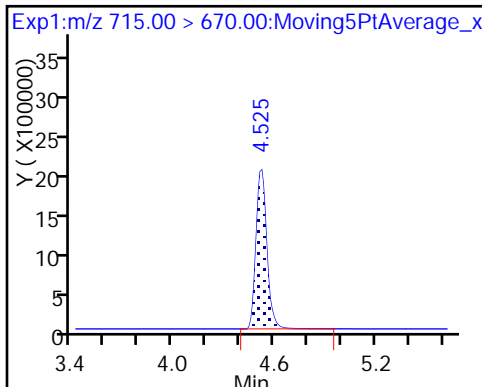
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

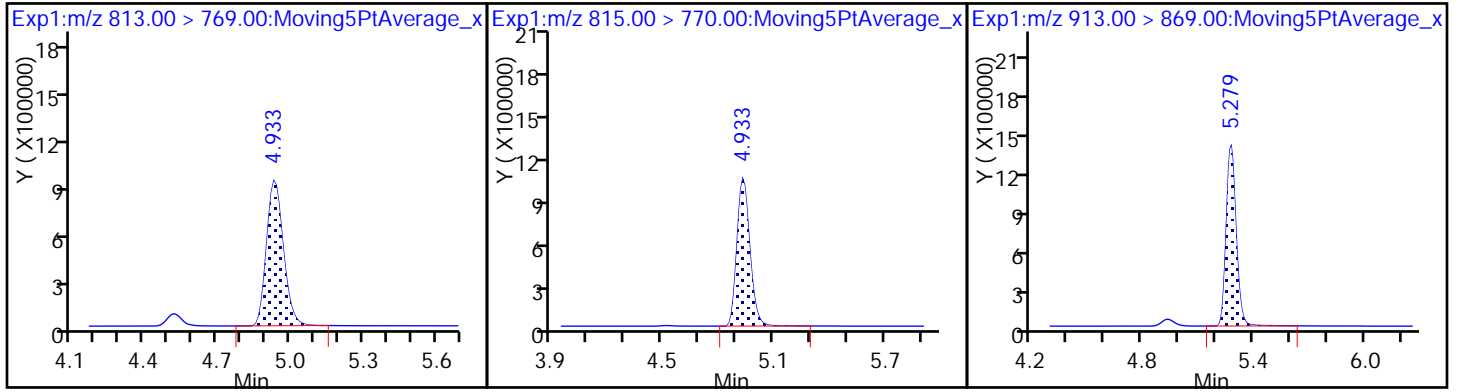
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCVL 320-171592/1 Calibration Date: 06/28/2017 21:43  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28A\_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9075		0.998	0.990	0.8	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.027		0.988	0.990	-0.3	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.562		0.980	0.875	12.0	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.006		0.980	0.990	-1.0	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.037		0.961	0.990	-2.9	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.209		0.986	0.901	9.4	50.0
6:2FTS	AveID	0.9859	0.9751		0.928	0.939	-1.1	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.064		0.993	0.990	0.3	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.117		0.915	0.943	-2.9	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.016		0.890	0.919	-3.1	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	0.9633		0.961	0.990	-2.9	50.0
8:2FTS	AveID	0.999	1.005		0.955	0.949	0.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9596		0.985	0.990	-0.5	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.012		1.03	0.990	3.9	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.007		0.957	0.990	-3.4	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6112		0.915	0.954	-4.1	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.8989		0.913	0.990	-7.8	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.046		0.973	0.990	-1.7	50.0
MeFOSA	AveID	0.9522	0.8837		0.919	0.990	-7.2	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9894		1.03	0.990	3.9	50.0
N-EtFOSA-M	AveID	0.999	0.9739		0.966	0.990	-2.5	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9431		0.962	0.990	-2.8	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.298		0.975	0.990	-1.5	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.548		0.831	0.990	-16.1	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	0.9395		0.863	0.990	-12.9	50.0
13C4 PFBA	Ave	233991	296105		62.6	49.5	26.5	50.0
13C5-PFPeA	Ave	160811	217861		67.1	49.5	35.5	50.0
13C2 PFHxA	Ave	153401	198689		64.1	49.5	29.5	50.0
13C4-PFHpA	Ave	136899	184167		66.6	49.5	34.5	50.0
18O2 PFHxS	Ave	212697	249993		55.0	46.8	17.5	50.0
M2-6:2FTS	Ave	72814	83016		53.6	47.0	14.0	50.0



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCVL 320-171592/1 Calibration Date: 06/28/2017 21:43  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28A\_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	163737		62.1	49.5	25.4	50.0
13C4 PFOS	Ave	162716	187811		54.6	47.3	15.4	50.0
13C5 PFNA	Ave	104991	130466		61.5	49.5	24.3	50.0
M2-8:2FTS	Ave	56620	60505		50.7	47.4	6.9	50.0
13C2 PFDA	Ave	100020	110335		54.6	49.5	10.3	50.0
13C8 FOSA	Ave	263963	297638		55.8	49.5	12.8	50.0
d3-NMeFOSAA	Ave	37033	41862		56.0	49.5	13.0	50.0
d5-NEtFOSAA	Ave	36944	42035		56.3	49.5	13.8	50.0
13C2 PFUnA	Ave	74302	87554		58.3	49.5	17.8	50.0
d-N-MeFOSA-M	Ave	74603	82093		54.5	49.5	10.0	50.0
13C2 PFDoA	Ave	73421	78400		52.9	49.5	6.8	50.0
d-N-EtFOSA-M	Ave	73544	76325		51.4	49.5	3.8	50.0
13C2-PFTeDA	Ave	151466	147221		48.1	49.5	-2.8	50.0
13C2-PFHxDA	Ave	83886	82657		48.8	49.5	-1.5	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44857.b\2017.06.28A\_003.d  
 Lims ID: CCVL 2  
 Client ID:  
 Sample Type: CCVL  
 Inject. Date: 28-Jun-2017 21:43:17 ALS Bottle#: 29 Worklist Smp#: 1  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCVL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44857.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 10:22:38 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 09:18:24

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90	> 169.00	1.535	1.533	0.002	1.000	266043	1.00	101	122
D 1 13C4 PFBA	217.00	> 172.00	1.535	1.533	0.002		14658645	62.6	127	215717
4 Perfluoropentanoic acid	262.90	> 219.00	1.735	1.742	-0.007	1.000	221472	0.9876	99.7	109
D 3 13C5-PFPeA	267.90	> 223.00	1.735	1.742	-0.007		10785176	67.1	135	21877
5 Perfluorobutanesulfonic acid	298.90	> 80.00	1.762	1.760	0.002	1.000	341665	0.9804	112	216
	298.90	> 99.00	1.762	1.760	0.002	1.000	135102	2.53(0.00-0.00)		206
D 47 13C3-PFBS	301.90	> 83.00	1.753	1.760	-0.007		268022	NC		7862
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00	> 307.00	1.948	1.958	-0.010	1.000	80469	1.02	110	3288
D 7 13C2 PFHxA	315.00	> 270.00	1.982	1.992	-0.010		9836069	64.1	130	85234
6 Perfluorohexanoic acid	313.00	> 269.00	1.982	2.003	-0.021	1.000	197858	0.9800	99.0	466
10 Perfluoroheptanoic acid	363.00	> 319.00	2.294	2.312	-0.018	1.000	189011	0.9610	97.1	254
D 9 13C4-PFHpA	367.00	> 322.00	2.294	2.312	-0.018		9117167	66.6	135	21066
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.310	2.329	-0.019	1.000	272249	0.9858	109	265
D 11 18O2 PFHxS	403.00	> 84.00	2.310	2.329	-0.019		11707573	55.0	118	42690

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.616	2.634	-0.018	1.000	75977	0.9283	98.9	1734
D 12 M2-6:2FTS	429.00	> 409.00	2.616	2.634	-0.018		3904199	53.6	114	15154
* 62 13C2-PFOA	415.00	> 370.00	2.638	2.656	-0.018		8533043	49.5	100	27343
15 Perfluorooctanoic acid	413.00	> 369.00	2.638	2.663	-0.025	1.000	172445	0.99	100	34.9
	413.00	> 169.00	2.638	2.663	-0.025	1.000	102165	1.69(0.90-1.10)		540
D 14 13C4 PFOA	417.00	> 372.00	2.638	2.663	-0.025		8105808	62.1	125	23433
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.645	2.671	-0.026	1.000	197672	0.9148	97.1	3543
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.003	3.026	-0.023	1.000	175357	0.8901	96.9	1129
	499.00	> 99.00	3.003	3.026	-0.023	1.000	37472	4.68(0.90-1.10)		417
D 18 13C4 PFOS	503.00	> 80.00	3.003	3.026	-0.023		8888482	54.6	115	18538
D 19 13C5 PFNA	468.00	> 423.00	3.003	3.026	-0.023		6458720	61.5	124	11031
20 Perfluorononanoic acid	463.00	> 419.00	3.011	3.026	-0.015	1.000	124430	0.9614	97.1	351
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.370	3.379	-0.009	1.000	298156	1.03	104	4343
D 21 13C8 FOSA	506.00	> 78.00	3.370	3.379	-0.009		14734567	55.8	113	37795
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.352	3.379	-0.027	1.000	57692	0.9548	101	1717
D 26 M2-8:2FTS	529.00	> 509.00	3.352	3.379	-0.027		2869487	50.7	107	12308
D 23 13C2 PFDA	515.00	> 470.00	3.361	3.388	-0.027		5462116	54.6	110	28767
24 Perfluorodecanoic acid	513.00	> 469.00	3.361	3.388	-0.027	1.000	104832	0.9847	99.5	559
D 27 d3-NMeFOSAA	573.00	> 419.00	3.517	3.542	-0.025		2072370	56.0	113	17131
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.517	3.542	-0.025	1.000	41751	0.9567	96.6	229
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.671	3.700	-0.029	1.000	109564	0.9149	95.9	3427
D 32 d5-NEtFOSAA	589.00	> 419.00	3.681	3.710	-0.029		2080933	56.3	114	5346
D 30 13C2 PFUnA	565.00	> 520.00	3.691	3.710	-0.019		4334361	58.3	118	20842
31 Perfluoroundecanoic acid	563.00	> 519.00	3.691	3.710	-0.019	1.000	90663	0.9731	98.3	200
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.691	3.720	-0.029	1.003	37409	0.9131	92.2	804

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.880	3.889	-0.009	4064033	54.5	110	974	
35 MeFOSA	512.00	> 169.00	3.880	3.889	-0.009	1.000	71827	0.9189	92.8	2276
D 36 13C2 PFDaA	615.00	> 570.00	3.980	4.008	-0.028	3881174	52.9	107	11843	
37 Perfluorododecanoic acid	613.00	> 569.00	3.980	4.008	-0.028	1.000	76798	1.03	104	86.8
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.066	4.078	-0.012	3778472	51.4	104	6635	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.076	4.078	-0.002	1.000	73596	0.9657	97.5	2050
41 Perfluorotridecanoic acid	663.00	> 619.00	4.245	4.273	-0.028	1.000	73207	0.9621	97.2	17.6
D 43 13C2-PFTeDA	715.00	> 670.00	4.479	4.510	-0.031	7288165	48.1	97.2	43672	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.479	4.510	-0.031	1.000	178356	0.9751	98.5	95.9
	713.00	> 169.00	4.470	4.510	-0.040	0.998	21736	8.21(0.00-0.00)		878
D 44 13C2-PFHxDA	815.00	> 770.00	4.888	4.922	-0.034	4091920	48.8	98.5	5846	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.888	4.922	-0.034	1.000	120191	0.8307	83.9	15.7
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.219	5.265	-0.046	1.000	72927	0.8629	87.1	23.1

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L2\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44857.b\2017.06.28A\_003.d

Injection Date: 28-Jun-2017 21:43:17

Instrument ID: A8\_N

Lims ID: CCVL 2

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 29

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

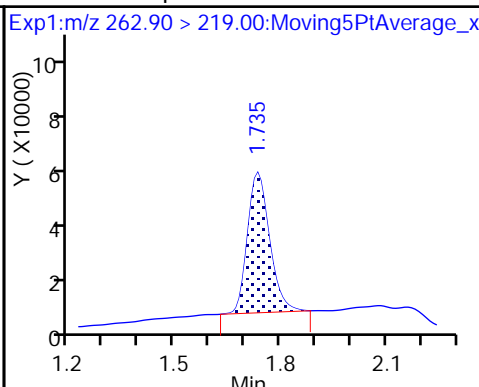
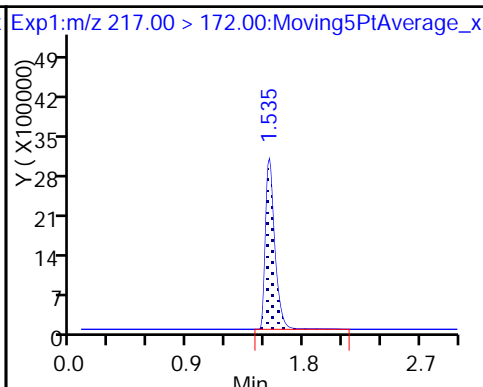
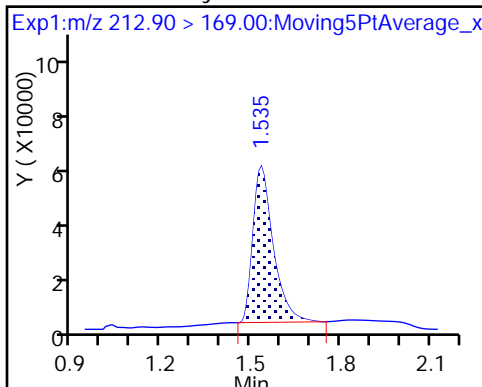
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

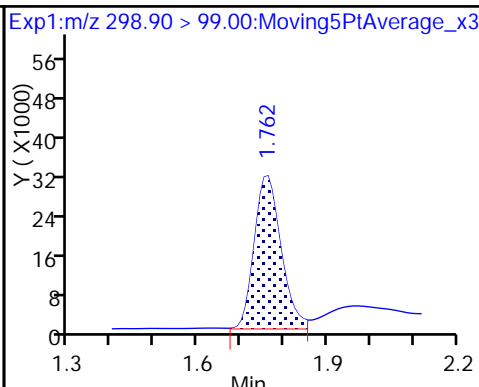
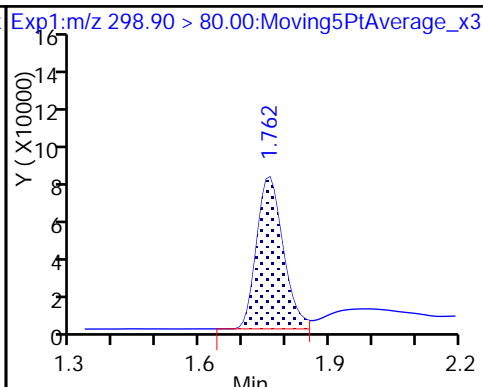
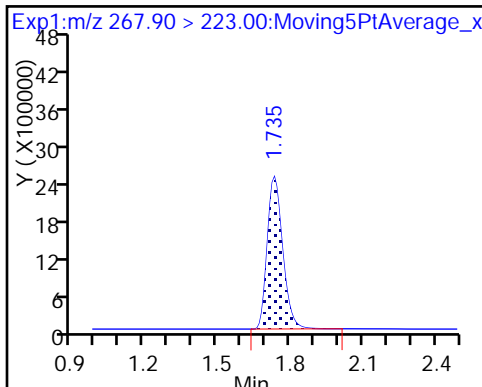
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

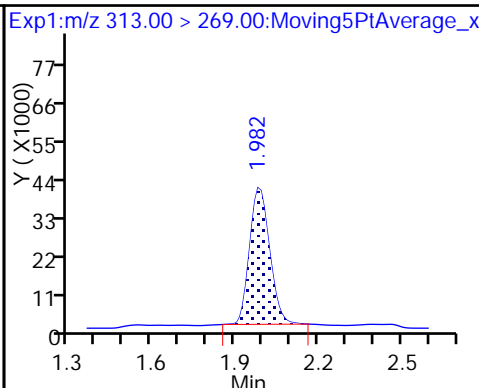
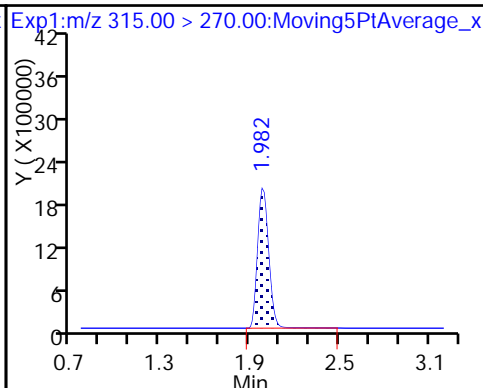
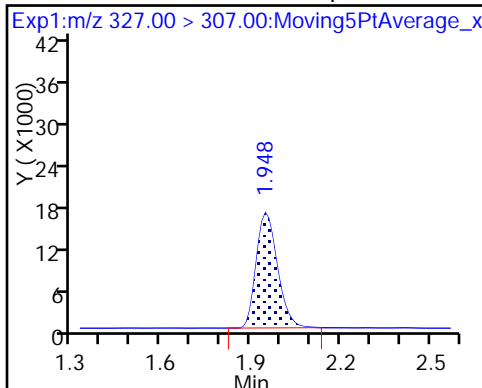
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

De 7 13C2 PFHxA

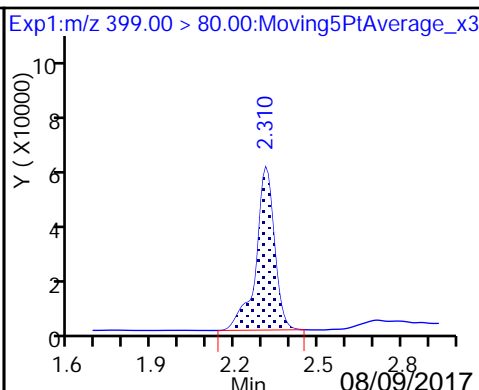
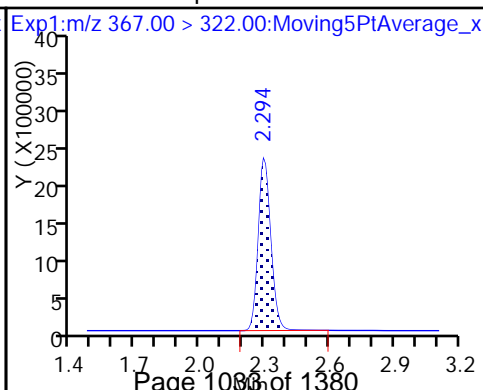
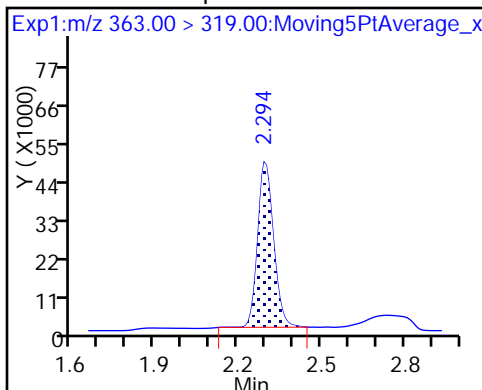
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

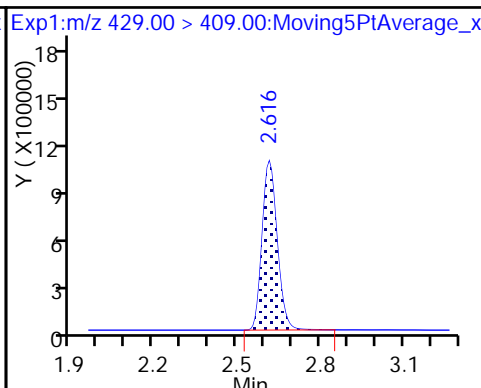
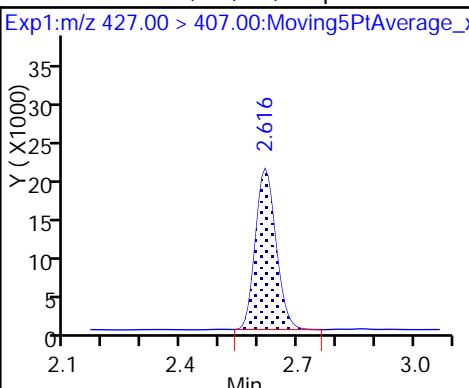
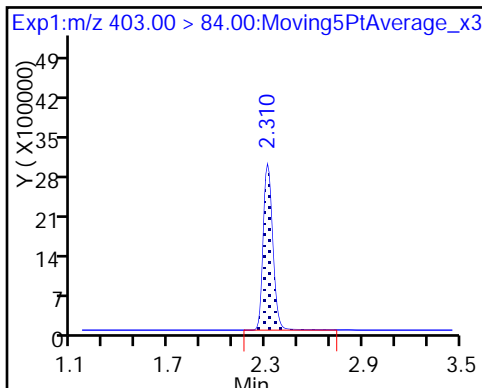
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

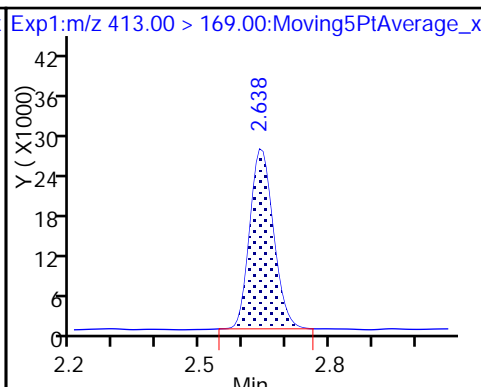
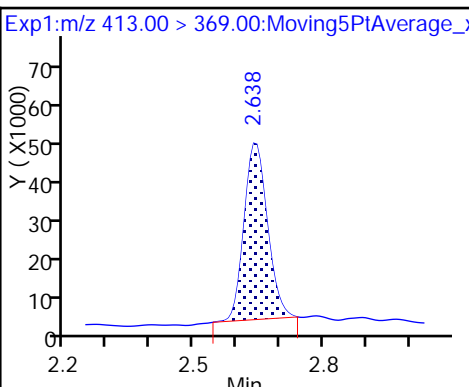
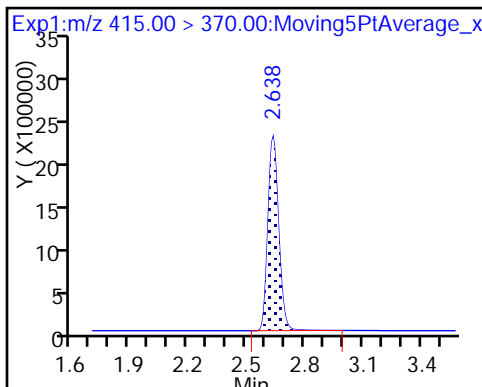
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

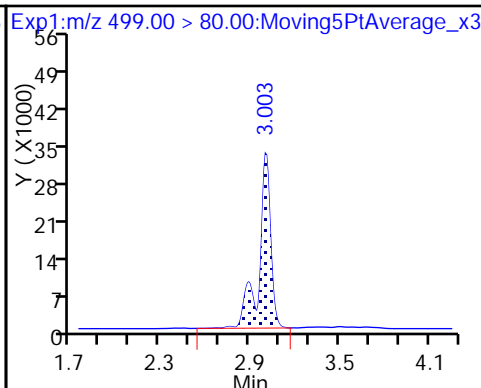
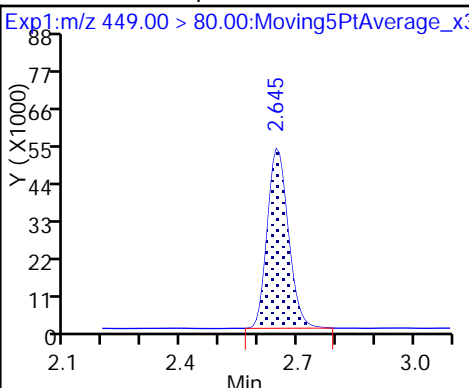
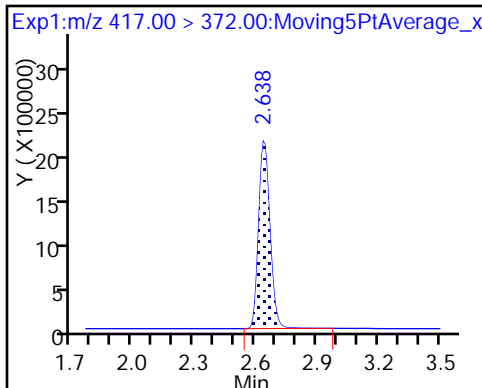
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

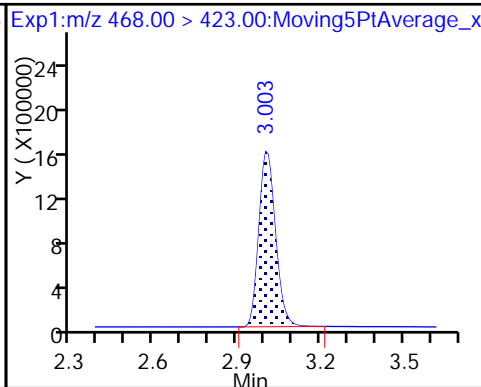
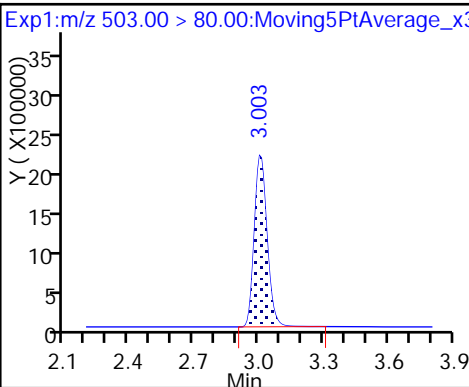
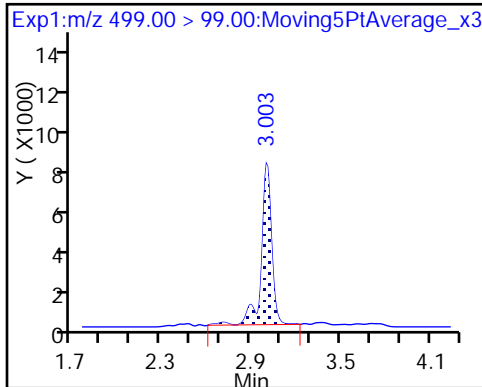
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

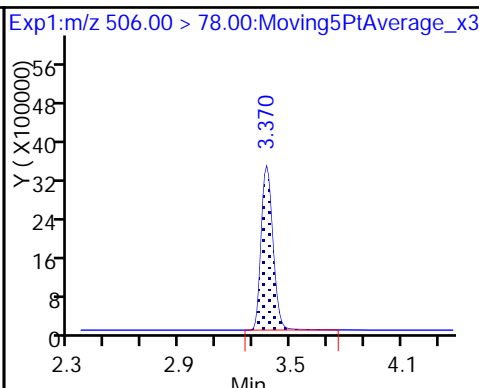
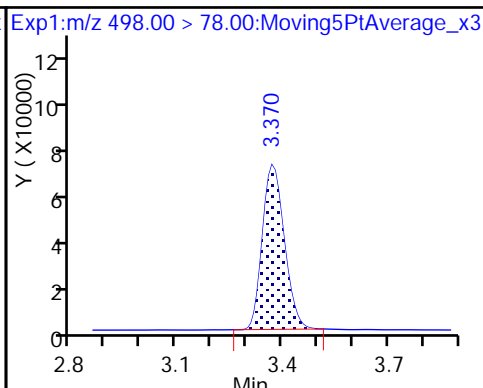
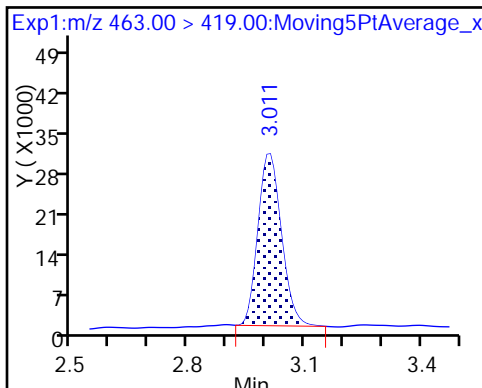
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

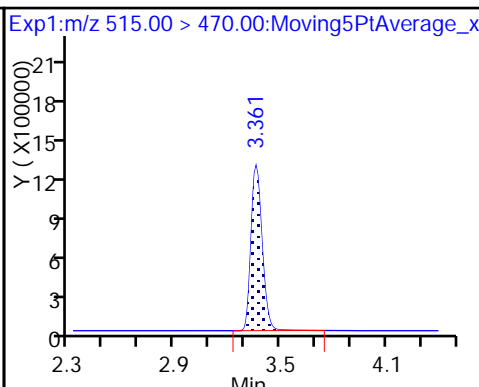
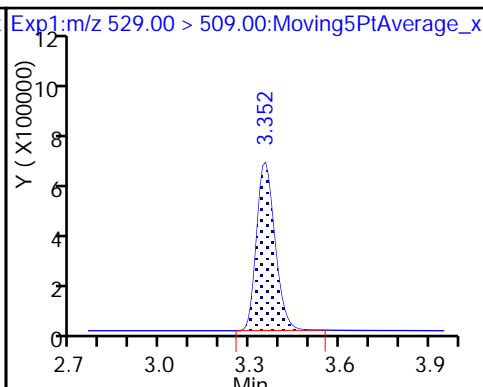
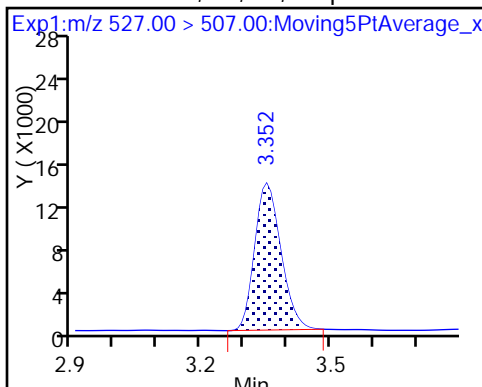
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

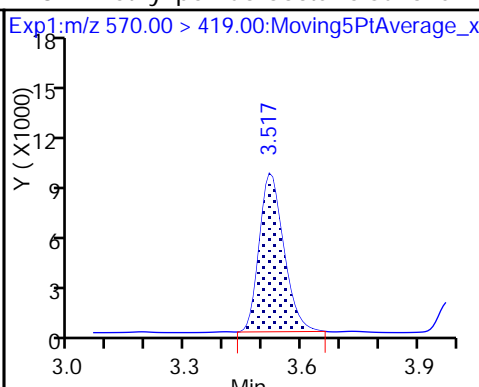
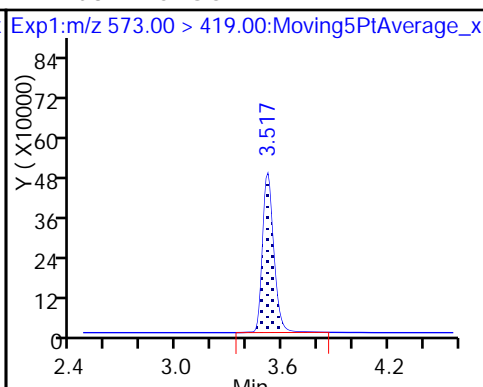
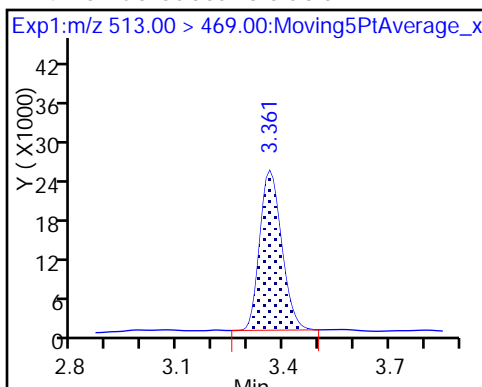
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

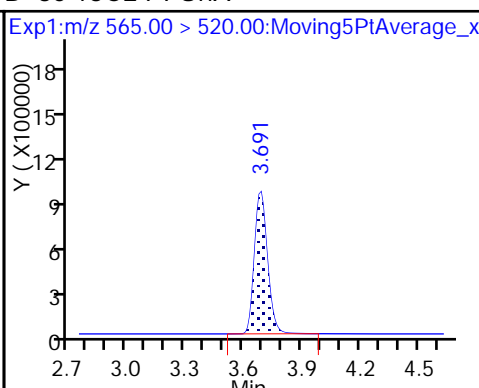
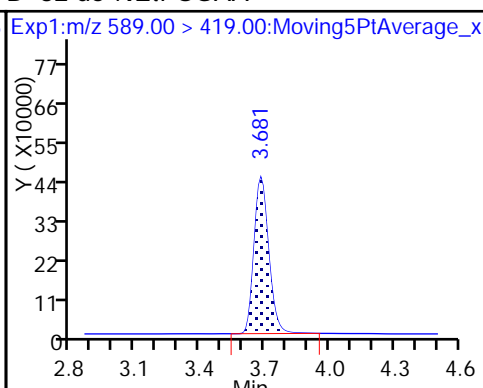
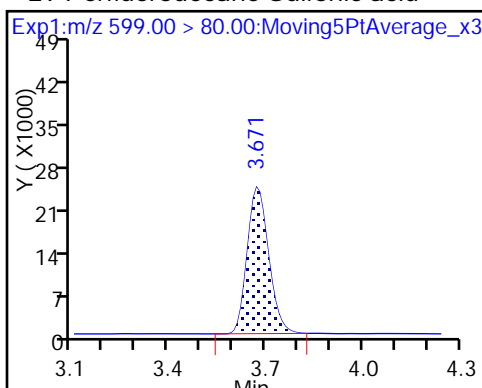
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

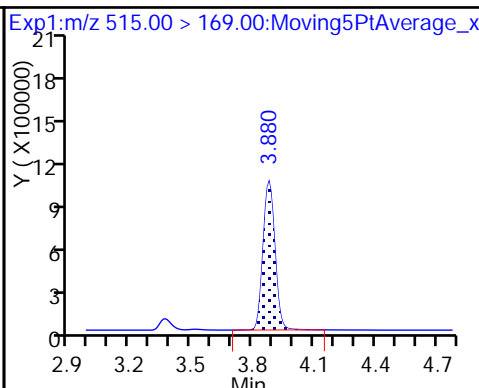
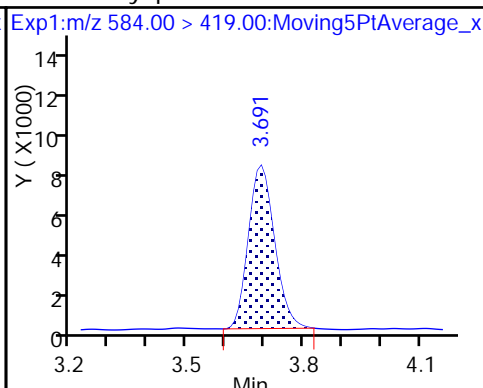
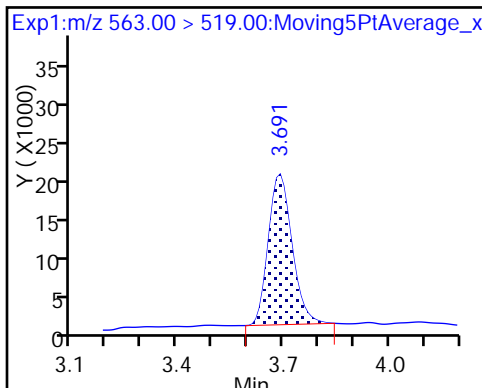
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

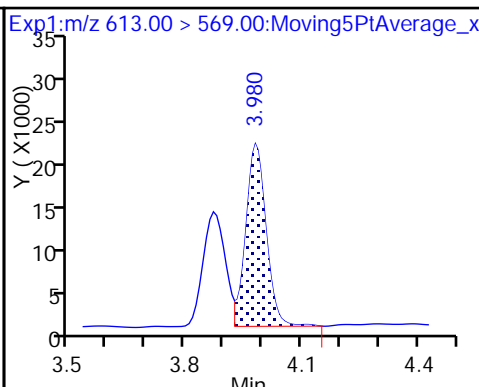
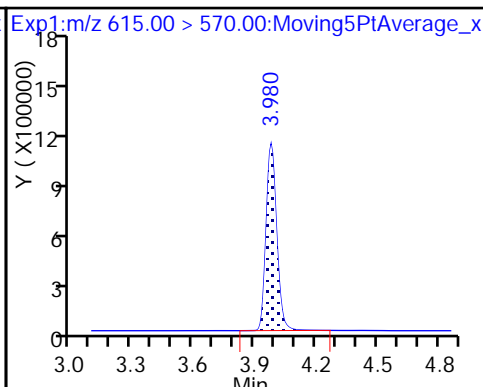
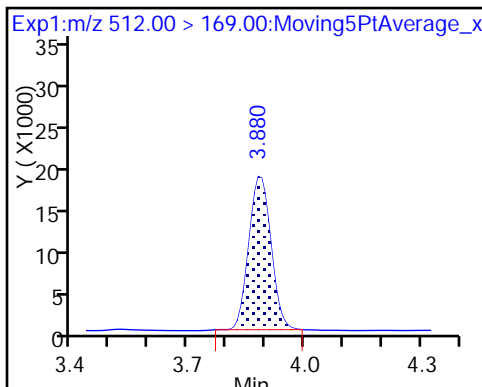
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

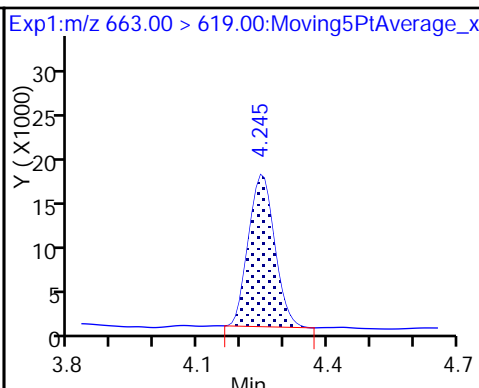
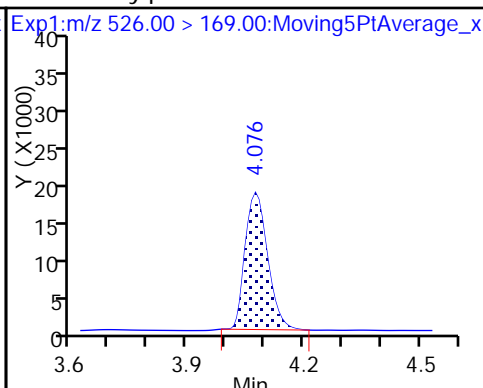
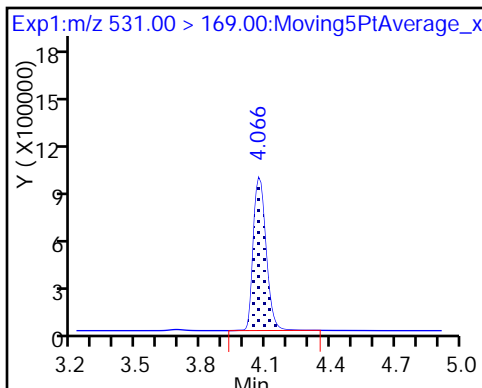
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

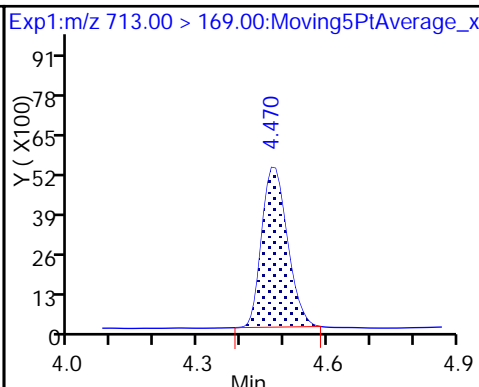
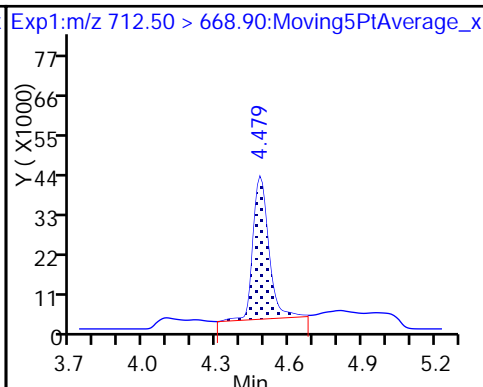
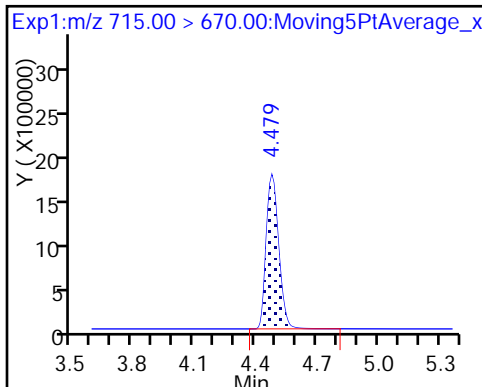
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

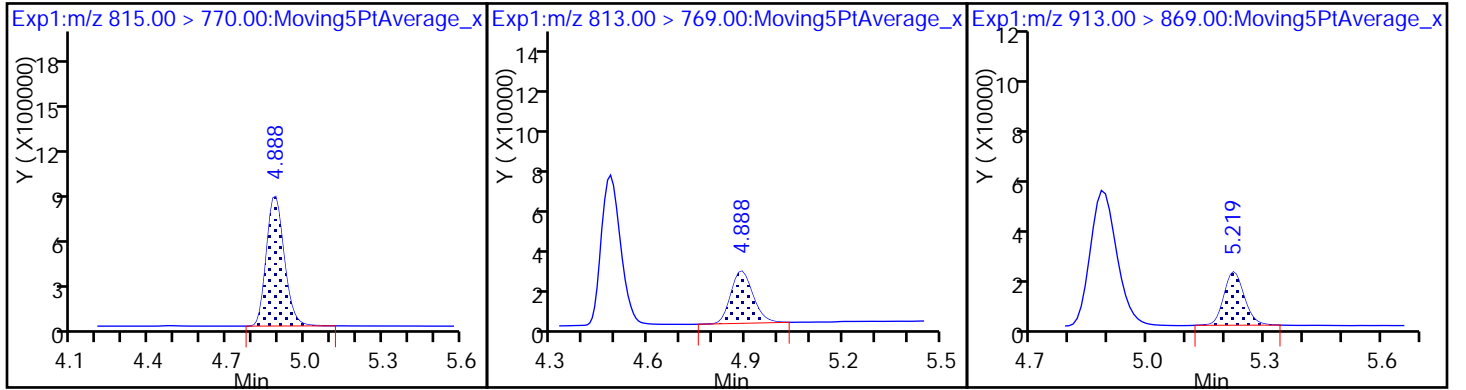




D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/1 Calibration Date: 06/28/2017 23:19  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9253		20.3	19.8	2.7	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.055		20.3	19.8	2.4	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.511		19.0	17.5	8.4	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.028		20.0	19.8	1.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.080		20.0	19.8	1.1	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.044		17.0	18.0	-5.5	25.0
6:2FTS	AveID	0.9859	0.999		19.0	18.8	1.3	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.095		20.4	19.8	3.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.190		19.5	18.9	3.4	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	1.028		20.5	19.8	3.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.064		18.6	18.4	1.5	25.0
8:2FTS	AveID	0.999	1.025		19.5	19.0	2.6	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9315		19.1	19.8	-3.5	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	0.9794		19.9	19.8	0.6	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.108		21.0	19.8	6.3	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6299		18.9	19.1	-1.2	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.9928		20.2	19.8	1.9	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.046		19.5	19.8	-1.7	25.0
MeFOSA	AveID	0.9522	0.9878		20.5	19.8	3.7	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9654		20.1	19.8	1.4	25.0
N-EtFOSA-M	AveID	0.999	1.034		20.5	19.8	3.5	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9721		19.8	19.8	0.2	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.038		17.3	19.8	-12.7	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8945		17.0	19.8	-14.4	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	0.9089		16.7	19.8	-15.7	25.0
13C4 PFBA	Ave	233991	281491		59.6	49.5	20.3	50.0
13C5-PFPeA	Ave	160811	197160		60.7	49.5	22.6	50.0
13C2 PFHxA	Ave	153401	190987		61.6	49.5	24.5	50.0
13C4-PFHpA	Ave	136899	168951		61.1	49.5	23.4	50.0
18O2 PFHxS	Ave	212697	253312		55.8	46.8	19.1	50.0
M2-6:2FTS	Ave	72814	80667		52.1	47.0	10.8	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/1 Calibration Date: 06/28/2017 23:19  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	147831		56.1	49.5	13.2	50.0
13C4 PFOS	Ave	162716	179484		52.2	47.3	10.3	50.0
13C5 PFNA	Ave	104991	118531		55.9	49.5	12.9	50.0
M2-8:2FTS	Ave	56620	59252		49.6	47.4	4.6	50.0
13C2 PFDA	Ave	100020	104718		51.8	49.5	4.7	50.0
13C8 FOSA	Ave	263963	293592		55.1	49.5	11.2	50.0
d3-NMeFOSAA	Ave	37033	38233		51.1	49.5	3.2	50.0
d5-NEtFOSAA	Ave	36944	39444		52.9	49.5	6.8	50.0
13C2 PFUnA	Ave	74302	79616		53.0	49.5	7.2	50.0
d-N-MeFOSA-M	Ave	74603	76475		50.7	49.5	2.5	50.0
13C2 PFDoA	Ave	73421	75730		51.1	49.5	3.1	50.0
d-N-EtFOSA-M	Ave	73544	72983		49.1	49.5	-0.8	50.0
13C2-PFTeDA	Ave	151466	132660		43.4	49.5	-12.4	50.0
13C2-PFHxDA	Ave	83886	75013		44.3	49.5	-10.6	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_001.d  
 Lims ID: CCV L4  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 28-Jun-2017 23:19:53 ALS Bottle#: 31 Worklist Smp#: 1  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L4  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:30 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas

Date: 29-Jun-2017 16:35:29

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.525	1.533	-0.008	1.000	5157773	20.3	103	1693	
D 1 13C4 PFBA	217.00 > 172.00	1.525	1.533	-0.008		13935205	59.6	120	123481	
4 Perfluoropentanoic acid	262.90 > 219.00	1.725	1.742	-0.017	1.000	4117023	20.3	102	1994	
D 3 13C5-PFPeA	267.90 > 223.00	1.725	1.742	-0.017		9760416	60.7	123	21718	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.751	1.760	-0.009	1.000	6701939	19.0	108	3939	
	298.90 > 99.00	1.751	1.760	-0.009	1.000	2860264	2.34(0.00-0.00)		8854	
D 47 13C3-PFBS	301.90 > 83.00	1.742	1.760	-0.018		252584	NC		9746	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.947	1.958	-0.011	1.000	1622074	21.2	114	17508	
D 7 13C2 PFHxA	315.00 > 270.00	1.980	1.992	-0.012		9454801	61.6	125	24350	
6 Perfluorohexanoic acid	313.00 > 269.00	1.980	2.003	-0.023	1.000	3886262	20.0	101	8183	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.290	2.312	-0.022	1.000	3613920	20.0	101	3585	
D 9 13C4-PFHpA	367.00 > 322.00	2.290	2.312	-0.022		8363887	61.1	123	13817	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.307	2.329	-0.022	1.000	4766560	17.0	94.5	2626	
D 11 18O2 PFHxS	403.00 > 84.00	2.307	2.329	-0.022		11863034	55.8	119	38178	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.611	2.634	-0.023	1.000	1512184	19.0	101	17672
D 12 M2-6:2FTS	429.00	> 409.00	2.611	2.634	-0.023		3793743	52.1	111	17080
* 62 13C2-PFOA	415.00	> 370.00	2.633	2.656	-0.023		7903782	49.5	100	20168
15 Perfluorooctanoic acid	413.00	> 369.00	2.640	2.663	-0.023	1.000	3204527	20.4	103	618
	413.00	> 169.00	2.640	2.663	-0.023	1.000	1896961		1.69(0.90-1.10)	5393
D 14 13C4 PFOA	417.00	> 372.00	2.640	2.663	-0.023		7318365	56.1	113	13583
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.648	2.671	-0.023	1.000	4026385	19.5	103	13980
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.005	3.026	-0.021	1.000	3509987	18.6	101	6736
	499.00	> 99.00	3.005	3.026	-0.021	1.000	745641		4.71(0.90-1.10)	5469
D 18 13C4 PFOS	503.00	> 80.00	3.005	3.026	-0.021		8494408	52.2	110	13640
D 19 13C5 PFNA	468.00	> 423.00	3.005	3.026	-0.021		5867860	55.9	113	10488
20 Perfluorononanoic acid	463.00	> 419.00	3.005	3.026	-0.021	1.000	2413441	20.5	104	4803
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.373	3.379	-0.006	1.000	5694034	19.9	101	31797
D 21 13C8 FOSA	506.00	> 78.00	3.364	3.379	-0.015		14534244	55.1	111	221025
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.355	3.379	-0.024	1.000	1151601	19.5	103	10811
D 26 M2-8:2FTS	529.00	> 509.00	3.355	3.379	-0.024		2810053	49.6	105	16472
D 23 13C2 PFDA	515.00	> 470.00	3.364	3.388	-0.024		5184043	51.8	105	25376
24 Perfluorodecanoic acid	513.00	> 469.00	3.364	3.388	-0.024	1.000	1931631	19.1	96.5	6866
D 27 d3-NMeFOSAA	573.00	> 419.00	3.520	3.542	-0.022		1892718	51.1	103	8355
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.528	3.542	-0.014	1.002	838971	21.0	106	3285
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.674	3.700	-0.026	1.000	2158254	18.9	98.8	11642
D 32 d5-NEtFOSAA	589.00	> 419.00	3.684	3.710	-0.026		1952662	52.9	107	4751
D 30 13C2 PFUnA	565.00	> 520.00	3.694	3.710	-0.016		3941385	53.0	107	22929
31 Perfluoroundecanoic acid	563.00	> 519.00	3.694	3.710	-0.016	1.000	1648830	19.5	98.3	3405
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.694	3.720	-0.026	1.003	775425	20.2	102	5896

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.874	3.889	-0.015	3785906	50.7	103	922	
35 MeFOSA	512.00	> 169.00	3.883	3.889	-0.006	1495862	20.5	104	5430	
D 36 13C2 PFDaA	615.00	> 570.00	3.990	4.008	-0.018	3749024	51.1	103	11427	
37 Perfluorododecanoic acid	613.00	> 569.00	3.990	4.008	-0.018	1447709	20.1	101	1839	
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.072	4.078	-0.006	3613025	49.1	99.2	7111	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.072	4.078	-0.006	1494154	20.5	104	4174	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.258	4.273	-0.015	1457751	19.8	100	358	
D 43 13C2-PFTeDA	715.00	> 670.00	4.493	4.510	-0.017	6567320	43.4	87.6	57568	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.493	4.510	-0.017	3056133	17.3	87.3	1881	
	713.00	> 169.00	4.484	4.510	-0.026	387278		7.89(0.00-0.00)	8413	
D 44 13C2-PFHxDA	815.00	> 770.00	4.892	4.922	-0.030	3713519	44.3	89.4	5730	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.903	4.922	-0.019	1341385	17.0	85.6	184	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.238	5.265	-0.027	1363030	16.7	84.3	418	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L4\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_001.d

Injection Date: 28-Jun-2017 23:19:53

Instrument ID: A8\_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

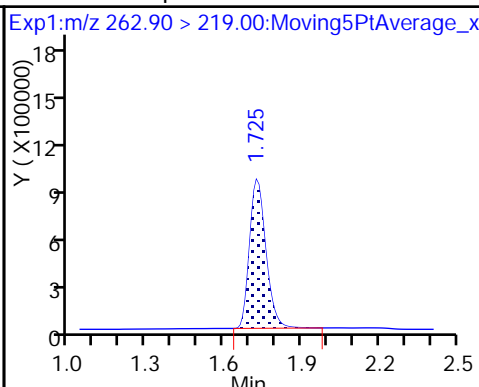
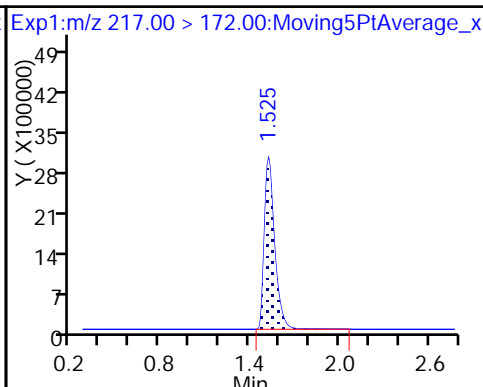
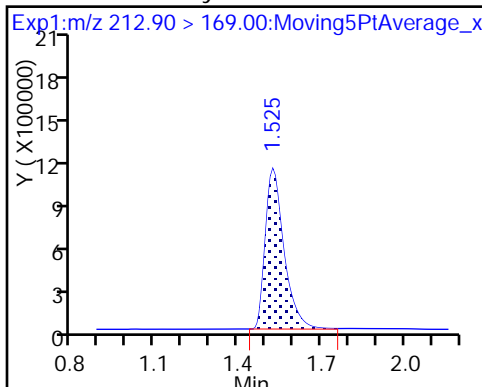
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

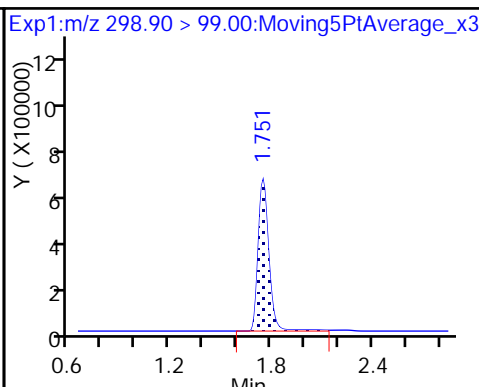
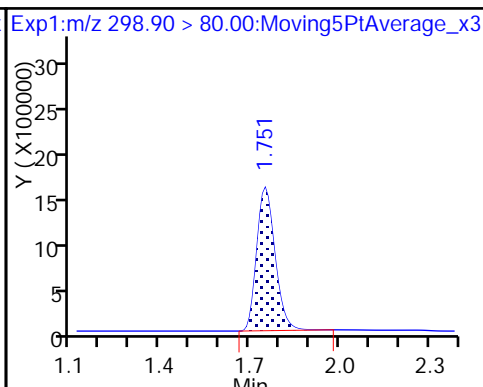
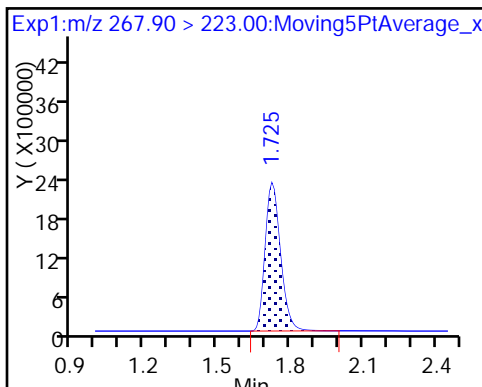
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

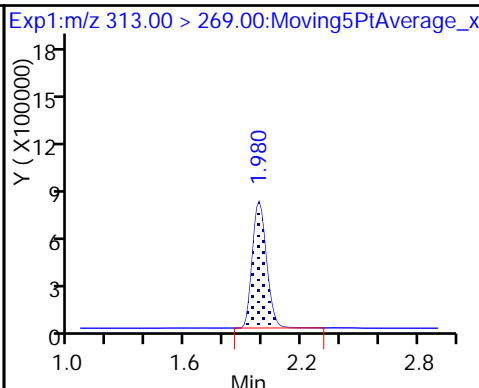
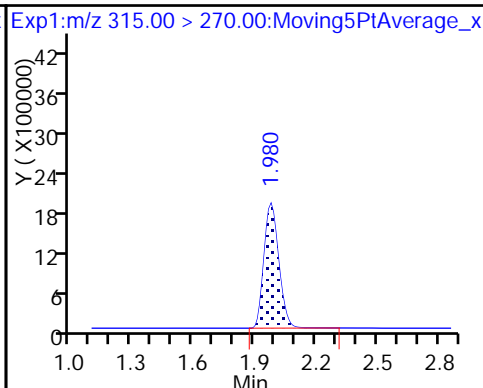
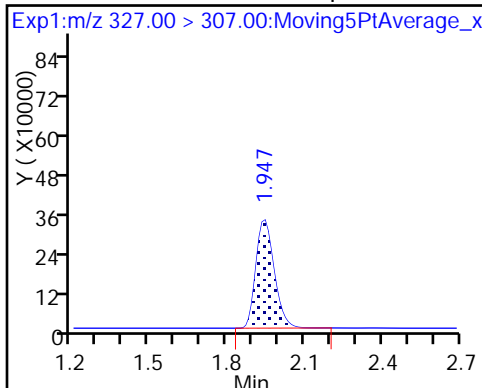
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

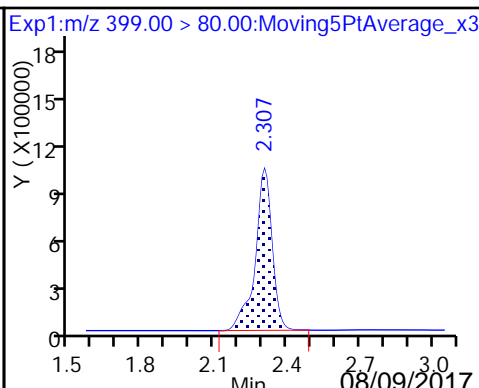
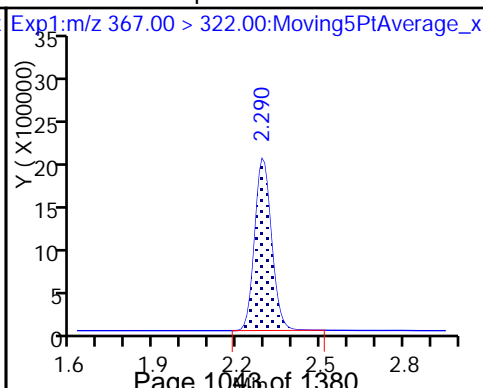
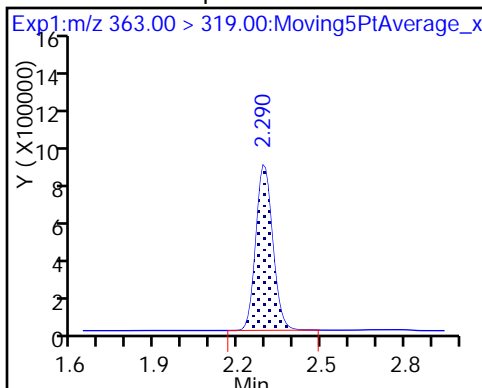
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

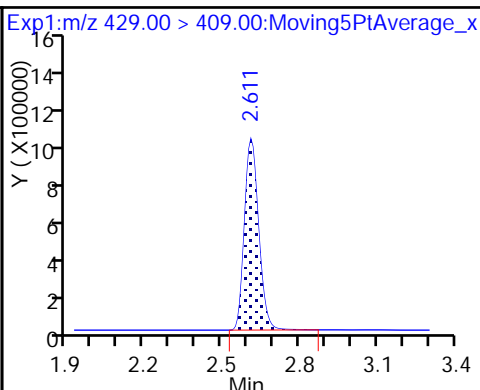
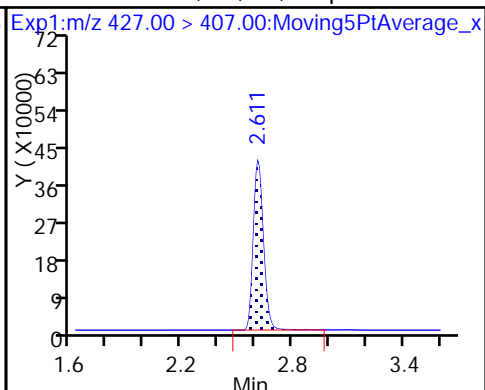
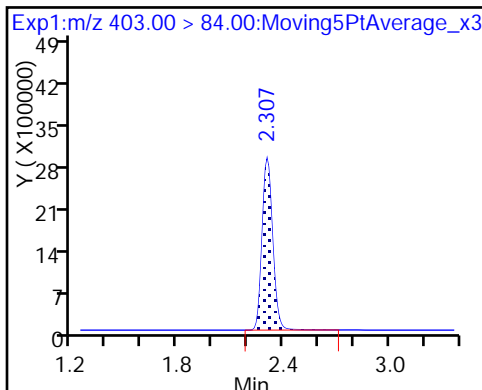
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

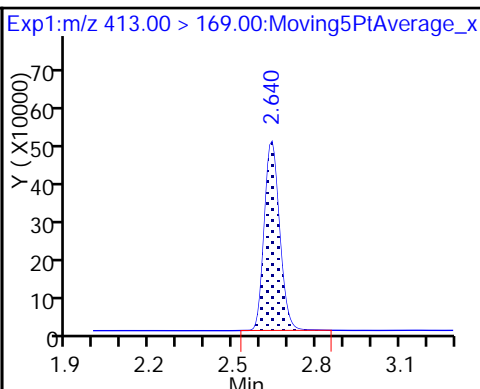
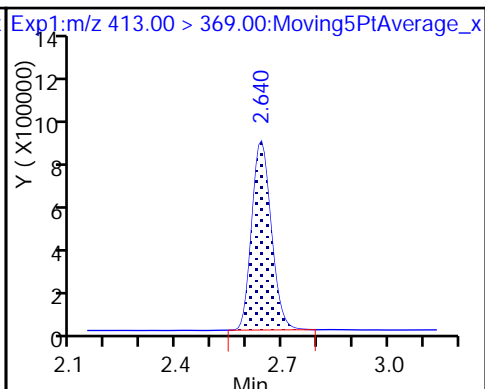
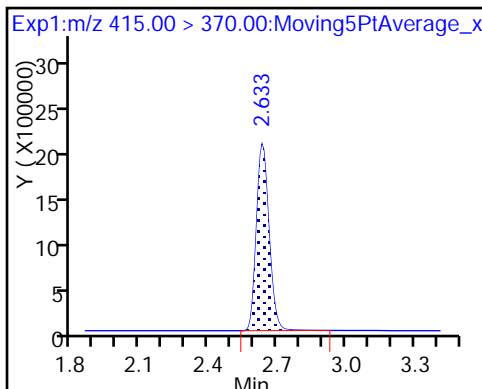
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

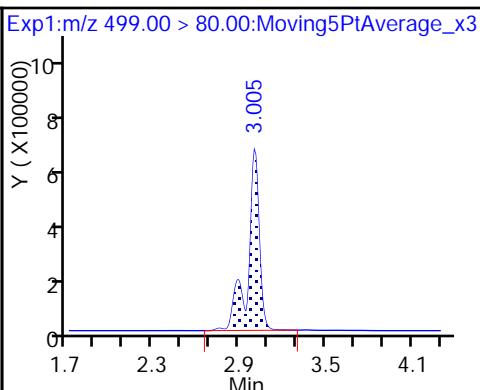
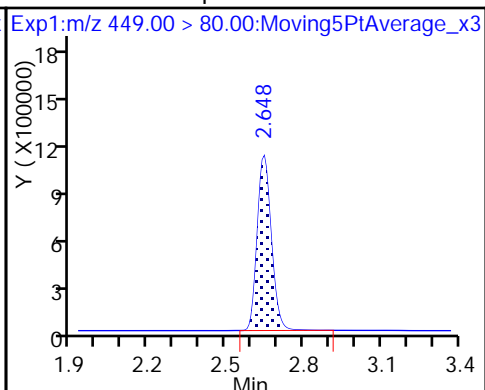
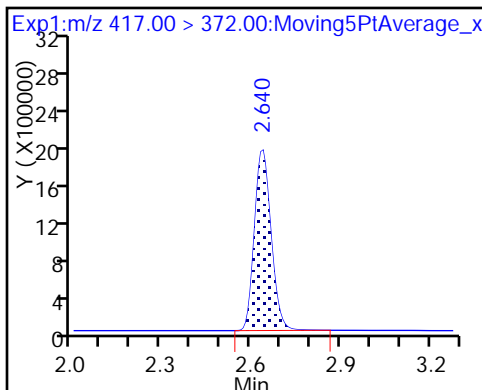
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

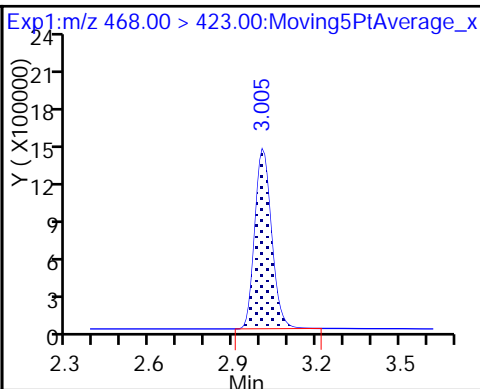
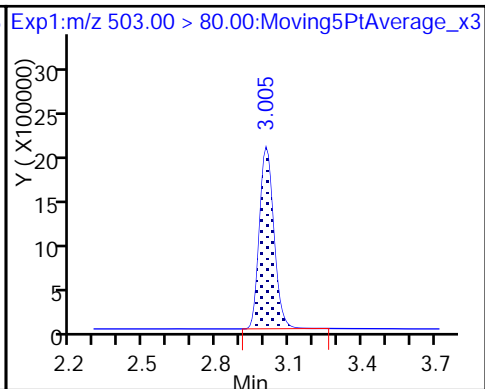
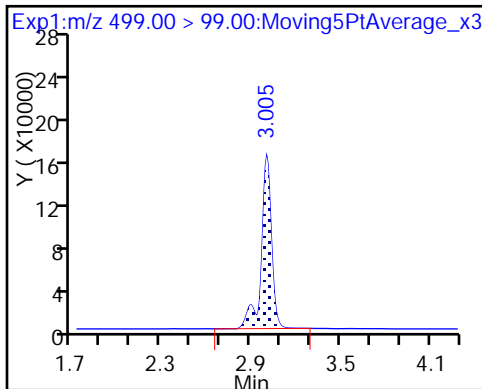
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

D 19 13C5 PFNA

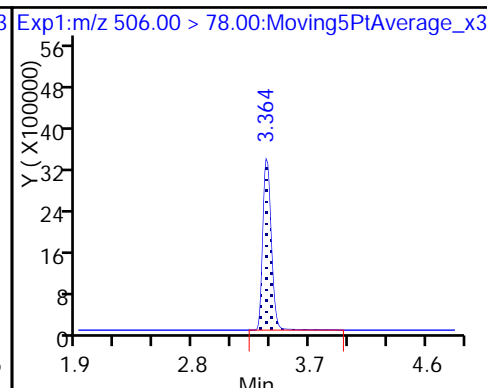
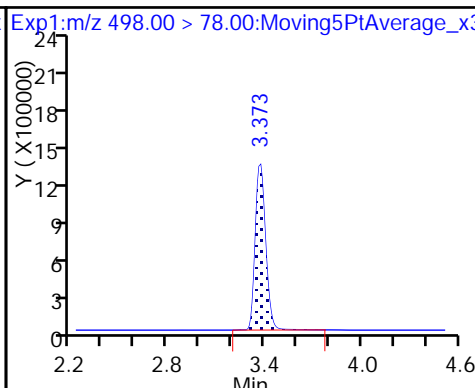
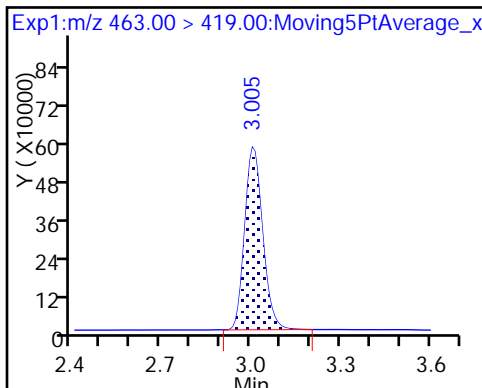




20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

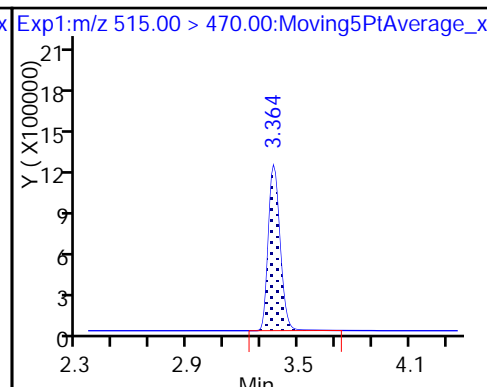
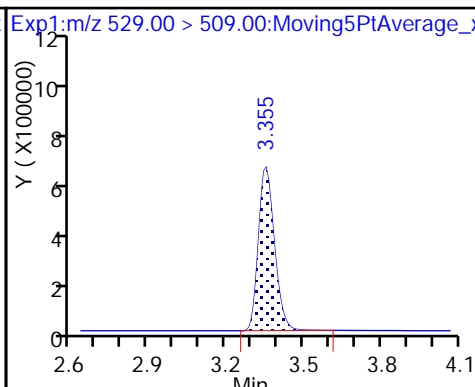
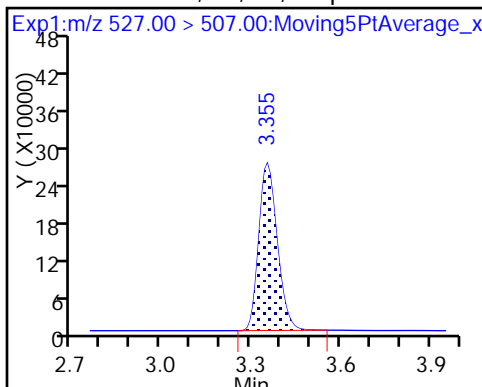
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecanoate

D 26 M2-8:2FTS

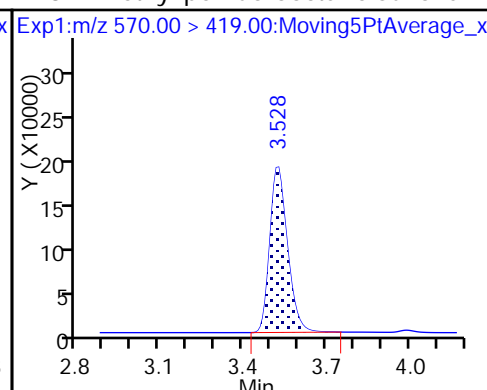
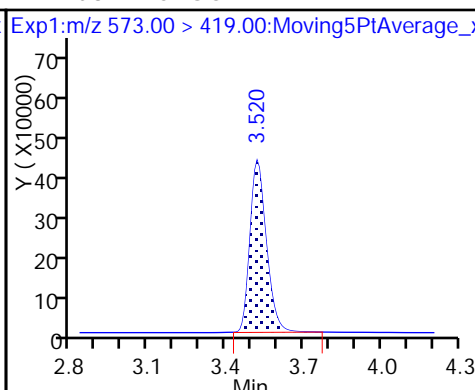
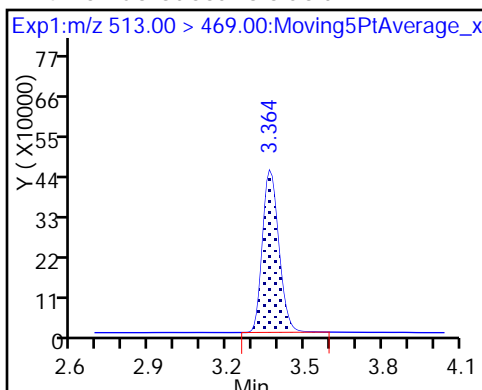
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

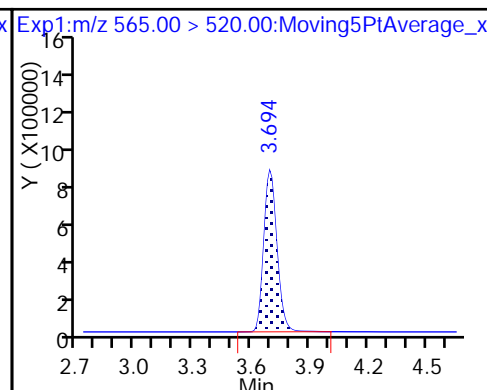
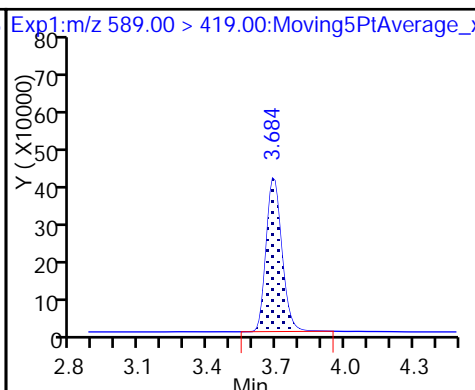
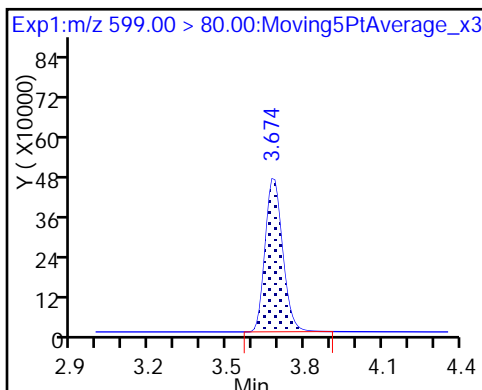
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

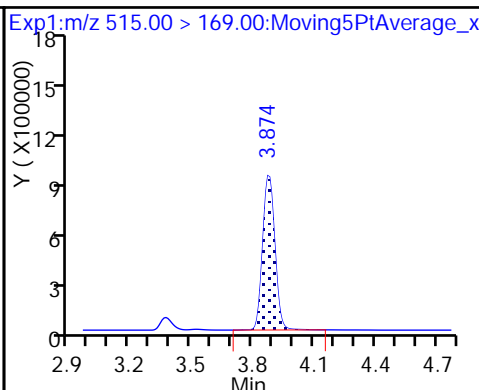
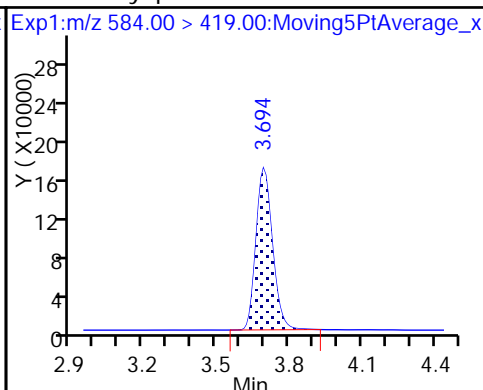
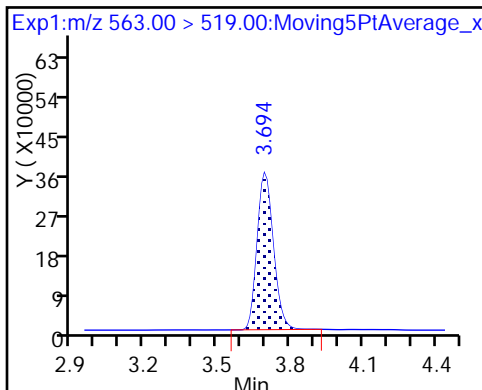
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

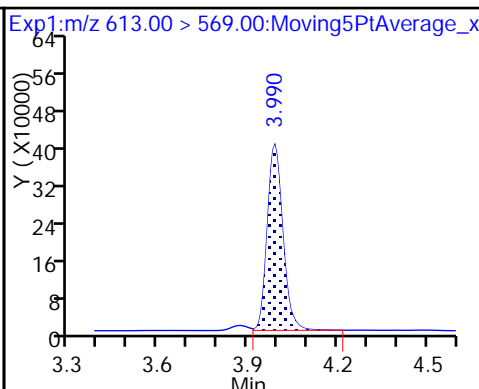
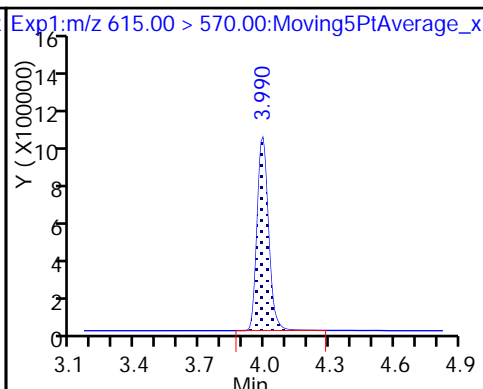
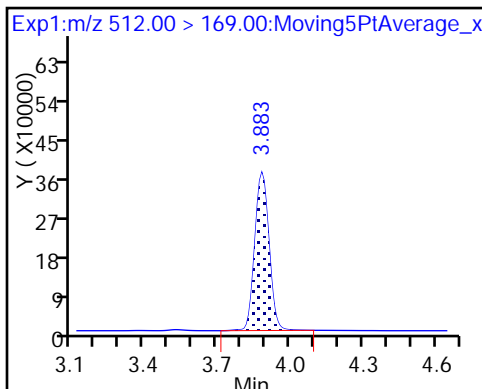
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

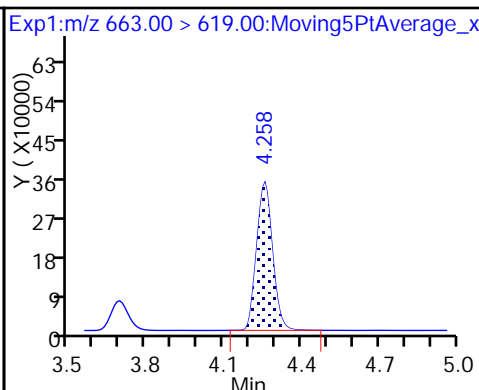
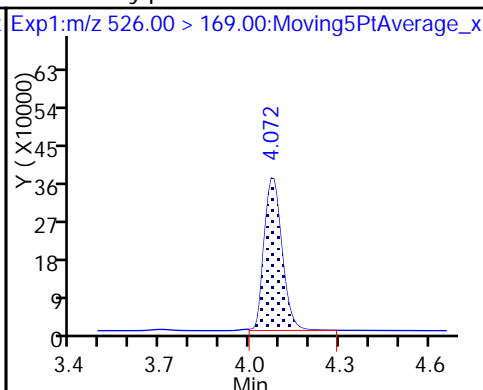
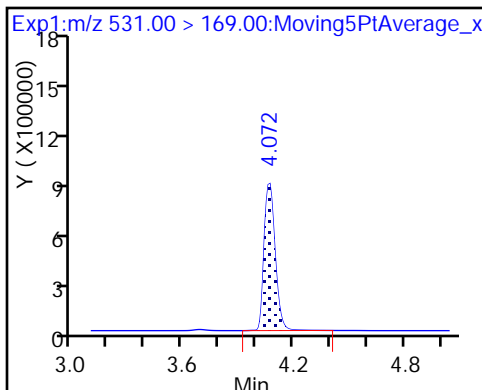
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

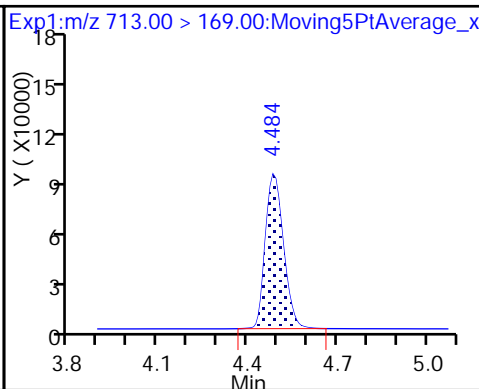
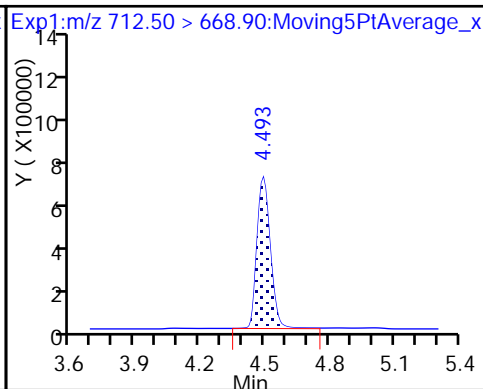
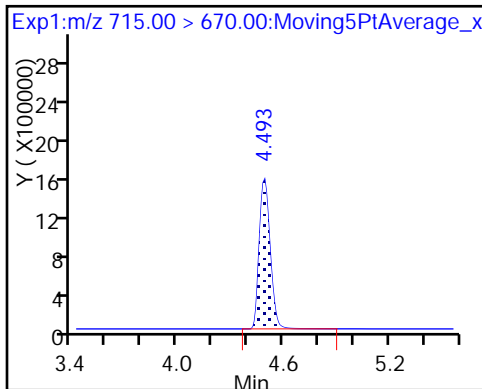
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

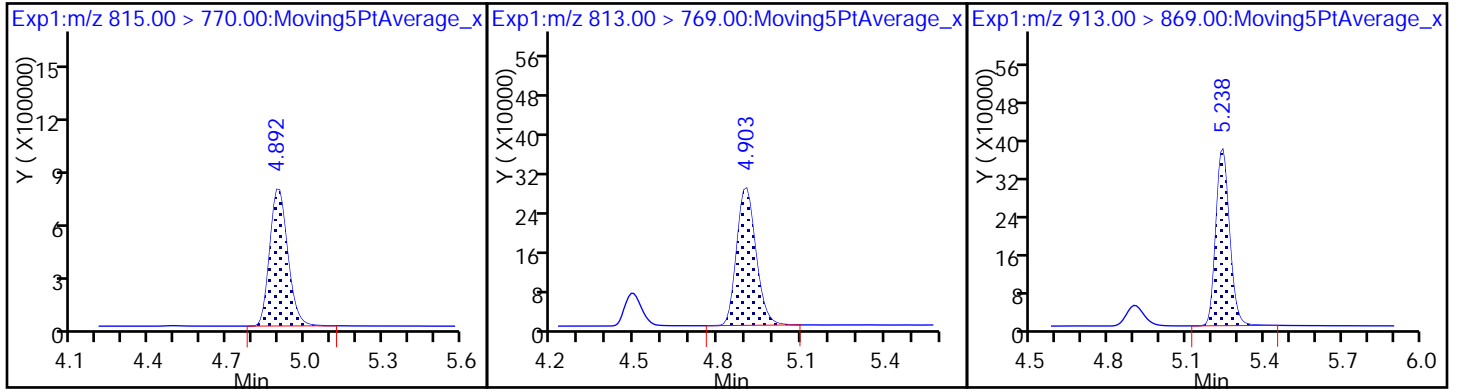
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/13 Calibration Date: 06/29/2017 00:42  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9464		52.0	49.5	5.1	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.057		50.8	49.5	2.7	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.557		48.9	43.8	11.7	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.022		49.8	49.5	0.6	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.055		48.9	49.5	-1.2	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.095		44.6	45.0	-0.9	25.0
6:2FTS	AveID	0.9859	1.013		48.2	46.9	2.7	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.075		50.2	49.5	1.4	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.229		50.3	47.1	6.8	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	1.015		50.7	49.5	2.3	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.099		48.2	45.9	4.8	25.0
8:2FTS	AveID	0.999	1.030		48.9	47.4	3.1	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9823		50.4	49.5	1.8	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.026		52.2	49.5	5.4	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.101		52.3	49.5	5.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6480		48.5	47.7	1.6	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.999		50.8	49.5	2.5	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.053		49.0	49.5	-1.1	25.0
MeFOSA	AveID	0.9522	0.9798		50.9	49.5	2.9	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9941		51.7	49.5	4.4	25.0
N-EtFOSA-M	AveID	0.999	1.045		51.8	49.5	4.6	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9830		50.1	49.5	1.3	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.077		44.1	49.5	-11.0	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8979		43.6	49.5	-12.0	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	0.9503		43.6	49.5	-11.9	25.0
13C4 PFBA	Ave	233991	312686		66.2	49.5	33.6	50.0
13C5-PFPeA	Ave	160811	216079		66.5	49.5	34.4	50.0
13C2 PFHxA	Ave	153401	215804		69.6	49.5	40.7	50.0
13C4-PFHpA	Ave	136899	180917		65.4	49.5	32.2	50.0
18O2 PFHxS	Ave	212697	279190		61.5	46.8	31.3	50.0
M2-6:2FTS	Ave	72814	91436		59.1	47.0	25.6	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/13 Calibration Date: 06/29/2017 00:42  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_013.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	163471		62.0	49.5	25.2	50.0
13C4 PFOS	Ave	162716	213425		62.1	47.3	31.2	50.0
13C5 PFNA	Ave	104991	133847		63.1	49.5	27.5	50.0
M2-8:2FTS	Ave	56620	67153		56.2	47.4	18.6	50.0
13C2 PFDA	Ave	100020	112962		55.9	49.5	12.9	50.0
13C8 FOSA	Ave	263963	316494		59.4	49.5	19.9	50.0
d3-NMeFOSAA	Ave	37033	47804		63.9	49.5	29.1	50.0
13C2 PFUnA	Ave	74302	88137		58.7	49.5	18.6	50.0
d5-NEtFOSAA	Ave	36944	45685		61.2	49.5	23.7	50.0
d-N-MeFOSA-M	Ave	74603	92163		61.2	49.5	23.5	50.0
13C2 PFDoA	Ave	73421	87242		58.8	49.5	18.8	50.0
d-N-EtFOSA-M	Ave	73544	86894		58.5	49.5	18.2	50.0
13C2-PFTeDA	Ave	151466	155851		50.9	49.5	2.9	50.0
13C2-PFHxDA	Ave	83886	88189		52.0	49.5	5.1	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_013.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 29-Jun-2017 00:42:42 ALS Bottle#: 32 Worklist Smp#: 13  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:01 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK005

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.535	1.533	0.002	1.000	14649223	52.0	105	4692	
D 1 13C4 PFBA	217.00 > 172.00	1.535	1.533	0.002		15479505	66.2	134	56665	
4 Perfluoropentanoic acid	262.90 > 219.00	1.735	1.742	-0.007	1.000	11304555	50.8	103	4511	
D 3 13C5-PFPeA	267.90 > 223.00	1.735	1.742	-0.007		10696976	66.5	134	20815	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.762	1.760	0.002	1.000	19025961	48.9	112	20060	
	298.90 > 99.00	1.762	1.760	0.002	1.000	8128128	2.34(0.00-0.00)		23617	
D 47 13C3-PFBS	301.90 > 83.00	1.753	1.760	-0.007		298873	NC		7733	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.948	1.958	-0.010	1.000	4239016	48.8	106	122059	
D 7 13C2 PFHxA	315.00 > 270.00	1.993	1.992	0.001		10683368	69.6	141	21853	
6 Perfluorohexanoic acid	313.00 > 269.00	1.993	2.003	-0.010	1.000	10916376	49.8	101	8229	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.297	2.312	-0.015	1.000	9446560	48.9	98.8	6537	
D 9 13C4-PFHpA	367.00 > 322.00	2.297	2.312	-0.015		8956298	65.4	132	23136	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.316	2.329	-0.013	1.000	13768377	44.6	99.1	4902	
D 11 18O2 PFHxS	403.00 > 84.00	2.316	2.329	-0.013		13074948	61.5	131	40478	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.618	2.634	-0.016	1.000	4345807	48.2	103	32013	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.618	2.634	-0.016	4300194	59.1	126	16655	
* 62 13C2-PFOA	415.00	> 370.00	2.639	2.656	-0.017	8580381	49.5	100	14956	
15 Perfluorooctanoic acid	413.00	> 369.00	2.647	2.663	-0.016	1.000	8702772	50.2	101	1364
	413.00	> 169.00	2.647	2.663	-0.016	1.000	5250086	1.66(0.90-1.10)		6300
D 14 13C4 PFOA	417.00	> 372.00	2.647	2.663	-0.016	8092648	62.0	125	13504	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.654	2.671	-0.017	1.000	12361644	50.3	107	25472
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.013	3.026	-0.013	1.000	10779654	48.2	105	30688
	499.00	> 99.00	3.013	3.026	-0.013	1.000	2251224	4.79(0.90-1.10)		7462
D 18 13C4 PFOS	503.00	> 80.00	3.013	3.026	-0.013	10100697	62.1	131	12017	
D 19 13C5 PFNA	468.00	> 423.00	3.013	3.026	-0.013	6626096	63.1	127	10293	
20 Perfluorononanoic acid	463.00	> 419.00	3.013	3.026	-0.013	1.000	6727023	50.7	102	10711
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.373	3.379	-0.006	1.000	16080236	52.2	105	724600
D 21 13C8 FOSA	506.00	> 78.00	3.373	3.379	-0.006	15668018	59.4	120	31615	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.355	3.379	-0.024	1.000	3279418	48.9	103	13806
D 26 M2-8:2FTS	529.00	> 509.00	3.355	3.379	-0.024	3184770	56.2	119	31764	
D 23 13C2 PFDA	515.00	> 470.00	3.364	3.388	-0.024	5592163	55.9	113	38110	
24 Perfluorodecanoic acid	513.00	> 469.00	3.364	3.388	-0.024	1.000	5493421	50.4	102	15682
D 27 d3-NMeFOSAA	573.00	> 419.00	3.520	3.542	-0.022	2366536	63.9	129	10572	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.528	3.542	-0.014	1.002	2606242	52.3	106	9238
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.684	3.700	-0.016	1.000	6599701	48.5	102	31638
D 32 d5-NEtFOSAA	589.00	> 419.00	3.694	3.710	-0.016	2261642	61.2	124	4984	
D 30 13C2 PFUnA	565.00	> 520.00	3.694	3.710	-0.016	4363218	58.7	119	33151	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.694	3.710	-0.016	1.000	4592924	49.0	98.9	9777
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.694	3.720	-0.026	1.000	2260100	50.8	103	8739
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.874	3.889	-0.015	4562529	61.2	124	938	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.883	3.889	-0.006	1.000	4470253	50.9	103	7037	
D 36 13C2 PFDaA	615.00 > 570.00	3.990	4.008	-0.018		4318910	58.8	119	11153	
37 Perfluorododecanoic acid	613.00 > 569.00	3.990	4.008	-0.018	1.000	4293588	51.7	104	4341	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.063	4.078	-0.015		4301702	58.5	118	7019	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.072	4.078	-0.006	1.000	4494207	51.8	105	5094	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.257	4.273	-0.016	1.000	4245652	50.1	101	1187	
D 43 13C2-PFTeDA	715.00 > 670.00	4.494	4.510	-0.016		7715410	50.9	103	72516	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.494	4.510	-0.016	1.000	8969478	44.1	89.0	5519	
	713.00 > 169.00	4.485	4.510	-0.025	0.998	1148712		7.81(0.00-0.00)	18091	
D 44 13C2-PFHxDA	815.00 > 770.00	4.898	4.922	-0.024		4365781	52.0	105	6272	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.898	4.922	-0.024	1.000	3877756	43.6	88.0	464	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.241	5.265	-0.024	1.000	4104119	43.6	88.1	1004	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L5\_00004

Amount Added: 1.00

Units: mL



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_013.d

Injection Date: 29-Jun-2017 00:42:42

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 13

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

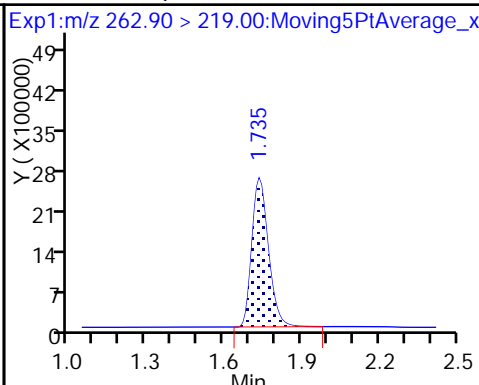
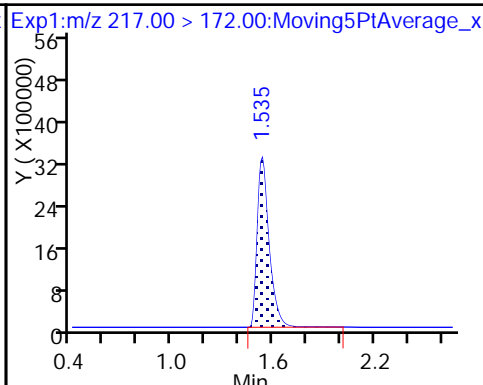
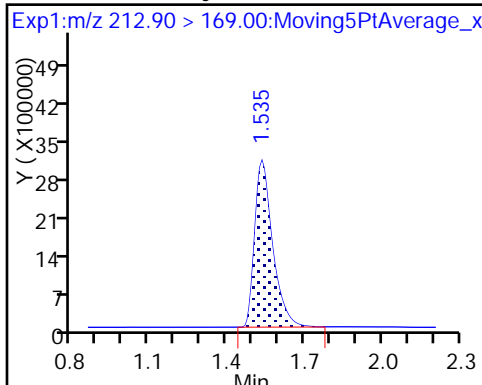
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

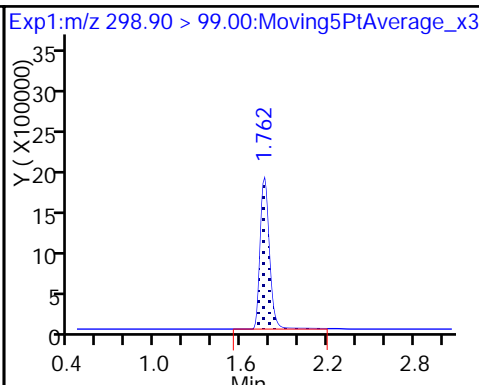
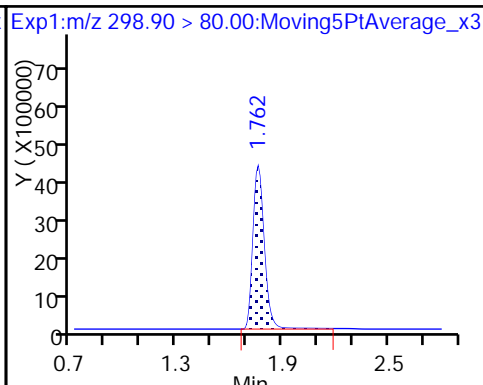
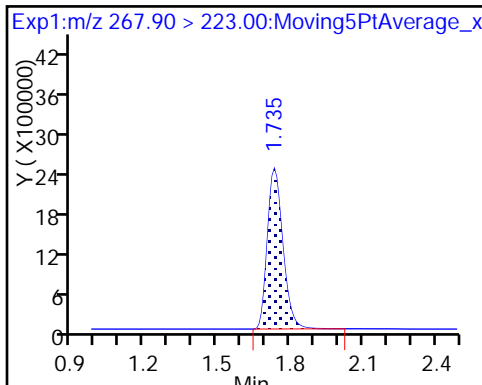
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

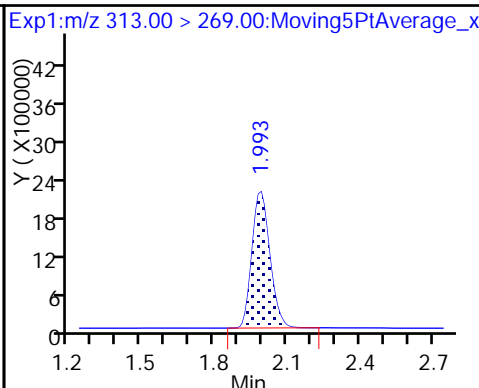
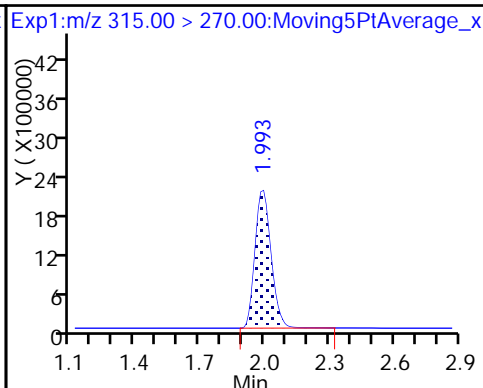
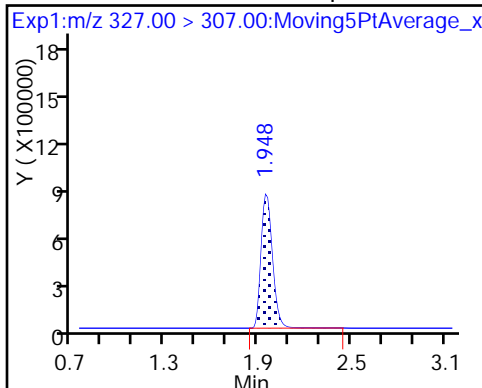
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

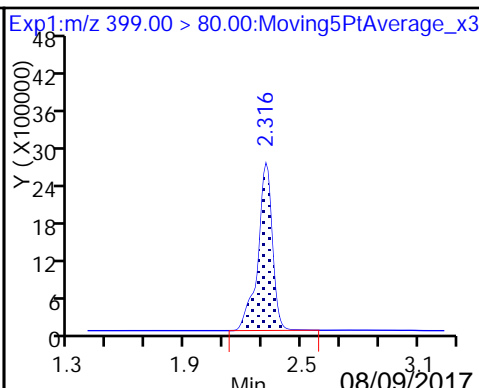
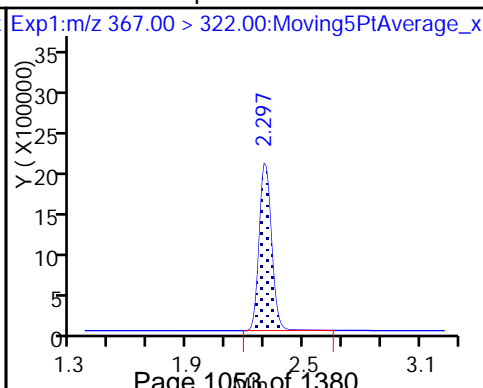
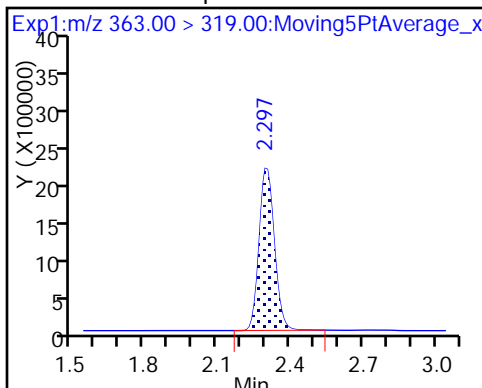
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

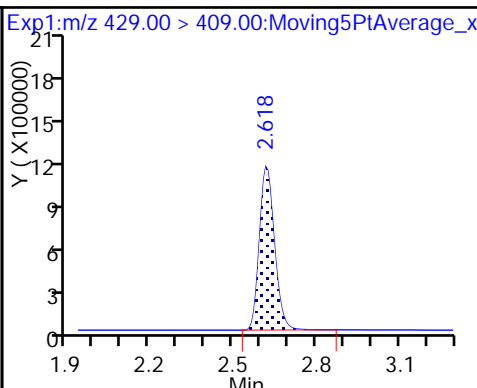
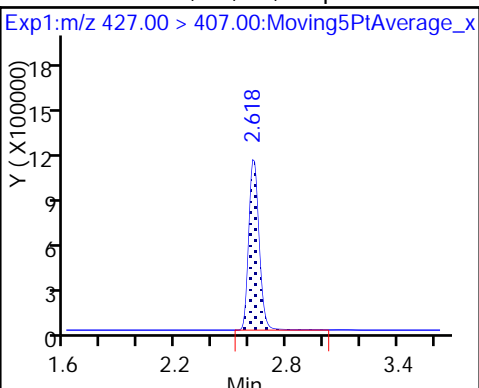
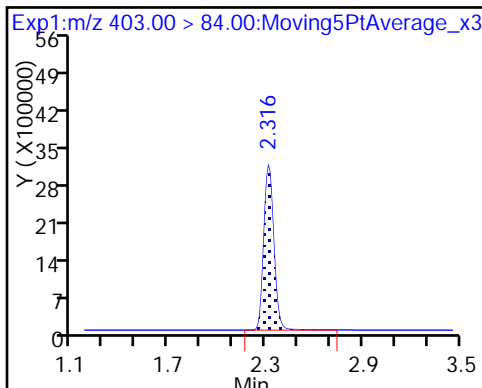
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

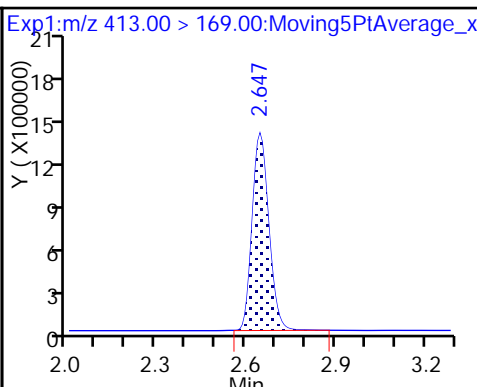
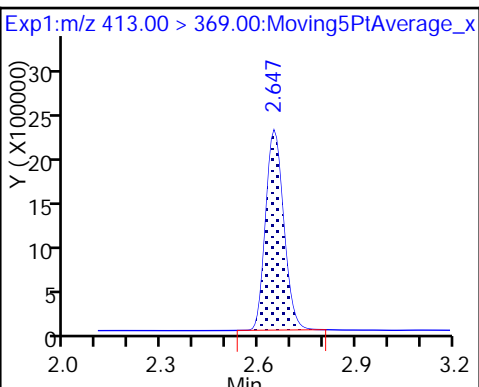
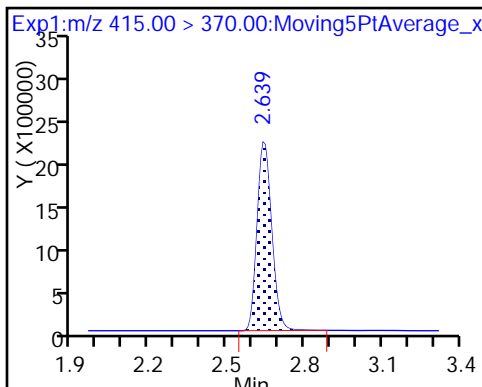
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

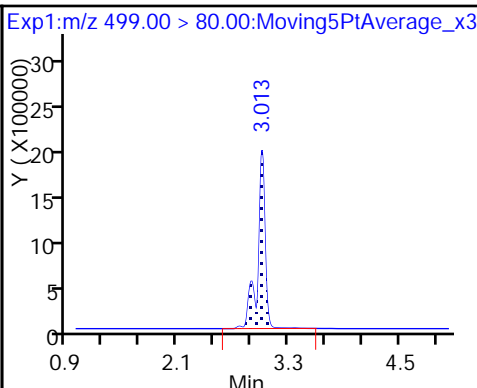
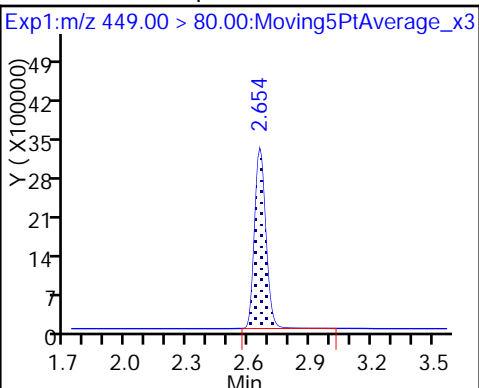
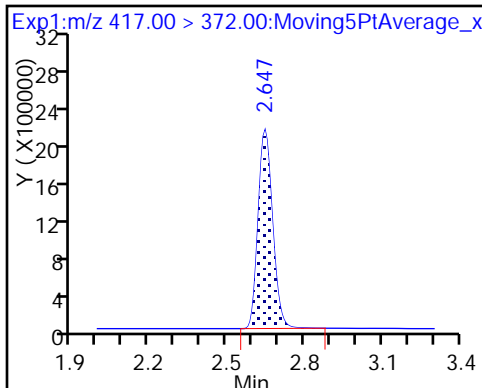
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

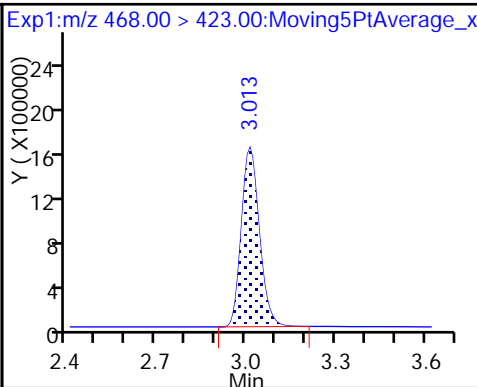
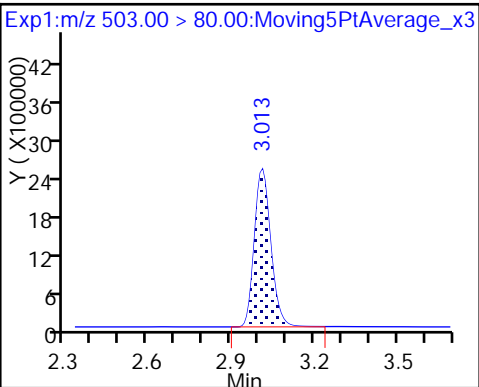
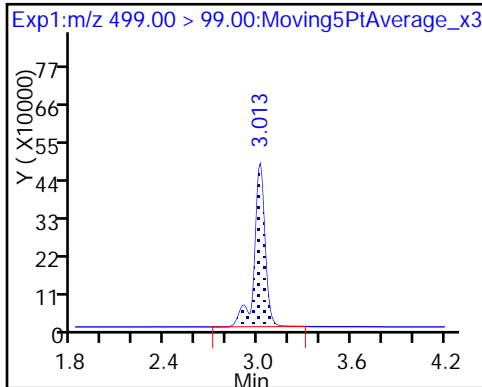
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

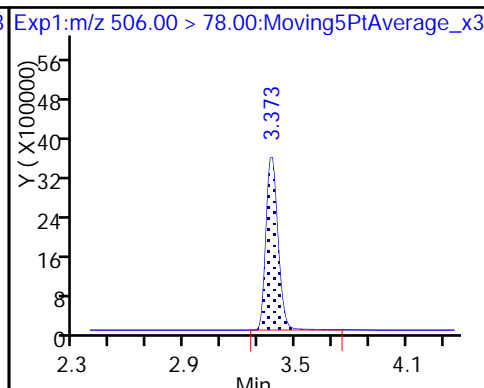
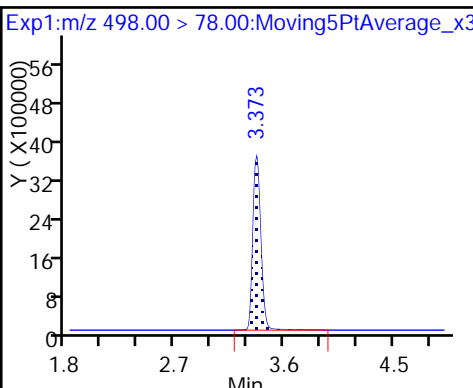
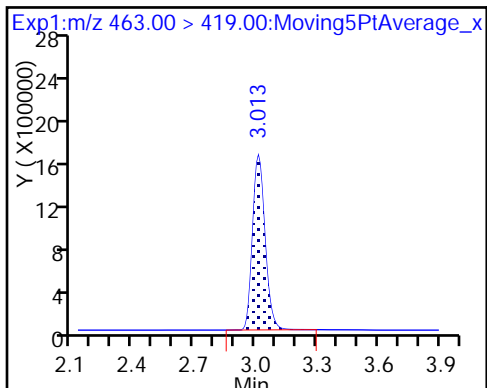
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

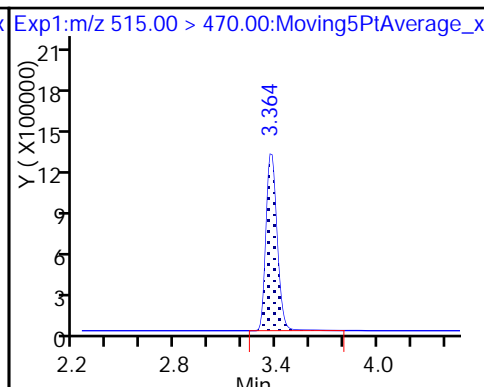
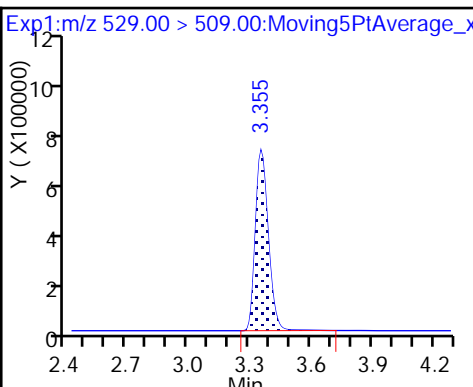
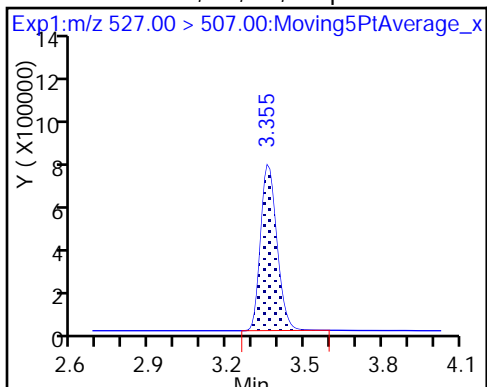
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecanoate

D 26 M2-8:2FTS

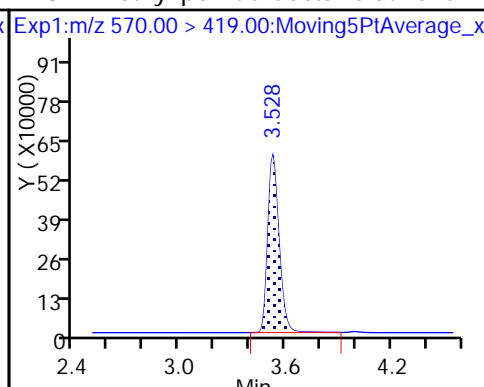
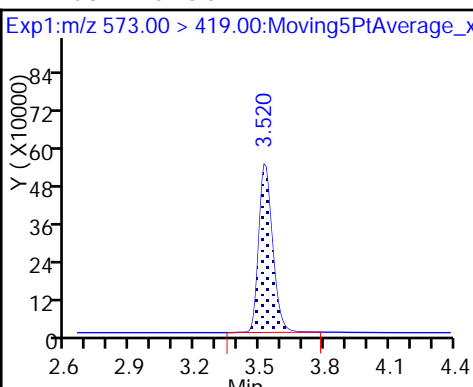
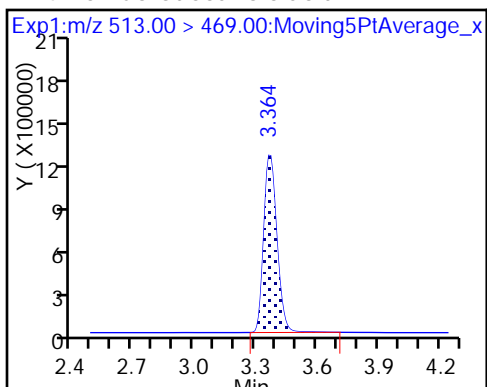
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

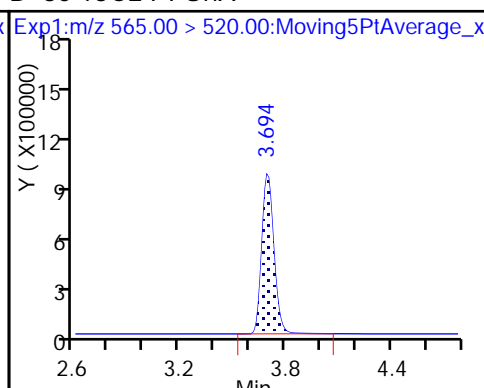
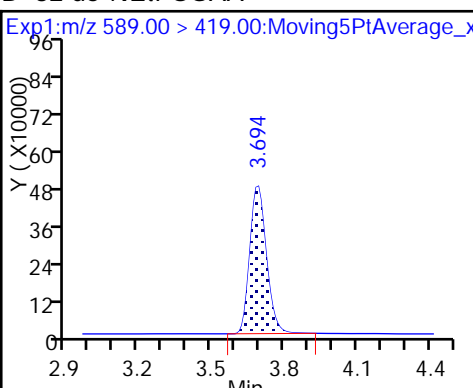
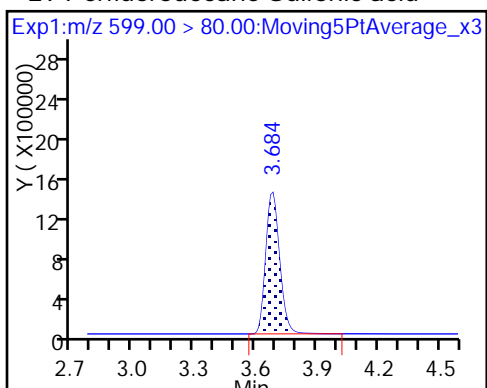
28 N-methyl perfluorooctane sulfonamide



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

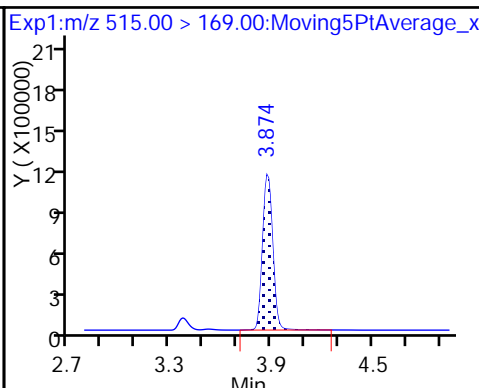
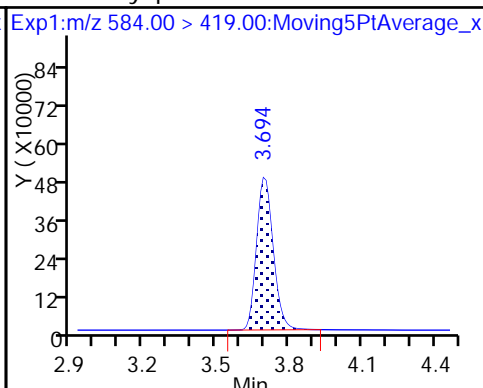
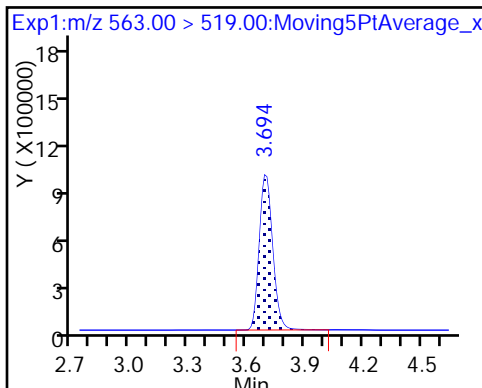
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

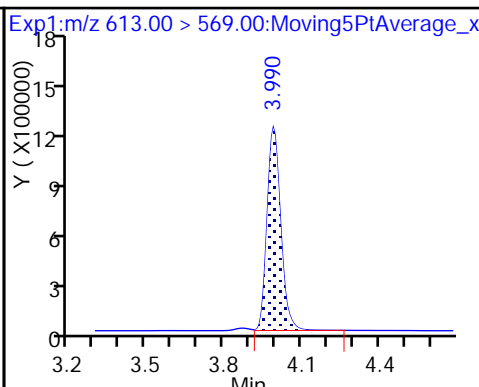
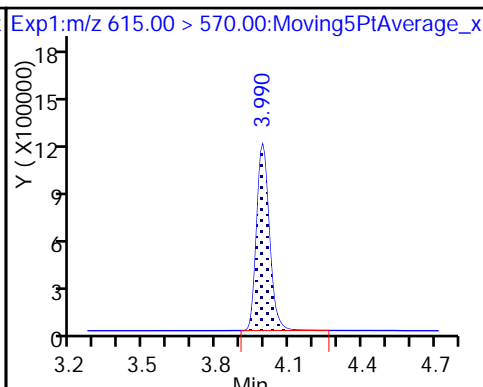
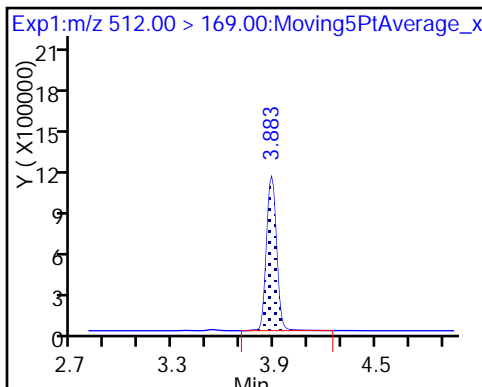
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

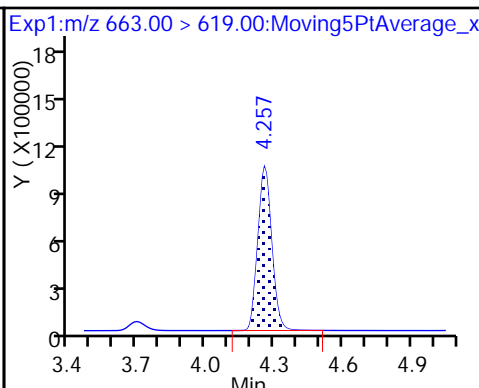
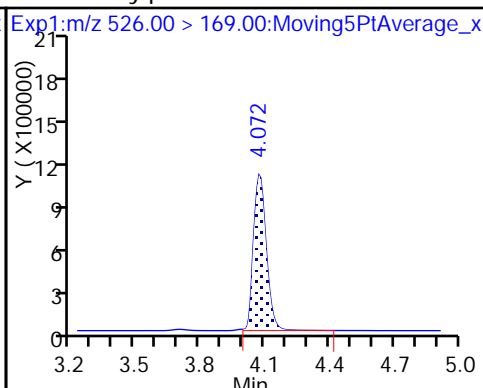
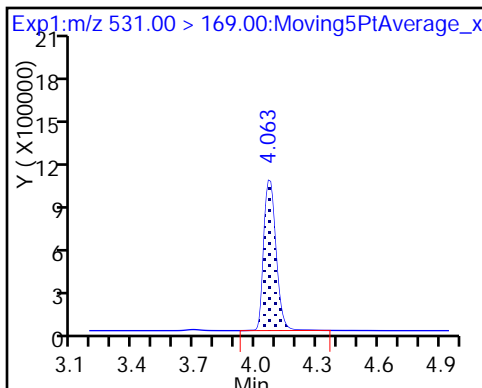
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

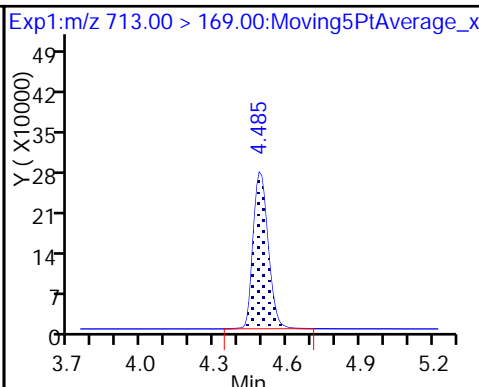
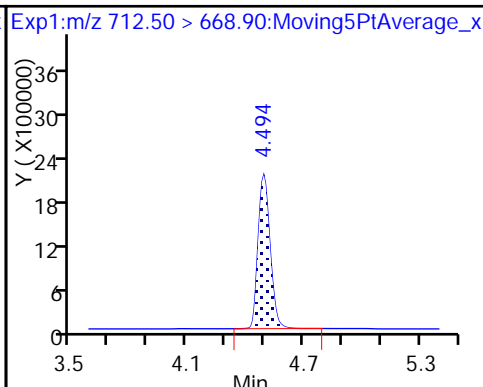
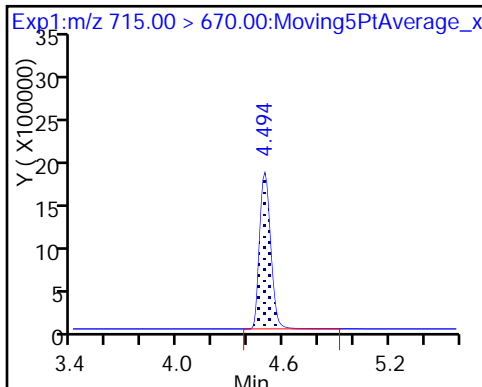
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

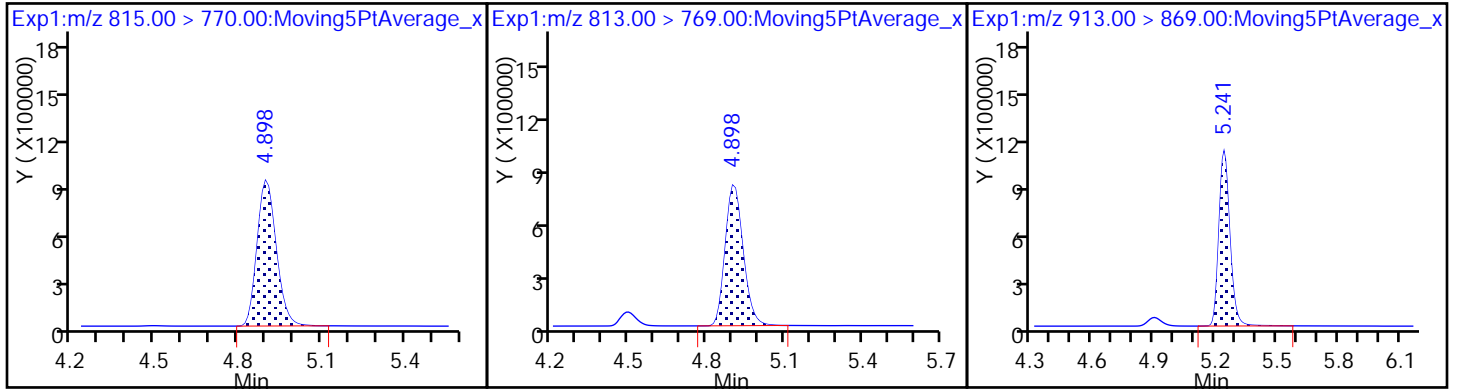
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/24 Calibration Date: 06/29/2017 01:58  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_024.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9346		20.5	19.8	3.8	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.122		21.6	19.8	9.0	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.570		19.7	17.5	12.6	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.027		20.0	19.8	1.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.098		20.4	19.8	2.8	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.045		17.0	18.0	-5.4	25.0
6:2FTS	AveID	0.9859	0.9802		18.7	18.8	-0.6	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.047		19.6	19.8	-1.2	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.221		20.0	18.9	6.1	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	1.030		20.5	19.8	3.8	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.048		18.4	18.4	-0.1	25.0
8:2FTS	AveID	0.999	1.038		19.7	19.0	4.0	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9732		20.0	19.8	0.9	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.048		21.3	19.8	7.6	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.085		20.6	19.8	4.1	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6022		18.0	19.1	-5.6	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.9476		19.3	19.8	-2.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	0.9909		18.4	19.8	-6.9	25.0
MeFOSA	AveID	0.9522	0.9578		19.9	19.8	0.6	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9631		20.0	19.8	1.2	25.0
N-EtFOSA-M	AveID	0.999	1.051		20.9	19.8	5.3	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9811		20.0	19.8	1.1	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.069		17.6	19.8	-11.3	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9090		17.2	19.8	-13.0	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	0.9477		17.4	19.8	-12.1	25.0
13C4 PFBA	Ave	233991	282456		59.8	49.5	20.7	50.0
13C5-PFPeA	Ave	160811	193921		59.7	49.5	20.6	50.0
13C2 PFHxA	Ave	153401	185220		59.8	49.5	20.7	50.0
13C4-PFHpA	Ave	136899	167444		60.6	49.5	22.3	50.0
18O2 PFHxS	Ave	212697	253422		55.8	46.8	19.1	50.0
M2-6:2FTS	Ave	72814	84340		54.5	47.0	15.8	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/24 Calibration Date: 06/29/2017 01:58  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_024.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	158775		60.2	49.5	21.6	50.0
13C4 PFOS	Ave	162716	189385		55.1	47.3	16.4	50.0
13C5 PFNA	Ave	104991	123962		58.5	49.5	18.1	50.0
M2-8:2FTS	Ave	56620	58887		49.3	47.4	4.0	50.0
13C2 PFDA	Ave	100020	108399		53.7	49.5	8.4	50.0
13C8 FOSA	Ave	263963	291781		54.7	49.5	10.5	50.0
d3-NMeFOSAA	Ave	37033	40796		54.5	49.5	10.2	50.0
d5-NEtFOSAA	Ave	36944	39967		53.6	49.5	8.2	50.0
13C2 PFUnA	Ave	74302	85267		56.8	49.5	14.8	50.0
d-N-MeFOSA-M	Ave	74603	75903		50.4	49.5	1.7	50.0
13C2 PFDoA	Ave	73421	78151		52.7	49.5	6.4	50.0
d-N-EtFOSA-M	Ave	73544	72178		48.6	49.5	-1.9	50.0
13C2-PFTEtDA	Ave	151466	139785		45.7	49.5	-7.7	50.0
13C2-PFHxDA	Ave	83886	80231		47.3	49.5	-4.4	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_024.d  
 Lims ID: CCV L4  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 29-Jun-2017 01:58:35 ALS Bottle#: 31 Worklist Smp#: 24  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L4  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:21 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1

Process Host: XAWRK005

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.527	1.533	-0.006	1.000	5227611	20.5	104	1900	
D 1 13C4 PFBA	217.00 > 172.00	1.527	1.533	-0.006		13982963	59.8	121	92860	
4 Perfluoropentanoic acid	262.90 > 219.00	1.727	1.742	-0.015	1.000	4307844	21.6	109	2163	
D 3 13C5-PFPeA	267.90 > 223.00	1.727	1.742	-0.015		9600025	59.7	121	22548	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.753	1.760	-0.007	1.000	6965292	19.7	113	3322	
	298.90 > 99.00	1.753	1.760	-0.007	1.000	2751759	2.53(0.00-0.00)		8554	
D 47 13C3-PFBS	301.90 > 83.00	1.753	1.760	-0.007		262838	NC		6920	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.949	1.958	-0.010	1.000	1611164	20.1	109	18340	
D 7 13C2 PFHxA	315.00 > 270.00	1.982	1.992	-0.010		9169301	59.8	121	65022	
6 Perfluorohexanoic acid	313.00 > 269.00	1.982	2.003	-0.021	1.000	3767825	20.0	101	4547	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.301	2.312	-0.011	1.000	3641883	20.4	103	3395	
D 9 13C4-PFHpA	367.00 > 322.00	2.301	2.312	-0.011		8289330	60.6	122	27541	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.309	2.329	-0.020	1.000	4770080	17.0	94.6	2556	
D 11 18O2 PFHxS	403.00 > 84.00	2.309	2.329	-0.020		11868180	55.8	119	27370	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.615	2.634	-0.019	1.000	1551918	18.7	99.4	13864	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.615	2.634	-0.019	3966502	54.5	116	18486	
* 62 13C2-PFOA	415.00	> 370.00	2.637	2.656	-0.019	8134555	49.5	100	21427	
15 Perfluorooctanoic acid	413.00	> 369.00	2.644	2.663	-0.019	1.000	3292254	19.6	98.8	659
	413.00	> 169.00	2.644	2.663	-0.019	1.000	1927926	1.71(0.90-1.10)		4391
D 14 13C4 PFOA	417.00	> 372.00	2.644	2.663	-0.019	7860142	60.2	122	17100	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.651	2.671	-0.020	1.000	4358344	20.0	106	15821
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.010	3.026	-0.016	1.000	3646252	18.4	99.9	6756
	499.00	> 99.00	3.010	3.026	-0.016	1.000	797965	4.57(0.90-1.10)		5705
D 18 13C4 PFOS	503.00	> 80.00	3.010	3.026	-0.016	8962987	55.1	116	11324	
D 19 13C5 PFNA	468.00	> 423.00	3.010	3.026	-0.016	6136726	58.5	118	12063	
20 Perfluorononanoic acid	463.00	> 419.00	3.010	3.026	-0.016	1.000	2527171	20.5	104	4624
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.368	3.379	-0.011	1.000	6055062	21.3	108	56354
D 21 13C8 FOSA	506.00	> 78.00	3.368	3.379	-0.011	14444580	54.7	111	475730	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.351	3.379	-0.028	1.000	1159822	19.7	104	11352
D 26 M2-8:2FTS	529.00	> 509.00	3.351	3.379	-0.028	2792737	49.3	104	28198	
D 23 13C2 PFDA	515.00	> 470.00	3.368	3.388	-0.020	5366302	53.7	108	23934	
24 Perfluorodecanoic acid	513.00	> 469.00	3.368	3.388	-0.020	1.000	2089045	20.0	101	8374
D 27 d3-NMeFOSAA	573.00	> 419.00	3.523	3.542	-0.019	2019588	54.5	110	10850	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.523	3.542	-0.019	1.000	876584	20.6	104	3154
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.677	3.700	-0.023	1.000	2177133	18.0	94.4	13589
D 32 d5-NEtFOSAA	589.00	> 419.00	3.687	3.710	-0.023	1978588	53.6	108	4231	
D 30 13C2 PFUnA	565.00	> 520.00	3.697	3.710	-0.013	4221152	56.8	115	15024	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.697	3.710	-0.013	1.000	1673079	18.4	93.1	3190
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.697	3.720	-0.023	1.003	749931	19.3	97.2	6613
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.877	3.889	-0.012	3757597	50.4	102	964	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.877	3.889	-0.012	1.000	1439590	19.9	101	5591	
D 36 13C2 PFDaA	615.00 > 570.00	3.992	4.008	-0.016		3868865	52.7	106	14102	
37 Perfluorododecanoic acid	613.00 > 569.00	3.992	4.008	-0.016	1.000	1490474	20.0	101	1772	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.064	4.078	-0.014		3573163	48.6	98.1	6876	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.074	4.078	-0.004	1.000	1502717	20.9	105	4118	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.260	4.273	-0.013	1.000	1518254	20.0	101	389	
D 43 13C2-PFTeDA	715.00 > 670.00	4.494	4.510	-0.016		6920052	45.7	92.3	74629	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.494	4.510	-0.016	1.000	3201153	17.6	88.7	2406	
	713.00 > 169.00	4.485	4.510	-0.025	0.998	395528		8.09(0.00-0.00)	9400	
D 44 13C2-PFHxDA	815.00 > 770.00	4.896	4.922	-0.026		3971837	47.3	95.6	5491	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.907	4.922	-0.015	1.000	1406733	17.2	87.0	193	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.239	5.265	-0.026	1.000	1466556	17.4	87.9	443	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L4\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_024.d

Injection Date: 29-Jun-2017 01:58:35

Instrument ID: A8\_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 24

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

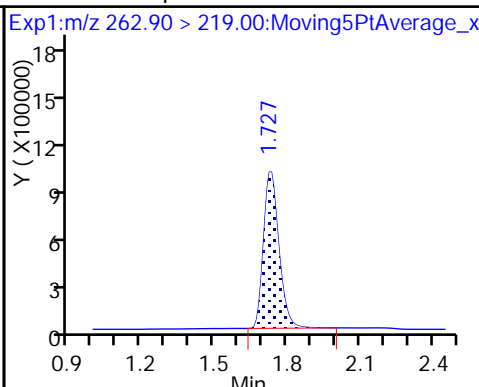
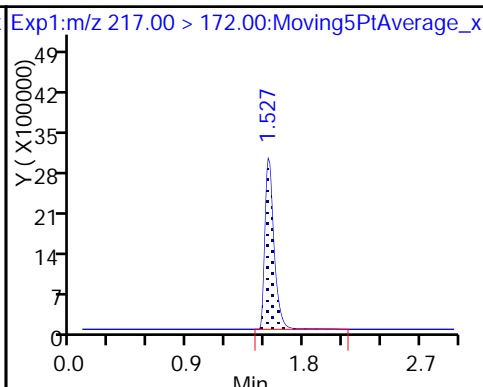
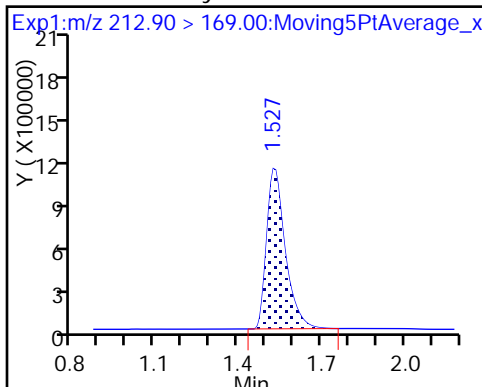
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

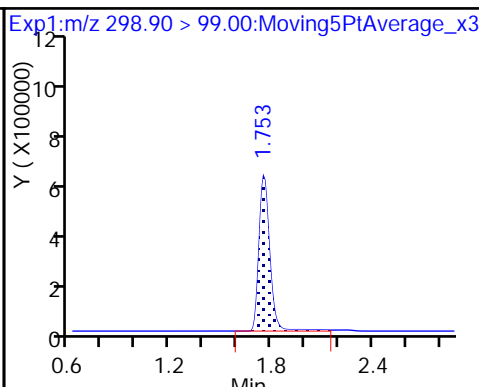
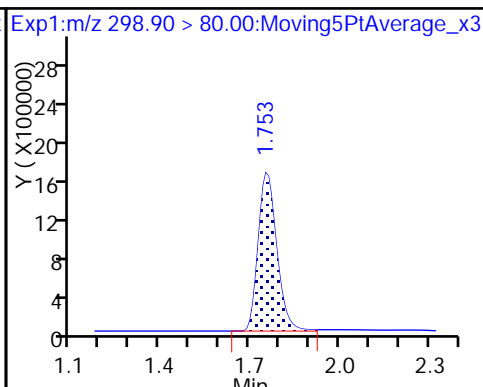
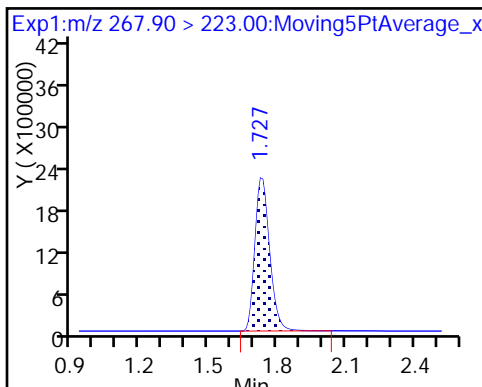
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

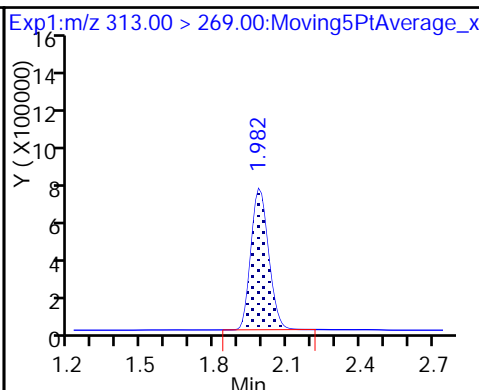
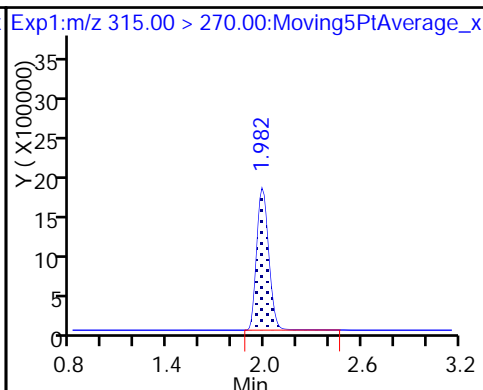
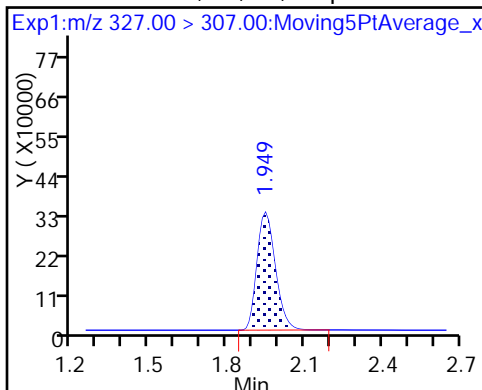
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

D 7 13C2 PFHxA

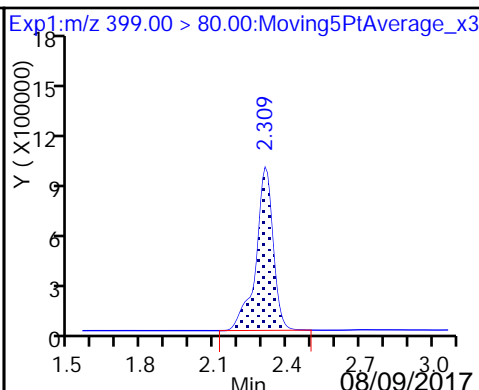
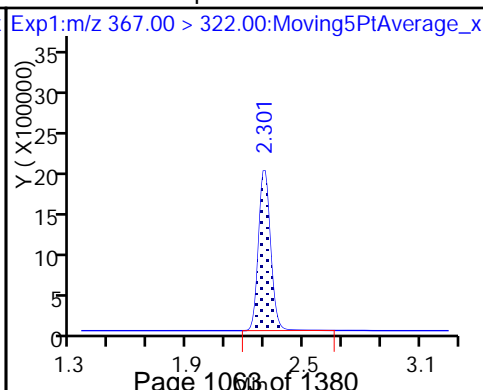
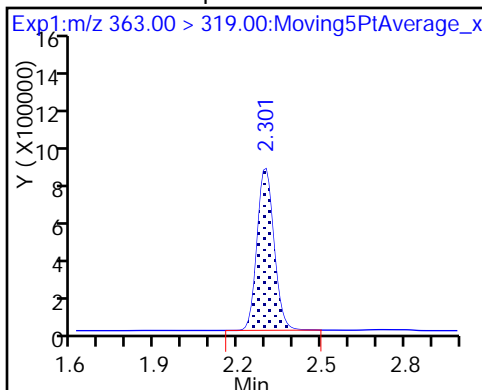
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

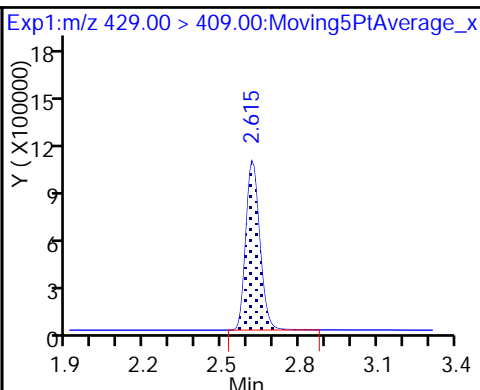
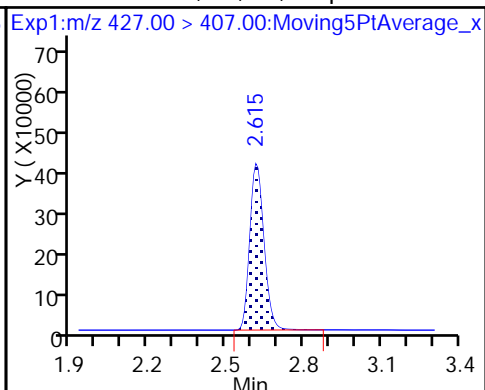
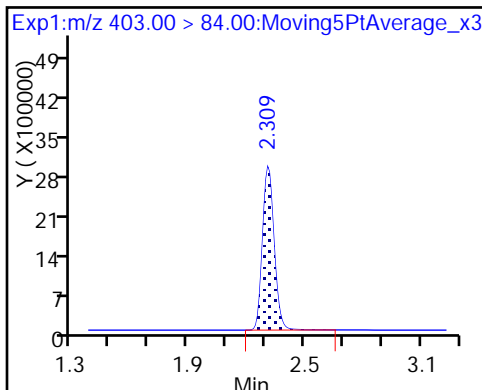
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

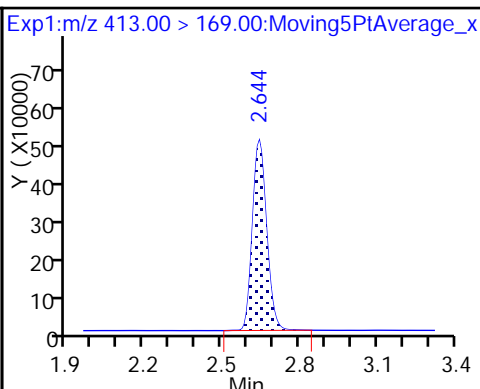
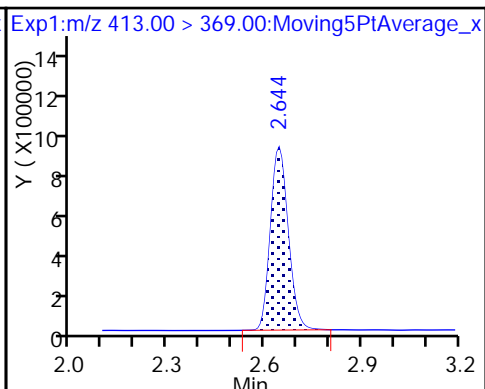
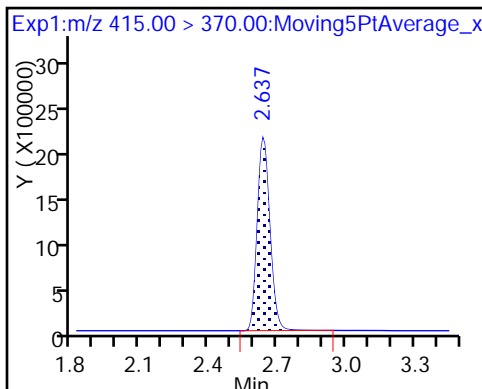
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

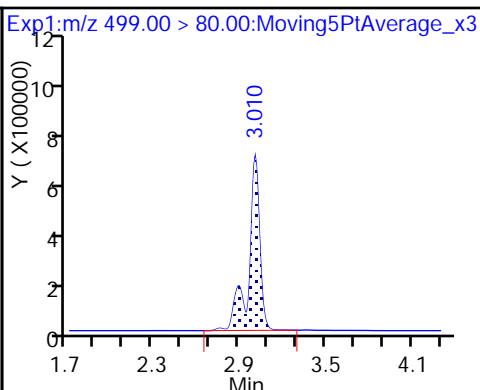
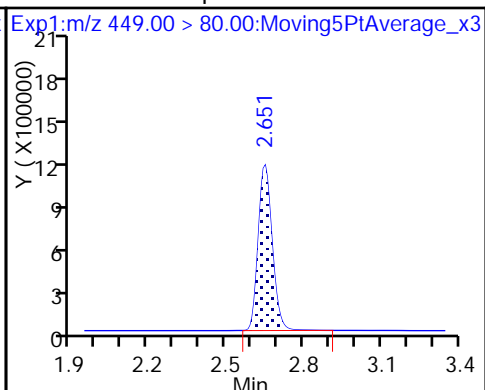
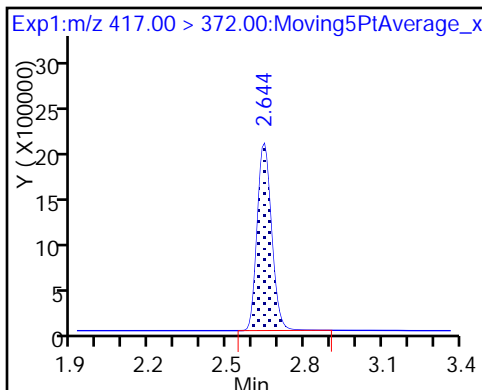
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

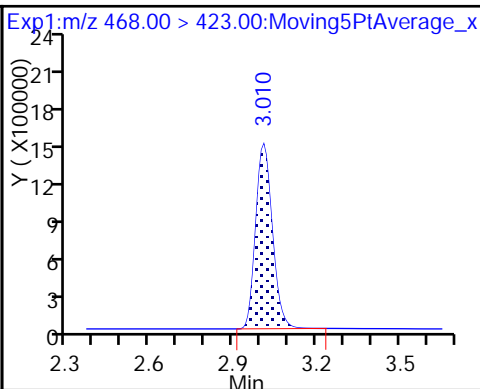
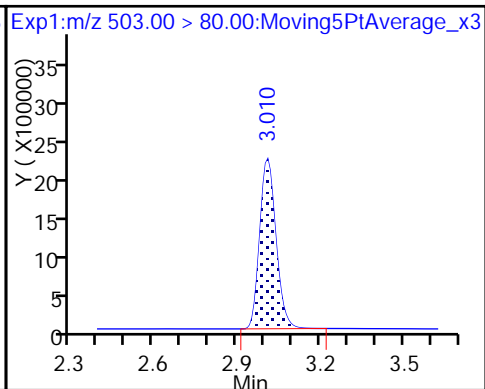
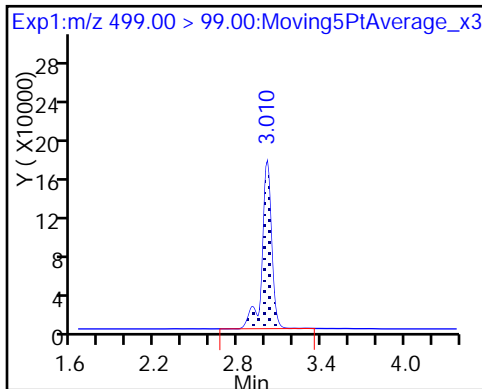
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

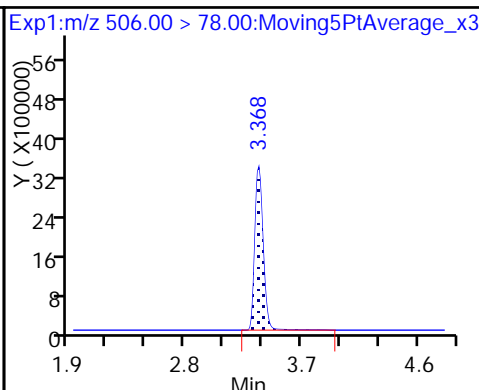
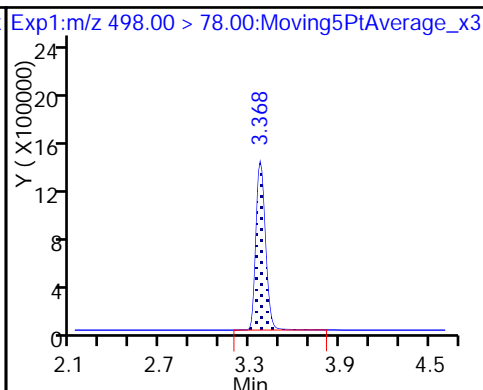
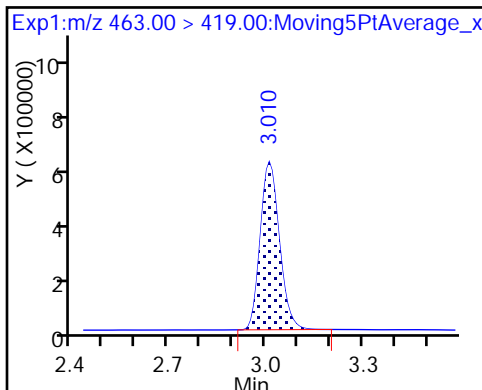
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

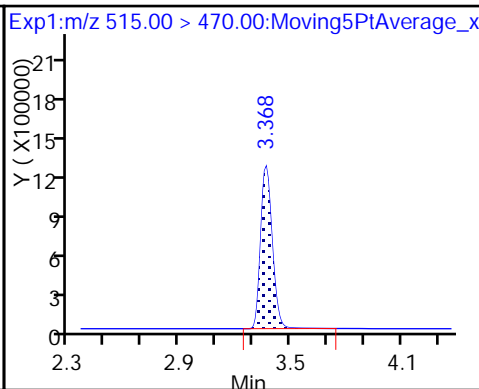
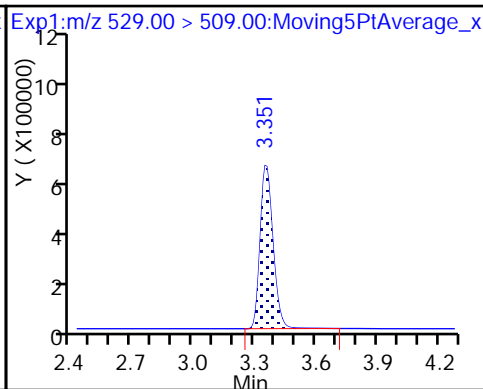
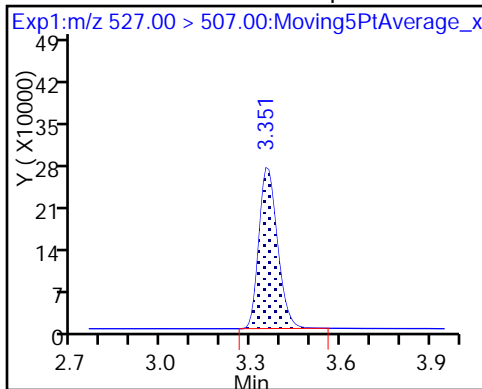
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecanoate

D 26 M2-8:2FTS

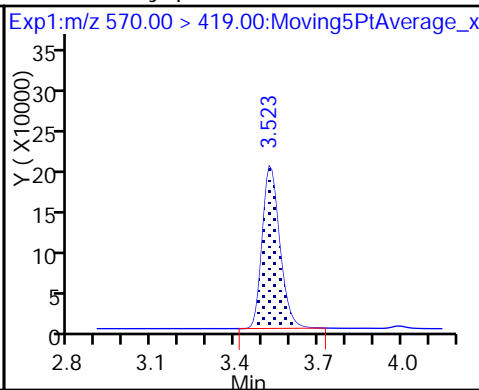
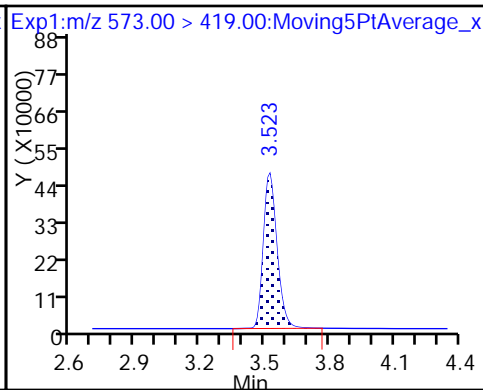
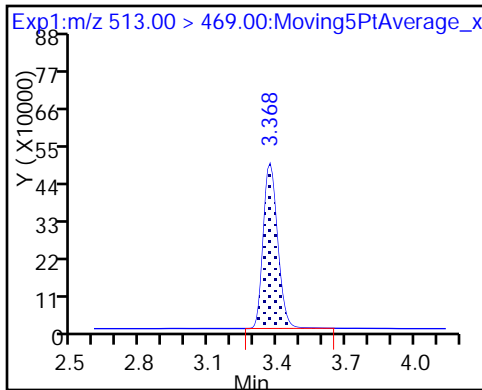
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

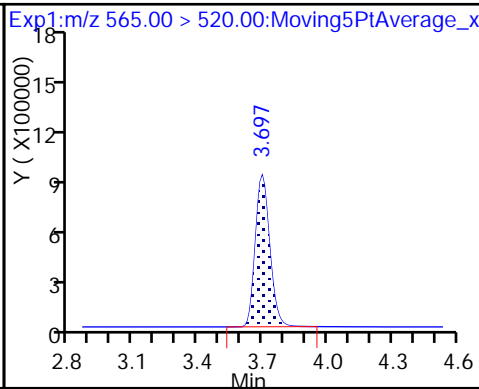
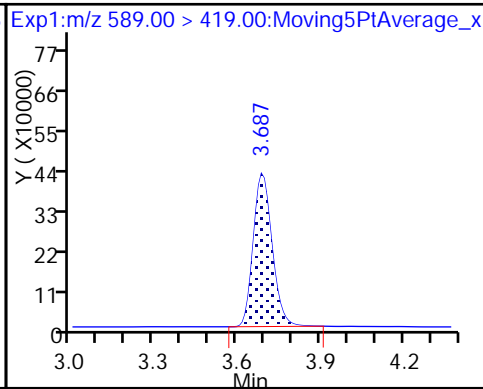
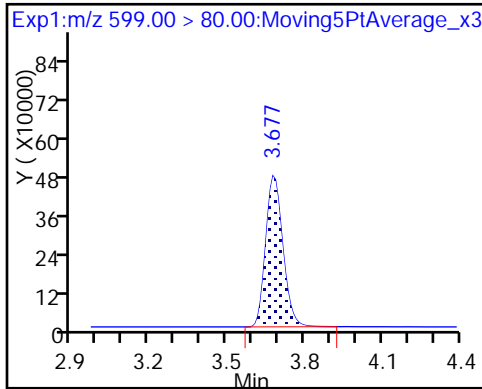
28 N-methyl perfluorooctane sulfonamide



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

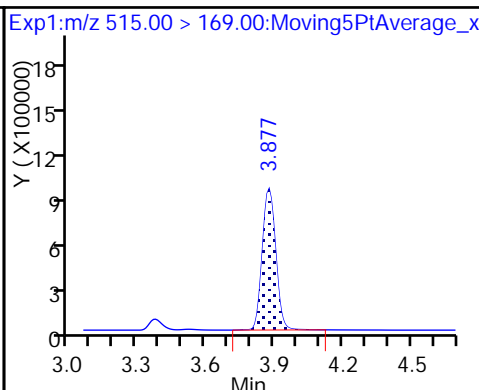
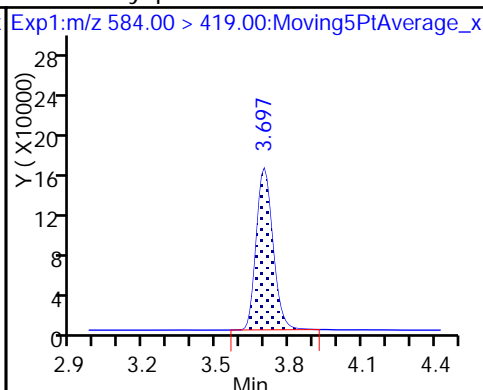
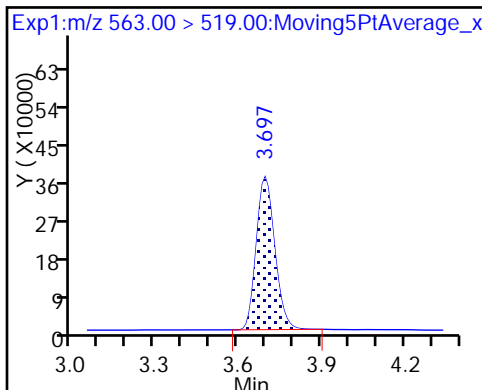
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

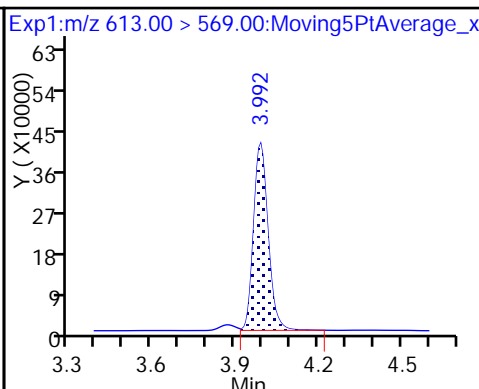
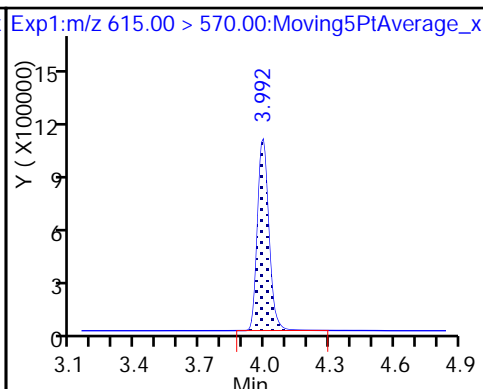
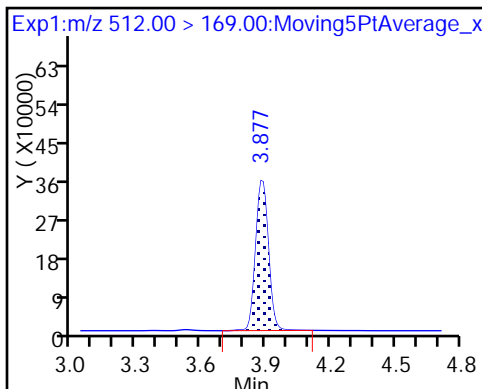
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

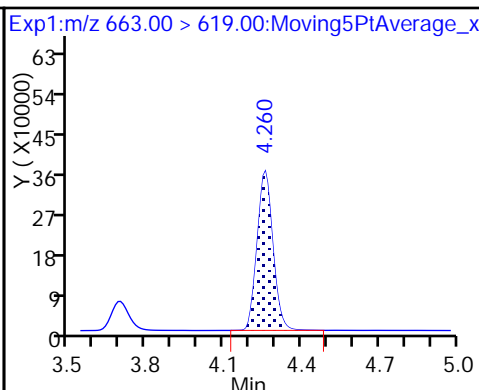
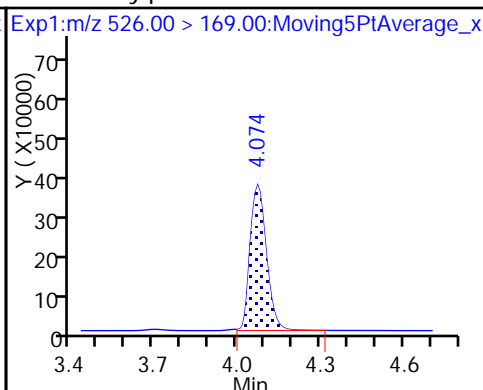
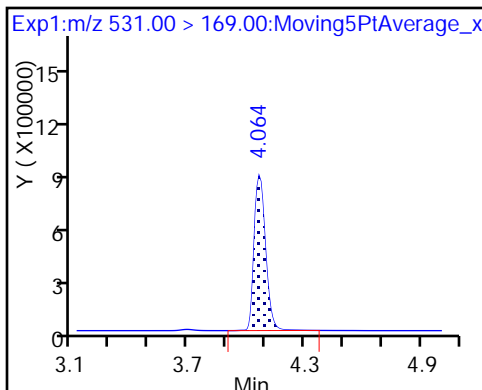
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

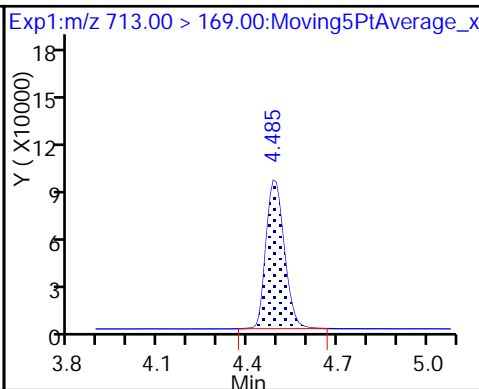
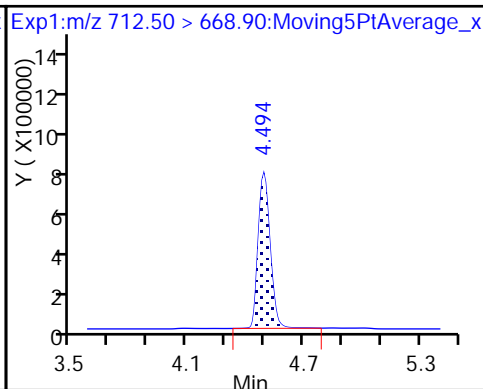
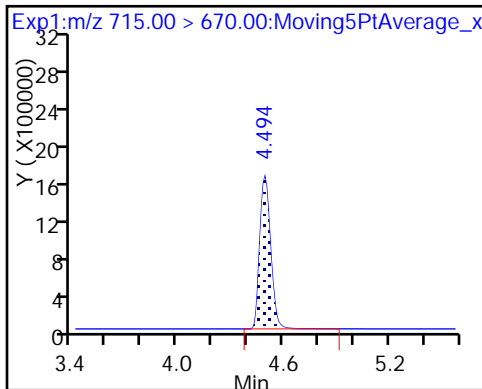
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

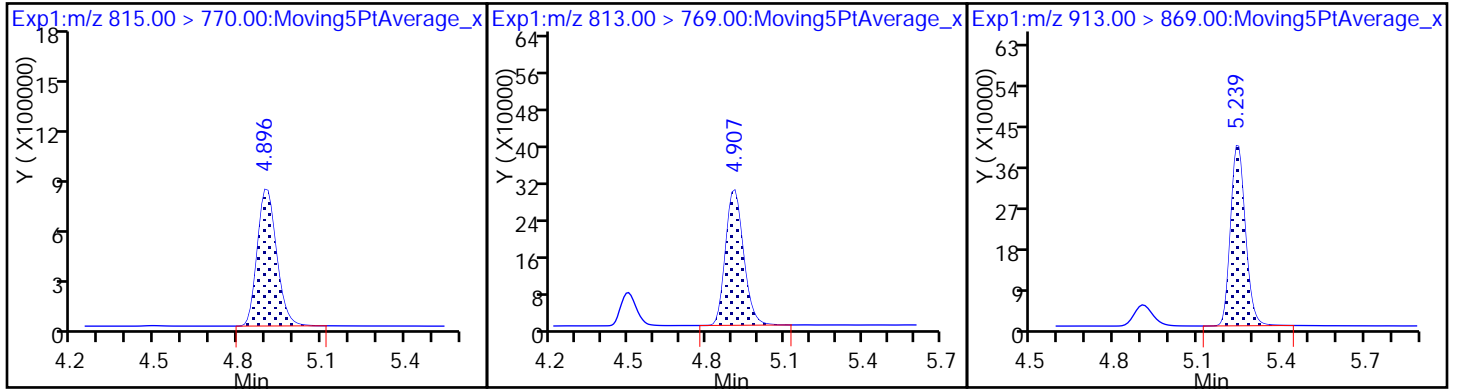
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/27 Calibration Date: 06/29/2017 02:19  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_027.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9536		52.4	49.5	5.9	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.066		51.2	49.5	3.5	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.506		47.3	43.8	8.0	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.074		52.3	49.5	5.7	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.091		50.6	49.5	2.1	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.072		43.7	45.0	-3.0	25.0
6:2FTS	AveID	0.9859	1.012		48.2	46.9	2.7	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.062		49.6	49.5	0.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.270		52.0	47.1	10.4	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	1.019		50.8	49.5	2.7	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.146		50.2	45.9	9.3	25.0
8:2FTS	AveID	0.999	0.9450		44.9	47.4	-5.4	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9726		49.9	49.5	0.8	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	0.9940		50.5	49.5	2.1	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.070		50.8	49.5	2.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6762		50.6	47.7	6.0	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.9900		50.3	49.5	1.6	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.066		49.6	49.5	0.2	25.0
MeFOSA	AveID	0.9522	0.9834		51.1	49.5	3.3	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9692		50.4	49.5	1.8	25.0
N-EtFOSA-M	AveID	0.999	1.048		52.0	49.5	5.0	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9692		49.4	49.5	-0.1	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.104		44.6	49.5	-9.8	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.9189		44.6	49.5	-9.9	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	1.006		46.2	49.5	-6.7	25.0
13C4 PFBA	Ave	233991	311230		65.8	49.5	33.0	50.0
13C5-PFPeA	Ave	160811	212366		65.4	49.5	32.1	50.0
13C2 PFHxA	Ave	153401	207645		67.0	49.5	35.4	50.0
13C4-PFHpA	Ave	136899	180747		65.4	49.5	32.0	50.0
18O2 PFHxS	Ave	212697	277163		61.0	46.8	30.3	50.0
M2-6:2FTS	Ave	72814	93116		60.1	47.0	27.9	50.0



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171594/27 Calibration Date: 06/29/2017 02:19  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.28B\_027.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	166776		63.2	49.5	27.8	50.0
13C4 PFOS	Ave	162716	206990		60.2	47.3	27.2	50.0
13C5 PFNA	Ave	104991	134366		63.4	49.5	28.0	50.0
M2-8:2FTS	Ave	56620	71447		59.8	47.4	26.2	50.0
13C2 PFDA	Ave	100020	113195		56.0	49.5	13.2	50.0
13C8 FOSA	Ave	263963	324526		60.9	49.5	22.9	50.0
d3-NMeFOSAA	Ave	37033	47378		63.3	49.5	27.9	50.0
d5-NEtFOSAA	Ave	36944	44273		59.3	49.5	19.8	50.0
13C2 PFUnA	Ave	74302	88007		58.6	49.5	18.4	50.0
d-N-MeFOSA-M	Ave	74603	92249		61.2	49.5	23.7	50.0
13C2 PFDoA	Ave	73421	89409		60.3	49.5	21.8	50.0
d-N-EtFOSA-M	Ave	73544	87340		58.8	49.5	18.8	50.0
13C2-PFTeDA	Ave	151466	161374		52.7	49.5	6.5	50.0
13C2-PFHxDA	Ave	83886	88624		52.3	49.5	5.6	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_027.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 29-Jun-2017 02:19:17 ALS Bottle#: 32 Worklist Smp#: 27  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:52:27 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK005

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.526	1.533	-0.007	1.000	14692194	52.4	106	3862	
D 1 13C4 PFBA	217.00 > 172.00	1.526	1.533	-0.007		15407430	65.8	133	22597	
4 Perfluoropentanoic acid	262.90 > 219.00	1.726	1.742	-0.016	1.000	11202961	51.2	104	4392	
D 3 13C5-PFPeA	267.90 > 223.00	1.726	1.742	-0.016		10513145	65.4	132	20685	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.753	1.760	-0.007	1.000	18262572	47.3	108	16078	
	298.90 > 99.00	1.753	1.760	-0.007	1.000	8400855	2.17(0.00-0.00)		195767	
D 47 13C3-PFBS	301.90 > 83.00	1.753	1.760	-0.007		287644	NC		7624	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.948	1.958	-0.010	1.000	4758003	53.8	116	33758	
D 7 13C2 PFHxA	315.00 > 270.00	1.982	1.992	-0.010		10279446	67.0	135	30340	
6 Perfluorohexanoic acid	313.00 > 269.00	1.982	2.003	-0.021	1.000	11036706	52.3	106	14168	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.296	2.312	-0.016	1.000	9759594	50.6	102	6669	
D 9 13C4-PFHpA	367.00 > 322.00	2.296	2.312	-0.016		8947888	65.4	132	15968	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.315	2.329	-0.014	1.000	13383314	43.7	97.0	5182	
D 11 18O2 PFHxS	403.00 > 84.00	2.315	2.329	-0.014		12980017	61.0	130	27916	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.616	2.634	-0.018	1.000	4422481	48.2	103	31778	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.616	2.634	-0.018	4379199	60.1	128	13903	
* 62 13C2-PFOA	415.00	> 370.00	2.638	2.656	-0.018	8444697	49.5	100	14735	
15 Perfluorooctanoic acid	413.00	> 369.00	2.645	2.663	-0.018	1.000	8764000	49.6	100	1454
	413.00	> 169.00	2.645	2.663	-0.018	1.000	5396567	1.62(0.90-1.10)	7757	
D 14 13C4 PFOA	417.00	> 372.00	2.645	2.663	-0.018	8256243	63.2	128	15314	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.652	2.671	-0.019	1.000	12388349	52.0	110	27630
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.011	3.026	-0.015	1.000	10901361	50.2	109	9604
	499.00	> 99.00	3.011	3.026	-0.015	1.000	2339635	4.66(0.90-1.10)	10165	
D 18 13C4 PFOS	503.00	> 80.00	3.011	3.026	-0.015	9796155	60.2	127	26081	
D 19 13C5 PFNA	468.00	> 423.00	3.011	3.026	-0.015	6651774	63.4	128	12192	
20 Perfluorononanoic acid	463.00	> 419.00	3.011	3.026	-0.015	1.000	6776561	50.8	103	7887
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.370	3.379	-0.009	1.000	15968490	50.5	102	512638
D 21 13C8 FOSA	506.00	> 78.00	3.370	3.379	-0.009	16065638	60.9	123	402815	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.361	3.379	-0.018	1.000	3201910	44.9	94.6	31671
D 26 M2-8:2FTS	529.00	> 509.00	3.361	3.379	-0.018	3388442	59.8	126	31043	
D 23 13C2 PFDA	515.00	> 470.00	3.370	3.388	-0.018	5603689	56.0	113	24090	
24 Perfluorodecanoic acid	513.00	> 469.00	3.370	3.388	-0.018	1.000	5450399	49.9	101	17883
D 27 d3-NMeFOSAA	573.00	> 419.00	3.525	3.542	-0.017	2345421	63.3	128	9937	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.525	3.542	-0.017	1.000	2509606	50.8	103	5881
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.681	3.700	-0.019	1.000	6679744	50.6	106	22311
D 32 d5-NEtFOSAA	589.00	> 419.00	3.691	3.710	-0.019	2191745	59.3	120	4802	
D 30 13C2 PFUnA	565.00	> 520.00	3.701	3.710	-0.009	4356804	58.6	118	18380	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.701	3.710	-0.009	1.000	4643702	49.6	100	10787
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.701	3.720	-0.019	1.003	2169884	50.3	102	9807
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.881	3.889	-0.008	4566766	61.2	124	841	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.881	3.889	-0.008	1.000	4491111	51.1	103	6395	
D 36 13C2 PFDaA	615.00 > 570.00	3.996	4.008	-0.012		4426202	60.3	122	12357	
37 Perfluorododecanoic acid	613.00 > 569.00	3.996	4.008	-0.012	1.000	4289998	50.4	102	4408	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.071	4.078	-0.007		4323767	58.8	119	5576	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.079	4.078	0.001	1.000	4531616	52.0	105	4891	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.257	4.273	-0.016	1.000	4289994	49.4	99.9	1061	
D 43 13C2-PFTeDA	715.00 > 670.00	4.497	4.510	-0.013		7988828	52.7	107	71836	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.497	4.510	-0.013	1.000	9310599	44.6	90.2	4779	
	713.00 > 169.00	4.487	4.510	-0.023	0.998	1160975	8.02(0.00-0.00)		16947	
D 44 13C2-PFHxDA	815.00 > 770.00	4.900	4.922	-0.022		4387309	52.3	106	5396	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.900	4.922	-0.022	1.000	4067394	44.6	90.1	458	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.243	5.265	-0.022	1.000	4452418	46.2	93.3	1142	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L5\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_027.d

Injection Date: 29-Jun-2017 02:19:17

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 27

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

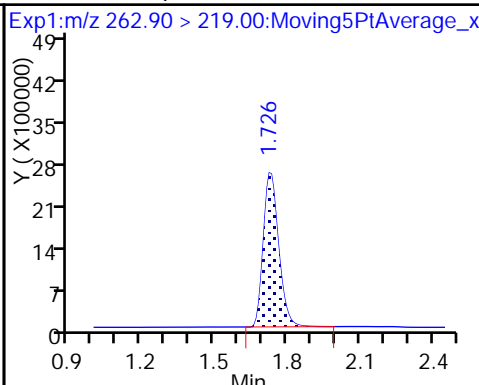
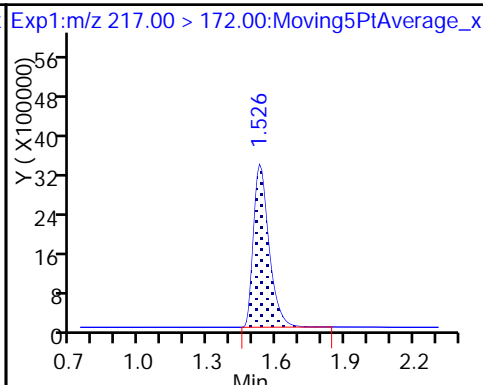
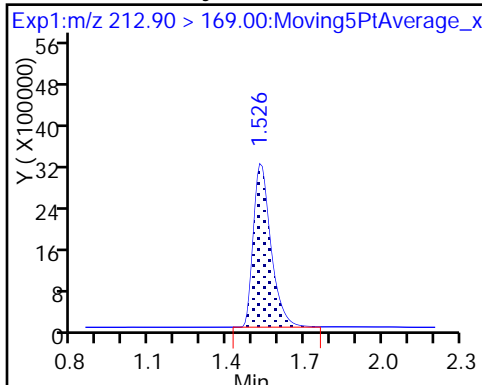
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

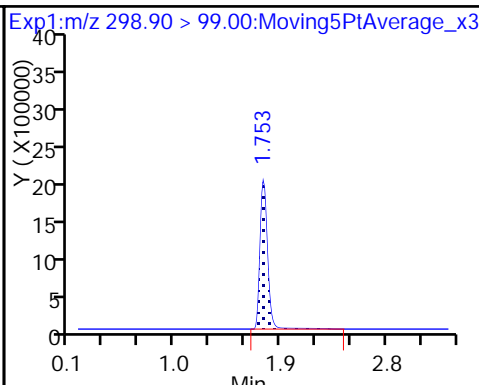
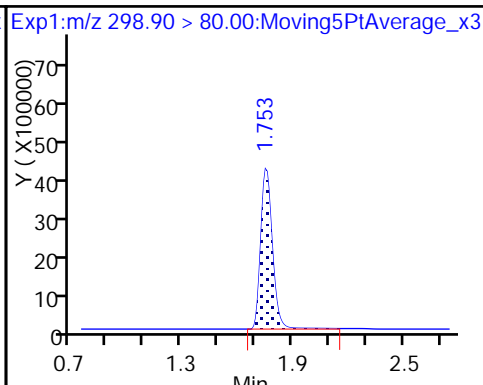
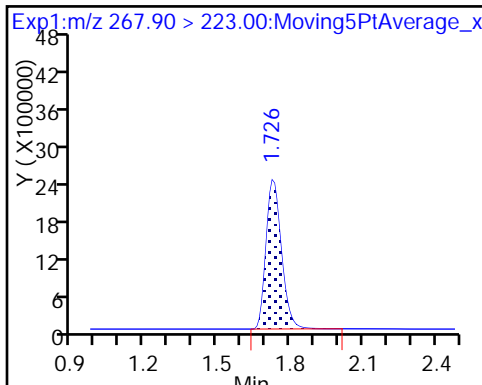
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

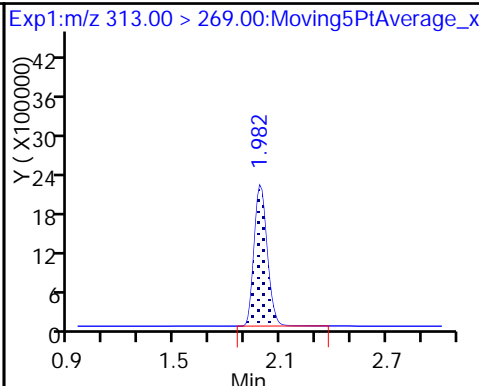
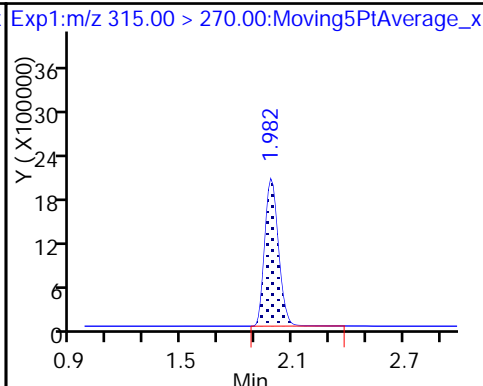
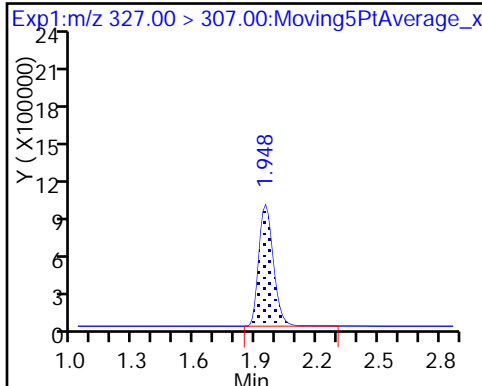
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

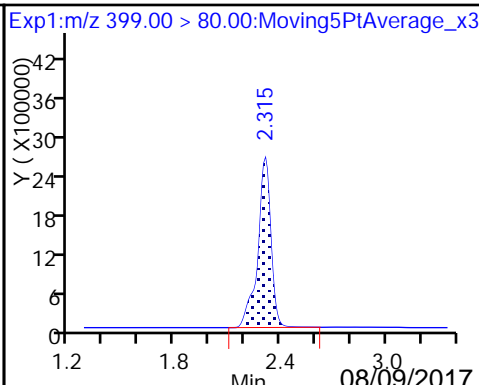
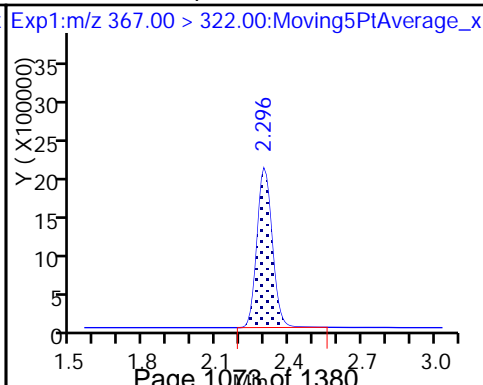
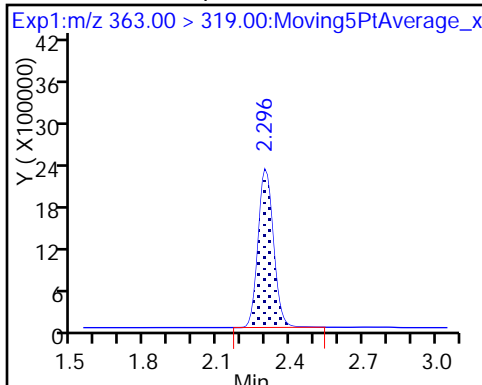
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

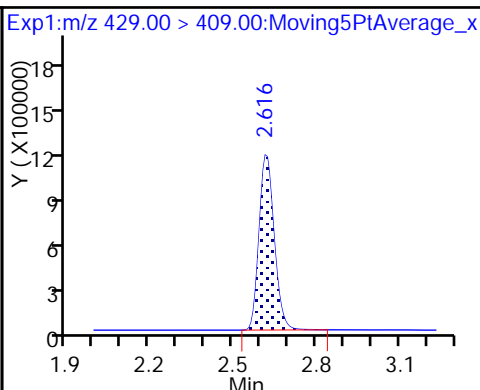
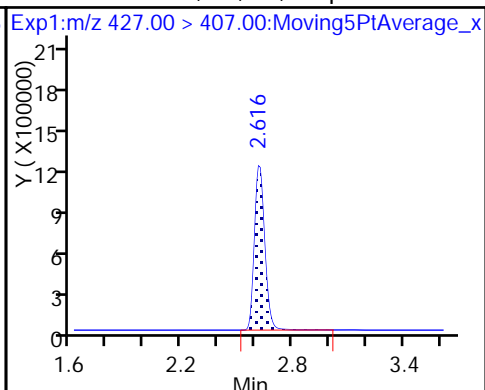
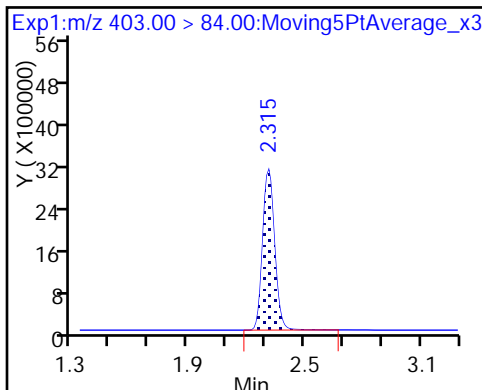
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

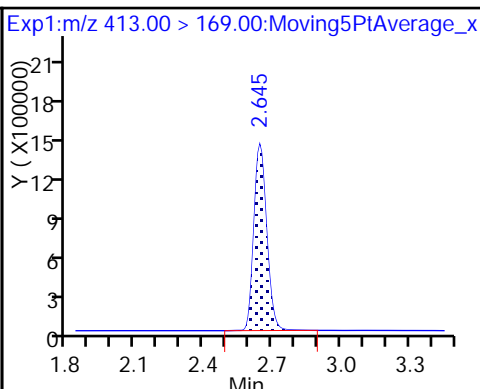
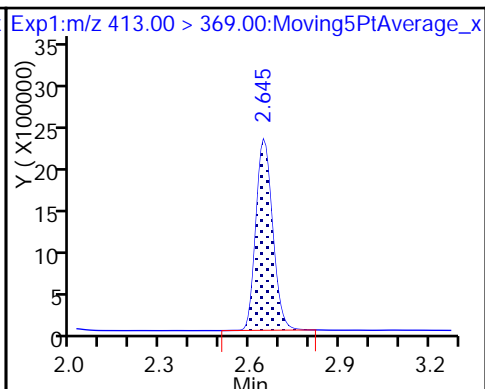
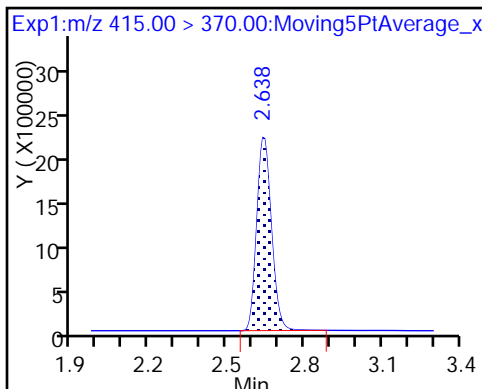
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

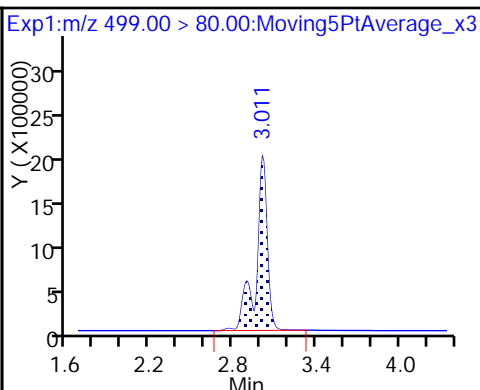
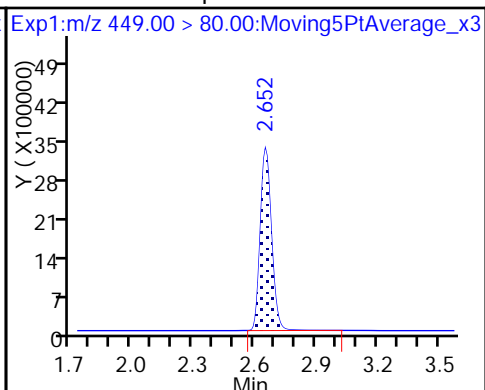
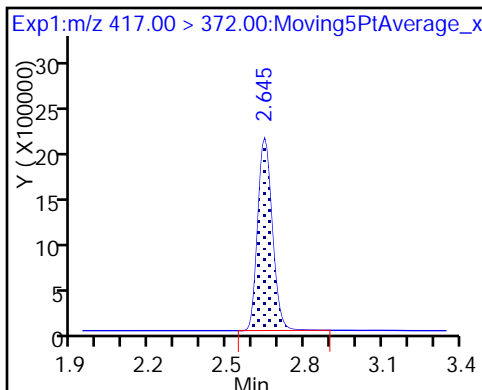
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

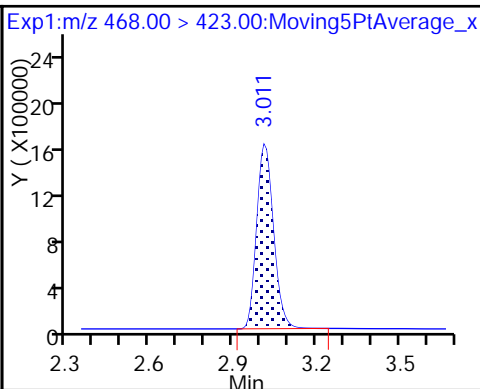
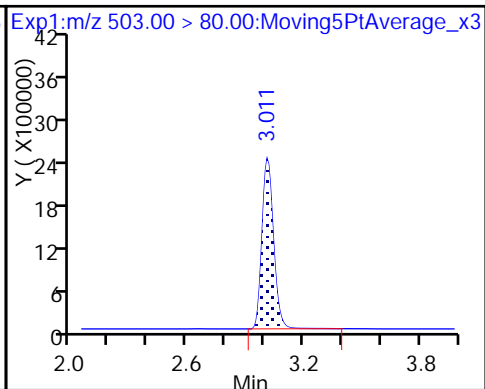
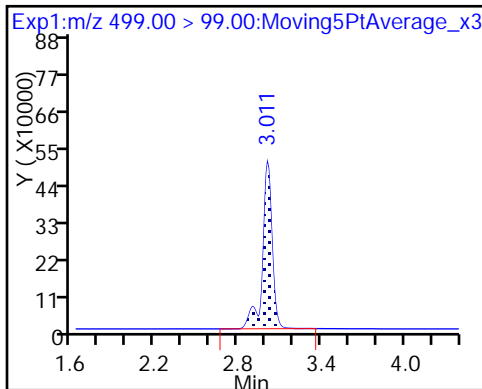
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

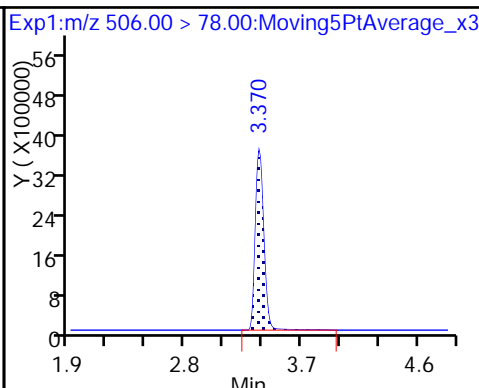
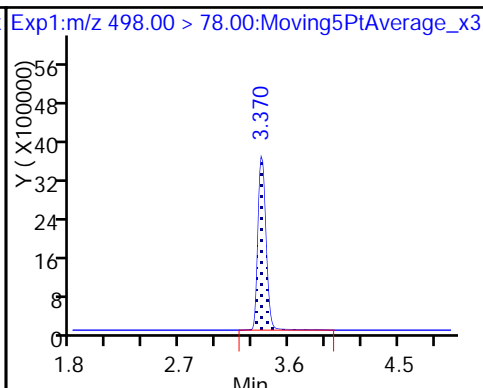
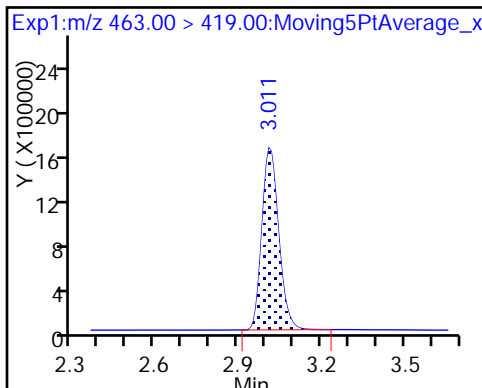
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

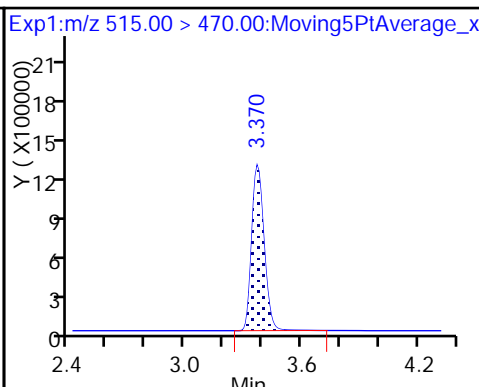
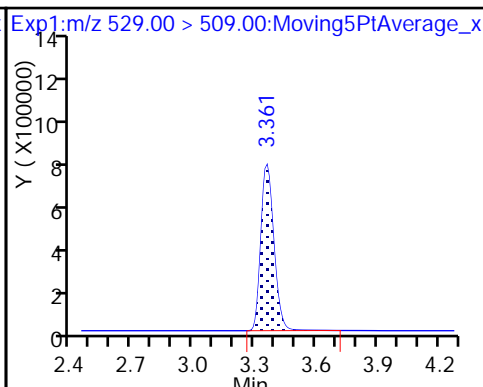
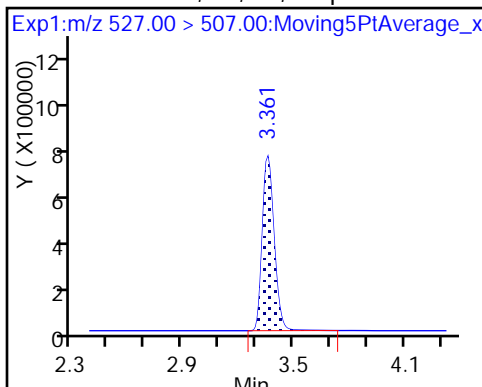
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

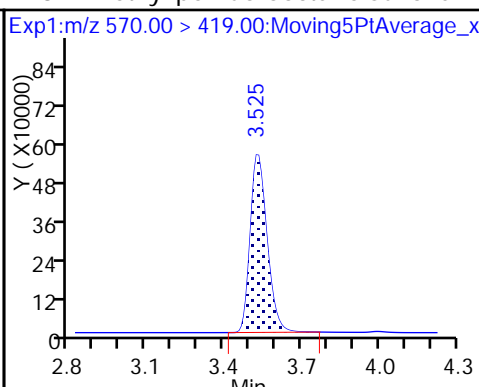
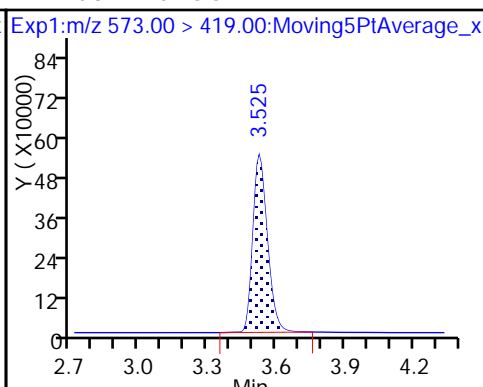
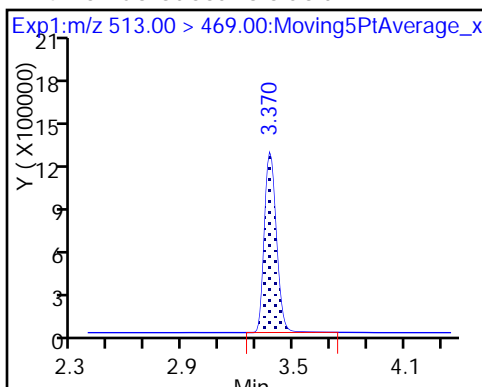
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

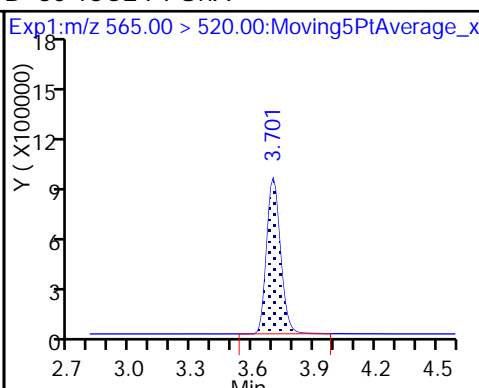
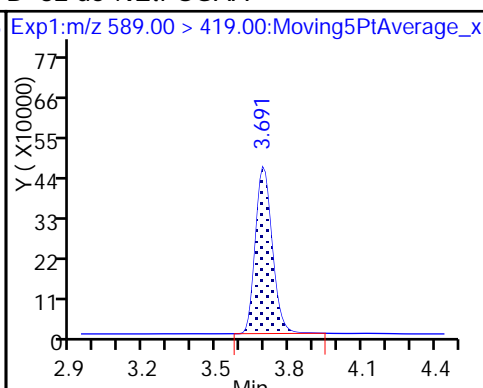
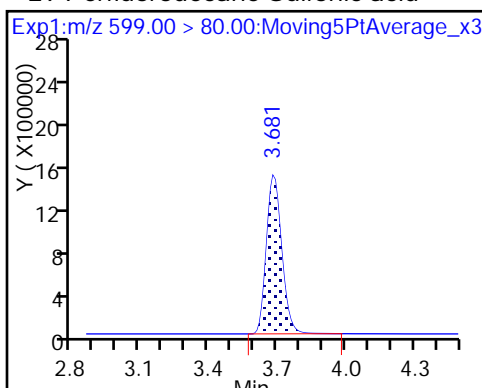
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

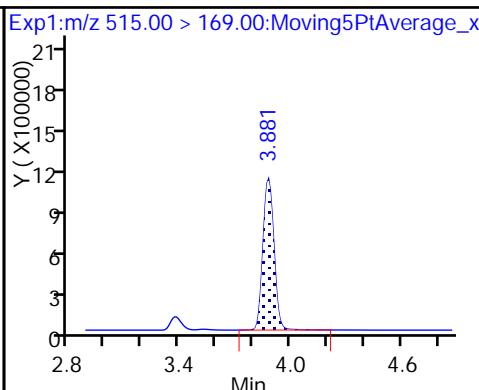
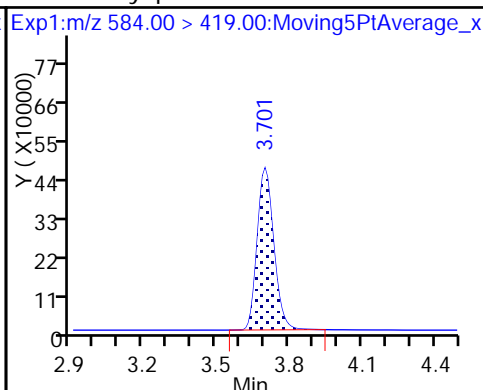
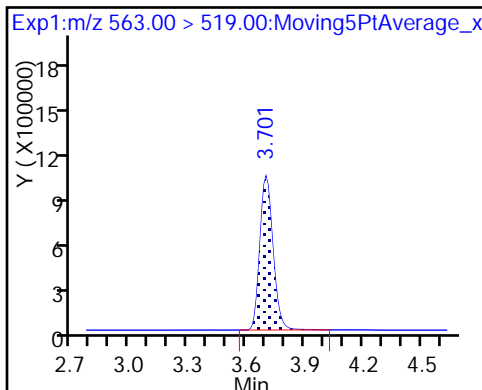
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

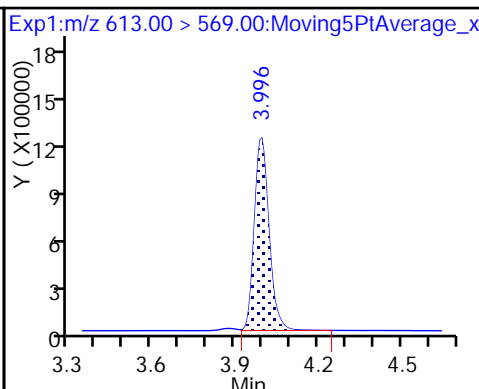
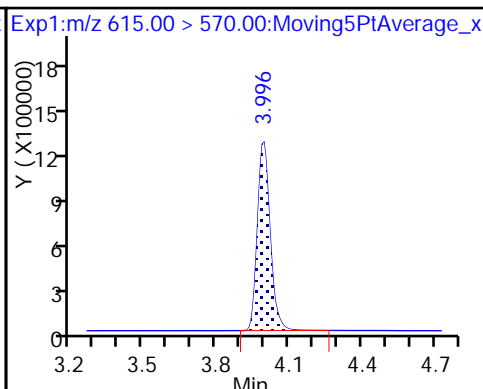
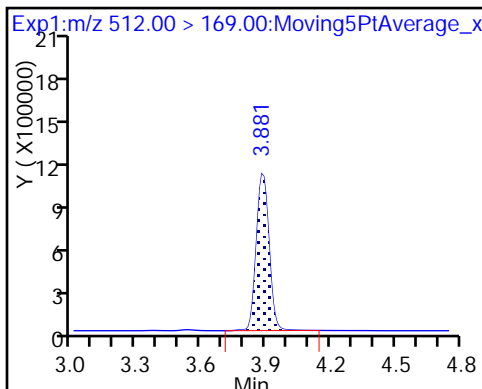
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

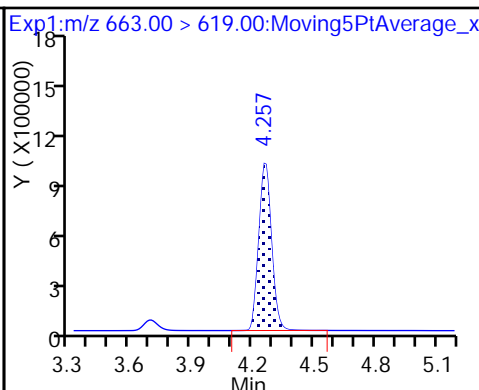
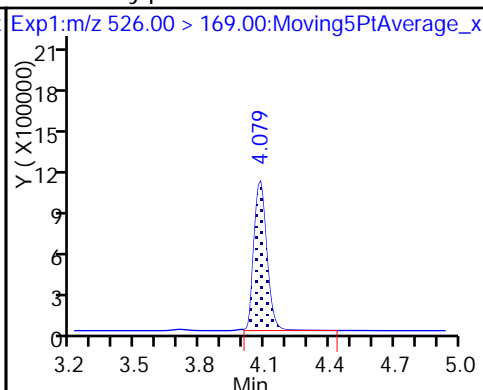
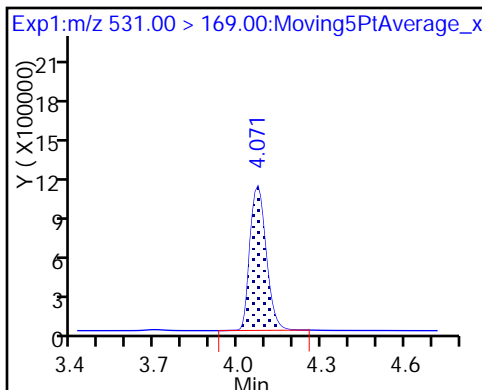
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

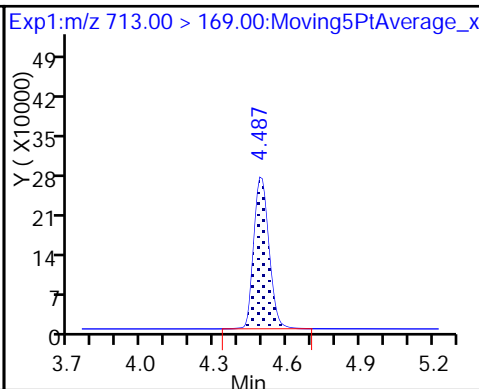
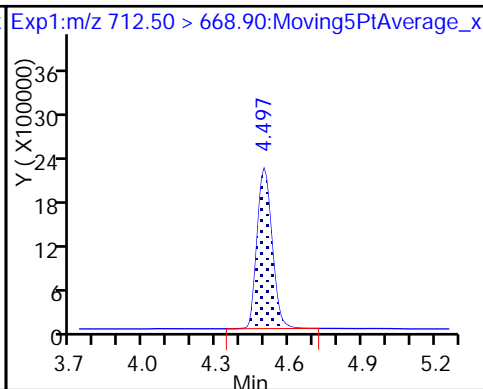
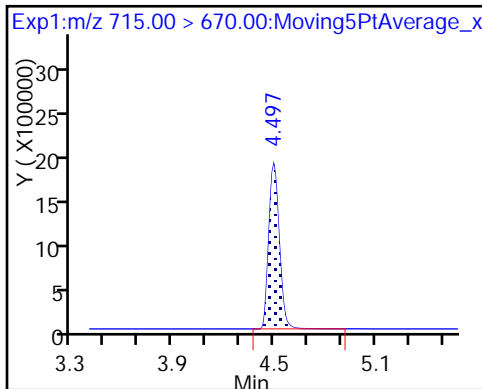
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

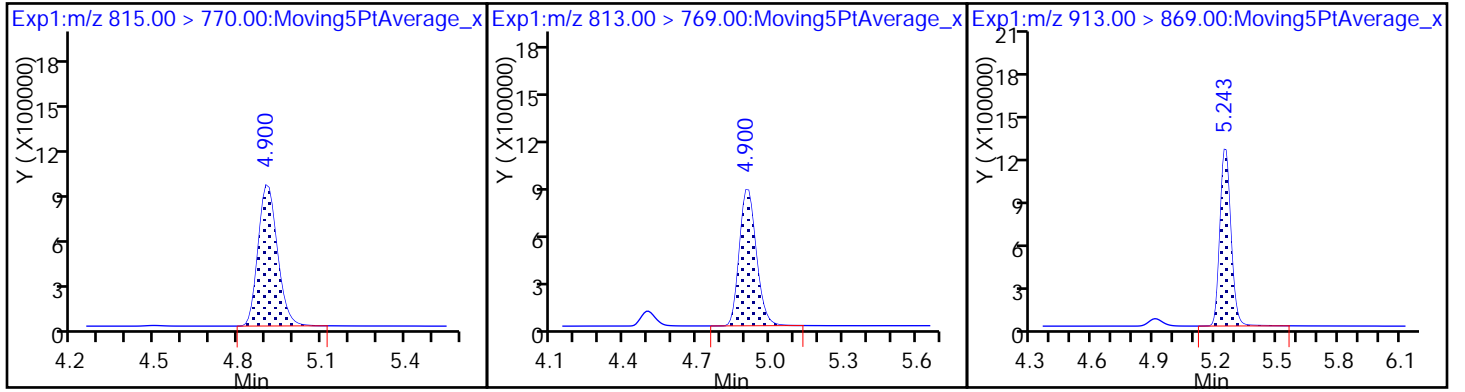




D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCVL 320-171664/1 Calibration Date: 06/29/2017 08:59  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.29A\_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9235		1.02	0.990	2.5	50.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	0.9936		0.956	0.990	-3.5	50.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.437		0.902	0.875	3.1	50.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.019		0.993	0.990	0.3	50.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.021		0.947	0.990	-4.4	50.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.211		0.988	0.901	9.7	50.0
6:2FTS	AveID	0.9859	1.033		0.984	0.939	4.8	50.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.082		1.01	0.990	2.0	50.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.104		0.904	0.943	-4.1	50.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	0.9742		0.972	0.990	-1.8	50.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	0.9769		0.856	0.919	-6.9	50.0
8:2FTS	AveID	0.999	0.9921		0.942	0.949	-0.7	50.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9532		0.978	0.990	-1.2	50.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.006		1.02	0.990	3.3	50.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.072		1.02	0.990	2.9	50.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6023		0.901	0.954	-5.6	50.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	0.9385		0.953	0.990	-3.7	50.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.009		0.939	0.990	-5.2	50.0
MeFOSA	AveID	0.9522	0.8797		0.915	0.990	-7.6	50.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.8766		0.912	0.990	-7.9	50.0
N-EtFOSA-M	AveID	0.999	0.9792		0.971	0.990	-1.9	50.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	0.9442		0.963	0.990	-2.7	50.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.029		0.861	0.990	-13.1	50.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.474		0.758	0.990	-23.5	50.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	0.8600		0.790	0.990	-20.2	50.0
13C4 PFBA	Ave	233991	299209		63.3	49.5	27.9	50.0
13C5-PFPeA	Ave	160811	215686		66.4	49.5	34.1	50.0
13C2 PFHxA	Ave	153401	204807		66.1	49.5	33.5	50.0
13C4-PFHpA	Ave	136899	186124		67.3	49.5	36.0	50.0
18O2 PFHxS	Ave	212697	260327		57.3	46.8	22.4	50.0
M2-6:2FTS	Ave	72814	88011		56.8	47.0	20.9	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCVL 320-171664/1 Calibration Date: 06/29/2017 08:59  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.29A\_003.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	167450		63.5	49.5	28.3	50.0
13C4 PFOS	Ave	162716	198586		57.8	47.3	22.0	50.0
13C5 PFNA	Ave	104991	135657		64.0	49.5	29.2	50.0
M2-8:2FTS	Ave	56620	60317		50.5	47.4	6.5	50.0
13C2 PFDA	Ave	100020	117050		57.9	49.5	17.0	50.0
13C8 FOSA	Ave	263963	296366		55.6	49.5	12.3	50.0
d3-NMeFOSAA	Ave	37033	45867		61.3	49.5	23.9	50.0
d5-NEtFOSAA	Ave	36944	45957		61.6	49.5	24.4	50.0
13C2 PFUnA	Ave	74302	92711		61.8	49.5	24.8	50.0
d-N-MeFOSA-M	Ave	74603	79932		53.0	49.5	7.1	50.0
13C2 PFDoA	Ave	73421	86845		58.6	49.5	18.3	50.0
d-N-EtFOSA-M	Ave	73544	75807		51.0	49.5	3.1	50.0
13C2-PFTEtDA	Ave	151466	153380		50.1	49.5	1.3	50.0
13C2-PFHxDA	Ave	83886	83948		49.5	49.5	0.0	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44878.b\2017.06.29A\_003.d  
 Lims ID: CCVL 2  
 Client ID:  
 Sample Type: CCVL  
 Inject. Date: 29-Jun-2017 08:59:31 ALS Bottle#: 29 Worklist Smp#: 1  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCVL  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44878.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 11:49:49 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 11:29:38

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.535	1.533	0.002	1.000	273575	1.02	103	143	
D 1 13C4 PFBA	217.00 > 172.00	1.526	1.533	-0.007		14812349	63.3	128	108051	
4 Perfluoropentanoic acid	262.90 > 219.00	1.735	1.742	-0.007	1.000	212173	0.9557	96.5	94.0	
D 3 13C5-PFPeA	267.90 > 223.00	1.735	1.742	-0.007		10677515	66.4	134	19843	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.753	1.760	-0.007	1.000	327354	0.9020	103	213	
	298.90 > 99.00	1.753	1.760	-0.007	1.000	142693	2.29(0.00-0.00)		201	
D 47 13C3-PFBS	301.90 > 83.00	1.753	1.760	-0.007		272980	NC		6419	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.948	1.958	-0.010	1.000	75912	0.9083	98.2	3832	
D 7 13C2 PFHxA	315.00 > 270.00	1.982	1.992	-0.010		10138943	66.1	134	13933	
6 Perfluorohexanoic acid	313.00 > 269.00	1.982	2.003	-0.021	1.000	206732	0.99	100	304	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.301	2.312	-0.011	1.000	188144	0.9465	95.6	242	
D 9 13C4-PFHpA	367.00 > 322.00	2.301	2.312	-0.011		9214042	67.3	136	45392	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.317	2.329	-0.012	1.000	284127	0.9880	110	251	
D 11 18O2 PFHxS	403.00 > 84.00	2.317	2.329	-0.012		12191571	57.3	122	29007	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.623	2.634	-0.011	1.000	85372	0.9839	105	2102
D 12 M2-6:2FTS	429.00	> 409.00	2.623	2.634	-0.011		4139114	56.8	121	19046
* 62 13C2-PFOA	415.00	> 370.00	2.644	2.656	-0.012		8713739	49.5	100	18686
15 Perfluorooctanoic acid	413.00	> 369.00	2.644	2.663	-0.019	1.000	179327	1.01	102	34.5
	413.00	> 169.00	2.644	2.663	-0.019	1.000	106977	1.68(0.90-1.10)		376
D 14 13C4 PFOA	417.00	> 372.00	2.644	2.663	-0.019		8289604	63.5	128	15545
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.652	2.671	-0.019	1.000	206557	0.9041	95.9	3471
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.011	3.026	-0.015	1.000	178239	0.8556	93.1	1096
	499.00	> 99.00	3.011	3.026	-0.015	1.000	39755	4.48(0.90-1.10)		365
D 18 13C4 PFOS	503.00	> 80.00	3.011	3.026	-0.015		9398426	57.8	122	12248
D 19 13C5 PFNA	468.00	> 423.00	3.011	3.026	-0.015		6715701	64.0	129	12911
20 Perfluorononanoic acid	463.00	> 419.00	3.011	3.026	-0.015	1.000	130848	0.9723	98.2	336
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.370	3.379	-0.009	1.000	295114	1.02	103	4056
D 21 13C8 FOSA	506.00	> 78.00	3.370	3.379	-0.009		14671587	55.6	112	555632
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.361	3.379	-0.018	1.000	56757	0.9423	99.3	2206
D 26 M2-8:2FTS	529.00	> 509.00	3.361	3.379	-0.018		2860579	50.5	107	14012
D 23 13C2 PFDA	515.00	> 470.00	3.370	3.388	-0.018		5794570	57.9	117	25100
24 Perfluorodecanoic acid	513.00	> 469.00	3.370	3.388	-0.018	1.000	110464	0.9781	98.8	691
D 27 d3-NMeFOSAA	573.00	> 419.00	3.525	3.542	-0.017		2270646	61.3	124	15312
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.525	3.542	-0.017	1.000	48698	1.02	103	270
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.681	3.700	-0.019	1.000	114153	0.9015	94.4	2829
D 32 d5-NEtFOSAA	589.00	> 419.00	3.691	3.710	-0.019		2275117	61.6	124	5116
D 30 13C2 PFUnA	565.00	> 520.00	3.700	3.710	-0.010		4589642	61.8	125	22009
31 Perfluoroundecanoic acid	563.00	> 519.00	3.700	3.710	-0.010	1.000	92649	0.9391	94.8	246
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.700	3.720	-0.020	1.003	42705	0.9534	96.3	757

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.872	3.889	-0.017	3957045	53.0	107	754	
35 MeFOSA	512.00	> 169.00	3.880	3.889	-0.009	1.000	69623	0.9148	92.4	1927
D 36 13C2 PFDaA	615.00	> 570.00	3.994	4.008	-0.014	4299270	58.6	118	17412	
37 Perfluorododecanoic acid	613.00	> 569.00	3.994	4.008	-0.014	1.000	75378	0.9116	92.1	91.7
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.069	4.078	-0.009	3752844	51.0	103	6481	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.069	4.078	-0.009	1.000	73494	0.9709	98.1	1807
41 Perfluorotridecanoic acid	663.00	> 619.00	4.256	4.273	-0.017	1.000	81186	0.9632	97.3	20.7
D 43 13C2-PFTeDA	715.00	> 670.00	4.491	4.510	-0.019	7593076	50.1	101	51450	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.491	4.510	-0.019	1.000	174423	0.8608	86.9	106
	713.00	> 169.00	4.491	4.510	-0.019	1.000	23595	7.39(0.00-0.00)		945
D 44 13C2-PFHxDA	815.00	> 770.00	4.901	4.922	-0.021	4155853	49.5	100	5483	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.901	4.922	-0.021	1.000	126772	0.7577	76.5	17.3
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.243	5.265	-0.022	1.000	73946	0.7898	79.8	22.5

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L2\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44878.b\2017.06.29A\_003.d

Injection Date: 29-Jun-2017 08:59:31

Instrument ID: A8\_N

Lims ID: CCVL 2

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 29

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

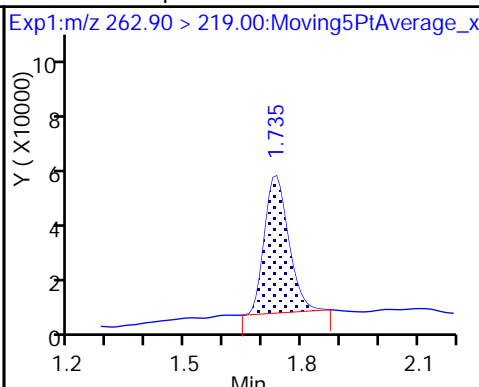
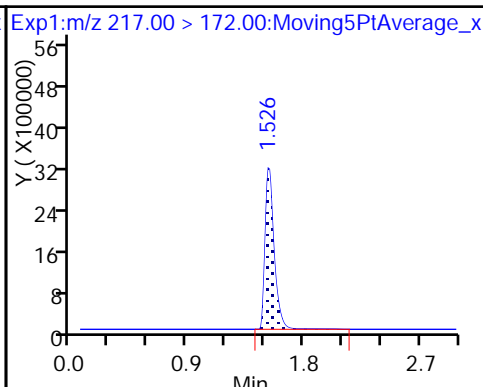
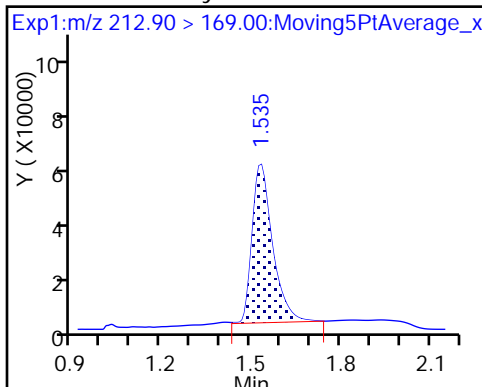
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

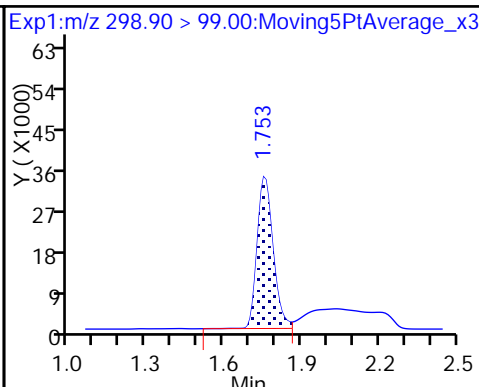
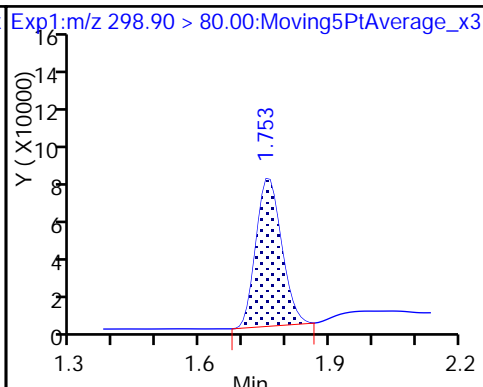
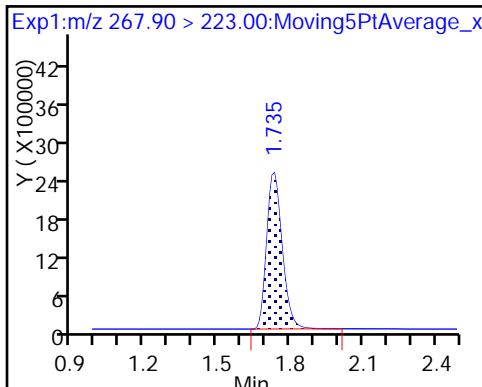
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

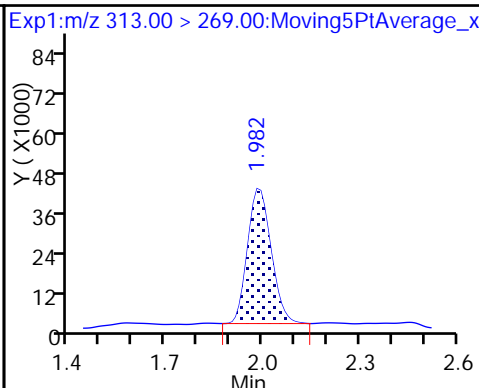
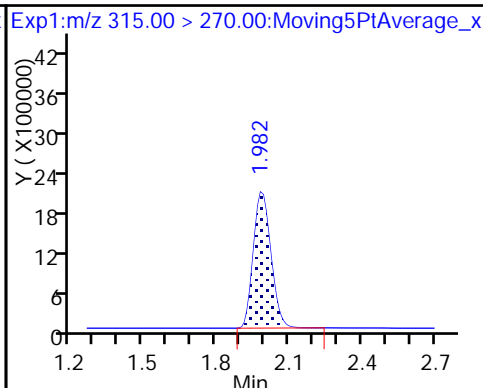
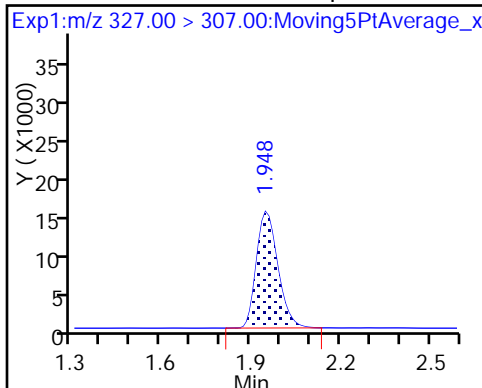
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

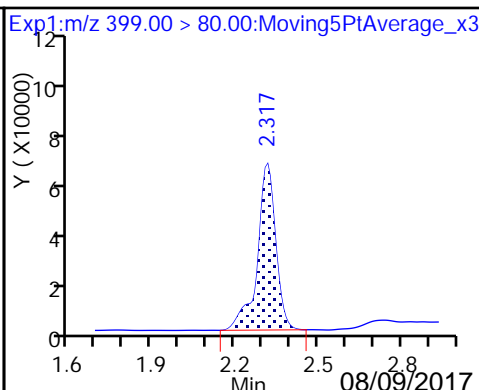
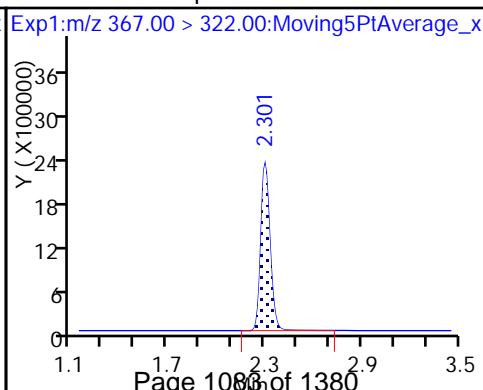
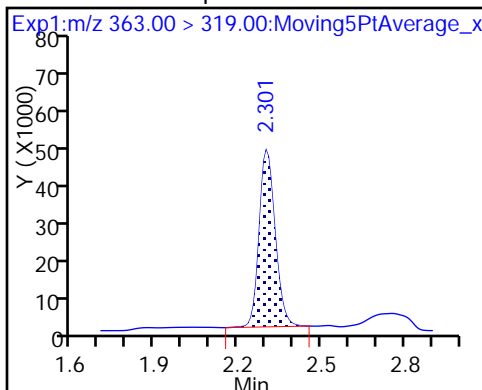
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

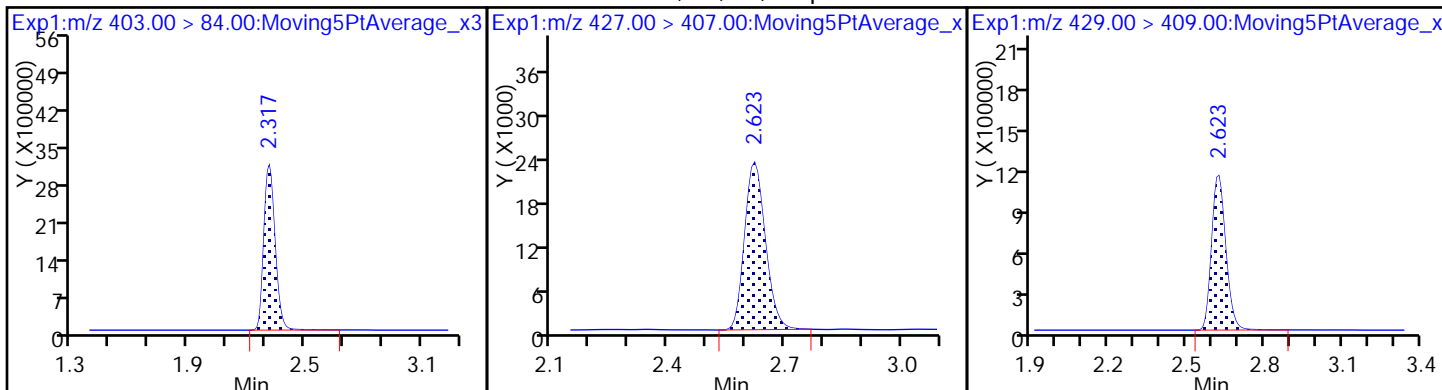
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

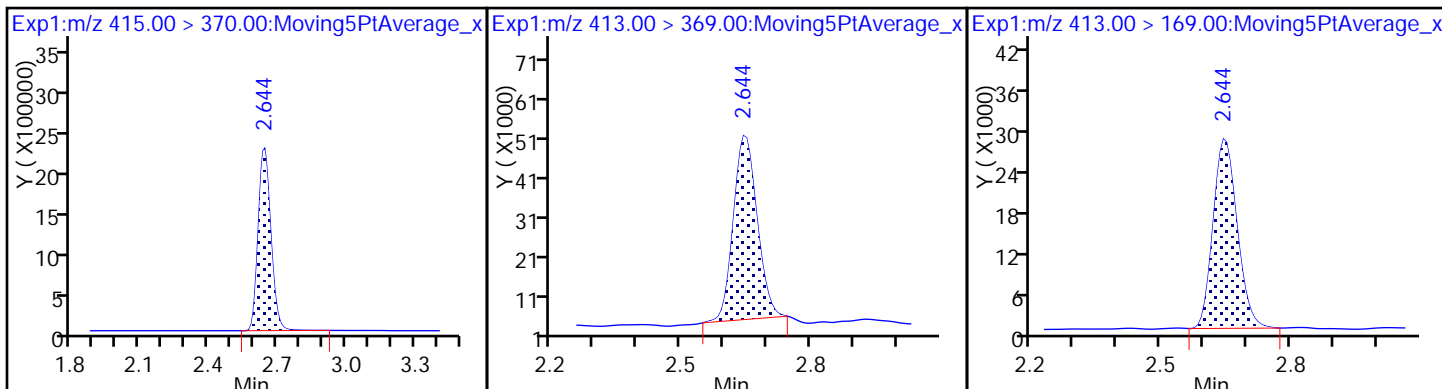
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

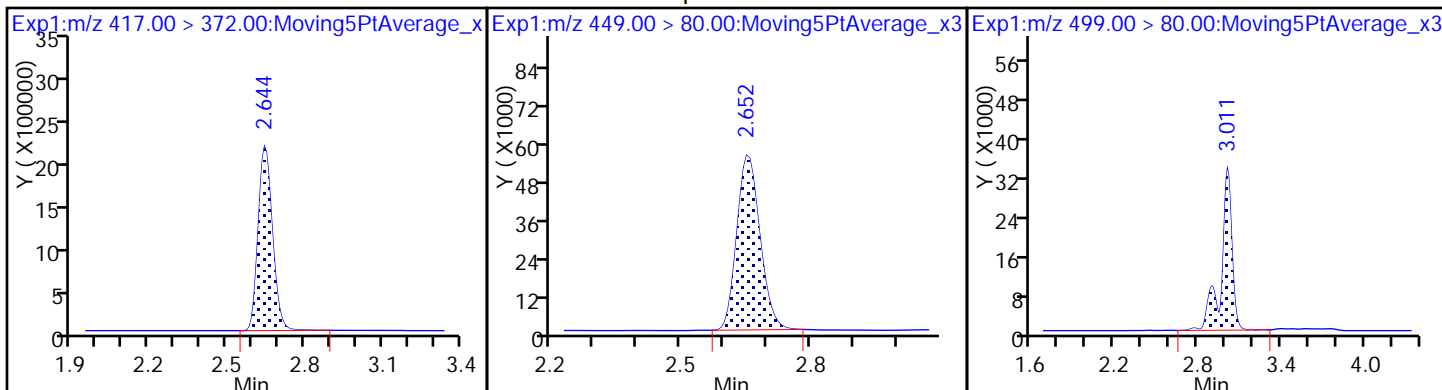
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

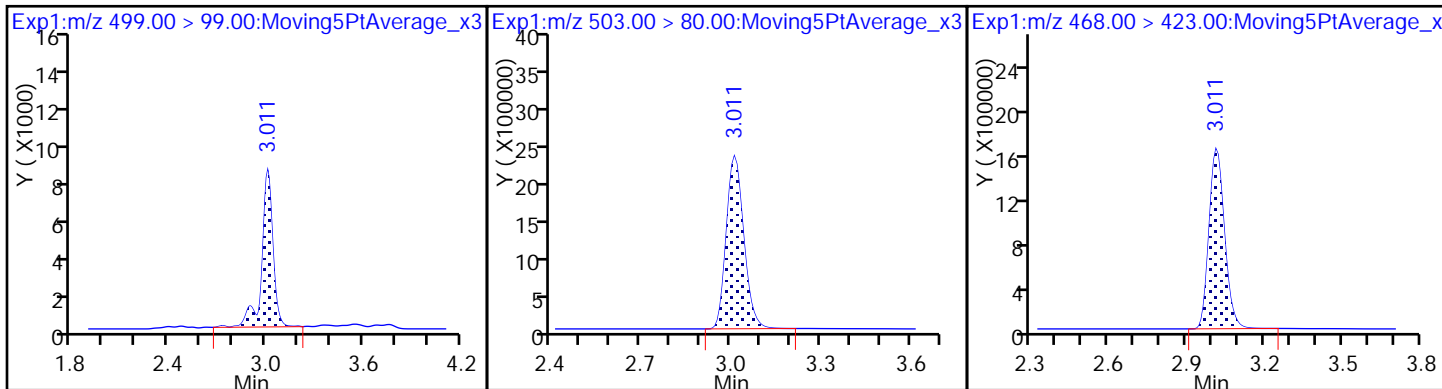
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

D 19 13C5 PFNA

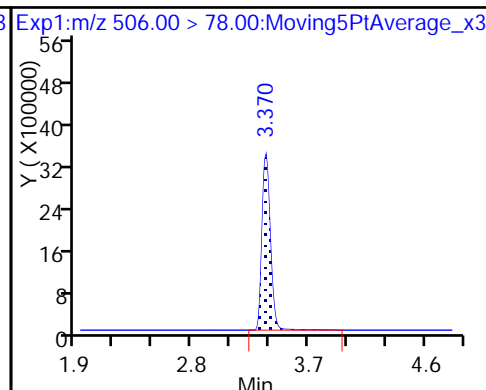
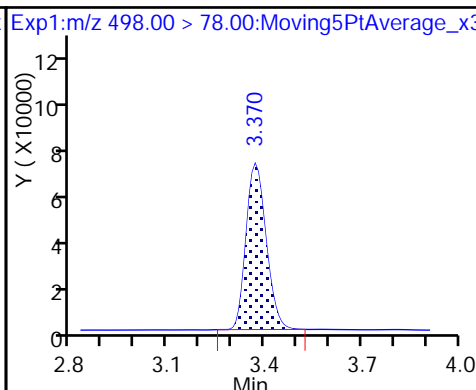
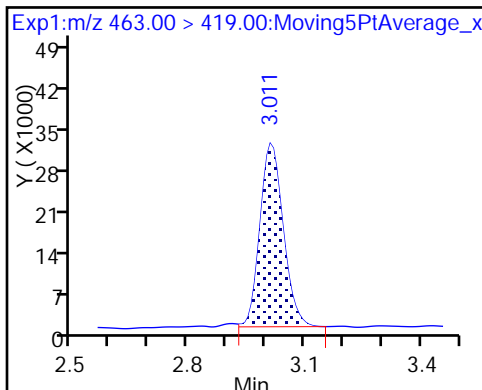




20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

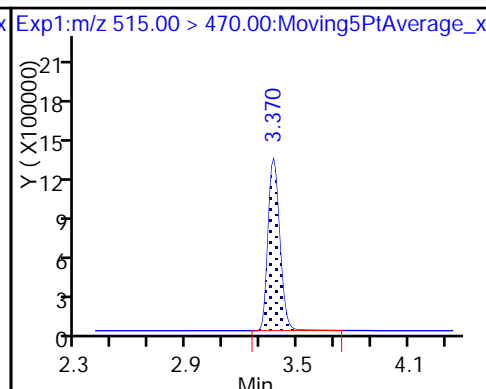
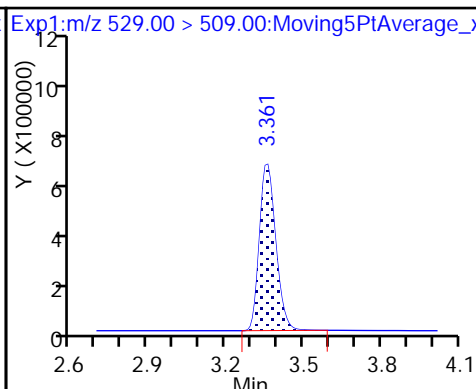
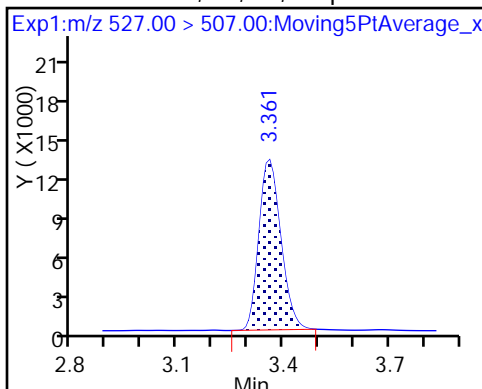
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

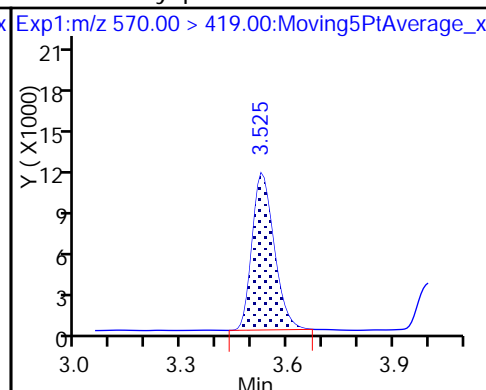
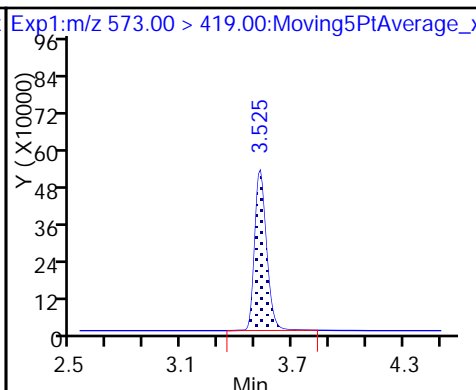
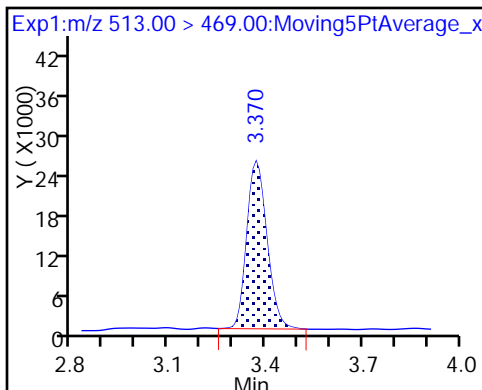
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

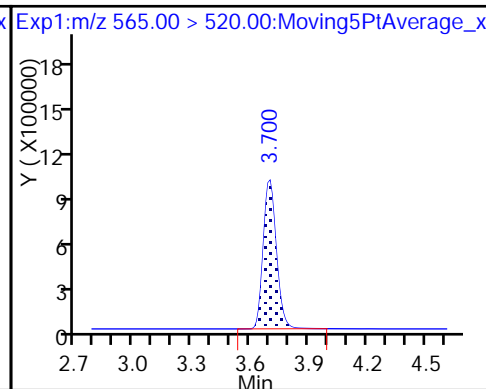
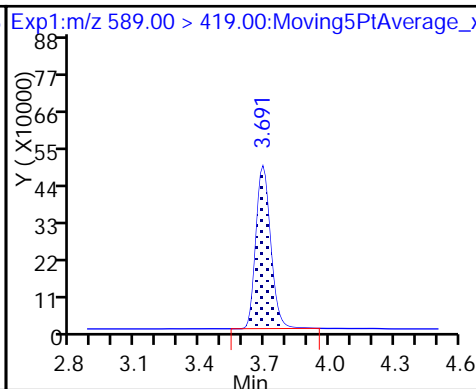
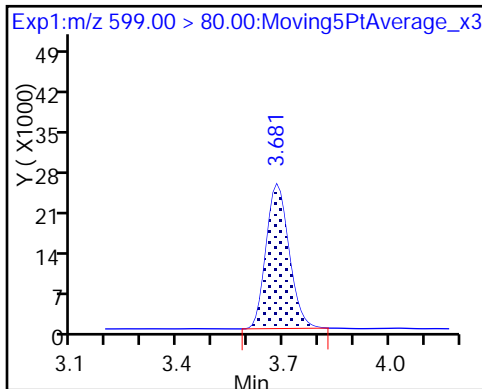
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

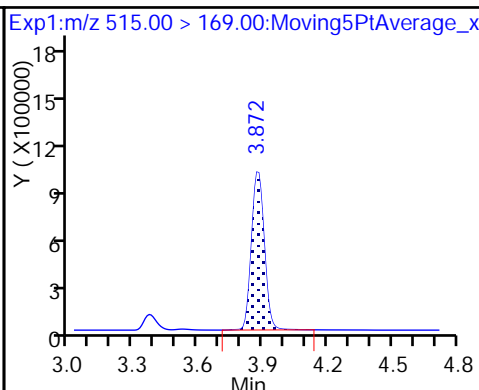
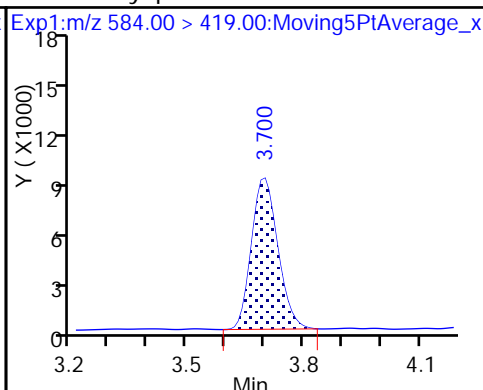
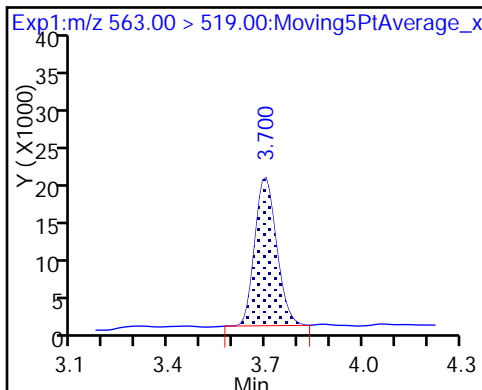
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

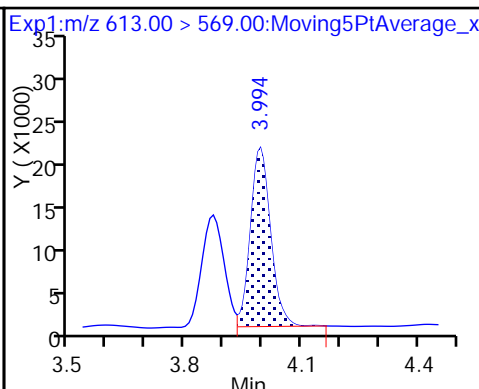
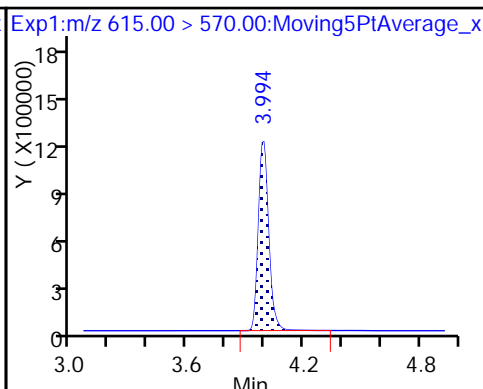
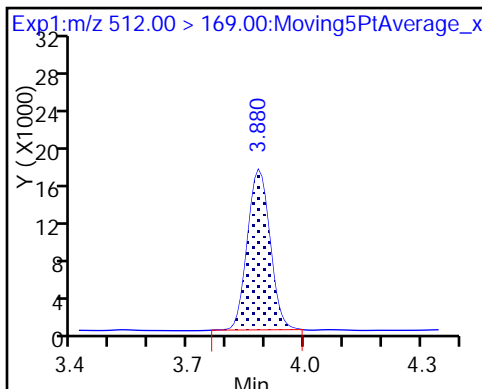
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

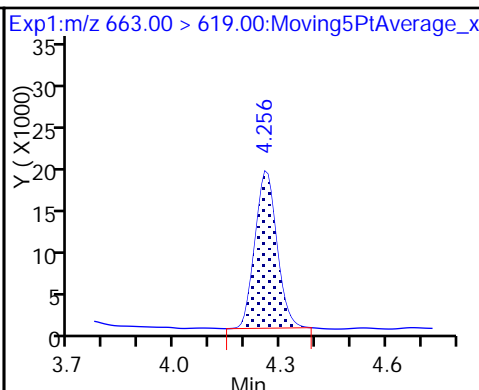
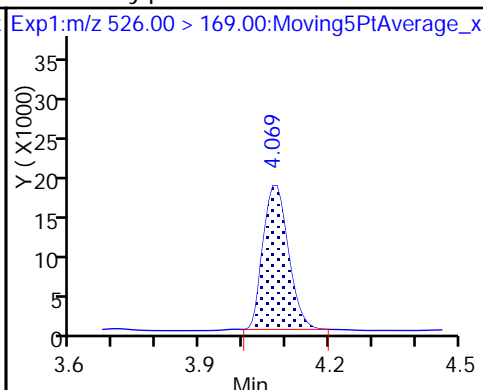
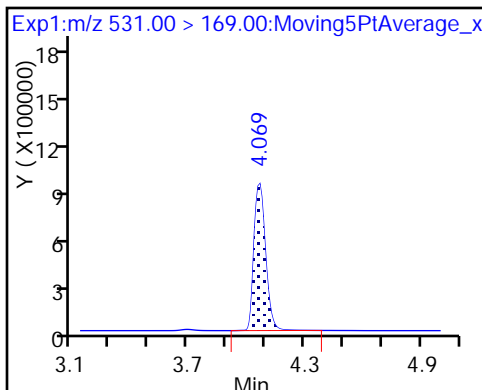
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

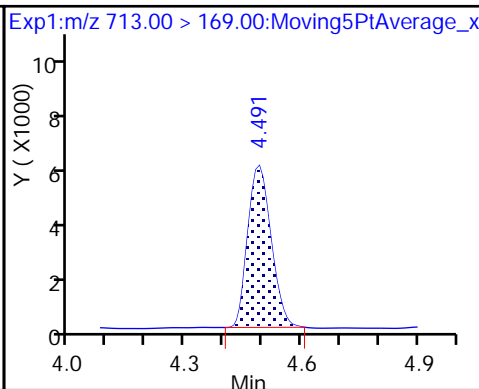
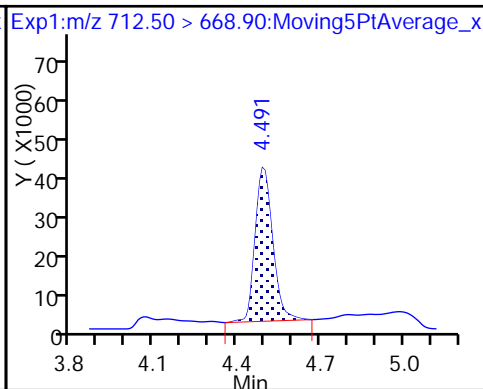
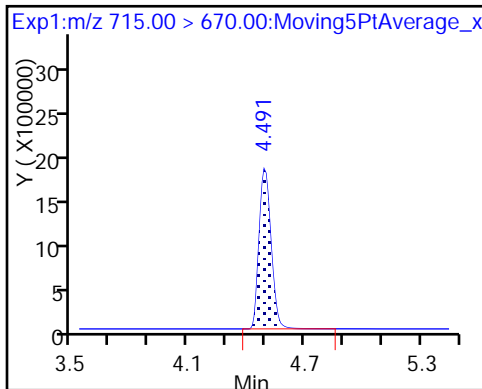
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

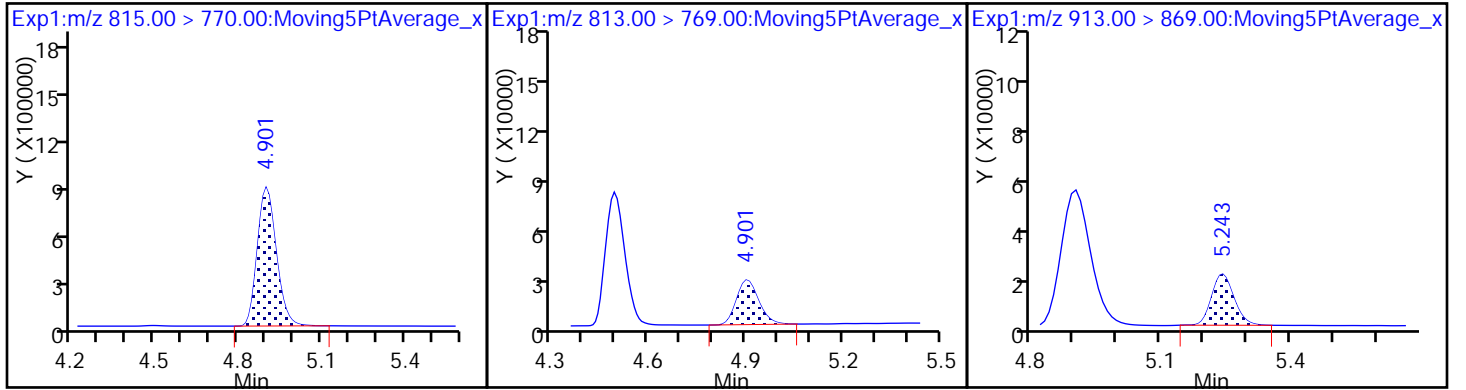
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171828/1 Calibration Date: 06/29/2017 18:11  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.29D\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9364		20.6	19.8	4.0	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.048		20.2	19.8	1.8	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.517		19.0	17.5	8.8	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.033		20.1	19.8	1.6	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.086		20.1	19.8	1.7	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.043		17.0	18.0	-5.6	25.0
6:2FTS	AveID	0.9859	0.9603		18.3	18.8	-2.6	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.074		20.1	19.8	1.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.207		19.8	18.9	4.9	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	0.997		19.9	19.8	0.5	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.042		18.3	18.4	-0.7	25.0
8:2FTS	AveID	0.999	1.021		19.4	19.0	2.2	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9616		19.7	19.8	-0.3	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.004		20.4	19.8	3.1	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.122		21.3	19.8	7.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6418		19.2	19.1	0.6	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	1.025		20.8	19.8	5.1	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	0.9817		18.3	19.8	-7.7	25.0
MeFOSA	AveID	0.9522	0.9553		19.9	19.8	0.3	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9427		19.6	19.8	-1.0	25.0
N-EtFOSA-M	AveID	0.999	1.050		20.8	19.8	5.1	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	1.000		20.4	19.8	3.0	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.183		18.5	19.8	-6.4	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.188		22.7	19.8	14.9	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	1.168		21.5	19.8	8.4	25.0
13C4 PFBA	Ave	233991	288850		61.1	49.5	23.4	50.0
13C5-PFPeA	Ave	160811	196943		60.6	49.5	22.5	50.0
13C2 PFHxA	Ave	153401	190702		61.5	49.5	24.3	50.0
13C4-PFHpA	Ave	136899	172869		62.5	49.5	26.3	50.0
18O2 PFHxS	Ave	212697	259573		57.2	46.8	22.0	50.0
M2-6:2FTS	Ave	72814	89494		57.8	47.0	22.9	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171828/1 Calibration Date: 06/29/2017 18:11  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.29D\_001.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	159946		60.7	49.5	22.5	50.0
13C4 PFOS	Ave	162716	184895		53.8	47.3	13.6	50.0
13C5 PFNA	Ave	104991	129772		61.2	49.5	23.6	50.0
M2-8:2FTS	Ave	56620	68447		57.3	47.4	20.9	50.0
13C2 PFDA	Ave	100020	111874		55.4	49.5	11.9	50.0
13C8 FOSA	Ave	263963	285461		53.5	49.5	8.1	50.0
d3-NMeFOSAA	Ave	37033	45396		60.7	49.5	22.6	50.0
13C2 PFUnA	Ave	74302	94053		62.7	49.5	26.6	50.0
d5-NEtFOSAA	Ave	36944	45818		61.4	49.5	24.0	50.0
d-N-MeFOSA-M	Ave	74603	75262		49.9	49.5	0.9	50.0
13C2 PFDoA	Ave	73421	98303		66.3	49.5	33.9	50.0
d-N-EtFOSA-M	Ave	73544	73920		49.8	49.5	0.5	50.0
13C2-PFTeDA	Ave	151466	200085		65.4	49.5	32.1	50.0
13C2-PFHxDA	Ave	83886	127112		75.0	49.5	51.5*	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_001.d  
 Lims ID: CCV L4  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 29-Jun-2017 18:11:31 ALS Bottle#: 31 Worklist Smp#: 1  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L4  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 08:15:59 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK014

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.535	1.533	0.002	1.000	5356008	20.6	104	2221	
D 1 13C4 PFBA	217.00 > 172.00	1.535	1.533	0.002		14299488	61.1	123	16493	
4 Perfluoropentanoic acid	262.90 > 219.00	1.735	1.742	-0.007	1.000	4085564	20.2	102	2019	
D 3 13C5-PFPeA	267.90 > 223.00	1.735	1.742	-0.007		9749648	60.6	122	47196	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.761	1.760	0.001	1.000	6890795	19.0	109	3539	
	298.90 > 99.00	1.761	1.760	0.001	1.000	2709784	2.54(0.00-0.00)		2950	
D 47 13C3-PFBS	301.90 > 83.00	1.753	1.760	-0.007		269123	NC		12716	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.948	1.958	-0.010	1.000	1550047	18.2	98.6	62954	
D 7 13C2 PFHxA	315.00 > 270.00	1.993	1.992	0.001		9440686	61.5	124	21417	
6 Perfluorohexanoic acid	313.00 > 269.00	1.993	2.003	-0.010	1.000	3900123	20.1	102	4810	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.303	2.312	-0.009	1.000	3717746	20.1	102	3643	
D 9 13C4-PFHpA	367.00 > 322.00	2.303	2.312	-0.009		8557864	62.5	126	16181	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.320	2.329	-0.009	1.000	4880224	17.0	94.4	2617	
D 11 18O2 PFHxS	403.00 > 84.00	2.320	2.329	-0.009		12156231	57.2	122	26076	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00 > 407.00	2.632	2.634	-0.002	1.000	1613250	18.3	97.4	11958	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.632	2.634	-0.002	4208893	57.8	123	14267	
* 62 13C2-PFOA	415.00	> 370.00	2.654	2.656	-0.002	8459122	49.5	100	17286	
15 Perfluorooctanoic acid	413.00	> 369.00	2.654	2.663	-0.009	1.000	3400091	20.1	101	772
	413.00	> 169.00	2.654	2.663	-0.009	1.000	2071574	1.64(0.90-1.10)	3754	
D 14 13C4 PFOA	417.00	> 372.00	2.654	2.663	-0.009	7918138	60.7	123	12649	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.662	2.671	-0.009	1.000	4207239	19.8	105	13368
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.024	3.026	-0.002	1.000	3540686	18.3	99.3	6774
	499.00	> 99.00	3.024	3.026	-0.002	1.000	770571	4.59(0.90-1.10)	4733	
D 18 13C4 PFOS	503.00	> 80.00	3.024	3.026	-0.002	8750490	53.8	114	12511	
D 19 13C5 PFNA	468.00	> 423.00	3.024	3.026	-0.002	6424360	61.2	124	34482	
20 Perfluorononanoic acid	463.00	> 419.00	3.024	3.026	-0.002	1.000	2562697	19.9	101	4167
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.385	3.379	0.006	1.000	5676433	20.4	103	39651
D 21 13C8 FOSA	506.00	> 78.00	3.385	3.379	0.006	14131709	53.5	108	360459	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.367	3.379	-0.012	1.000	1325355	19.4	102	8730
D 26 M2-8:2FTS	529.00	> 509.00	3.367	3.379	-0.012	3246173	57.3	121	22297	
D 23 13C2 PFDA	515.00	> 470.00	3.385	3.388	-0.003	5538301	55.4	112	25435	
24 Perfluorodecanoic acid	513.00	> 469.00	3.385	3.388	-0.003	1.000	2130328	19.7	99.7	7782
D 27 d3-NMeFOSAA	573.00	> 419.00	3.538	3.542	-0.004	2247307	60.7	123	9737	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.538	3.542	-0.004	1.000	1008493	21.3	108	3307
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.696	3.700	-0.004	1.000	2265078	19.2	101	14567
D 32 d5-NEtFOSAA	589.00	> 419.00	3.706	3.710	-0.004	2268242	61.4	124	5416	
D 30 13C2 PFUnA	565.00	> 520.00	3.706	3.710	-0.004	4656101	62.7	127	21710	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.716	3.710	0.006	1.000	1828369	18.3	92.3	4836
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.716	3.720	-0.004	1.003	929616	20.8	105	5165
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.894	3.889	0.005	3725820	49.9	101	661	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.894	3.889	0.005	1.000	1423737	19.9	100	5946	
D 36 13C2 PFDaA	615.00 > 570.00	4.006	4.008	-0.002		4866507	66.3	134	17595	
37 Perfluorododecanoic acid	613.00 > 569.00	4.006	4.008	-0.002	1.000	1834987	19.6	99.0	2235	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.083	4.078	0.005		3659393	49.8	101	6464	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.091	4.078	0.013	1.000	1536739	20.8	105	3808	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.268	4.273	-0.005	1.000	1946872	20.4	103	452	
D 43 13C2-PFTeDA	715.00 > 670.00	4.506	4.510	-0.004		9905175	65.4	132	73036	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.506	4.510	-0.004	1.000	4250112	18.5	93.6	4484	
	713.00 > 169.00	4.506	4.510	-0.004	1.000	571044	7.44(0.00-0.00)		11145	
D 44 13C2-PFHxDA	815.00 > 770.00	4.919	4.922	-0.003		6292680	75.0	152	8309	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.919	4.922	-0.003	1.000	2313333	22.7	115	436	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.255	5.265	-0.010	1.000	2274472	21.5	108	740	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L4\_00003

Amount Added: 1.00

Units: mL



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_001.d

Injection Date: 29-Jun-2017 18:11:31

Instrument ID: A8\_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

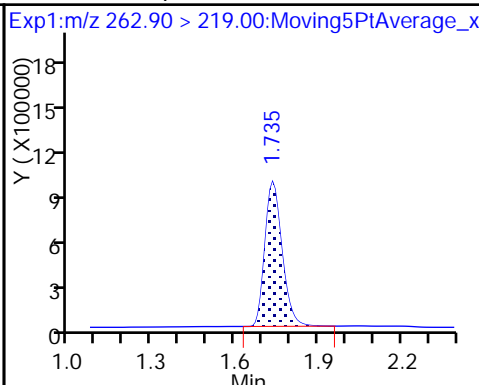
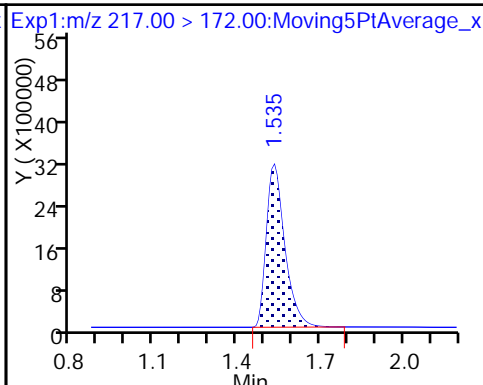
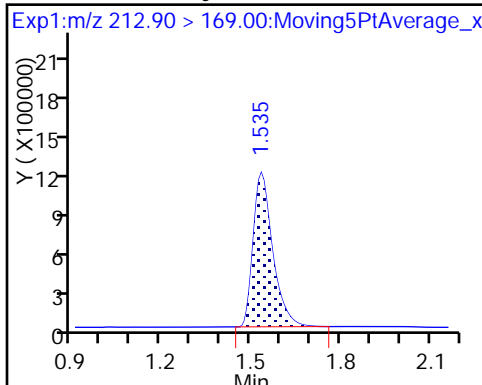
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

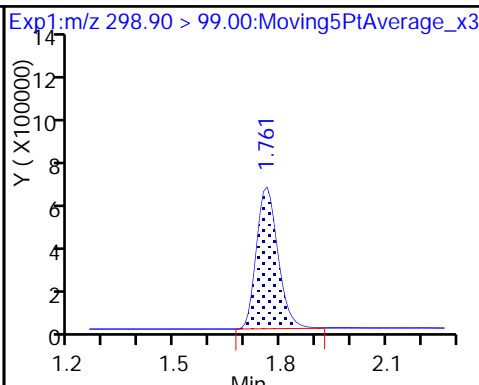
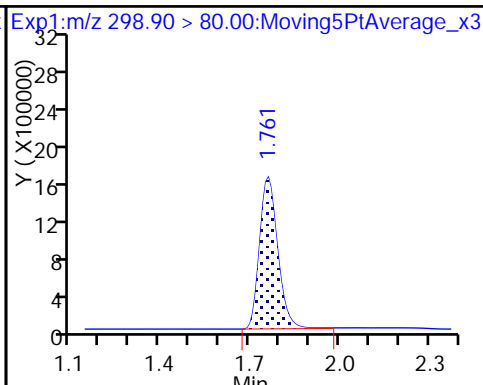
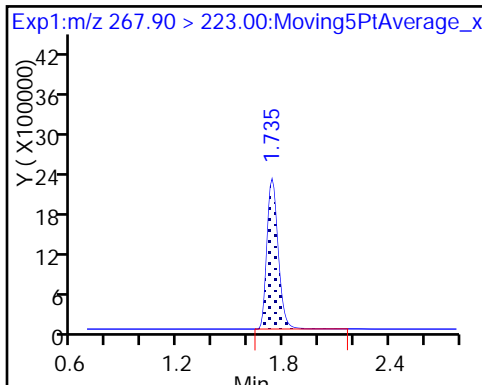
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

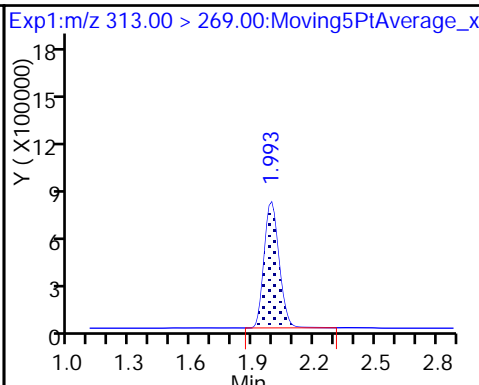
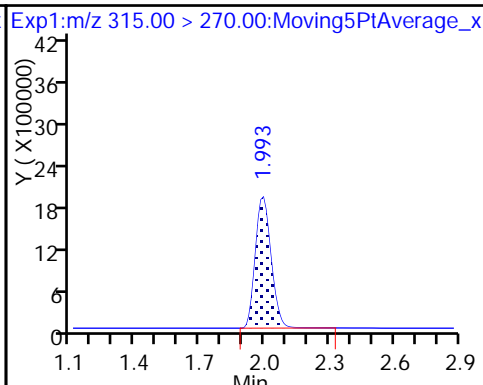
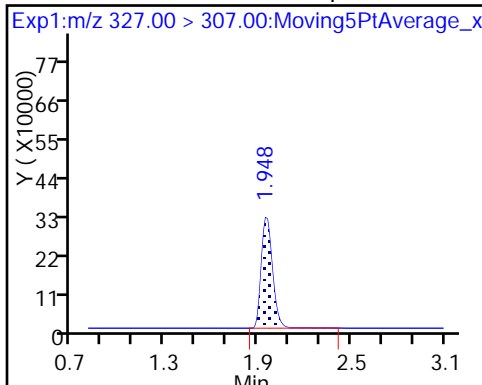
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

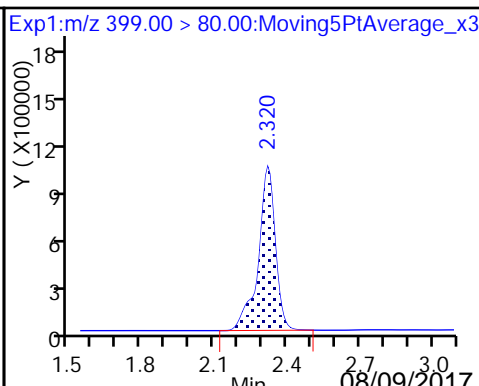
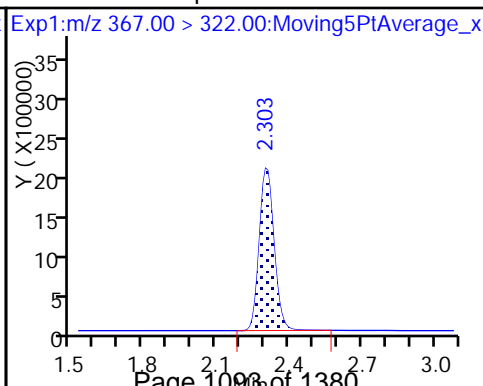
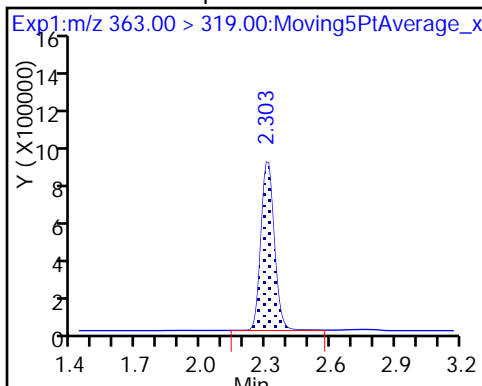
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

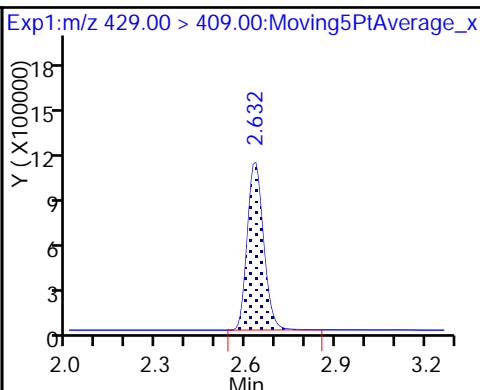
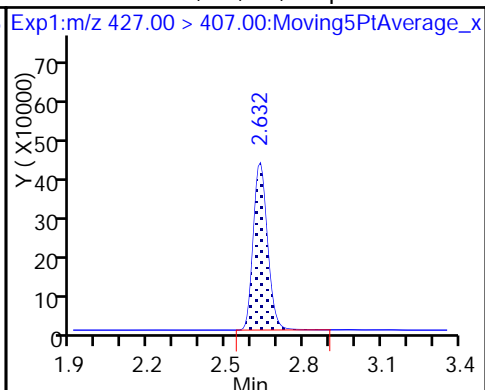
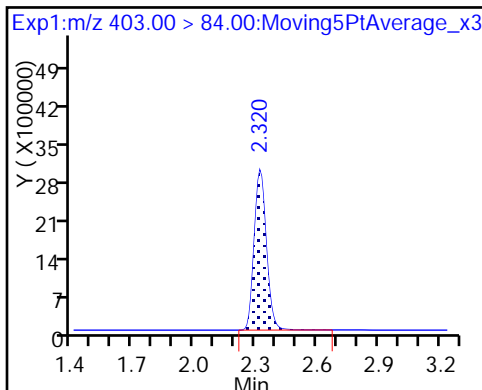
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

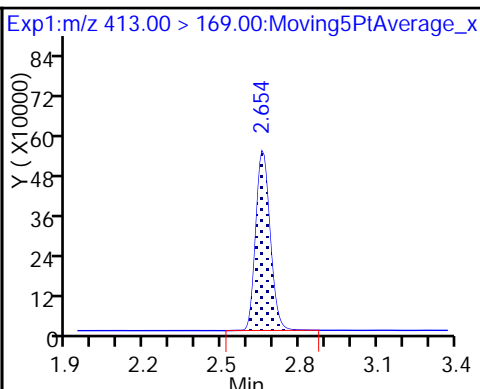
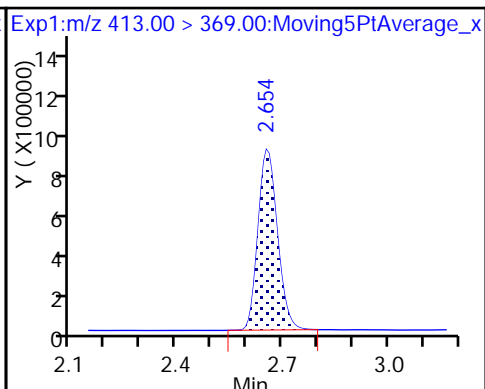
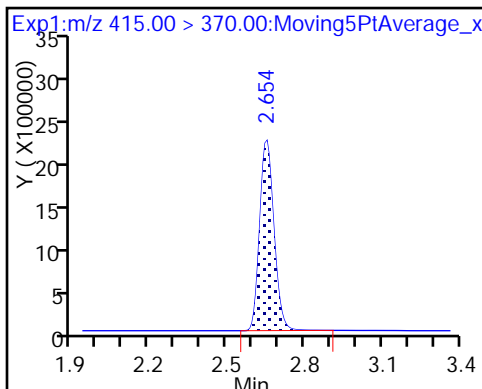
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

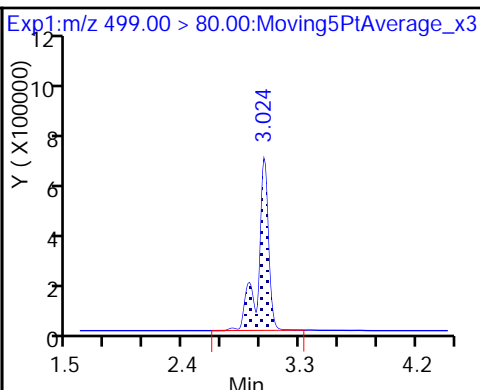
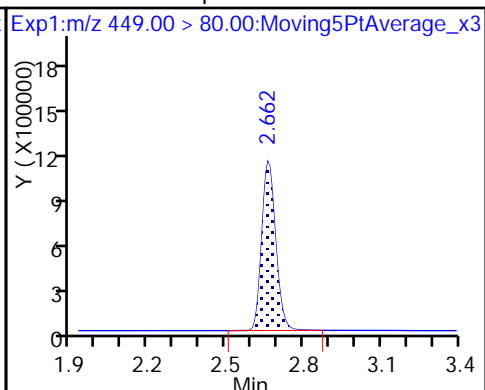
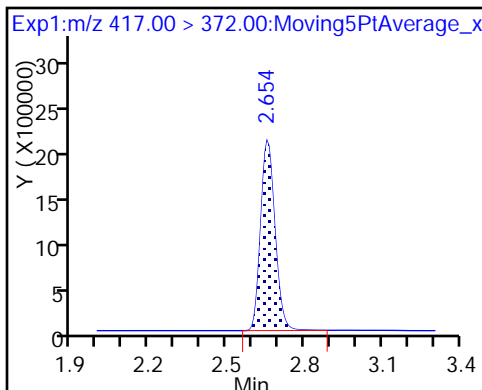
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

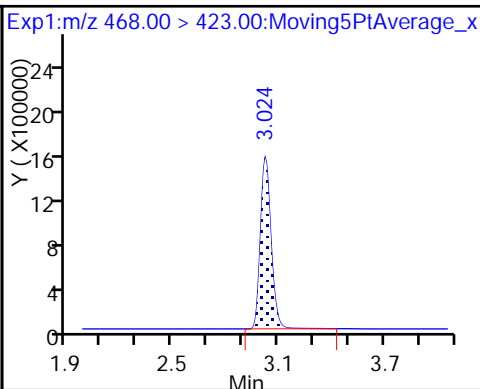
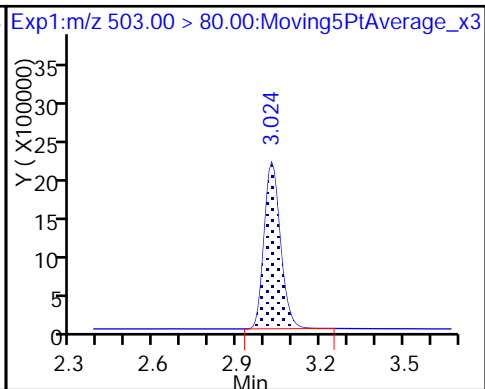
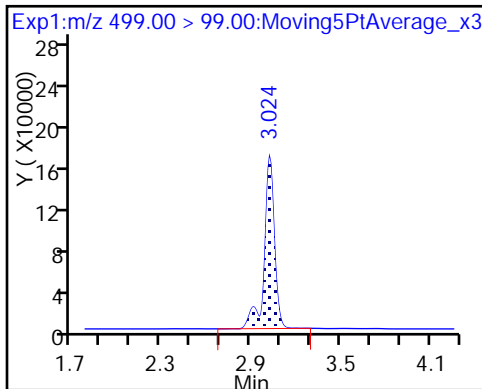
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

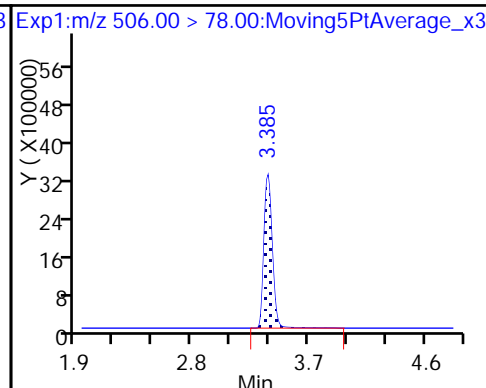
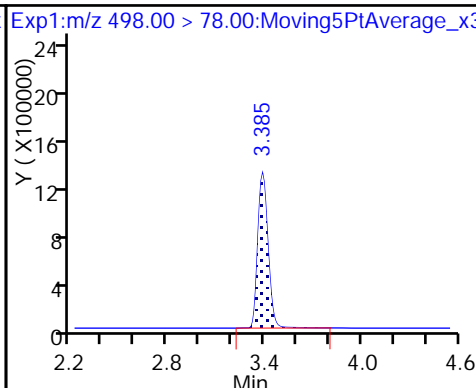
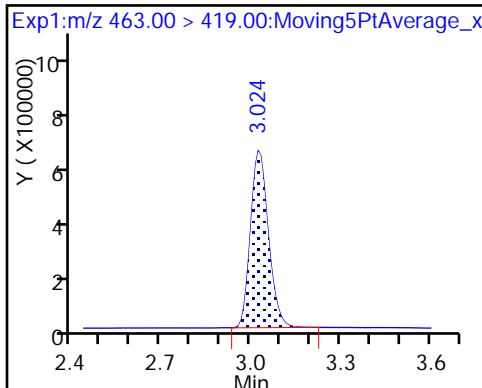
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

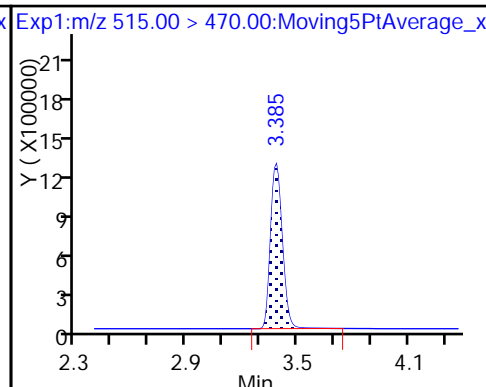
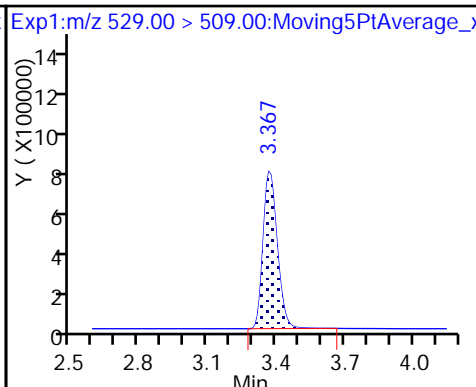
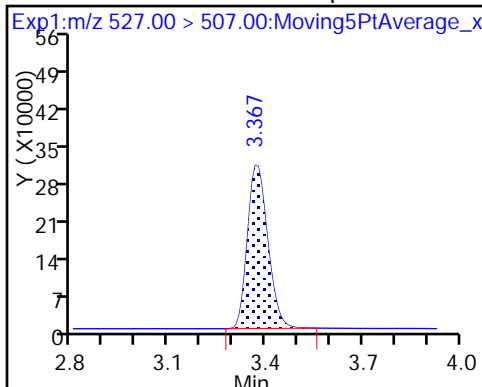
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecanoate

D 26 M2-8:2FTS

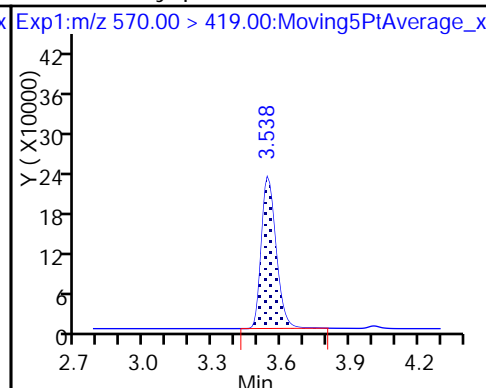
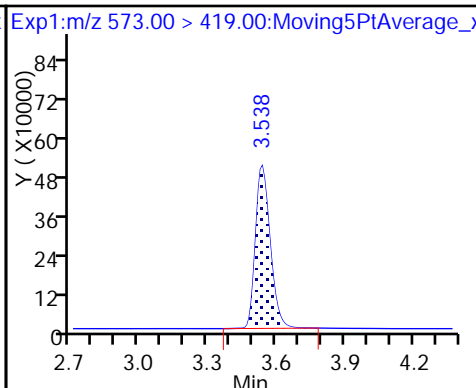
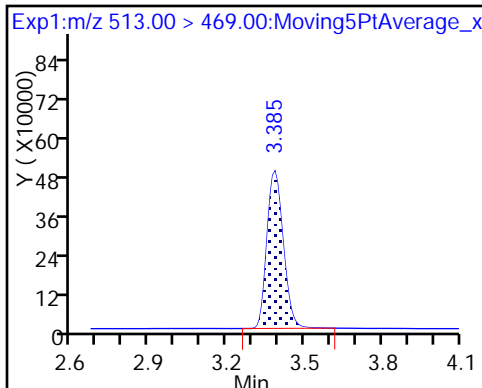
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

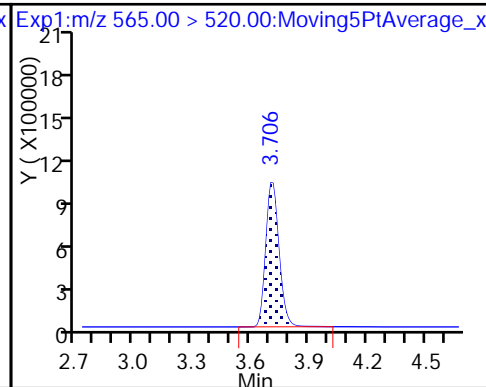
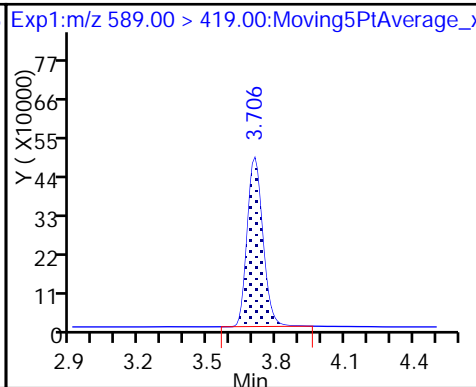
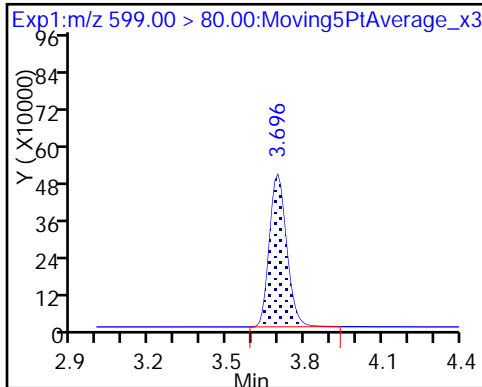
28 N-methyl perfluorooctane sulfonamide



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

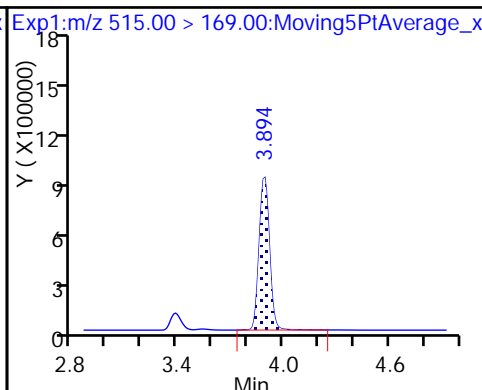
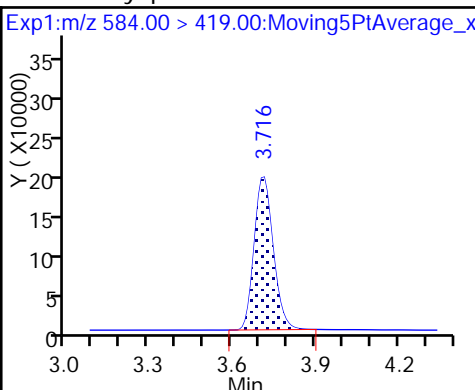
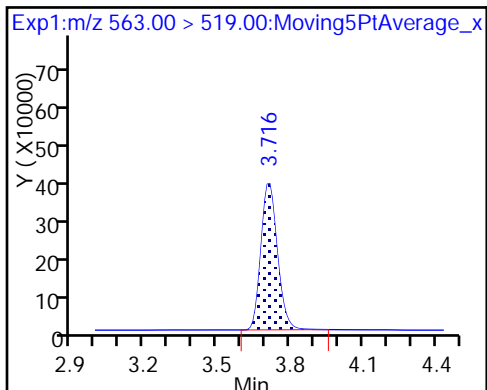
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

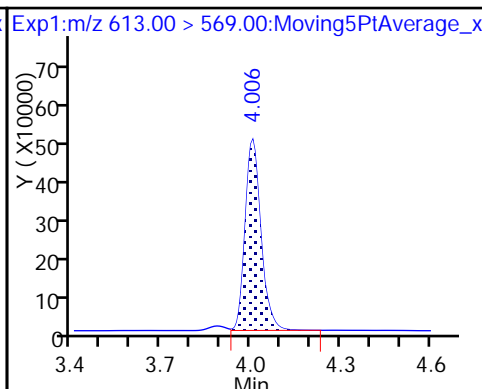
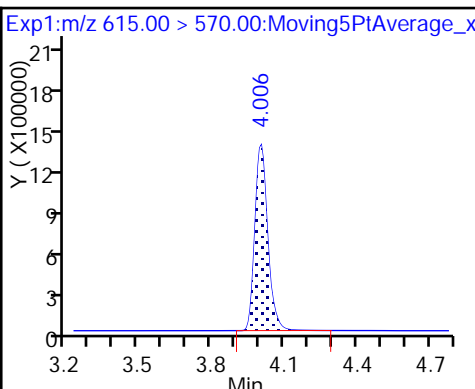
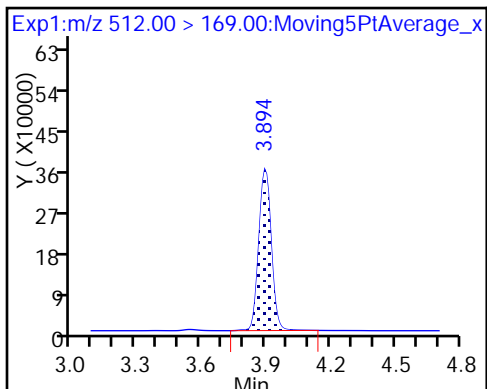
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDa

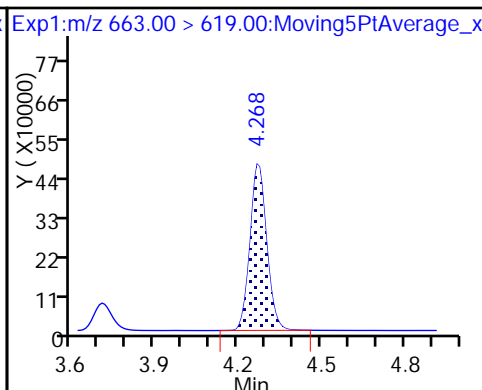
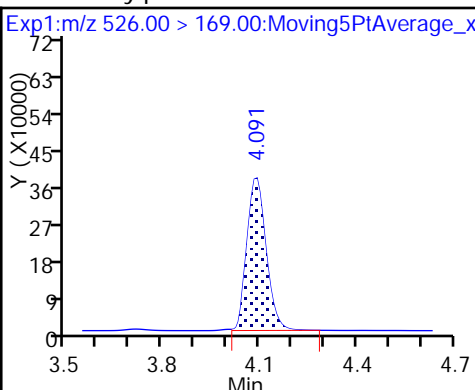
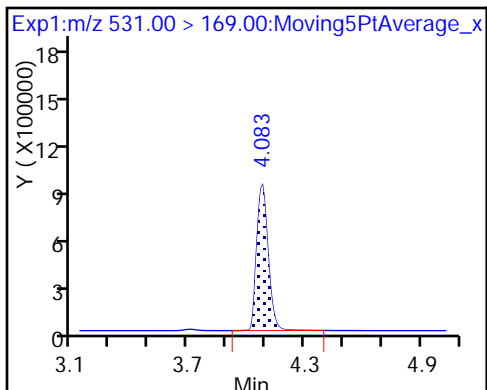
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

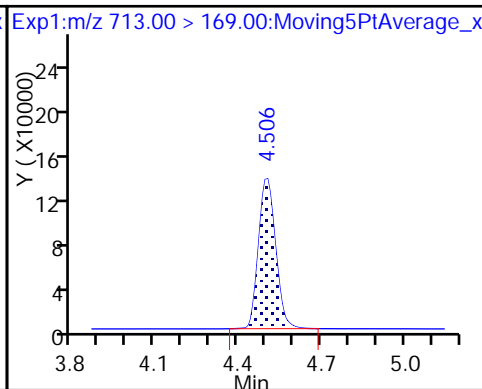
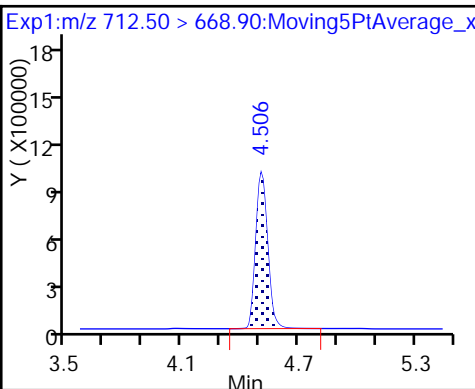
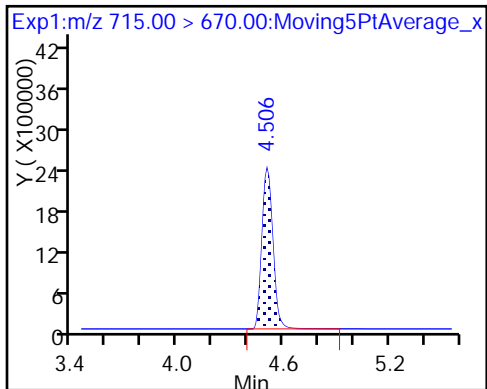
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

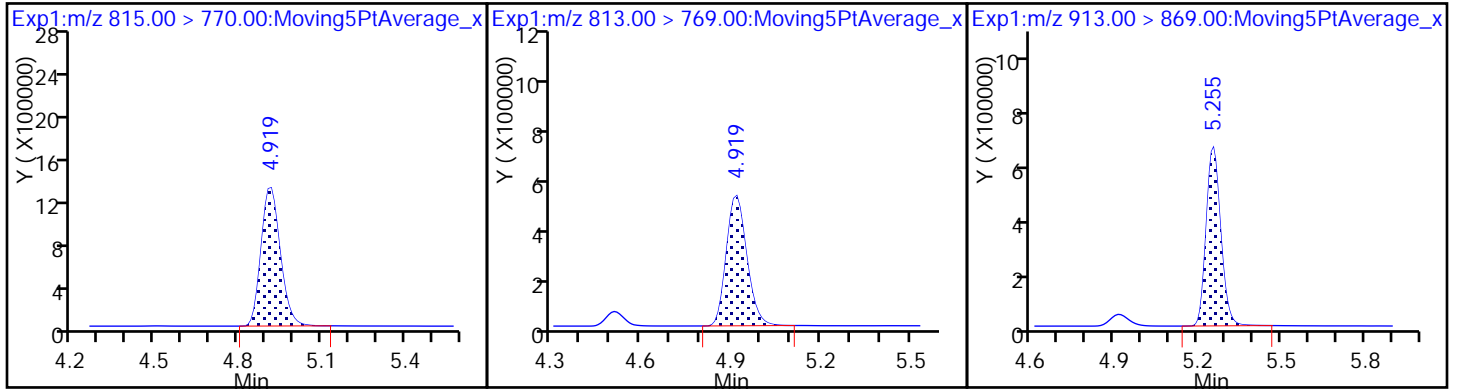
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171828/12 Calibration Date: 06/29/2017 19:27  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.29D\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9007	0.9444		51.9	49.5	4.9	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.029	1.089		52.4	49.5	5.8	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.394	1.516		47.6	43.8	8.7	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.016	1.034		50.4	49.5	1.8	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.068	1.076		49.9	49.5	0.7	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.105	1.087		44.3	45.0	-1.6	25.0
6:2FTS	AveID	0.9859	0.997		47.4	46.9	1.1	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.060	1.056		49.3	49.5	-0.4	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.151	1.205		49.4	47.1	4.8	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9921	1.021		50.9	49.5	2.9	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.049	1.085		47.5	45.9	3.4	25.0
8:2FTS	AveID	0.999	1.015		48.2	47.4	1.6	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9649	0.9913		50.9	49.5	2.7	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.001		50.9	49.5	2.8	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.043	1.093		51.9	49.5	4.9	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6377	0.6552		49.0	47.7	2.7	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9747	1.104		56.1	49.5	13.2	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.041		48.4	49.5	-2.2	25.0
MeFOSA	AveID	0.9522	0.9828		51.1	49.5	3.2	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9521	0.9933		51.6	49.5	4.3	25.0
N-EtFOSA-M	AveID	0.999	1.063		52.7	49.5	6.4	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9705	1.049		53.5	49.5	8.1	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.333	2.146		45.5	49.5	-8.0	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.156		56.3	49.5	13.7	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.078	1.159		53.2	49.5	7.5	25.0
13C4 PFBA	Ave	233991	327913		69.4	49.5	40.1	50.0
13C5-PFPeA	Ave	160811	215769		66.4	49.5	34.2	50.0
13C2 PFHxA	Ave	153401	218016		70.4	49.5	42.1	50.0
13C4-PFHpA	Ave	136899	190044		68.7	49.5	38.8	50.0
18O2 PFHxS	Ave	212697	275655		60.7	46.8	29.6	50.0
M2-6:2FTS	Ave	72814	93412		60.3	47.0	28.3	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171828/12 Calibration Date: 06/29/2017 19:27  
 Instrument ID: A8\_N Calib Start Date: 06/28/2017 00:13  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/28/2017 01:01  
 Lab File ID: 2017.06.29D\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	130539	179277		68.0	49.5	37.3	50.0
13C4 PFOS	Ave	162716	215784		62.8	47.3	32.6	50.0
13C5 PFNA	Ave	104991	147041		69.3	49.5	40.1	50.0
M2-8:2FTS	Ave	56620	77296		64.7	47.4	36.5	50.0
13C2 PFDA	Ave	100020	125453		62.1	49.5	25.4	50.0
13C8 FOSA	Ave	263963	320363		60.1	49.5	21.4	50.0
d3-NMeFOSAA	Ave	37033	58941		78.8	49.5	59.2*	50.0
13C2 PFUnA	Ave	74302	105504		70.3	49.5	42.0	50.0
d5-NEtFOSAA	Ave	36944	50768		68.0	49.5	37.4	50.0
d-N-MeFOSA-M	Ave	74603	91762		60.9	49.5	23.0	50.0
13C2 PFDoA	Ave	73421	114697		77.3	49.5	56.2*	50.0
d-N-EtFOSA-M	Ave	73544	87474		58.9	49.5	18.9	50.0
13C2-PFTeDA	Ave	151466	234755		76.7	49.5	55.0*	50.0
13C2-PFHxDA	Ave	83886	149120		88.0	49.5	77.8*	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_012.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 29-Jun-2017 19:27:26 ALS Bottle#: 32 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 08:16:35 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 08:02:18

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.535	1.533	0.002	1.000	15330580	51.9		105	3258	
D 1 13C4 PFBA										
217.00 > 172.00	1.535	1.533	0.002		16233328	69.4		140	14346	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.735	1.742	-0.007	1.000	11628065	52.4		106	5104	
D 3 13C5-PFPeA										
267.90 > 223.00	1.735	1.742	-0.007		10681631	66.4		134	19852	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.760	0.002	1.000	18287911	47.6		109	39410	
298.90 > 99.00	1.762	1.760	0.002	1.000	8246454		2.22(0.00-0.00)		147433	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.760	-0.007		302000	NC			7091	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.949	1.958	-0.009	1.000	4190369	47.2		102	24704	
D 7 13C2 PFHxA										
315.00 > 270.00	1.993	1.992	0.001		10792895	70.4		142	21110	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.993	2.003	-0.010	1.000	11159054	50.4		102	10757	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.302	2.312	-0.010	1.000	10120884	49.9		101	7977	
D 9 13C4-PFHpA										
367.00 > 322.00	2.302	2.312	-0.010		9408105	68.7		139	20850	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.321	2.329	-0.008	1.000	13494691	44.3		98.4	4376	
D 11 18O2 PFHxS										
403.00 > 84.00	2.321	2.329	-0.008		12909401	60.7		130	21353	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.629	2.634	-0.005	1.000	4369473	47.4	101	13463
D 12 M2-6:2FTS	429.00	> 409.00	2.629	2.634	-0.005		4393144	60.3	128	10910
* 62 13C2-PFOA	415.00	> 370.00	2.651	2.656	-0.005		9217359	49.5	100	17929
15 Perfluorooctanoic acid	413.00	> 369.00	2.651	2.663	-0.012	1.000	9371030	49.3	99.6	1708
	413.00	> 169.00	2.651	2.663	-0.012	1.000	5696271		1.65(0.90-1.10)	6048
D 14 13C4 PFOA	417.00	> 372.00	2.651	2.663	-0.012		8875077	68.0	137	12730
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.659	2.671	-0.012	1.000	12257279	49.4	105	22323
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.019	3.026	-0.007	1.000	10757109	47.5	103	8079
	499.00	> 99.00	3.019	3.026	-0.007	1.000	2302032		4.67(0.90-1.10)	7586
D 18 13C4 PFOS	503.00	> 80.00	3.019	3.026	-0.007		10212370	62.8	133	20358
D 19 13C5 PFNA	468.00	> 423.00	3.019	3.026	-0.007		7279248	69.3	140	12524
20 Perfluorononanoic acid	463.00	> 419.00	3.019	3.026	-0.007	1.000	7430371	50.9	103	6675
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.379	3.379	0.0	1.000	15873298	50.9	103	76425
D 21 13C8 FOSA	506.00	> 78.00	3.379	3.379	0.0		15859565	60.1	121	595674
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.361	3.379	-0.018	1.000	3719400	48.2	102	20929
D 26 M2-8:2FTS	529.00	> 509.00	3.361	3.379	-0.018		3665818	64.7	137	12788
D 23 13C2 PFDA	515.00	> 470.00	3.379	3.388	-0.009		6210539	62.1	125	20724
24 Perfluorodecanoic acid	513.00	> 469.00	3.379	3.388	-0.009	1.000	6156600	50.9	103	22139
D 27 d3-NMeFOSAA	573.00	> 419.00	3.533	3.542	-0.009		2917855	78.8	159	15242
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.533	3.542	-0.009	1.000	3189831	51.9	105	7783
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.691	3.700	-0.009	1.000	6746612	49.0	103	31866
D 32 d5-NEtFOSAA	589.00	> 419.00	3.701	3.710	-0.009		2513280	68.0	137	5682
D 30 13C2 PFUnA	565.00	> 520.00	3.701	3.710	-0.009		5222955	70.3	142	34588
31 Perfluoroundecanoic acid	563.00	> 519.00	3.711	3.710	0.001	1.000	5438229	48.4	97.8	17786
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.701	3.720	-0.019	1.000	2773814	56.1	113	14220

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.881	3.889	-0.008	4542667	60.9	123	727	
35 MeFOSA	512.00	> 169.00	3.890	3.889	0.001	1.000	4464503	51.1	103	6183
D 36 13C2 PFDaA	615.00	> 570.00	3.996	4.008	-0.012	5678061	77.3	156	27502	
37 Perfluorododecanoic acid	613.00	> 569.00	3.996	4.008	-0.012	1.000	5640136	51.6	104	6172
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.071	4.078	-0.007	4330381	58.9	119	4784	
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.079	4.078	0.001	1.000	4602283	52.7	106	4409
41 Perfluorotridecanoic acid	663.00	> 619.00	4.265	4.273	-0.008	1.000	5957665	53.5	108	1965
D 43 13C2-PFTeDA	715.00	> 670.00	4.497	4.510	-0.013	11621518	76.7	155	90253	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.497	4.510	-0.013	1.000	12184218	45.5	92.0	19773
	713.00	> 169.00	4.497	4.510	-0.013	1.000	1702911	7.15(0.00-0.00)		20969
D 44 13C2-PFHxDA	815.00	> 770.00	4.911	4.922	-0.011	7382165	88.0	178	8403	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.911	4.922	-0.011	1.000	6562816	56.3	114	1062
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.243	5.265	-0.022	1.000	6580460	53.2	108	1765

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L5\_00004

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b\2017.06.29D\_012.d

Injection Date: 29-Jun-2017 19:27:26

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

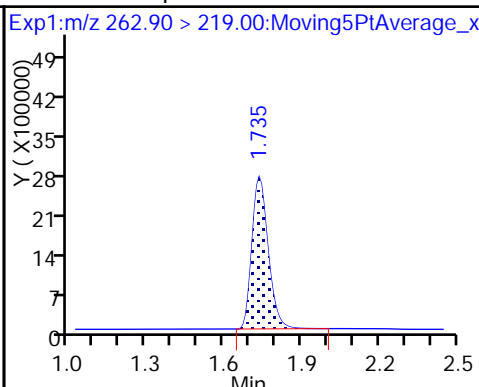
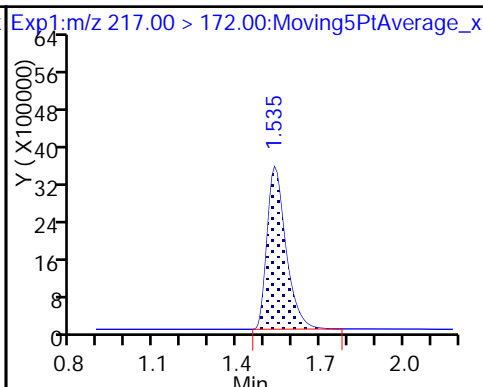
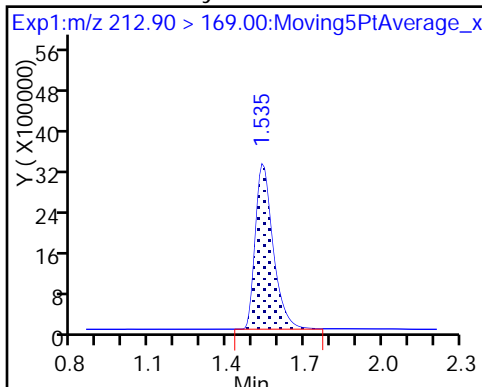
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

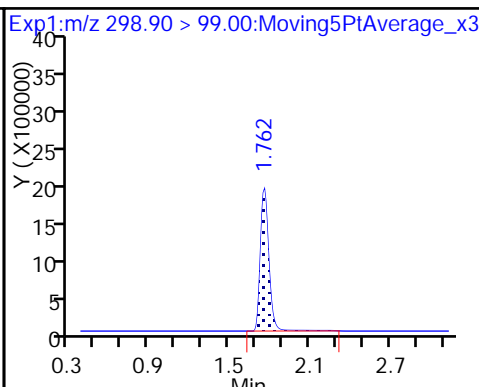
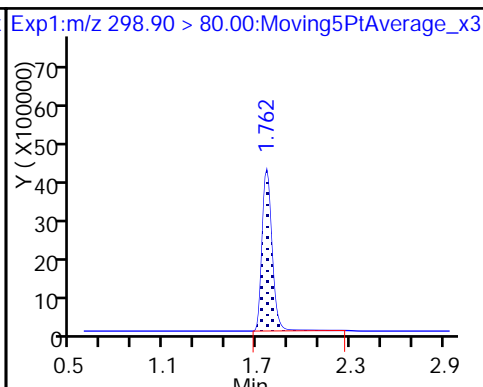
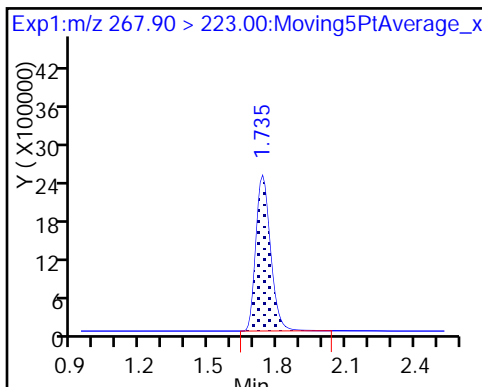
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

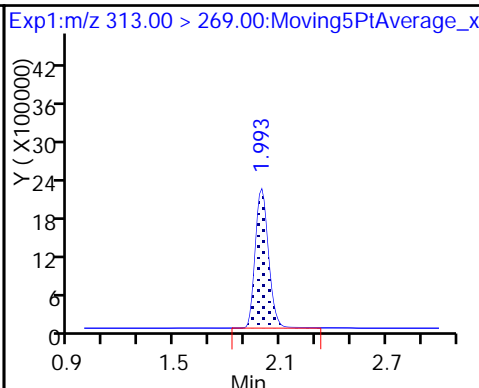
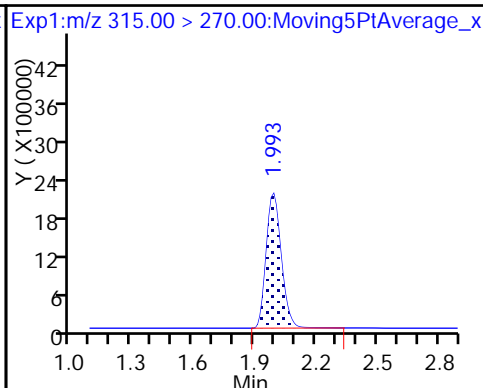
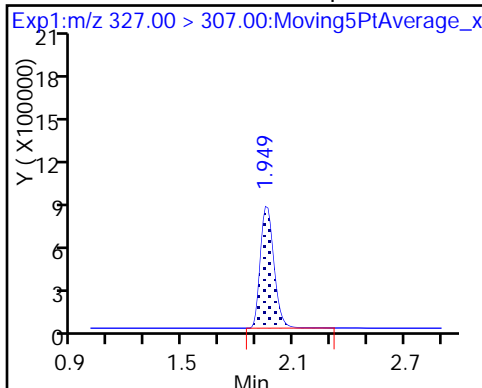
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

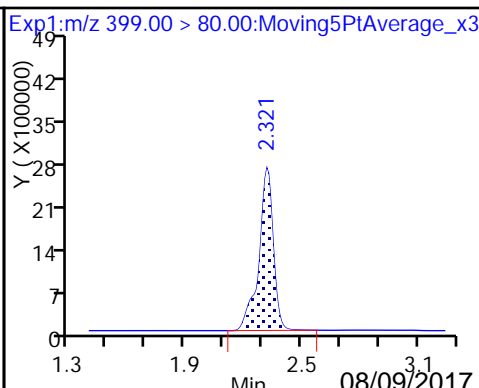
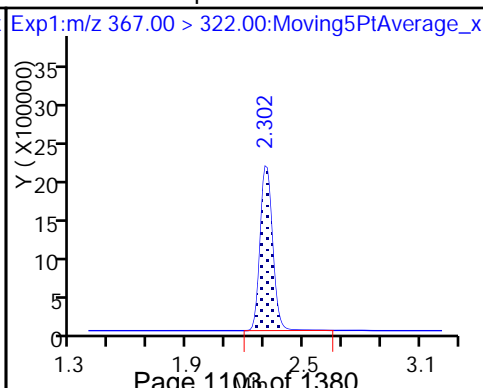
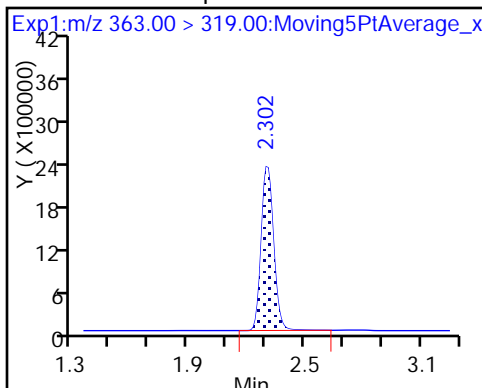
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

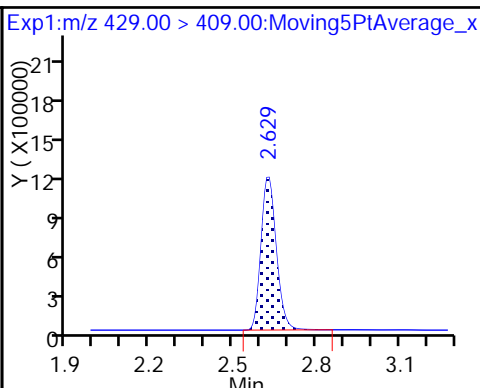
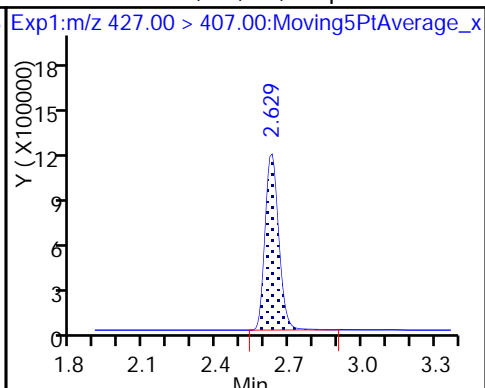
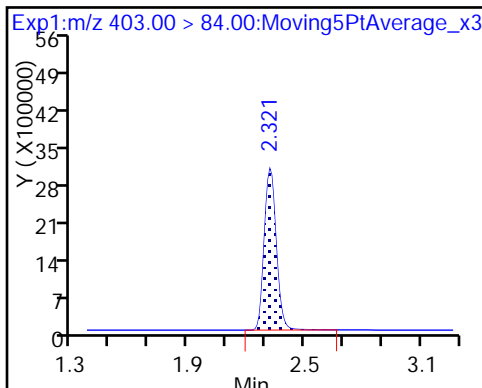
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

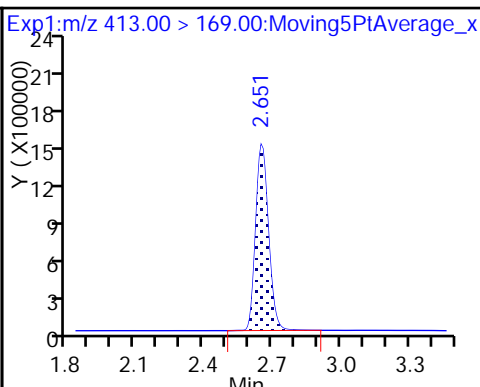
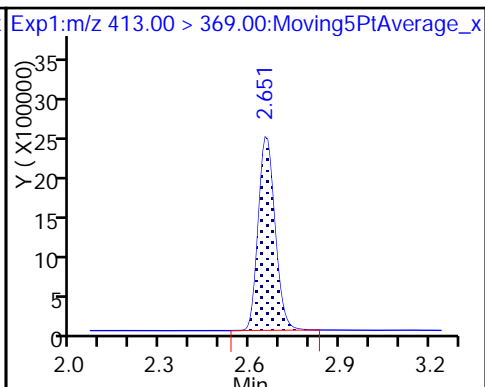
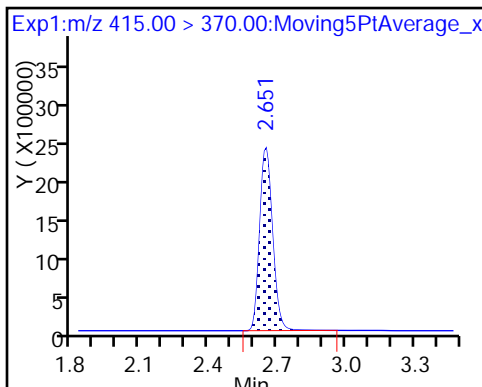
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

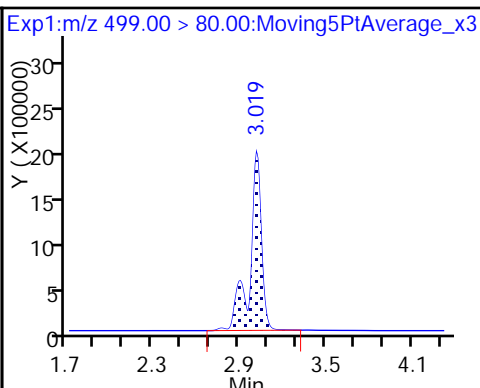
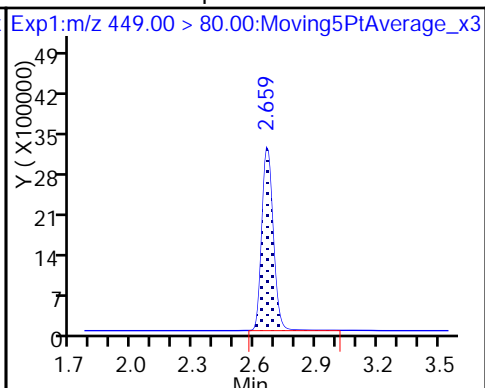
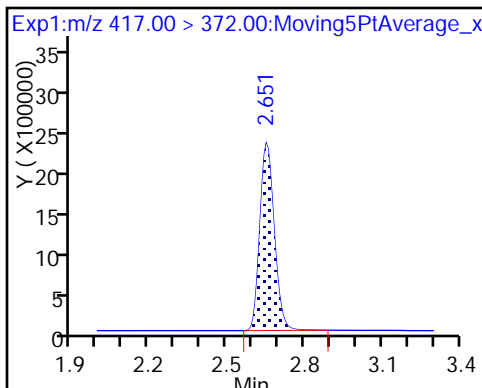
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

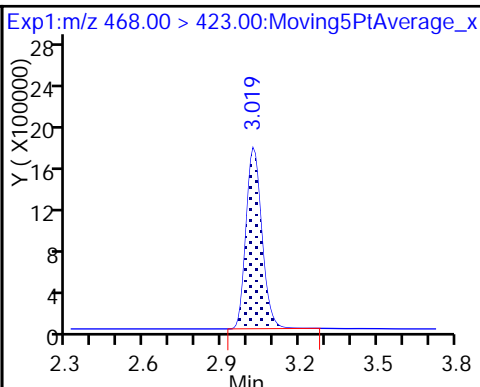
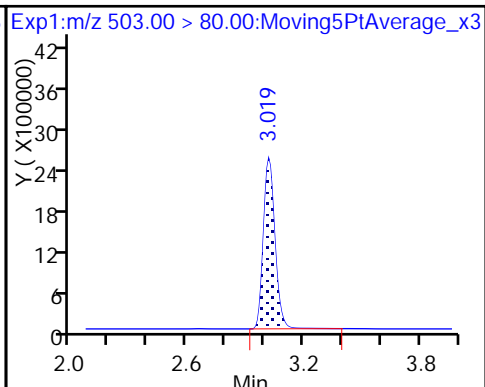
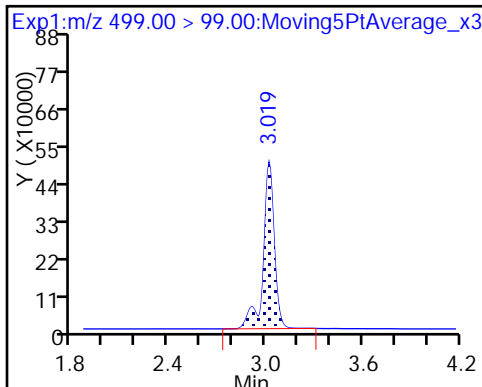
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

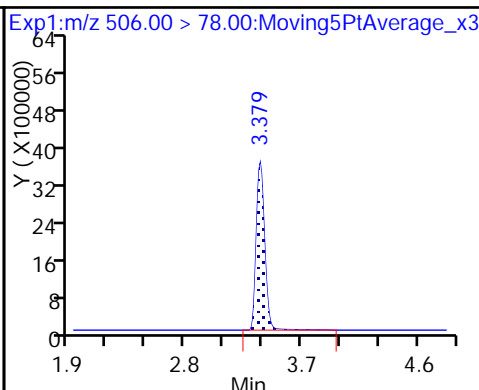
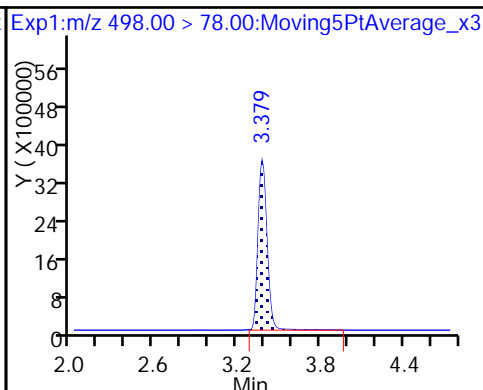
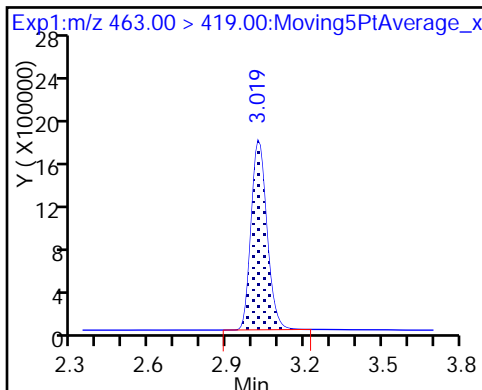
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

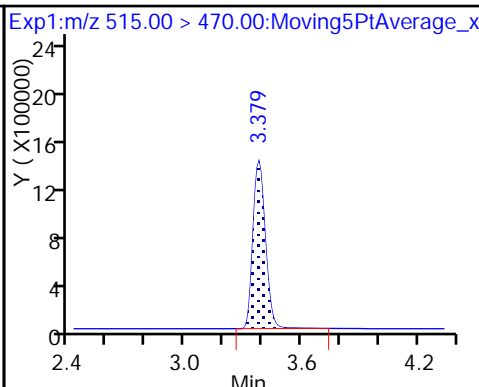
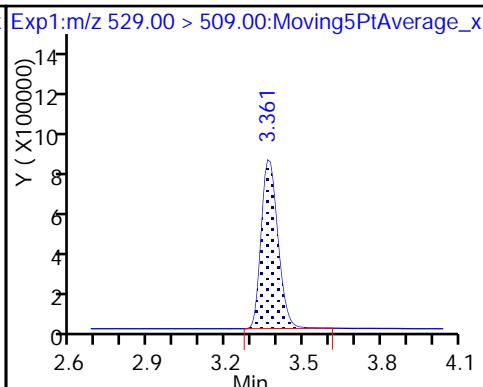
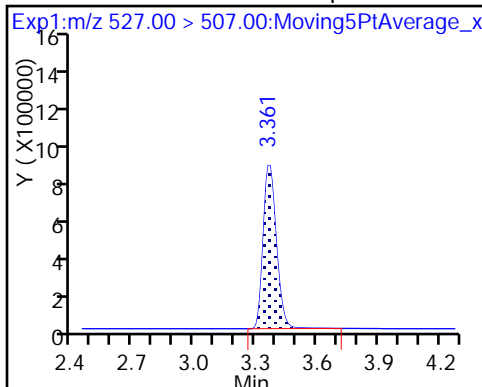
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecanoate

D 26 M2-8:2FTS

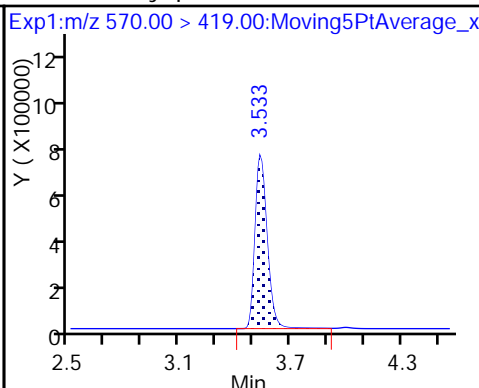
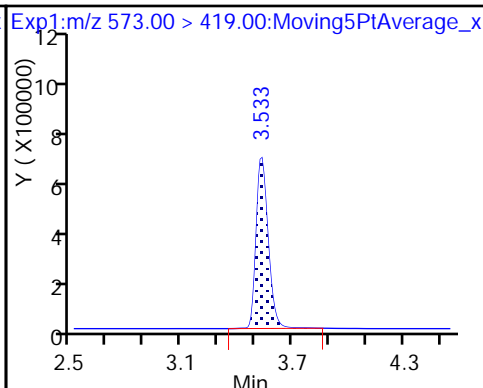
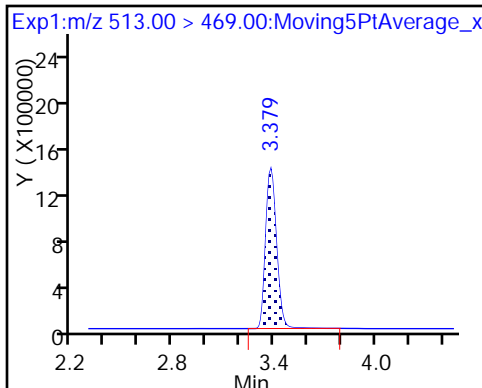
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

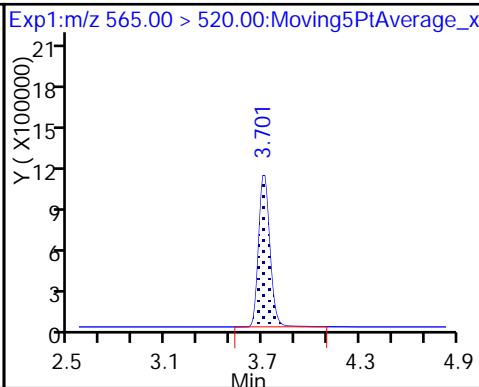
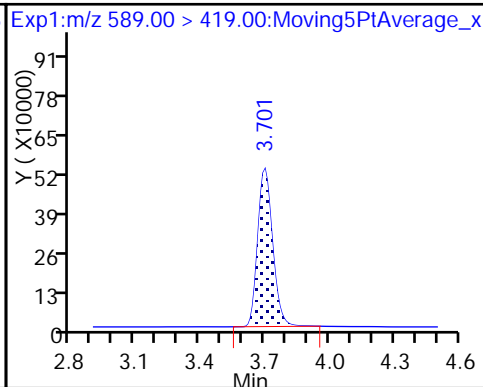
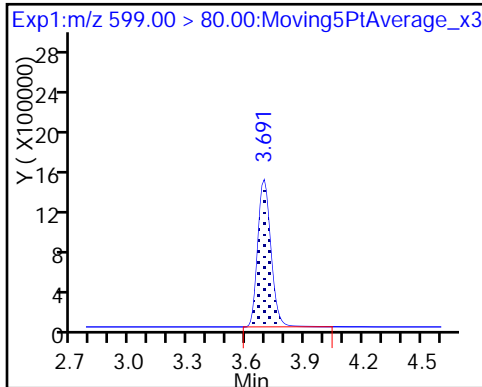
28 N-methyl perfluorooctane sulfonamide



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

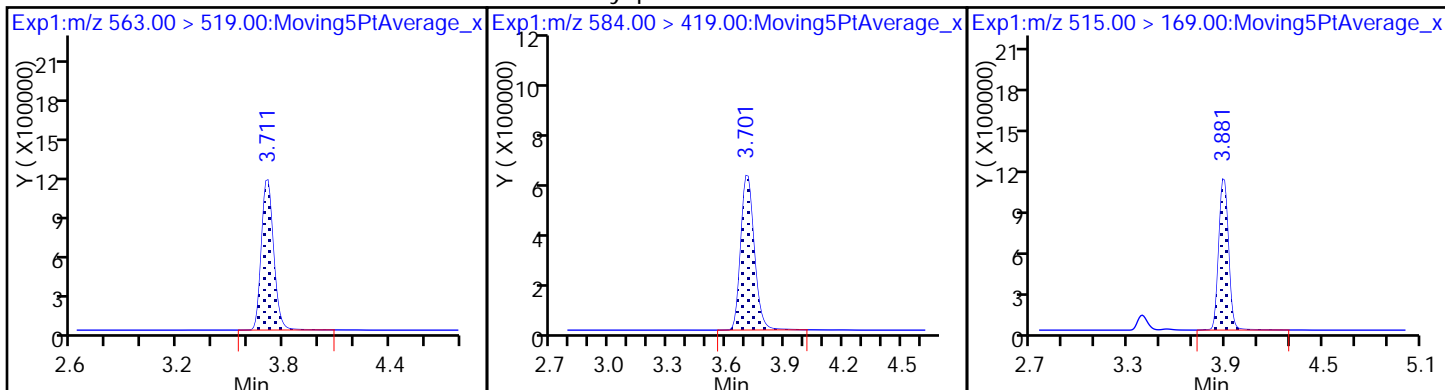
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

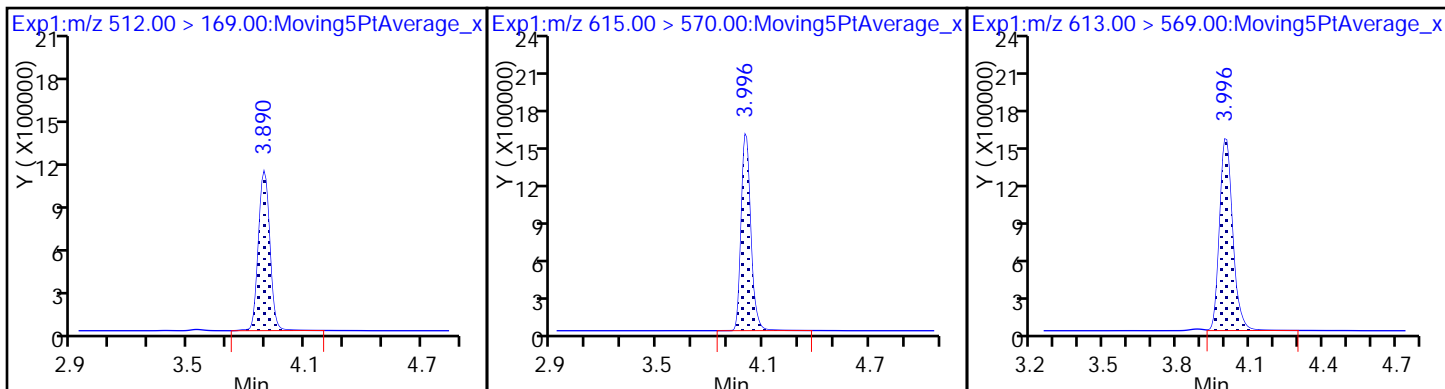
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

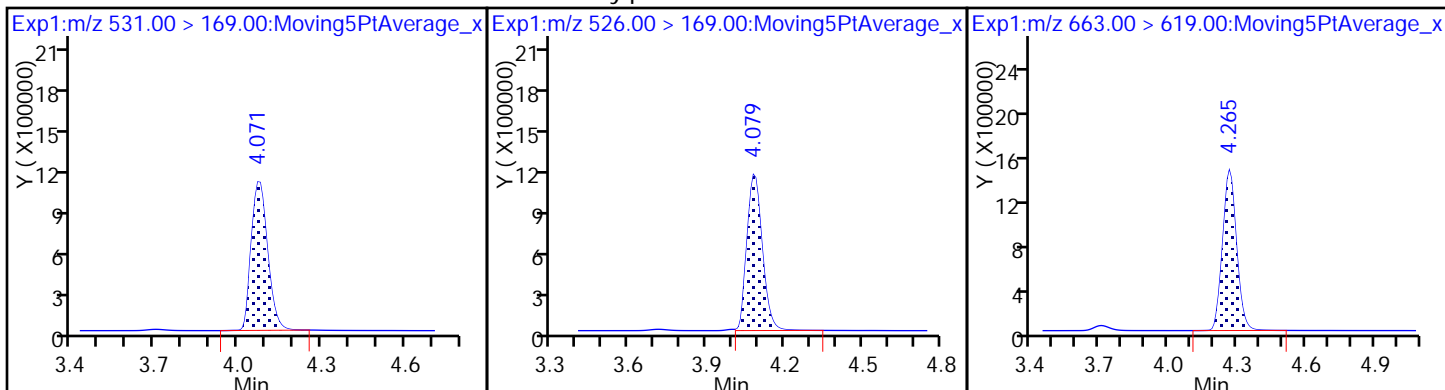
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

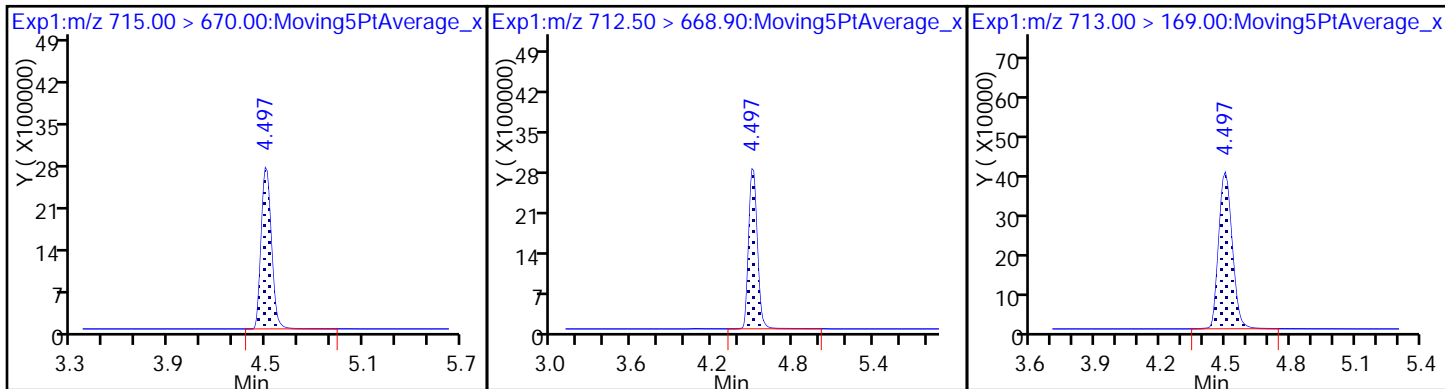
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

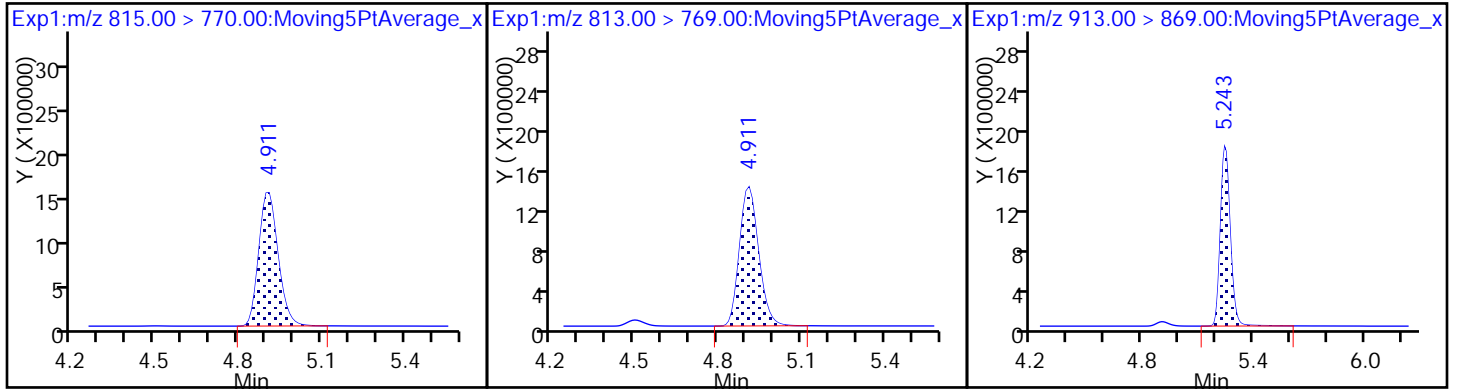
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 320-171897/12 Calibration Date: 06/30/2017 10:22  
 Instrument ID: A8\_N Calib Start Date: 06/30/2017 09:20  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/30/2017 10:08  
 Lab File ID: 2017.06.30CURVE\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9045	0.9735		53.3	49.5	7.6	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.012	1.075		52.6	49.5	6.3	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.449	1.611		48.7	43.8	11.2	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.002	1.030		50.9	49.5	2.8	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.067	1.095		50.8	49.5	2.6	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.118	1.070		44.8	46.8	-4.3	25.0
6:2FTS	AveID	0.9826	0.8615		41.1	46.9	-12.3	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.069	1.107		51.3	49.5	3.6	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.138	1.148		47.5	47.1	0.9	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.044	1.011		45.8	47.3	-3.1	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9844	1.077		54.2	49.5	9.4	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	0.9613		48.9	49.5	-1.3	25.0
8:2FTS	AveID	0.9686	0.9841		48.2	47.4	1.6	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9616	1.023		52.7	49.5	6.4	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.048	1.044		49.3	49.5	-0.4	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6211	0.6274		48.3	47.8	1.0	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9573	0.9206		47.6	49.5	-3.8	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.072		49.9	49.5	0.7	25.0
MeFOSA	AveID	0.9527	0.9314		48.4	49.5	-2.2	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9471	1.021		53.4	49.5	7.8	25.0
N-EtFOSA-M	AveID	1.007	1.018		50.1	49.5	1.2	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9553	0.9613		49.8	49.5	0.6	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.453	2.439		49.2	49.5	-0.6	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.144		54.3	49.5	9.7	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.142	1.250		54.2	49.5	9.5	25.0
13C4 PFBA	Ave	257677	257620		49.5	49.5	-0.0	50.0
13C5-PFPeA	Ave	186409	177553		47.2	49.5	-4.8	50.0
13C2 PFHxA	Ave	178568	185383		51.4	49.5	3.8	50.0
13C4-PFHpA	Ave	160423	158541		48.9	49.5	-1.2	50.0
18O2 PFHxS	Ave	238247	237703		46.7	46.8	-0.2	50.0
M2-6:2FTS	Ave	79988	83611		49.2	47.0	4.5	50.0



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 320-171897/12 Calibration Date: 06/30/2017 10:22  
 Instrument ID: A8\_N Calib Start Date: 06/30/2017 09:20  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/30/2017 10:08  
 Lab File ID: 2017.06.30CURVE\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	156457	155833		49.3	49.5	-0.4	50.0
13C4 PFOS	Ave	180276	184351		48.4	47.3	2.3	50.0
13C5 PFNA	Ave	128002	125608		48.6	49.5	-1.9	50.0
13C8 FOSA	Ave	274836	273082		49.2	49.5	-0.6	50.0
M2-8:2FTS	Ave	67097	66247		46.8	47.4	-1.3	50.0
13C2 PFDA	Ave	118292	113227		47.4	49.5	-4.3	50.0
d3-NMeFOSAA	Ave	47523	45696		47.6	49.5	-3.8	50.0
d5-NEtFOSAA	Ave	49120	49168		49.6	49.5	0.1	50.0
13C2 PFUnA	Ave	93413	88728		47.0	49.5	-5.0	50.0
d-N-MeFOSA-M	Ave	75395	77334		50.8	49.5	2.6	50.0
13C2 PFDoA	Ave	98221	97764		49.3	49.5	-0.5	50.0
d-N-EtFOSA-M	Ave	72410	76752		52.5	49.5	6.0	50.0
13C2-PFTEtDA	Ave	213708	211895		49.1	49.5	-0.8	50.0
13C2-PFHxDA	Ave	120017	120395		49.7	49.5	0.3	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_012.d  
 Lims ID: ICV Full  
 Client ID:  
 Sample Type: ICV  
 Inject. Date: 30-Jun-2017 10:22:44 ALS Bottle#: 36 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: ICV  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist:  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 10:51:21 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK016

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.541	1.541	0.0	1.000	12416008	53.3		5089	
D 1 13C4 PFBA	217.00 > 172.00	1.541	1.541	0.0		12753481	49.5	100.0	19033	
D 3 13C5-PFPeA	267.90 > 223.00	1.742	1.748	-0.006		8789742	47.2	95.2	32317	
4 Perfluoropentanoic acid	262.90 > 219.00	1.751	1.750	0.001	1.000	9450291	52.6		4459	
D 47 13C3-PFBS	301.90 > 83.00	1.768	1.768	0.0		237465	NC		6942	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.768	1.775	-0.007	1.000	16781357	48.7		626274	
	298.90 > 99.00	1.768	1.775	-0.007	1.000	7197074	2.33(0.00-0.00)		204459	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.968	1.969	-0.001	1.000	3101157	43.2		13655	
D 7 13C2 PFHxA	315.00 > 270.00	2.002	2.012	-0.010		9177391	51.4	104	21133	
6 Perfluorohexanoic acid	313.00 > 269.00	2.002	2.012	-0.010	1.000	9451166	50.9		11570	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.334	2.331	0.003	1.000	8591602	50.8		8074	
D 9 13C4-PFHpA	367.00 > 322.00	2.325	2.331	-0.006		7848556	48.9	98.8	25118	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.342	2.346	-0.004	1.000	11897428	44.8		5422	
D 11 18O2 PFHxS	403.00 > 84.00	2.342	2.346	-0.004		11132043	46.7	99.8	29549	
D 12 M2-6:2FTS	429.00 > 409.00	2.659	2.656	0.003		3932210	49.2	105	15752	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.659	2.657	0.002	1.000	3380547	41.1		18390
* 62 13C2-PFOA	415.00	> 370.00	2.681	2.679	0.002		7807012	49.5		16657
D 14 13C4 PFOA	417.00	> 372.00	2.681	2.682	-0.001		7714512	49.3	99.6	25896
15 Perfluorooctanoic acid	413.00	> 369.00	2.681	2.683	-0.002	1.000	8539448	51.3		1953
	413.00	> 169.00	2.681	2.683	-0.002	1.000	5072165		1.68(0.90-1.10)	6525
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.689	2.691	-0.002	1.000	9973634	47.5		25597
D 18 13C4 PFOS	503.00	> 80.00	3.051	3.054	-0.003		8724744	48.4	102	14600
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.051	3.057	-0.006	1.000	8815447	45.8		39592
	499.00	> 99.00	3.051	3.057	-0.006	1.000	2104160		4.19(0.90-1.10)	10871
D 19 13C5 PFNA	468.00	> 423.00	3.051	3.057	-0.006		6218202	48.6	98.1	10669
20 Perfluorononanoic acid	463.00	> 419.00	3.059	3.057	0.002	1.000	6696100	54.2		7054
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.398	3.390	0.008	1.000	12995616	48.9		37082
D 21 13C8 FOSA	506.00	> 78.00	3.398	3.390	0.008		13518932	49.2	99.4	32642
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.407	3.407	0.0	1.000	3091940	48.2		9939
D 26 M2-8:2FTS	529.00	> 509.00	3.407	3.407	0.0		3141805	46.8	98.7	24102
D 23 13C2 PFDA	515.00	> 470.00	3.416	3.417	-0.001		5605304	47.4	95.7	31843
24 Perfluorodecanoic acid	513.00	> 469.00	3.416	3.419	-0.003	1.000	5736025	52.7		25424
D 27 d3-NMeFOSAA	573.00	> 419.00	3.567	3.575	-0.008		2262177	47.6	96.2	6478
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.578	3.579	-0.001	1.003	2361334	49.3		7027
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.726	3.732	-0.006	1.000	5525579	48.3		19662
D 32 d5-NEtFOSAA	589.00	> 419.00	3.736	3.742	-0.006		2434077	49.6	100	4509
D 30 13C2 PFUnA	565.00	> 520.00	3.746	3.750	-0.004		4392460	47.0	95.0	15555
31 Perfluoroundecanoic acid	563.00	> 519.00	3.746	3.750	-0.004	1.000	4706569	49.9		14024
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.746	3.750	-0.004	1.003	2240873	47.6		11300
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.896	3.890	0.006		3828426	50.8	103	602

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
35 MeFOSA	512.00 > 169.00	3.905	3.895	0.010	1.000	3565708	48.4		5425	
D 36 13C2 PFDaA	615.00 > 570.00	4.039	4.045	-0.006		4839805	49.3	99.5	16805	
37 Perfluorododecanoic acid	613.00 > 569.00	4.039	4.045	-0.006	1.000	4943182	53.4		5198	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.091	4.077	0.014		3799587	52.5	106	5658	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.100	4.086	0.014	1.000	3869646	50.1		5734	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.313	4.316	-0.003	1.000	4652485	49.8		1280	
D 43 13C2-PFTeDA	715.00 > 670.00	4.542	4.556	-0.014		10489833	49.1	99.2	80164	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.551	4.557	-0.006	1.000	11803930	49.2		2652	
	713.00 > 169.00	4.542	4.557	-0.015	0.998	1424648		8.29(0.00-0.00)	17079	
D 44 13C2-PFHxDA	815.00 > 770.00	4.956	4.969	-0.013		5960144	49.7	100	12977	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.956	4.972	-0.016	1.000	5535325	54.3		1034	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.306	5.324	-0.018	1.000	6049776	54.2		1602	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFCIC\_FULL\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_012.d

Injection Date: 30-Jun-2017 10:22:44

Instrument ID: A8\_N

Lims ID: ICV Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 36

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

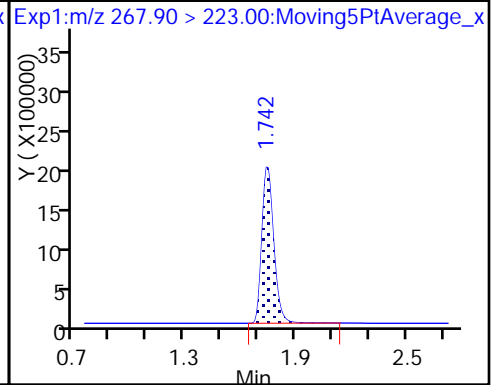
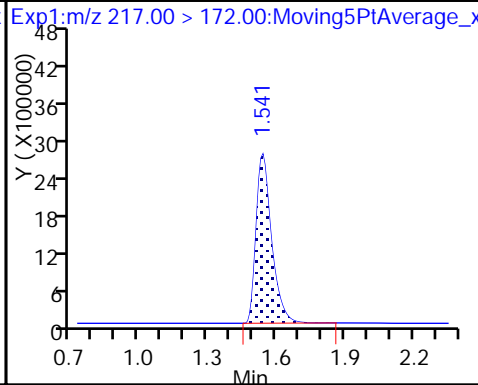
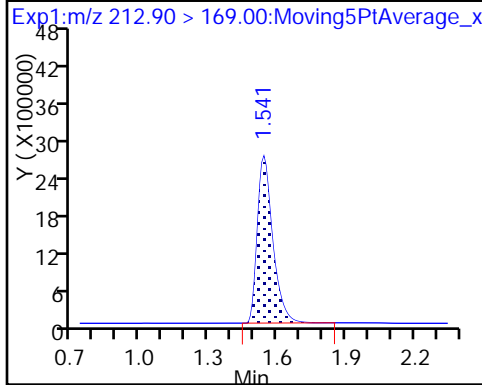
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

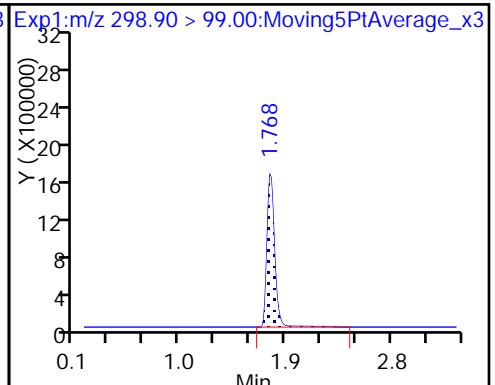
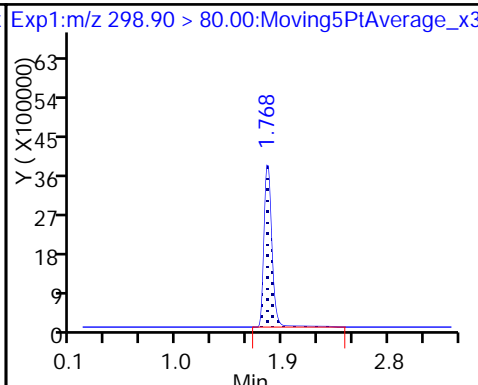
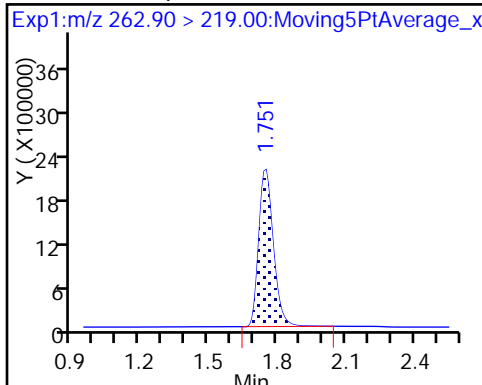
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

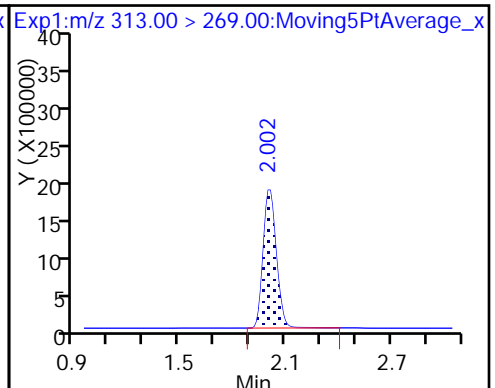
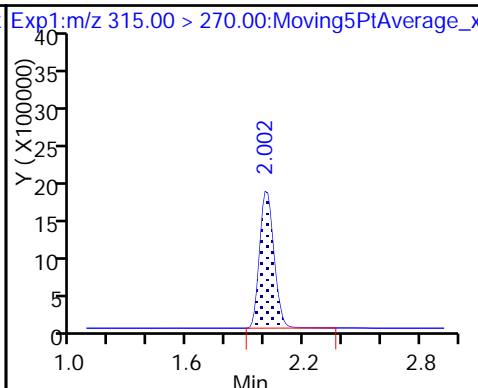
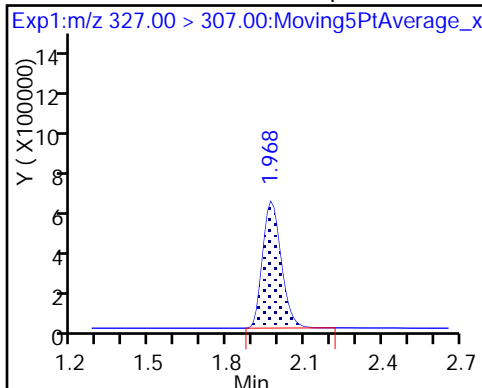
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

D 7 13C2 PFHxA

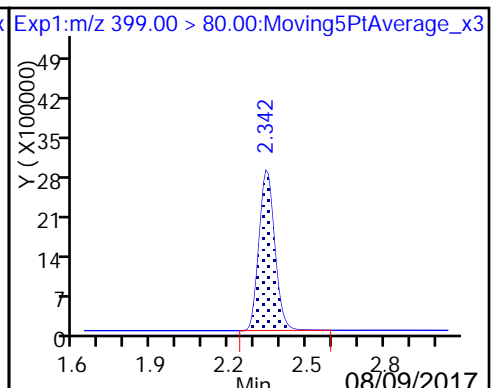
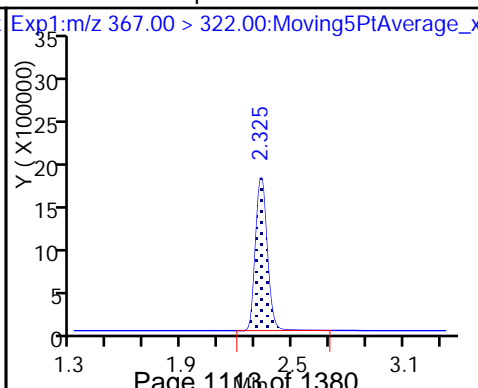
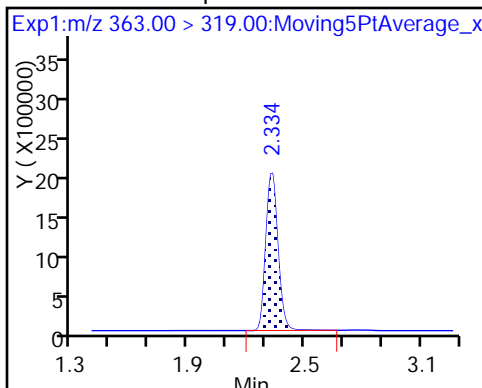
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

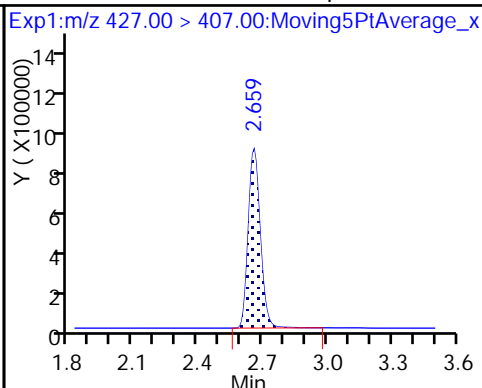
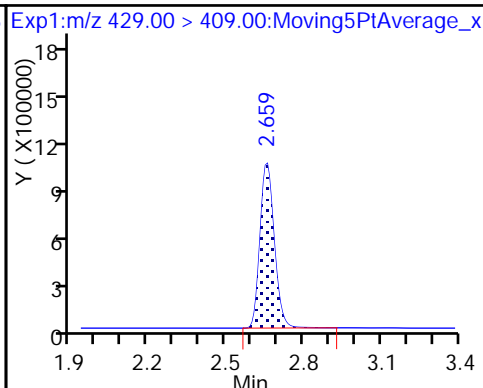
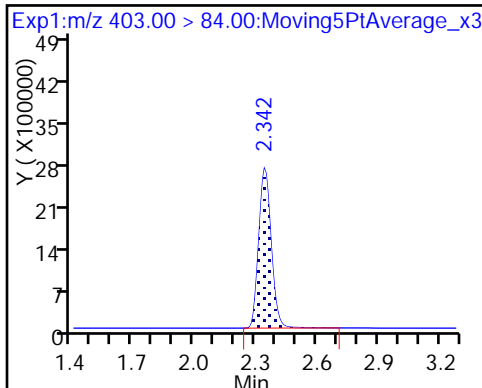
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

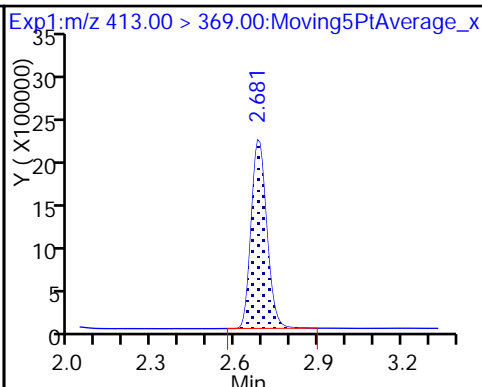
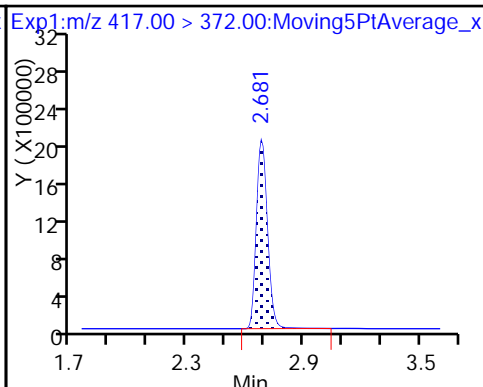
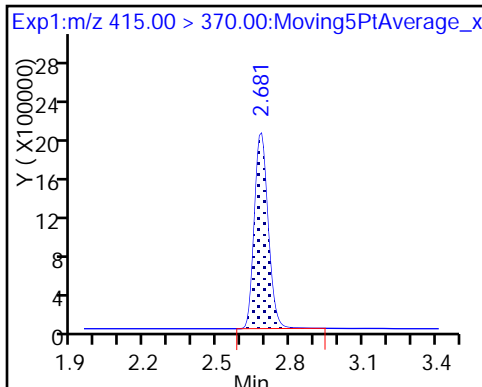
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

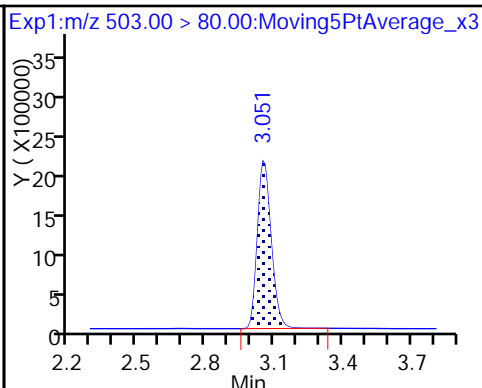
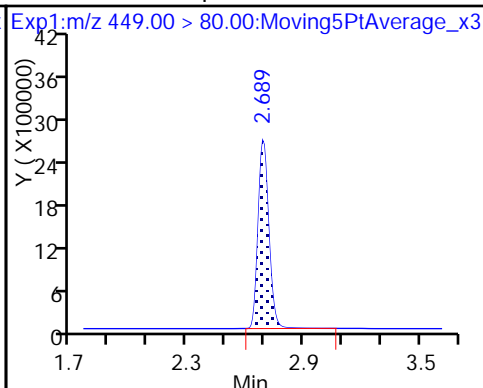
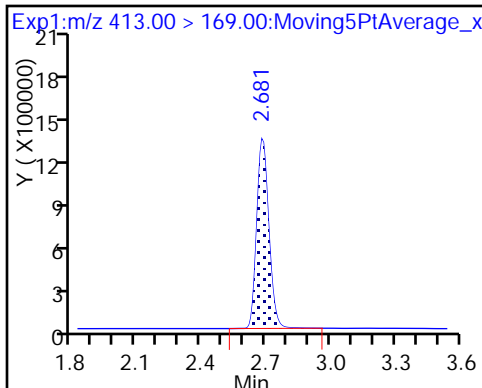
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

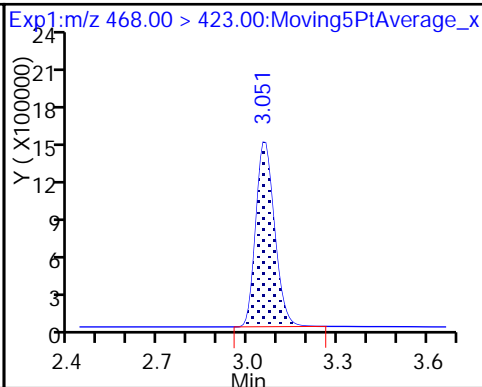
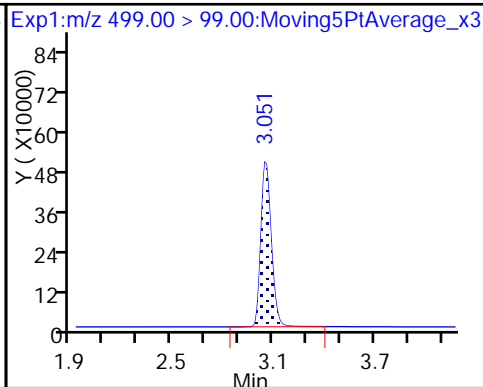
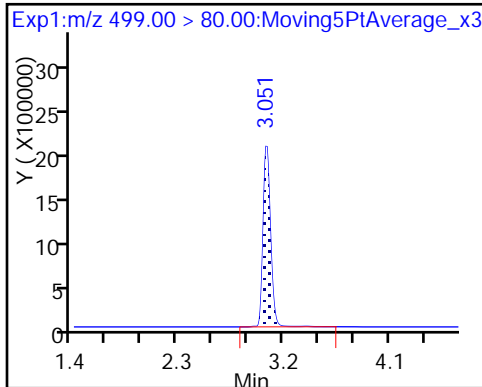
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

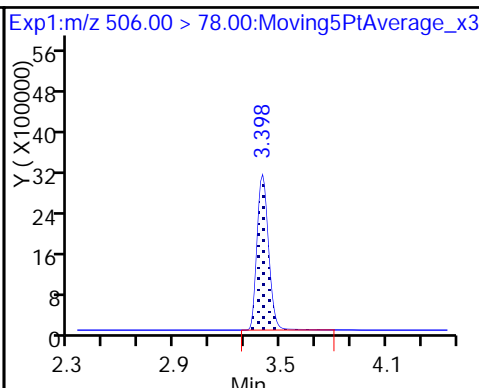
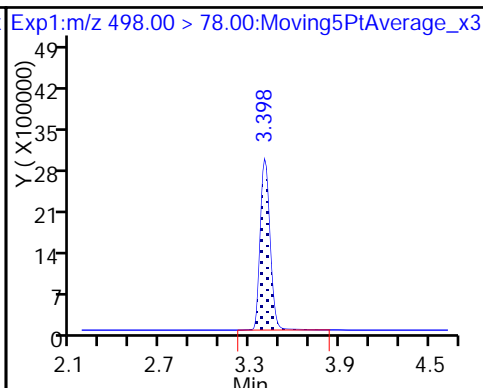
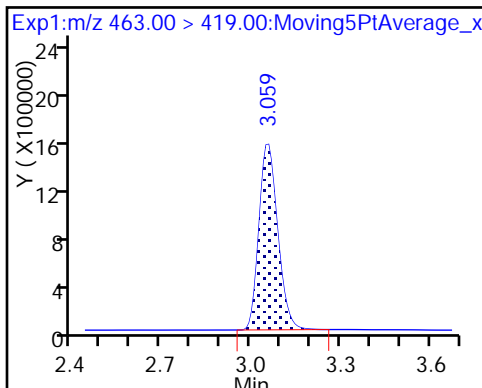
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

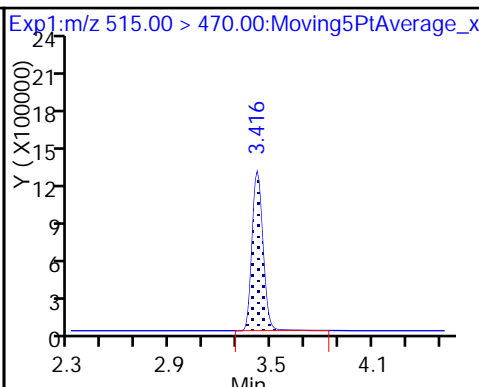
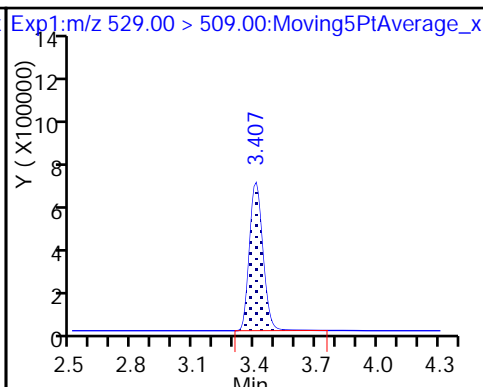
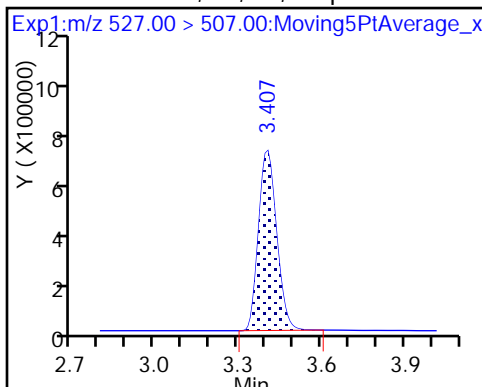
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

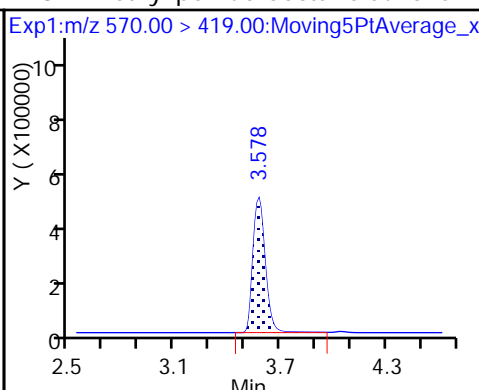
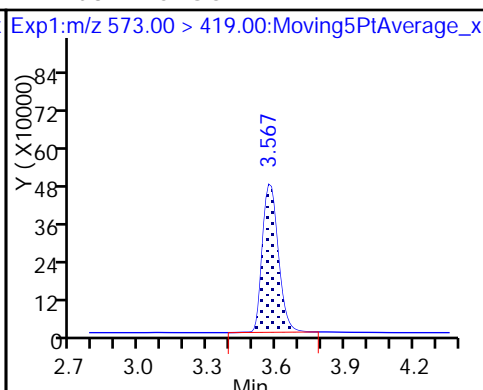
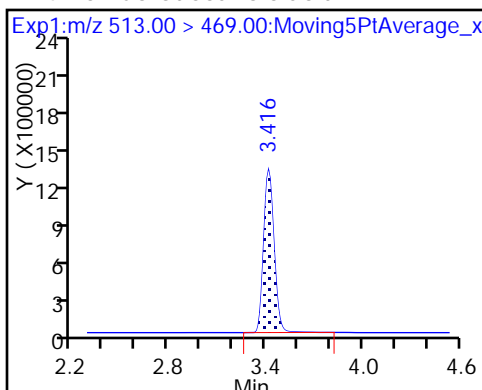
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

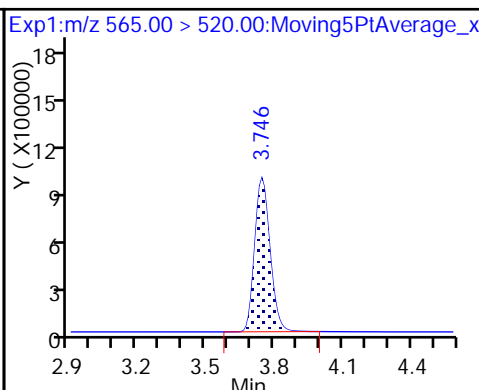
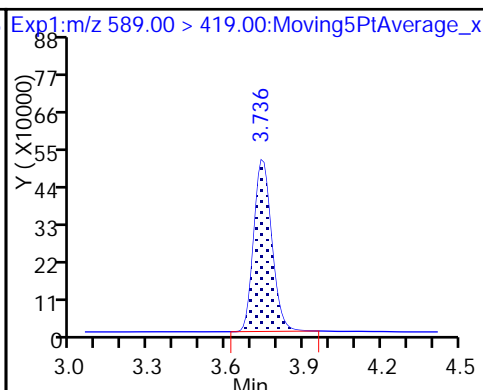
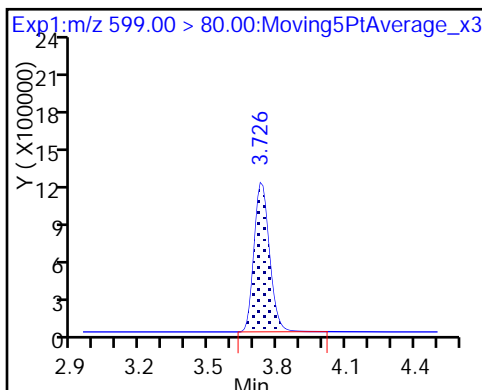
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

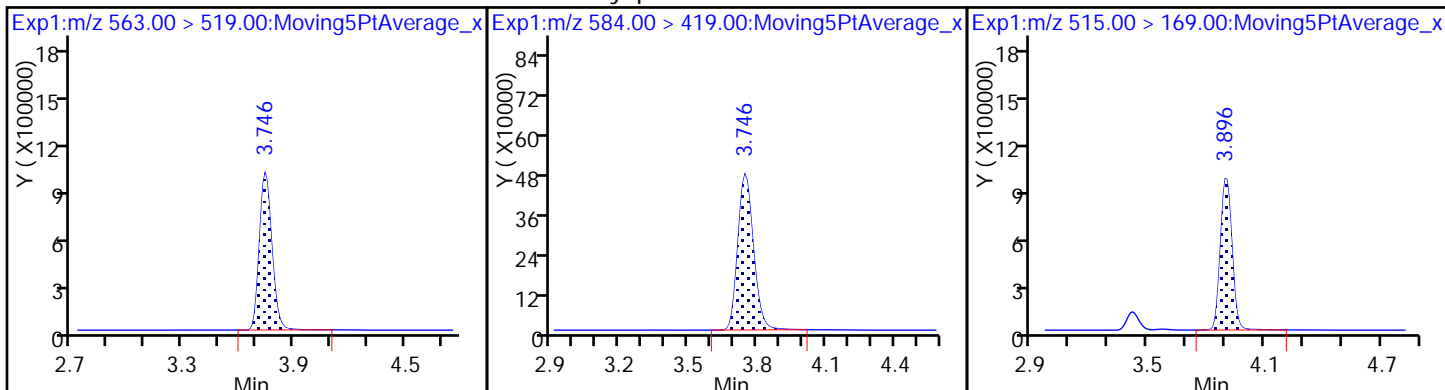
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

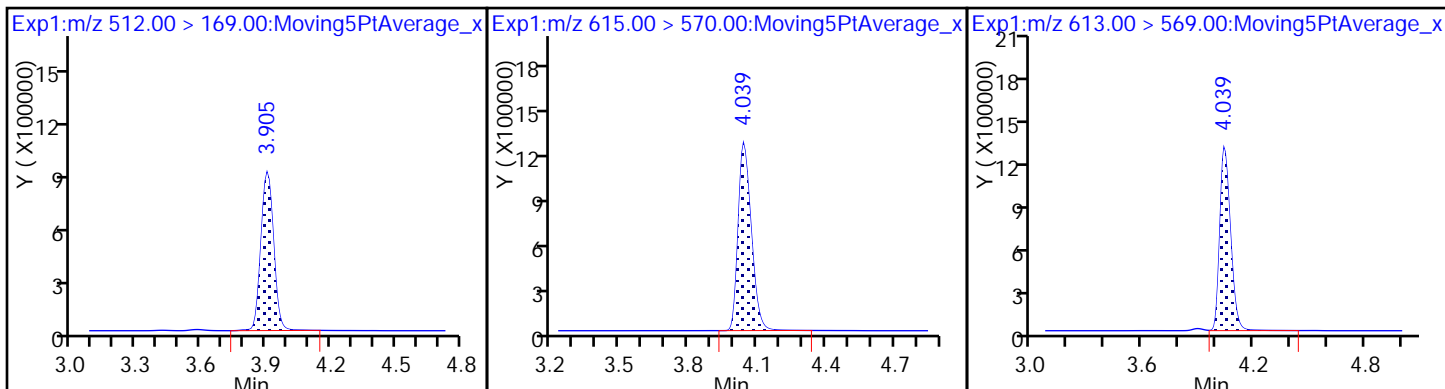
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

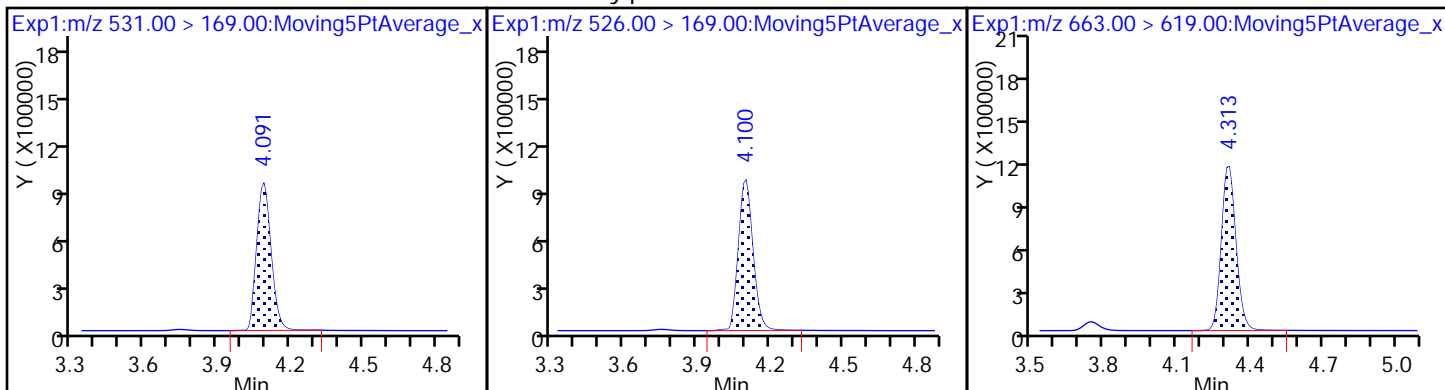
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

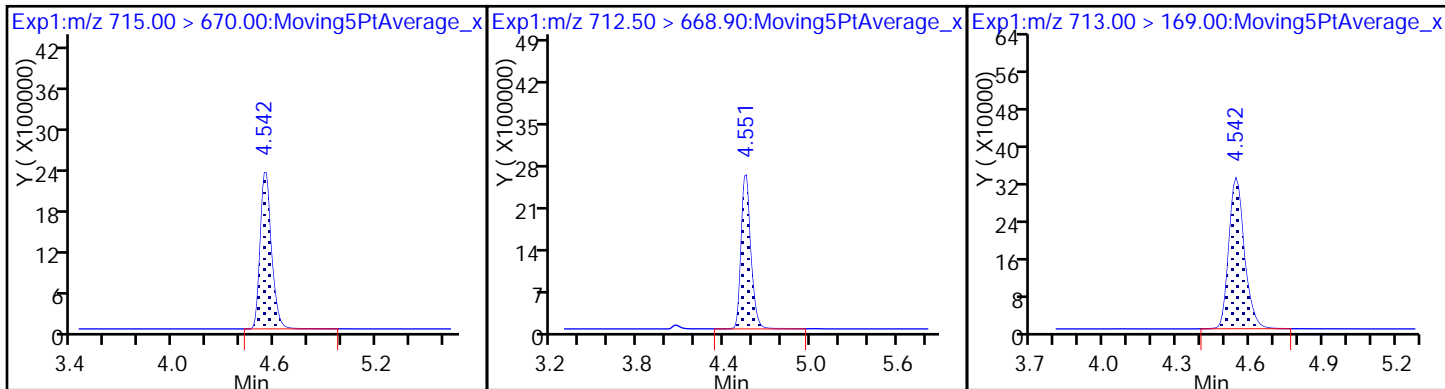
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

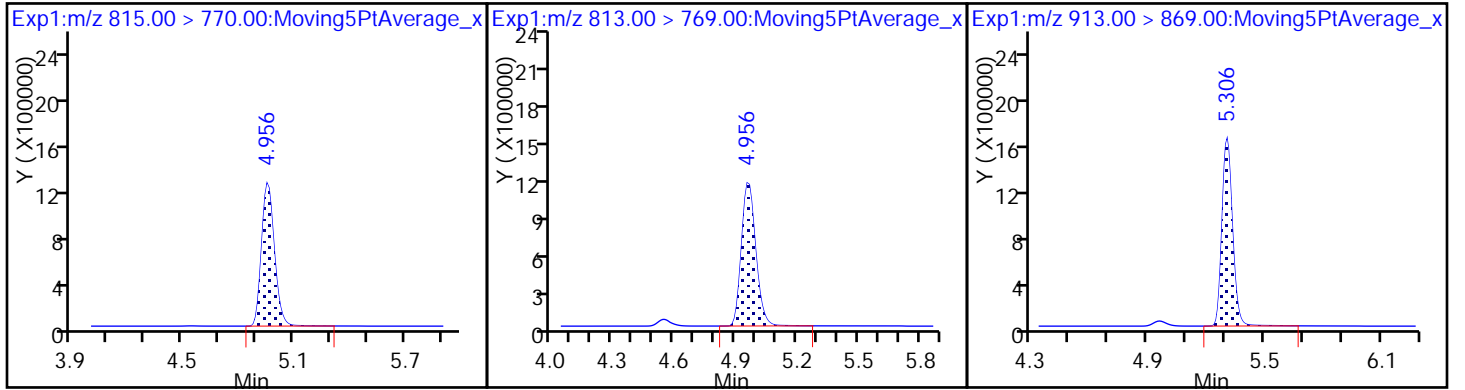




D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171948/12 Calibration Date: 06/30/2017 12:13  
 Instrument ID: A8\_N Calib Start Date: 06/30/2017 09:20  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/30/2017 10:08  
 Lab File ID: 2017.06.30A\_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9045	0.9695		21.2	19.8	7.2	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.012	1.029		20.1	19.8	1.7	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.449	1.598		19.3	17.5	10.3	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.002	1.076		21.3	19.8	7.3	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.067	1.073		19.9	19.8	0.6	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.118	1.070		17.2	18.0	-4.3	25.0
6:2FTS	AveID	0.9826	1.037		19.8	18.8	5.5	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.069	1.094		20.3	19.8	2.3	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.138	1.198		19.9	18.9	5.3	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9844	1.010		20.3	19.8	2.6	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.044	1.047		18.4	18.4	0.3	25.0
8:2FTS	AveID	0.9686	1.071		21.0	19.0	10.6	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.029		20.9	19.8	5.6	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9616	0.9454		19.5	19.8	-1.7	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.048	1.026		19.4	19.8	-2.1	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6211	0.6395		19.7	19.1	3.0	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9573	1.024		21.2	19.8	7.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.007		18.8	19.8	-5.3	25.0
MeFOSA	AveID	0.9527	0.9938		20.7	19.8	4.3	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9471	0.9513		19.9	19.8	0.4	25.0
N-EtFOSA-M	AveID	1.007	1.055		20.7	19.8	4.8	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9553	0.9443		19.6	19.8	-1.2	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.453	2.157		17.4	19.8	-12.1	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.038		19.2	19.8	-3.2	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.142	1.131		19.6	19.8	-0.9	25.0
13C4 PFBA	Ave	257677	262577		50.4	49.5	1.9	50.0
13C5-PFPeA	Ave	186409	194901		51.8	49.5	4.6	50.0
13C2 PFHxA	Ave	178568	189055		52.4	49.5	5.9	50.0
13C4-PFHpA	Ave	160423	175445		54.1	49.5	9.4	50.0
18O2 PFHxS	Ave	238247	251264		49.4	46.8	5.5	50.0
M2-6:2FTS	Ave	79988	87438		51.4	47.0	9.3	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171948/12 Calibration Date: 06/30/2017 12:13  
 Instrument ID: A8\_N Calib Start Date: 06/30/2017 09:20  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/30/2017 10:08  
 Lab File ID: 2017.06.30A\_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	156457	169713		53.7	49.5	8.5	50.0
13C4 PFOS	Ave	180276	190594		50.0	47.3	5.7	50.0
13C5 PFNA	Ave	128002	141563		54.7	49.5	10.6	50.0
13C8 FOSA	Ave	274836	291113		52.4	49.5	5.9	50.0
M2-8:2FTS	Ave	67097	68520		48.4	47.4	2.1	50.0
13C2 PFDA	Ave	118292	126524		53.0	49.5	7.0	50.0
d3-NMeFOSAA	Ave	47523	51401		53.5	49.5	8.2	50.0
13C2 PFUnA	Ave	93413	100004		53.0	49.5	7.1	50.0
d5-NEtFOSAA	Ave	49120	52983		53.4	49.5	7.9	50.0
d-N-MeFOSA-M	Ave	75395	72784		47.8	49.5	-3.5	50.0
13C2 PFDoA	Ave	98221	106173		53.5	49.5	8.1	50.0
d-N-EtFOSA-M	Ave	72410	72878		49.8	49.5	0.6	50.0
13C2-PFTEdA	Ave	213708	206832		47.9	49.5	-3.2	50.0
13C2-PFHxDA	Ave	120017	123907		51.1	49.5	3.2	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30A\_011.d  
 Lims ID: CCV L4  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 30-Jun-2017 12:13:08 ALS Bottle#: 31 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L4  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 13:56:09 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 13:15:12

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.542	1.541	0.001	1.000	5040782	21.2	107	2449	
D 1 13C4 PFBA	217.00 > 172.00	1.542	1.541	0.001		12998840	50.4	102	17171	
D 3 13C5-PFPeA	267.90 > 223.00	1.742	1.748	-0.006		9648581	51.8	105	45641	
4 Perfluoropentanoic acid	262.90 > 219.00	1.742	1.750	-0.008	1.000	3970226	20.1	102	2245	
D 47 13C3-PFBS	301.90 > 83.00	1.769	1.768	0.001		255232	NC		8592	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.769	1.775	-0.006	1.000	7027039	19.3	110	3383	
	298.90 > 99.00	1.769	1.775	-0.006	1.000	2878956	2.44(0.00-0.00)		3447	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.969	1.969	0.0	1.000	1388546	18.5	100	25434	
D 7 13C2 PFHxA	315.00 > 270.00	2.003	2.012	-0.009		9359138	52.4	106	29859	
6 Perfluorohexanoic acid	313.00 > 269.00	2.003	2.012	-0.009	1.000	4027019	21.3	107	4777	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.323	2.331	-0.008	1.000	3726720	19.9	101	3535	
D 9 13C4-PFHpA	367.00 > 322.00	2.323	2.331	-0.008		8685398	54.1	109	15630	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.339	2.346	-0.007	1.000	4845124	17.2	95.7	2851	
D 11 18O2 PFHxS	403.00 > 84.00	2.339	2.346	-0.007		11767132	49.4	105	48598	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.645	2.656	-0.011	4112189	51.4	109	16670	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.652	2.657	-0.005	1.000	1702278	19.8	106	11763
* 62 13C2-PFOA	415.00	> 370.00	2.674	2.679	-0.005	8981623	49.5	100	22268	
D 14 13C4 PFOA	417.00	> 372.00	2.674	2.682	-0.008	8401654	53.7	108	16832	
15 Perfluorooctanoic acid	413.00	> 369.00	2.674	2.683	-0.009	1.000	3675593	20.3	102	887
	413.00	> 169.00	2.674	2.683	-0.009	1.000	2131487	1.72(0.90-1.10)		3816
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.681	2.691	-0.010	1.000	4305530	19.9	105	13669
D 18 13C4 PFOS	503.00	> 80.00	3.049	3.054	-0.005	9020199	50.0	106	18388	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.049	3.057	-0.008	1.000	3667785	18.4	100	7500
	499.00	> 99.00	3.049	3.057	-0.008	1.000	790589	4.64(0.90-1.10)		6133
D 19 13C5 PFNA	468.00	> 423.00	3.049	3.057	-0.008	7008067	54.7	111	12307	
20 Perfluorononanoic acid	463.00	> 419.00	3.049	3.057	-0.008	1.000	2830584	20.3	103	5143
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.398	3.390	0.008	1.000	5929218	20.9	106	34220
D 21 13C8 FOSA	506.00	> 78.00	3.398	3.390	0.008	14411514	52.4	106	328576	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.398	3.407	-0.009	1.000	1392365	21.0	111	9531
D 26 M2-8:2FTS	529.00	> 509.00	3.398	3.407	-0.009	3249604	48.4	102	28075	
D 23 13C2 PFDA	515.00	> 470.00	3.407	3.417	-0.010	6263569	53.0	107	17395	
24 Perfluorodecanoic acid	513.00	> 469.00	3.407	3.419	-0.012	1.000	2368599	19.5	98.3	8156
D 27 d3-NMeFOSAA	573.00	> 419.00	3.565	3.575	-0.010	2544589	53.5	108	15804	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.565	3.579	-0.014	1.000	1044646	19.4	97.9	3122
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.723	3.732	-0.009	1.000	2326554	19.7	103	16280
D 32 d5-NEtFOSAA	589.00	> 419.00	3.733	3.742	-0.009	2622919	53.4	108	5828	
D 30 13C2 PFUnA	565.00	> 520.00	3.733	3.750	-0.017	4950689	53.0	107	21805	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.733	3.750	-0.017	1.000	1994812	18.8	94.7	4661
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.733	3.750	-0.017	1.000	1074179	21.2	107	8135

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.902	3.890	0.012		3603163		47.8	96.5	595
35 MeFOSA	512.00 > 169.00	3.910	3.895	0.015	1.000	1432377		20.7	104	5495
D 36 13C2 PFDaA	615.00 > 570.00	4.027	4.045	-0.018		5256090		53.5	108	16914
37 Perfluorododecanoic acid	613.00 > 569.00	4.027	4.045	-0.018	1.000	2000048		19.9	100	2318
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.092	4.077	0.015		3607838		49.8	101	6529
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.101	4.086	0.015	1.000	1522540		20.7	105	5148
41 Perfluorotridecanoic acid	663.00 > 619.00	4.295	4.316	-0.021	1.000	1985274		19.6	98.8	690
D 43 13C2-PFTeDA	715.00 > 670.00	4.536	4.556	-0.020		10239217		47.9	96.8	95268
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.536	4.557	-0.021	1.000	4535422		17.4	87.9	1809
	713.00 > 169.00	4.527	4.557	-0.030	0.998	580755	7.81(0.00-0.00)			9748
D 44 13C2-PFHxDA	815.00 > 770.00	4.943	4.969	-0.026		6133995		51.1	103	11954
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.943	4.972	-0.029	1.000	2181772		19.2	96.8	397
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.281	5.324	-0.043	1.000	2377583		19.6	99.1	784

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L4\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30A\_011.d

Injection Date: 30-Jun-2017 12:13:08

Instrument ID: A8\_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

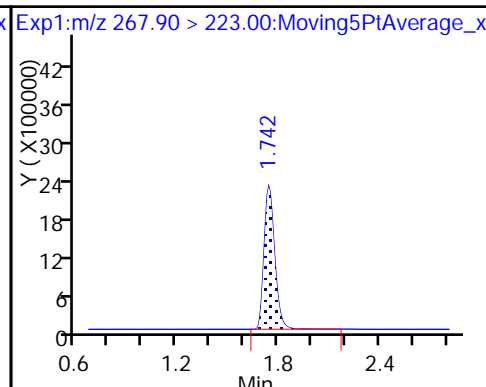
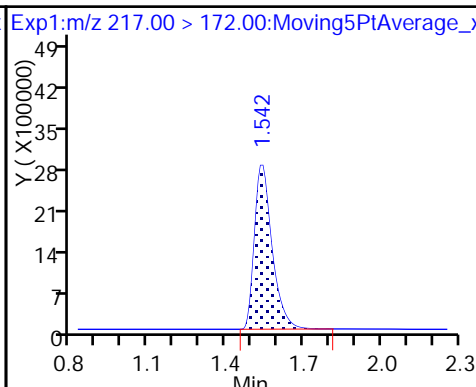
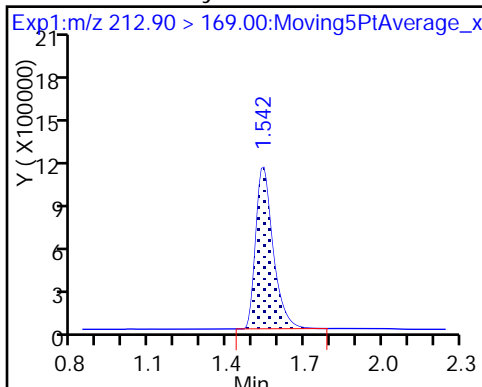
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

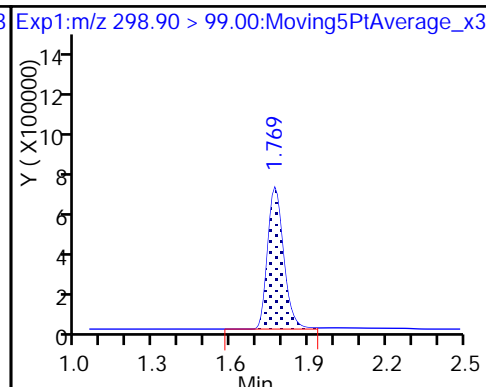
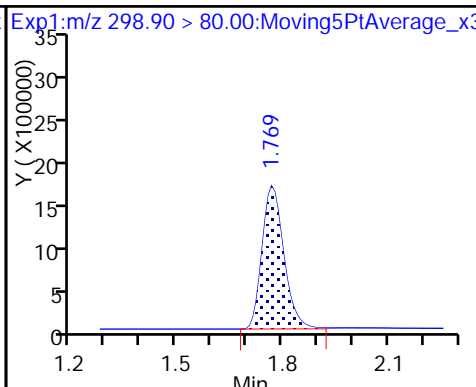
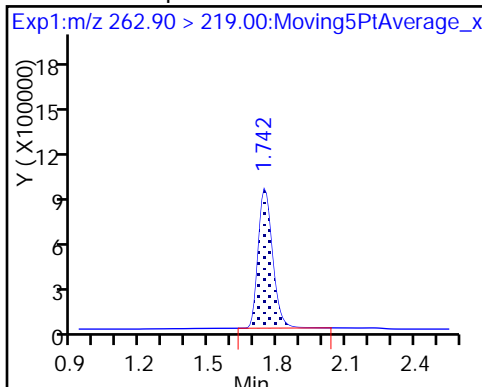
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

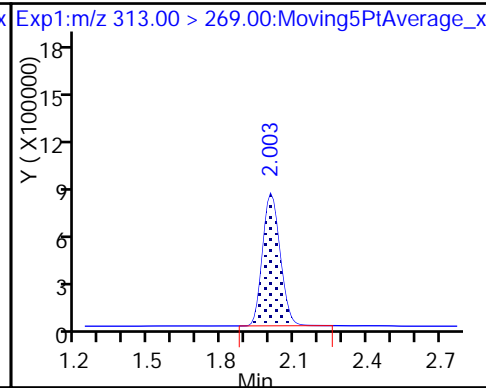
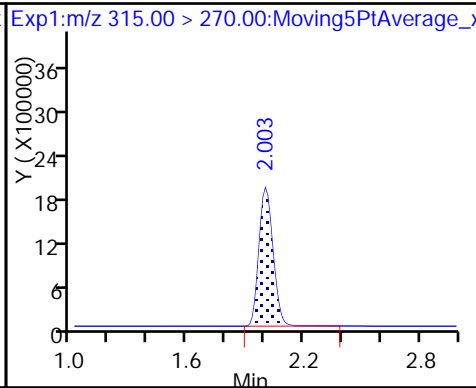
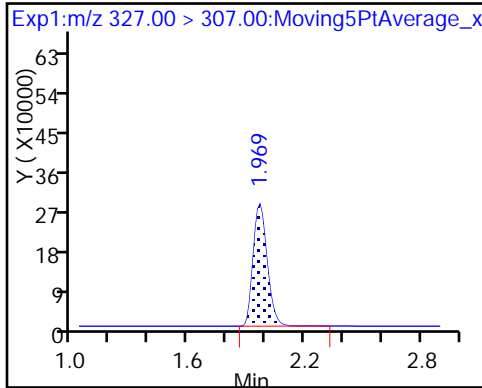
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoate

D 7 13C2 PFHxA

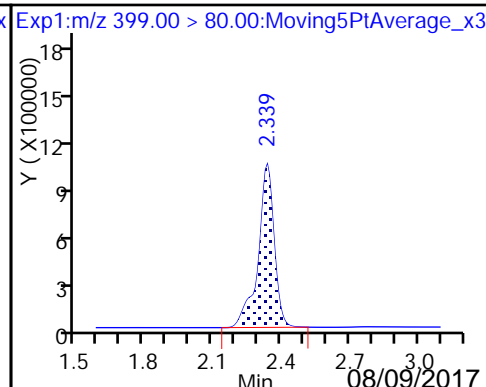
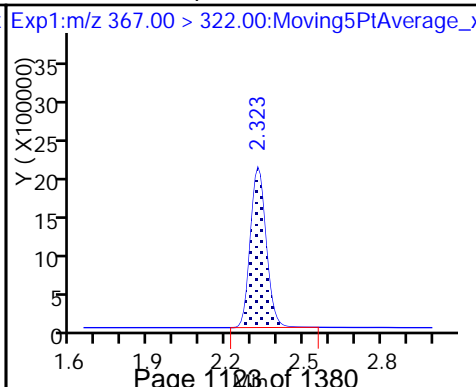
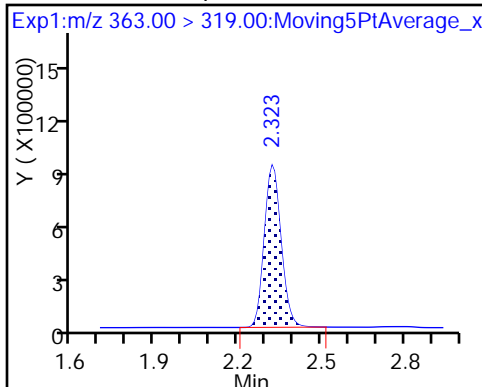
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

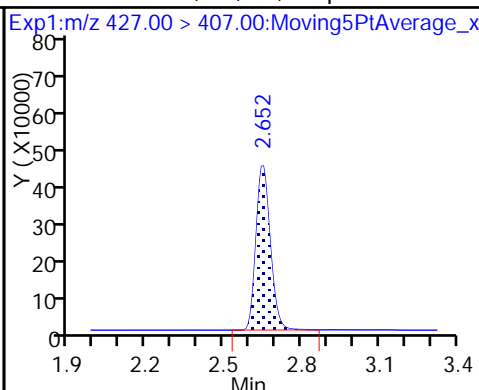
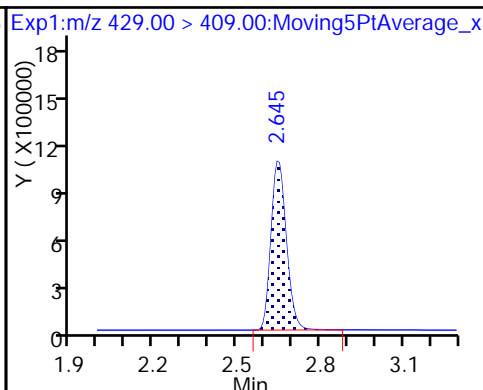
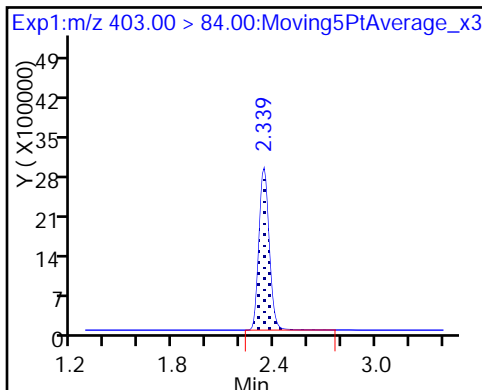
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

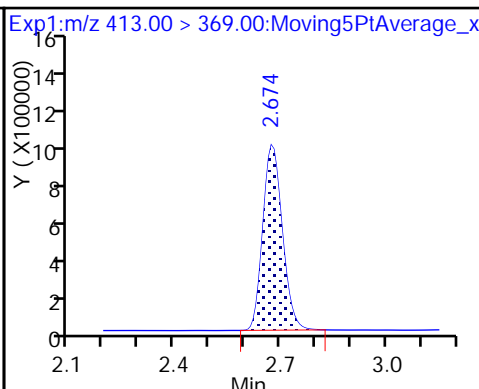
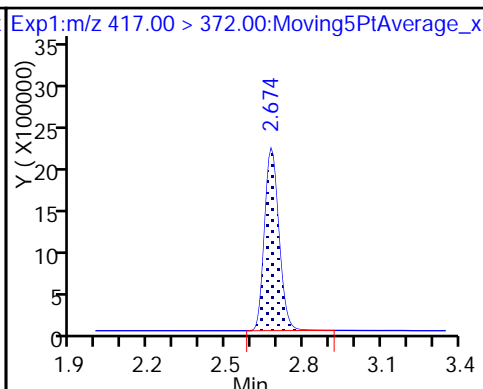
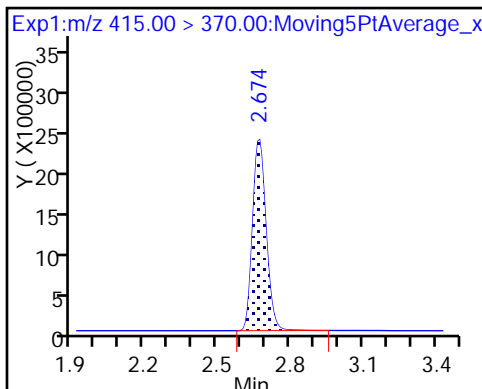
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

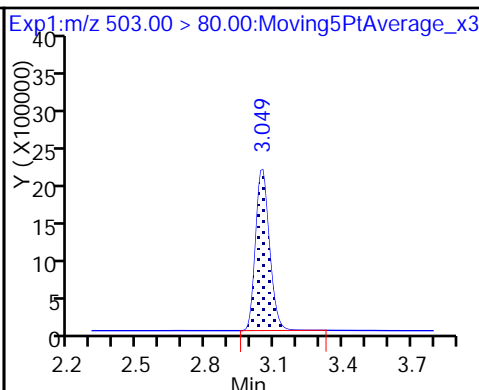
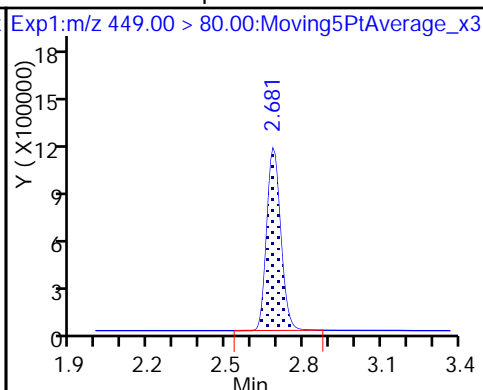
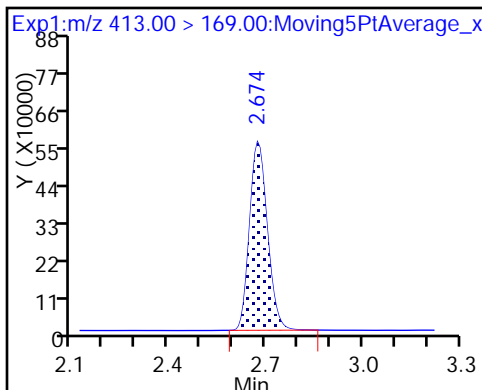
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

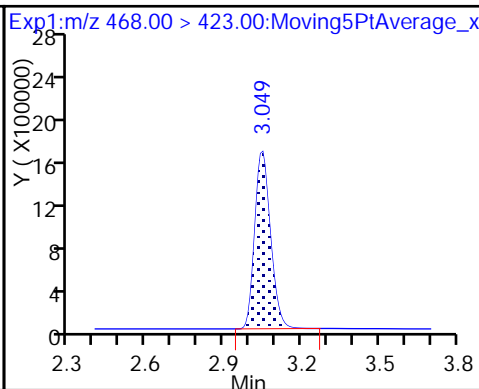
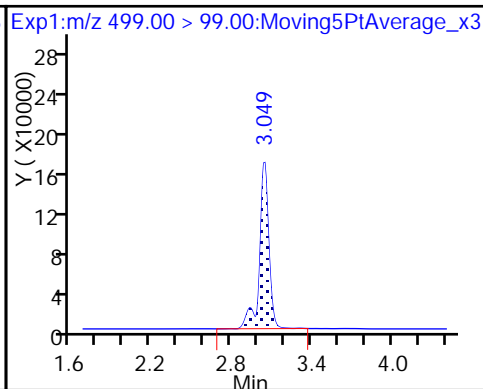
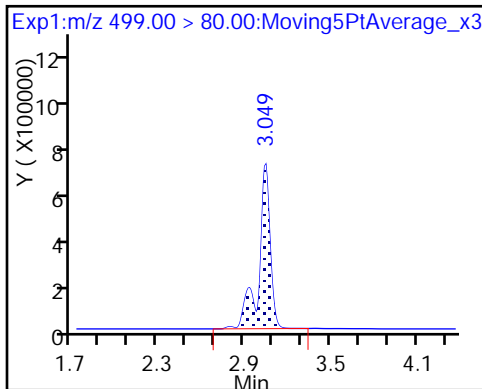
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

D 19 13C5 PFNA

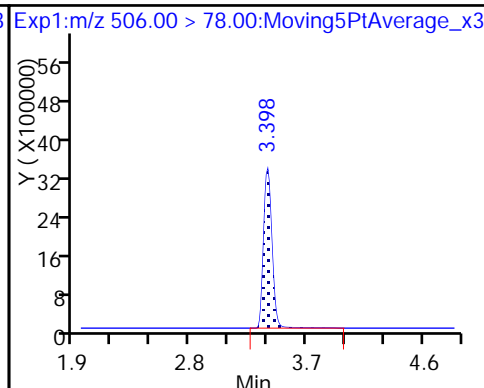
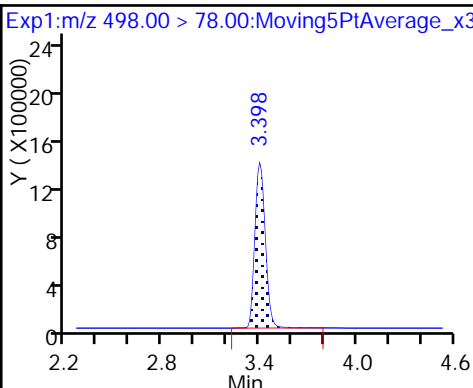
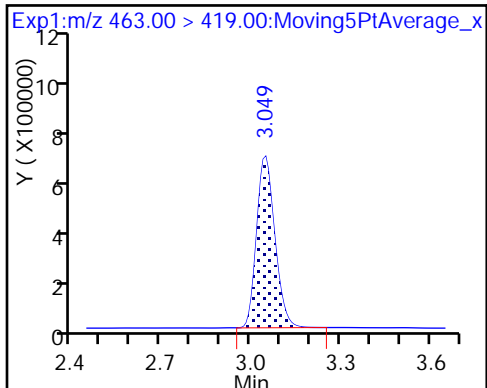




20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

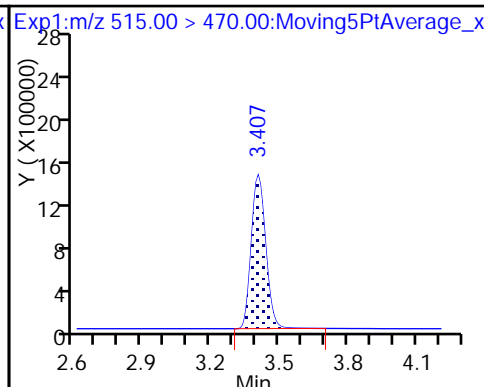
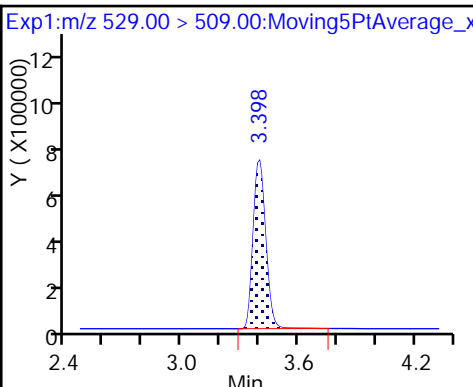
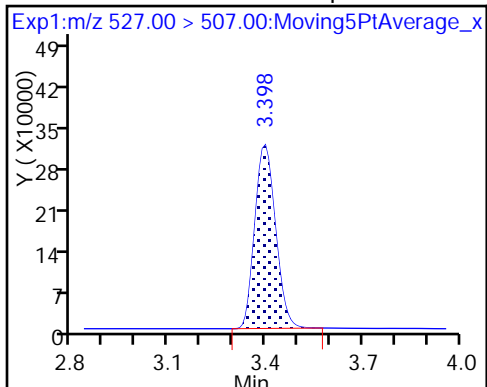
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

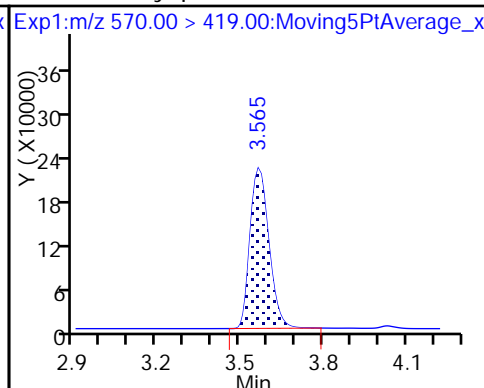
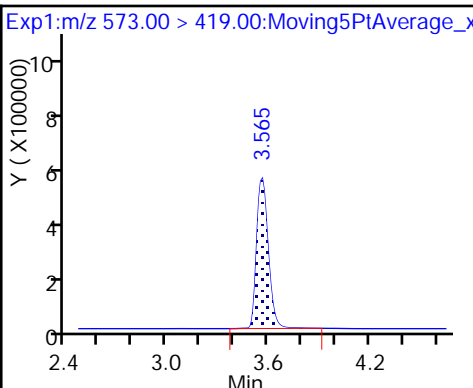
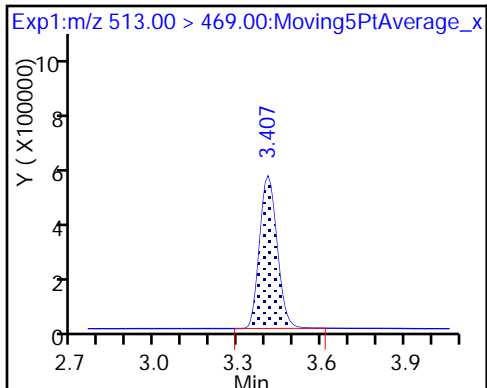
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

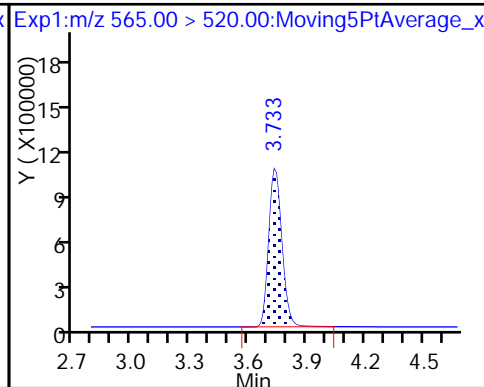
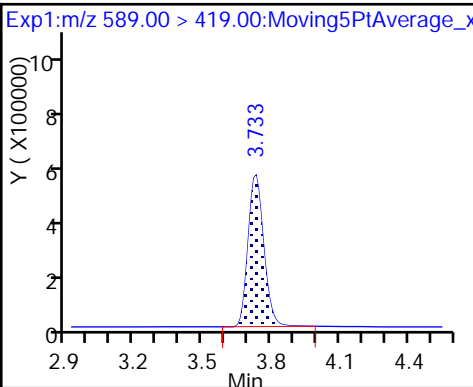
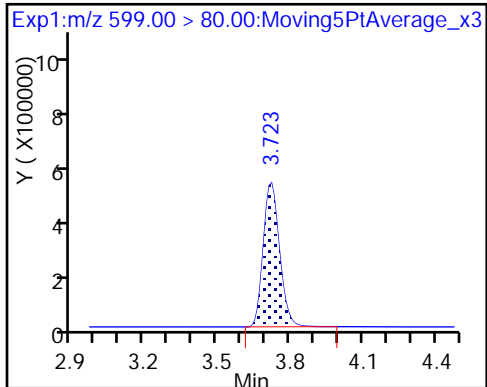
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

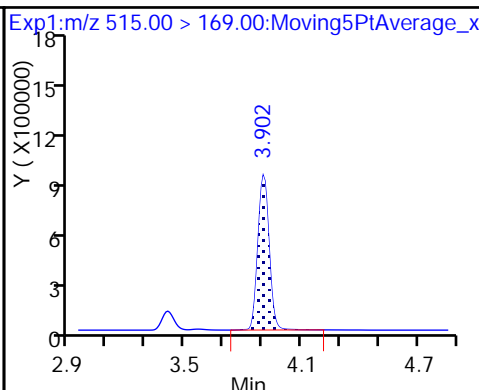
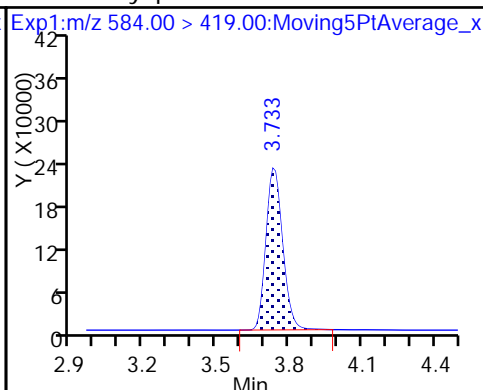
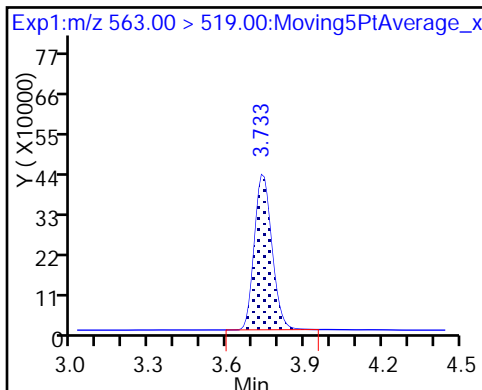
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

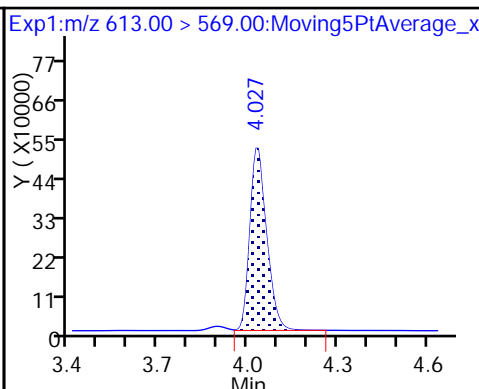
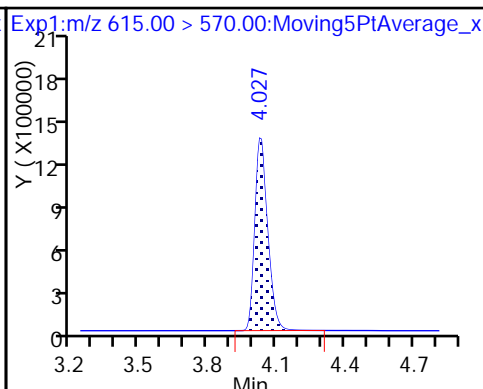
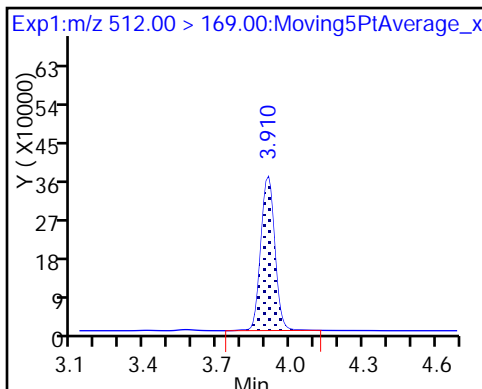
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

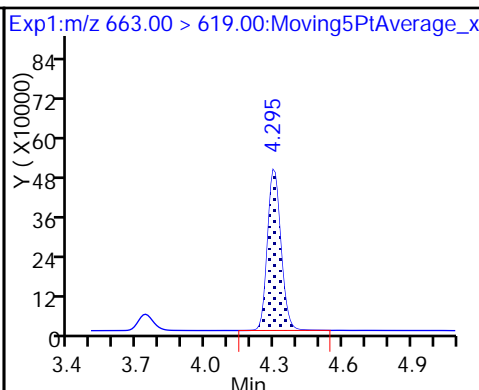
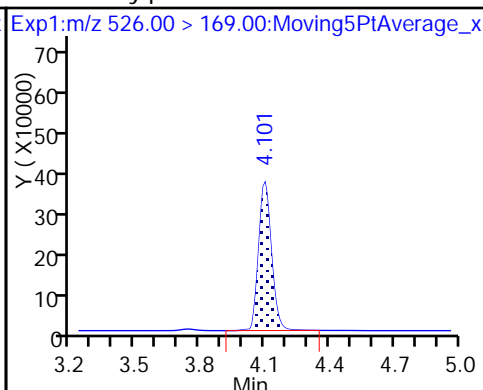
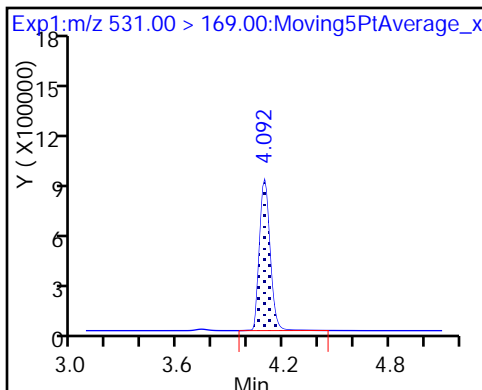
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

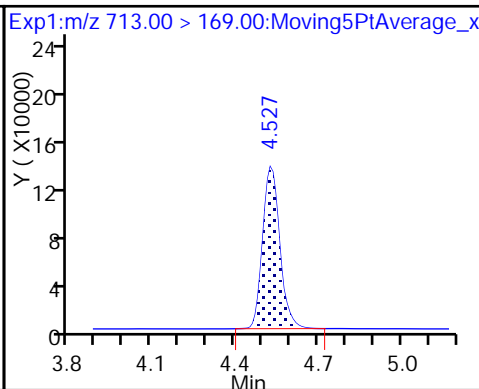
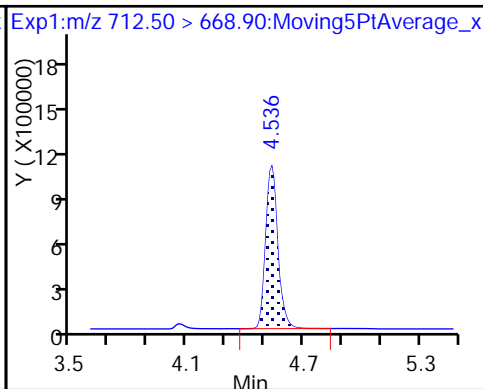
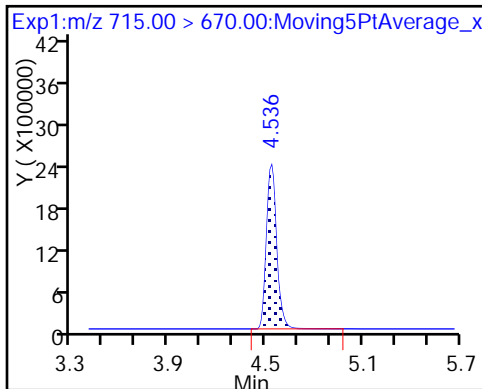
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

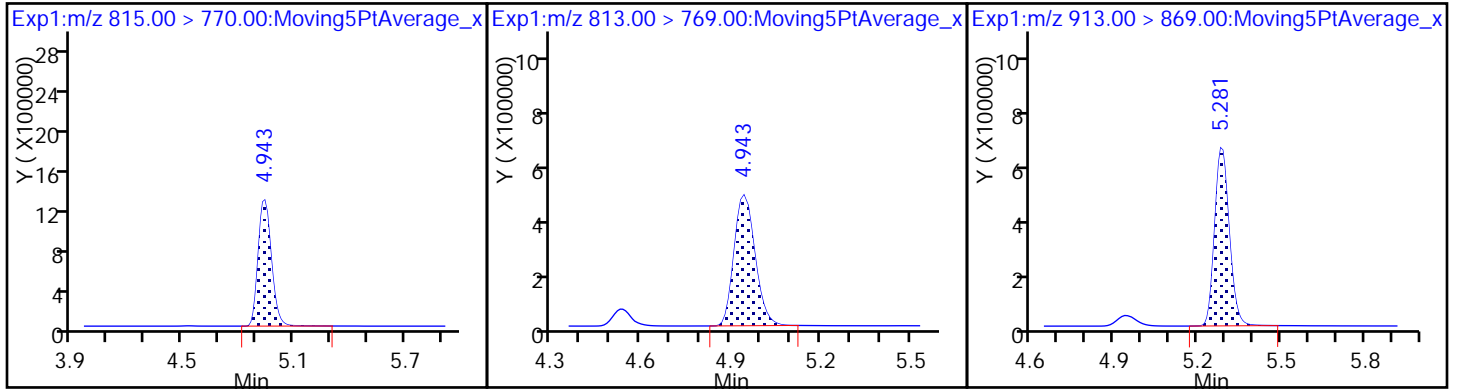
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171948/20 Calibration Date: 06/30/2017 13:08  
 Instrument ID: A8\_N Calib Start Date: 06/30/2017 09:20  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/30/2017 10:08  
 Lab File ID: 2017.06.30B\_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9045	0.9308		50.9	49.5	2.9	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.012	1.039		50.9	49.5	2.7	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.449	1.404		42.4	43.8	-3.1	25.0
Perfluorohexanoic acid (PFHxA)	AveID	1.002	1.001		49.4	49.5	-0.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.067	1.117		51.8	49.5	4.7	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.118	1.083		43.6	45.0	-3.1	25.0
6:2FTS	AveID	0.9826	0.9743		46.5	46.9	-0.8	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.069	1.081		50.1	49.5	1.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.138	1.144		47.4	47.1	0.5	25.0
Perfluorononanoic acid (PFNA)	AveID	0.9844	1.026		51.6	49.5	4.2	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.044	1.088		47.9	45.9	4.3	25.0
8:2FTS	AveID	0.9686	1.084		53.1	47.4	11.9	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9739	1.015		51.6	49.5	4.3	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9616	0.9231		47.5	49.5	-4.0	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	1.048	1.031		48.7	49.5	-1.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6211	0.6918		53.2	47.7	11.4	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.9573	1.015		52.5	49.5	6.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.064	1.027		47.8	49.5	-3.4	25.0
MeFOSA	AveID	0.9527	1.020		53.0	49.5	7.0	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9471	0.9496		49.6	49.5	0.3	25.0
N-EtFOSA-M	AveID	1.007	1.049		51.6	49.5	4.2	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.9553	0.9795		50.8	49.5	2.5	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	2.453	2.148		43.4	49.5	-12.4	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		1.097		52.0	49.5	5.1	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	1.142	1.207		52.3	49.5	5.7	25.0
13C4 PFBA	Ave	257677	330626		63.5	49.5	28.3	50.0
13C5-PFPeA	Ave	186409	227077		60.3	49.5	21.8	50.0
13C2 PFHxA	Ave	178568	218852		60.7	49.5	22.6	50.0
13C4-PFHpA	Ave	160423	187705		57.9	49.5	17.0	50.0
18O2 PFHxS	Ave	238247	273857		53.8	46.8	14.9	50.0
M2-6:2FTS	Ave	79988	81191		47.7	47.0	1.5	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-171948/20 Calibration Date: 06/30/2017 13:08  
 Instrument ID: A8\_N Calib Start Date: 06/30/2017 09:20  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 06/30/2017 10:08  
 Lab File ID: 2017.06.30B\_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	156457	187268		59.3	49.5	19.7	50.0
13C4 PFOS	Ave	180276	216623		56.9	47.3	20.2	50.0
13C5 PFNA	Ave	128002	164339		63.6	49.5	28.4	50.0
13C8 FOSA	Ave	274836	311920		56.2	49.5	13.5	50.0
M2-8:2FTS	Ave	67097	78910		55.8	47.4	17.6	50.0
13C2 PFDA	Ave	118292	155143		64.9	49.5	31.2	50.0
d3-NMeFOSAA	Ave	47523	78648		81.9	49.5	65.5*	50.0
d5-NEtFOSAA	Ave	49120	76807		77.4	49.5	56.4*	50.0
13C2 PFUnA	Ave	93413	129431		68.6	49.5	38.6	50.0
d-N-MeFOSA-M	Ave	75395	94724		62.2	49.5	25.6	50.0
13C2 PFDoA	Ave	98221	144554		72.9	49.5	47.2	50.0
d-N-EtFOSA-M	Ave	72410	94486		64.6	49.5	30.5	50.0
13C2-PFTEtDA	Ave	213708	286746		66.4	49.5	34.2	50.0
13C2-PFHxDA	Ave	120017	177202		73.1	49.5	47.6	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30B\_011.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 30-Jun-2017 13:08:21 ALS Bottle#: 32 Worklist Smp#: 20  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub20  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 30-Jun-2017 13:56:22 Calib Date: 30-Jun-2017 10:08:55  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170630-44931.b\2017.06.30CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK014

First Level Reviewer: chandrasenas Date: 30-Jun-2017 13:55:40

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid	212.90 > 169.00	1.543	1.541	0.002	1.000	15235111	50.9	103	7191	
D 1 13C4 PFBA	217.00 > 172.00	1.543	1.541	0.002		16367615	63.5	128	77428	
D 3 13C5-PFPeA	267.90 > 223.00	1.744	1.748	-0.004		11241454	60.3	122	20265	
4 Perfluoropentanoic acid	262.90 > 219.00	1.744	1.750	-0.006	1.000	11684043	50.9	103	6552	
D 47 13C3-PFBS	301.90 > 83.00	1.771	1.768	0.003		277392	NC		16038	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.771	1.775	-0.004	1.000	16830673	42.4	96.9	472339	
	298.90 > 99.00	1.771	1.775	-0.004	1.000	7273265	2.31(0.00-0.00)		14506	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.971	1.969	0.002	1.000	3455041	49.6	107	34825	
D 7 13C2 PFHxA	315.00 > 270.00	2.004	2.012	-0.008		10834270	60.7	123	31596	
6 Perfluorohexanoic acid	313.00 > 269.00	2.004	2.012	-0.008	1.000	10842096	49.4	99.9	8981	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.326	2.331	-0.005	1.000	10379378	51.8	105	8461	
D 9 13C4-PFHpA	367.00 > 322.00	2.326	2.331	-0.005		9292321	57.9	117	28288	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.343	2.346	-0.003	1.000	13366300	43.6	96.9	5539	
D 11 18O2 PFHxS	403.00 > 84.00	2.343	2.346	-0.003		12825206	53.8	115	37332	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.647	2.656	-0.009	3818386	47.7	102	14027	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.647	2.657	-0.010	1.000	3712514	46.5	99.2	26121
* 62 13C2-PFOA	415.00	> 370.00	2.669	2.679	-0.010	9592623	49.5	100	26987	
D 14 13C4 PFOA	417.00	> 372.00	2.676	2.682	-0.006	9270669	59.3	120	16385	
15 Perfluorooctanoic acid	413.00	> 369.00	2.676	2.683	-0.007	1.000	10019279	50.1	101	2997
	413.00	> 169.00	2.676	2.683	-0.007	1.000	6030876	1.66(0.90-1.10)		7089
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.683	2.691	-0.008	1.000	11674216	47.4	100	24599
D 18 13C4 PFOS	503.00	> 80.00	3.044	3.054	-0.010	10252038	56.9	120	14062	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.044	3.057	-0.013	1.000	10832420	47.9	104	8729
	499.00	> 99.00	3.044	3.057	-0.013	1.000	2366094	4.58(0.90-1.10)		11419
D 19 13C5 PFNA	468.00	> 423.00	3.044	3.057	-0.013	8135597	63.6	128	14684	
20 Perfluorononanoic acid	463.00	> 419.00	3.044	3.057	-0.013	1.000	8345777	51.6	104	9366
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.395	3.390	0.005	1.000	15678048	51.6	104	496859
D 21 13C8 FOSA	506.00	> 78.00	3.395	3.390	0.005	15441594	56.2	113	63274	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.395	3.407	-0.012	1.000	4057355	53.1	112	22728
D 26 M2-8:2FTS	529.00	> 509.00	3.395	3.407	-0.012	3742381	55.8	118	10977	
D 23 13C2 PFDA	515.00	> 470.00	3.404	3.417	-0.013	7680359	64.9	131	21065	
24 Perfluorodecanoic acid	513.00	> 469.00	3.404	3.419	-0.015	1.000	7089874	47.5	96.0	27709
D 27 d3-NMeFOSAA	573.00	> 419.00	3.564	3.575	-0.011	3893452	81.9	165	18560	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.564	3.579	-0.015	1.000	4015722	48.7	98.4	8523
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.713	3.732	-0.019	1.000	7152021	53.2	111	16691
D 32 d5-NEtFOSAA	589.00	> 419.00	3.723	3.742	-0.019	3802304	77.4	156	8601	
D 30 13C2 PFUnA	565.00	> 520.00	3.732	3.750	-0.018	6407467	68.6	139	36280	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.732	3.750	-0.018	1.000	6582830	47.8	96.6	12192
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.732	3.750	-0.018	1.003	3857941	52.5	106	10851

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.901	3.890	0.011	4689286	62.2		126	572	
35 MeFOSA	512.00 > 169.00	3.910	3.895	0.015	1.000	4782362	53.0	107	6300	
D 36 13C2 PFDaA	615.00 > 570.00	4.029	4.045	-0.016	7156156	72.9		147	24479	
37 Perfluorododecanoic acid	613.00 > 569.00	4.029	4.045	-0.016	1.000	6795145	49.6	100	6624	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.088	4.077	0.011	4677528	64.6		130	4951	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.097	4.086	0.011	1.000	4905779	51.6	104	4864	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.292	4.316	-0.024	1.000	7009268	50.8	103	2264	
D 43 13C2-PFTeDA	715.00 > 670.00	4.527	4.556	-0.029	14195369	66.4		134	93362	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.527	4.557	-0.030	1.000	15374881	43.4	87.6	6871	
	713.00 > 169.00	4.527	4.557	-0.030	1.000	2082507	7.38(0.00-0.00)		21813	
D 44 13C2-PFHxDA	815.00 > 770.00	4.938	4.969	-0.031	8772367	73.1		148	16056	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.938	4.972	-0.034	1.000	7847280	52.0	105	1345	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.277	5.324	-0.047	1.000	8634887	52.3	106	1630	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L5\_00004

Amount Added: 1.00

Units: mL



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44946.b\2017.06.30B\_011.d

Injection Date: 30-Jun-2017 13:08:21

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 20

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

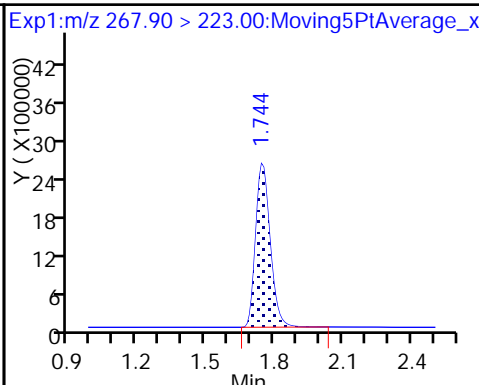
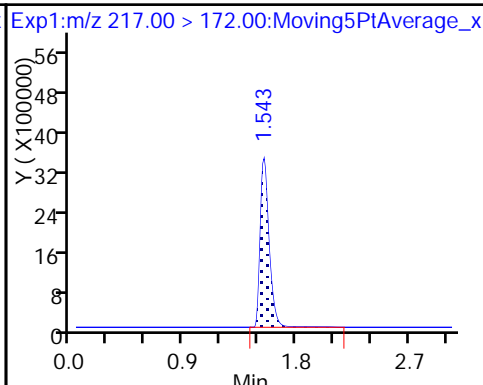
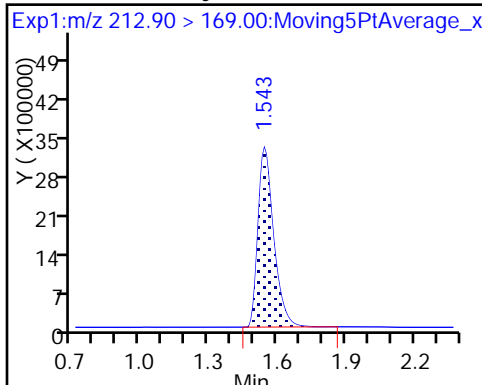
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

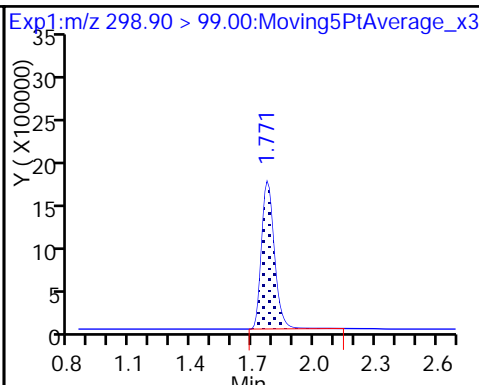
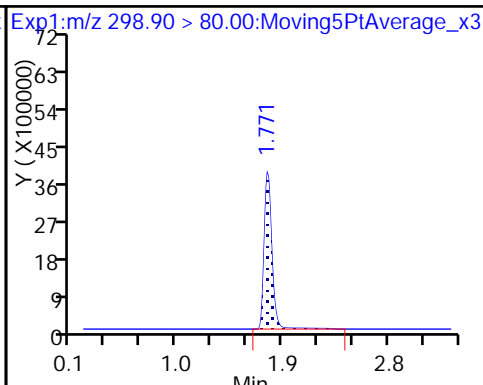
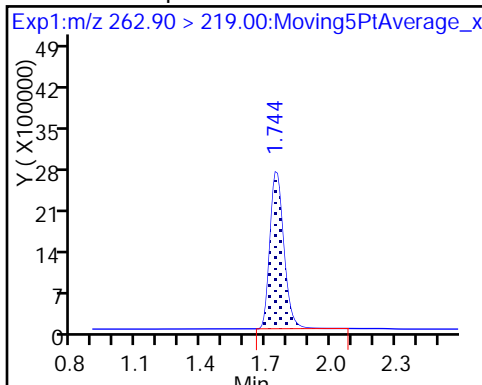
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

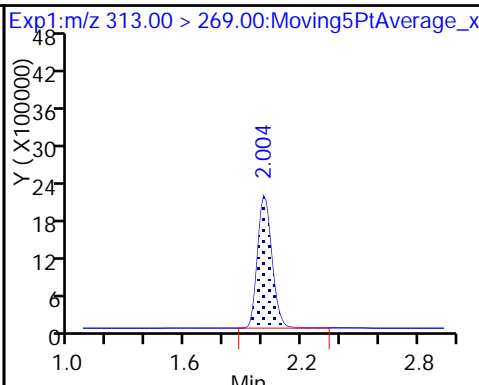
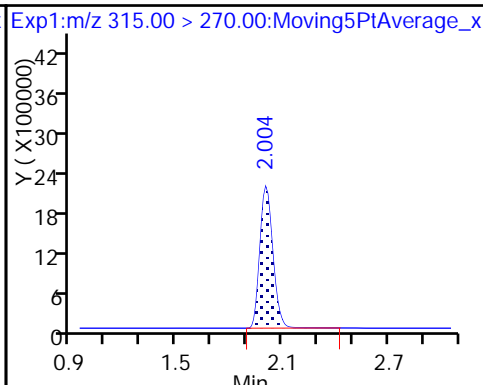
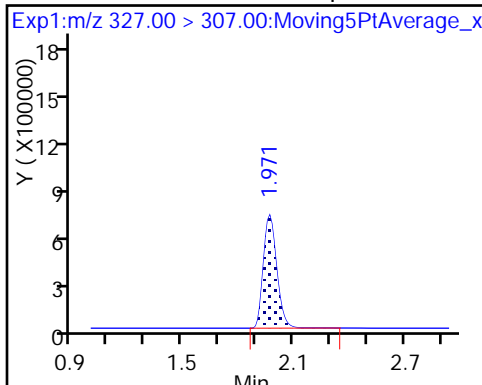
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

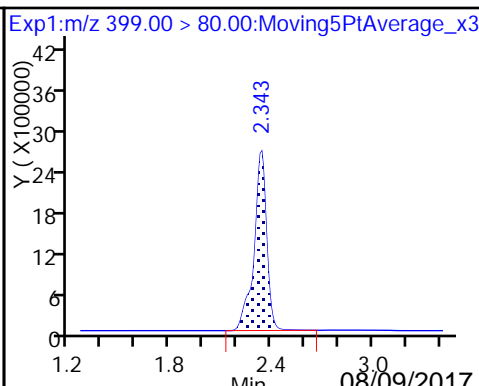
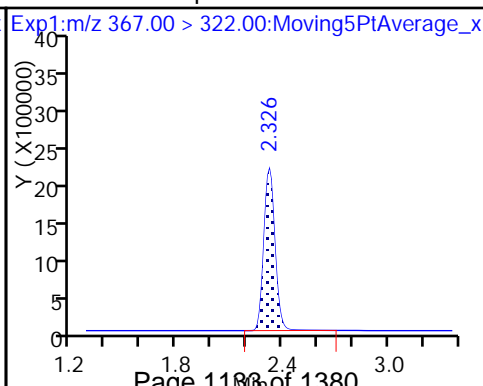
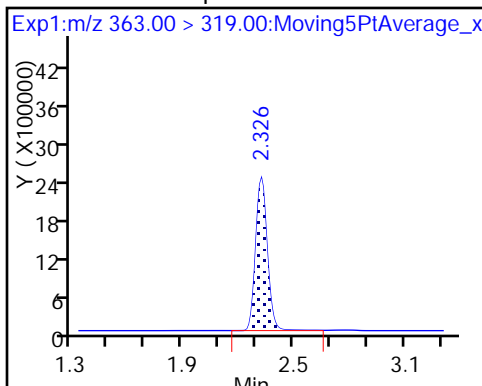
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

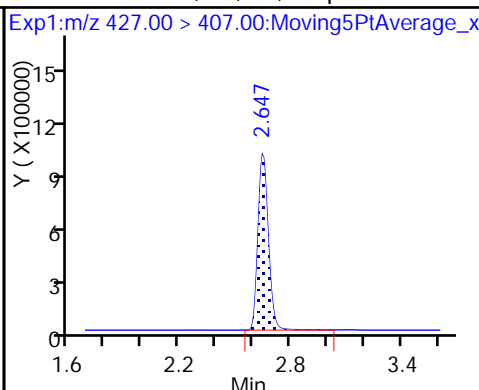
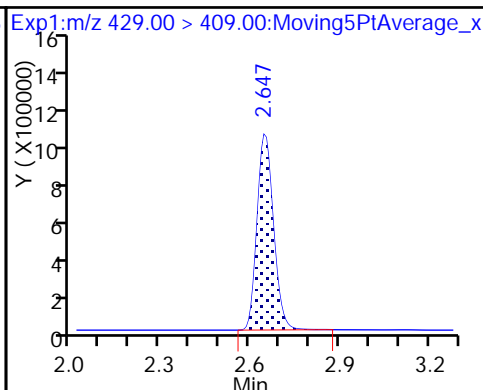
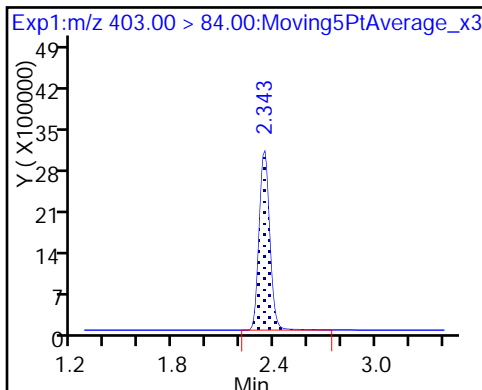
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

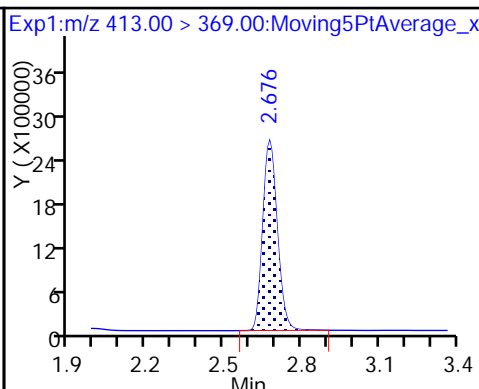
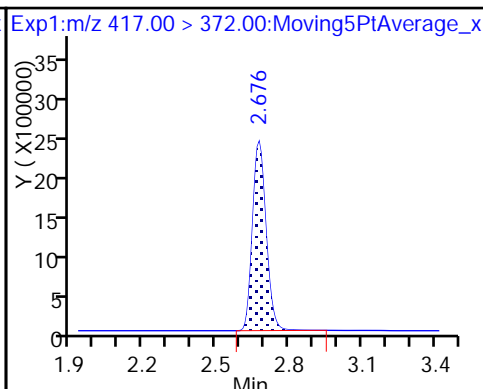
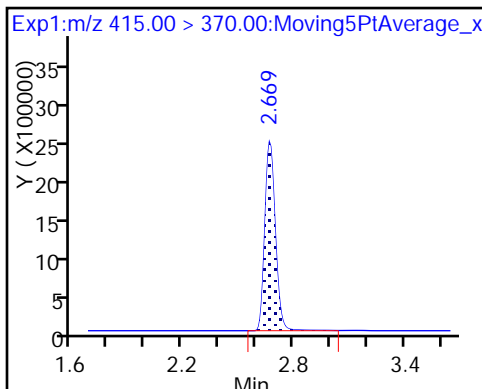
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

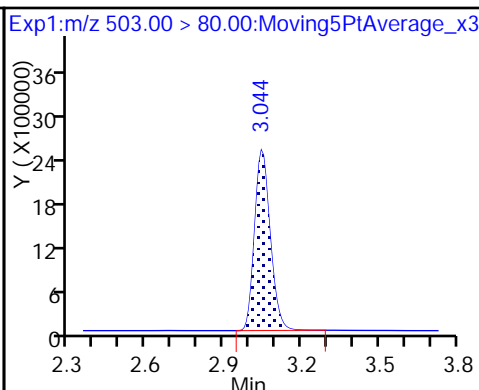
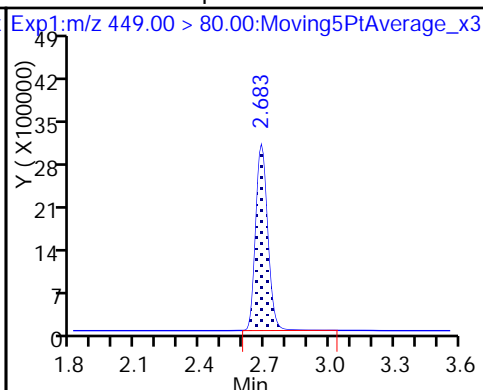
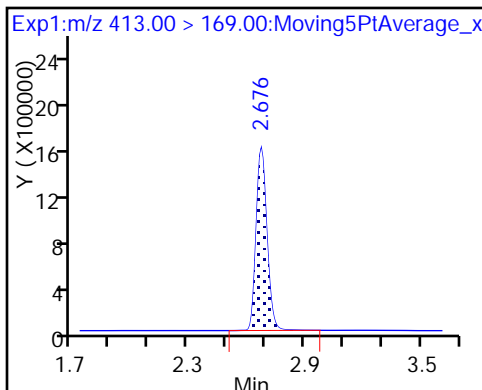
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

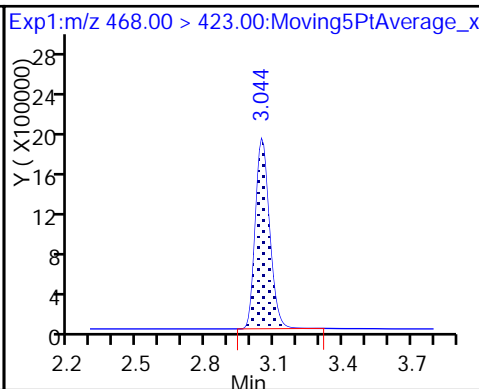
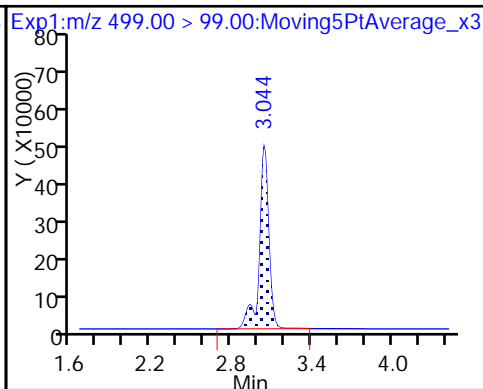
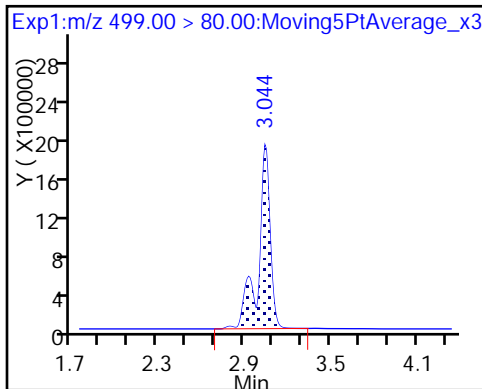
D 18 13C4 PFOS



17 Perfluorooctane sulfonic acid

17 Perfluorooctane sulfonic acid

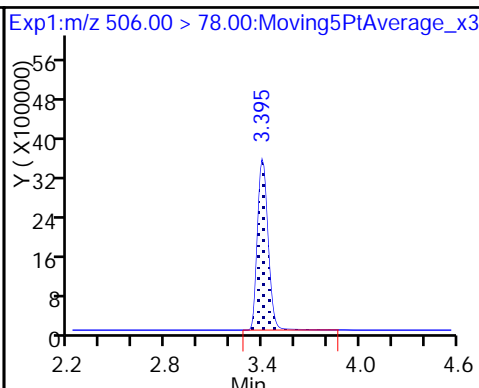
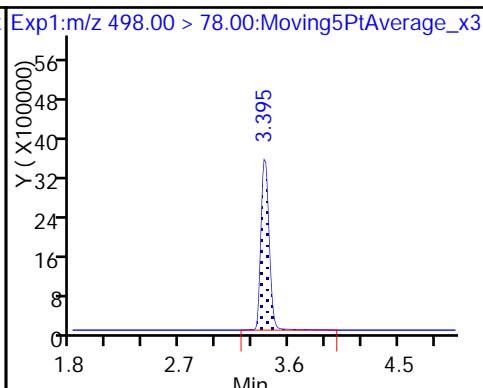
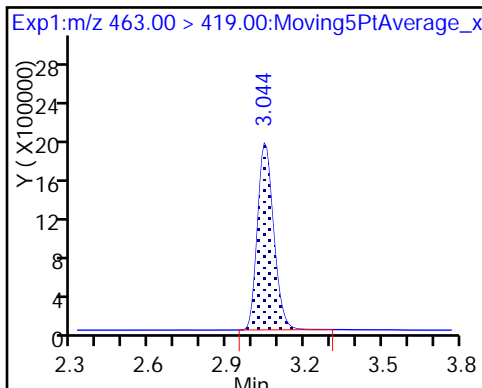
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

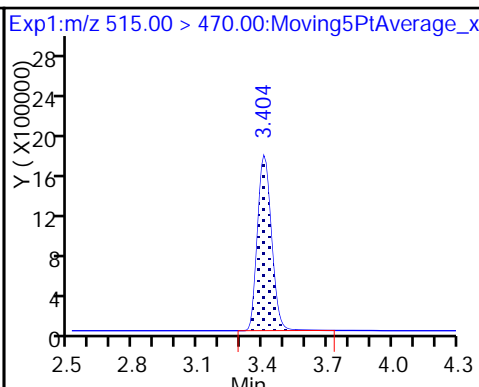
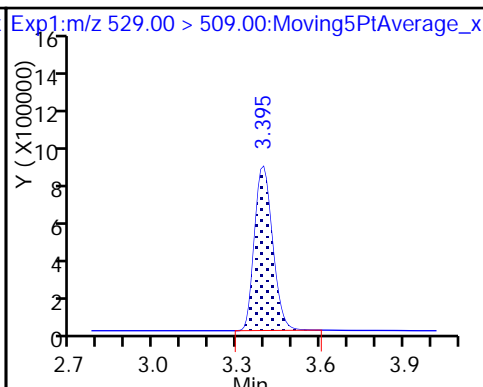
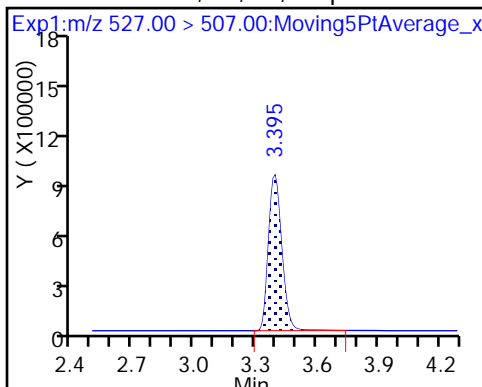
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS

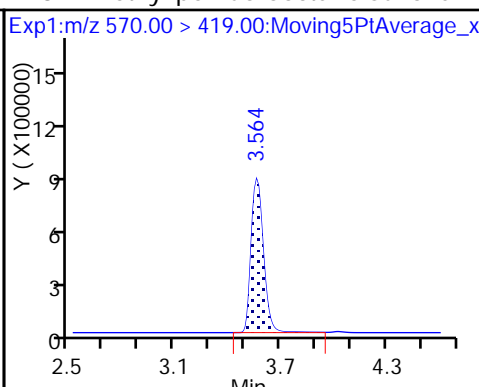
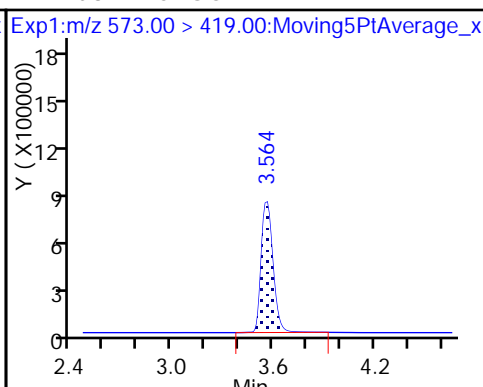
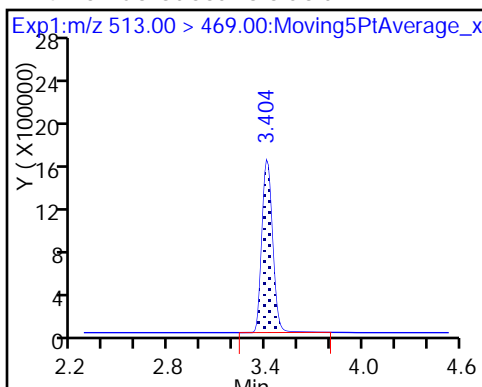
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA

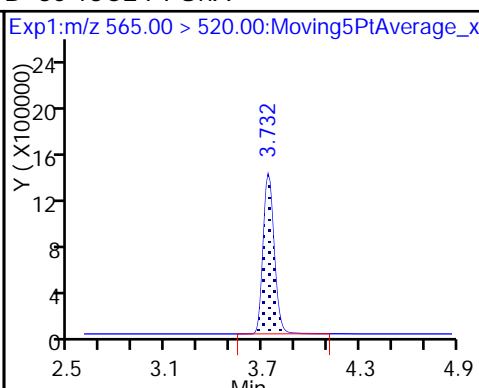
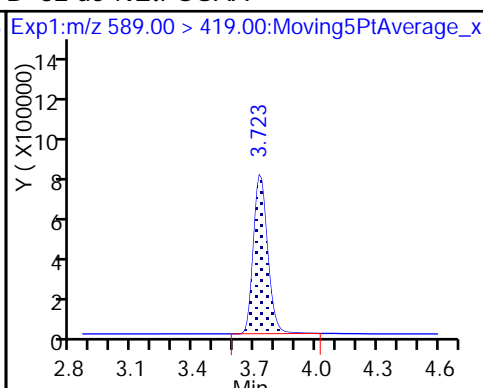
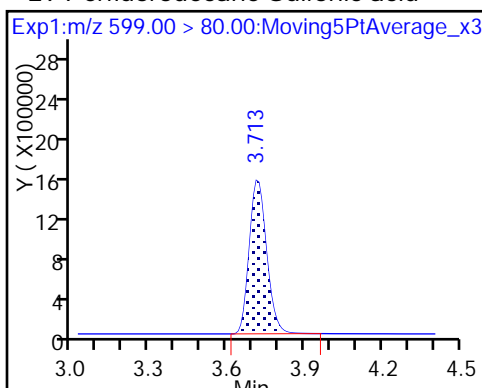
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

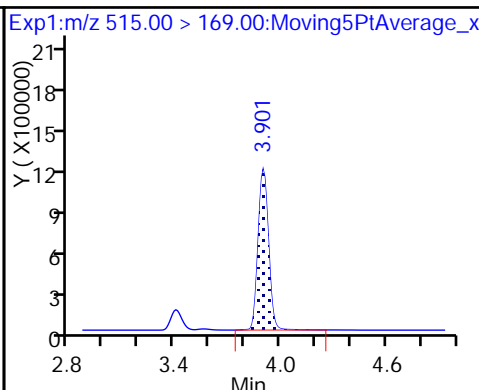
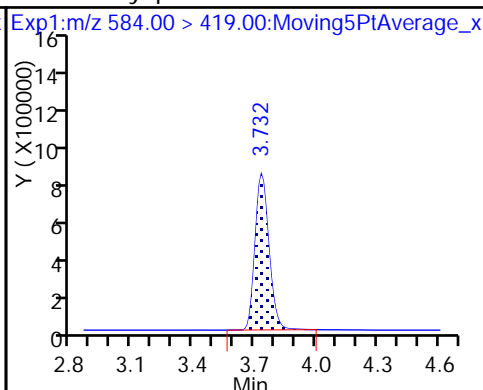
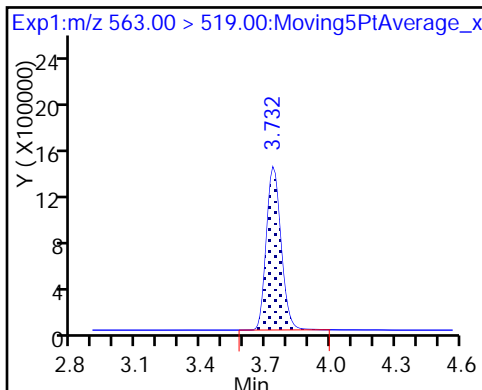
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

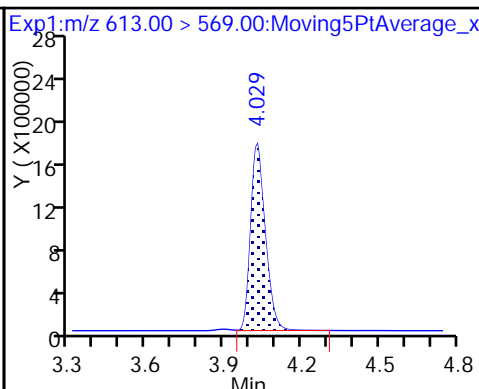
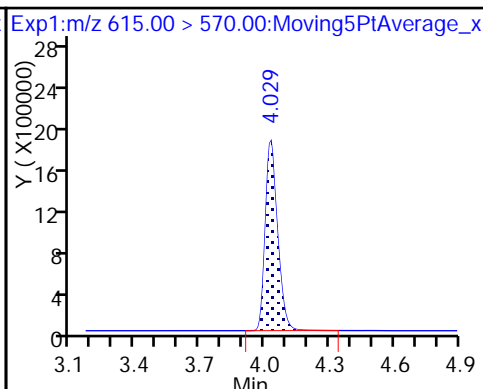
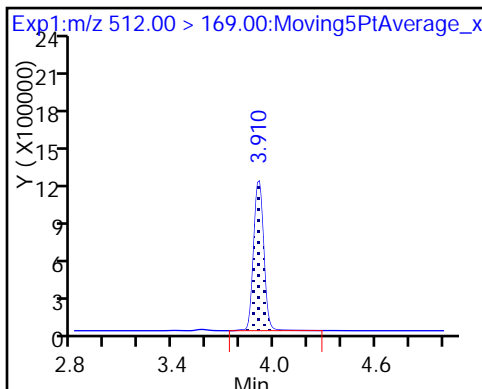
34 d-N-MeFOSA-M



35 MeFOSA

D 36 13C2 PFDaA

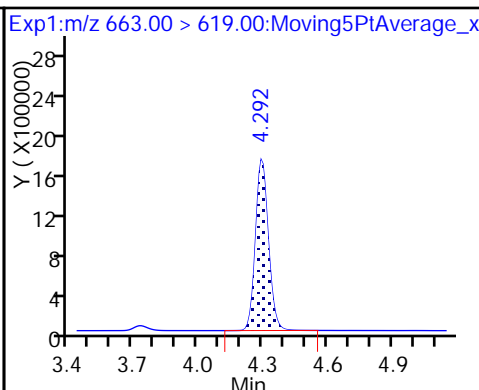
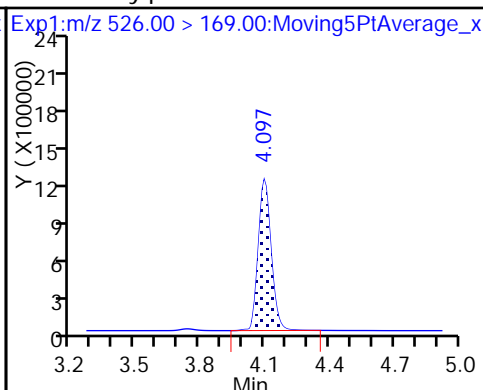
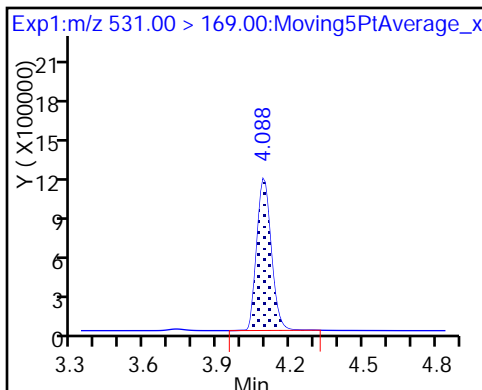
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

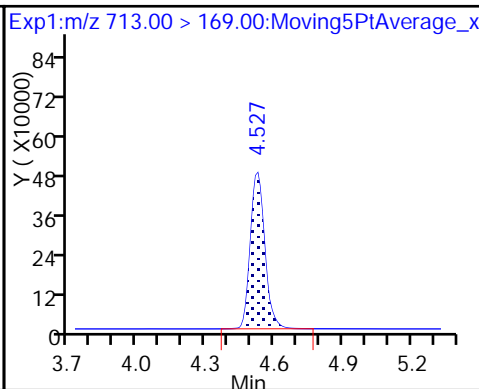
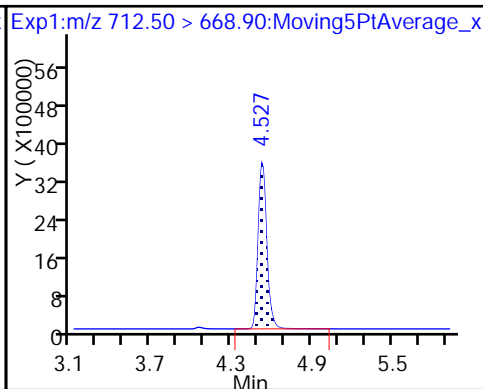
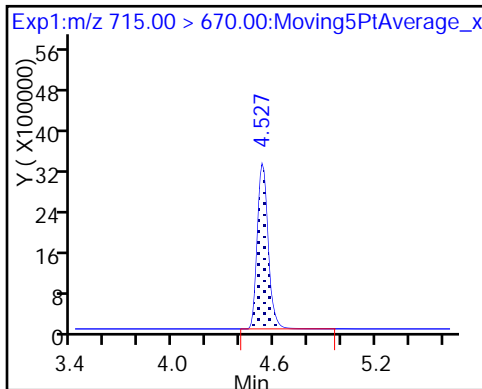
41 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

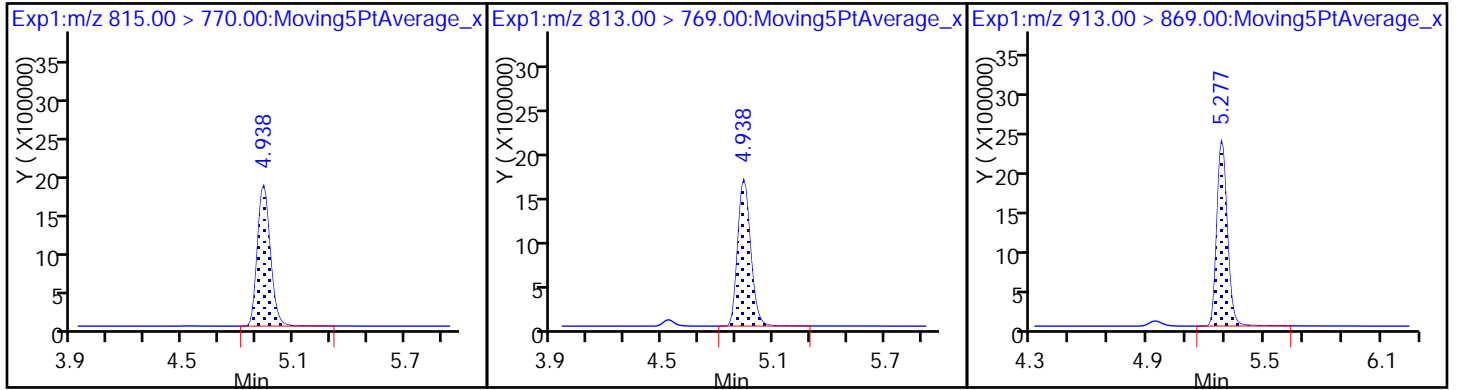
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 320-174751/12 Calibration Date: 07/18/2017 15:10  
 Instrument ID: A8\_N Calib Start Date: 07/18/2017 14:08  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/18/2017 14:56  
 Lab File ID: 2017.07.18ICAL\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9413		51.1	49.5	3.1	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.030	1.132		54.4	49.5	9.9	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.332	1.571		51.7	43.8	17.9	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9452	1.027		53.8	49.5	8.7	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.019	1.120		54.4	49.5	9.9	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.011	1.064		49.2	46.8	5.2	25.0
6:2FTS	AveID	0.8681	0.8948		48.4	46.9	3.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.133	1.160		48.2	47.1	2.3	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.062	1.123		52.4	49.5	5.8	25.0
Perfluorononanoic acid (PFNA)	AveID	1.010	1.092		53.5	49.5	8.1	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.043	0.9495		43.0	47.3	-8.9	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9210	0.9824		52.8	49.5	6.7	25.0
8:2FTS	AveID	0.9140	0.9909		51.4	47.4	8.4	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9937	1.087		54.1	49.5	9.4	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9118	1.026		55.7	49.5	12.5	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6236	0.6124		46.9	47.8	-1.8	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.8502	0.9304		54.2	49.5	9.4	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.053	1.102		51.8	49.5	4.7	25.0
MeFOSA	AveID	0.9081	0.9495		51.8	49.5	4.6	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9558	1.007		52.2	49.5	5.4	25.0
N-EtFOSA-M	AveID	0.9374	1.049		55.4	49.5	11.9	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8572	0.8681		50.1	49.5	1.3	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.999	2.287		56.6	49.5	14.4	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8426		50.1	49.5	1.2	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7883	0.8140		51.1	49.5	3.3	25.0
13C4 PFBA	Ave	177084	179420		50.2	49.5	1.3	50.0
13C5-PFPeA	Ave	123804	118000		47.2	49.5	-4.7	50.0
13C2 PFHxA	Ave	118253	116250		48.7	49.5	-1.7	50.0
13C4-PFHpA	Ave	107300	102892		47.5	49.5	-4.1	50.0
18O2 PFHxS	Ave	178395	174985		45.9	46.8	-1.9	50.0
M2-6:2FTS	Ave	52287	51877		46.7	47.0	-0.8	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: ICV 320-174751/12 Calibration Date: 07/18/2017 15:10  
 Instrument ID: A8\_N Calib Start Date: 07/18/2017 14:08  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/18/2017 14:56  
 Lab File ID: 2017.07.18ICAL\_012.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	94156	90734		47.7	49.5	-3.6	50.0
13C4 PFOS	Ave	128806	128103		47.1	47.3	-0.5	50.0
13C5 PFNA	Ave	75982	71707		46.7	49.5	-5.6	50.0
13C8 FOSA	Ave	208266	190606		45.3	49.5	-8.5	50.0
M2-8:2FTS	Ave	38534	39142		48.2	47.4	1.6	50.0
13C2 PFDA	Ave	64475	60439		46.4	49.5	-6.3	50.0
d3-NMeFOSAA	Ave	25506	23399		45.4	49.5	-8.3	50.0
13C2 PFUnA	Ave	48271	45123		46.3	49.5	-6.5	50.0
d5-NEtFOSAA	Ave	25455	23494		45.7	49.5	-7.7	50.0
d-N-MeFOSA-M	Ave	52284	51381		48.6	49.5	-1.7	50.0
13C2 PFDoA	Ave	47403	45019		47.0	49.5	-5.0	50.0
d-N-EtFOSA-M	Ave	52199	50529		47.9	49.5	-3.2	50.0
13C2-PFTEtDA	Ave	88645	83532		46.6	49.5	-5.8	50.0
13C2-PFHxDA	Ave	45203	41138		45.1	49.5	-9.0	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_012.d  
 Lims ID: ICV Full  
 Client ID:  
 Sample Type: ICV  
 Inject. Date: 18-Jul-2017 15:10:21 ALS Bottle#: 36 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: ICV  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist:  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 18-Jul-2017 16:35:20 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK030

First Level Reviewer: chandrasenas Date: 18-Jul-2017 16:34:48

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.547	1.542	0.005	8882188	50.2		101	37891	
2 Perfluorobutyric acid	212.90 > 169.00	1.547	1.544	0.003	8360730	51.1			3144	
D 3 13C5-PFPeA	267.90 > 223.00	1.757	1.757	0.0	5841585	47.2		95.3	68565	
4 Perfluoropentanoic acid	262.90 > 219.00	1.766	1.760	0.006	6610911	54.4			4783	
D 47 13C3-PFBS	301.90 > 83.00	1.784	1.778	0.006	171735	NC			7940	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.784	1.786	-0.002	12041682	51.7			442035	
	298.90 > 99.00	1.784	1.786	-0.002	4852000		2.48(0.00-0.00)		134225	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.986	1.984	0.002	2665609	50.6			67782	
6 Perfluorohexanoic acid	313.00 > 269.00	2.020	2.021	-0.001	5912754	53.8			13761	
D 7 13C2 PFHxA	315.00 > 270.00	2.020	2.021	-0.001	5754962	48.7		98.3	45159	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.344	2.340	0.004	5707214	54.4			6699	
D 9 13C4-PFHpA	367.00 > 322.00	2.344	2.340	0.004	5093649	47.5		95.9	33875	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.360	2.354	0.006	8707304	49.2			6487	
D 11 18O2 PFHxS	403.00 > 84.00	2.360	2.354	0.006	8194838	45.9		98.1	52727	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.667	2.660	0.007	2439770	46.7	99.2	29824	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.667	2.661	0.006	1.000	2178514	48.4		30829
* 62 13C2-PFOA	415.00	> 370.00	2.689	2.682	0.007		4545541	49.5		32172
D 14 13C4 PFOA	417.00	> 372.00	2.689	2.687	0.002		4491787	47.7	96.4	24864
15 Perfluorooctanoic acid	413.00	> 369.00	2.696	2.688	0.008	1.000	5046361	52.4		1176
	413.00	> 169.00	2.696	2.688	0.008	1.000	3036410	1.66(0.90-1.10)		8983
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.696	2.694	0.002	1.000	7002316	48.2		27374
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.057	3.055	0.002	1.000	5750600	43.0		55892
	499.00	> 99.00	3.057	3.055	0.002	1.000	1400223	4.11(0.90-1.10)		10426
20 Perfluorononanoic acid	463.00	> 419.00	3.057	3.055	0.002	1.000	3876756	53.5		9004
D 18 13C4 PFOS	503.00	> 80.00	3.057	3.055	0.002		6062685	47.1	99.5	26840
D 19 13C5 PFNA	468.00	> 423.00	3.057	3.055	0.002		3549874	46.7	94.4	18907
D 21 13C8 FOSA	506.00	> 78.00	3.403	3.392	0.011		9435949	45.3	91.5	22914
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.403	3.392	0.011	1.000	9269488	52.8		15508
D 26 M2-8:2FTS	529.00	> 509.00	3.412	3.402	0.010		1856360	48.2	102	15549
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.412	3.403	0.009	1.000	1839383	51.4		21930
24 Perfluorodecanoic acid	513.00	> 469.00	3.421	3.415	0.006	1.000	3251856	54.1		11452
D 23 13C2 PFDA	515.00	> 470.00	3.421	3.415	0.006		2992020	46.4	93.7	10145
D 27 d3-NMeFOSAA	573.00	> 419.00	3.576	3.571	0.005		1158350	45.4	91.7	5740
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.576	3.574	0.002	1.000	1188129	55.7		5488
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.732	3.728	0.004	1.000	3747601	46.9		12765
D 32 d5-NEtFOSAA	589.00	> 419.00	3.742	3.738	0.004		1163062	45.7	92.3	2601
D 30 13C2 PFUnA	565.00	> 520.00	3.742	3.740	0.002		2233824	46.3	93.5	10458
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.751	3.742	0.009	1.003	1082125	54.2		5916
31 Perfluoroundecanoic acid	563.00	> 519.00	3.751	3.742	0.009	1.000	2461316	51.8		4390

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.899	3.891	0.008		2543622	48.6	98.3	745	
35 MeFOSA	512.00 > 169.00	3.908	3.897	0.011	1.000	2415135	51.8		5735	
37 Perfluorododecanoic acid	613.00 > 569.00	4.039	4.034	0.005	1.000	2244676	52.2		2633	
D 36 13C2 PFDaA	615.00 > 570.00	4.039	4.034	0.005		2228663	47.0	95.0	6037	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.090	4.079	0.011		2501434	47.9	96.8	5818	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.099	4.086	0.013	1.000	2623176	55.4		6878	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.311	4.304	0.007	1.000	1934643	50.1		904	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.544	4.544	0.0	1.000	5096850	56.6		822	
	713.00 > 169.00	4.544	4.544	0.0	1.000	559438		9.11(0.00-0.00)	7249	
D 43 13C2-PFTeDA	715.00 > 670.00	4.544	4.544	0.0		4135245	46.6	94.2	15728	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.959	4.954	0.005	1.000	1877804	50.1		357	
D 44 13C2-PFHxDA	815.00 > 770.00	4.959	4.954	0.005		2036554	45.1	91.0	3447	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.300	5.301	-0.001	1.000	1814206	51.1		669	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFCIC\_FULL\_00003

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_012.d

Injection Date: 18-Jul-2017 15:10:21

Instrument ID: A8\_N

Lims ID: ICV Full

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 36

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

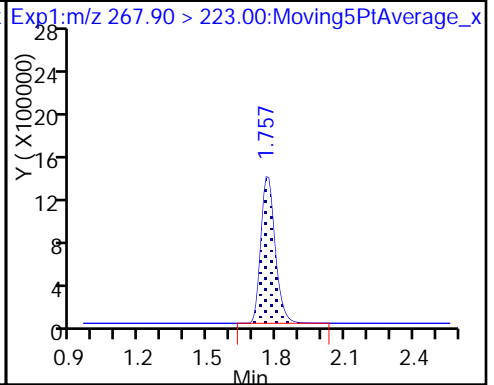
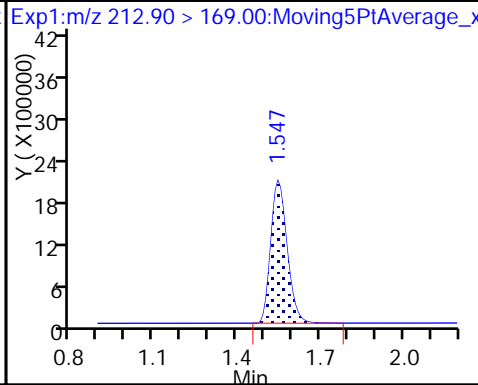
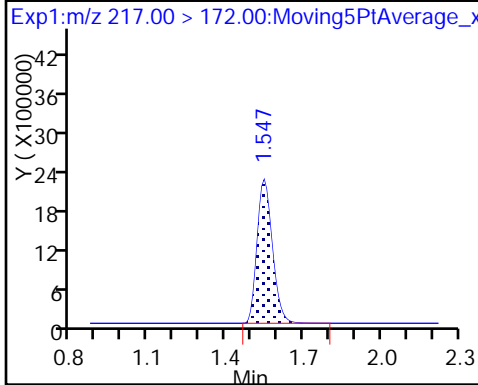
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

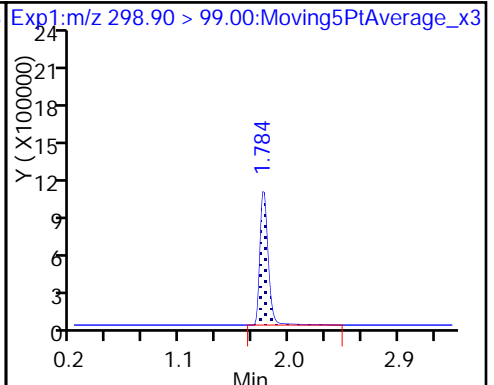
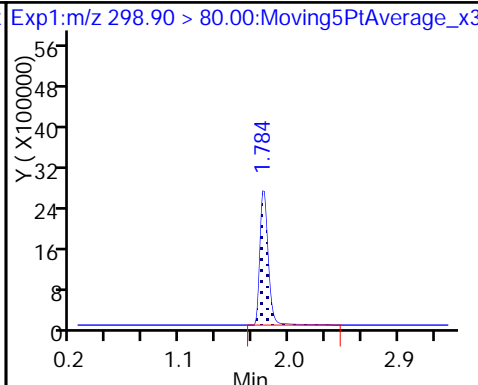
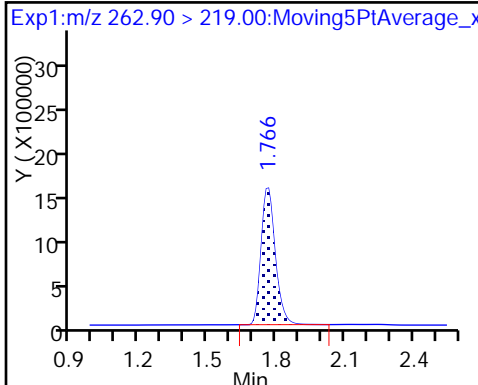
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

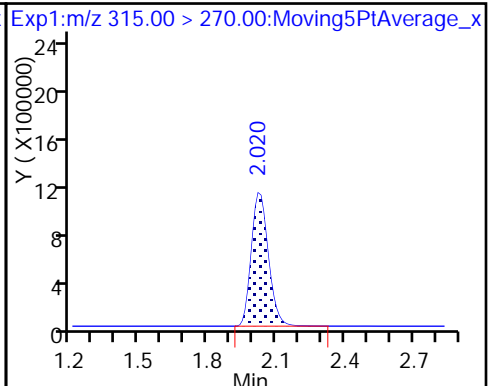
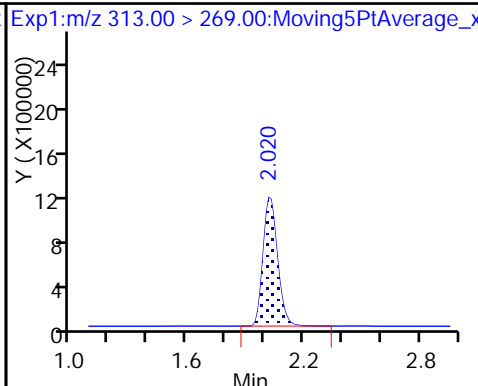
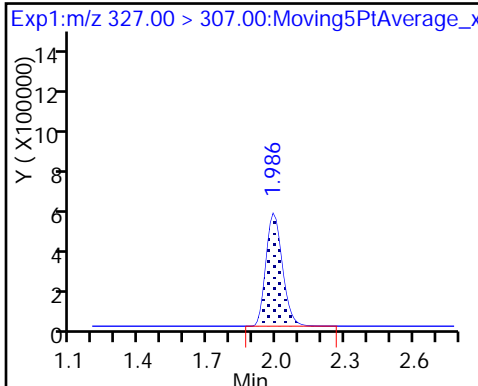
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

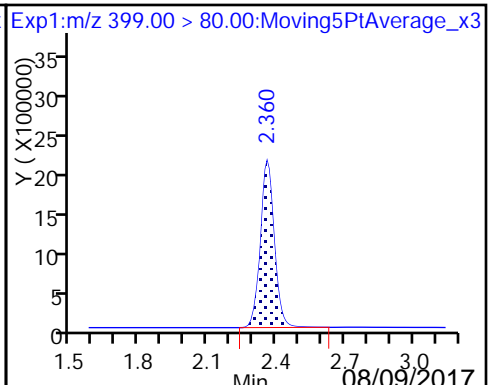
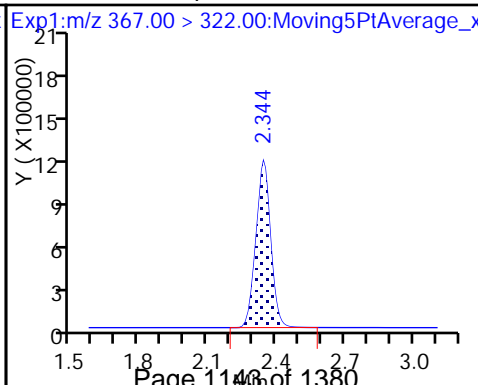
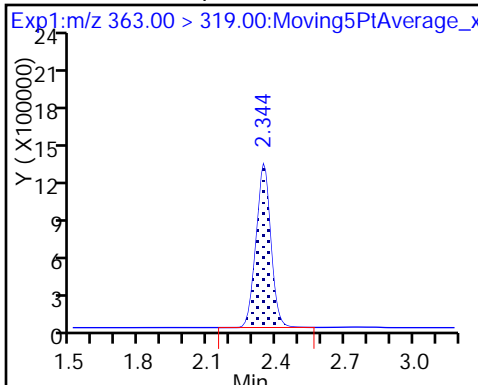
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

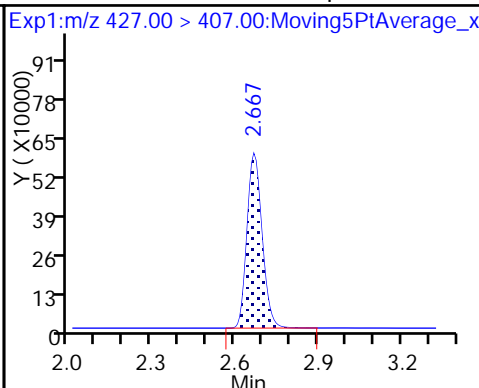
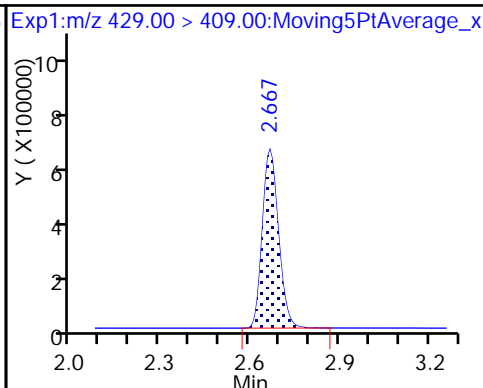
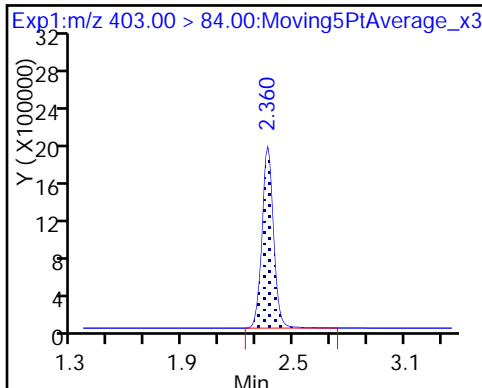
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

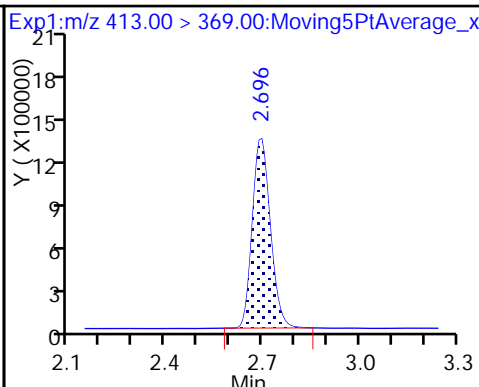
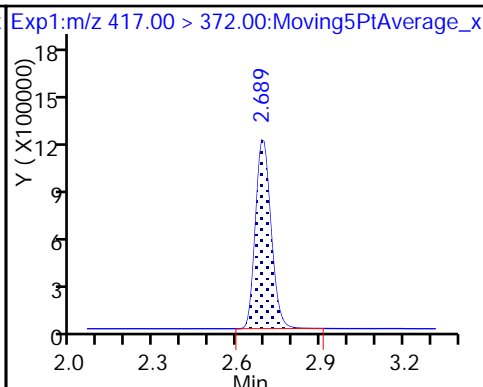
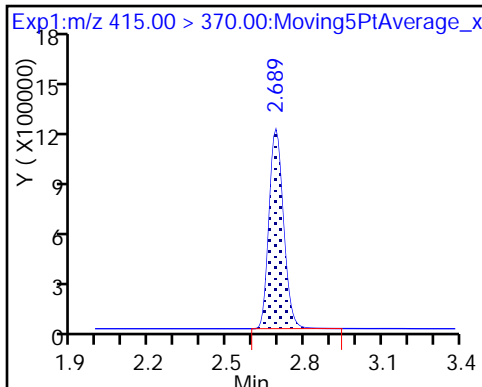
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

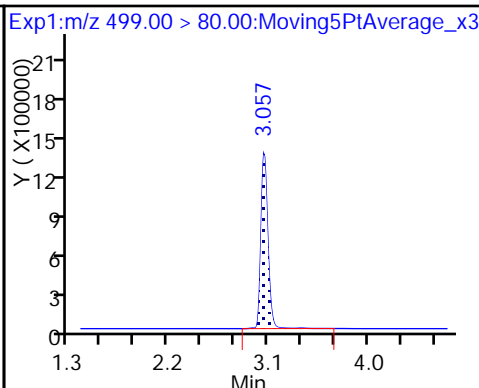
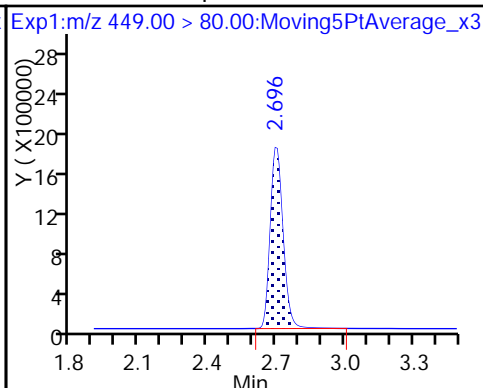
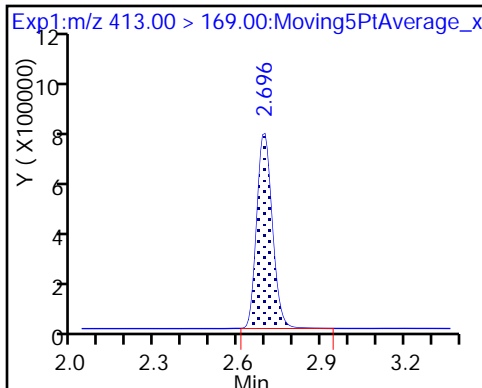
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

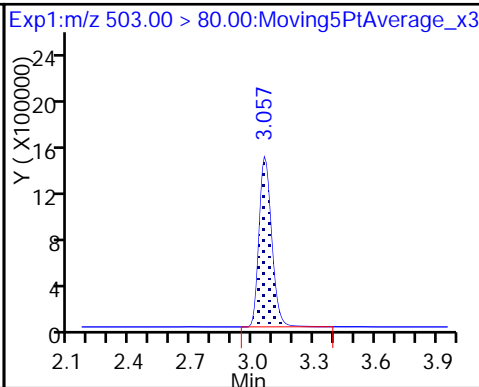
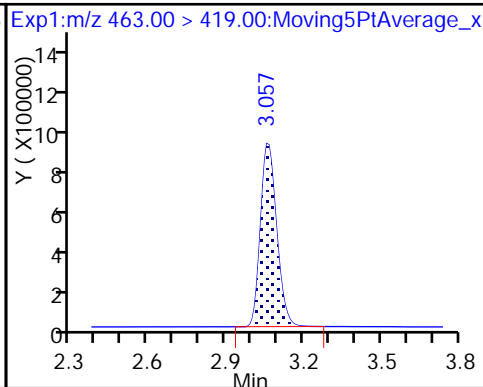
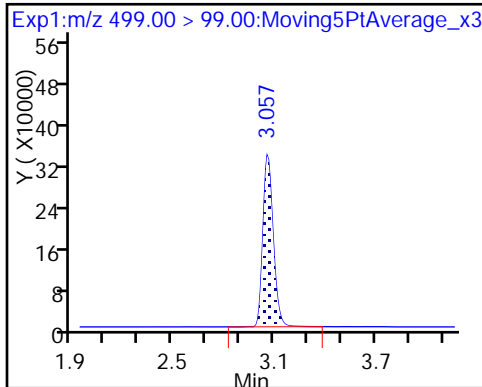
17 Perfluorooctane sulfonic acid



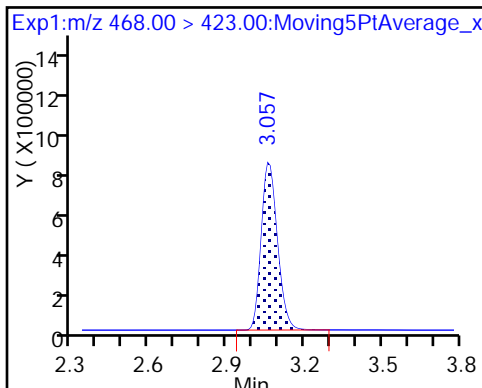
17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

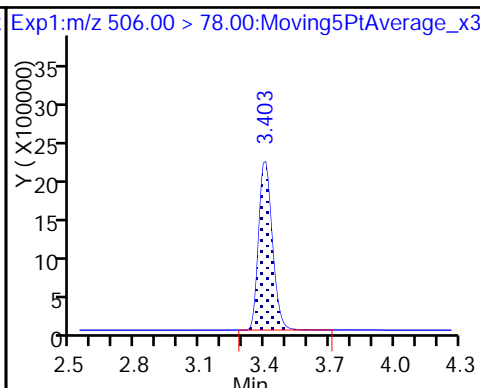
D 18 13C4 PFOS



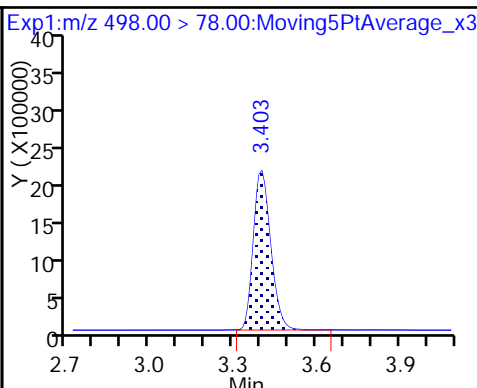
D 19 13C5 PFNA



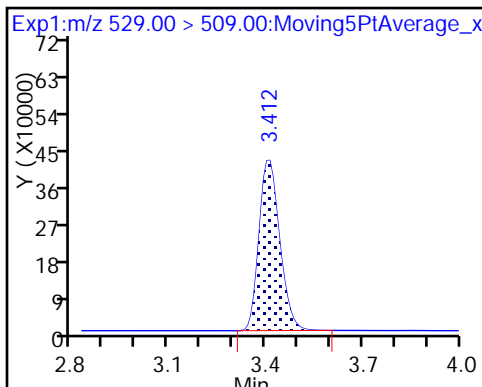
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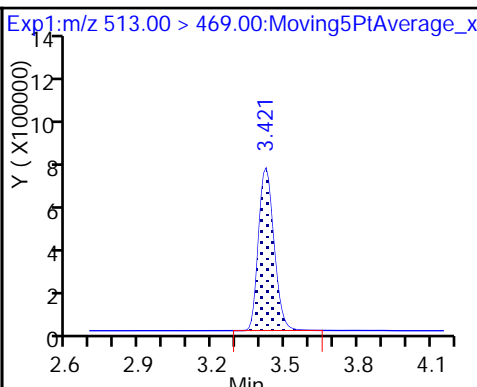
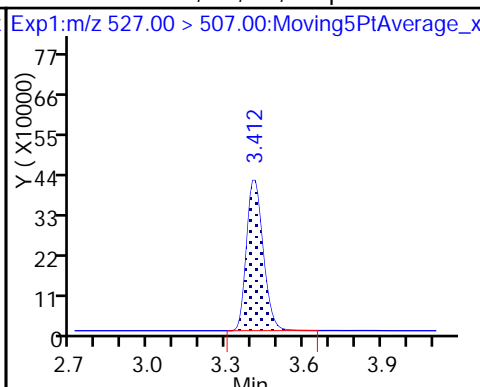
22 Perfluorooctane Sulfonamide



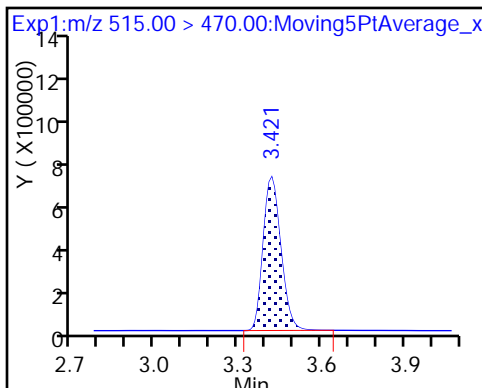
D 26 M2-8:2FTS



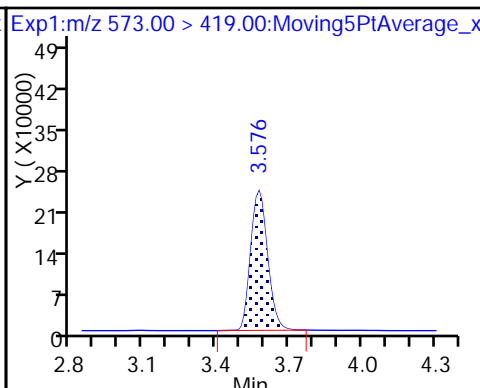
25 Sodium 1H,1H,2H,2H-perfluorodecan-2-yl Perfluorodecanoic acid



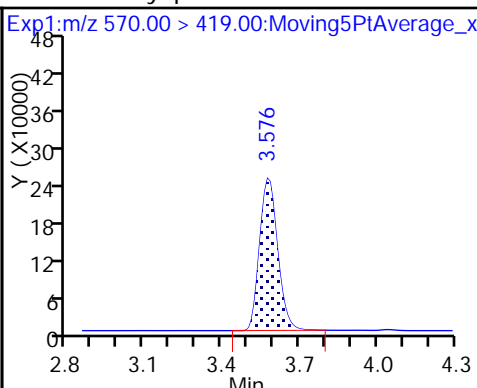
D 23 13C2 PFDA



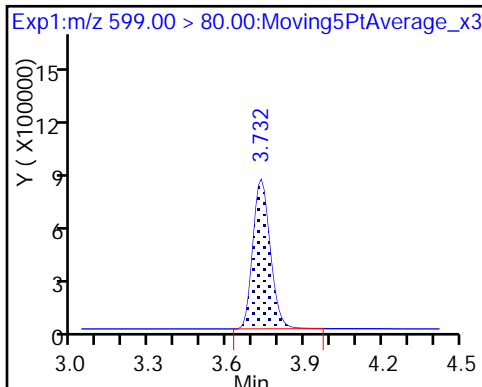
D 27 d3-NMeFOSAA



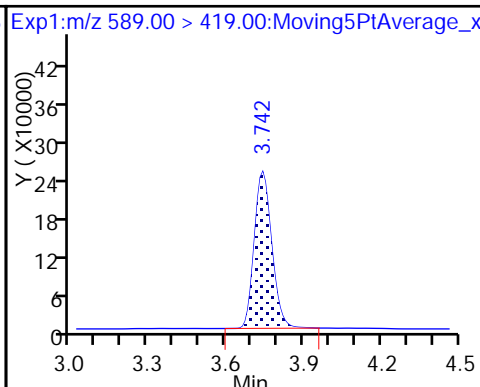
28 N-methyl perfluorooctane sulfonamide



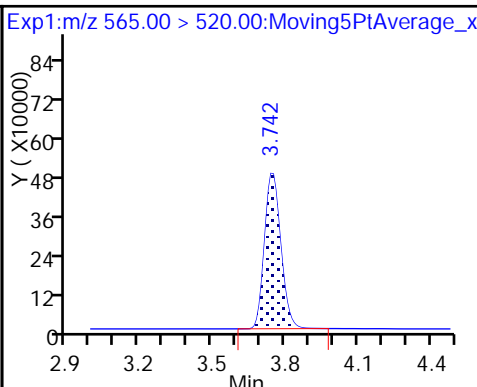
29 Perfluorodecane Sulfonic acid



D 32 d5-NEtFOSAA



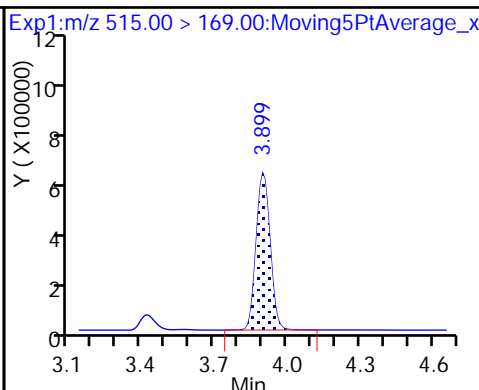
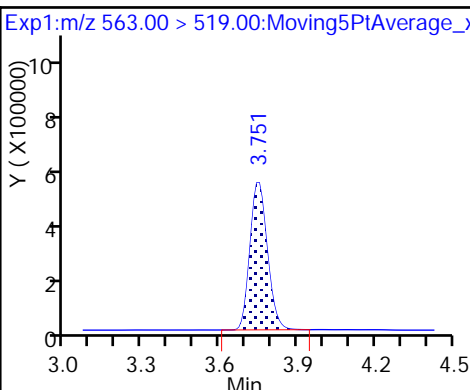
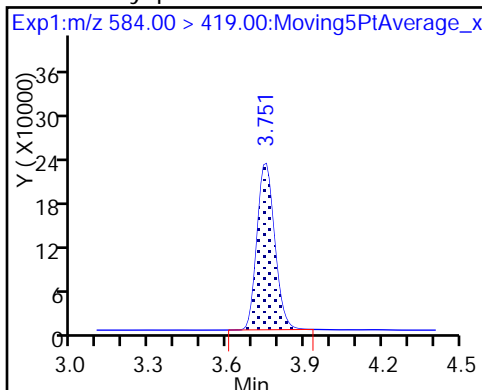
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

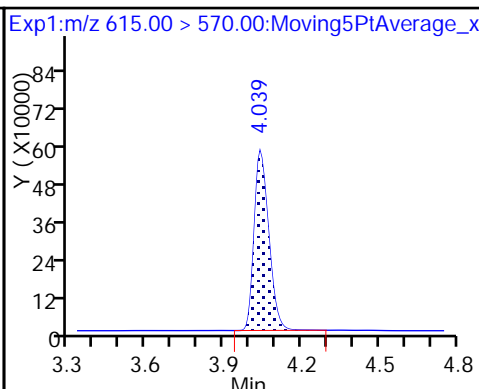
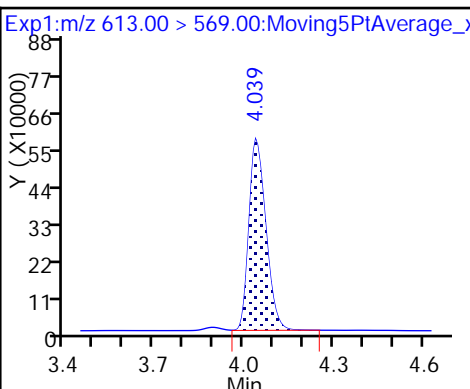
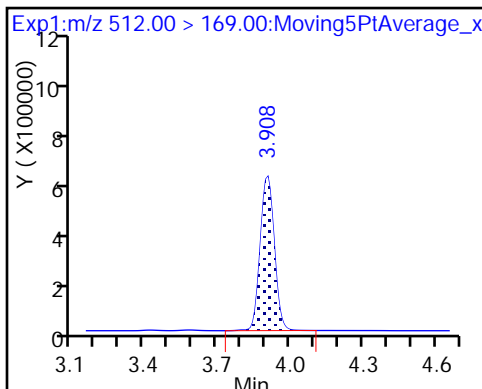
D 34 d-N-MeFOSA-M



35 MeFOSA

37 Perfluorododecanoic acid

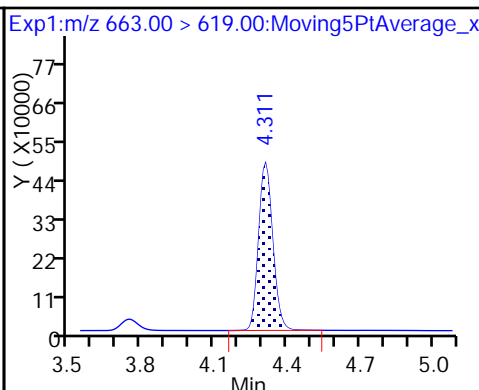
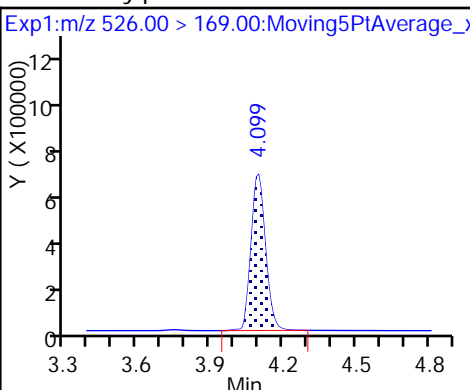
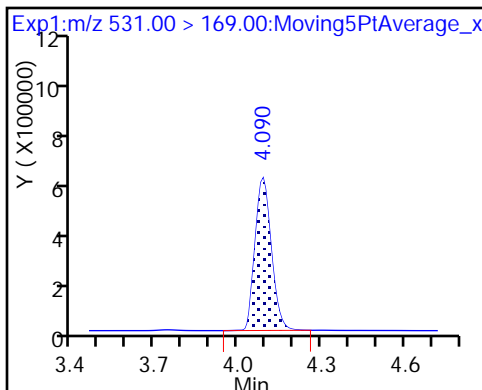
D 36 13C2 PFDaA



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

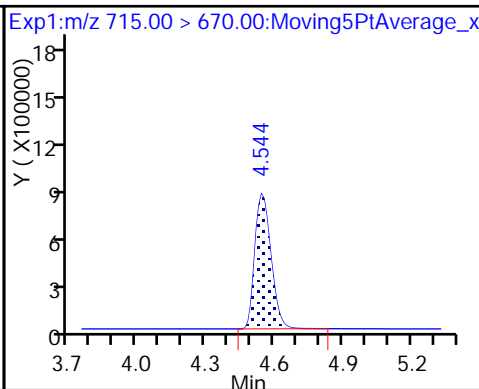
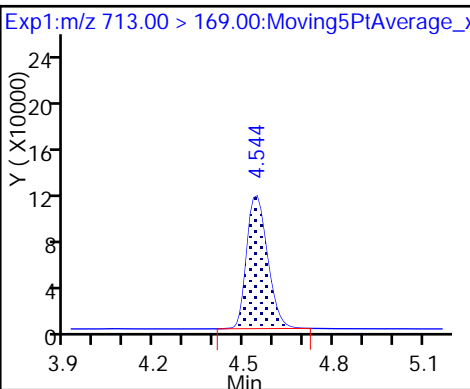
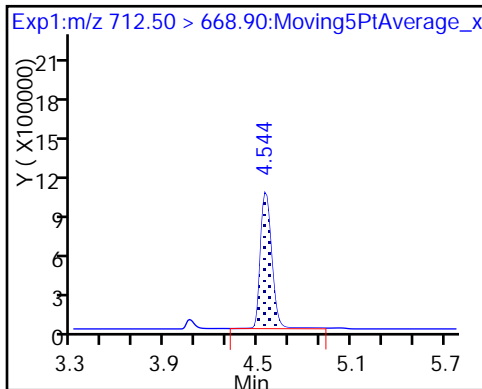
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

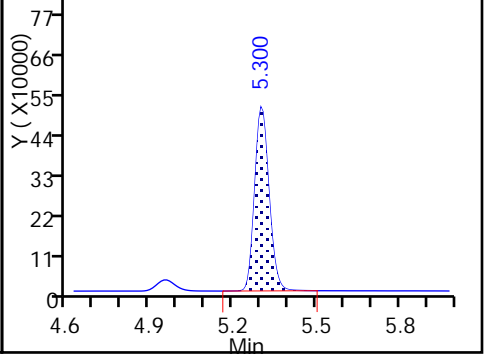
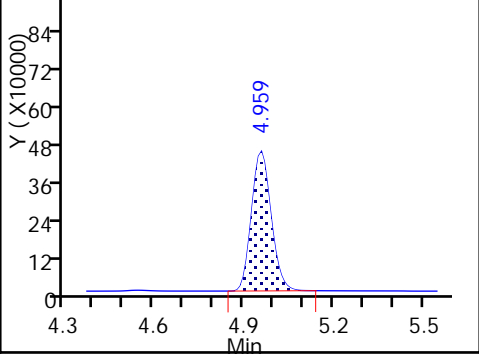
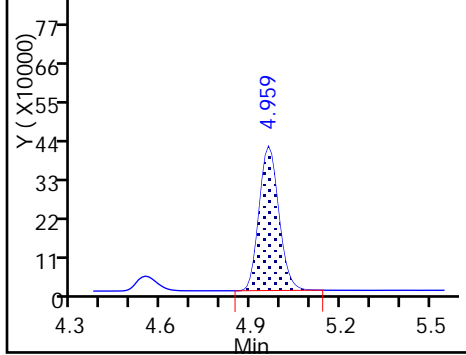
D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid

Exp1:m/z 813.00 > 769.00:Moving5PtAverage\_x

Exp1:m/z 815.00 > 770.00:Moving5PtAverage\_x

Exp1:m/z 913.00 > 869.00:Moving5PtAverage\_x



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-174824/1 Calibration Date: 07/18/2017 23:55  
 Instrument ID: A8\_N Calib Start Date: 07/18/2017 14:08  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/18/2017 14:56  
 Lab File ID: 2017.07.18BB\_059.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9358		51.3	50.0	2.5	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.030	0.9862		47.9	50.0	-4.2	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.332	1.348		44.7	44.2	1.2	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9452	0.9221		48.8	50.0	-2.4	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.019	0.9804		48.1	50.0	-3.8	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.011	0.9739		43.8	45.5	-3.7	25.0
6:2FTS	AveID	0.8681	0.8375		45.7	47.4	-3.5	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.062	1.008		47.4	50.0	-5.1	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.133	1.184		49.7	47.6	4.4	25.0
Perfluorononanoic acid (PFNA)	AveID	1.010	0.9865		48.8	50.0	-2.4	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.043	1.034		46.0	46.4	-0.8	25.0
8:2FTS	AveID	0.9140	0.8434		44.2	47.9	-7.7	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9210	0.9220		50.0	50.0	0.1	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9937	0.9006		45.3	50.0	-9.4	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9118	0.8790		48.2	50.0	-3.6	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6236	0.6275		48.5	48.2	0.6	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.8502	0.8333		49.0	50.0	-2.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.053	1.018		48.3	50.0	-3.3	25.0
MeFOSA	AveID	0.9081	0.8762		48.2	50.0	-3.5	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9558	0.8915		46.6	50.0	-6.7	25.0
N-EtFOSA-M	AveID	0.9374	0.9224		49.2	50.0	-1.6	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8572	0.7763		45.3	50.0	-9.4	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.999	1.958		49.0	50.0	-2.0	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.7476		44.8	50.0	-10.4	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7883	0.6841		43.4	50.0	-13.2	25.0
13C4 PFBA	Ave	177084	174935		49.4	50.0	-1.2	50.0
13C5-PFPeA	Ave	123804	127039		51.3	50.0	2.6	50.0
13C2 PFHxA	Ave	118253	121023		51.2	50.0	2.3	50.0
13C4-PFHpA	Ave	107300	116431		54.3	50.0	8.5	50.0
18O2 PFHxS	Ave	178395	176559		46.8	47.3	-1.0	50.0
M2-6:2FTS	Ave	52287	59489		54.0	47.5	13.8	50.0



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-174824/1 Calibration Date: 07/18/2017 23:55  
 Instrument ID: A8\_N Calib Start Date: 07/18/2017 14:08  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/18/2017 14:56  
 Lab File ID: 2017.07.18BB\_059.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	94156	101591		53.9	50.0	7.9	50.0
13C4 PFOS	Ave	128806	121312		45.0	47.8	-5.8	50.0
13C5 PFNA	Ave	75982	80023		52.7	50.0	5.3	50.0
13C8 FOSA	Ave	208266	198421		47.6	50.0	-4.7	50.0
M2-8:2FTS	Ave	38534	41613		51.7	47.9	8.0	50.0
13C2 PFDA	Ave	64475	71428		55.4	50.0	10.8	50.0
d3-NMeFOSAA	Ave	25506	26939		52.8	50.0	5.6	50.0
13C2 PFUnA	Ave	48271	52263		54.1	50.0	8.3	50.0
d5-NEtFOSAA	Ave	25455	27884		54.8	50.0	9.5	50.0
d-N-MeFOSA-M	Ave	52284	50718		48.5	50.0	-3.0	50.0
13C2 PFDoA	Ave	47403	54430		57.4	50.0	14.8	50.0
d-N-EtFOSA-M	Ave	52199	51180		49.0	50.0	-2.0	50.0
13C2-PFTeDA	Ave	88645	107540		60.7	50.0	21.3	50.0
13C2-PFHxDA	Ave	45203	49322		54.6	50.0	9.1	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18BB\_059.d  
 Lims ID: CCV L5  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 18-Jul-2017 23:55:01 ALS Bottle#: 32 Worklist Smp#: 1  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L5  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub18  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:49:19

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.545	1.545	0.0	8746753	49.4		98.8	39747	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.545	0.0	1.000	8184756	51.3	103	4228	
D 3 13C5-PFPeA	267.90 > 223.00	1.754	1.754	0.0	6351972	51.3		103	60591	
4 Perfluoropentanoic acid	262.90 > 219.00	1.754	1.754	0.0	1.000	6264355	47.9	95.8	4458	
D 47 13C3-PFBS	301.90 > 83.00	1.782	1.782	0.0	159662	NC			6122	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.782	1.782	0.0	1.000	10518867	44.7	101	393657	
	298.90 > 99.00	1.782	1.782	0.0	1.000	4162739	2.53(0.00-0.00)		55965	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.983	1.983	0.0	1.000	2555011	42.3	90.6	64152	
6 Perfluorohexanoic acid	313.00 > 269.00	2.017	2.017	0.0	1.000	5579651	48.8	97.6	13907	
D 7 13C2 PFHxA	315.00 > 270.00	2.017	2.017	0.0	6051160	51.2		102	38615	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.339	2.339	0.0	1.000	5707694	48.1	96.2	7076	
D 9 13C4-PFHpA	367.00 > 322.00	2.339	2.339	0.0	5821548	54.3		109	29912	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.355	2.355	0.0	1.000	7823998	43.8	96.3	5310	
D 11 18O2 PFHxS	403.00 > 84.00	2.355	2.355	0.0	8351257	46.8		99.0	69408	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.656	2.656	0.0	2825706	54.0	114	35843	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.656	2.656	0.0	1.000	2361494	45.7	96.5	38841
* 62 13C2-PFOA	415.00	> 370.00	2.685	2.685	0.0		4825822	50.0	100	29860
D 14 13C4 PFOA	417.00	> 372.00	2.685	2.685	0.0		5079526	53.9	108	32102
15 Perfluorooctanoic acid	413.00	> 369.00	2.685	2.685	0.0	1.000	5119427	47.4	94.9	1233
	413.00	> 169.00	2.685	2.685	0.0	1.000	3121490		1.64(0.90-1.10)	9906
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.692	2.692	0.0	1.000	6836317	49.7	104	45903
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.051	3.051	0.0	1.000	5822119	46.0	99.2	30296
	499.00	> 99.00	3.051	3.051	0.0	1.000	1245151		4.68(0.90-1.10)	8084
20 Perfluorononanoic acid	463.00	> 419.00	3.051	3.051	0.0	1.000	3946952	48.8	97.6	7980
D 18 13C4 PFOS	503.00	> 80.00	3.051	3.051	0.0		5798710	45.0	94.2	21553
D 19 13C5 PFNA	468.00	> 423.00	3.051	3.051	0.0		4001158	52.7	105	23551
D 21 13C8 FOSA	506.00	> 78.00	3.394	3.394	0.0		9921038	47.6	95.3	23990
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.394	3.394	0.0	1.000	1681208	44.2	92.3	13749
D 26 M2-8:2FTS	529.00	> 509.00	3.394	3.394	0.0		1993272	51.7	108	16323
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.403	3.403	0.0	1.000	9146827	50.0	100	23672
24 Perfluorodecanoic acid	513.00	> 469.00	3.412	3.412	0.0	1.000	3216452	45.3	90.6	7933
D 23 13C2 PFDA	515.00	> 470.00	3.412	3.412	0.0		3571400	55.4	111	15082
D 27 d3-NMeFOSAA	573.00	> 419.00	3.564	3.564	0.0		1346954	52.8	106	7332
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.564	3.564	0.0	1.000	1183971	48.2	96.4	5254
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.722	3.722	0.0	1.000	3668905	48.5	101	10285
D 32 d5-NEtFOSAA	589.00	> 419.00	3.732	3.732	0.0		1394201	54.8	110	2967
D 30 13C2 PFUnA	565.00	> 520.00	3.732	3.732	0.0		2613133	54.1	108	11125
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.732	3.732	0.0	1.000	1161748	49.0	98.0	7507
31 Perfluoroundecanoic acid	563.00	> 519.00	3.732	3.732	0.0	1.000	2659259	48.3	96.7	5365

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.898	3.898	0.0	2535879	48.5	97.0	809	
35 MeFOSA	512.00	> 169.00	3.907	3.907	0.0	1.000	2221964	48.2	96.5	5922
37 Perfluorododecanoic acid	613.00	> 569.00	4.030	4.030	0.0	1.000	2426296	46.6	93.3	2859
D 36 13C2 PFDaA	615.00	> 570.00	4.030	4.030	0.0		2721487	57.4	115	6153
D 38 d-N-EtFOSA-M	531.00	> 169.00	4.088	4.088	0.0		2559009	49.0	98.0	4994
39 N-ethylperfluoro-1-octanesulfonami	526.00	> 169.00	4.097	4.097	0.0	1.000	2360469	49.2	98.4	6111
41 Perfluorotridecanoic acid	663.00	> 619.00	4.291	4.291	0.0	1.000	2112792	45.3	90.6	620
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.526	4.526	0.0	1.000	5329648	49.0	98.0	1536
	713.00	> 169.00	4.517	4.526	-0.009	0.998	640703	8.32(0.00-0.00)		8586
D 43 13C2-PFTeDA	715.00	> 670.00	4.526	4.526	0.0		5376999	60.7	121	19958
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.934	4.934	0.0	1.000	2034629	44.8	89.6	282
D 44 13C2-PFHxDA	815.00	> 770.00	4.934	4.934	0.0		2466113	54.6	109	3727
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.281	5.281	0.0	1.000	1861785	43.4	86.8	583

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULL-L5\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18BB\_059.d

Injection Date: 18-Jul-2017 23:55:01

Instrument ID: A8\_N

Lims ID: CCV L5

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 32

Worklist Smp#: 1

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

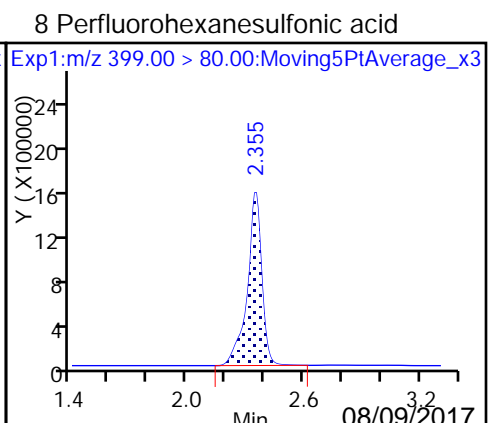
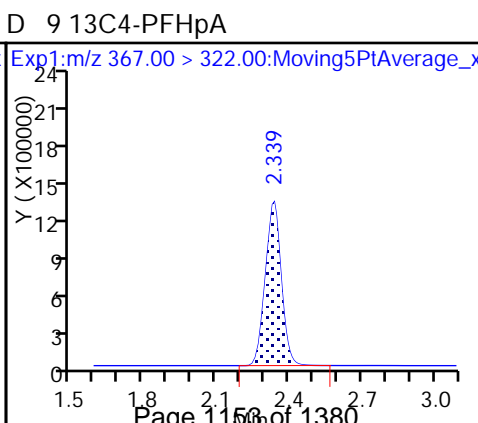
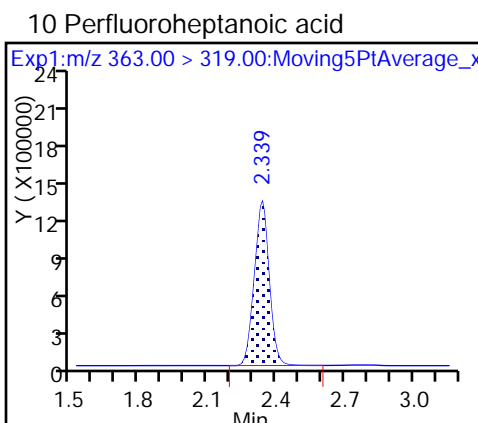
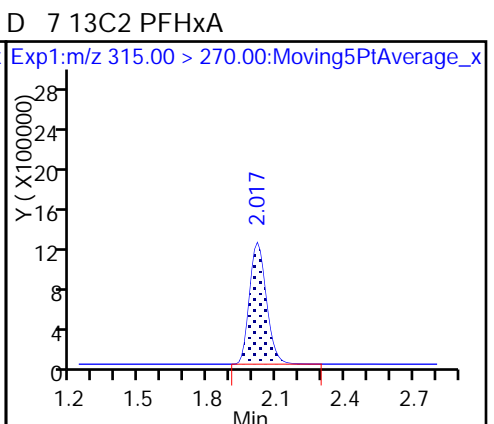
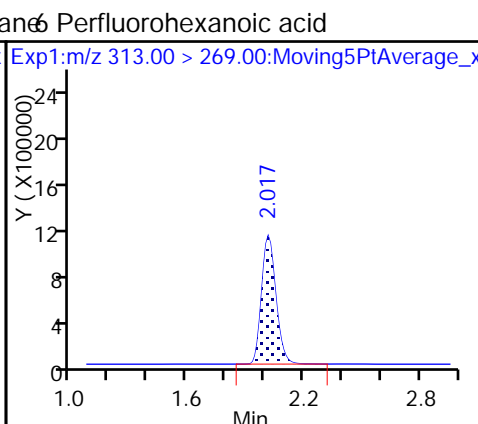
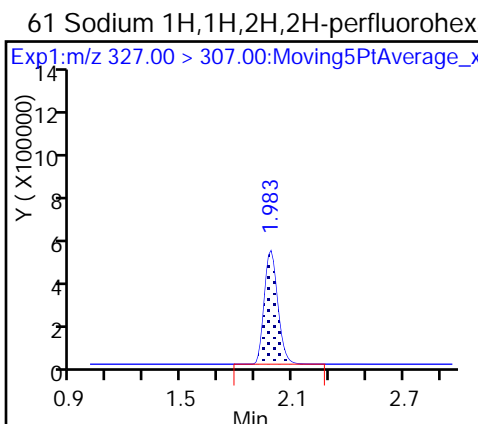
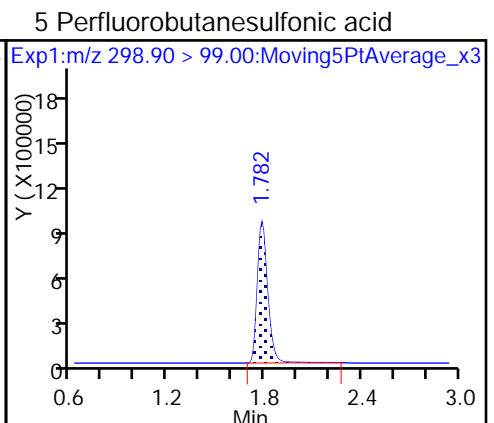
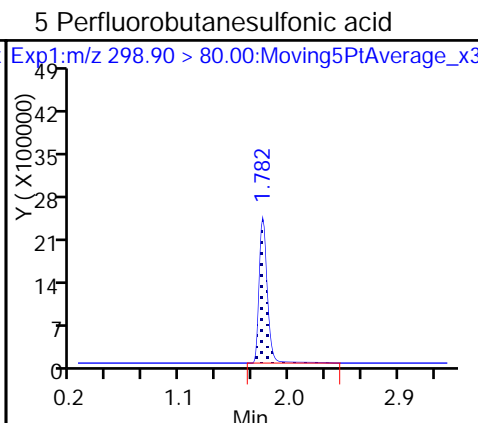
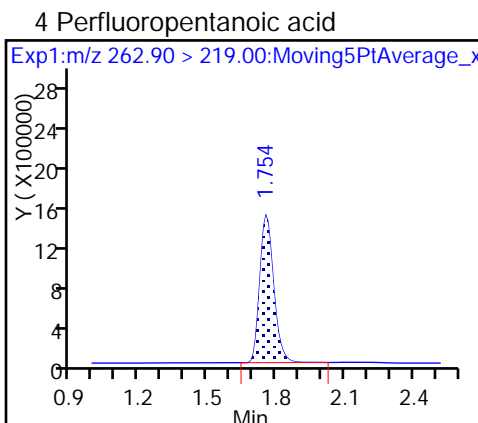
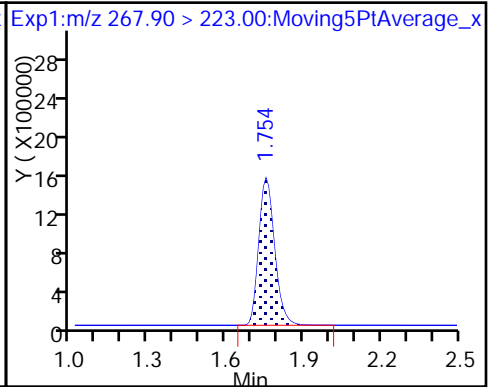
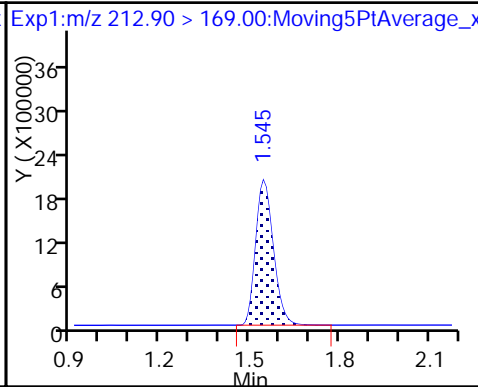
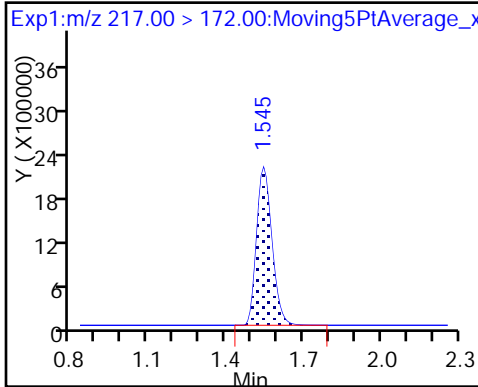
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

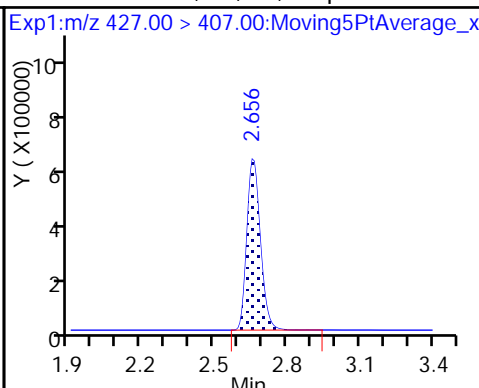
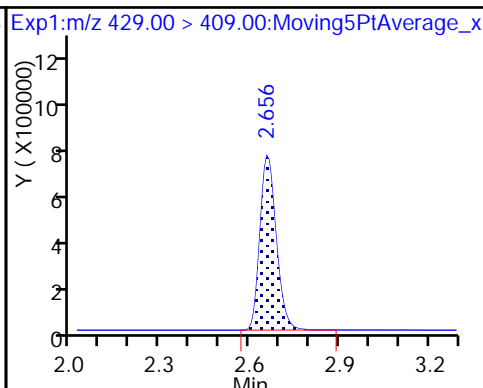
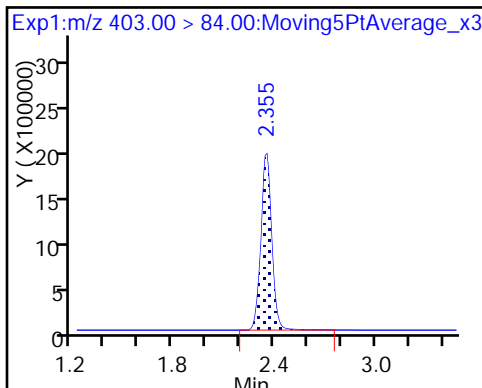
D 3 13C5-PFPeA



D 11 18O2 PFHxS

D 12 M2-6:2FTS

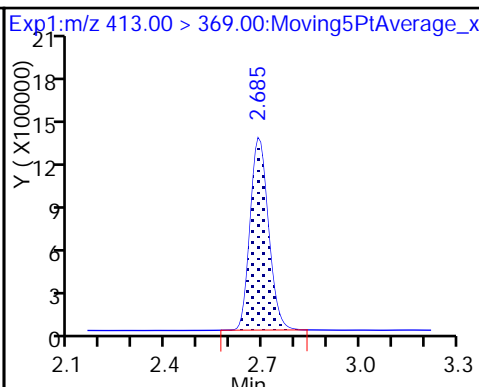
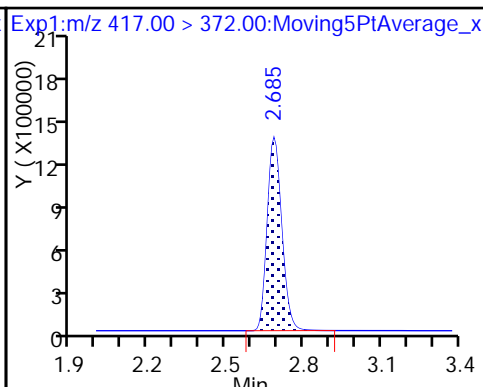
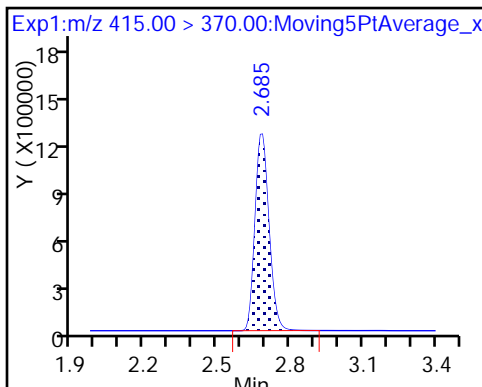
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

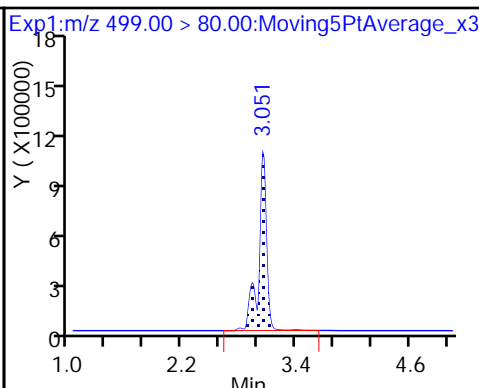
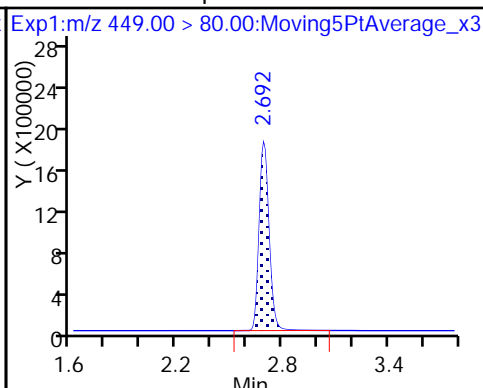
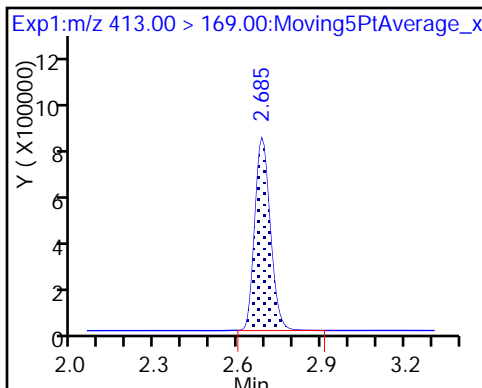
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

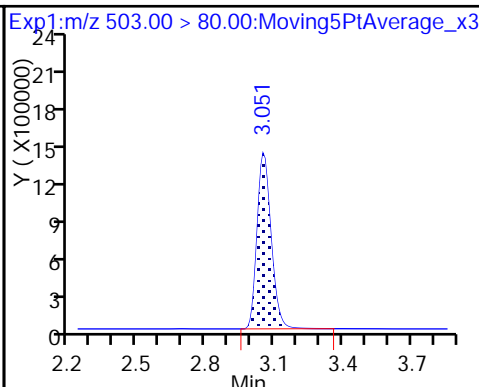
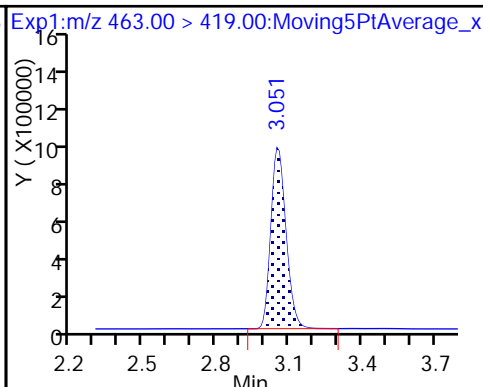
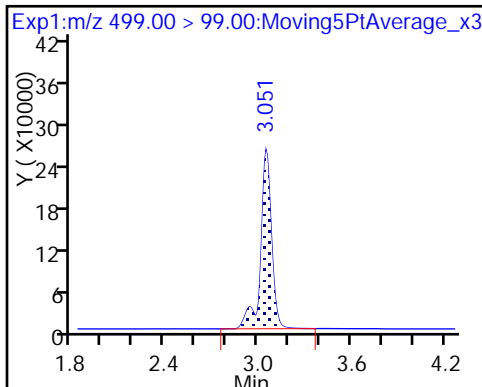
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

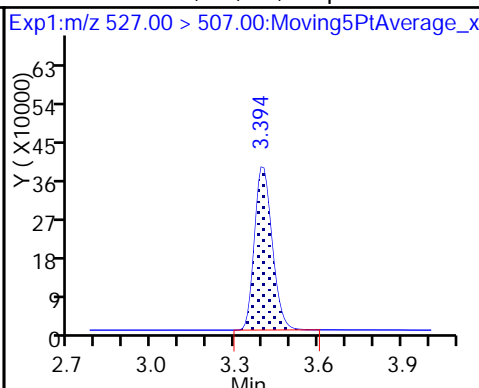
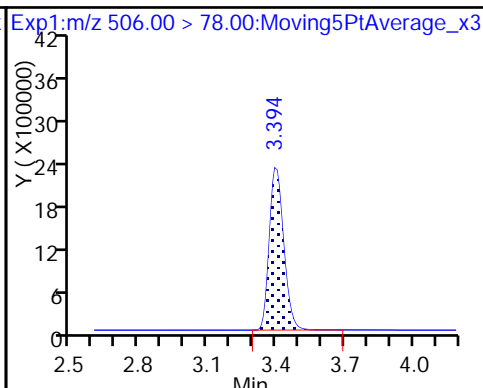
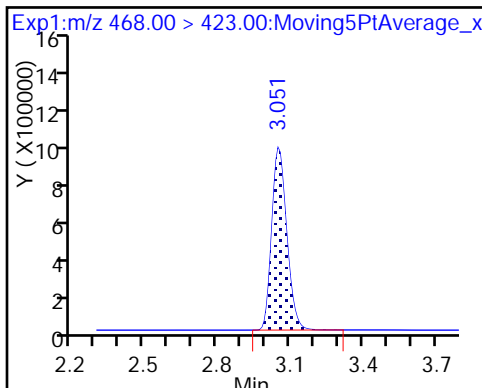
D 18 13C4 PFOS



D 19 13C5 PFNA

D 21 13C8 FOSA

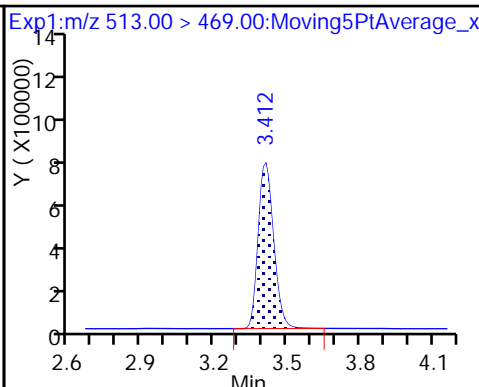
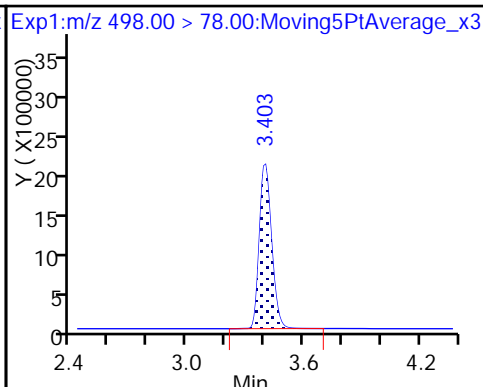
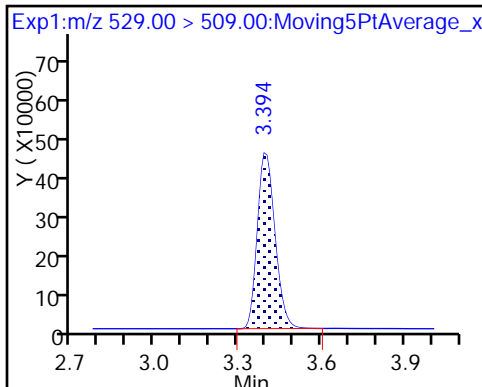
25 Sodium 1H,1H,2H,2H-perfluorodecane



D 26 M2-8:2FTS

22 Perfluorooctane Sulfonamide

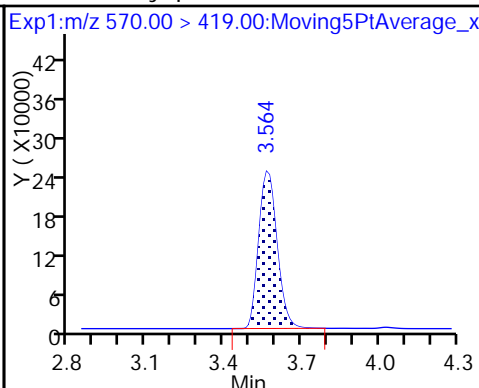
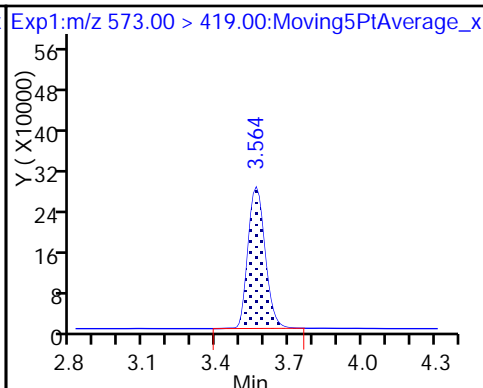
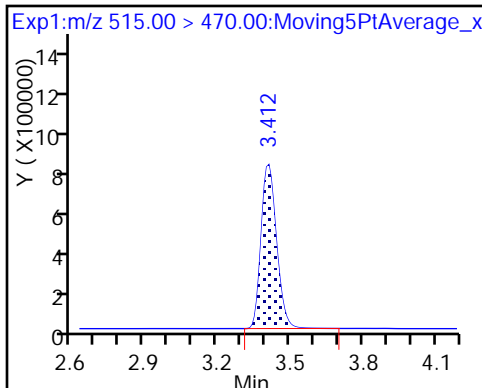
24 Perfluorodecanoic acid



D 23 13C2 PFDA

D 27 d3-NMeFOSAA

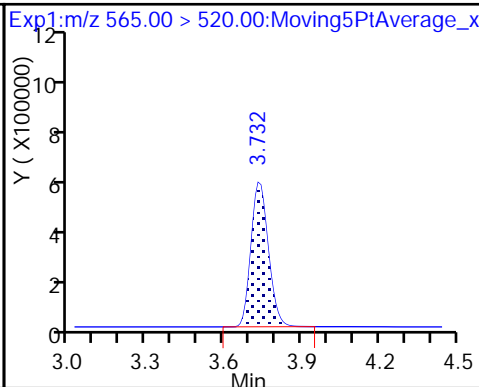
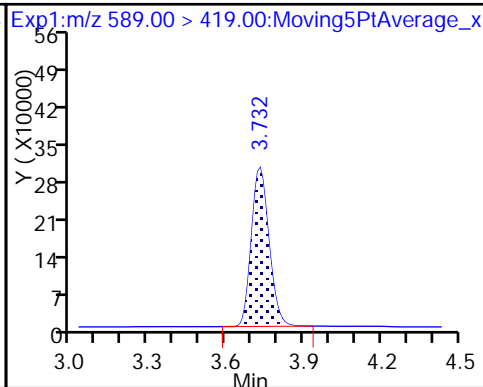
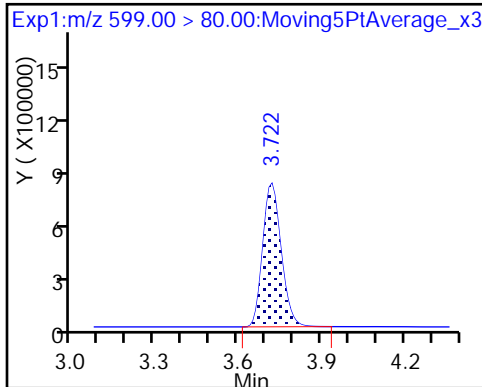
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

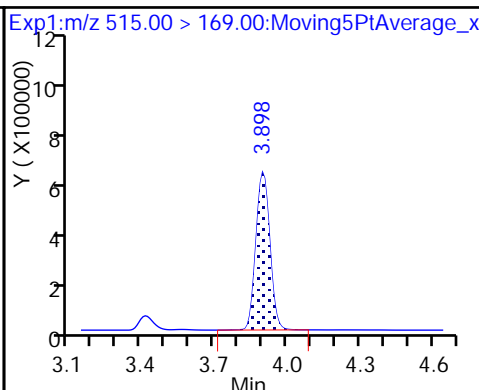
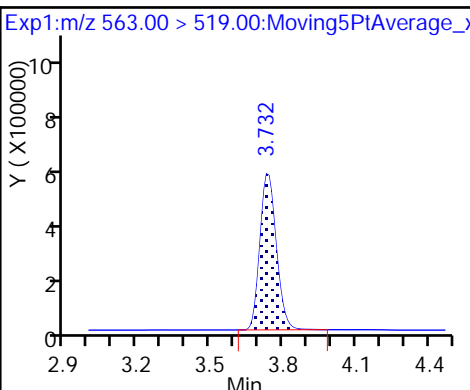
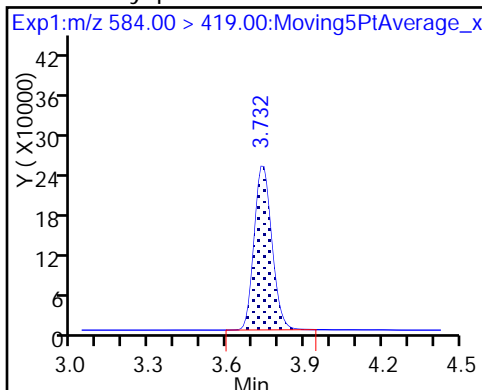
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

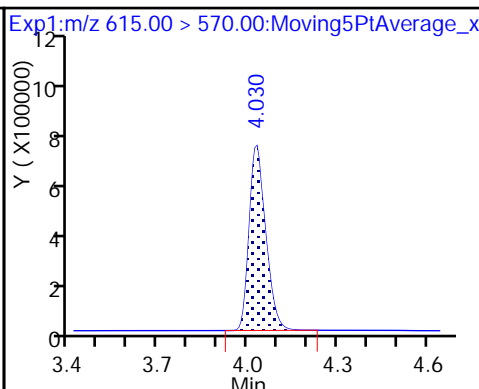
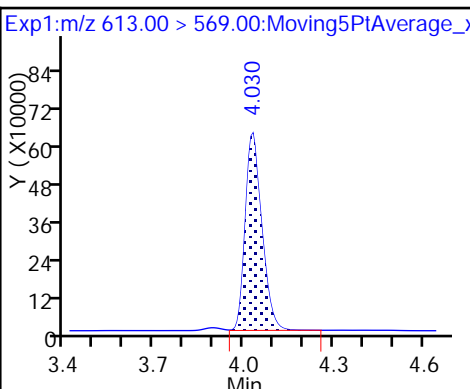
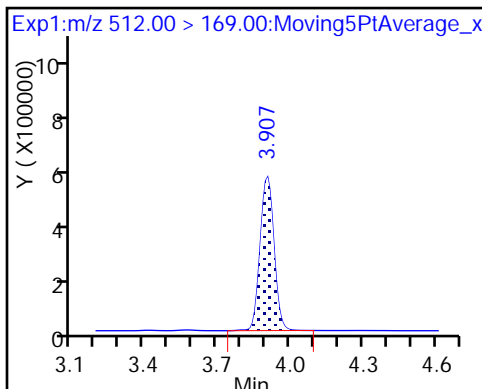
D 34 d-N-MeFOSA-M



35 MeFOSA

37 Perfluorododecanoic acid

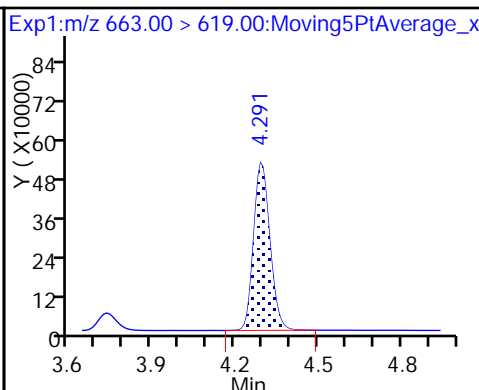
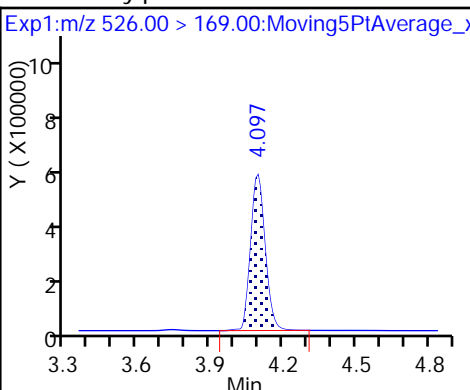
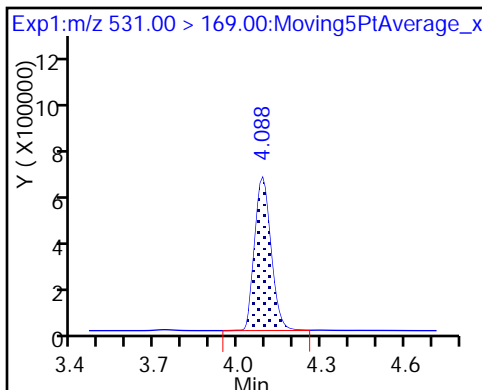
D 36 13C2 PFDa



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

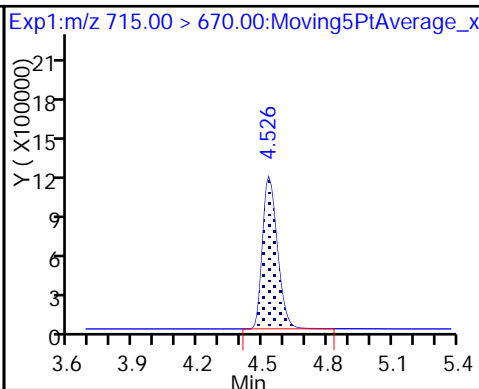
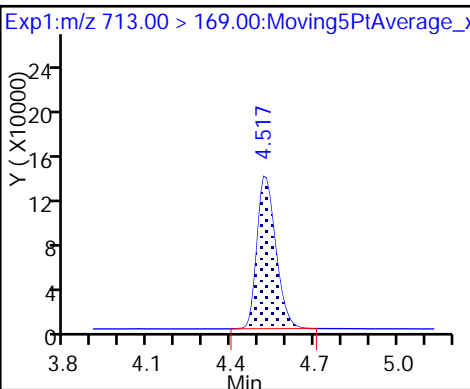
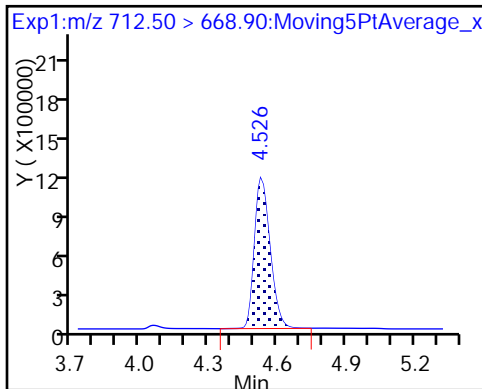
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

D 43 13C2-PFTeDA

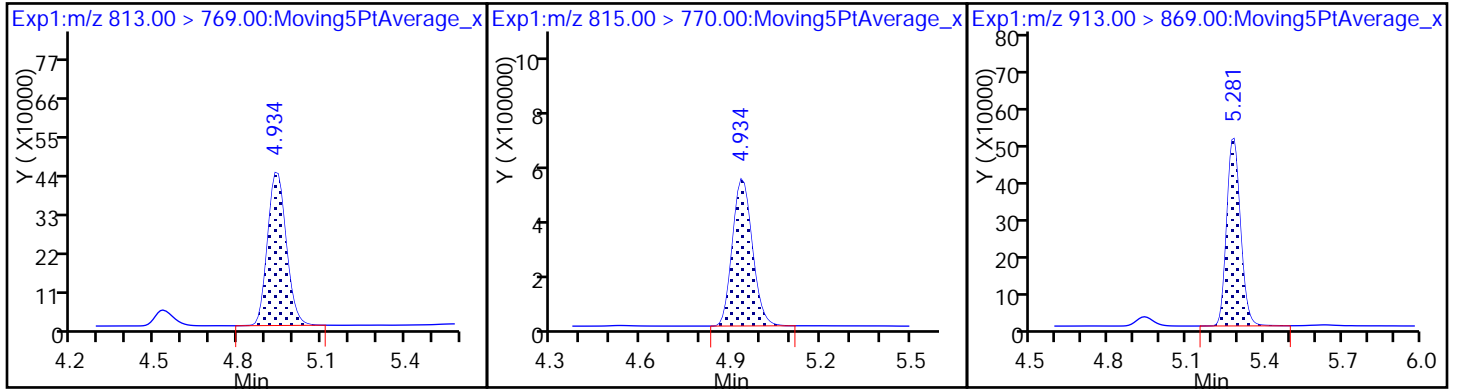




45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-174824/12 Calibration Date: 07/19/2017 01:10  
 Instrument ID: A8\_N Calib Start Date: 07/18/2017 14:08  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/18/2017 14:56  
 Lab File ID: 2017.07.18C\_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Perfluorobutanoic acid (PFBA)	AveID	0.9128	0.9373		20.5	20.0	2.7	25.0
Perfluoropentanoic acid (PFPeA)	AveID	1.030	1.035		20.1	20.0	0.5	25.0
Perfluorobutanesulfonic acid (PFBS)	AveID	1.332	1.528		20.3	17.7	14.8	25.0
Perfluorohexanoic acid (PFHxA)	AveID	0.9452	0.8871		18.8	20.0	-6.1	25.0
Perfluoroheptanoic acid (PFHpA)	AveID	1.019	0.999		19.6	20.0	-2.0	25.0
Perfluorohexanesulfonic acid (PFHxS)	AveID	1.011	0.9879		17.8	18.2	-2.3	25.0
6:2FTS	AveID	0.8681	0.8955		19.6	19.0	3.2	25.0
Perfluorooctanoic acid (PFOA)	AveID	1.062	1.075		20.2	20.0	1.2	25.0
Perfluoroheptanesulfonic Acid (PFHpS)	AveID	1.133	1.155		19.4	19.0	1.9	25.0
Perfluorononanoic acid (PFNA)	AveID	1.010	0.999		19.8	20.0	-1.1	25.0
Perfluorooctanesulfonic acid (PFOS)	AveID	1.043	0.9700		17.3	18.6	-7.0	25.0
8:2FTS	AveID	0.9140	0.9420		19.7	19.2	3.1	25.0
Perfluorooctane Sulfonamide (FOSA)	AveID	0.9210	0.9386		20.4	20.0	1.9	25.0
Perfluorodecanoic acid (PFDA)	AveID	0.9937	0.9028		18.2	20.0	-9.1	25.0
N-methyl perfluorooctane sulfonamidoacetic acid (NMeFOSAA)	AveID	0.9118	0.9423		20.7	20.0	3.3	25.0
Perfluorodecanesulfonic acid (PFDS)	AveID	0.6236	0.6194		19.2	19.3	-0.7	25.0
N-ethyl perfluorooctane sulfonamidoacetic acid (NEtFOSAA)	AveID	0.8502	0.8336		19.6	20.0	-2.0	25.0
Perfluoroundecanoic acid (PFUnA)	AveID	1.053	0.9895		18.8	20.0	-6.0	25.0
MeFOSA	AveID	0.9081	0.9042		19.9	20.0	-0.4	25.0
Perfluorododecanoic acid (PFDoA)	AveID	0.9558	0.8928		18.7	20.0	-6.6	25.0
N-EtFOSA-M	AveID	0.9374	0.9024		19.3	20.0	-3.7	25.0
Perfluorotridecanoic Acid (PFTriA)	AveID	0.8572	0.8125		19.0	20.0	-5.2	25.0
Perfluorotetradecanoic acid (PFTeA)	AveID	1.999	1.863		18.6	20.0	-6.8	25.0
Perfluoro-n-hexadecanoic acid (PFHxDA)	L2ID		0.8197		19.2	20.0	-3.9	25.0
Perfluoro-n-octadecanoic acid (PFODA)	AveID	0.7883	0.7616		19.3	20.0	-3.4	25.0
13C4 PFBA	Ave	177084	183165		51.7	50.0	3.4	50.0
13C5-PFPeA	Ave	123804	127025		51.3	50.0	2.6	50.0
13C2 PFHxA	Ave	118253	128016		54.1	50.0	8.3	50.0
13C4-PFHpA	Ave	107300	119852		55.8	50.0	11.7	50.0
18O2 PFHxS	Ave	178395	174067		46.2	47.3	-2.4	50.0
M2-6:2FTS	Ave	52287	56237		51.1	47.5	7.6	50.0

FORM VII  
LCMS CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Lab Sample ID: CCV 320-174824/12 Calibration Date: 07/19/2017 01:10  
 Instrument ID: A8\_N Calib Start Date: 07/18/2017 14:08  
 GC Column: GeminiC18 3x100 ID: 3.00 (mm) Calib End Date: 07/18/2017 14:56  
 Lab File ID: 2017.07.18C\_011.d Conc. Units: ng/mL

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
13C4 PFOA	Ave	94156	102351		54.4	50.0	8.7	50.0
13C4 PFOS	Ave	128806	125384		46.5	47.8	-2.7	50.0
13C5 PFNA	Ave	75982	84278		55.5	50.0	10.9	50.0
M2-8:2FTS	Ave	38534	44642		55.5	47.9	15.9	50.0
13C8 FOSA	Ave	208266	201851		48.5	50.0	-3.1	50.0
13C2 PFDA	Ave	64475	73912		57.3	50.0	14.6	50.0
d3-NMeFOSAA	Ave	25506	28530		55.9	50.0	11.9	50.0
d5-NEtFOSAA	Ave	25455	28678		56.3	50.0	12.7	50.0
13C2 PFUnA	Ave	48271	53695		55.6	50.0	11.2	50.0
d-N-MeFOSA-M	Ave	52284	50944		48.7	50.0	-2.6	50.0
13C2 PFDoA	Ave	47403	58709		61.9	50.0	23.9	50.0
d-N-EtFOSA-M	Ave	52199	52467		50.3	50.0	0.5	50.0
13C2-PFTeDA	Ave	88645	105230		59.4	50.0	18.7	50.0
13C2-PFHxDA	Ave	45203	52719		58.3	50.0	16.6	50.0

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_011.d  
 Lims ID: CCV L4  
 Client ID:  
 Sample Type: CCV  
 Inject. Date: 19-Jul-2017 01:10:56 ALS Bottle#: 31 Worklist Smp#: 12  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: CCV L4  
 Misc. Info.: Plate: 1 Rack: 1  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Sublist: chrom-A8\_N\*sub18  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:32 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d

Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:54:03

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.547	1.545	0.002	9158235	51.7		103	40365	
2 Perfluorobutyric acid	212.90 > 169.00	1.547	1.545	0.002	3433660	20.5		103	1760	
D 3 13C5-PFPeA	267.90 > 223.00	1.756	1.754	0.002	6351230	51.3		103	65662	
4 Perfluoropentanoic acid	262.90 > 219.00	1.756	1.754	0.002	2628873	20.1		100	1838	
D 47 13C3-PFBS	301.90 > 83.00	1.784	1.782	0.002	163042	NC			7416	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.784	1.782	0.002	4703049	20.3		115	172182	
	298.90 > 99.00	1.784	1.782	0.002	1744082		2.70(0.00-0.00)		8993	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.986	1.983	0.003	1400031	24.5		131	56477	
6 Perfluorohexanoic acid	313.00 > 269.00	2.020	2.017	0.003	2271112	18.8		93.9	6105	
D 7 13C2 PFHxA	315.00 > 270.00	2.020	2.017	0.003	6400777	54.1		108	38369	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.341	2.339	0.002	2393913	19.6		98.0	3538	
D 9 13C4-PFHpA	367.00 > 322.00	2.341	2.339	0.002	5992579	55.8		112	32088	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.349	2.355	-0.006	3129564	17.8		97.7	2403	
D 11 18O2 PFHxS	403.00 > 84.00	2.349	2.355	-0.006	8233358	46.2		97.6	44726	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.660	2.656	0.004	2671281	51.1	108	26857	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.660	2.656	0.004	1.000	954843	19.6	103	22874
* 62 13C2-PFOA	415.00	> 370.00	2.682	2.685	-0.003	5138866	50.0	100	32614	
D 14 13C4 PFOA	417.00	> 372.00	2.689	2.685	0.004	5117537	54.4	109	30775	
15 Perfluorooctanoic acid	413.00	> 369.00	2.689	2.685	0.004	1.000	2200606	20.2	101	560
	413.00	> 169.00	2.689	2.685	0.004	1.000	1275904	1.72(0.90-1.10)		6538
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.696	2.692	0.004	1.000	2756217	19.4	102	16984
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.060	3.051	0.010	1.000	2257227	17.3	93.0	7869
	499.00	> 99.00	3.060	3.051	0.010	1.000	499949	4.51(0.90-1.10)		4311
20 Perfluorononanoic acid	463.00	> 419.00	3.060	3.051	0.010	1.000	1683674	19.8	98.9	4964
D 18 13C4 PFOS	503.00	> 80.00	3.052	3.051	0.002	5993347	46.5	97.3	19876	
D 19 13C5 PFNA	468.00	> 423.00	3.060	3.051	0.010	4213897	55.5	111	21082	
D 21 13C8 FOSA	506.00	> 78.00	3.411	3.394	0.017	10092568	48.5	96.9	32891	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.402	3.394	0.008	1.000	805703	19.7	103	14425
D 26 M2-8:2FTS	529.00	> 509.00	3.402	3.394	0.008	2138334	55.5	116	20738	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.411	3.403	0.008	1.000	3789220	20.4	102	23998
24 Perfluorodecanoic acid	513.00	> 469.00	3.420	3.412	0.008	1.000	1334531	18.2	90.9	5127
D 23 13C2 PFDA	515.00	> 470.00	3.420	3.412	0.008	3695616	57.3	115	13397	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.568	3.564	0.004	1426517	55.9	112	10576	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.579	3.564	0.015	1.003	537663	20.7	103	3333
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.725	3.722	0.003	1.000	1497258	19.2	99.3	9291
D 32 d5-NEtFOSAA	589.00	> 419.00	3.735	3.732	0.003	1433896	56.3	113	2743	
D 30 13C2 PFUnA	565.00	> 520.00	3.744	3.732	0.012	2684745	55.6	111	12987	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.744	3.732	0.012	1.003	478108	19.6	98.0	5133
31 Perfluoroundecanoic acid	563.00	> 519.00	3.744	3.732	0.012	1.000	1062565	18.8	94.0	2251

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 34 d-N-MeFOSA-M	515.00 > 169.00	3.908	3.898	0.010	2547183	48.7		97.4	684	
35 MeFOSA	512.00 > 169.00	3.916	3.907	0.009	1.000	921253	19.9	99.6	5496	
37 Perfluorododecanoic acid	613.00 > 569.00	4.038	4.030	0.008	1.000	1048317	18.7	93.4	1171	
D 36 13C2 PFDaA	615.00 > 570.00	4.038	4.030	0.008	2935444	61.9		124	6793	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.098	4.088	0.010	2623357	50.3		101	5515	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.106	4.097	0.009	1.000	946884	19.3	96.3	5142	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.308	4.291	0.017	1.000	954008	19.0	94.8	272	
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.539	4.526	0.013	1.000	2187965	18.6	93.2	369	
	713.00 > 169.00	4.539	4.526	0.013	1.000	250325	8.74(0.00-0.00)		4807	
D 43 13C2-PFTeDA	715.00 > 670.00	4.539	4.526	0.013	5261493	59.4		119	15252	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.943	4.934	0.009	1.000	962459	19.2	96.1	179	
D 44 13C2-PFHxDA	815.00 > 770.00	4.943	4.934	0.009	2635936	58.3		117	4141	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.288	5.281	0.007	1.000	894204	19.3	96.6	290	

**QC Flag Legend**

Processing Flags

NC - Not Calibrated

**Reagents:**

LCPFC\_FULLL-L4\_00005

Amount Added: 1.00

Units: mL

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_011.d

Injection Date: 19-Jul-2017 01:10:56

Instrument ID: A8\_N

Lims ID: CCV L4

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 31

Worklist Smp#: 12

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

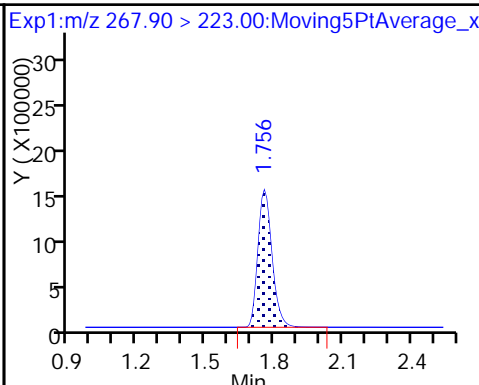
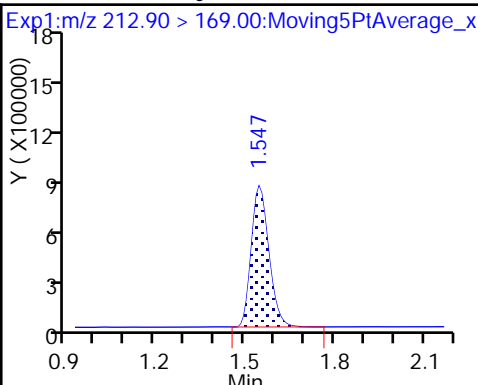
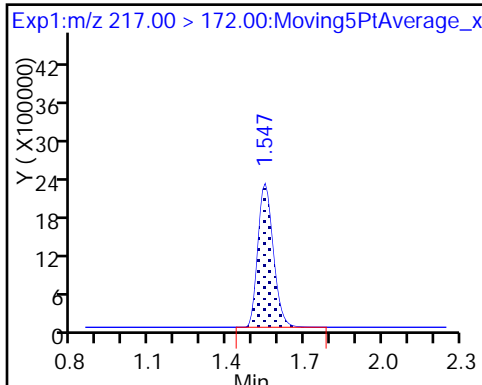
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

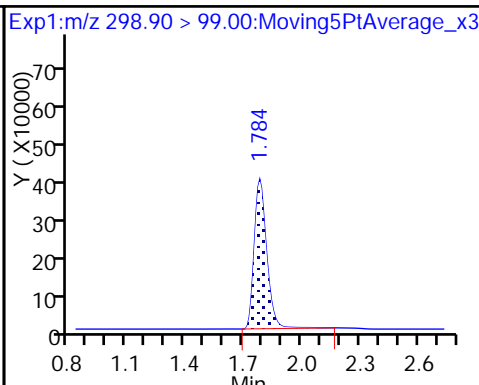
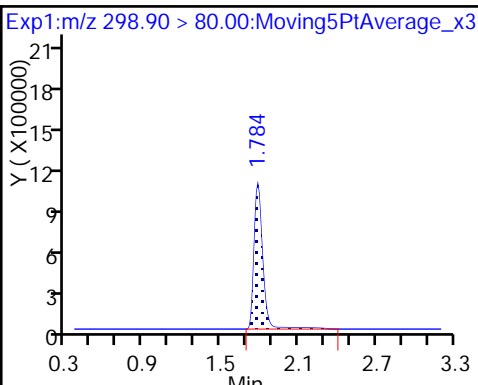
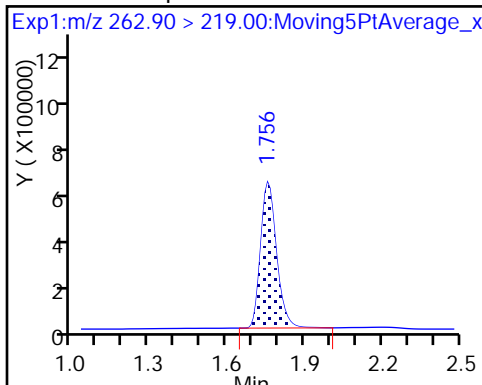
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

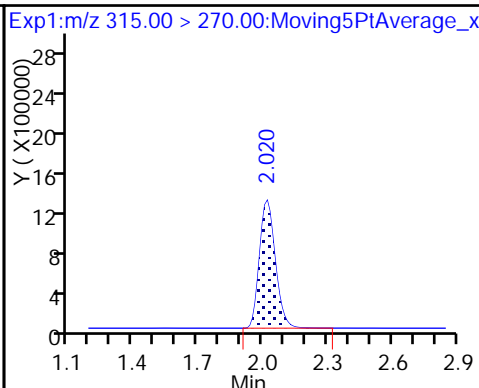
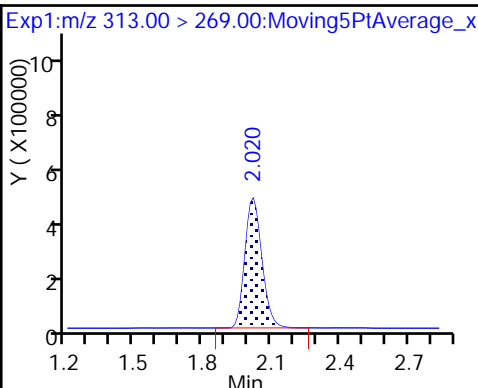
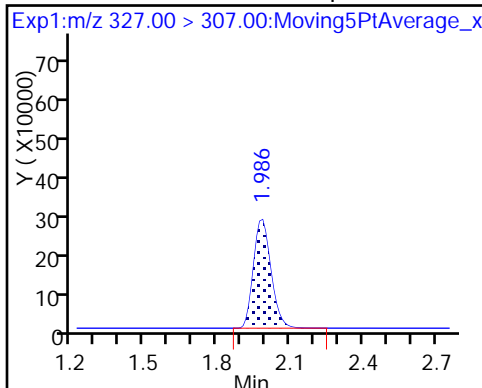
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

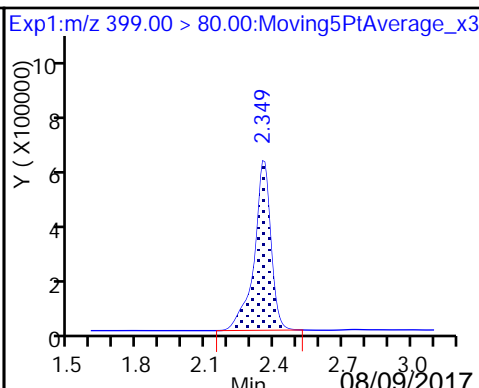
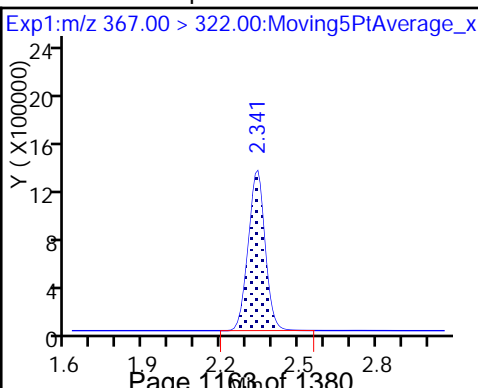
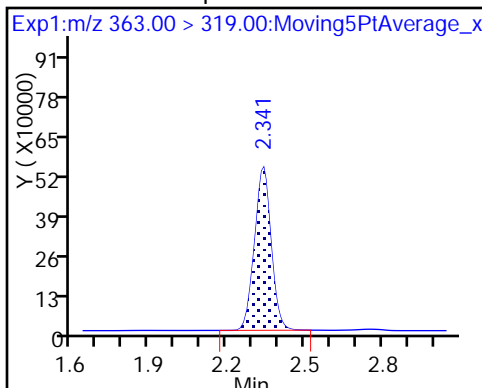
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

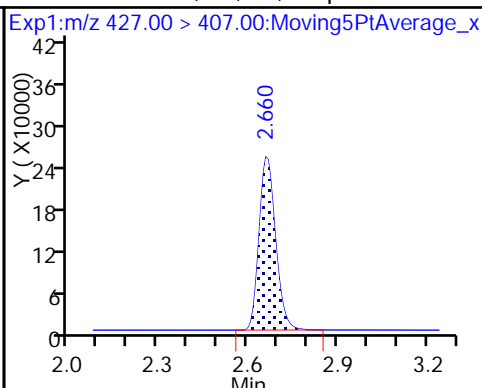
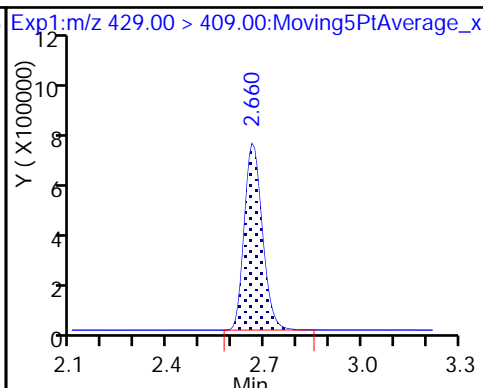
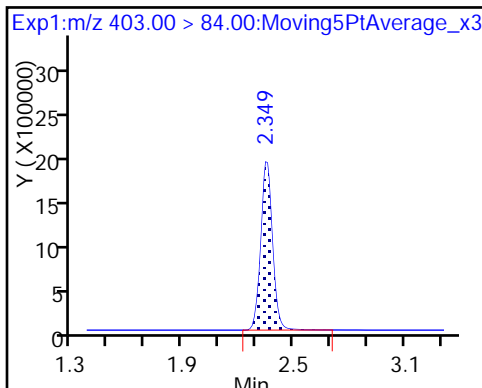
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

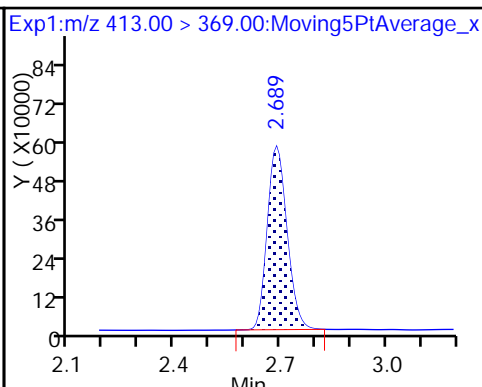
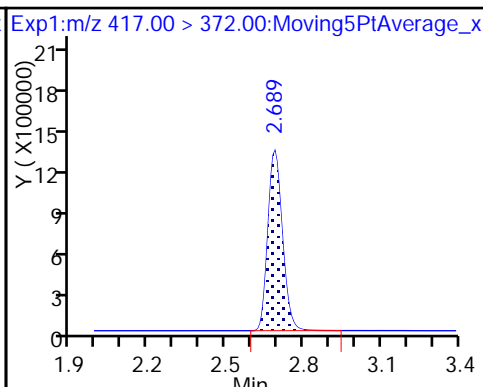
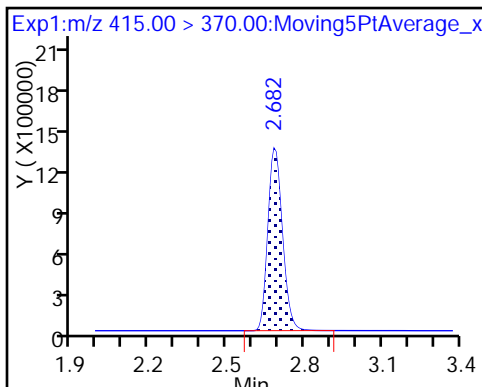
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

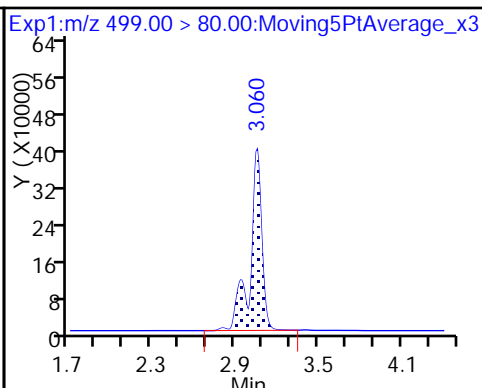
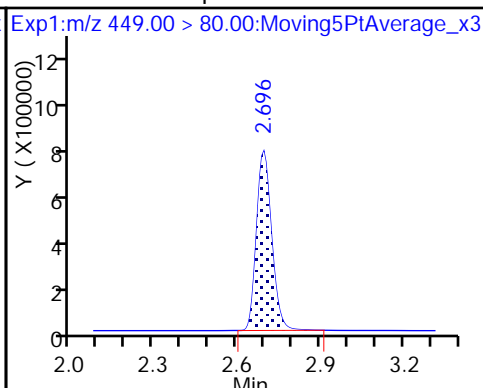
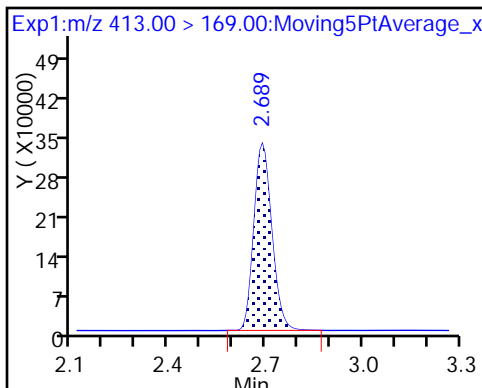
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

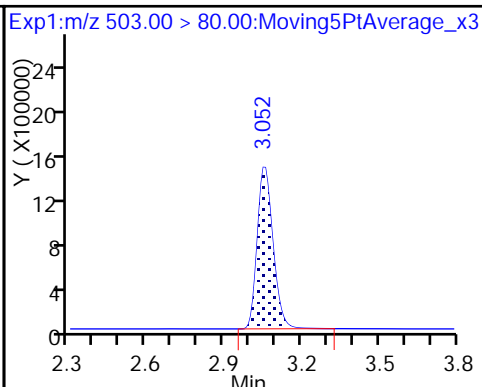
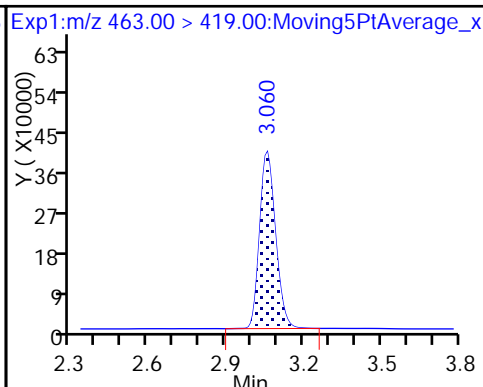
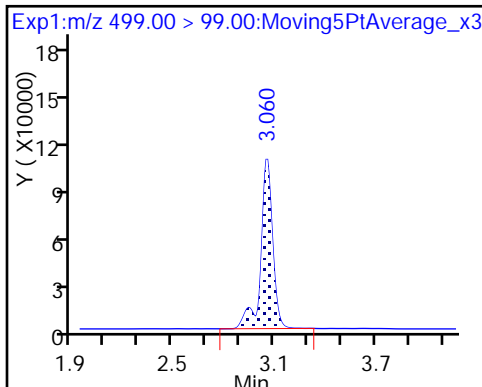
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

D 18 13C4 PFOS

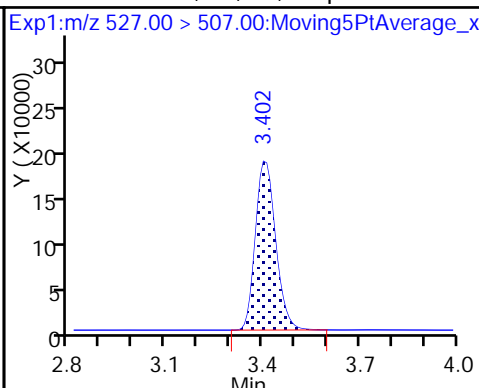
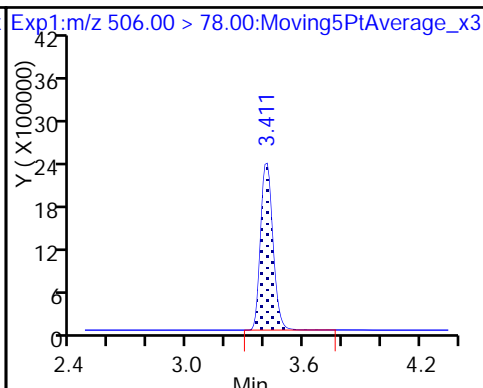
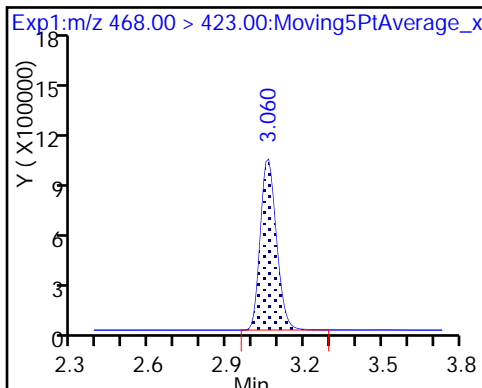




D 19 13C5 PFNA

D 21 13C8 FOSA

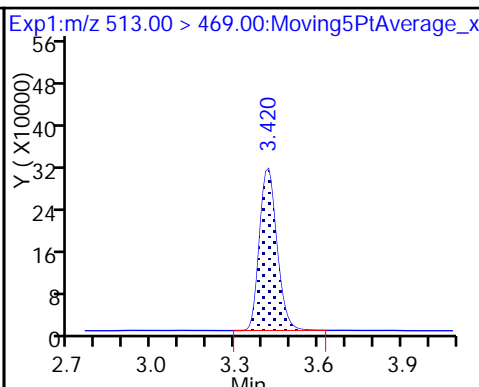
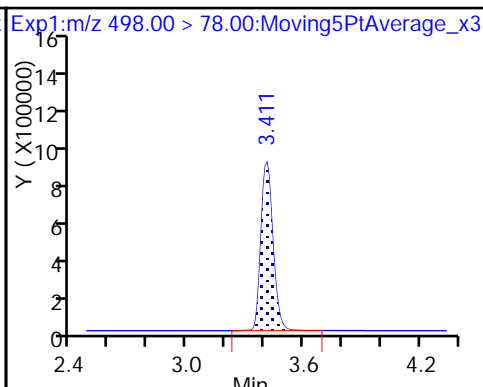
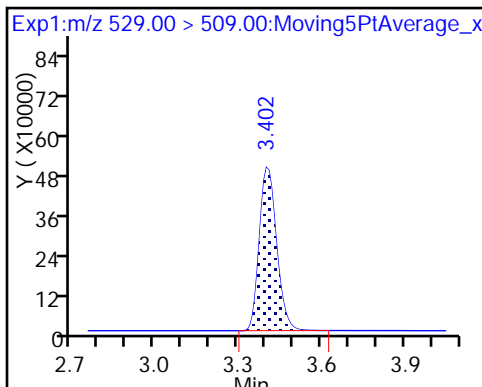
25 Sodium 1H,1H,2H,2H-perfluorodecane



D 26 M2-8:2FTS

22 Perfluorooctane Sulfonamide

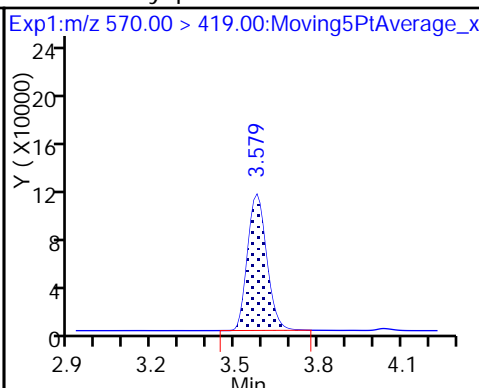
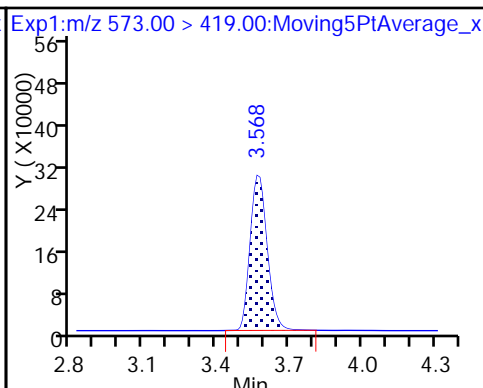
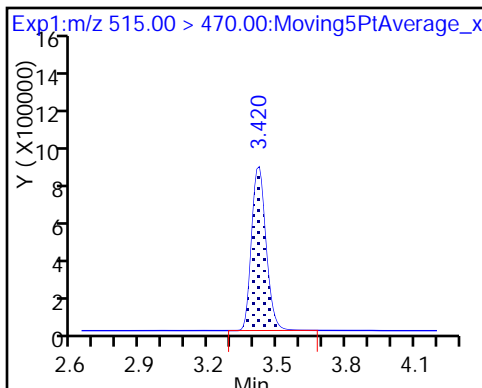
24 Perfluorodecanoic acid



D 23 13C2 PFDA

D 27 d3-NMeFOSAA

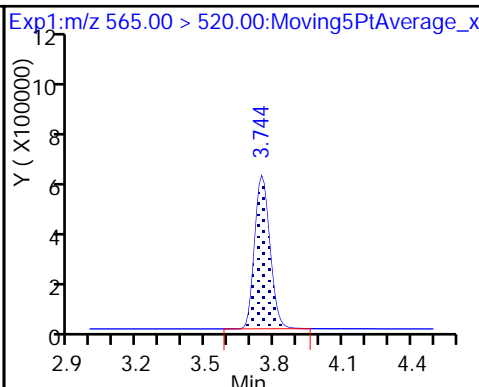
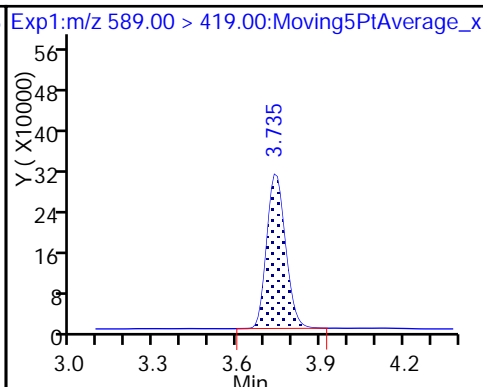
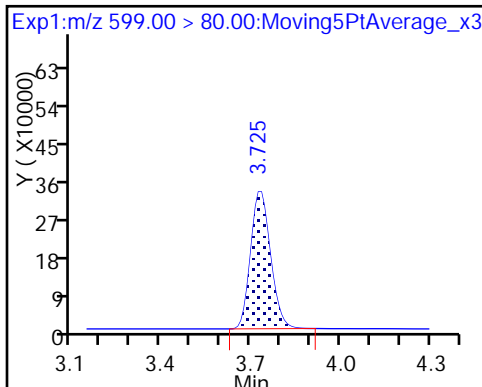
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

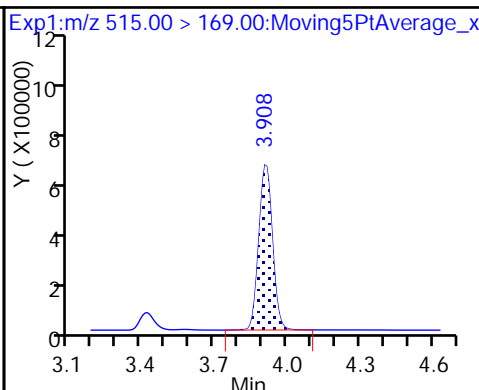
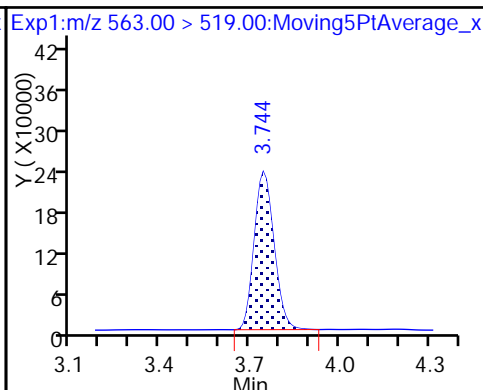
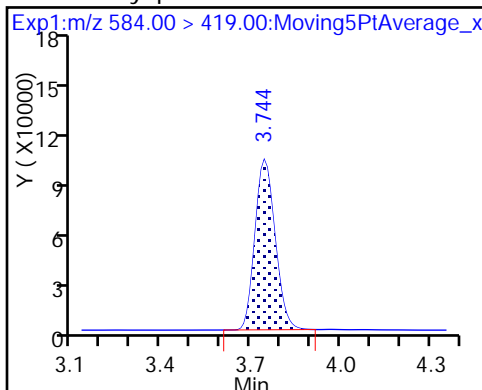
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

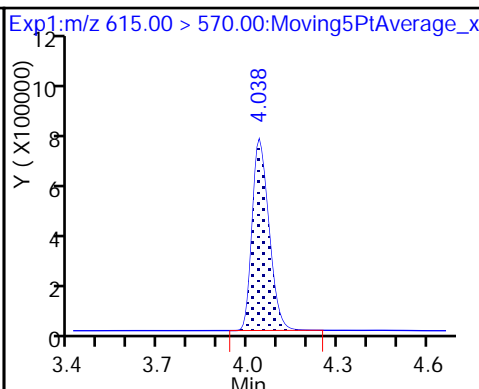
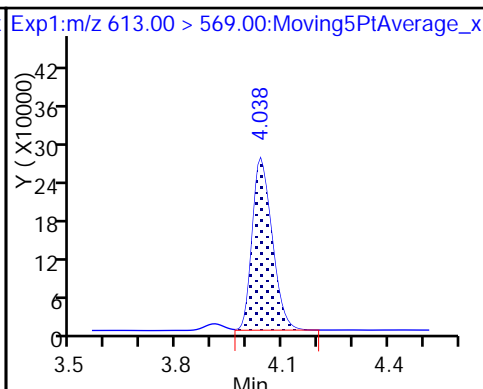
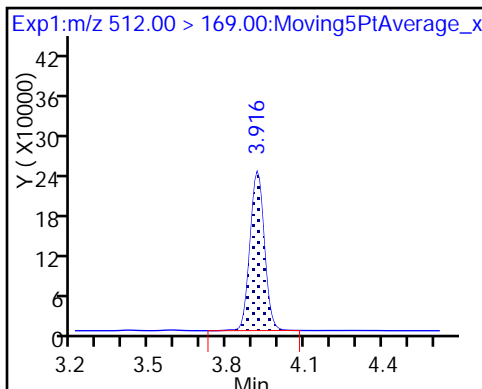
D 34 d-N-MeFOSA-M



35 MeFOSA

37 Perfluorododecanoic acid

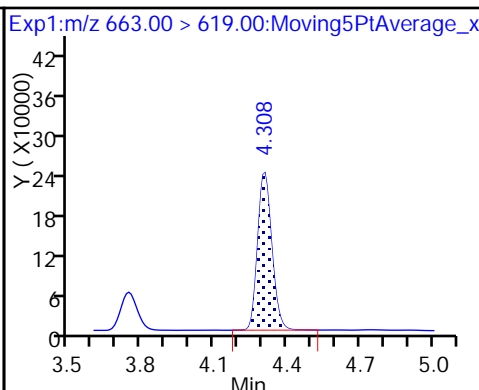
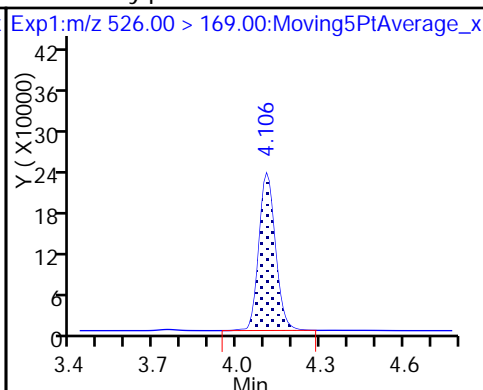
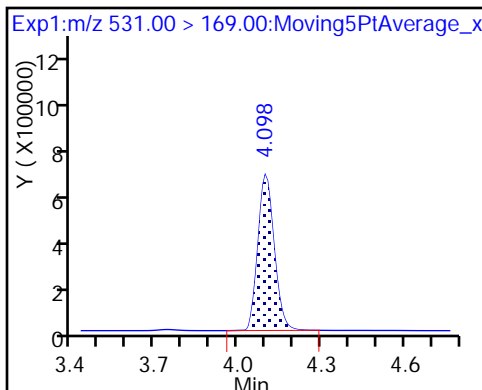
D 36 13C2 PFDa



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

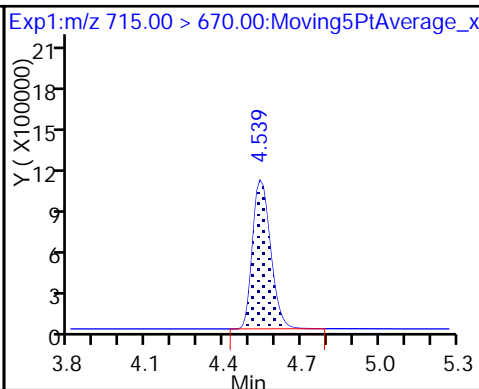
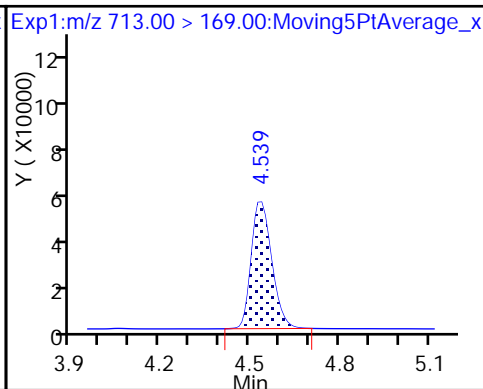
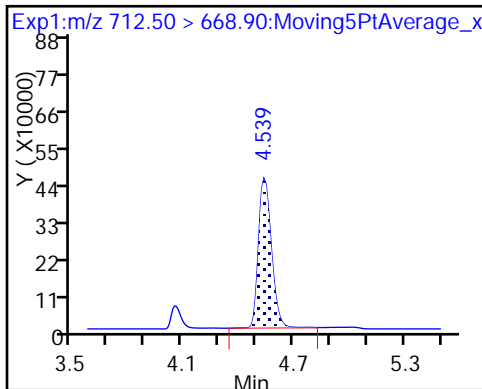
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

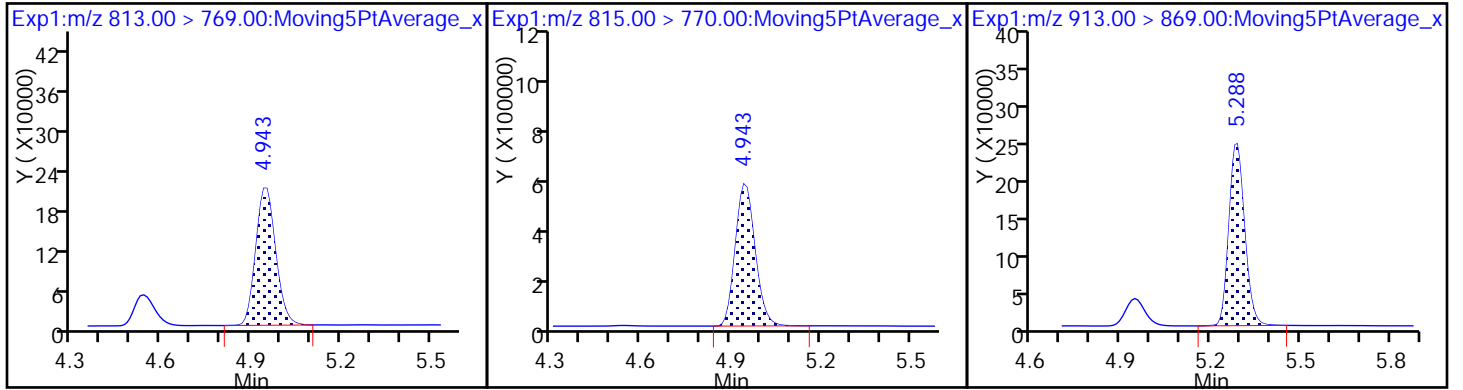
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 320-170766/1-A  
 Matrix: Water Lab File ID: 2017.06.27\_PFC\_B\_006.d  
 Analysis Method: 537 (Modified) Date Collected: \_\_\_\_\_  
 Extraction Method: 3535 Date Extracted: 06/23/2017 16:59  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 06/28/2017 09:18  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171335 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	2.0	U	2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U M	2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	124		25-150
STL00991	13C4 PFOS	104		25-150
STL00994	18O2 PFHxS	104		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_006.d  
 Lims ID: MB 320-170766/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 28-Jun-2017 09:18:40 ALS Bottle#: 5 Worklist Smp#: 6  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: mb 320-170766/1-a  
 Misc. Info.: Plate: 1 Rack: 4  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 15:52:02 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK008

First Level Reviewer: barnettj Date: 28-Jun-2017 15:50:44

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00	> 172.00	1.541	1.541	0.0	12473370	53.3	107	131287	
2 Perfluorobutyric acid	212.90	> 169.00	1.533	1.541	-0.008	1.000	240453	1.07	62.8	
D 3 13C5-PFPeA	267.90	> 223.00	1.751	1.742	0.009	8904038	55.4	111	19781	
D 47 13C3-PFBS	301.90	> 83.00	1.768	1.760	0.008	210387	NC		3830	
5 Perfluorobutanesulfonic acid	298.90	> 80.00	1.768	1.769	-0.001	1.000	19498	0.0633	11.9	M
	298.90	> 99.00	1.768	1.769	-0.001	1.000	5884	3.31(0.00-0.00)	7.3	M
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00	> 307.00	1.968	1.958	0.010	1.000	1600	NR	70.8	
D 7 13C2 PFHxA	315.00	> 270.00	2.002	2.002	0.0	8433568	55.0	110	39074	
6 Perfluorohexanoic acid	313.00	> 269.00	2.002	2.002	0.0	1.000	7378	0.0430	10.5	
10 Perfluoroheptanoic acid	363.00	> 319.00	2.322	2.312	0.010	1.000	5343	0.0293	8.7	
D 9 13C4-PFHpA	367.00	> 322.00	2.322	2.312	0.010	8537341	62.4	125	28803	
8 Perfluorohexanesulfonic acid	399.00	> 80.00	2.338	2.329	0.009	1.000	43010	0.1761	45.8	
D 11 18O2 PFHxS	403.00	> 84.00	2.338	2.329	0.009	10456860	49.2	104	26952	
D 12 M2-6:2FTS	429.00	> 409.00	2.641	2.634	0.007	21858	0.3002	0.0	1188	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.641	2.634	0.007	1.000	NR		5619	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA	417.00	> 372.00	2.670	2.656	0.014	8123001	62.2	124	20458	
15 Perfluorooctanoic acid	413.00	> 369.00	2.670	2.656	0.014	1.000	7157	0.0416	2.5	
	413.00	> 169.00	2.670	2.656	0.014	1.000	7327	0.98(0.90-1.10)	35.5	
* 62 13C2-PFOA	415.00	> 370.00	2.663	2.656	0.007	5694	50.0		234	
D 19 13C5 PFNA	468.00	> 423.00	3.035	3.026	0.009	6172121	58.8	118	10952	
D 18 13C4 PFOS	503.00	> 80.00	3.035	3.026	0.009	8101837	49.8	104	277575	
D 21 13C8 FOSA	506.00	> 78.00	3.376	3.377	-0.001	899637	3.41	6.8	5980	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.376	3.377	-0.001	1.000	1655	NR	77.2	
D 23 13C2 PFDA	515.00	> 470.00	3.386	3.386	0.0	6472496	64.7	129	26495	
24 Perfluorodecanoic acid	513.00	> 469.00	3.386	3.386	0.0	1.000	4257	0.0341	27.8	
D 30 13C2 PFUnA	565.00	> 520.00	3.716	3.717	-0.001	4449712	59.9	120	27509	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.716	3.717	-0.001	1.000	12891	0.1361	36.5	
D 36 13C2 PFDoA	615.00	> 570.00	4.010	4.013	-0.003	4162872	56.7	113	14324	
37 Perfluorododecanoic acid	613.00	> 569.00	4.010	4.013	-0.003	1.000	4380	0.0553	9.6	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.283	4.277	0.006	1.000	3696	0.0457	1.0	
D 43 13C2-PFTeDA	715.00	> 670.00	4.519	4.515	0.004	8950576	59.1	118	70795	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.585	4.515	0.070	1.000	47565	0.2449	14.0	
	713.00	> 169.00	4.509	4.515	-0.006	0.984	4861	9.79(0.00-0.00)	171	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.930	4.929	0.001	1.000	70987	0.1528	15.7	
D 44 13C2-PFHxDA	815.00	> 770.00	4.930	4.929	0.001	4922858	58.7	117	7667	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.276	5.275	0.001	1.000	4734	0.0527	1.9	

## QC Flag Legend

### Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

### Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_006.d

Injection Date: 28-Jun-2017 09:18:40

Instrument ID: A8\_N

Lims ID: MB 320-170766/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 5

Worklist Smp#: 6

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

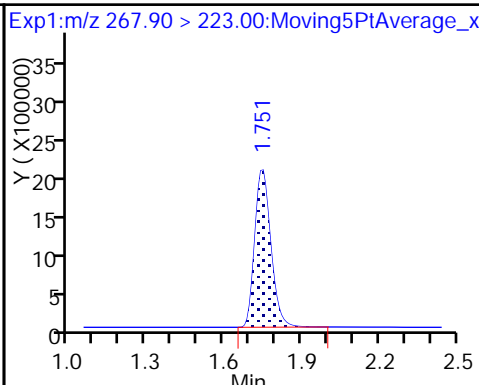
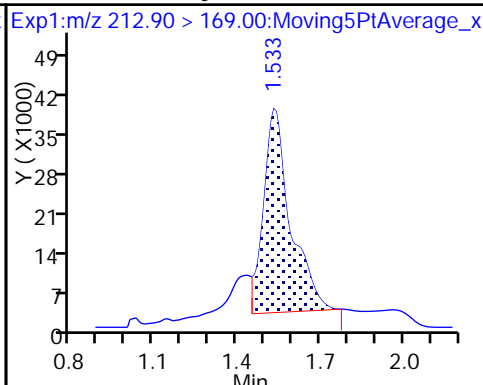
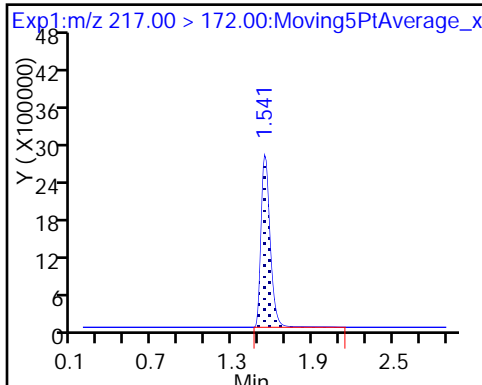
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

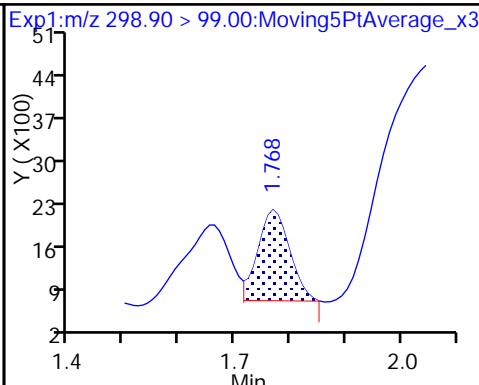
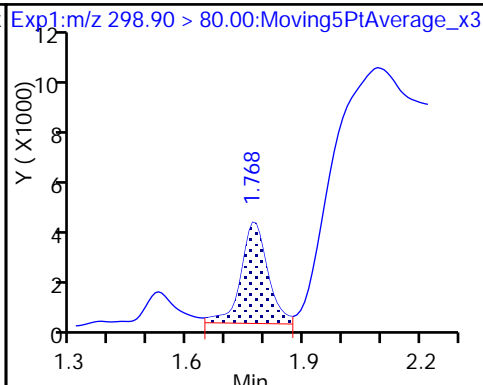
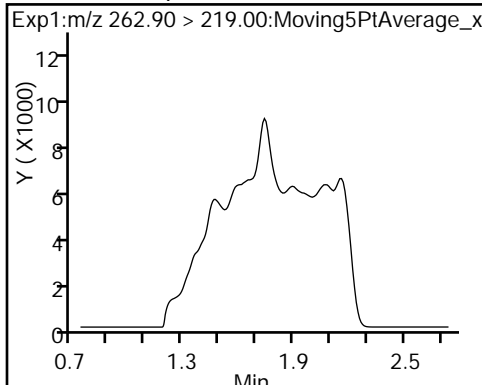
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (ND)

5 Perfluorobutanesulfonic acid

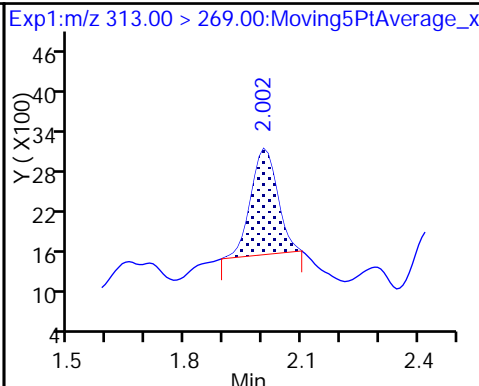
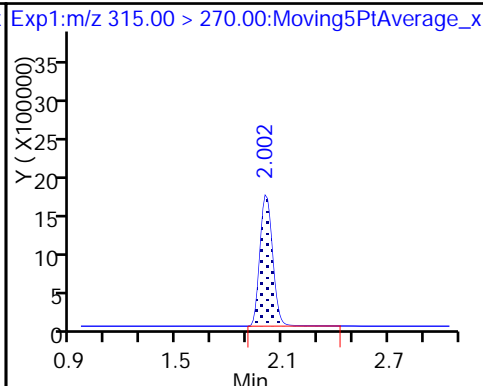
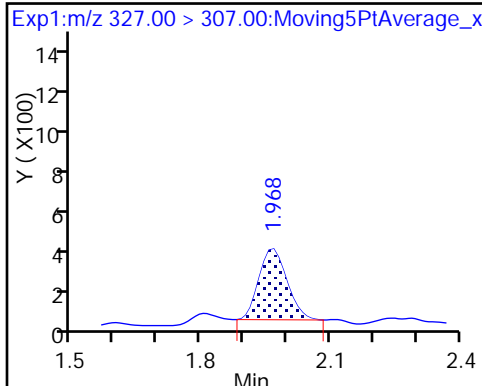
5 Perfluorobutanesulfonic acid (M)



61 Sodium 1H,1H,2H,2H-perfluorohexa

De 7 13C2 PFHxA

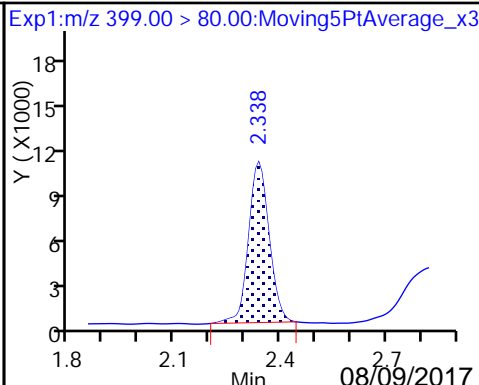
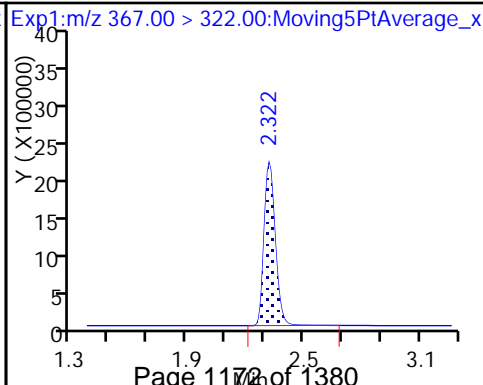
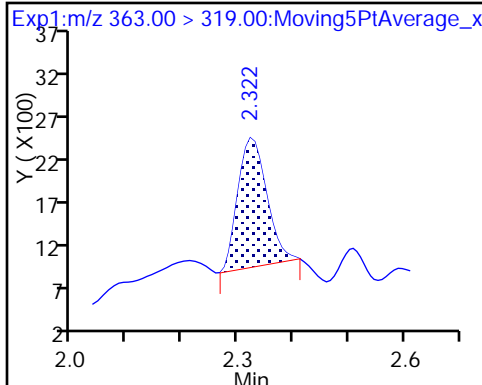
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid

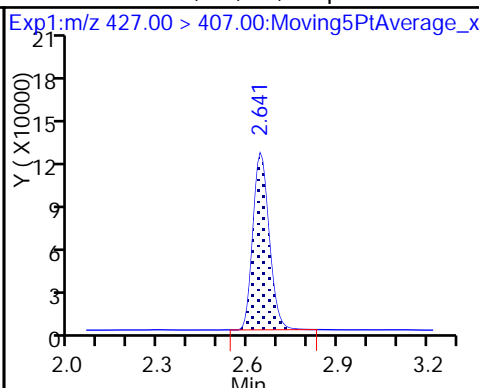
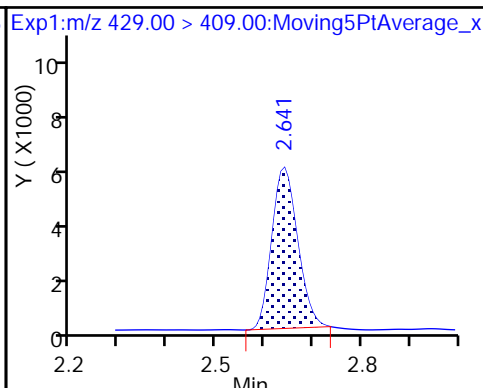
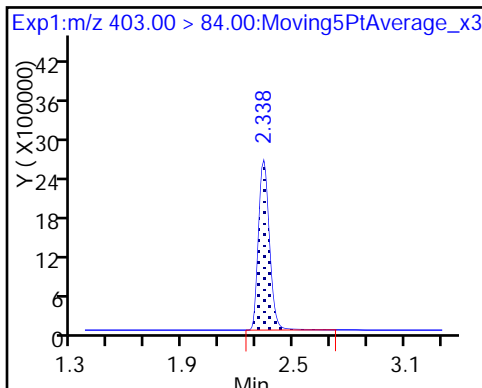




D 11 18O2 PFHxS

D 12 M2-6:2FTS

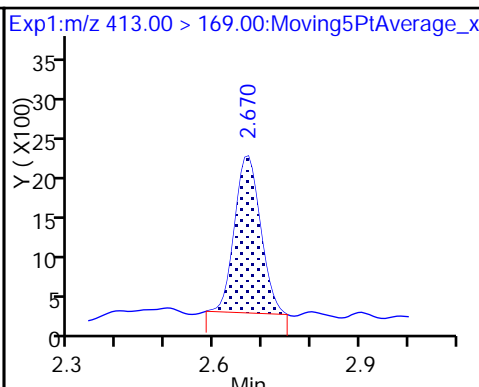
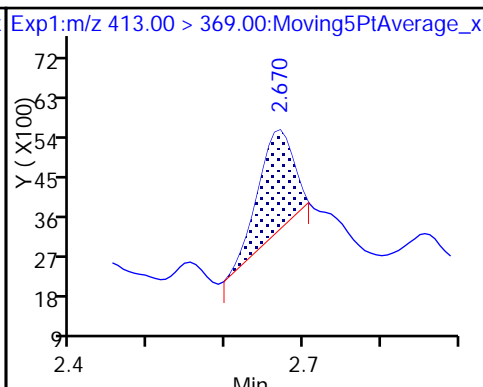
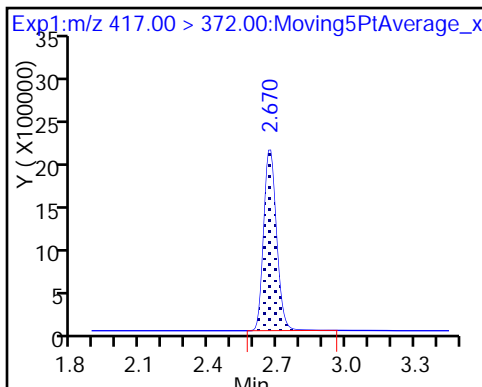
13 Sodium 1H,1H,2H,2H-perfluorooctane



D 14 13C4 PFOA

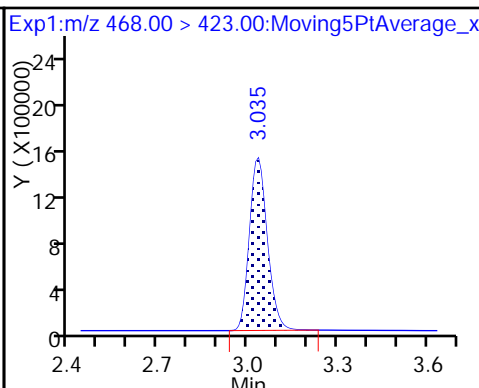
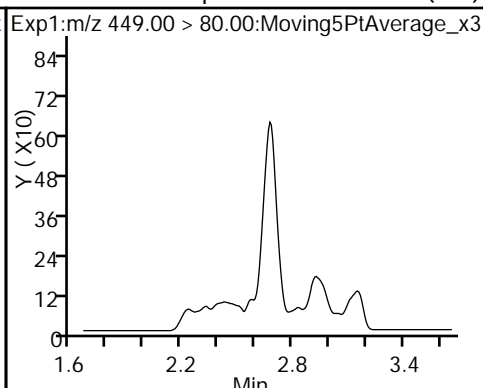
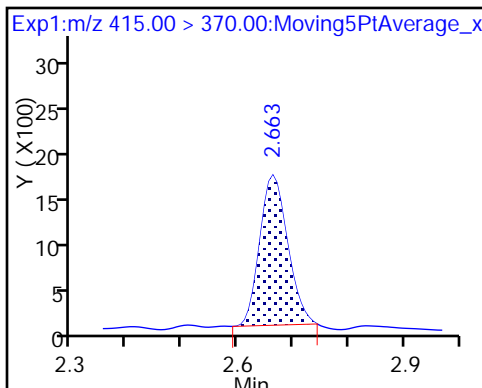
15 Perfluorooctanoic acid

15 Perfluorooctanoic acid



\* 62 13C2-PFOA

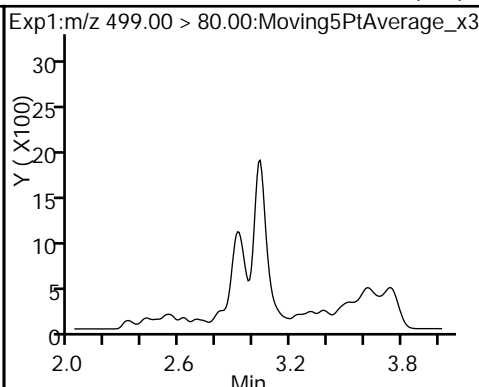
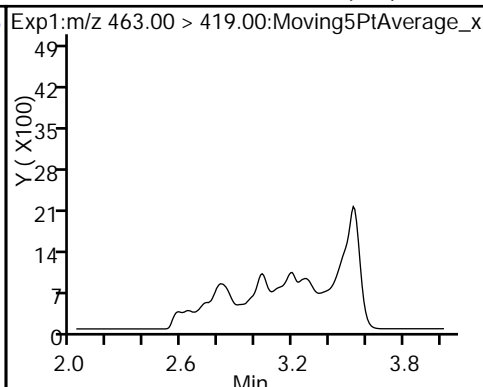
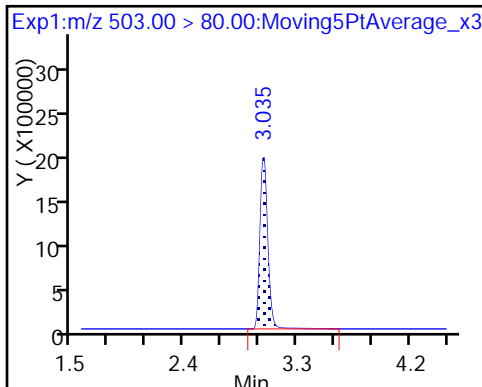
16 Perfluoroheptanesulfonic Acid (ND) D 19 13C5 PFNA



D 18 13C4 PFOS

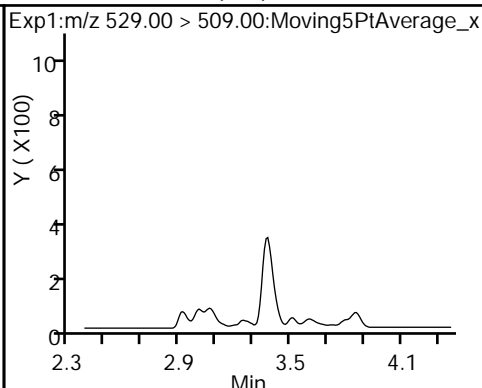
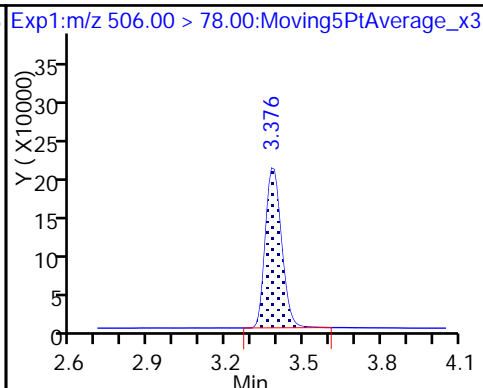
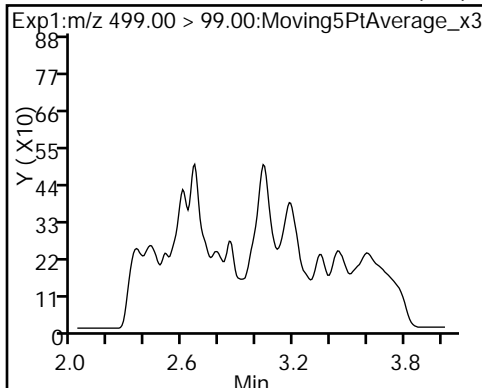
20 Perfluorononanoic acid (ND)

17 Perfluorooctane sulfonic acid (ND)



17 Perfluorooctane sulfonic acid (ND) D 21 13C8 FOSA

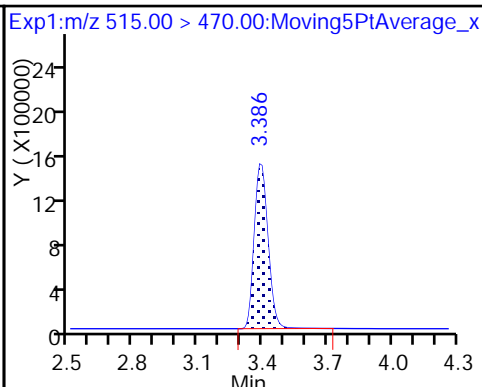
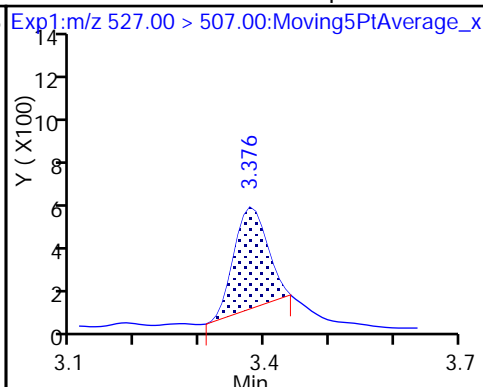
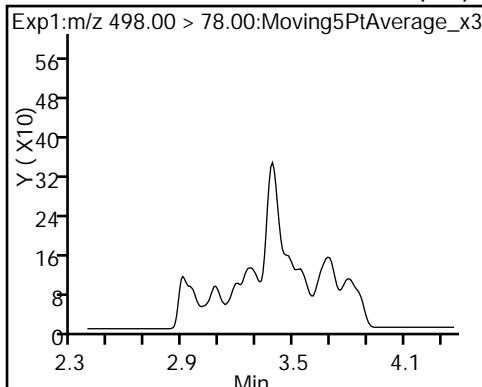
D 26 M2-8:2FTS (ND)



22 Perfluorooctane Sulfonamide (ND)

25 Sodium 1H,1H,2H,2H-perfluorodeca

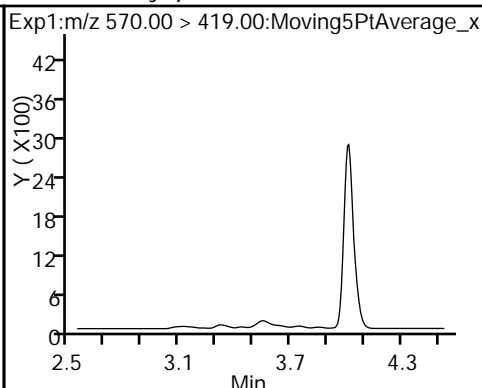
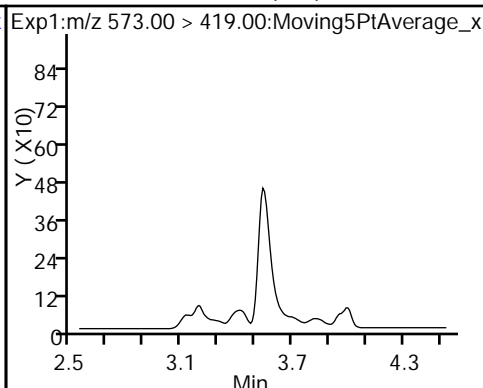
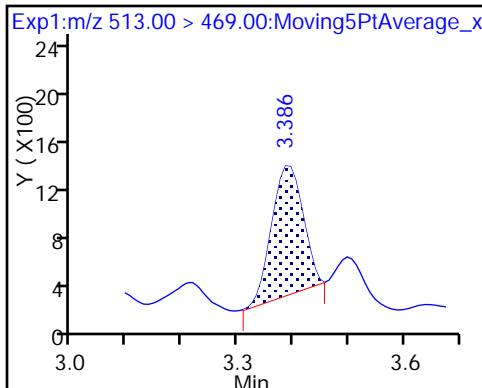
De23 13C2 PFDA



24 Perfluorodecanoic acid

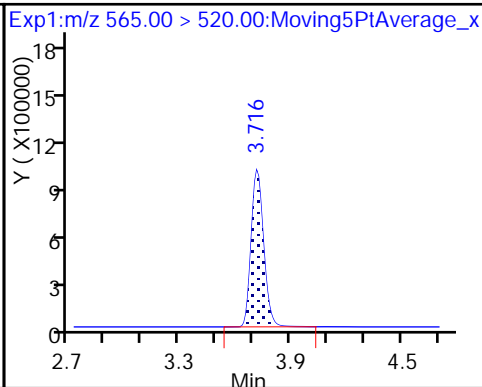
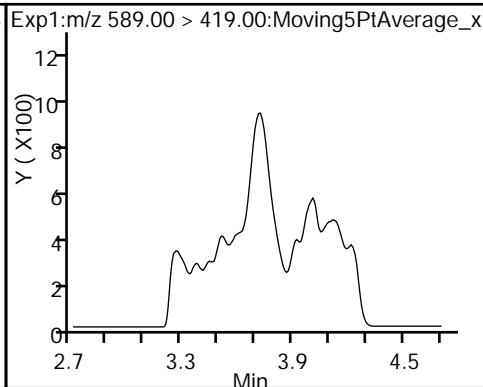
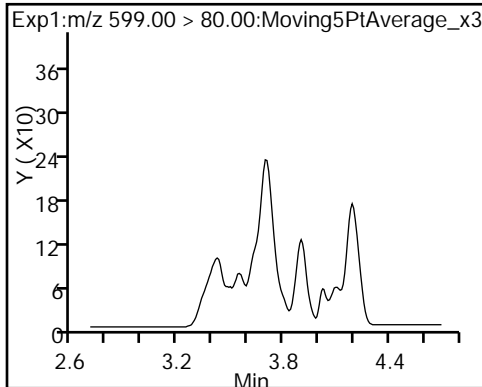
D 27 d3-NMeFOSAA (ND)

28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA (ND)

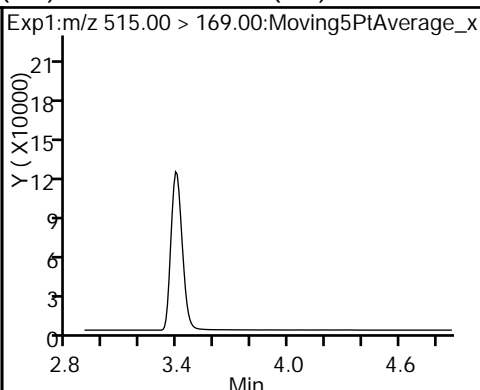
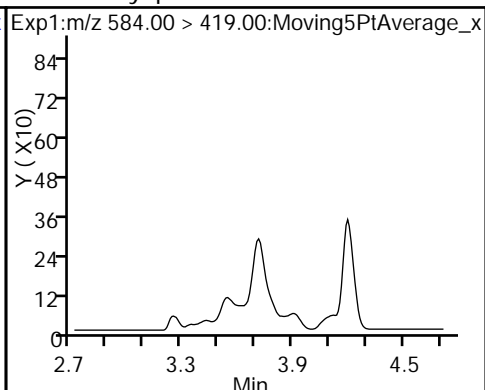
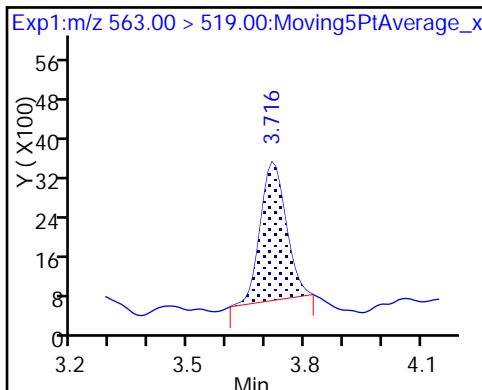
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid (ND)

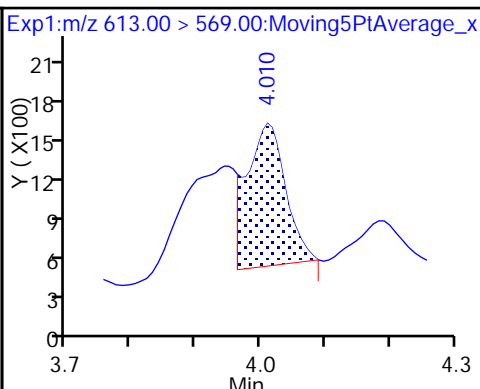
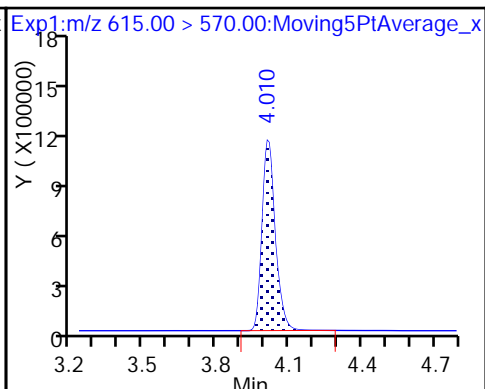
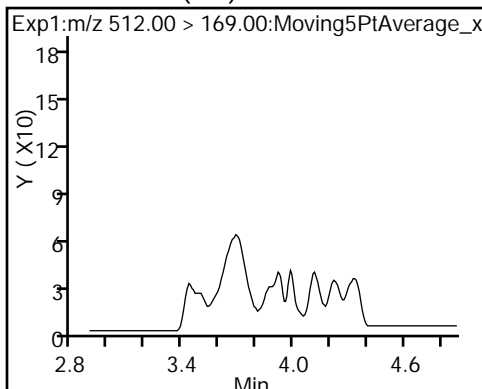
34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

D 36 13C2 PFDaA

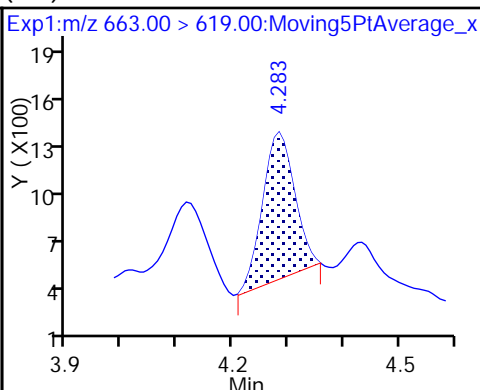
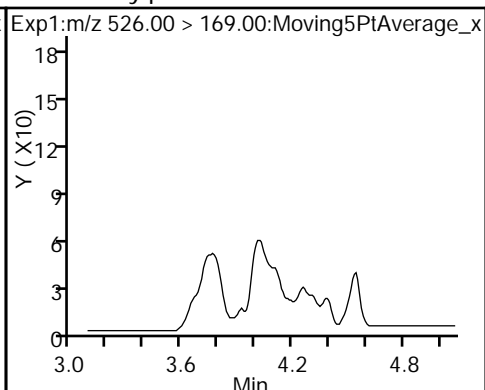
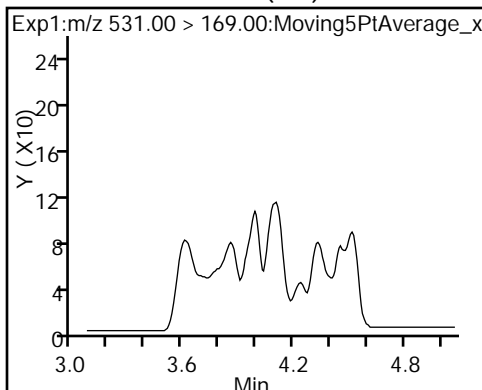
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M (ND)

39 N-ethylperfluoro-1-octanesulfonami (ND)

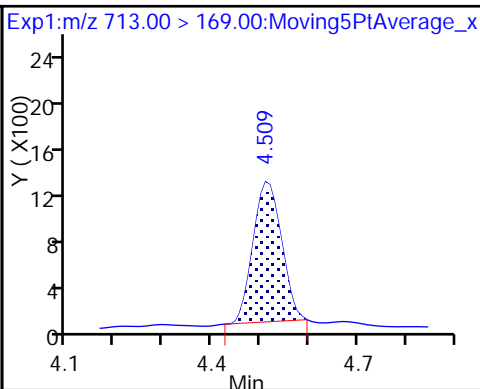
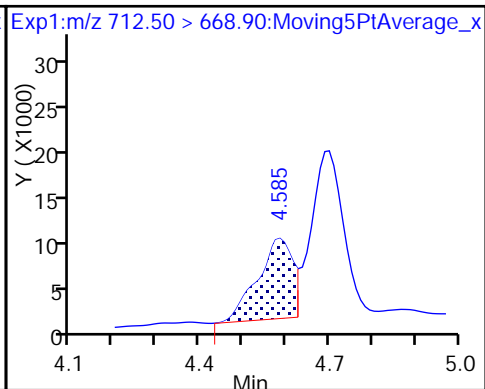
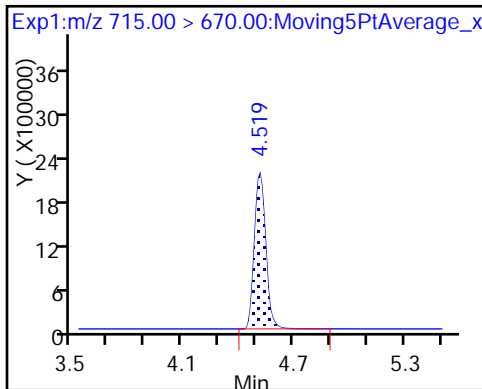
40 Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

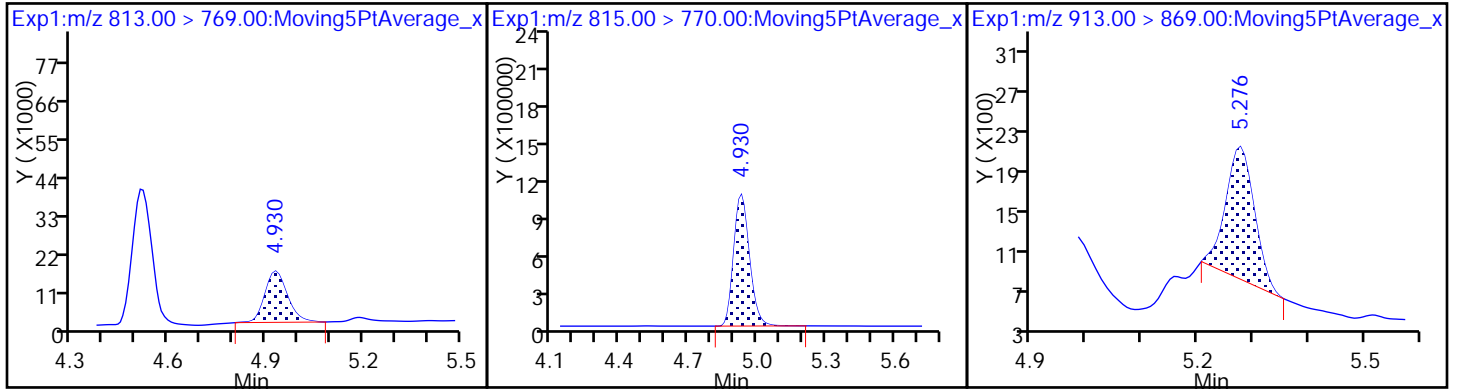
42 Perfluorotetradecanoic acid



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



TestAmerica Sacramento

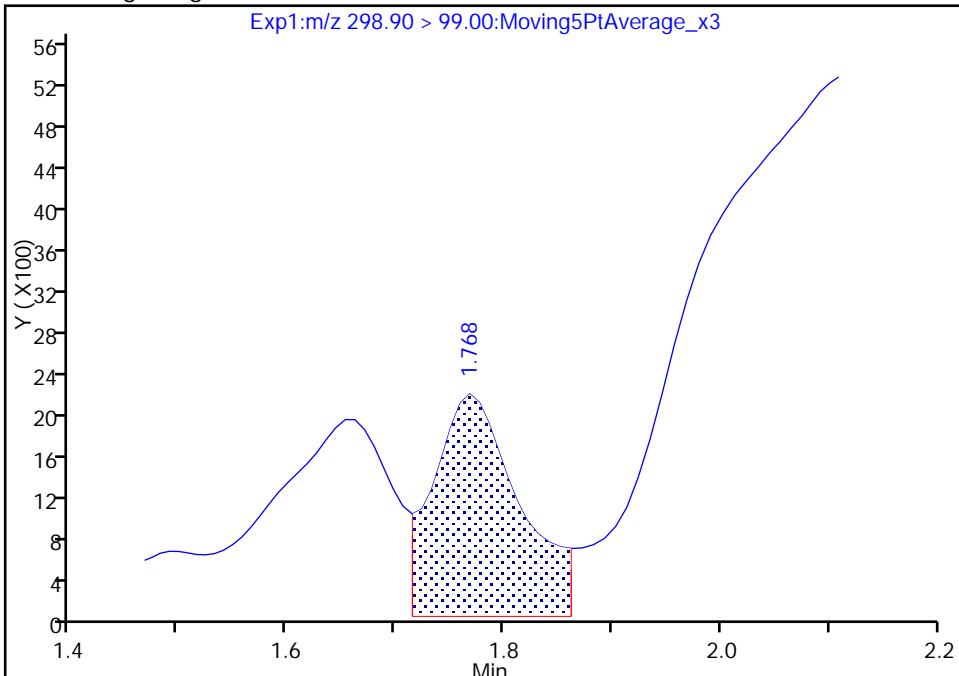
Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_006.d  
Injection Date: 28-Jun-2017 09:18:40 Instrument ID: A8\_N  
Lims ID: MB 320-170766/1-A  
Client ID:  
Operator ID: SACINSTLCMS01 ALS Bottle#: 5 Worklist Smp#: 6  
Injection Vol: 2.0 ul Dil. Factor: 1.0000  
Method: A8\_N Limit Group: LC PFC\_DOD ICAL  
Column: Detector EXP1

5 Perfluorobutanesulfonic acid, CAS: 375-73-5

Signal: 2

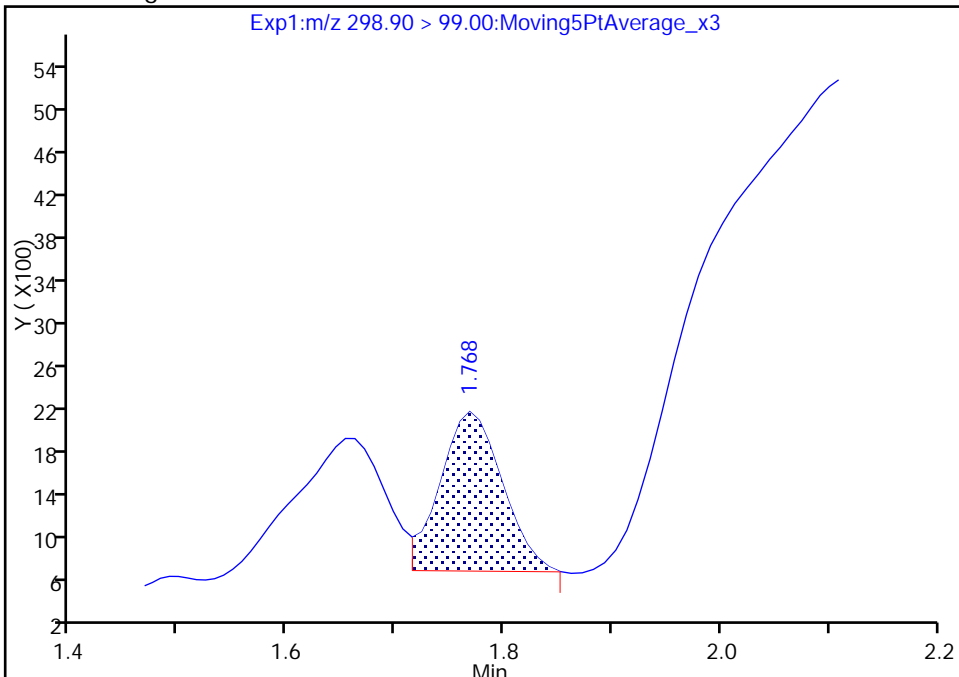
RT: 1.77  
Area: 11898  
Amount: 0.063266  
Amount Units: ng/ml

Processing Integration Results



RT: 1.77  
Area: 5884  
Amount: 0.063266  
Amount Units: ng/ml

Manual Integration Results



Reviewer: barnettj, 28-Jun-2017 15:50:27  
Audit Action: Manually Integrated

Audit Reason: Baseline

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 320-170805/1-A  
 Matrix: Water Lab File ID: 2017.06.28B\_003.d  
 Analysis Method: 537 (Modified) Date Collected: \_\_\_\_\_  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 06/28/2017 23:33  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	2.0	U	2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	3.0	U	4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	133		25-150
STL00991	13C4 PFOS	108		25-150
STL00994	18O2 PFHxS	114		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_003.d  
 Lims ID: MB 320-170805/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 28-Jun-2017 23:33:41 ALS Bottle#: 1 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: mb 320-170805/1-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:35:42

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.535	1.533	0.002	1.000	183325	0.7316			26.8	
D 1 13C4 PFBA										
217.00 > 172.00	1.535	1.533	0.002		13911498	59.5		119	50685	
D 3 13C5-PFPeA										
267.90 > 223.00	1.735	1.742	-0.007		9883601	61.5		123	42824	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.760	-0.007		253373	NC			5798	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.992	-0.010		9097318	59.3		119	13429	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	2.003	-0.021	1.000	8144	0.0441			9.8	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.308	2.312	-0.004	1.000	4104	0.0215			5.1	
D 9 13C4-PFHpA										
367.00 > 322.00	2.300	2.312	-0.012		8930298	65.2		130	14815	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.317	2.329	-0.012	1.000	36478	0.1360			36.5	
D 11 18O2 PFHxS										
403.00 > 84.00	2.317	2.329	-0.012		11483168	54.0		114	44482	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.619	2.634	-0.015	1.000	42386	NR			1164	
D 12 M2-6:2FTS										
429.00 > 409.00	2.619	2.634	-0.015		3723	0.0511		0.0	262	
* 62 13C2-PFOA										
415.00 > 370.00	2.641	2.656	-0.015		6315	50.0			294	
D 14 13C4 PFOA										
417.00 > 372.00	2.641	2.663	-0.022		8658185	66.3		133	25339	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 18 13C4 PFOS	503.00	> 80.00	3.014	3.026	-0.012	8395916	51.6	108	12410	
D 19 13C5 PFNA	468.00	> 423.00	3.014	3.026	-0.012	6193009	59.0	118	13607	
D 21 13C8 FOSA	506.00	> 78.00	3.365	3.379	-0.014	2848638	10.8	21.6	8666	
D 23 13C2 PFDA	515.00	> 470.00	3.365	3.388	-0.023	5568832	55.7	111	24043	
24 Perfluorodecanoic acid	513.00	> 469.00	3.365	3.388	-0.023	1.000	2690	0.0250	22.0	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.529	3.542	-0.013	8072	0.2180	0.0	218	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.695	3.710	-0.016	6595	0.1785	0.0	19.4	
D 30 13C2 PFUnA	565.00	> 520.00	3.695	3.710	-0.016	4249553	57.2	114	14280	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.695	3.710	-0.016	1.000	11079	0.1225	25.0	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.704	3.720	-0.016	1.003	3311	NR	64.3	
D 36 13C2 PFDaA	615.00	> 570.00	3.989	4.008	-0.019	3665955	49.9	99.9	13319	
37 Perfluorododecanoic acid	613.00	> 569.00	3.989	4.008	-0.019	1.000	2287	0.0328	8.8	
D 43 13C2-PFTeDA	715.00	> 670.00	4.499	4.510	-0.011	7001309	46.2	92.4	49870	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.499	4.510	-0.011	1.000	12030	0.0703	5.8	
	713.00	> 169.00	4.490	4.510	-0.020	0.998	3876	3.10(0.00-0.00)	157	
D 44 13C2-PFHxDA	815.00	> 770.00	4.908	4.922	-0.014	3560258	42.4	84.9	5818	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.908	4.922	-0.014	1.000	50164	-0.0150	7.9	
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.168	5.265	-0.097	1.000	4445	0.0562	1.3	

### QC Flag Legend

#### Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated



TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_003.d

Injection Date: 28-Jun-2017 23:33:41

Instrument ID: A8\_N

Lims ID: MB 320-170805/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

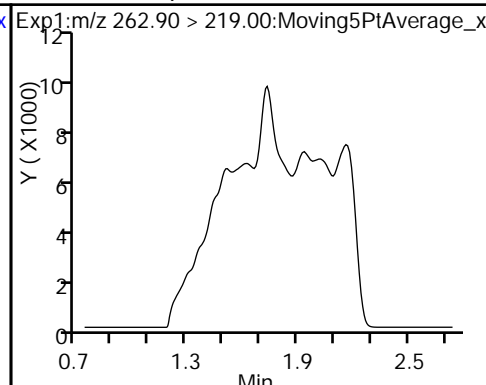
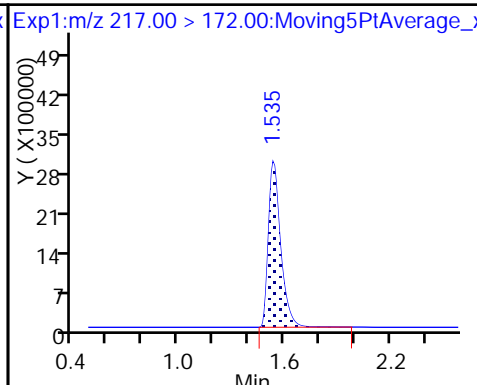
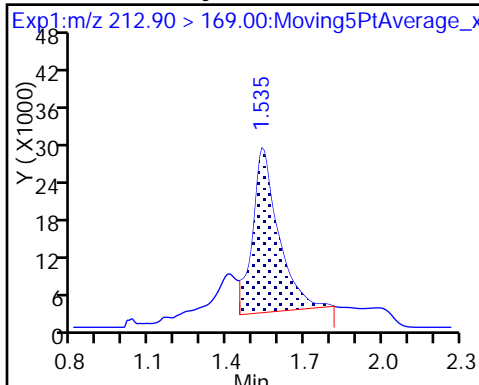
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

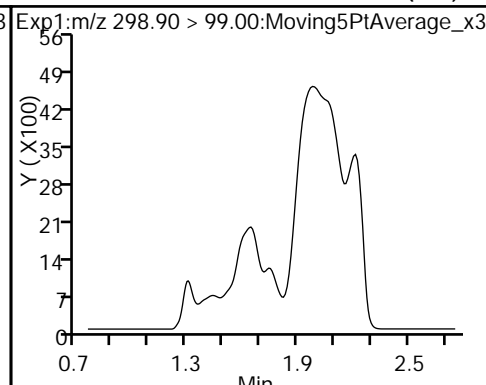
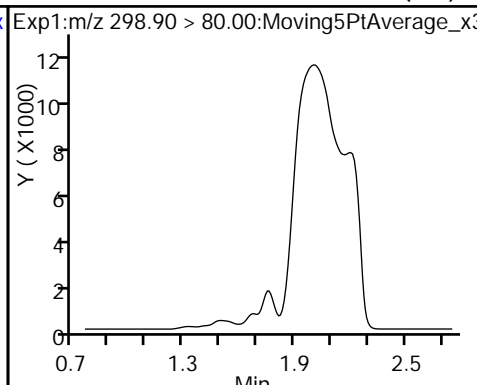
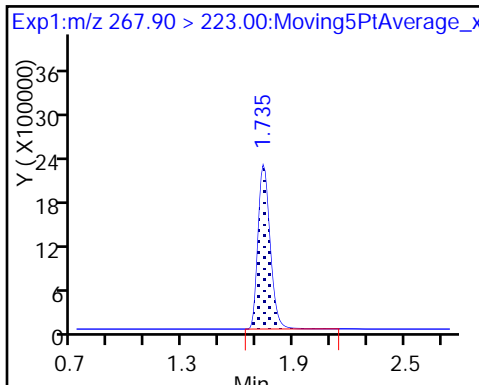
4 Perfluoropentanoic acid (ND)



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid (ND)

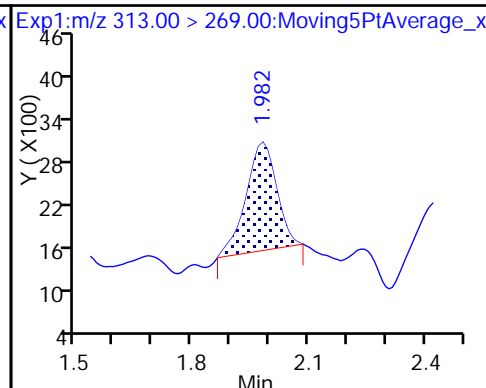
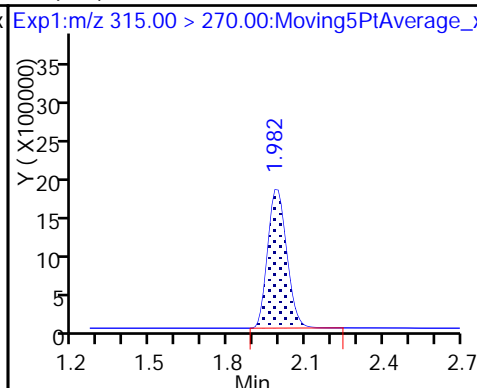
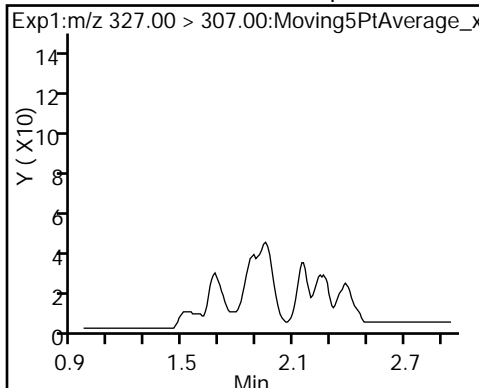
5 Perfluorobutanesulfonic acid (ND)



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid (ND)

D 1 13C2 PFHxA

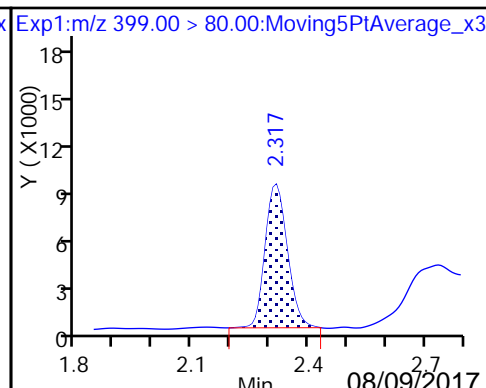
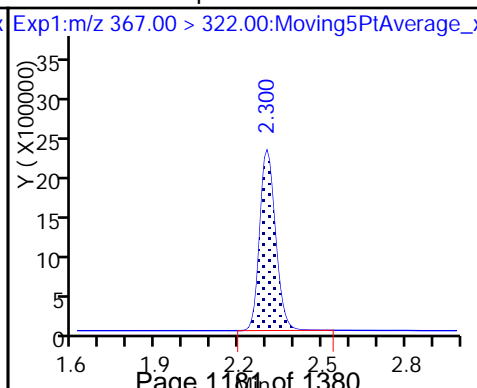
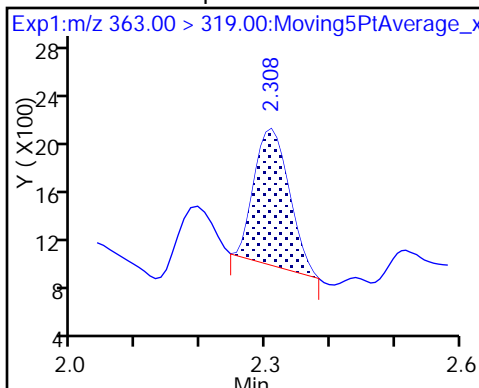
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

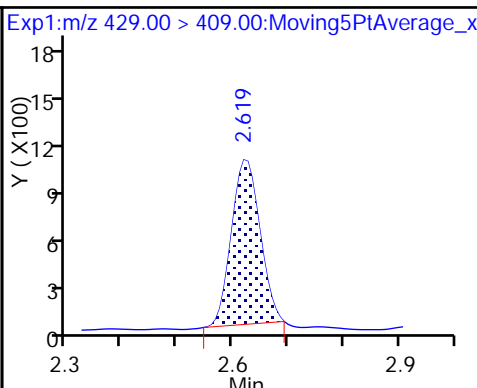
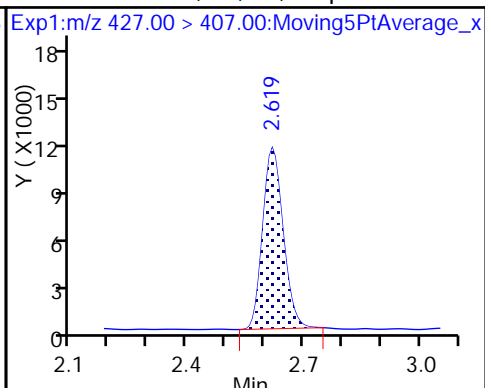
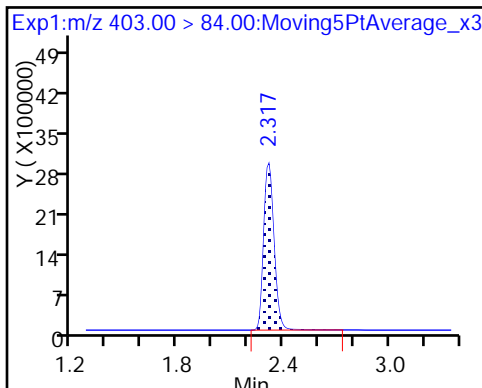
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

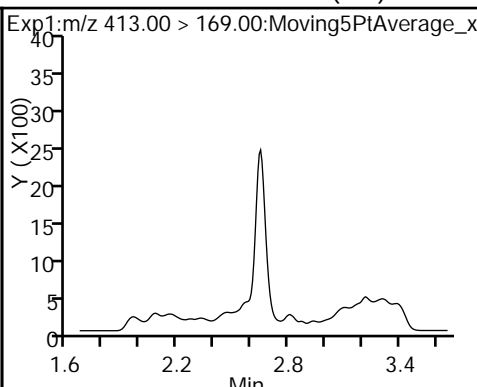
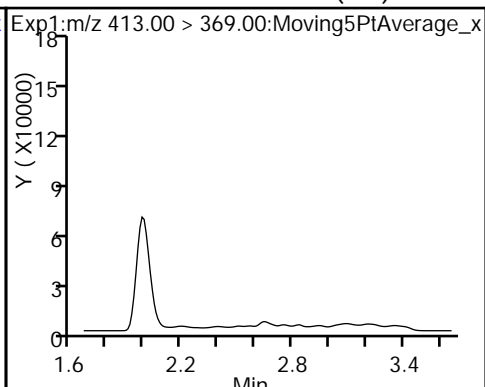
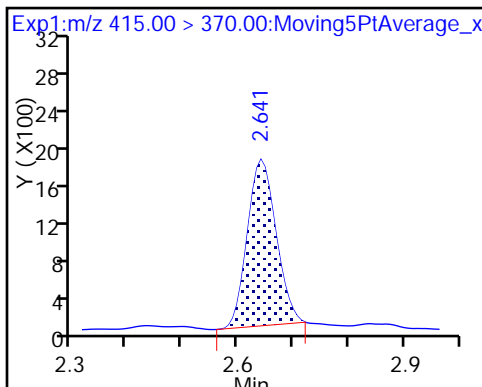
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid (ND)

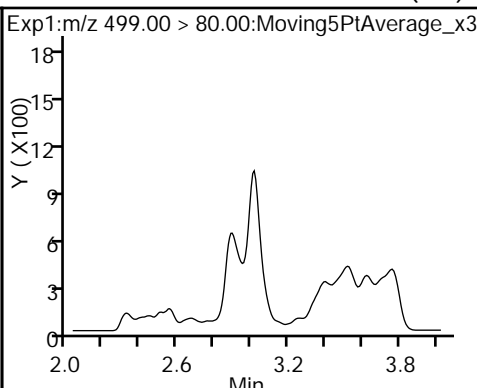
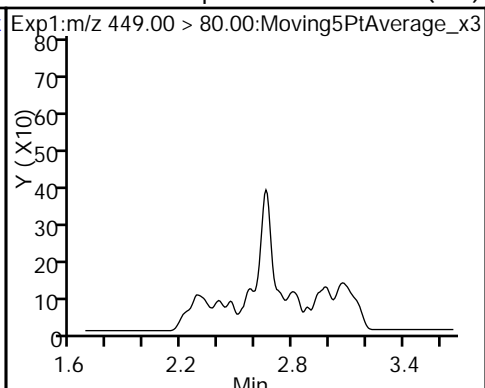
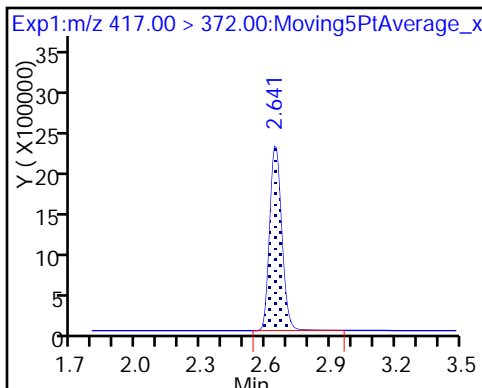
15 Perfluorooctanoic acid (ND)



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid (ND)

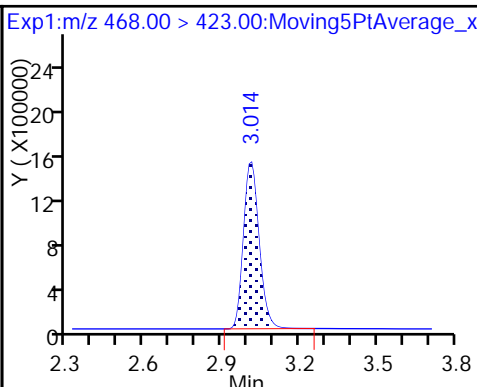
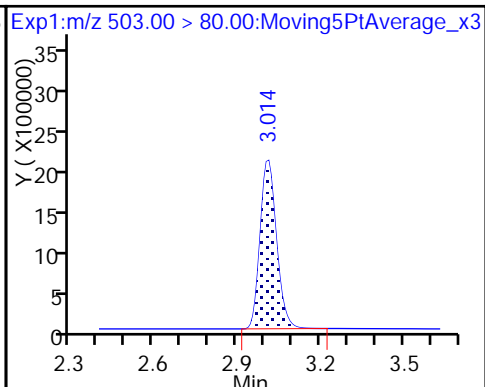
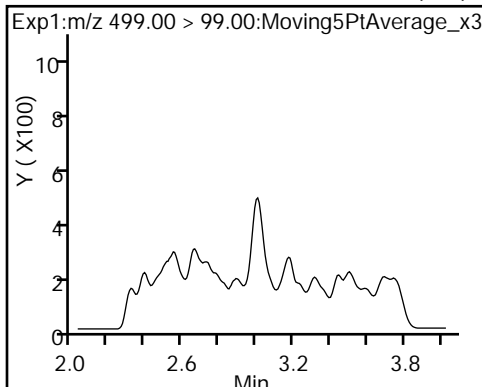
17 Perfluorooctane sulfonic acid (ND)



17 Perfluorooctane sulfonic acid (ND)

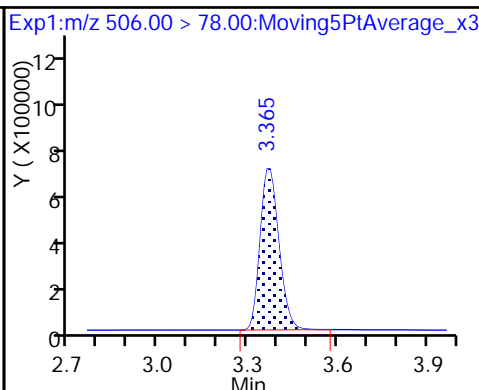
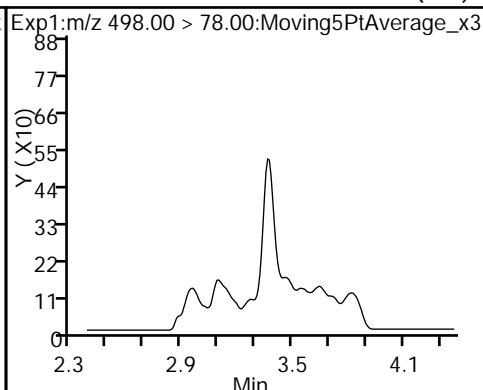
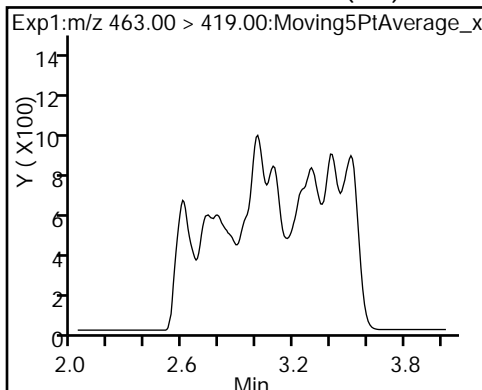
D 18 13C4 PFOS

D 19 13C5 PFNA



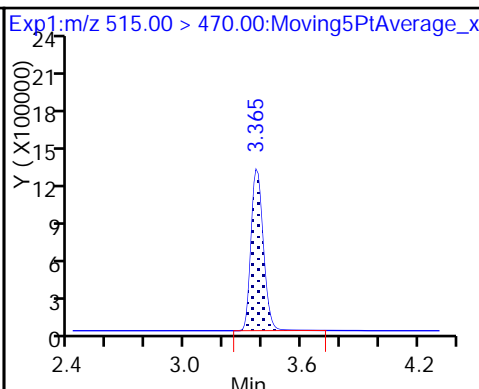
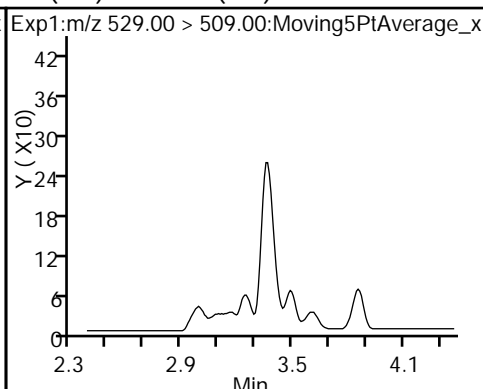
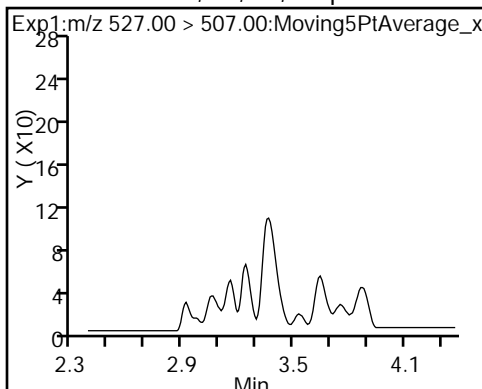
20 Perfluorononanoic acid (ND)

22 Perfluorooctane Sulfonamide (ND) D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecane-2,8:2FTS (ND)

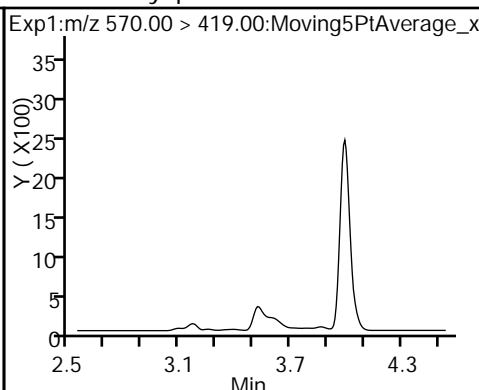
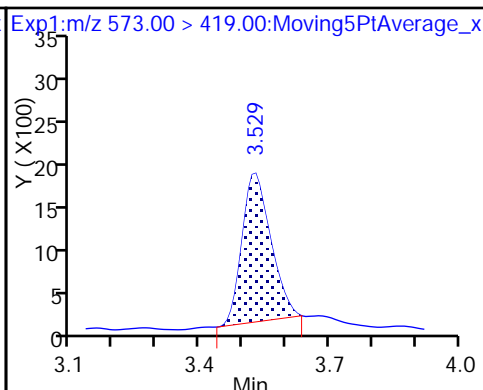
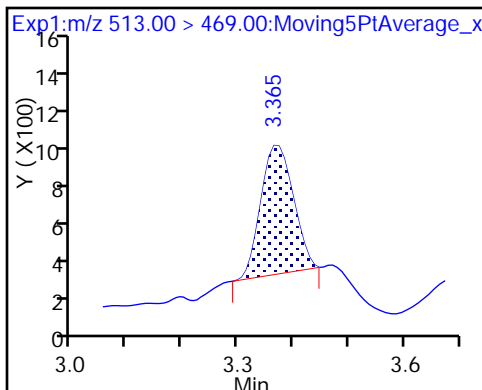
D 23 13C2 PFDA



24 Perfluorodecanoic acid

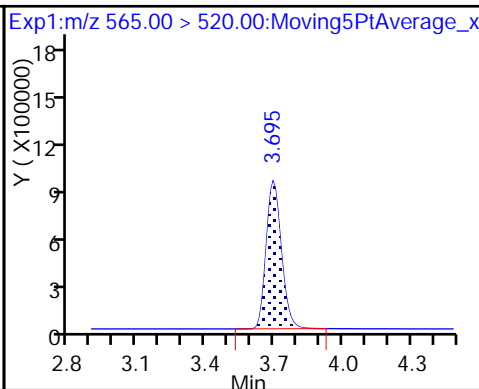
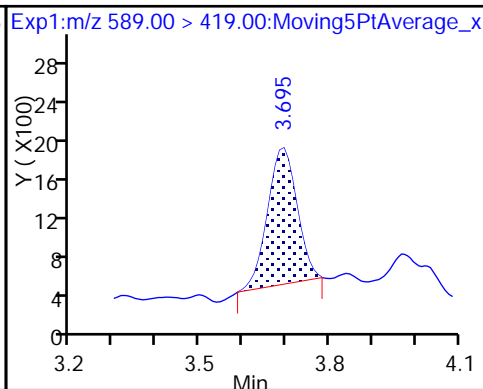
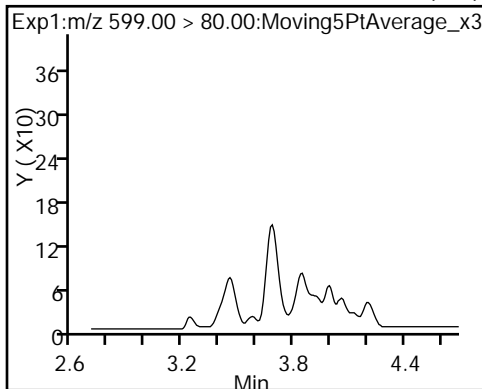
D 27 d3-NMeFOSAA

28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid (ND) D 32 d5-NEtFOSAA

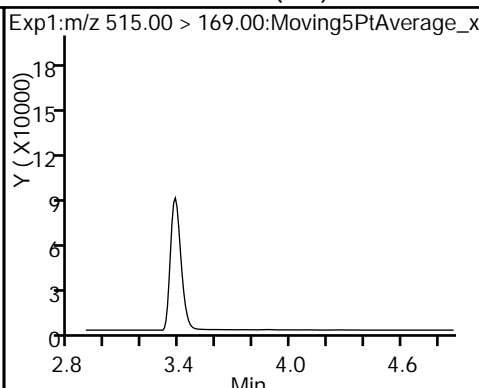
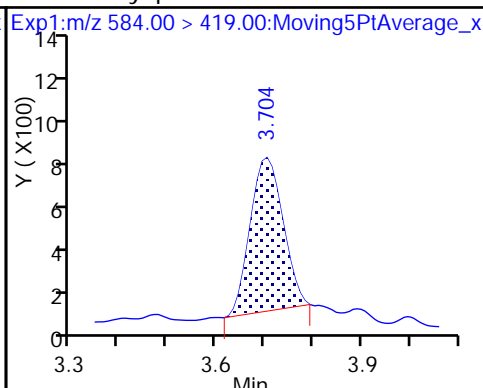
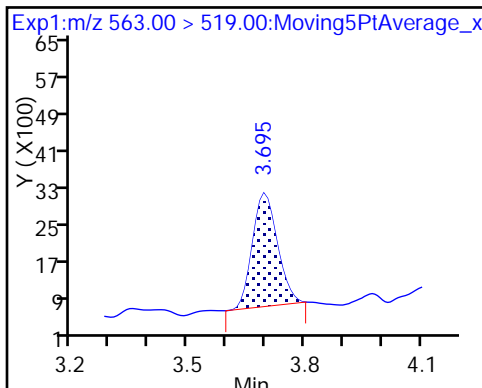
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid D

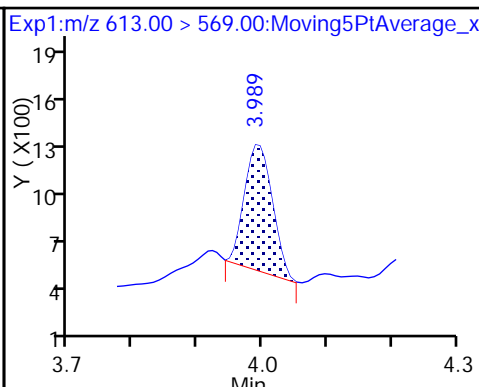
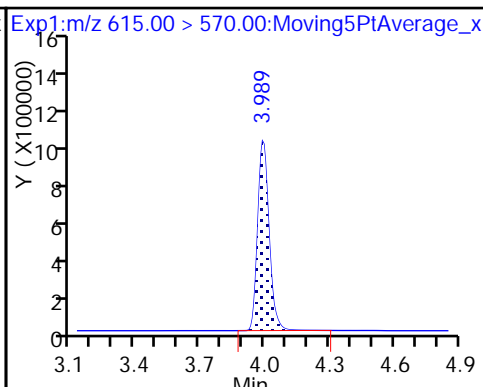
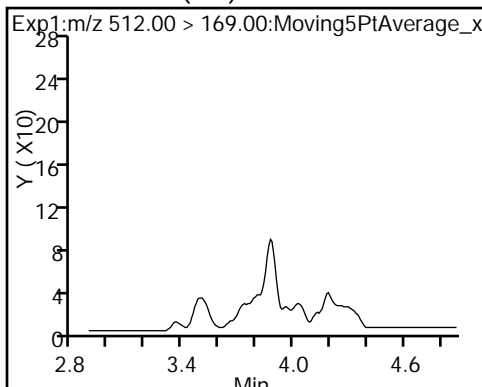
34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

D 36 13C2 PFDaA

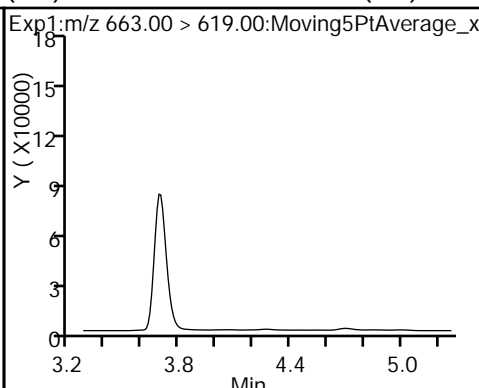
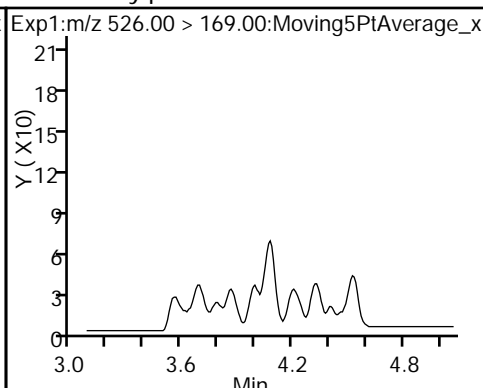
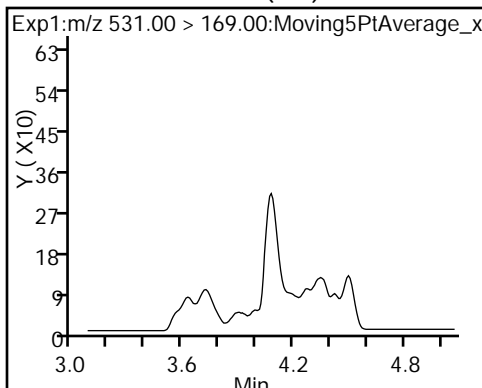
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M (ND)

39 N-ethylperfluoro-1-octanesulfonami (ND)

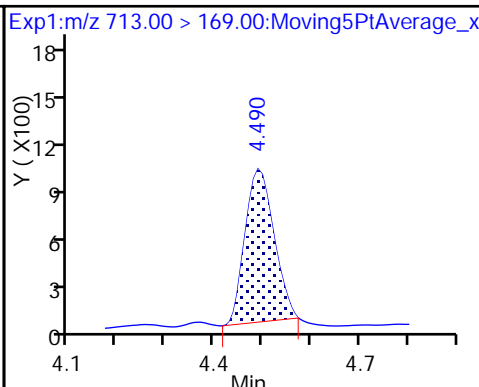
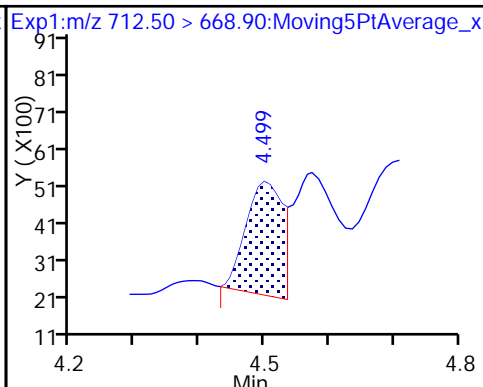
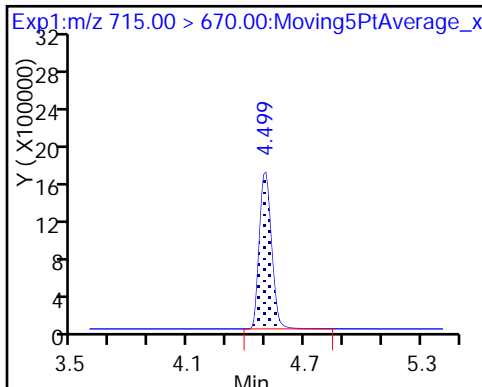
Perfluorotridecanoic acid (ND)



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

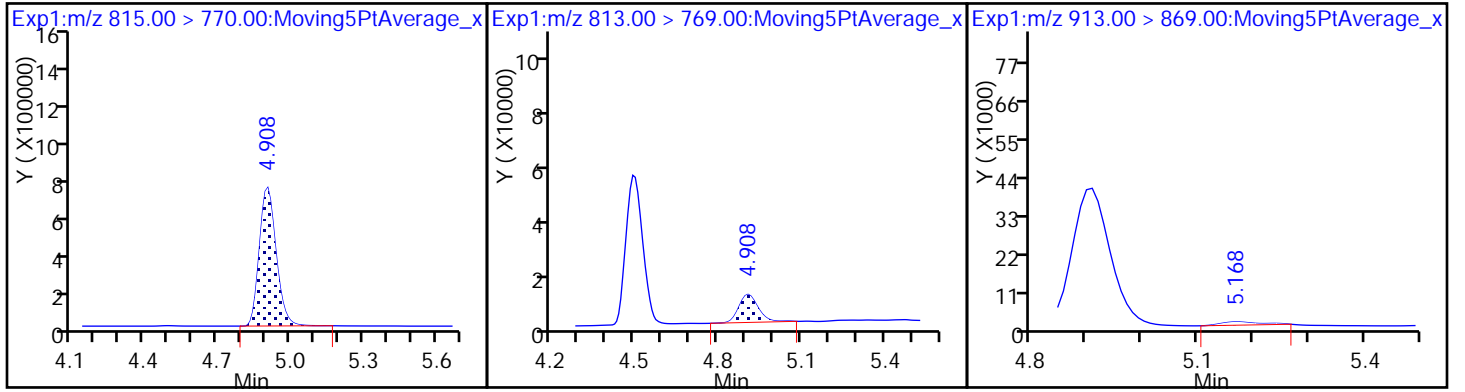
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: MB 320-172026/1-A  
 Matrix: Solid Lab File ID: 2017.07.18C\_001.d  
 Analysis Method: 537 (Modified) Date Collected: \_\_\_\_\_  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.00(g) Date Analyzed: 07/19/2017 00:01  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.30	U	0.50	0.30	0.10
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.30	U	0.50	0.30	0.13
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.30	U	0.40	0.30	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	128		25-150
STL00991	13C4 PFOS	93		25-150
STL00994	18O2 PFHxS	93		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_001.d  
 Lims ID: MB 320-172026/1-A  
 Client ID:  
 Sample Type: MB  
 Inject. Date: 19-Jul-2017 00:01:55 ALS Bottle#: 1 Worklist Smp#: 2  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: mb 320-172026/1-a  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:50:04

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.546	1.545	0.001	9839629	55.6		111	32653	
2 Perfluorobutyric acid										M
212.90 > 169.00	1.546	1.545	0.001	1.000	58847	0.3276		19.4		M
D 3 13C5-PFPeA	267.90 > 223.00	1.755	1.754	0.001	7300982	59.0		118	54410	
D 47 13C3-PFBS	301.90 > 83.00	1.774	1.782	-0.008	161971	NC			2677	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.774	1.782	-0.008	1.000	12625	0.0571			9.7	
298.90 > 99.00	1.774	1.782	-0.008	1.000	2368		5.33(0.00-0.00)		4.8	
D 40 d-N-EtFOSE-M	212.90 > 169.00	2.063	1.884	0.179	33875	NC			9.5	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.972	1.983	-0.011	1.000	1447	NR			70.0	
6 Perfluorohexanoic acid										
313.00 > 269.00	2.006	2.017	-0.011	1.000	9008	0.0749			13.5	
D 7 13C2 PFHxA	315.00 > 270.00	2.018	2.017	0.001	6363274	53.8		108	33765	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.337	2.339	-0.002	1.000	6114	0.0447			8.5	
D 9 13C4-PFHpA	367.00 > 322.00	2.329	2.339	-0.010	6714543	62.6		125	34408	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.345	2.355	-0.010	1.000	31346	0.1868			40.7	
D 11 18O2 PFHxS	403.00 > 84.00	2.345	2.355	-0.010	7848286	44.0		93.0	36628	
D 12 M2-6:2FTS	429.00 > 409.00	2.654	2.656	-0.002	4527	0.0866		0.0	252	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.661	2.656	0.005	1.000	51074	NR		2697	
* 62 13C2-PFOA	415.00	> 370.00	2.676	2.685	-0.009		6622	50.0		223	
D 14 13C4 PFOA	417.00	> 372.00	2.683	2.685	-0.002		6028032	64.0	128	33512	
15 Perfluorooctanoic acid	413.00	> 369.00	2.683	2.685	-0.002	1.000	13106	0.1023		3.9	
	413.00	> 169.00	2.683	2.685	-0.002	1.000	8827	1.48(0.90-1.10)		53.0	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.690	2.692	-0.002	1.000	5036	0.0370		124	
20 Perfluorononanoic acid	463.00	> 419.00	3.053	3.051	0.003	1.000	5973	0.0666		14.8	
D 18 13C4 PFOS	503.00	> 80.00	3.053	3.051	0.003		5742774	44.6	93.3	28374	
D 19 13C5 PFNA	468.00	> 423.00	3.053	3.051	0.003		4439448	58.4	117	19791	
D 21 13C8 FOSA	506.00	> 78.00	3.396	3.394	0.002		5226040	25.1	50.2	20637	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.406	3.394	0.012	1.003	1981	NR		103	
D 26 M2-8:2FTS	529.00	> 509.00	3.396	3.394	0.002		3433	0.0891	0.0	137	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.406	3.403	0.003	1.000	8772	0.0911		115	
24 Perfluorodecanoic acid	513.00	> 469.00	3.406	3.412	-0.006	1.000	5335	0.0765		20.0	
D 23 13C2 PFDA	515.00	> 470.00	3.406	3.412	-0.006		3508961	54.4	109	13791	
D 27 d3-NMeFOSAA	573.00	> 419.00	3.563	3.564	-0.001		3414	0.1339	0.0	83.1	
28 N-methyl perfluorooctane sulfonami	570.00	> 419.00	3.573	3.564	0.009	1.003	3242	NR		30.3	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.720	3.722	-0.002	1.000	4053	0.0541		75.6	
D 32 d5-NEtFOSAA	589.00	> 419.00	3.739	3.732	0.007		5783	0.2272	0.0	14.2	
D 30 13C2 PFUnA	565.00	> 520.00	3.739	3.732	0.007		2682934	55.6	111	14011	
33 N-ethyl perfluorooctane sulfonamid	584.00	> 419.00	3.739	3.732	0.007	1.000	2239	NR		54.6	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.739	3.732	0.007	1.000	10122	0.1792		24.8	
D 34 d-N-MeFOSA-M	515.00	> 169.00	3.904	3.898	0.006		2728	0.0522	0.0	1.1	
37 Perfluorododecanoic acid	613.00	> 569.00	4.032	4.030	0.002	1.000	4222	0.0937		11.6	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 36 13C2 PFDaA	615.00 > 570.00	4.032	4.030	0.002		2356537	49.7	99.4	6613	
D 38 d-N-EtFOSA-M	531.00 > 169.00	4.090	4.088	0.002		2348	0.0450	0.0	65.0	
39 N-ethylperfluoro-1-octanesulfonami	526.00 > 169.00	4.090	4.097	-0.007	1.000	1670	NR		56.8	
41 Perfluorotridecanoic acid	663.00 > 619.00	4.301	4.291	0.010	1.000	3085	0.0764		1.0	
D 43 13C2-PFTeDA	715.00 > 670.00	4.526	4.526	0.0		3682788	41.5	83.1	14727	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.939	4.934	0.005	1.000	28550	-0.0369		5.3	
D 44 13C2-PFHxDA	815.00 > 770.00	4.939	4.934	0.005		1221340	27.0	54.0	2488	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.284	5.281	0.003	1.000	8224	0.2214		3.5	

### QC Flag Legend

#### Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

#### Review Flags

M - Manually Integrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_001.d

Injection Date: 19-Jul-2017 00:01:55

Instrument ID: A8\_N

Lims ID: MB 320-172026/1-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 1

Worklist Smp#: 2

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

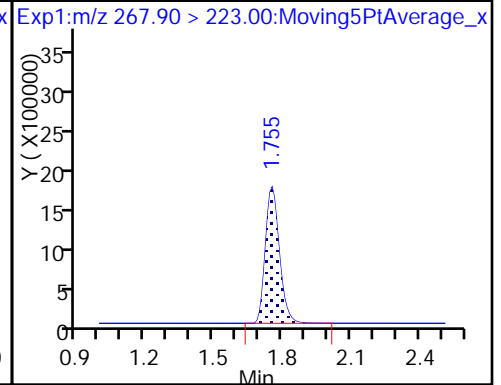
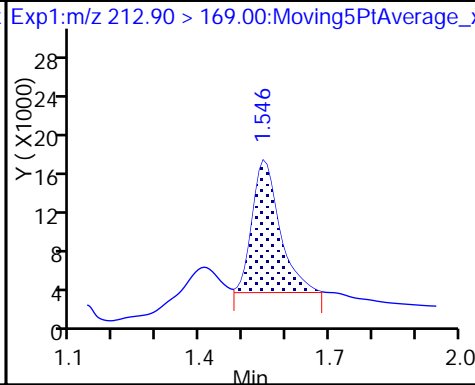
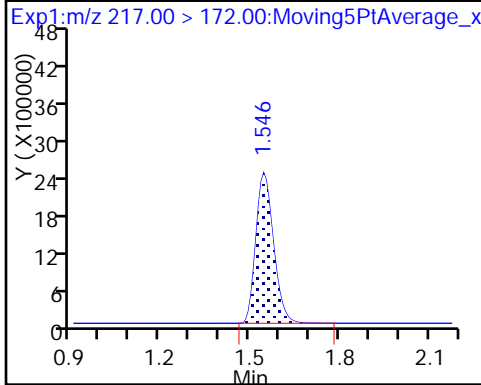
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid (M)

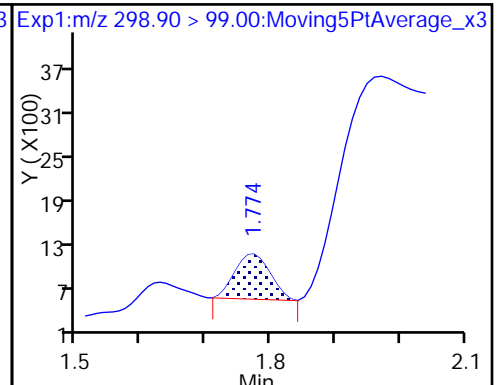
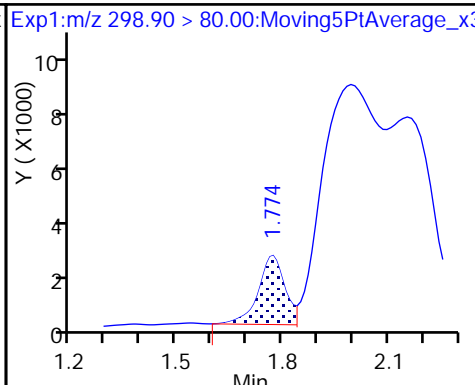
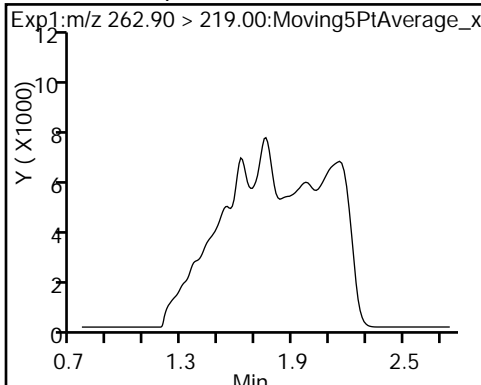
D 3 13C5-PFPeA



4 Perfluoropentanoic acid (ND)

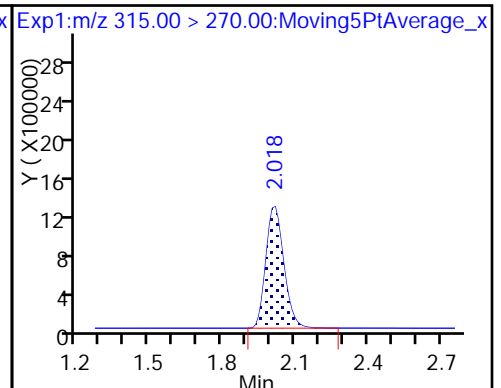
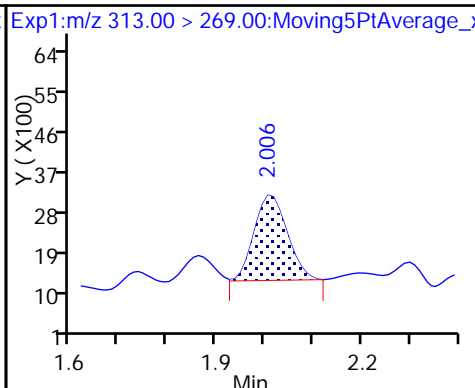
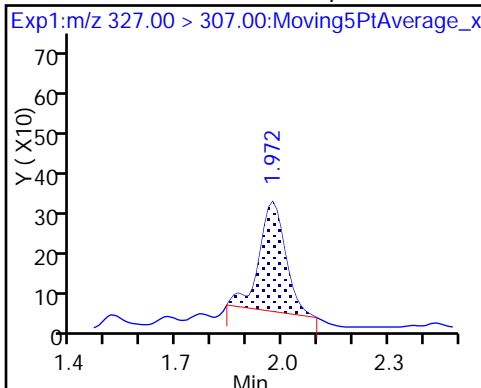
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

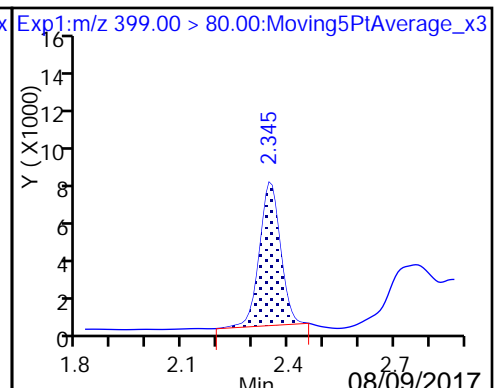
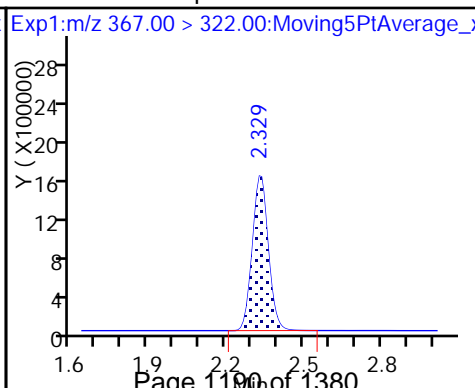
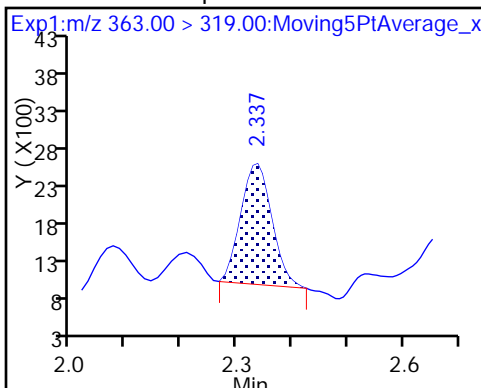
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

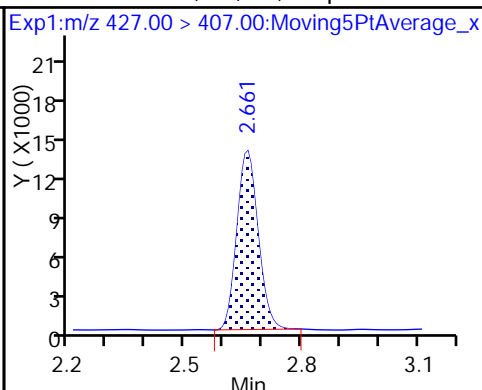
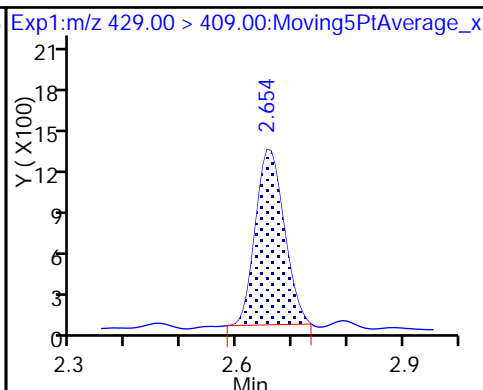
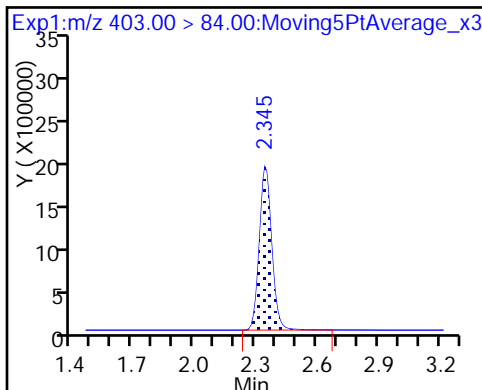
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

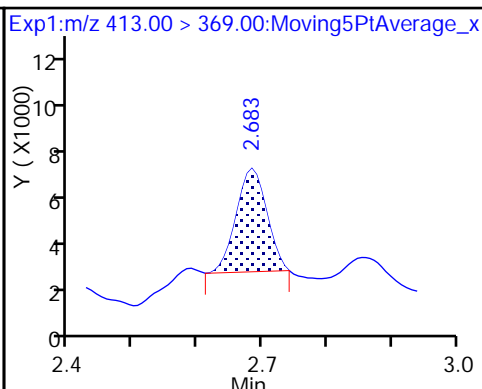
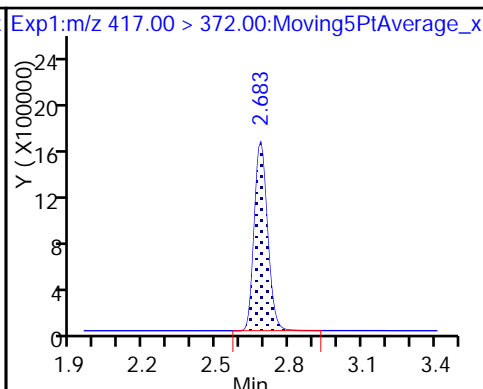
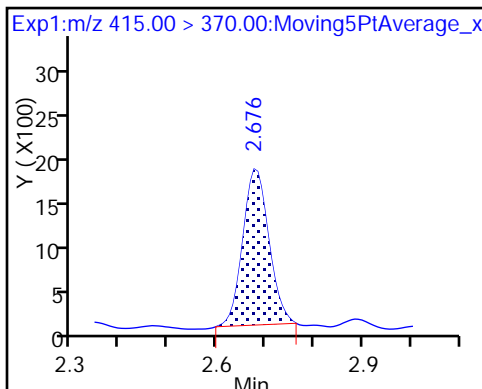
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

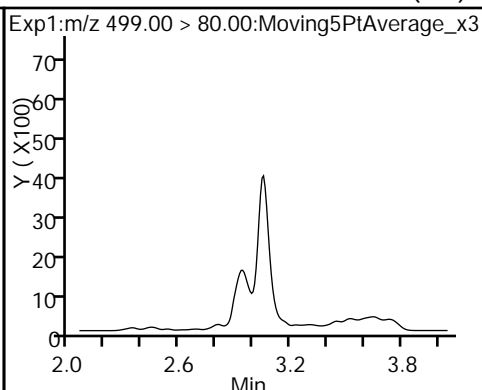
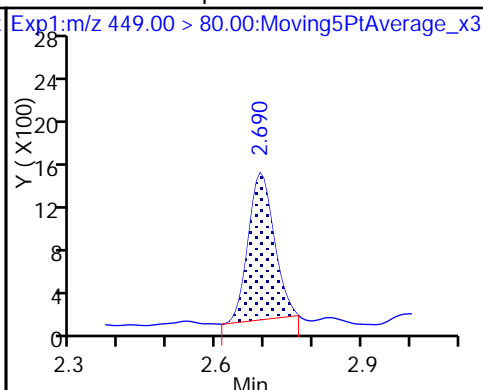
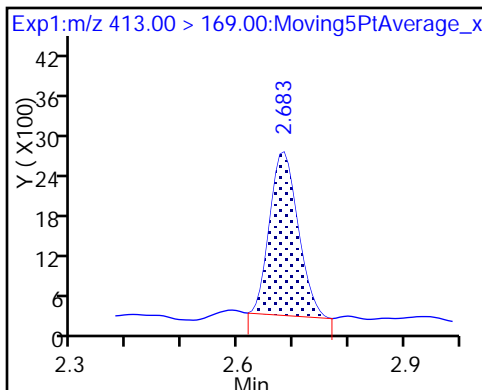
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

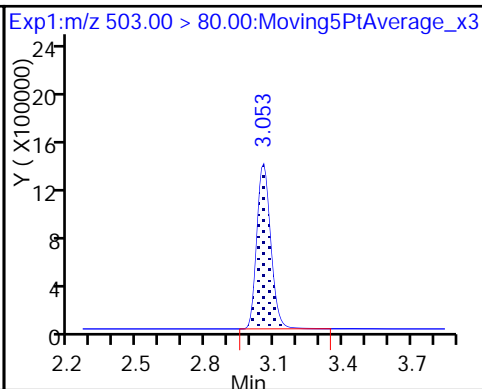
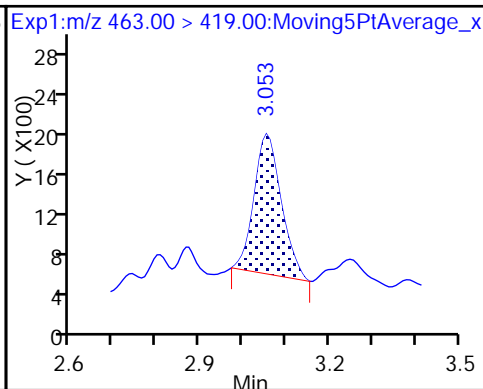
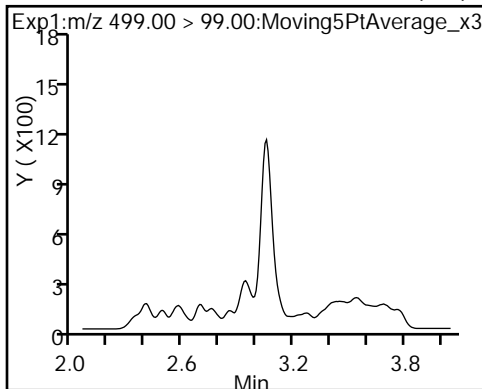
17 Perfluorooctane sulfonic acid (ND)



17 Perfluorooctane sulfonic acid (ND)

20 Perfluorononanoic acid

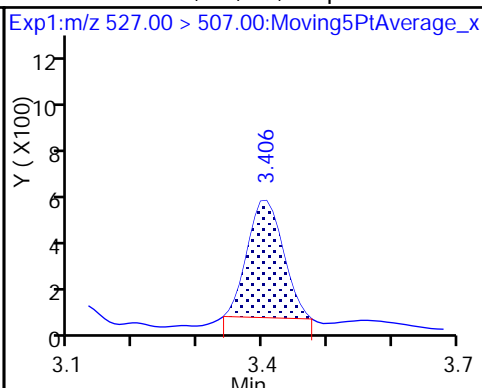
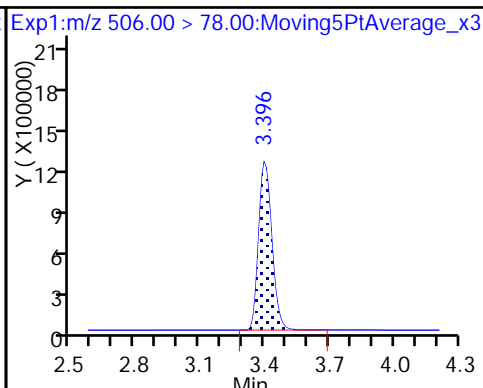
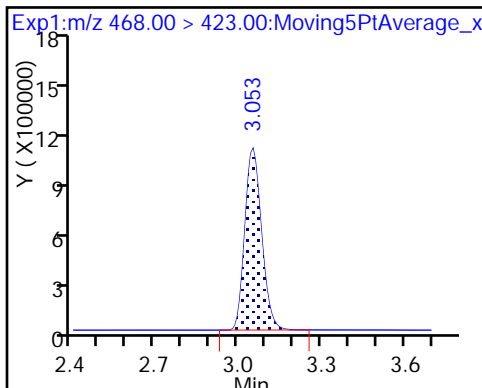
D 18 13C4 PFOS



D 19 13C5 PFNA

D 21 13C8 FOSA

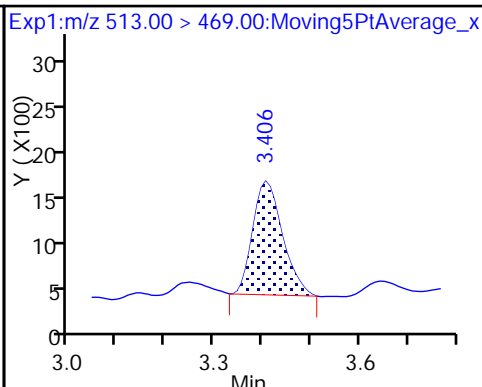
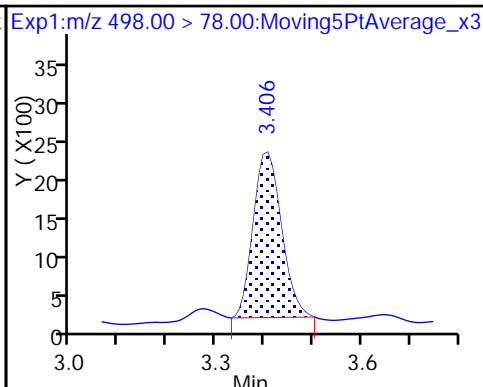
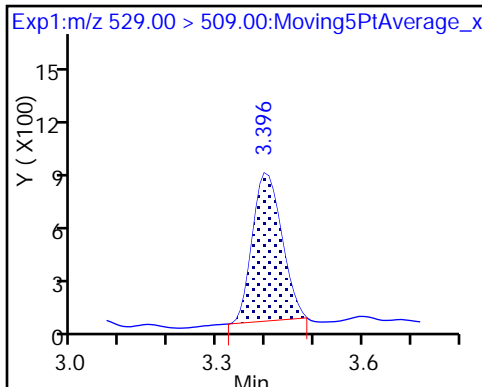
25 Sodium 1H,1H,2H,2H-perfluorodecane



D 26 M2-8:2FTS

22 Perfluorooctane Sulfonamide

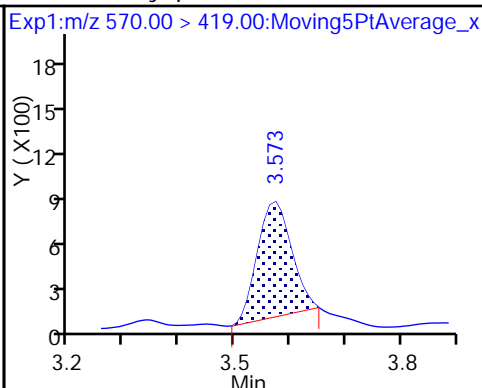
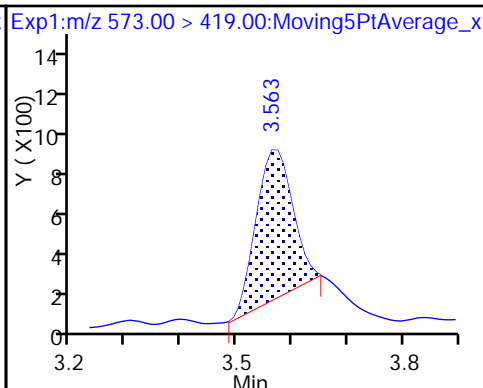
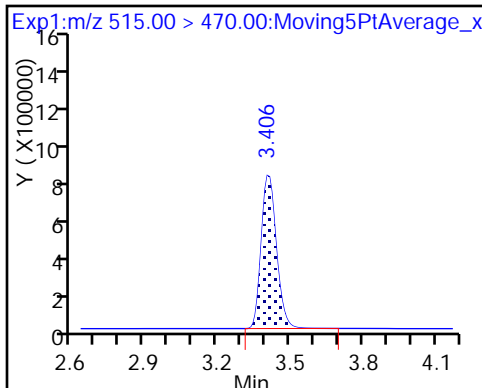
24 Perfluorodecanoic acid



D 23 13C2 PFDA

D 27 d3-NMeFOSAA

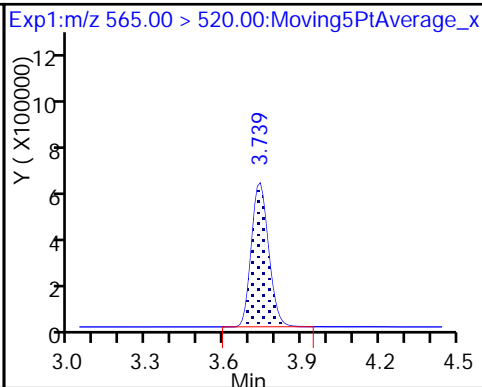
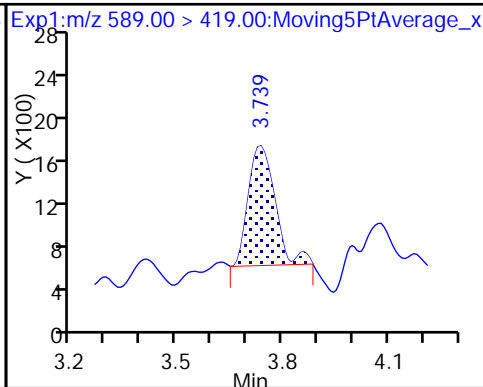
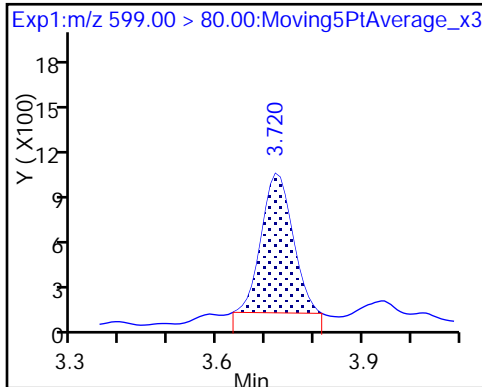
28 N-methyl perfluorooctane sulfonami



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

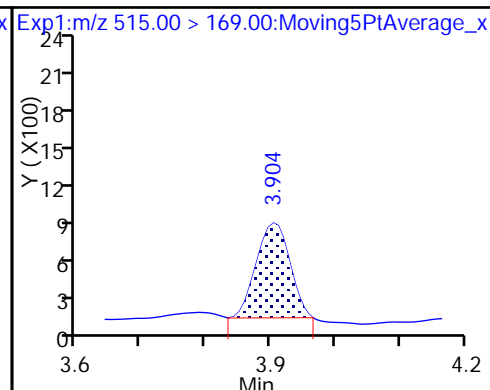
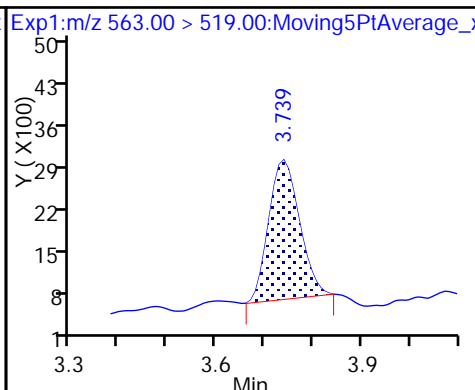
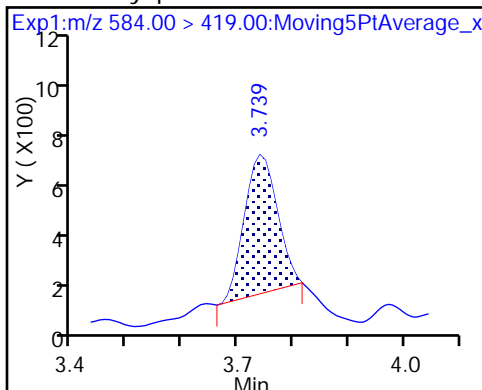
D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid

31 Perfluoroundecanoic acid

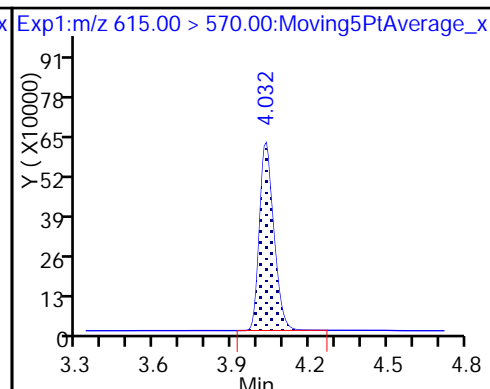
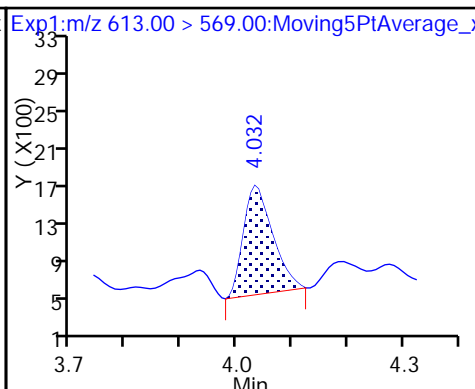
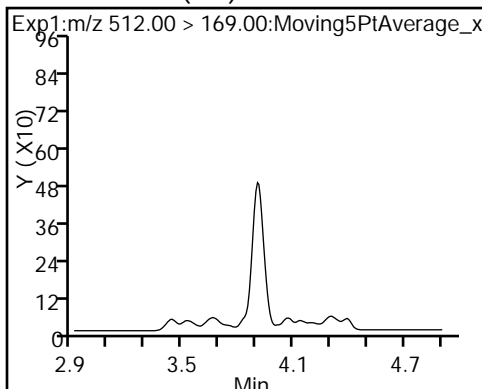
D 34 d-N-MeFOSA-M



35 MeFOSA (ND)

37 Perfluorododecanoic acid

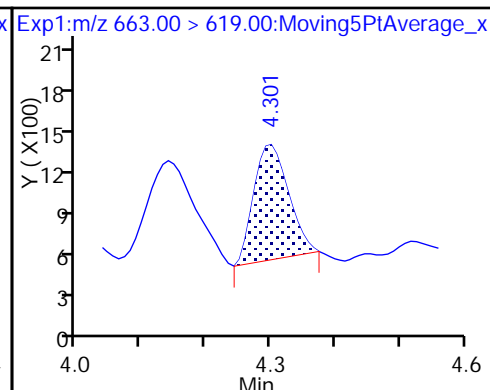
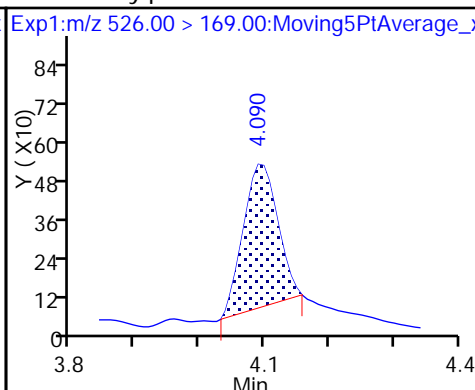
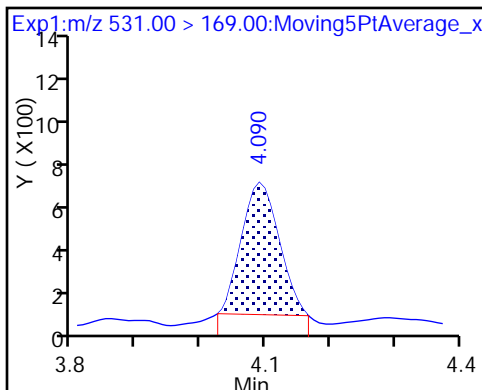
D 36 13C2 PFDa



D 38 d-N-EtFOSA-M

39 N-ethylperfluoro-1-octanesulfonami

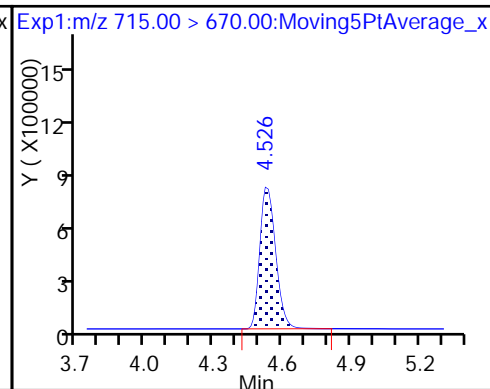
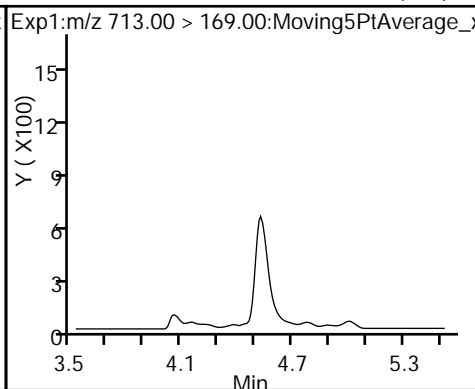
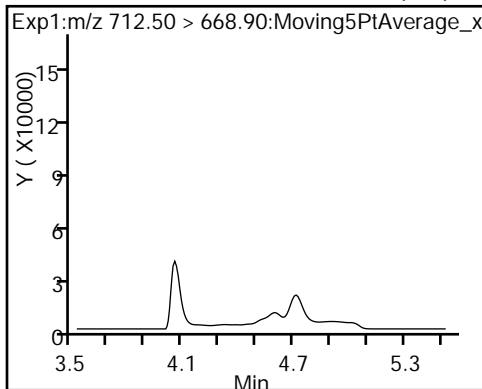
41 Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid (ND)

42 Perfluorotetradecanoic acid (ND)

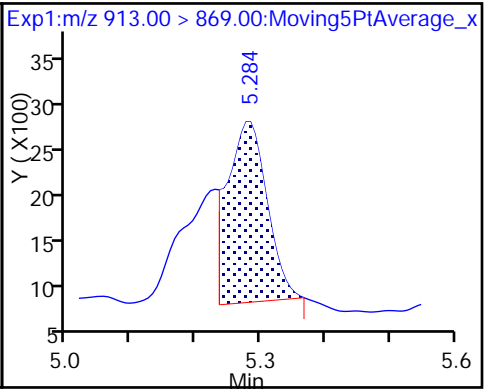
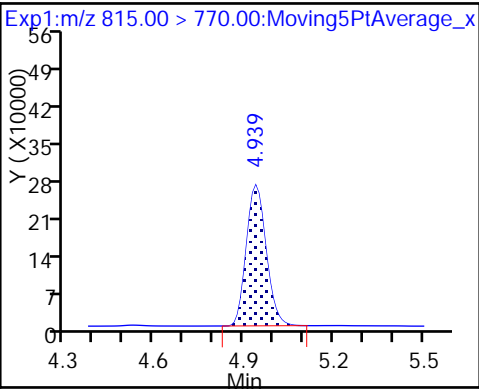
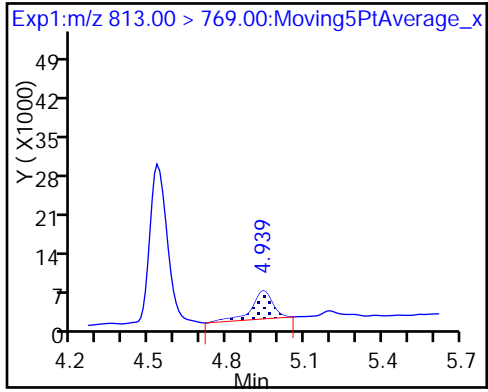
D 43 13C2-PFTeDa



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCS 320-170766/2-A  
 Matrix: Water Lab File ID: 2017.06.27\_PFC\_B\_007.d  
 Analysis Method: 537 (Modified) Date Collected: \_\_\_\_\_  
 Extraction Method: 3535 Date Extracted: 06/23/2017 16:59  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 06/28/2017 09:25  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171335 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	41.6		2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	41.6		4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	39.8		2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	117		25-150
STL00991	13C4 PFOS	101		25-150
STL00994	18O2 PFHxS	103		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_007.d  
 Lims ID: LCS 320-170766/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 28-Jun-2017 09:25:34 ALS Bottle#: 6 Worklist Smp#: 7  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcs 320-170766/2-a  
 Misc. Info.: Plate: 1 Rack: 4  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 15:52:02 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK008

First Level Reviewer: chandrasenas Date: 28-Jun-2017 11:41:28

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.550	1.541	0.009	12092066	51.7		103	30770	
2 Perfluorobutyric acid	212.90 > 169.00	1.550	1.541	0.009	1.000	5173403	23.8	119	3529	
D 3 13C5-PFPeA	267.90 > 223.00	1.751	1.742	0.009	8653495	53.8		108	25330	
4 Perfluoropentanoic acid	262.90 > 219.00	1.751	1.742	0.009	1.000	3686849	20.7	103	1897	
D 47 13C3-PFBS	301.90 > 83.00	1.769	1.760	0.009	210228	NC			3793	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.777	1.769	0.008	1.000	6073598	19.9	113	2753	
	298.90 > 99.00	1.777	1.769	0.008	1.000	2369660	2.56(0.00-0.00)		1996	
D 7 13C2 PFHxA	315.00 > 270.00	2.013	2.002	0.011	8252999	53.8		108	20719	
6 Perfluorohexanoic acid	313.00 > 269.00	2.013	2.002	0.011	1.000	3460006	20.6	103	4353	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.325	2.312	0.013	1.000	3704301	20.8	104	3874	
D 9 13C4-PFHpA	367.00 > 322.00	2.325	2.312	0.013	8348478	61.0		122	27987	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.341	2.329	0.012	1.000	4606503	19.1	105	2333	
D 11 18O2 PFHxS	403.00 > 84.00	2.341	2.329	0.012	10346566	48.6		103	30375	
D 14 13C4 PFOA	417.00 > 372.00	2.670	2.656	0.014	7662736	58.7		117	14632	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.670	2.656	0.014	1.000	3380406	20.8		104	991	
413.00 > 169.00	2.670	2.656	0.014	1.000	1969535		1.72(0.90-1.10)		4493	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.677	2.664	0.013	1.000	4276598	22.5		118	10691	
D 19 13C5 PFNA										
468.00 > 423.00	3.036	3.026	0.010		6014205	57.3		115	9211	
D 18 13C4 PFOS										
503.00 > 80.00	3.036	3.026	0.010		7893736	48.5		101	54285	
20 Perfluorononanoic acid										
463.00 > 419.00	3.036	3.026	0.010	1.000	2651312	22.2		111	4488	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.036	3.026	0.010	1.000	3600565	20.8		112	7808	
499.00 > 99.00	3.036	3.026	0.010	1.000	763424		4.72(0.90-1.10)		3797	
D 21 13C8 FOSA										
506.00 > 78.00	3.380	3.377	0.003		4995675	18.9		37.9	33920	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.380	3.377	0.003	1.000	1979228	20.3		102	11776	
D 23 13C2 PFDA										
515.00 > 470.00	3.390	3.386	0.004		6215063	62.1		124	54864	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.390	3.386	0.004	1.000	2600267	21.7		108	12276	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.702	3.698	0.004	1.000	2102459	20.0		104	12449	
D 30 13C2 PFUnA										
565.00 > 520.00	3.721	3.717	0.004		4261878	57.4		115	13251	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.721	3.717	0.004	1.000	1906313	21.0		105	4300	
D 36 13C2 PFDoA										
615.00 > 570.00	4.015	4.013	0.002		4144751	56.5		113	16591	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.015	4.013	0.002	1.000	1602823	20.3		102	4092	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.281	4.277	0.004	1.000	1597697	19.9		99.3	466	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.517	4.515	0.002		8380823	55.3		111	151904	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.517	4.515	0.002	1.000	3654363	18.9		94.5	1403	
713.00 > 169.00	4.517	4.515	0.002	1.000	463633		7.88(0.00-0.00)		9132	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.929	4.929	0.0	1.000	1615673	18.7		93.6	312	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.929	4.929	0.0		4220301	50.3		101	8460	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.282	5.275	0.007	1.000	1616874	18.1		90.5	465	

[QC Flag Legend](#)

Processing Flags

NC - Not Calibrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_007.d

Injection Date: 28-Jun-2017 09:25:34

Instrument ID: A8\_N

Lims ID: LCS 320-170766/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 6

Worklist Smp#: 7

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

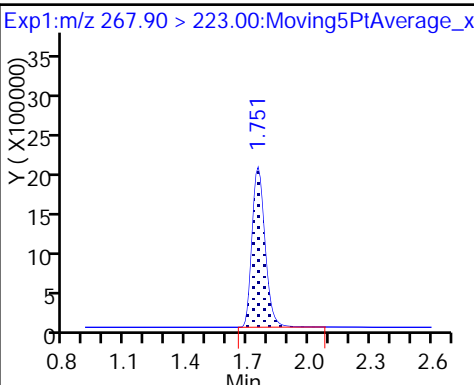
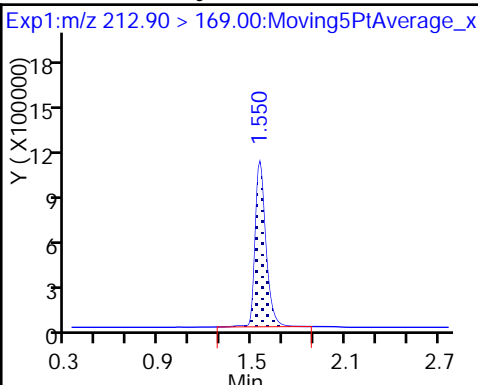
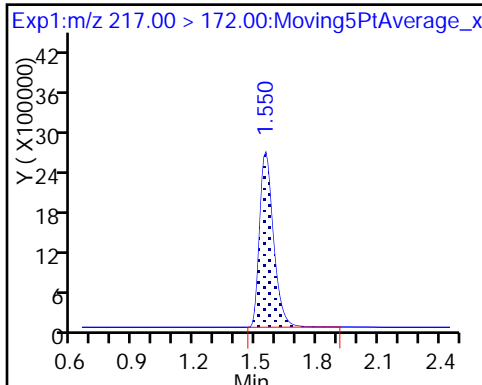
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

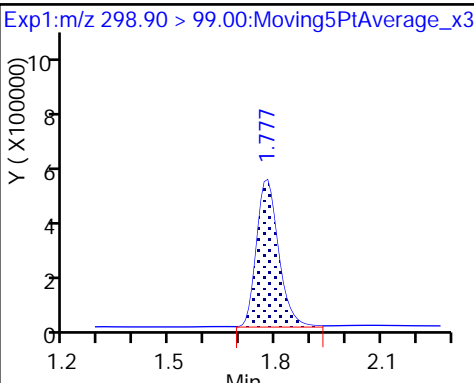
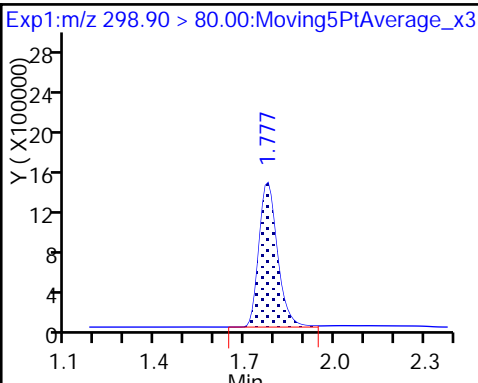
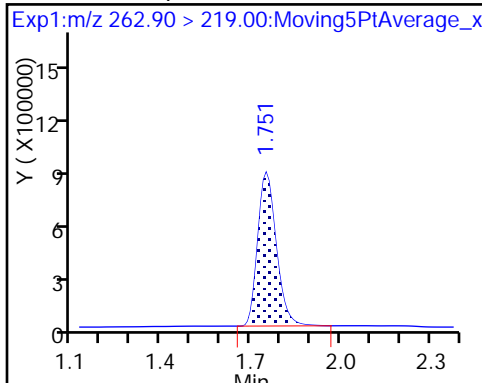
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

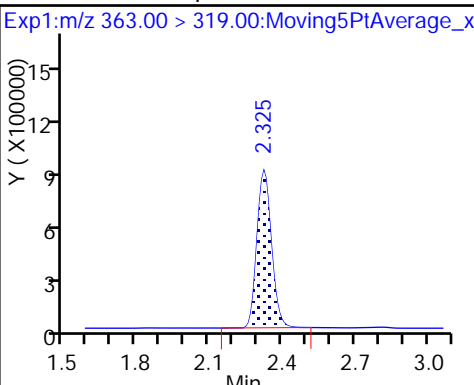
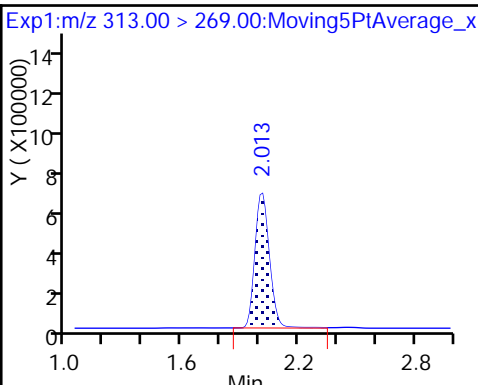
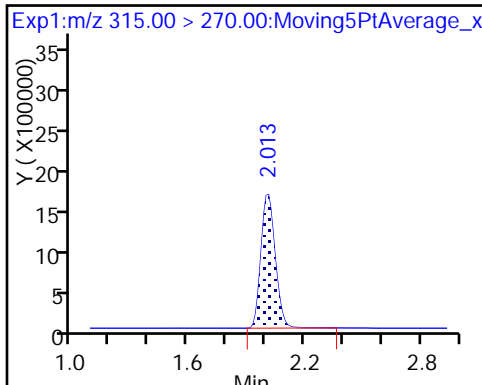
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

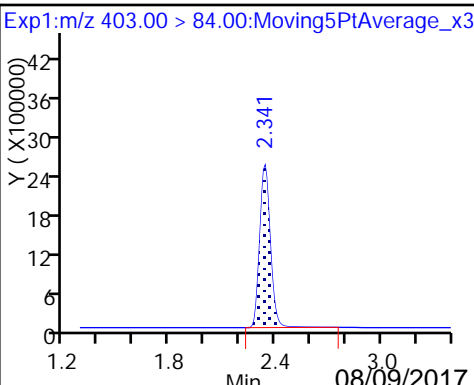
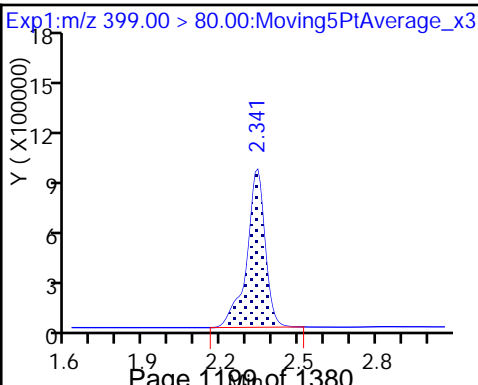
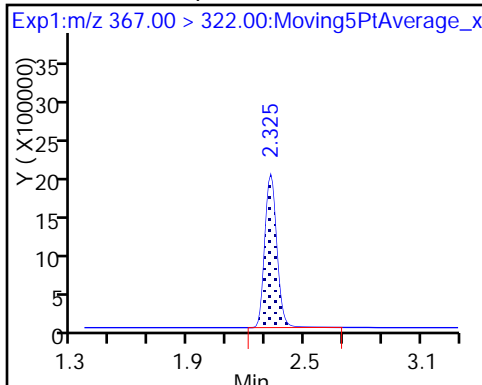
10 Perfluoroheptanoic acid



D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid

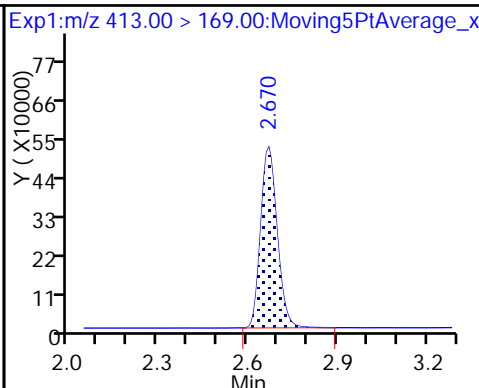
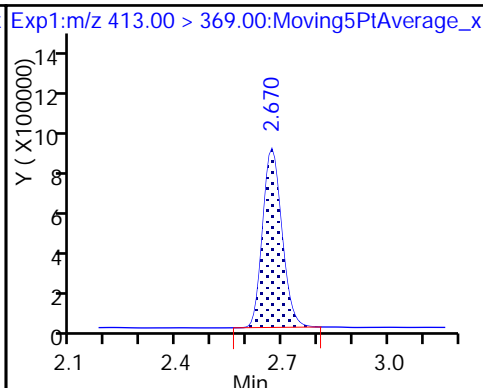
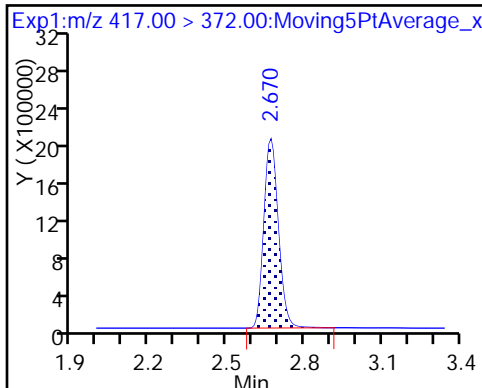
D 11 18O2 PFHxS



D 14 13C4 PFOA

15 Perfluorooctanoic acid

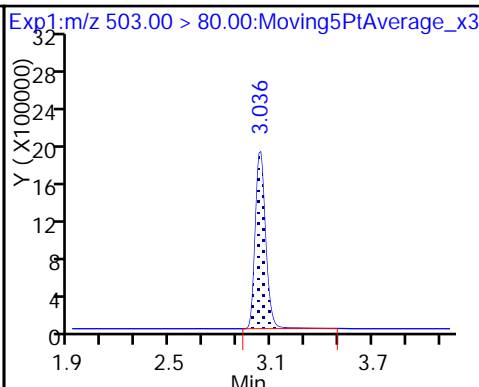
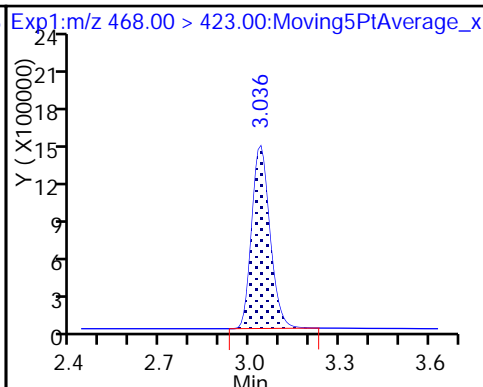
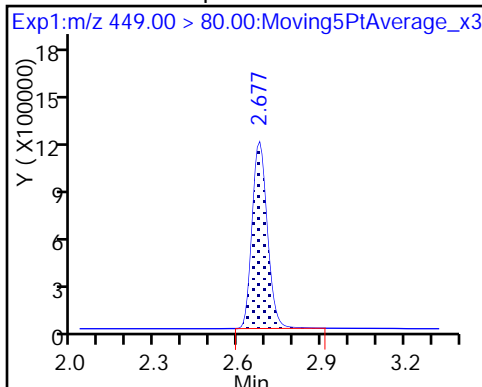
15 Perfluorooctanoic acid



16 Perfluoroheptanesulfonic Acid

D 19 13C5 PFNA

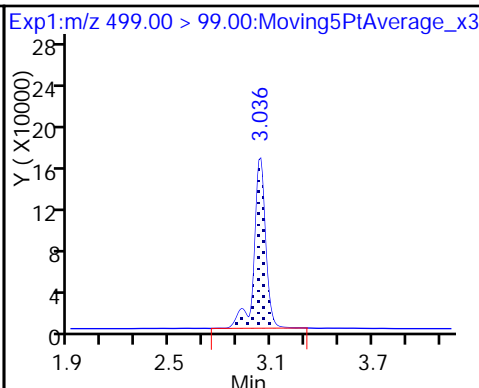
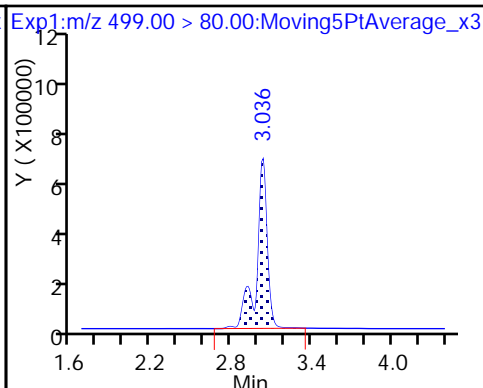
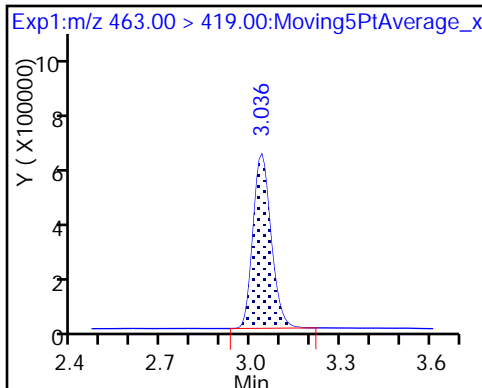
D 18 13C4 PFOS



20 Perfluorononanoic acid

17 Perfluorooctane sulfonic acid

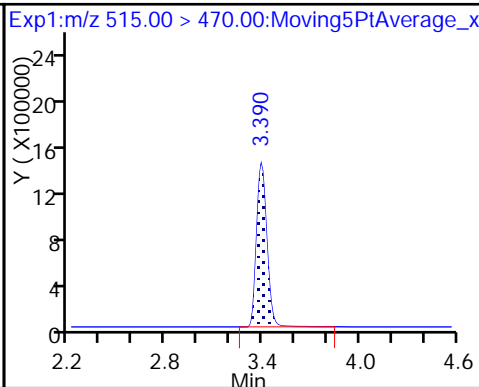
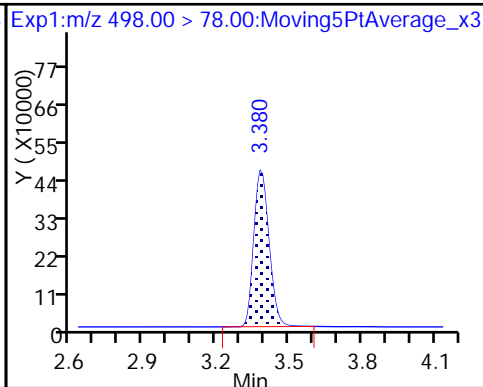
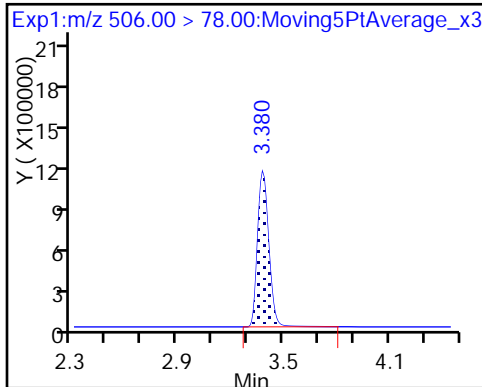
17 Perfluorooctane sulfonic acid



D 21 13C8 FOSA

22 Perfluorooctane Sulfonamide

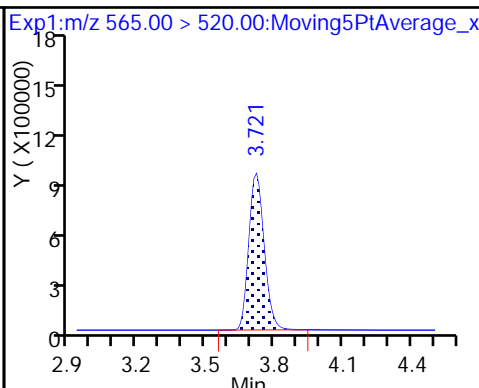
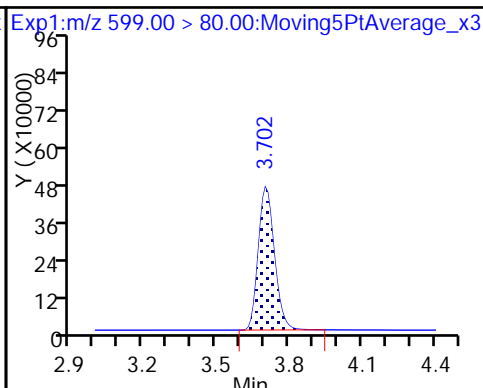
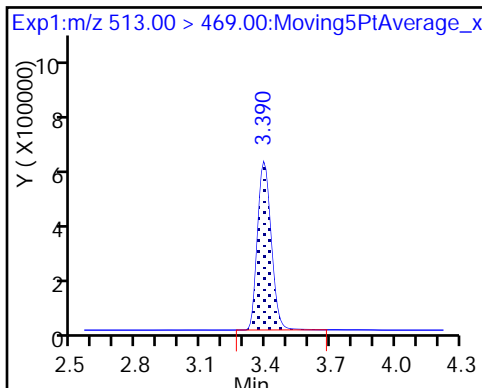
D 23 13C2 PFDA



24 Perfluorodecanoic acid

29 Perfluorodecane Sulfonic acid

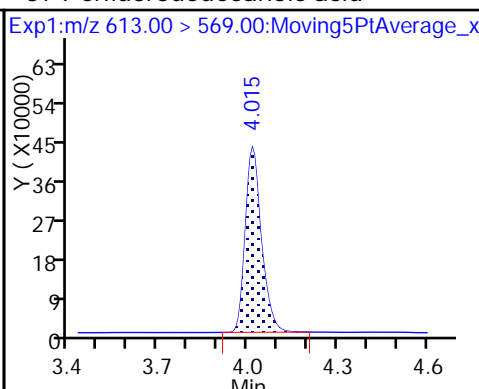
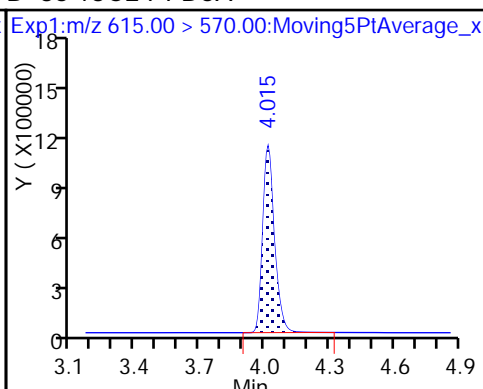
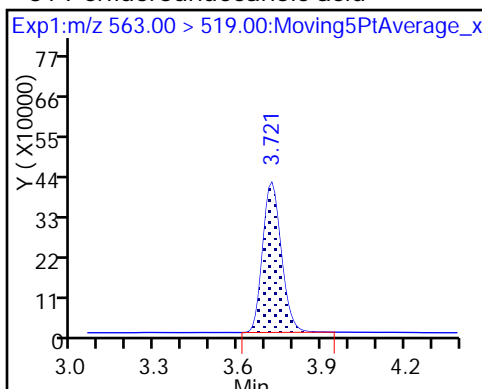
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

D 36 13C2 PFDaA

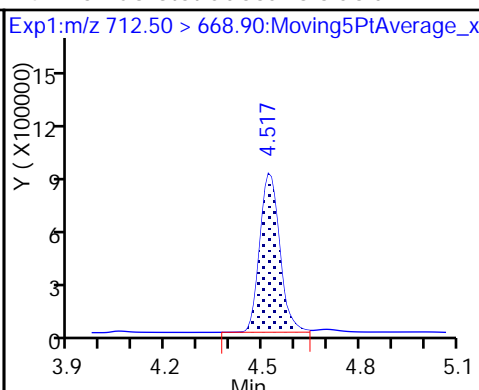
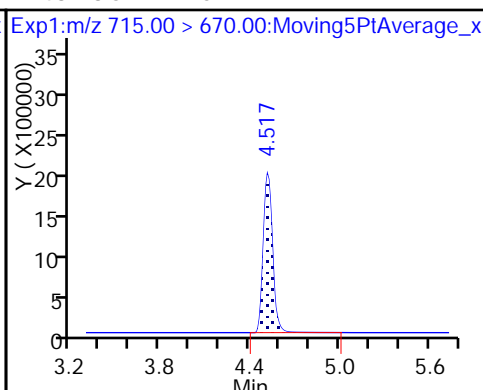
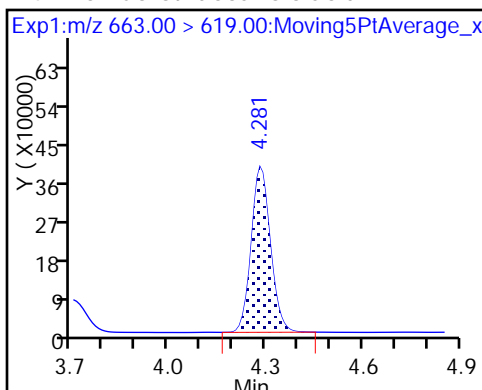
37 Perfluorododecanoic acid



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

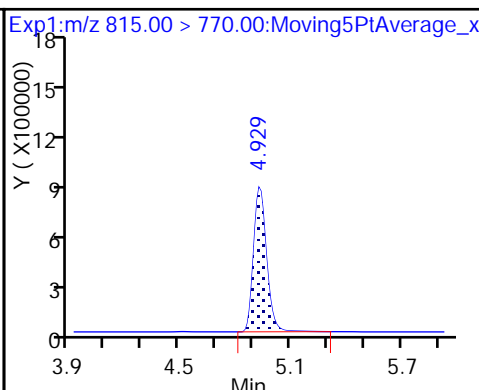
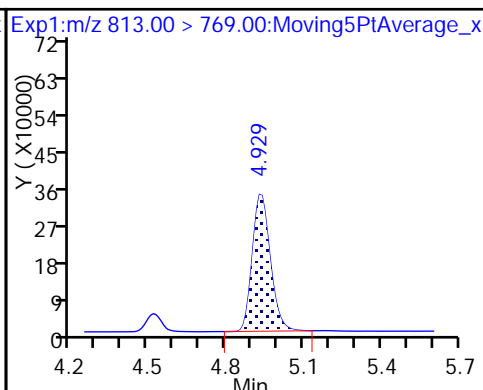
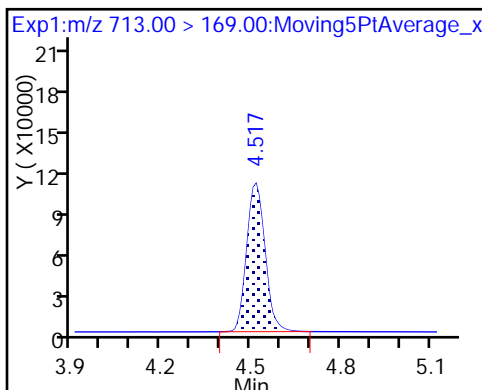
42 Perfluorotetradecanoic acid



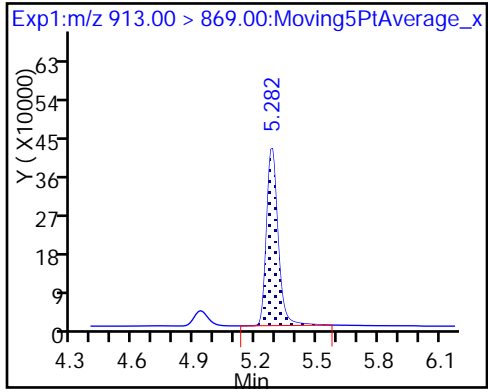
42 Perfluorotetradecanoic acid

45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCS 320-170805/2-A  
 Matrix: Water Lab File ID: 2017.06.28B\_004.d  
 Analysis Method: 537 (Modified) Date Collected: \_\_\_\_\_  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 06/28/2017 23:40  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	41.3		2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	41.2		4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	37.7		2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	125		25-150
STL00991	13C4 PFOS	107		25-150
STL00994	18O2 PFHxS	116		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_004.d  
 Lims ID: LCS 320-170805/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 28-Jun-2017 23:40:35 ALS Bottle#: 2 Worklist Smp#: 4  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcs 320-170805/2-a  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:36:14

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.535	1.533	0.001	1.000	5690093	23.6		118	1506	
D 1 13C4 PFBA										
217.00 > 172.00	1.535	1.533	0.001		13377116	57.2		114	18504	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.735	1.742	-0.007	1.000	4084299	20.5		102	1876	
D 3 13C5-PFPeA										
267.90 > 223.00	1.735	1.742	-0.007		9679624	60.2		120	26544	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	6508719	18.8		107	3328	
298.90 > 99.00	1.753	1.760	-0.007	1.000	2650839		2.46(0.00-0.00)		3967	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.760	-0.007		236057	NC			5115	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.992	-0.010		9216744	60.1		120	18868	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	2.003	-0.021	1.000	3790674	20.2		101	5505	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.300	2.312	-0.012	1.000	3695585	19.9		99.5	3604	
D 9 13C4-PFHpA										
367.00 > 322.00	2.300	2.312	-0.012		8695655	63.5		127	18955	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.309	2.329	-0.020	1.000	5184395	18.9		104	2816	
D 11 18O2 PFHxS										
403.00 > 84.00	2.309	2.329	-0.020		11719130	55.1		116	35114	
15 Perfluorooctanoic acid										
413.00 > 369.00	2.644	2.663	-0.019	1.000	3556971	20.6		103	873	
413.00 > 169.00	2.644	2.663	-0.019	1.000	2029838		1.75(0.90-1.10)		5309	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 14 13C4 PFOA	417.00	> 372.00	2.644	2.663	-0.019	8126542	62.3	125	24368	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.651	2.671	-0.020	1.000	4824578	24.1	127	16248
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.010	3.026	-0.016	1.000	3764633	20.6	111	8117
	499.00	> 99.00	3.002	3.026	-0.024	0.997	819074	4.60(0.90-1.10)		3928
D 18 13C4 PFOS	503.00	> 80.00	3.002	3.026	-0.024	8321604	51.1	107	13696	
D 19 13C5 PFNA	468.00	> 423.00	3.010	3.026	-0.016	6090658	58.0	116	13832	
20 Perfluorononanoic acid	463.00	> 419.00	3.010	3.026	-0.016	1.000	2539867	21.0	105	5559
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.369	3.379	-0.010	1.000	2459164	20.0	99.8	13307
D 21 13C8 FOSA	506.00	> 78.00	3.369	3.379	-0.010	6322844	24.0	47.9	103239	
D 23 13C2 PFDA	515.00	> 470.00	3.360	3.388	-0.028	5329068	53.3	107	27261	
24 Perfluorodecanoic acid	513.00	> 469.00	3.360	3.388	-0.028	1.000	2170447	21.1	106	9514
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.680	3.700	-0.020	1.000	2176944	19.6	102	14401
D 30 13C2 PFUnA	565.00	> 520.00	3.690	3.710	-0.020	3948656	53.1	106	13855	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.690	3.710	-0.020	1.000	1817051	21.6	108	3936
D 36 13C2 PFDoA	615.00	> 570.00	3.986	4.008	-0.022	3586991	48.9	97.7	10780	
37 Perfluorododecanoic acid	613.00	> 569.00	3.986	4.008	-0.022	1.000	1432124	21.0	105	4351
41 Perfluorotridecanoic acid	663.00	> 619.00	4.252	4.273	-0.021	1.000	1505249	21.6	108	381
D 43 13C2-PFTeDA	715.00	> 670.00	4.484	4.510	-0.026	7016842	46.3	92.7	29463	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.493	4.510	-0.017	1.000	3198606	19.1	95.6	1367
	713.00	> 169.00	4.484	4.510	-0.026	0.998	383436	8.34(0.00-0.00)		6546
D 44 13C2-PFHxDA	815.00	> 770.00	4.900	4.922	-0.022	3426022	40.8	81.7	2538	
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.900	4.922	-0.022	1.000	1322025	17.7	88.3	182
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.235	5.265	-0.030	1.000	1193077	15.4	77.1	229

[QC Flag Legend](#)

Processing Flags

NC - Not Calibrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_004.d

Injection Date: 28-Jun-2017 23:40:35

Instrument ID: A8\_N

Lims ID: LCS 320-170805/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 4

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

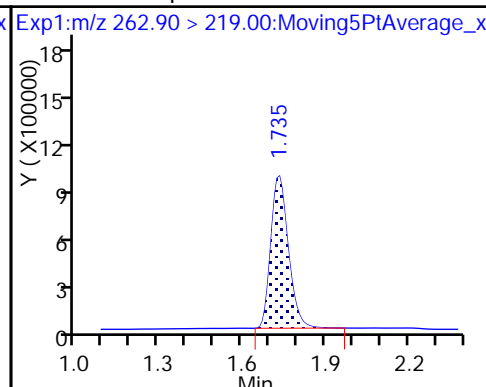
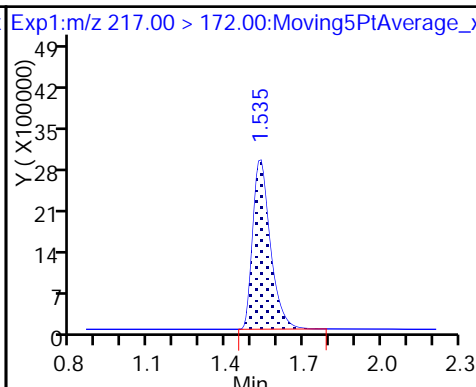
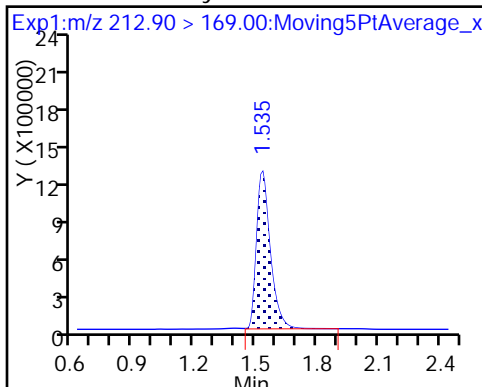
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

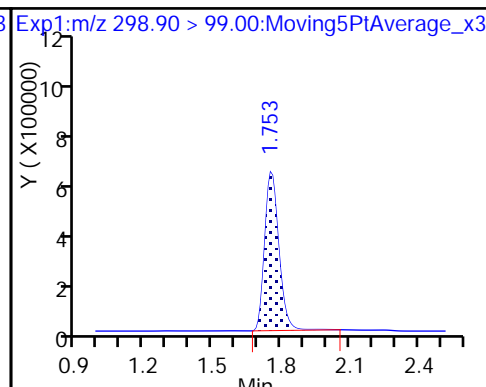
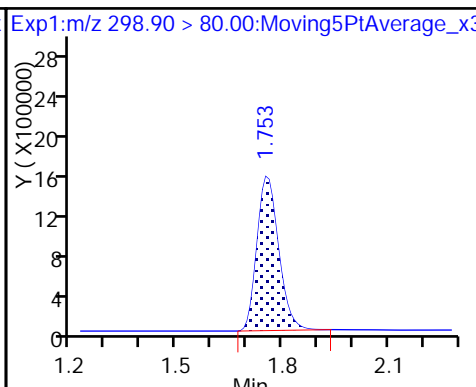
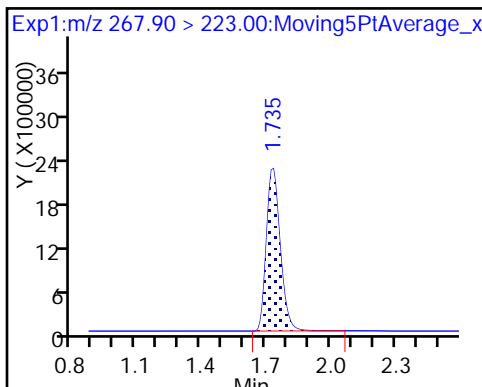
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

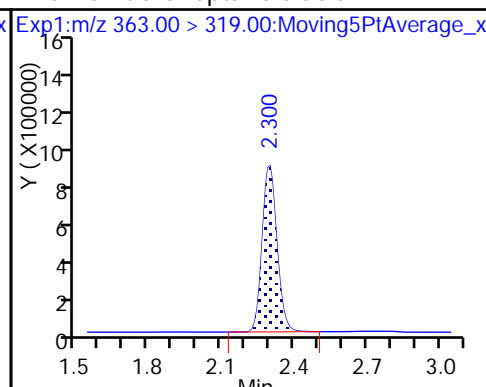
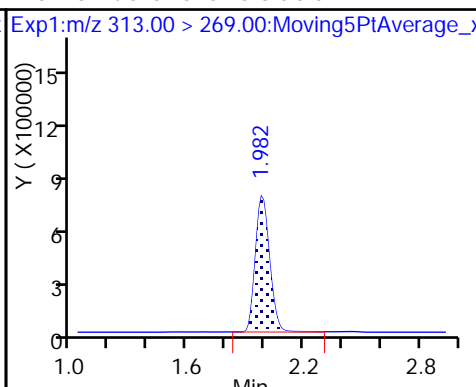
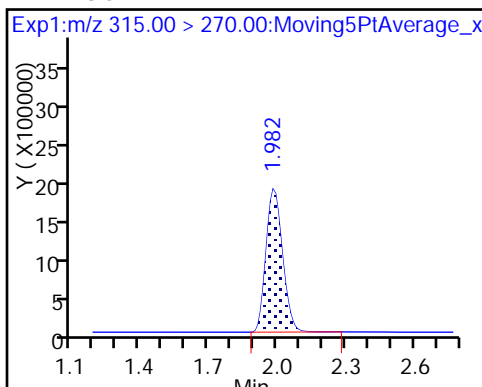
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

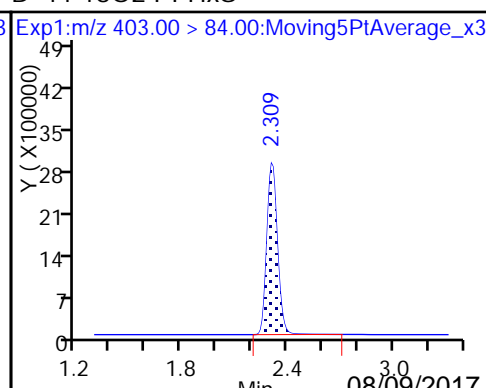
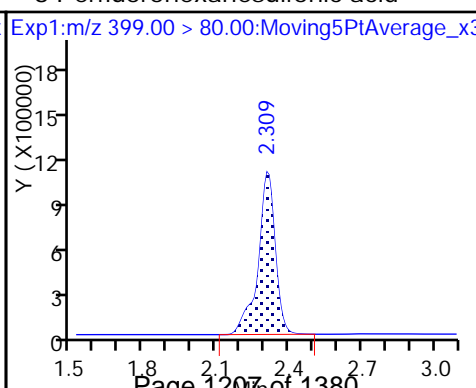
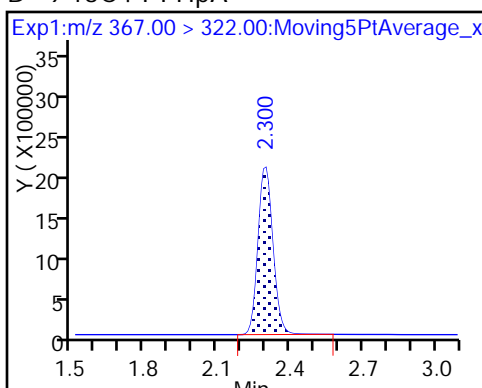
10 Perfluoroheptanoic acid

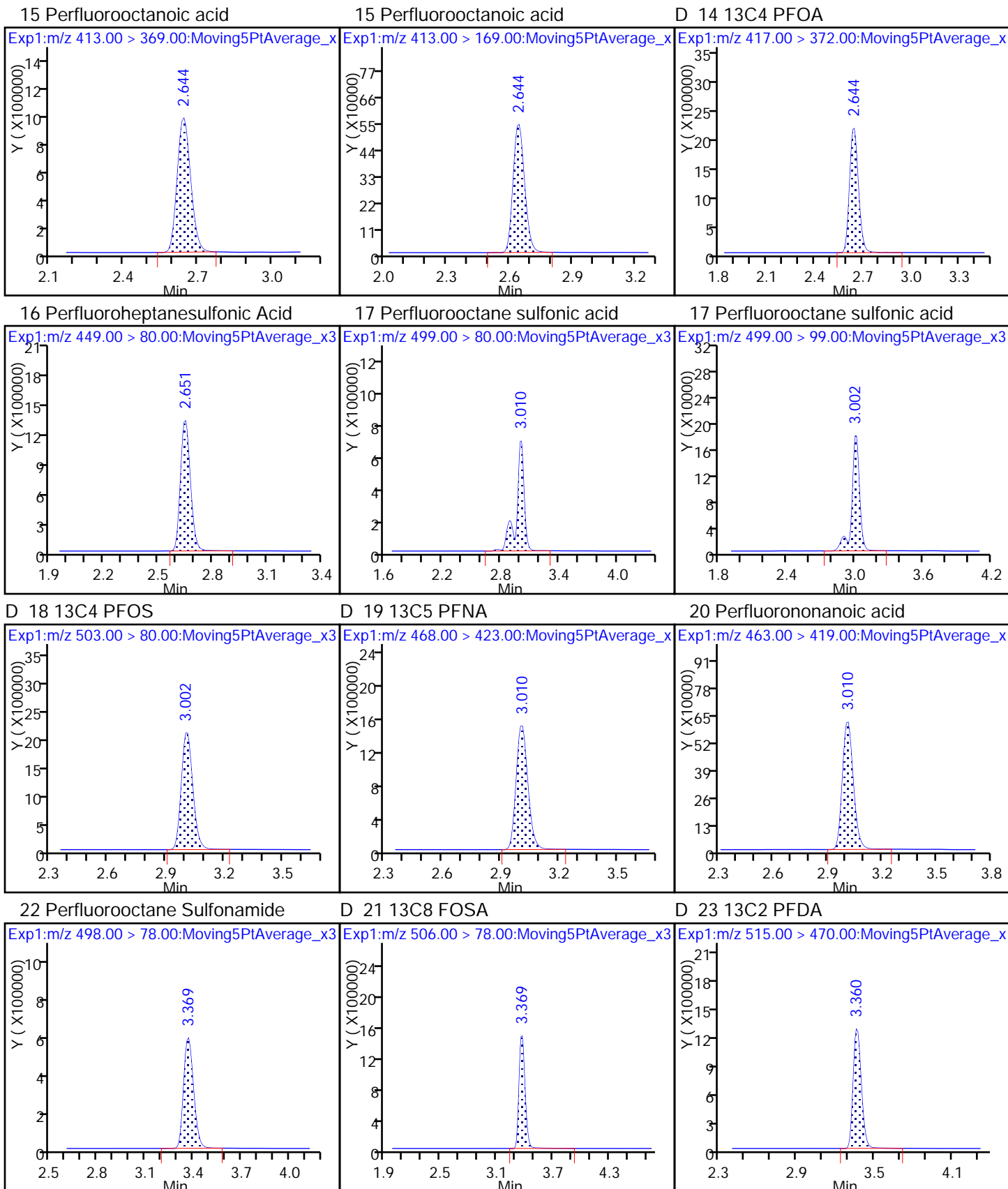


D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid

D 11 18O2 PFHxS

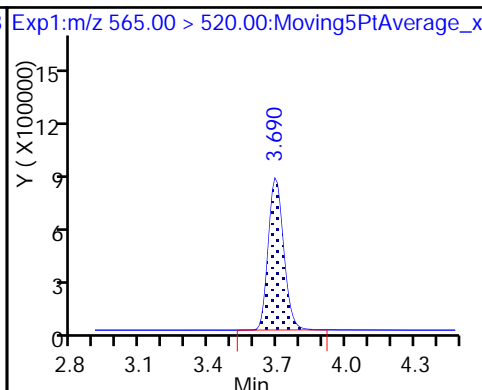
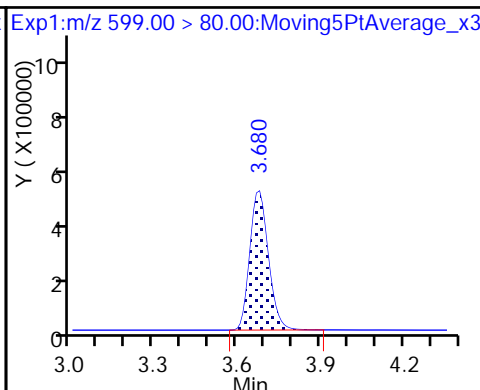
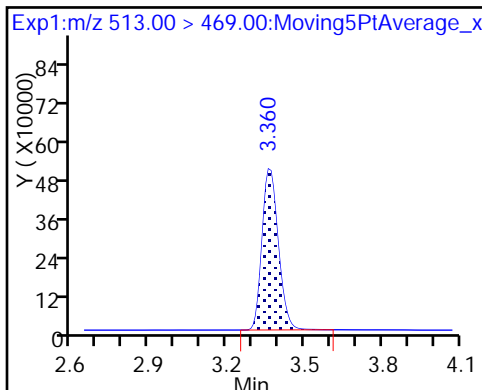




24 Perfluorodecanoic acid

29 Perfluorodecane Sulfonic acid

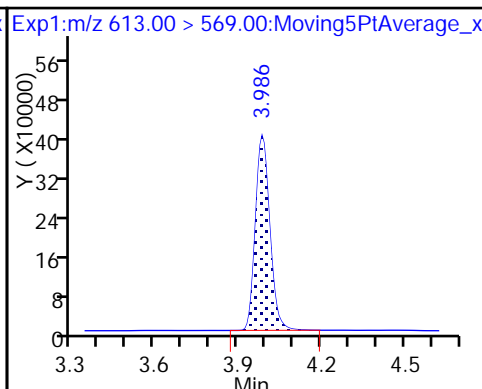
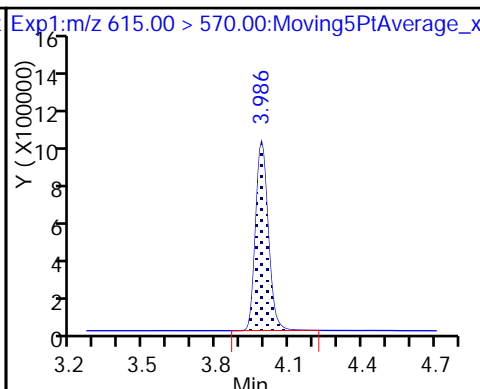
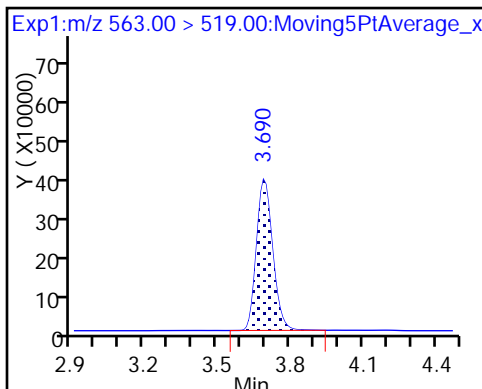
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

D 36 13C2 PFDaA

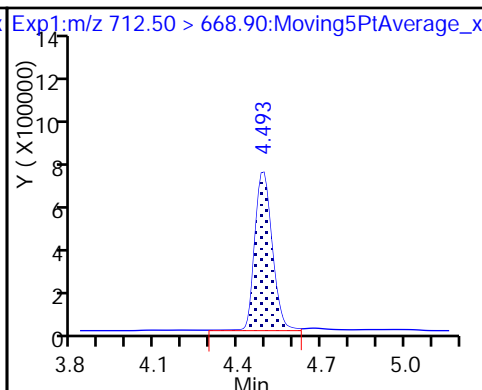
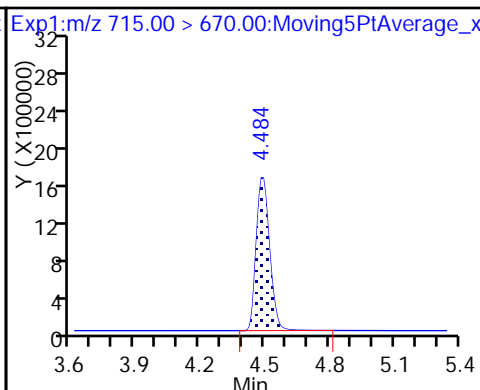
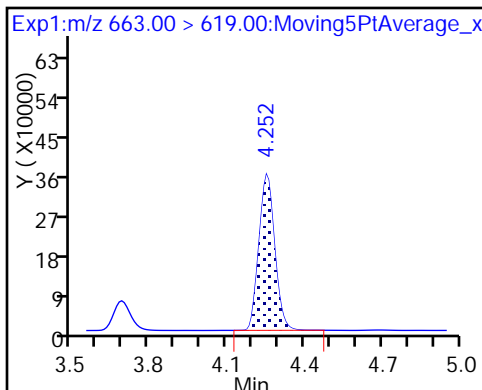
37 Perfluorododecanoic acid



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

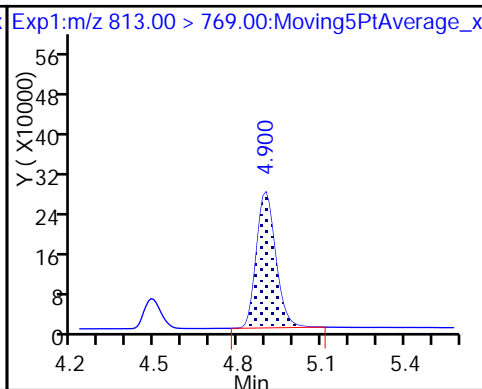
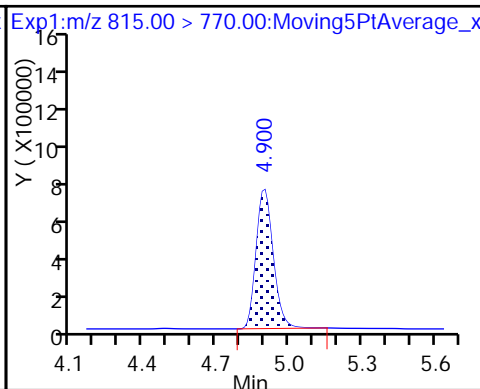
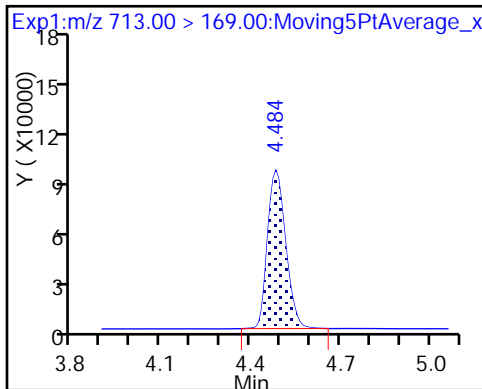
42 Perfluorotetradecanoic acid



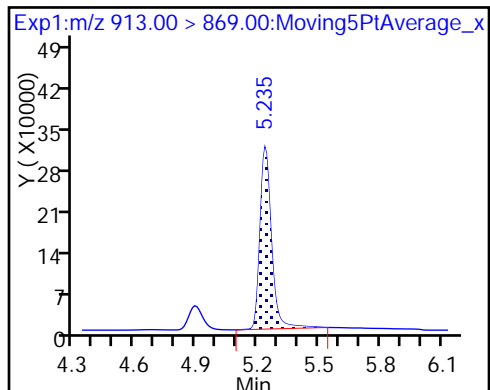
42 Perfluorotetradecanoic acid

D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid



46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCS 320-172026/2-A  
 Matrix: Solid Lab File ID: 2017.07.18C\_002.d  
 Analysis Method: 537 (Modified) Date Collected: \_\_\_\_\_  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.00(g) Date Analyzed: 07/19/2017 00:08  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	3.92		0.50	0.30	0.10
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	4.16		0.50	0.30	0.13
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4.06		0.40	0.30	0.10

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	118		25-150
STL00991	13C4 PFOS	90		25-150
STL00994	18O2 PFHxS	96		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_002.d  
 Lims ID: LCS 320-172026/2-A  
 Client ID:  
 Sample Type: LCS  
 Inject. Date: 19-Jul-2017 00:08:49 ALS Bottle#: 2 Worklist Smp#: 3  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcs 320-172026/2-a  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:50:15

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.545	1.545	0.0	9570569	54.0		108	38012	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.545	0.0	3942090	22.6		113	1462	
D 3 13C5-PFPeA	267.90 > 223.00	1.754	1.754	0.0	6988289	56.4		113	66538	
4 Perfluoropentanoic acid	262.90 > 219.00	1.754	1.754	0.0	2957547	20.5		103	1783	
D 47 13C3-PFBS	301.90 > 83.00	1.773	1.782	-0.009	167040	NC			4348	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.782	1.782	0.0	4609675	20.3		115	10245	
	298.90 > 99.00	1.782	1.782	0.0	1823011		2.53(0.00-0.00)		19987	
6 Perfluorohexanoic acid	313.00 > 269.00	2.017	2.017	0.0	2651551	22.5		113	4620	
D 7 13C2 PFHxA	315.00 > 270.00	2.017	2.017	0.0	6228493	52.7		105	45106	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.330	2.339	-0.009	2768627	20.1		101	2978	
D 9 13C4-PFHpA	367.00 > 322.00	2.330	2.339	-0.009	6756341	63.0		126	42149	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.346	2.355	-0.009	3502565	20.3		112	2730	
D 11 18O2 PFHxS	403.00 > 84.00	2.346	2.355	-0.009	8065948	45.2		95.6	38445	
D 14 13C4 PFOA	417.00 > 372.00	2.678	2.685	-0.007	5578711	59.2		118	41203	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.678	2.685	-0.007	1.000	2322992	19.6		98.0	594	
413.00 > 169.00	2.678	2.685	-0.007	1.000	1309136		1.77(0.90-1.10)		6424	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.685	2.692	-0.007	1.000	3109171	23.7		125	26614	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.050	3.051	0.0	1.000	2507346	20.8		112	8664	
499.00 > 99.00	3.050	3.051	0.0	1.000	526915		4.76(0.90-1.10)		4098	
20 Perfluorononanoic acid										
463.00 > 419.00	3.050	3.051	0.0	1.000	1774628	21.0		105	4525	
D 18 13C4 PFOS										
503.00 > 80.00	3.050	3.051	0.0		5528657	42.9		89.8	28332	
D 19 13C5 PFNA										
468.00 > 423.00	3.050	3.051	0.0		4178927	55.0		110	25516	
D 21 13C8 FOSA										
506.00 > 78.00	3.394	3.394	0.0		6582294	31.6		63.2	24068	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.394	3.403	-0.009	1.000	2599356	21.4		107	19256	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.404	3.412	-0.008	1.000	1412388	20.1		100	5247	
D 23 13C2 PFDA										
515.00 > 470.00	3.404	3.412	-0.008		3537958	54.9		110	12075	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.716	3.722	-0.006	1.000	1390677	19.3		100	8535	
D 30 13C2 PFUnA										
565.00 > 520.00	3.735	3.732	0.003		2554722	52.9		106	13351	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.735	3.732	0.003	1.000	1214334	22.6		113	2846	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.029	4.030	-0.001	1.000	946681	21.7		109	2514	
D 36 13C2 PFDoA										
615.00 > 570.00	4.029	4.030	-0.001		2282054	48.1		96.3	6094	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.290	4.291	-0.001	1.000	756586	19.3		96.7	213	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.524	4.526	-0.002	1.000	1663132	18.2		91.2	335	
713.00 > 169.00	4.524	4.526	-0.002	1.000	177837		9.35(0.00-0.00)		4825	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.524	4.526	-0.002		3539660	39.9		79.9	12698	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.937	4.934	0.003	1.000	429449	10.7		53.5	103	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.937	4.934	0.003		1074054	23.8		47.5	2347	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.281	5.281	0.0	1.000	226006	6.28		31.4	125	

[QC Flag Legend](#)

Processing Flags

NC - Not Calibrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_002.d

Injection Date: 19-Jul-2017 00:08:49

Instrument ID: A8\_N

Lims ID: LCS 320-172026/2-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 2

Worklist Smp#: 3

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

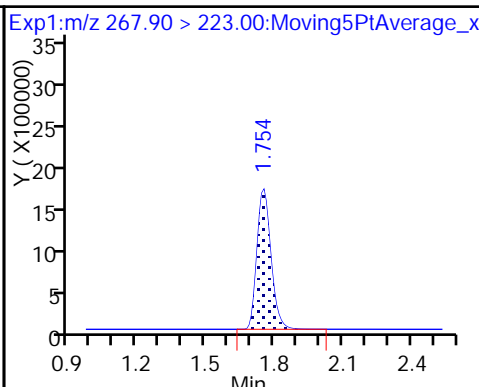
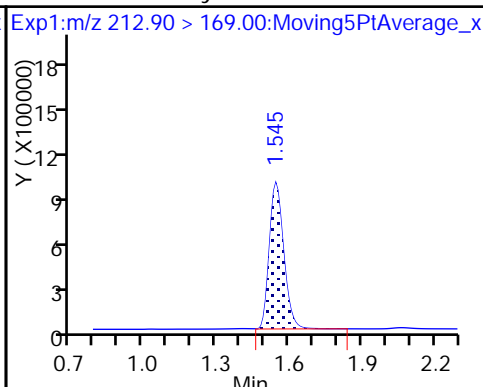
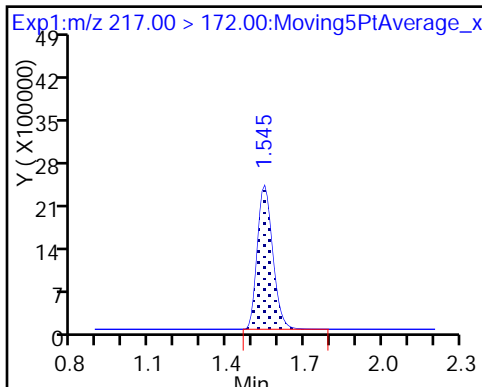
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

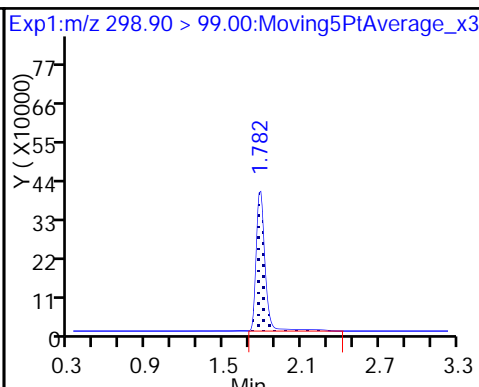
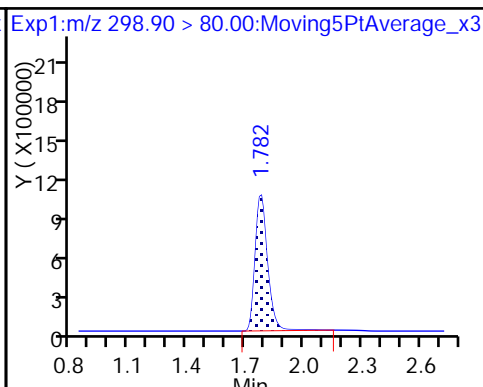
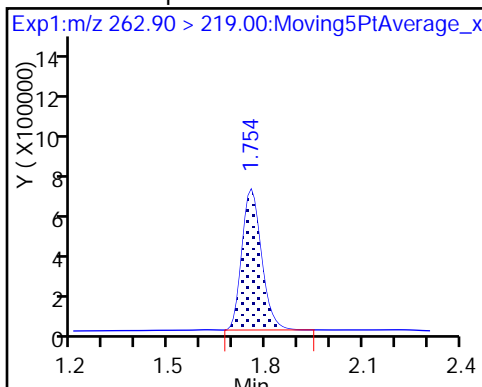
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

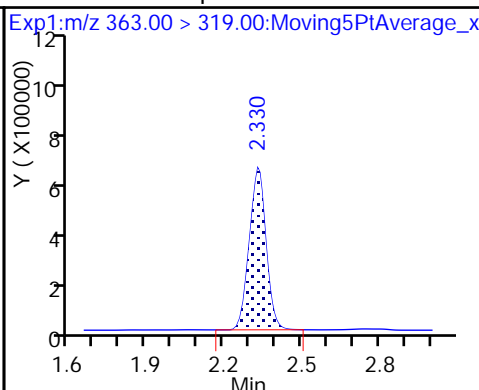
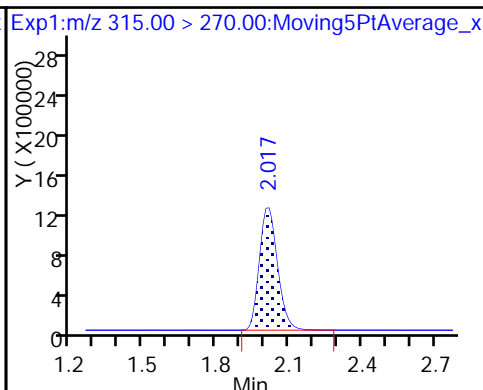
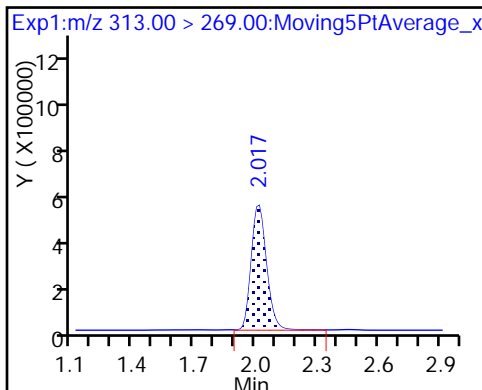
5 Perfluorobutanesulfonic acid



6 Perfluorohexanoic acid

D 7 13C2 PFHxA

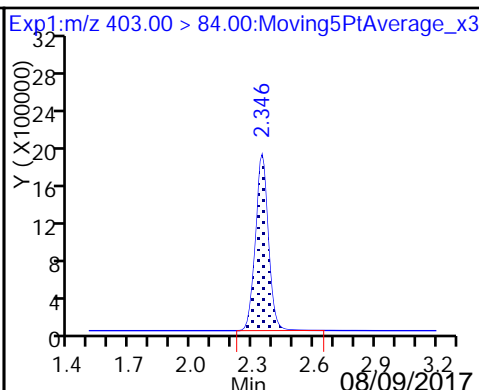
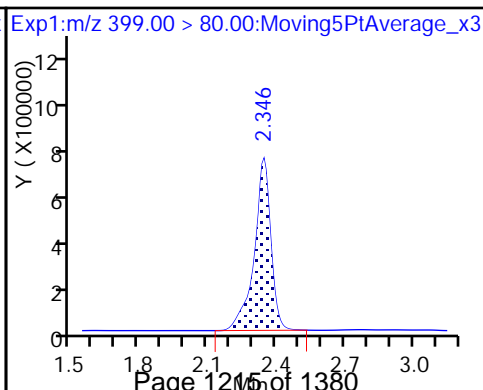
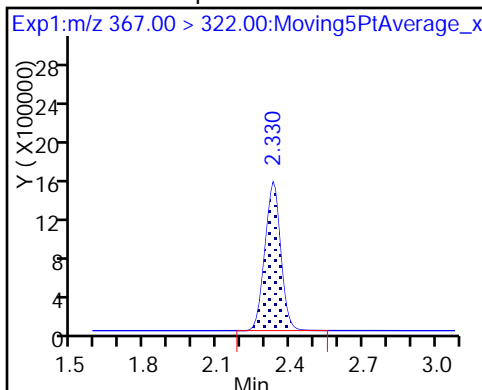
10 Perfluoroheptanoic acid



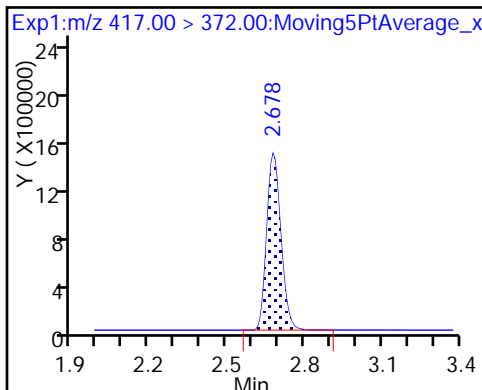
D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid

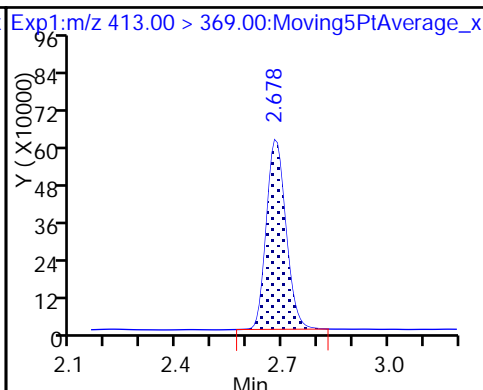
D 11 18O2 PFHxS



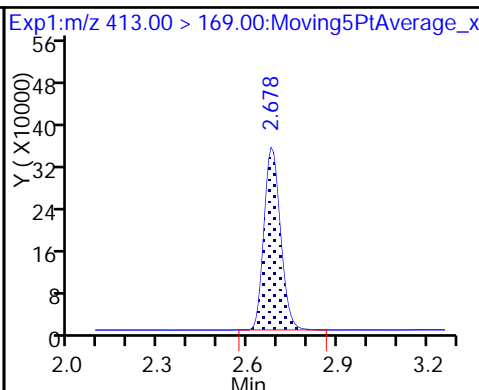
D 14 13C4 PFOA



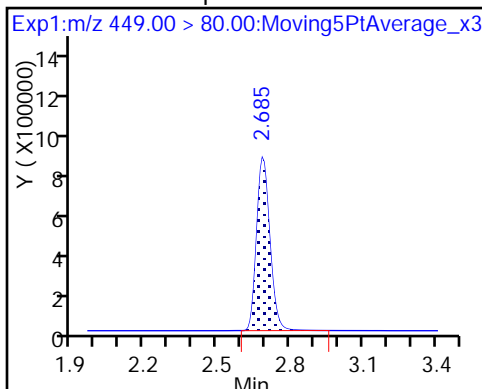
15 Perfluorooctanoic acid



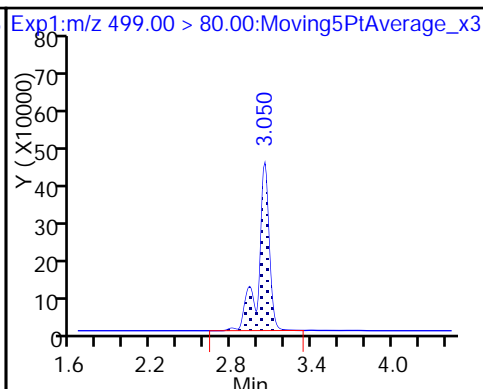
15 Perfluorooctanoic acid



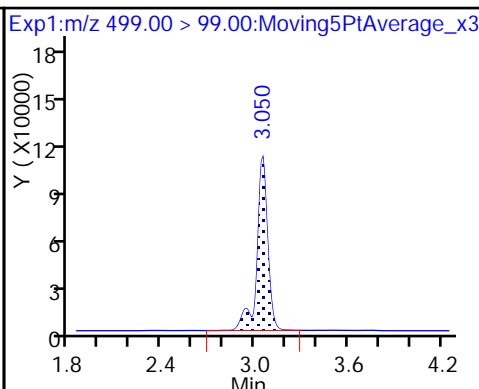
16 Perfluoroheptanesulfonic Acid



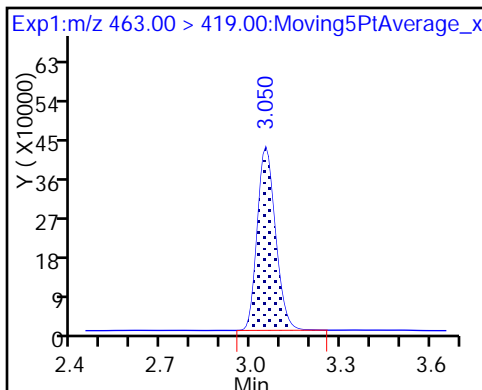
17 Perfluorooctane sulfonic acid



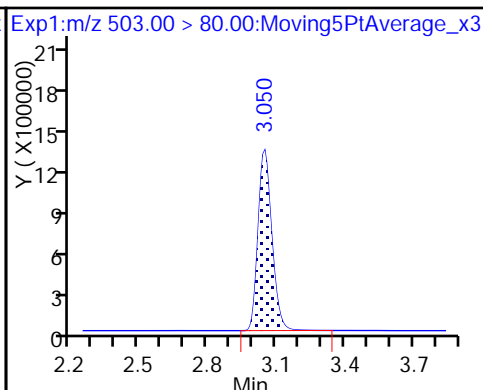
17 Perfluorooctane sulfonic acid



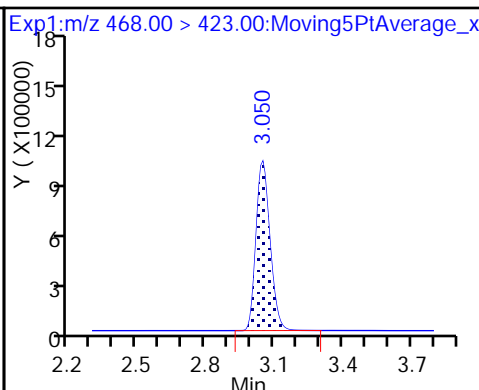
20 Perfluorononanoic acid



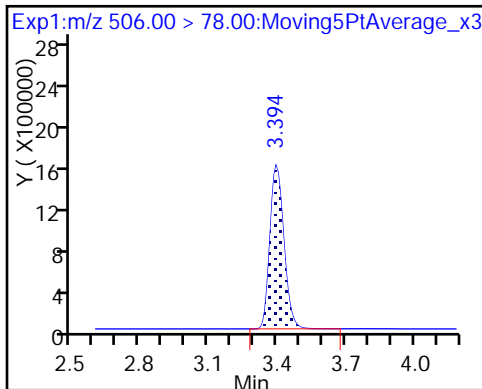
D 18 13C4 PFOS



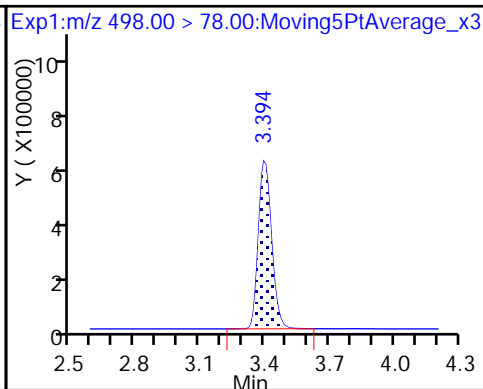
D 19 13C5 PFNA



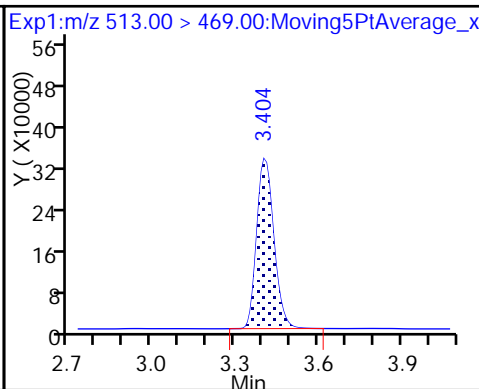
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide



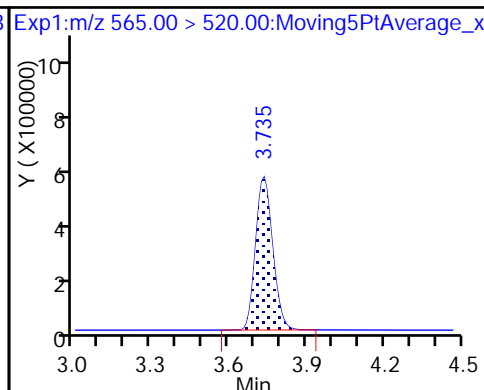
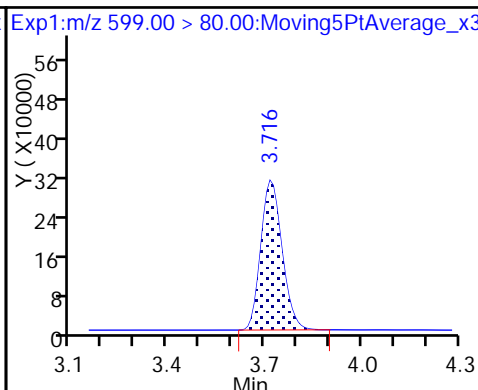
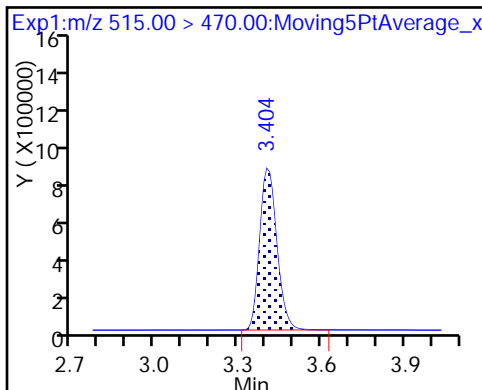
24 Perfluorodecanoic acid



D 23 13C2 PFDA

29 Perfluorodecane Sulfonic acid

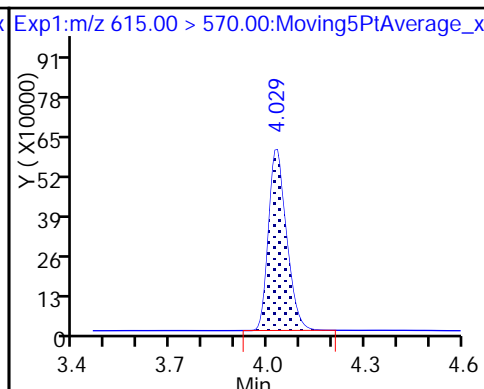
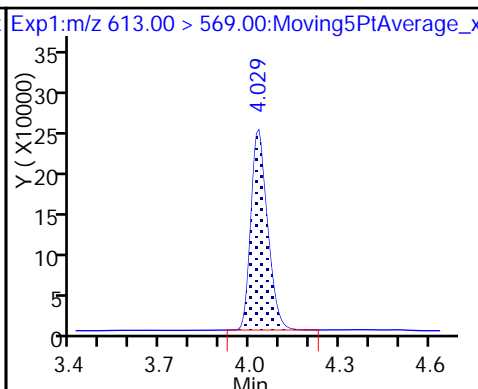
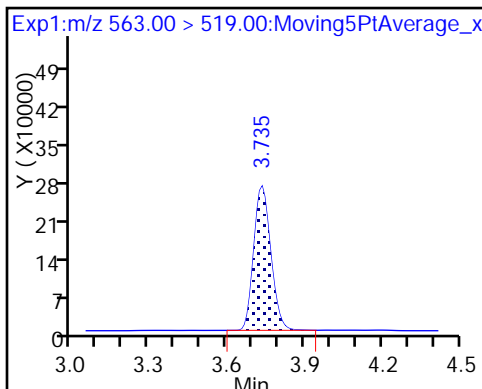
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

37 Perfluorododecanoic acid

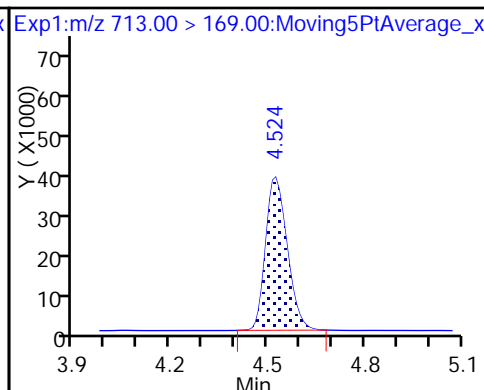
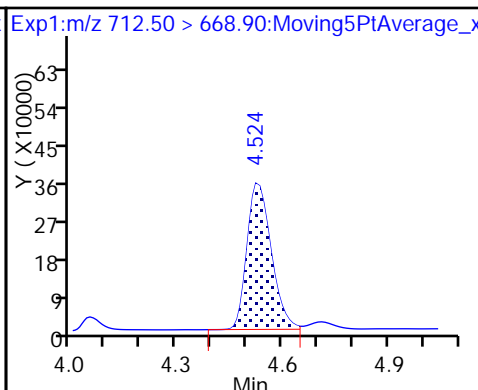
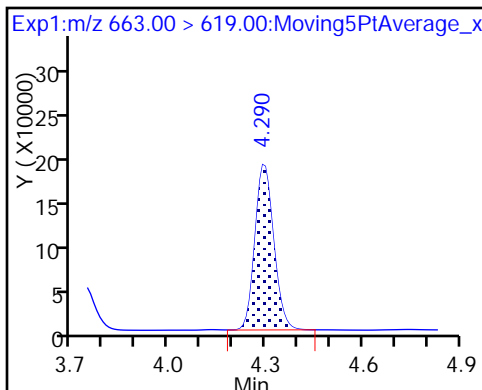
D 36 13C2 PFDaA



41 Perfluorotridecanoic acid

42 Perfluorotetradecanoic acid

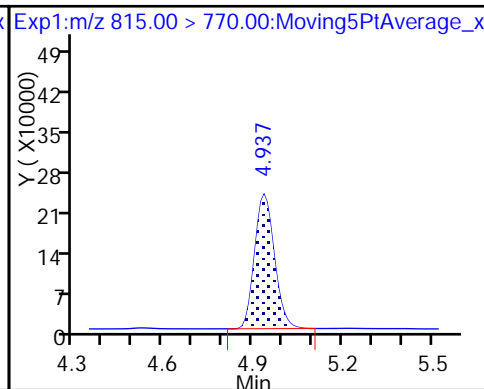
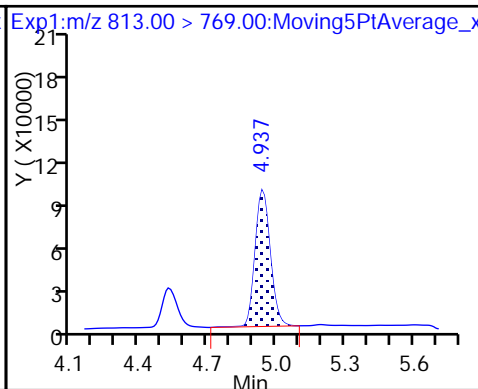
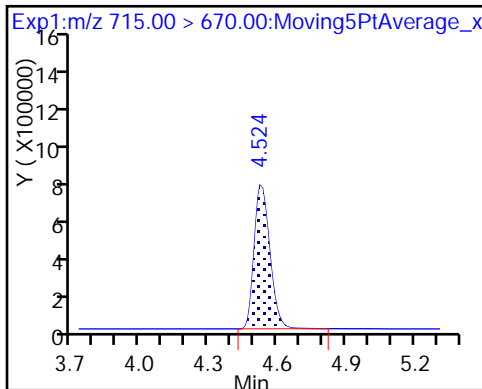
42 Perfluorotetradecanoic acid



D 43 13C2-PFTeDA

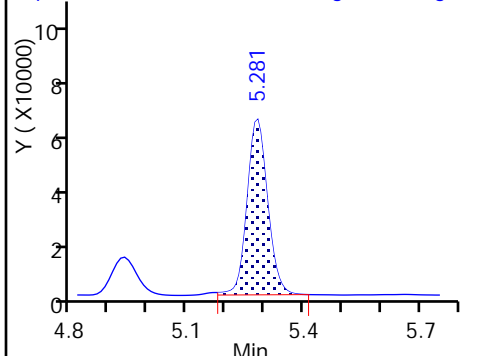
45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid

Exp1:m/z 913.00 > 869.00:Moving5PtAverage\_x



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: \_\_\_\_\_ Lab Sample ID: LCSD 320-170766/3-A  
 Matrix: Water Lab File ID: 2017.06.27\_PFC\_B\_008.d  
 Analysis Method: 537 (Modified) Date Collected: \_\_\_\_\_  
 Extraction Method: 3535 Date Extracted: 06/23/2017 16:59  
 Sample wt/vol: 250.00 (mL) Date Analyzed: 06/28/2017 09:32  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171335 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	40.6		2.5	2.0	0.75
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	42.8		4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	40.5		2.5	2.0	0.92

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	117		25-150
STL00991	13C4 PFOS	98		25-150
STL00994	18O2 PFHxS	101		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\2017.06.27\_PFC\_B\_008.d  
 Lims ID: LCSD 320-170766/3-A  
 Client ID:  
 Sample Type: LCSD  
 Inject. Date: 28-Jun-2017 09:32:28 ALS Bottle#: 7 Worklist Smp#: 8  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: lcsd 320-170766/3-a  
 Misc. Info.: Plate: 1 Rack: 4  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170628-44796.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 28-Jun-2017 15:52:02 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK008

First Level Reviewer: barnettj Date: 28-Jun-2017 15:51:32

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.543	1.541	0.002	11701769	50.0		100	26419	
2 Perfluorobutyric acid	212.90 > 169.00	1.543	1.541	0.002	1.000	5104515	24.2	121	1916	
D 3 13C5-PFPeA	267.90 > 223.00	1.744	1.742	0.002	8441220	52.5		105	176820	
4 Perfluoropentanoic acid	262.90 > 219.00	1.744	1.742	0.002	1.000	3611157	20.8	104	1860	
D 47 13C3-PFBS	301.90 > 83.00	1.771	1.760	0.011	207874	NC			4454	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.771	1.769	0.002	1.000	6089807	20.3	115	2844	
	298.90 > 99.00	1.771	1.769	0.002	1.000	2404522	2.53(0.00-0.00)		2157	
D 7 13C2 PFHxA	315.00 > 270.00	2.004	2.002	0.002	8037850	52.4		105	16298	
6 Perfluorohexanoic acid	313.00 > 269.00	2.004	2.002	0.002	1.000	3273046	20.0	100	4843	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.324	2.312	0.012	1.000	3665938	21.0	105	4096	
D 9 13C4-PFHpA	367.00 > 322.00	2.324	2.312	0.012	8191247	59.8		120	32521	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.340	2.329	0.011	1.000	4507572	18.9	104	2352	
D 11 18O2 PFHxS	403.00 > 84.00	2.340	2.329	0.011	10193593	47.9		101	38695	
D 14 13C4 PFOA	417.00 > 372.00	2.668	2.656	0.012	7638518	58.5		117	18639	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
15 Perfluorooctanoic acid										
413.00 > 369.00	2.668	2.656	0.012	1.000	3290230	20.3		102	979	
413.00 > 169.00	2.668	2.656	0.012	1.000	1950811		1.69(0.90-1.10)		5337	
16 Perfluoroheptanesulfonic Acid										
449.00 > 80.00	2.675	2.664	0.011	1.000	4488327	24.6		129	12892	
D 19 13C5 PFNA										
468.00 > 423.00	3.033	3.026	0.007		6217345	59.2		118	73817	
D 18 13C4 PFOS										
503.00 > 80.00	3.033	3.026	0.007		7593008	46.7		97.6	60988	
20 Perfluorononanoic acid										
463.00 > 419.00	3.033	3.026	0.007	1.000	2661213	21.6		108	5095	
17 Perfluorooctane sulfonic acid										
499.00 > 80.00	3.033	3.026	0.007	1.000	3569652	21.4		115	7755	
499.00 > 99.00	3.033	3.026	0.007	1.000	733978		4.86(0.90-1.10)		2822	
D 21 13C8 FOSA										
506.00 > 78.00	3.386	3.377	0.009		1208242	4.58		9.2	7069	
22 Perfluorooctane Sulfonamide										
498.00 > 78.00	3.386	3.377	0.009	1.000	491872	20.9		104	4624	
D 23 13C2 PFDA										
515.00 > 470.00	3.395	3.386	0.009		6555315	65.5		131	34623	
24 Perfluorodecanoic acid										
513.00 > 469.00	3.395	3.386	0.009	1.000	2701593	21.4		107	18408	
29 Perfluorodecane Sulfonic acid										
599.00 > 80.00	3.708	3.698	0.010	1.000	1990961	19.7		102	10393	
D 30 13C2 PFUnA										
565.00 > 520.00	3.727	3.717	0.010		4213804	56.7		113	16795	
31 Perfluoroundecanoic acid										
563.00 > 519.00	3.727	3.717	0.010	1.000	1947846	21.7		109	4699	
D 36 13C2 PFDoA										
615.00 > 570.00	4.018	4.013	0.005		4193287	57.1		114	14308	
37 Perfluorododecanoic acid										
613.00 > 569.00	4.018	4.013	0.005	1.000	1680411	21.0		105	4598	
41 Perfluorotridecanoic acid										
663.00 > 619.00	4.284	4.277	0.007	1.000	1719586	21.1		106	598	
D 43 13C2-PFTeDA										
715.00 > 670.00	4.528	4.515	0.013		9110048	60.1		120	88908	
42 Perfluorotetradecanoic acid										
712.50 > 668.90	4.528	4.515	0.013	1.000	3907620	20.0		99.9	1447	
713.00 > 169.00	4.519	4.515	0.004	0.998	511406		7.64(0.00-0.00)		10186	
45 Perfluorohexadecanoic acid										
813.00 > 769.00	4.941	4.929	0.012	1.000	1694729	19.4		97.2	326	
D 44 13C2-PFHxDA										
815.00 > 770.00	4.941	4.929	0.012		4381096	52.2		104	4376	
46 Perfluorooctadecanoic acid										
913.00 > 869.00	5.284	5.275	0.009	1.000	1600741	17.7		88.5	411	

[QC Flag Legend](#)

Processing Flags

NC - Not Calibrated

TestAmerica Sacramento

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Injection Date: 28-Jun-2017 09:32:28

Instrument ID: A8\_N

Lims ID: LCSD 320-170766/3-A

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 7

Worklist Smp#: 8

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

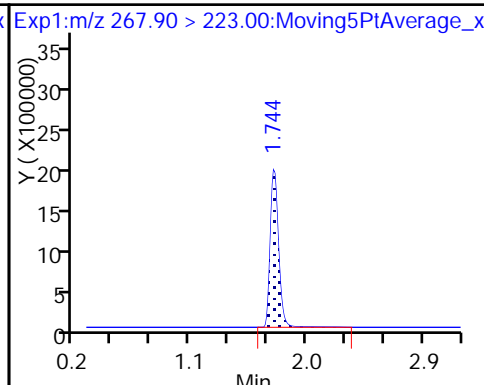
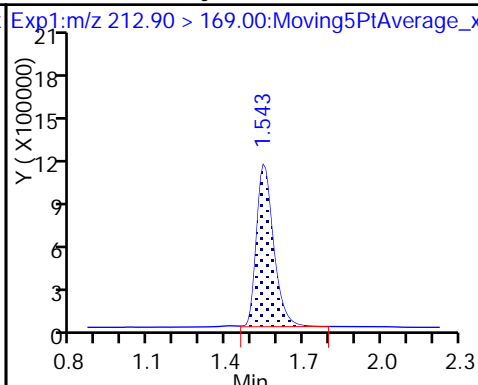
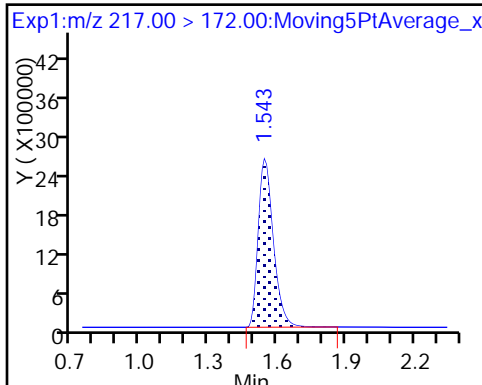
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

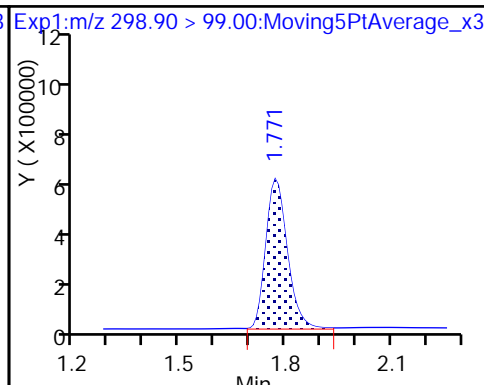
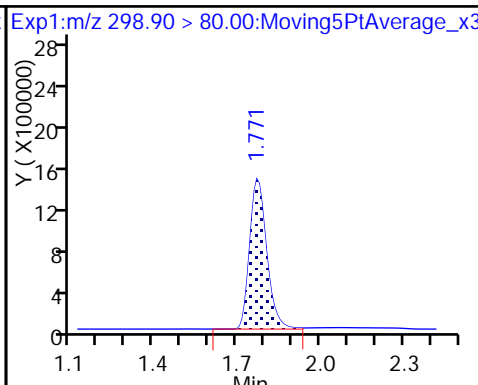
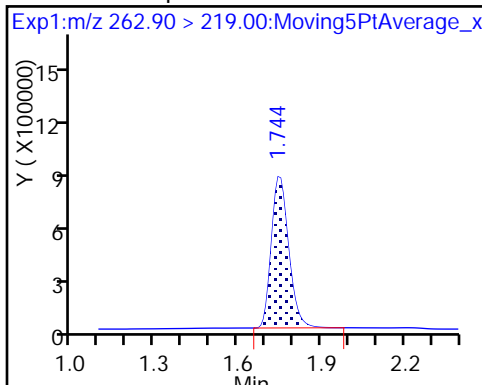
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

5 Perfluorobutanesulfonic acid

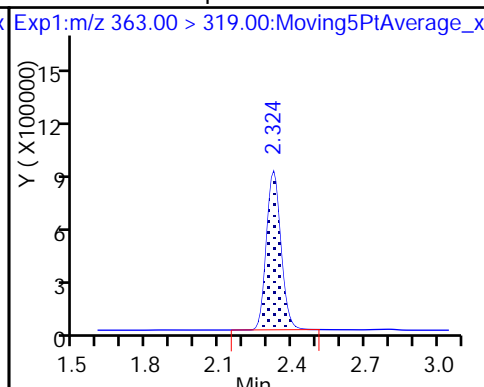
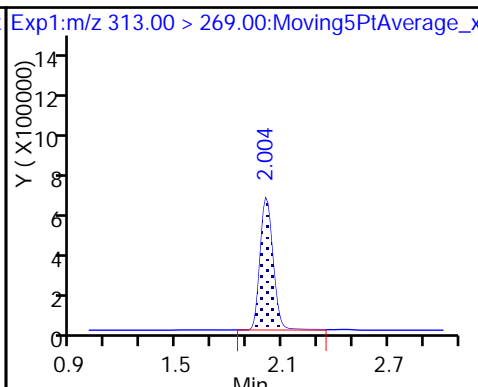
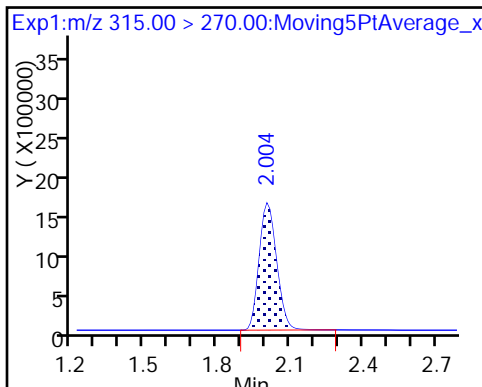
5 Perfluorobutanesulfonic acid



D 7 13C2 PFHxA

6 Perfluorohexanoic acid

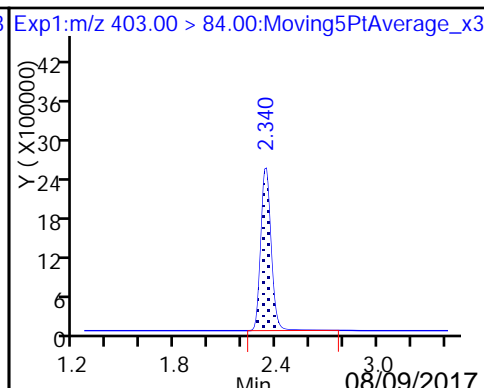
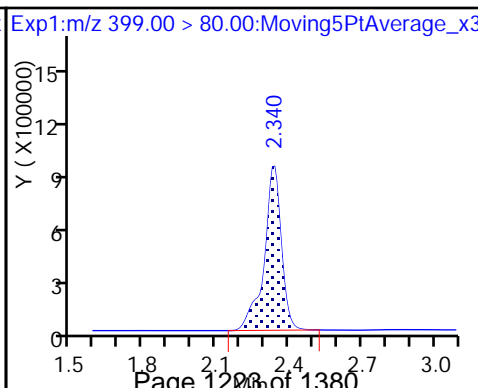
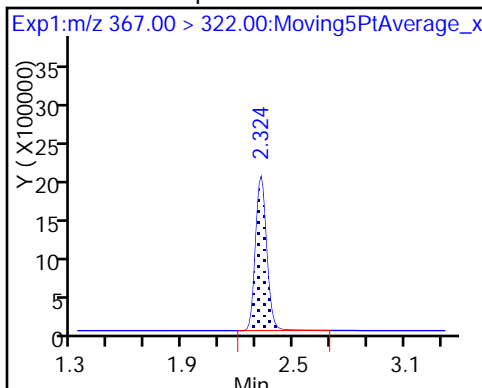
10 Perfluoroheptanoic acid



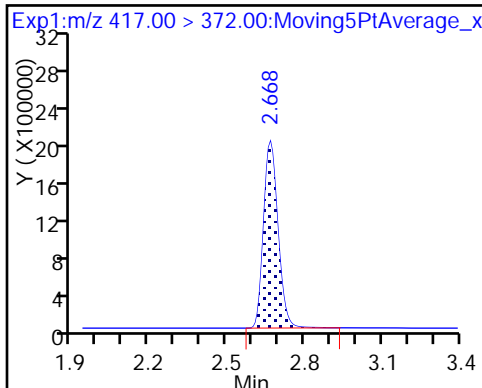
D 9 13C4-PFHpA

8 Perfluorohexanesulfonic acid

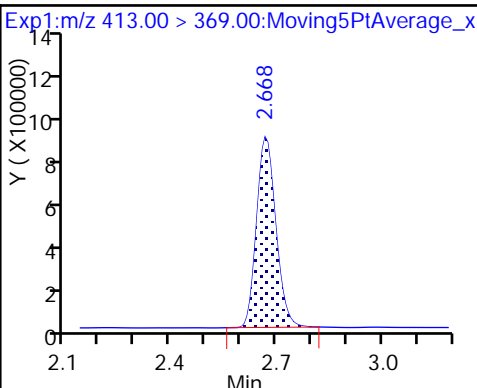
D 11 18O2 PFHxS



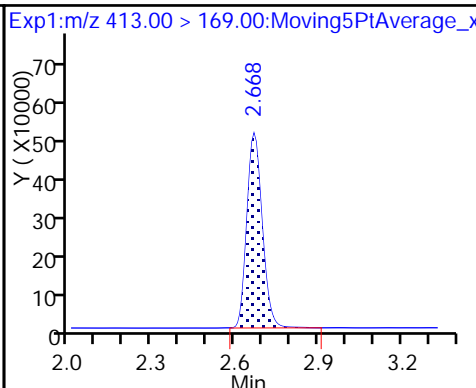
D 14 13C4 PFOA



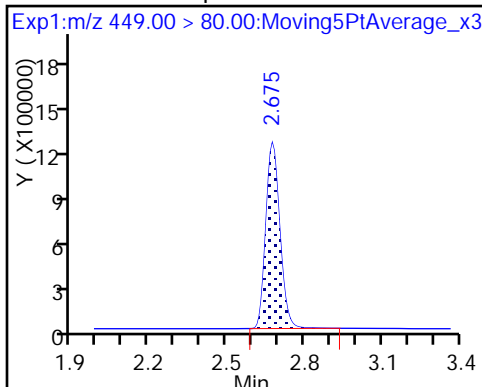
15 Perfluorooctanoic acid



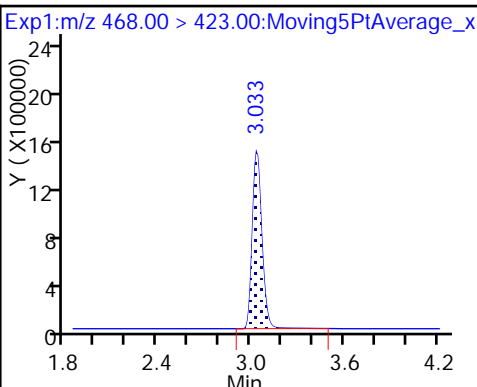
15 Perfluorooctanoic acid



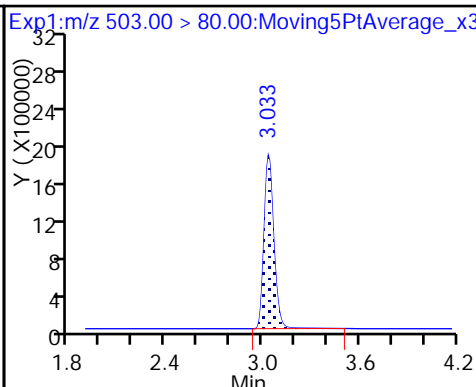
16 Perfluoroheptanesulfonic Acid



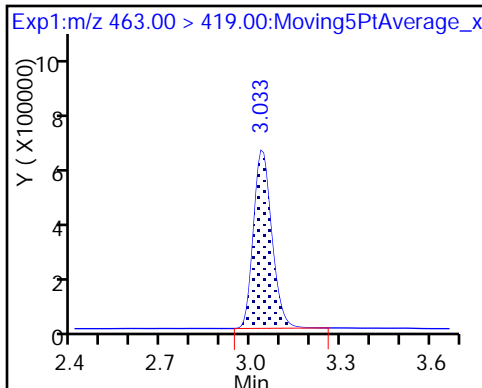
D 19 13C5 PFNA



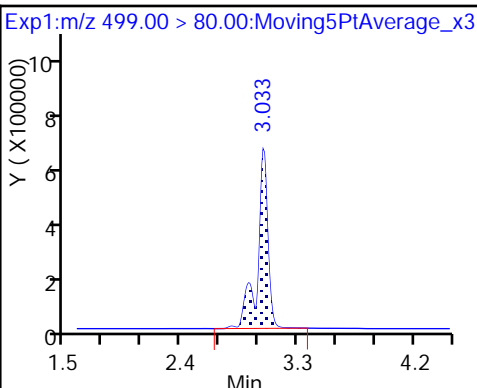
D 18 13C4 PFOS



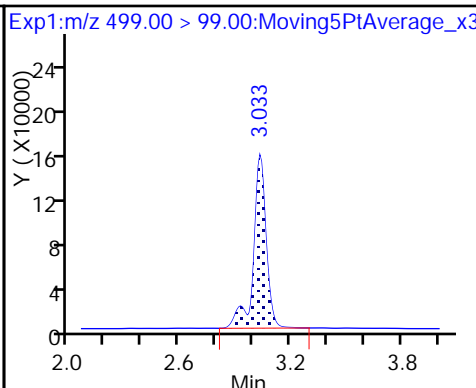
20 Perfluorononanoic acid



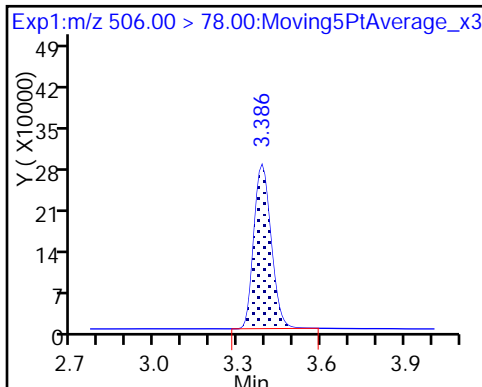
17 Perfluorooctane sulfonic acid



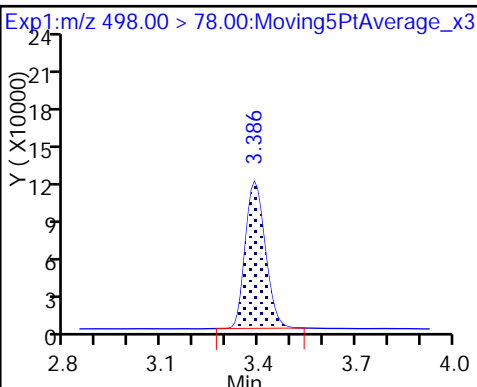
17 Perfluorooctane sulfonic acid



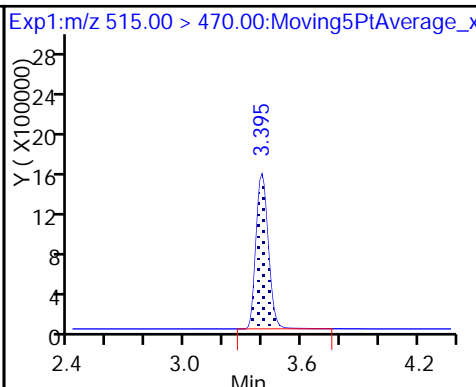
D 21 13C8 FOSA



22 Perfluorooctane Sulfonamide



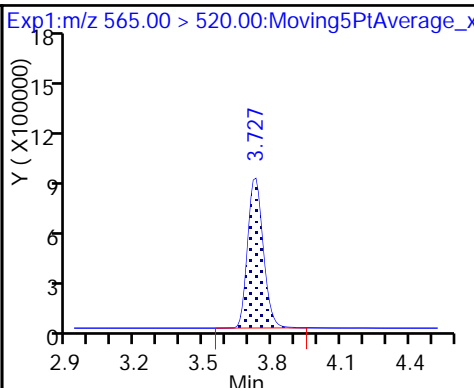
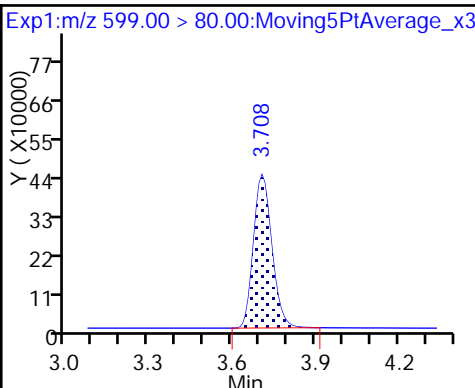
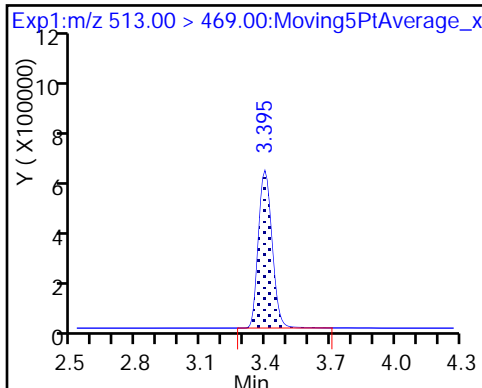
D 23 13C2 PFDA



24 Perfluorodecanoic acid

29 Perfluorodecane Sulfonic acid

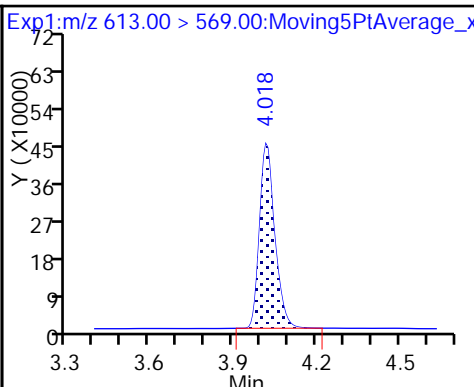
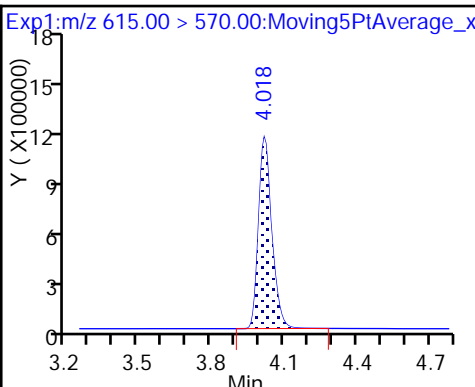
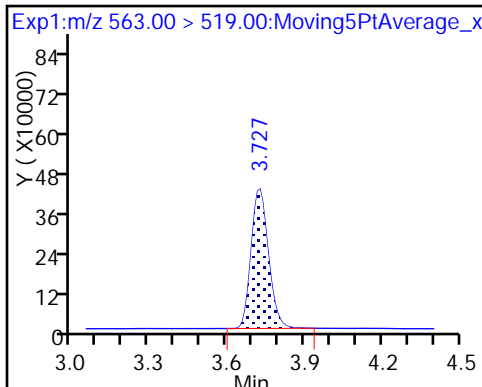
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

D 36 13C2 PFDaA

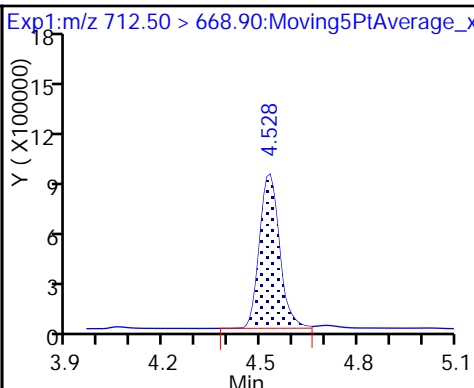
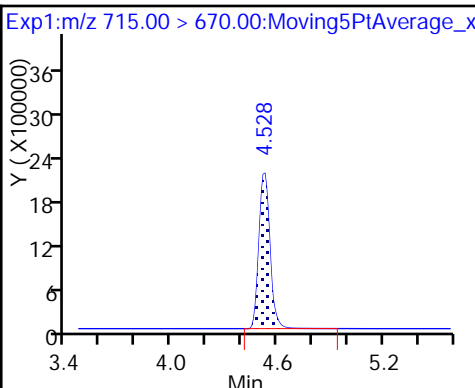
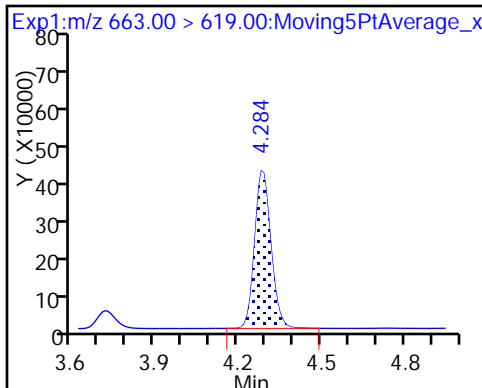
37 Perfluorododecanoic acid



41 Perfluorotridecanoic acid

D 43 13C2-PFTeDA

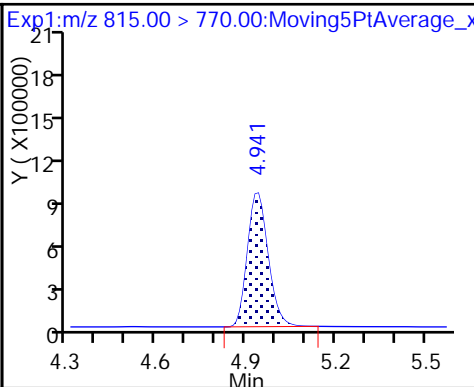
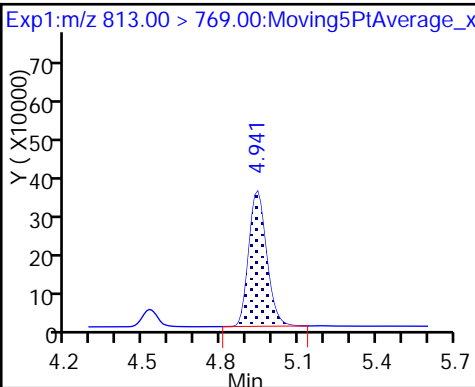
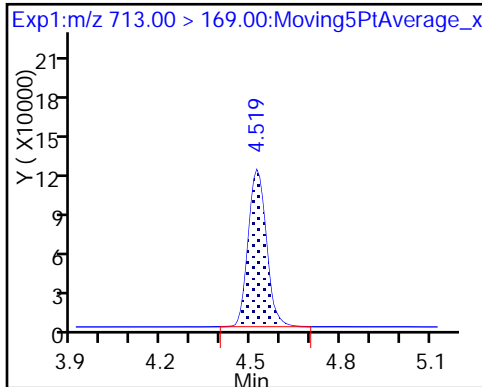
42 Perfluorotetradecanoic acid



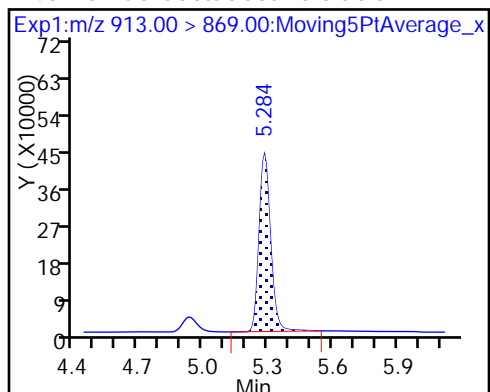
42 Perfluorotetradecanoic acid

45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA



46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-EASTBMW01-0617 MS Lab Sample ID: 320-29267-4 MS  
 Matrix: Water Lab File ID: 2017.06.28B\_009.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 11:35  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 267.4 (mL) Date Analyzed: 06/29/2017 00:15  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	39.1		2.3	1.9	0.70
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	75.0		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36.1		2.3	1.9	0.86

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	72		25-150
STL00991	13C4 PFOS	113		25-150
STL00994	18O2 PFHxS	123		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_009.d  
 Lims ID: 320-29267-A-4-B MS  
 Client ID: MEAFF-EASTBMW01-0617  
 Sample Type: MS  
 Inject. Date: 29-Jun-2017 00:15:06 ALS Bottle#: 7 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-4-b ms  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:38:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.535	1.533	0.002	1.000	3458527	23.0		115	810	
D 1 13C4 PFBA										
217.00 > 172.00	1.535	1.533	0.002		8337772	35.6		71.3	29829	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.735	1.742	-0.007	1.000	2328993	19.8		99.2	1749	
D 3 13C5-PFPeA										
267.90 > 223.00	1.735	1.742	-0.007		5699227	35.4		70.9	18538	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.762	1.760	0.002	1.000	7020270	19.3		109	3142	
298.90 > 99.00	1.762	1.760	0.002	1.000	2896703		2.42(0.00-0.00)		6328	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.760	-0.007		247312	NC			5819	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.958	-0.010	1.000	3002	NR		0.0	156	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.992	-0.010		5044129	32.9		65.8	14419	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	2.003	-0.021	1.000	2107210	20.6		103	2169	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.298	2.312	-0.014	1.000	2586067	19.7		98.4	2836	
D 9 13C4-PFHpA										
367.00 > 322.00	2.298	2.312	-0.014		6155150	45.0		89.9	17073	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.315	2.329	-0.014	1.000	6977931	24.2		133	3446	
D 11 18O2 PFHxS										
403.00 > 84.00	2.315	2.329	-0.014		12333725	58.0		123	15274	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.619	2.634	-0.015	1.000	839312	NR		0.0	11582	



Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.619	2.634	-0.015	46073	0.6327	0.0	2487	
* 62 13C2-PFOA	415.00	> 370.00	2.641	2.656	-0.015	4789	50.0	0.0	131	
15 Perfluorooctanoic acid	413.00	> 369.00	2.648	2.663	-0.015	1.000	2087687	20.9	105	1155
	413.00	> 169.00	2.648	2.663	-0.015	1.000	1182765	1.77(0.90-1.10)		2799
D 14 13C4 PFOA	417.00	> 372.00	2.648	2.663	-0.015	4703438	36.0	72.1	13200	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.656	2.671	-0.015	1.000	5096585	24.1	126	8600
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.014	3.026	-0.012	1.000	7749016	40.1	216	9712
	499.00	> 99.00	3.014	3.026	-0.012	1.000	1645500	4.71(0.90-1.10)		5151
D 18 13C4 PFOS	503.00	> 80.00	3.014	3.026	-0.012	8803152	54.1	113	14719	
D 19 13C5 PFNA	468.00	> 423.00	3.014	3.026	-0.012	3224912	30.7	61.4	11244	
20 Perfluorononanoic acid	463.00	> 419.00	3.014	3.026	-0.012	1.000	1380309	21.6	108	2232
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.374	3.379	-0.005	1.000	8754	18.1	90.7	233
D 21 13C8 FOSA	506.00	> 78.00	3.365	3.379	-0.014	24778	0.0939	0.2	383	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.356	3.379	-0.023	1.000	3959	NR	0.0	252
D 23 13C2 PFDA	515.00	> 470.00	3.365	3.388	-0.023	2475247	24.7	49.5	17041	
24 Perfluorodecanoic acid	513.00	> 469.00	3.365	3.388	-0.023	1.000	1013741	21.2	106	6218
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.685	3.700	-0.015	1.000	2300434	19.6	102	12199
D 32 d5-NEtFOSAA	589.00	> 419.00	3.685	3.710	-0.025	2006	0.0543	0.0	14.8	
D 30 13C2 PFUnA	565.00	> 520.00	3.695	3.710	-0.015	1499700	20.2	40.4	9689	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.695	3.710	-0.015	1.000	651144	20.4	102	1882
D 36 13C2 PFDaA	615.00	> 570.00	3.989	4.008	-0.019	1459763	19.9	39.8	6755	
37 Perfluorododecanoic acid	613.00	> 569.00	3.989	4.008	-0.019	1.000	582755	21.0	105	1916
41 Perfluorotridecanoic acid	663.00	> 619.00	4.256	4.273	-0.017	1.000	800373	28.2	141	725
D 43 13C2-PFTeDA	715.00	> 670.00	4.490	4.510	-0.020	5780946	38.2	76.3	62304	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
42 Perfluorotetradecanoic acid	712.50 > 668.90	4.490	4.510	-0.020	1.000	2557051	37.5		188	2129
	713.00 > 169.00	4.490	4.510	-0.020	1.000	315187	8.11(0.00-0.00)			7440
D 44 13C2-PFHxDA	815.00 > 770.00	4.897	4.922	-0.025		3725078	44.4		88.8	4519
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.897	4.922	-0.025	1.000	1421760	47.8		239	282
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.239	5.265	-0.026	1.000	1356246	43.1		215	337

### QC Flag Legend

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_009.d

Injection Date: 29-Jun-2017 00:15:06

Instrument ID: A8\_N

Lims ID: 320-29267-A-4-B MS

Client ID: MEAFF-EASTBMW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 7

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

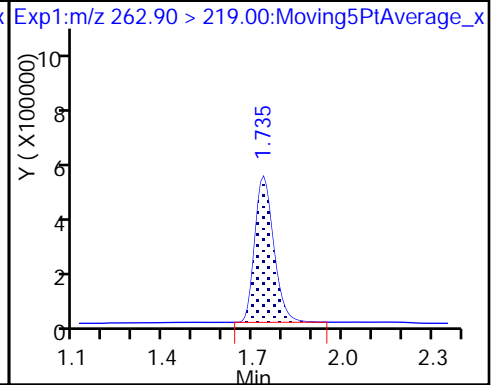
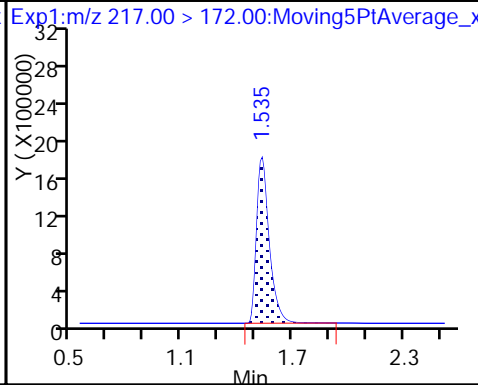
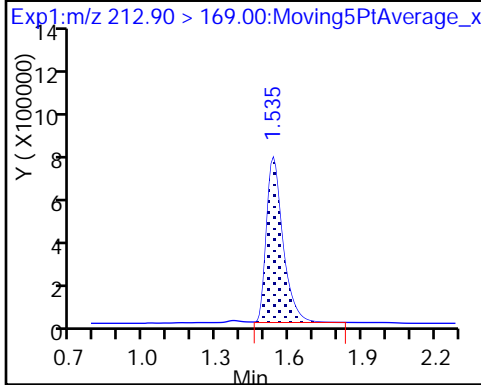
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

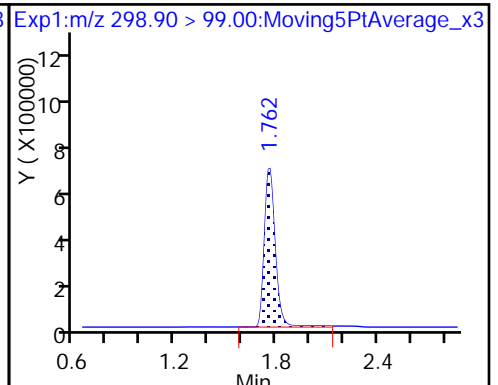
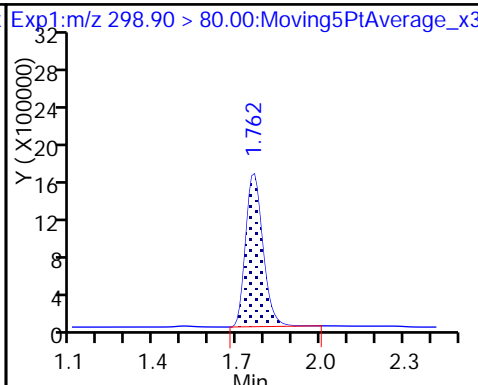
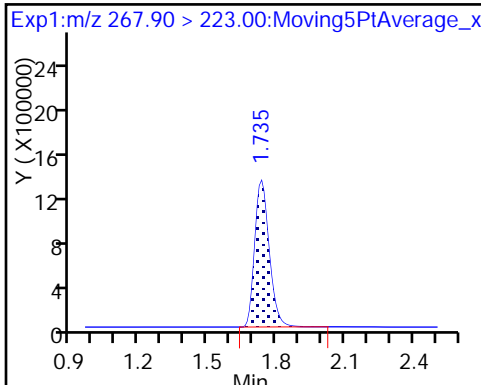
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

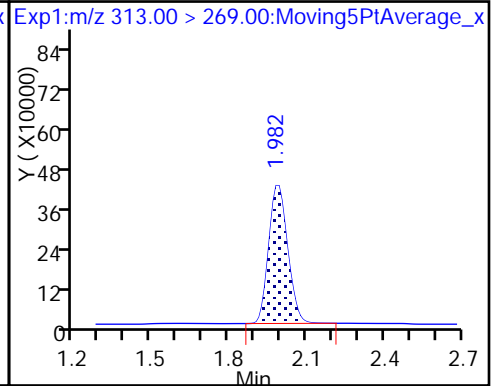
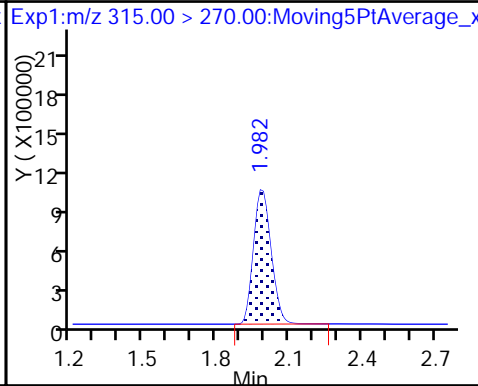
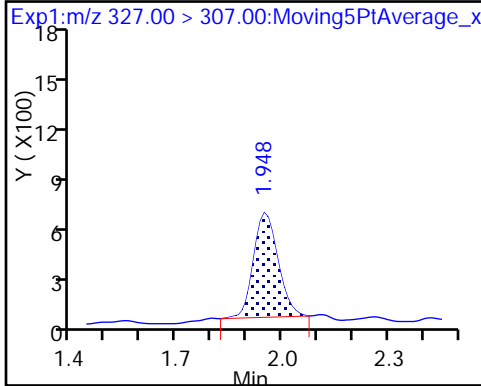
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

De 7 13C2 PFHxA

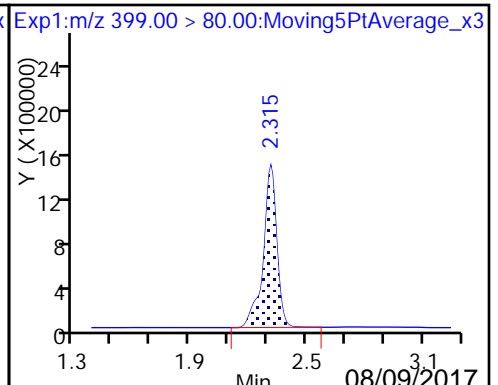
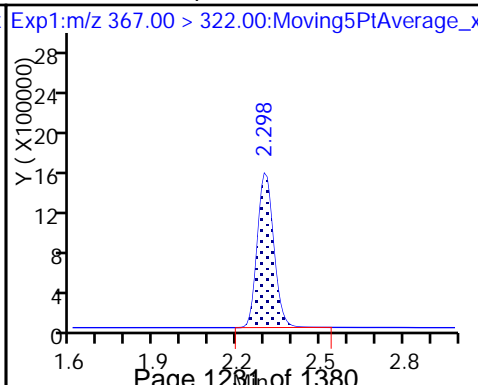
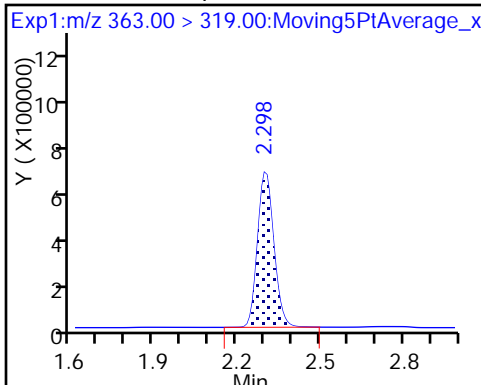
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

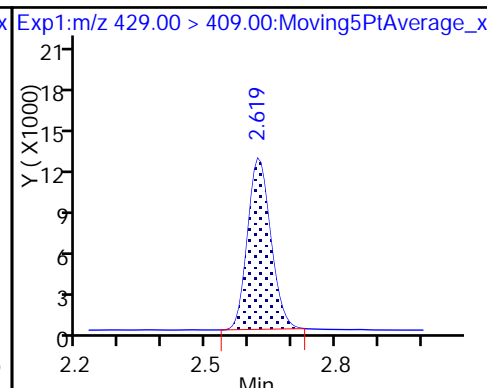
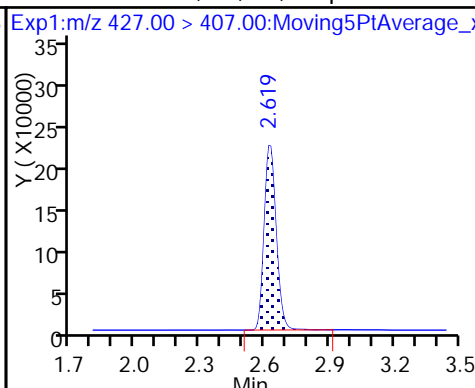
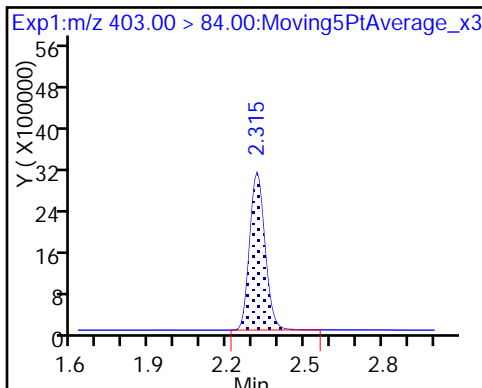
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

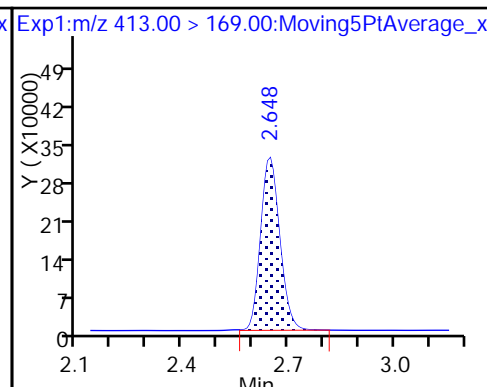
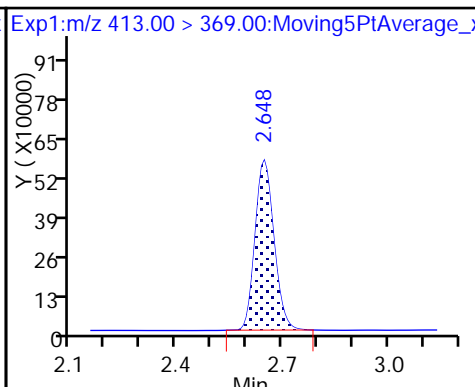
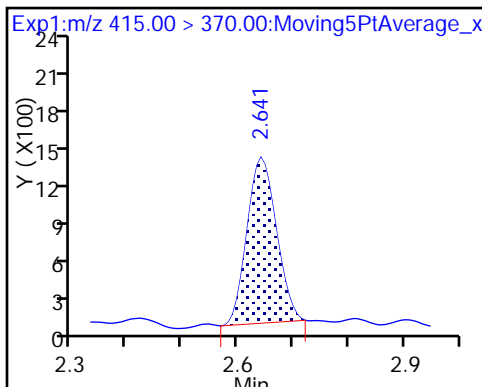
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

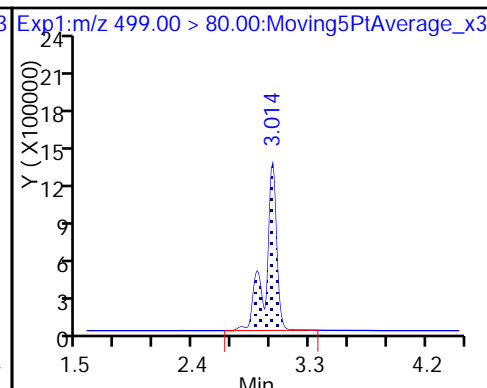
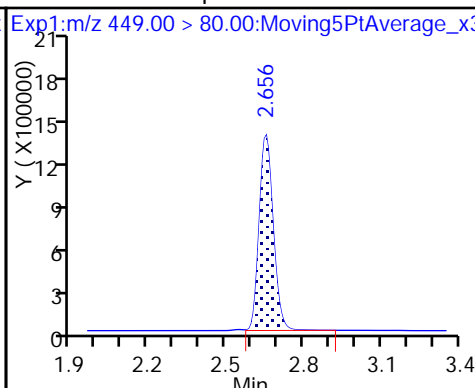
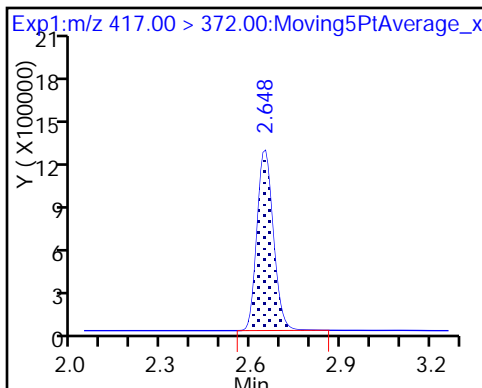
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

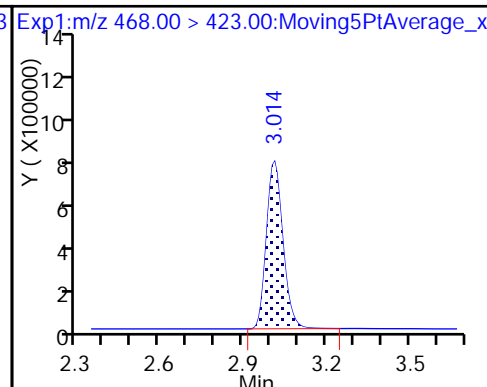
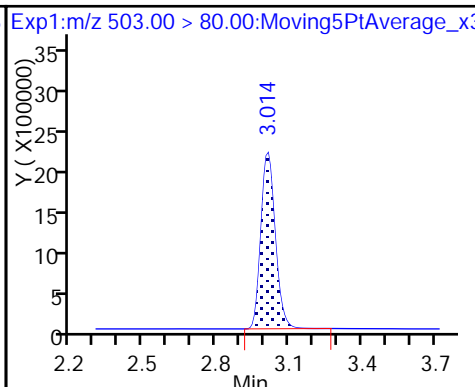
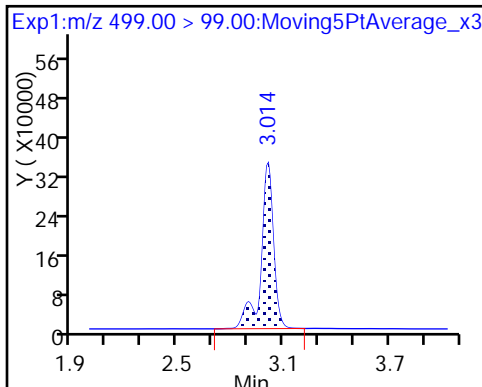
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

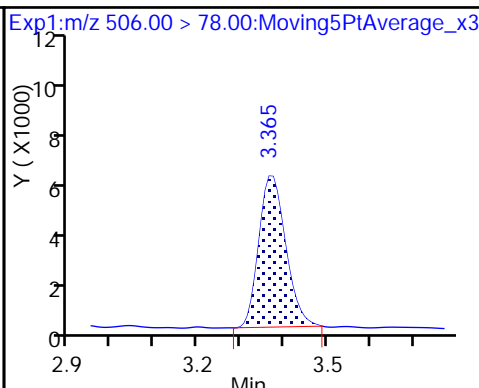
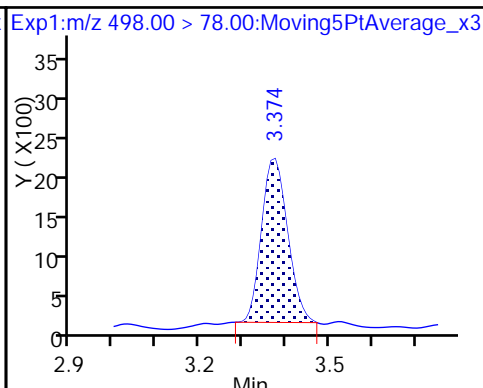
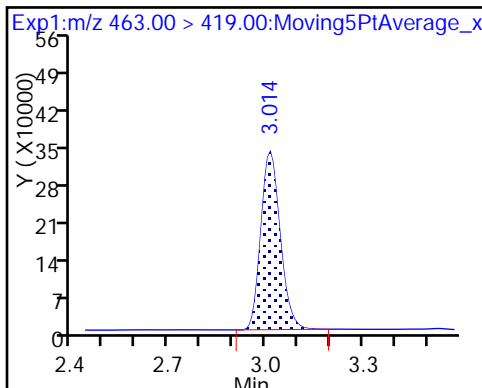
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

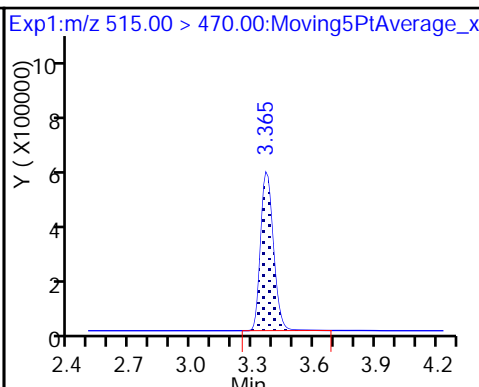
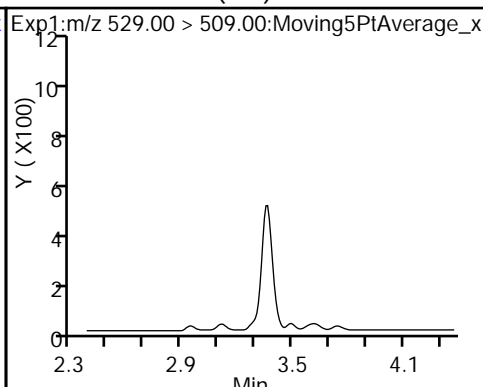
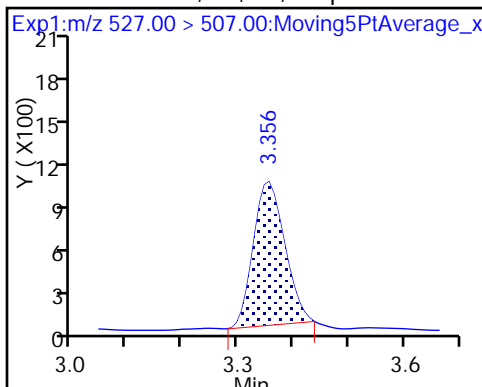
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodecanoate

D 26 M2-8:2FTS (ND)

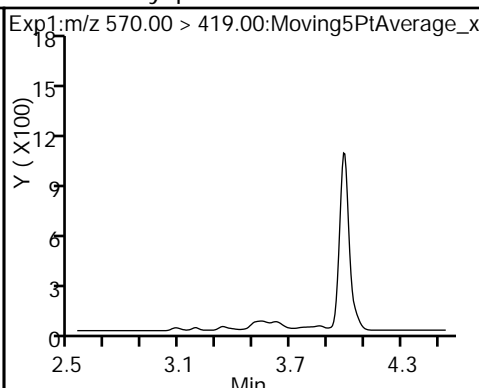
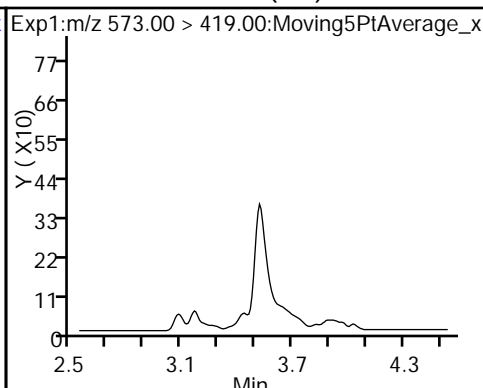
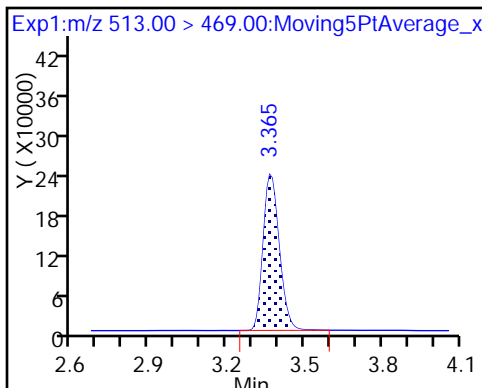
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA (ND)

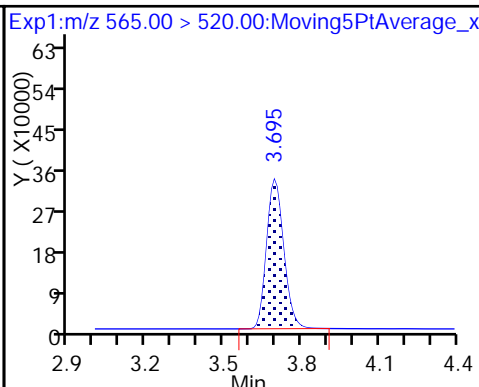
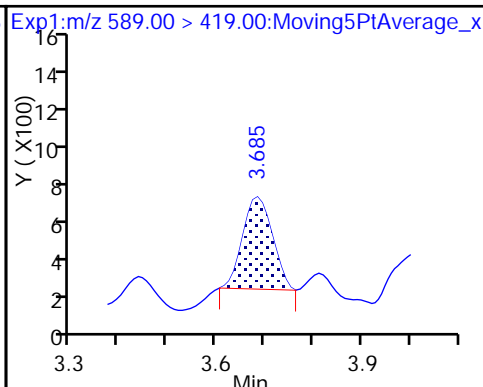
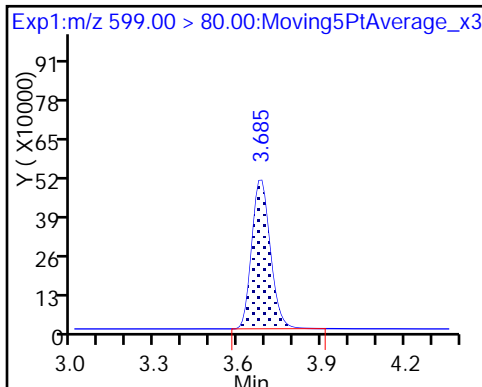
28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA

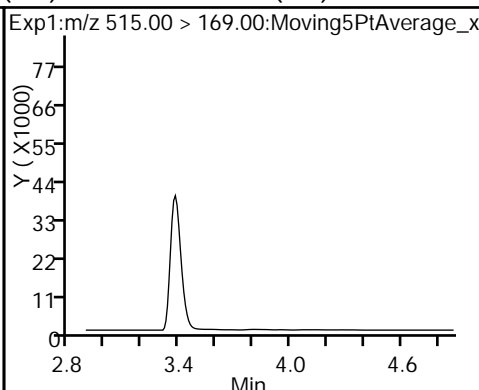
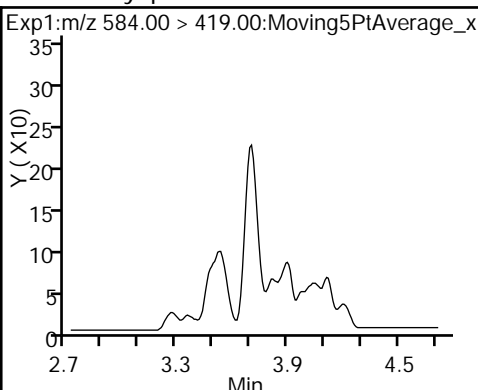
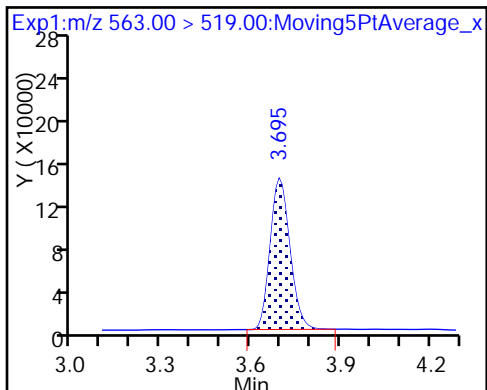
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid (ND)

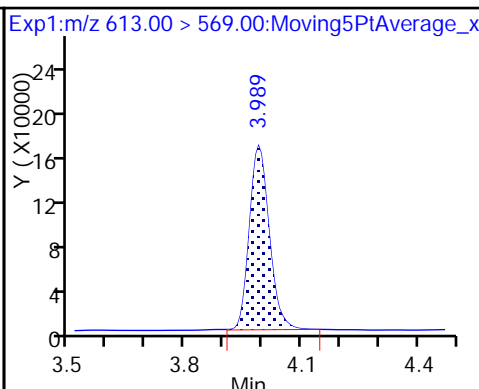
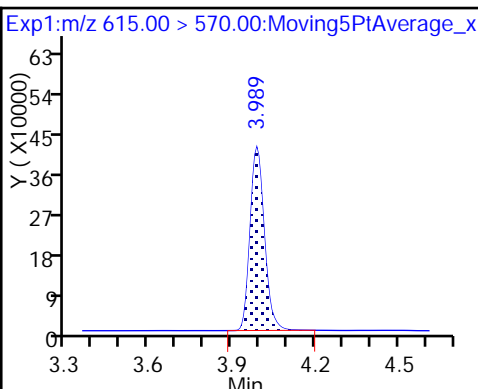
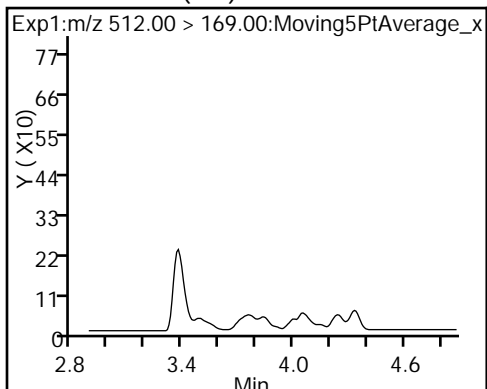
34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

D 36 13C2 PFDaA

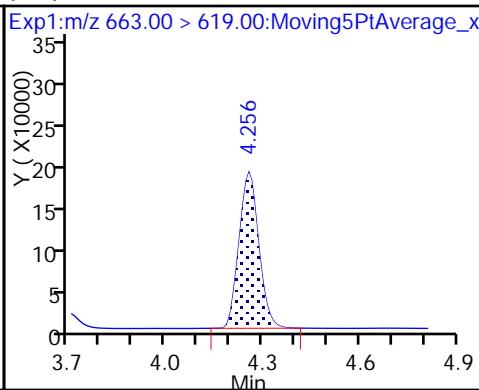
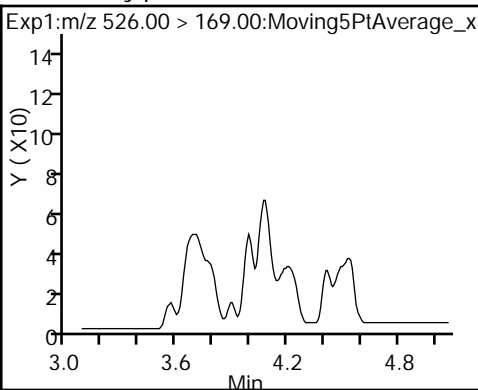
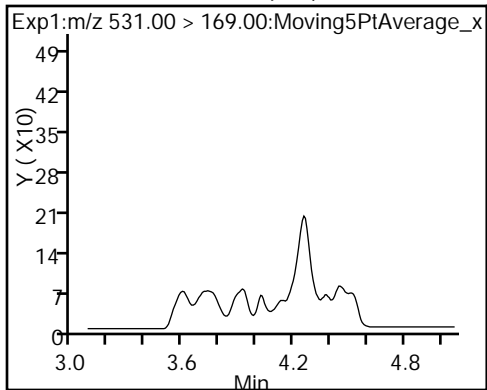
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M (ND)

39 N-ethylperfluoro-1-octanesulfonami (ND)

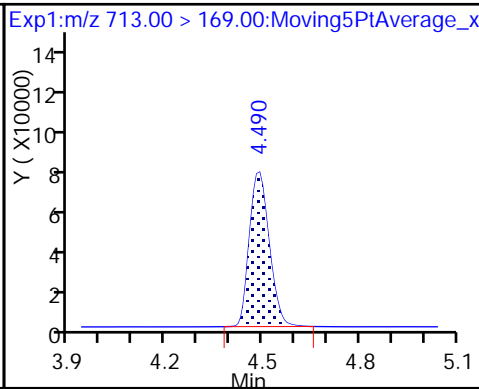
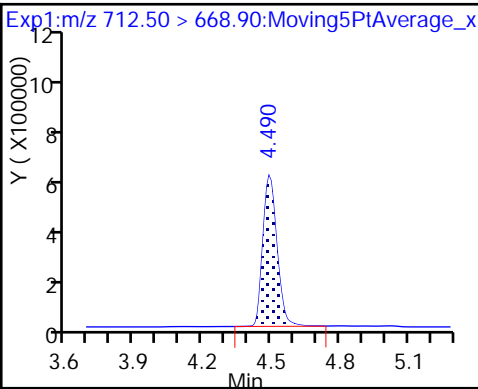
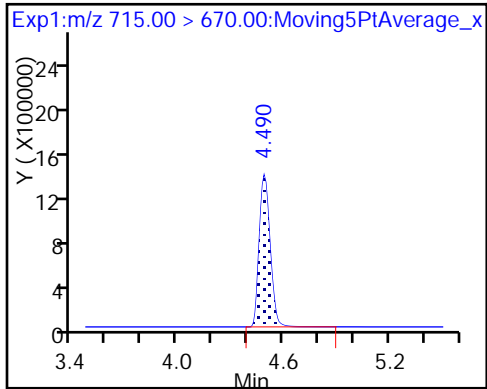
Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

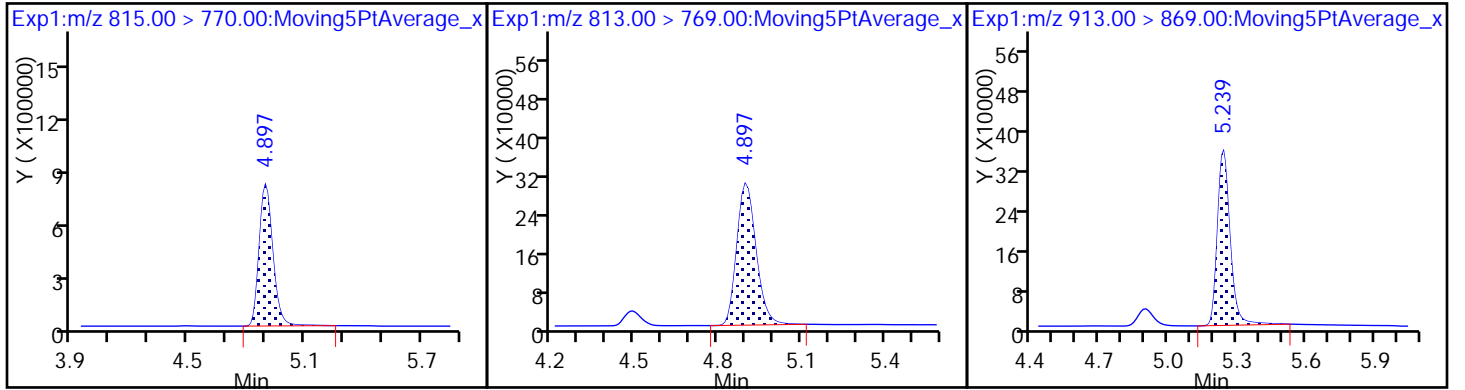
42 Perfluorotetradecanoic acid



D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW08-SO-0617 MS Lab Sample ID: 320-29267-24 MS  
 Matrix: Solid Lab File ID: 2017.07.18C\_008.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 13:00  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.00(g) Date Analyzed: 07/19/2017 00:50  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: 7.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.35		0.54	0.32	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	4.39		0.54	0.32	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4.49		0.43	0.32	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	120		25-150
STL00991	13C4 PFOS	77		25-150
STL00994	18O2 PFHxS	99		25-150



TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_008.d  
 Lims ID: 320-29267-A-24-B MS  
 Client ID:  
 Sample Type: MS  
 Inject. Date: 19-Jul-2017 00:50:14 ALS Bottle#: 8 Worklist Smp#: 9  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-24-b ms  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:52:27

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.545	1.545	0.0	10008649	56.5		113	39837	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.545	0.0	1.000	4054612	22.2	111	1182	
D 3 13C5-PFPeA	267.90 > 223.00	1.754	1.754	0.0	6953430	56.2		112	61287	
4 Perfluoropentanoic acid	262.90 > 219.00	1.754	1.754	0.0	1.000	2985693	20.8	104	1678	
D 47 13C3-PFBS	301.90 > 83.00	1.782	1.782	0.0	168390	NC			4348	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.782	1.782	0.0	1.000	4876570	20.8	118	41801	
	298.90 > 99.00	1.782	1.782	0.0	1.000	1950287	2.50(0.00-0.00)		11103	
D 40 d-N-EtFOSE-M	212.90 > 169.00	2.063	1.884	0.179	33468	NC			7.4	
D 60 M2-4:2FTS	329.00 > 309.00	1.983	1.986	-0.003	7169	NC			11.6	
6 Perfluorohexanoic acid	313.00 > 269.00	2.017	2.017	0.0	1.000	2710369	21.5	107	3635	
D 7 13C2 PFHxA	315.00 > 270.00	2.017	2.017	0.0	6671476	56.4		113	40218	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.338	2.339	-0.001	1.000	3028867	21.8	109	3271	
D 9 13C4-PFHpA	367.00 > 322.00	2.338	2.339	-0.001	6829302	63.6		127	45383	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.346	2.355	-0.009	1.000	3550929	19.9	110	2780	
D 11 18O2 PFHxS	403.00 > 84.00	2.346	2.355	-0.009	8225237	46.7		98.7	37329	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.658	2.656	0.002	2523	0.0483	0.0	120	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.658	2.656	0.002	1.000	20722	NR	0.0	774
* 62 13C2-PFOA	415.00	> 370.00	2.679	2.685	-0.006	7342	50.0	0.0	278	
D 14 13C4 PFOA	417.00	> 372.00	2.687	2.685	0.002	5660112	60.1	120	41520	
15 Perfluorooctanoic acid	413.00	> 369.00	2.687	2.685	0.002	1.000	2426328	20.2	101	730
16 Perfluoroheptanesulfonic Acid	413.00	> 169.00	2.687	2.685	0.002	1.000	1431541	1.69(0.90-1.10)	6721	
17 Perfluorooctane sulfonic acid	449.00	> 80.00	2.694	2.692	0.002	1.000	3102769	27.7	146	24331
20 Perfluorononanoic acid	499.00	> 80.00	3.053	3.051	0.003	1.000	2092973	20.3	110	52404
	499.00	> 99.00	3.053	3.051	0.003	1.000	448710	4.66(0.90-1.10)	2471	
D 18 13C4 PFOS	463.00	> 419.00	3.053	3.051	0.003	1.000	1803521	20.9	105	3959
D 19 13C5 PFNA	503.00	> 80.00	3.053	3.051	0.003	4717870	36.6	76.6	22699	
D 21 13C8 FOSA	468.00	> 423.00	3.053	3.051	0.003	4263323	56.1	112	25560	
22 Perfluorooctane Sulfonamide	506.00	> 78.00	3.402	3.394	0.008	4162716	20.0	40.0	20384	
24 Perfluorodecanoic acid	498.00	> 78.00	3.402	3.403	-0.001	1.000	1624767	21.2	106	17329
D 23 13C2 PFDA	513.00	> 469.00	3.411	3.412	-0.001	1.000	1137208	20.2	101	3730
29 Perfluorodecane Sulfonic acid	515.00	> 470.00	3.411	3.412	-0.001	2837180	44.0	88.0	13239	
D 30 13C2 PFUnA	599.00	> 80.00	3.719	3.722	-0.003	1.000	1155687	18.8	97.4	10184
31 Perfluoroundecanoic acid	565.00	> 520.00	3.739	3.732	0.007	2056625	42.6	85.2	12295	
37 Perfluorododecanoic acid	563.00	> 519.00	3.739	3.732	0.007	1.000	910063	21.0	105	2320
D 36 13C2 PFDaA	613.00	> 569.00	4.032	4.030	0.002	1.000	846727	20.2	101	2518
41 Perfluorotridecanoic acid	615.00	> 570.00	4.032	4.030	0.002	2194027	46.3	92.6	6265	
42 Perfluorotetradecanoic acid	663.00	> 619.00	4.301	4.291	0.010	1.000	857226	22.8	114	337
	712.50	> 668.90	4.538	4.526	0.012	1.000	2022897	23.1	115	448
	713.00	> 169.00	4.527	4.526	0.001	0.998	238301	8.49(0.00-0.00)	6471	
D 43 13C2-PFTeDA	715.00	> 670.00	4.527	4.526	0.001	4523115	51.0	102	18733	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.940	4.934	0.006	1.000	753071	20.2	101	153
D 44 13C2-PFHxDA	815.00	> 770.00	4.940	4.934	0.006		1762545	39.0	78.0	2886
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.284	5.281	0.003	1.000	615158	17.8	88.9	233

**QC Flag Legend**

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_008.d

Injection Date: 19-Jul-2017 00:50:14

Instrument ID: A8\_N

Lims ID: 320-29267-A-24-B MS

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 8

Worklist Smp#: 9

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

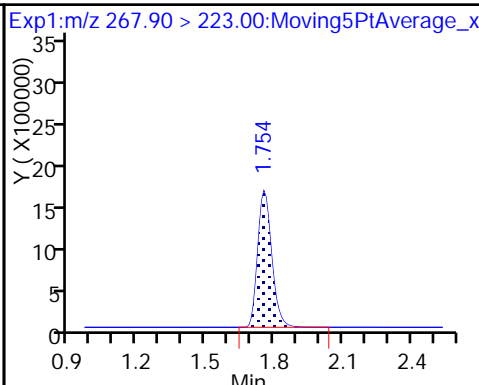
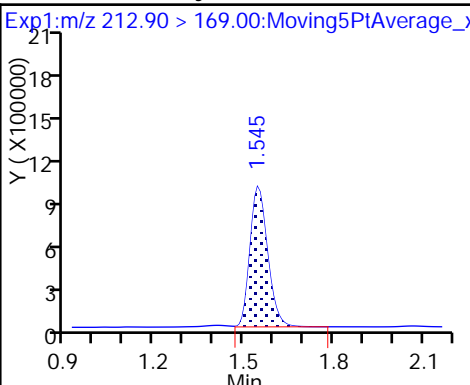
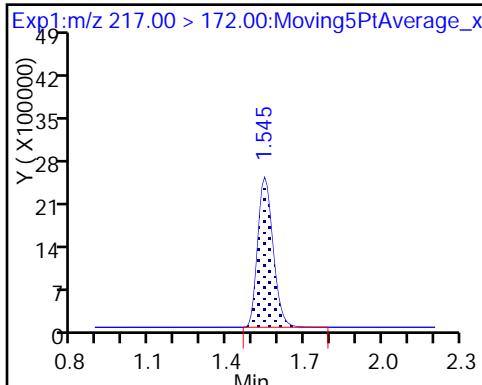
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

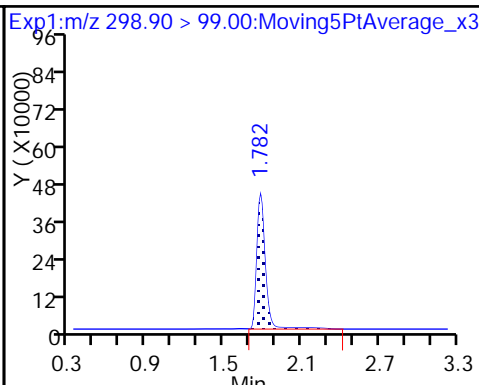
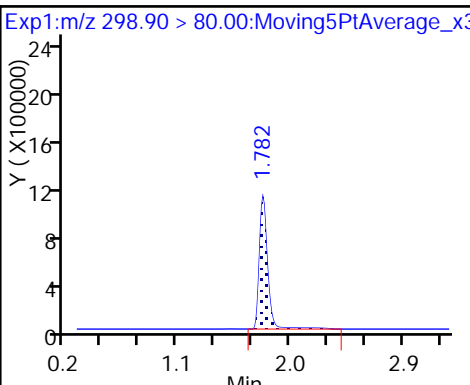
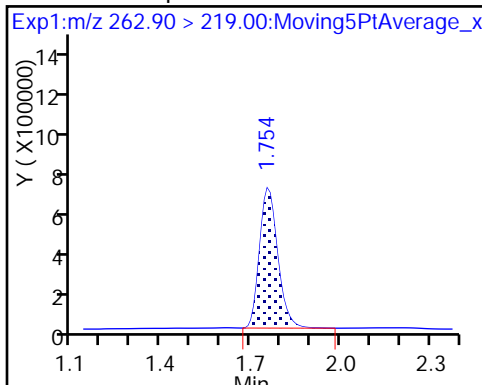
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

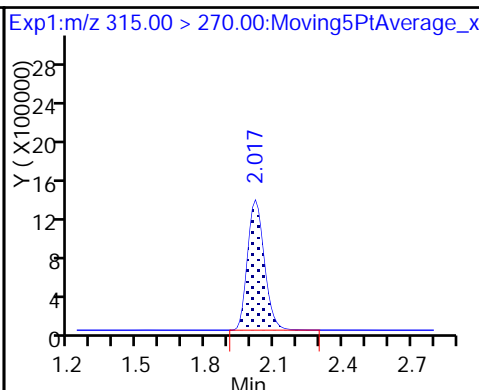
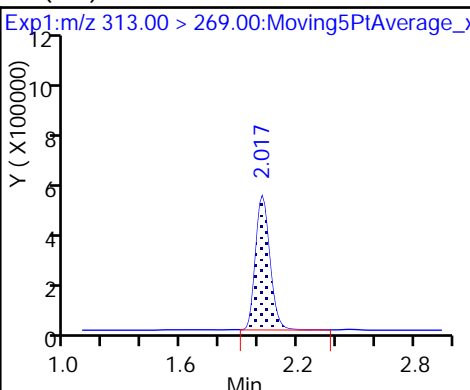
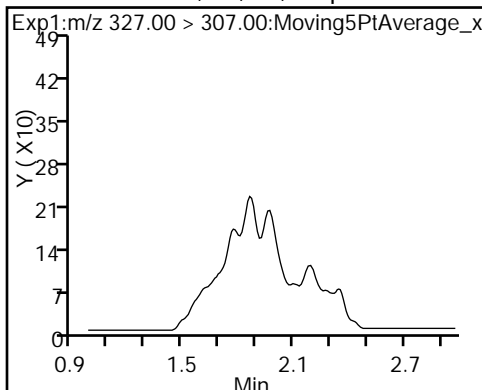
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid (PFHxA)

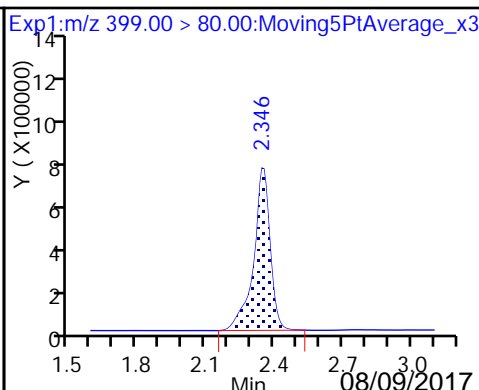
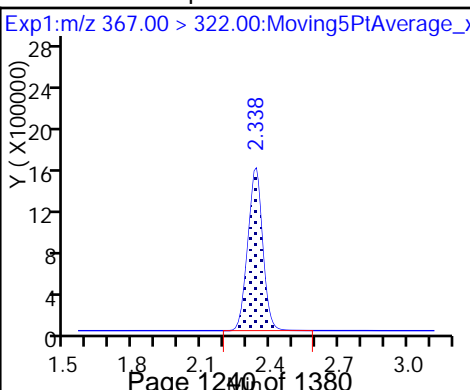
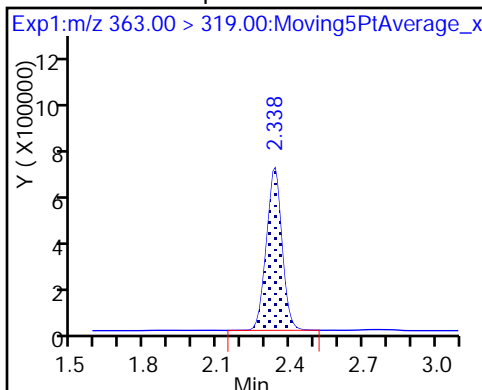
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

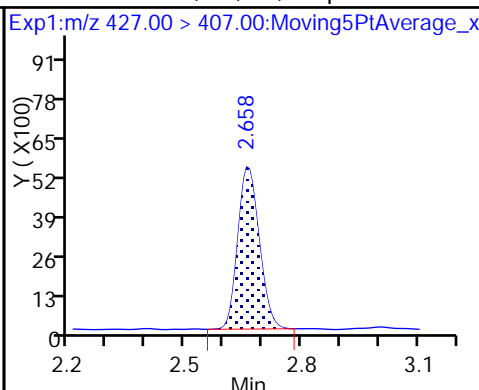
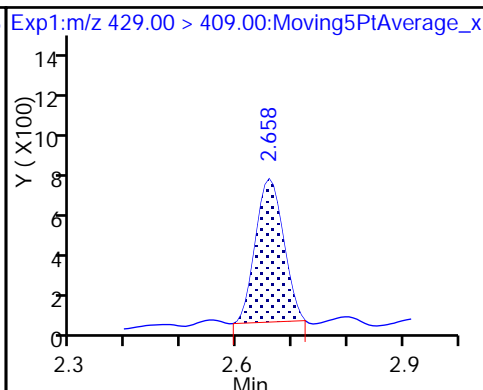
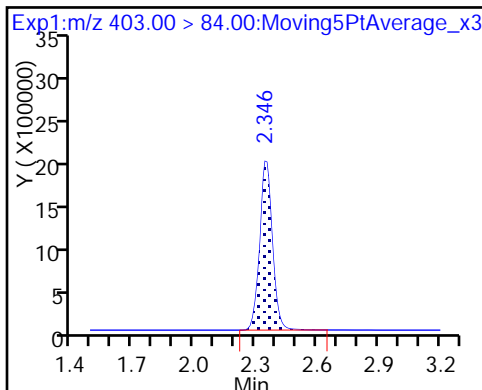
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

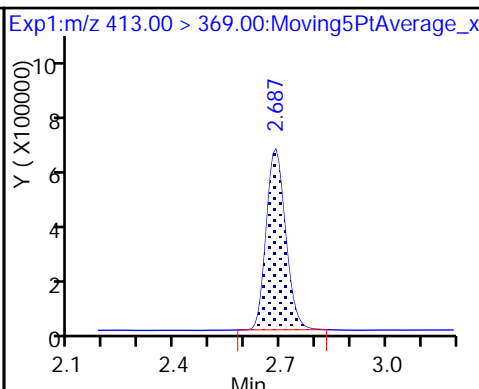
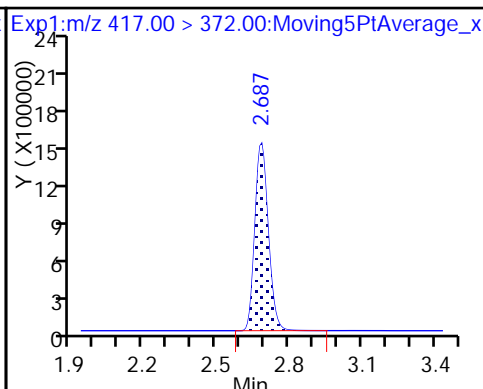
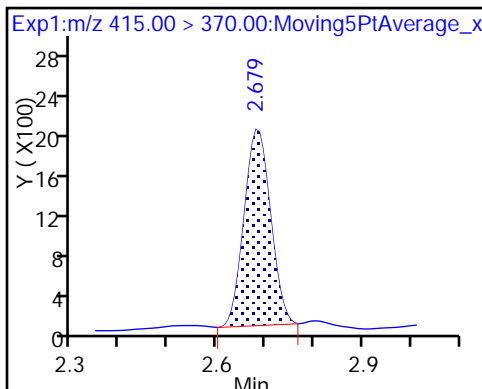
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

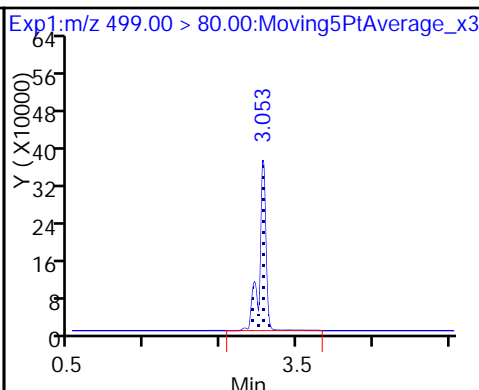
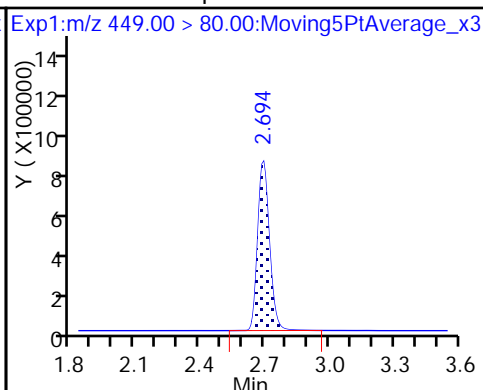
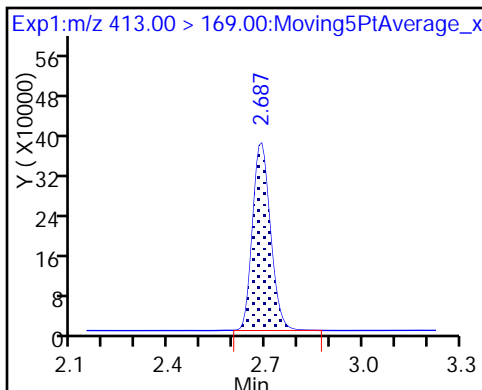
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

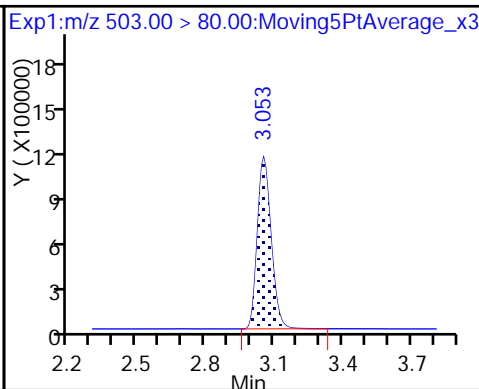
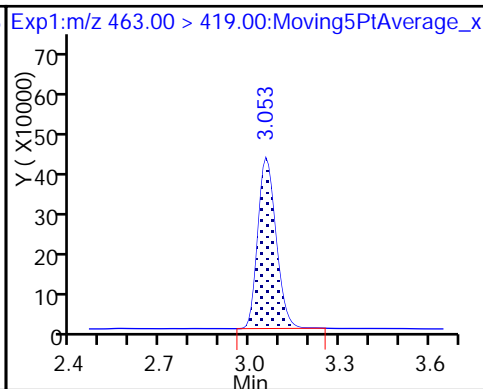
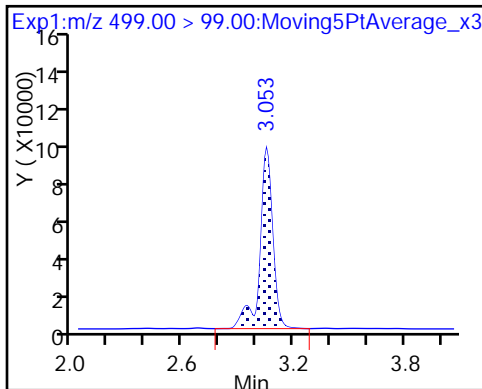
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

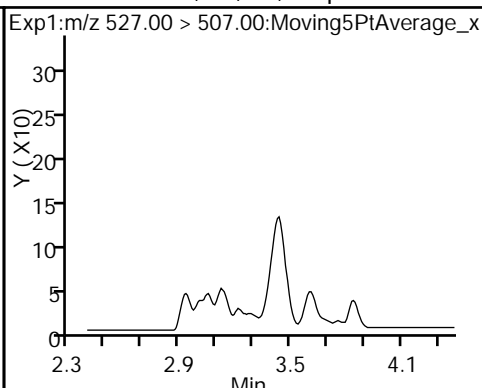
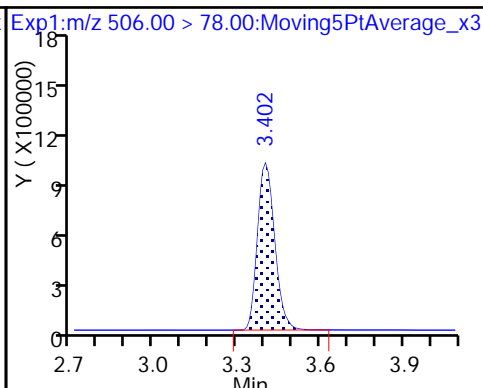
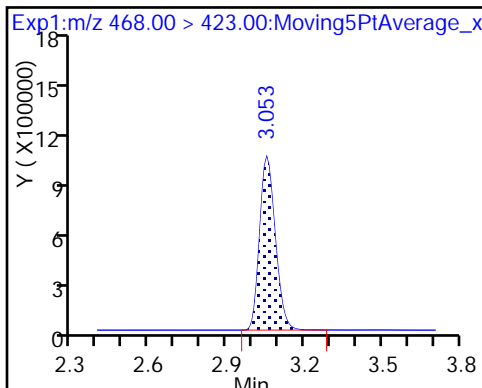
D 18 13C4 PFOS



D 19 13C5 PFNA

D 21 13C8 FOSA

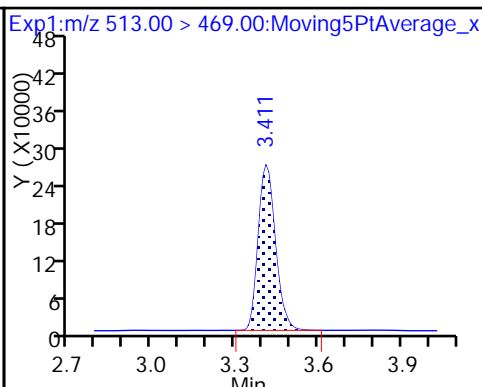
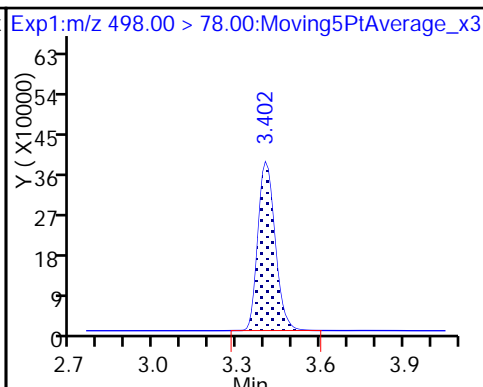
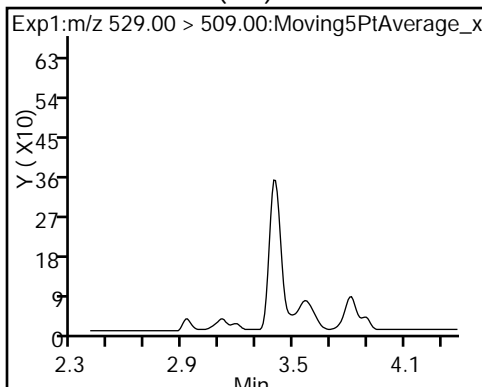
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



D 26 M2-8:2FTS (ND)

22 Perfluorooctane Sulfonamide

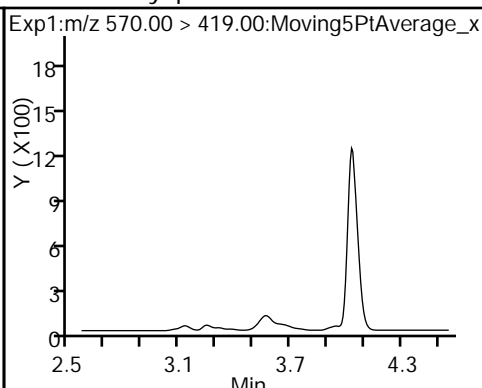
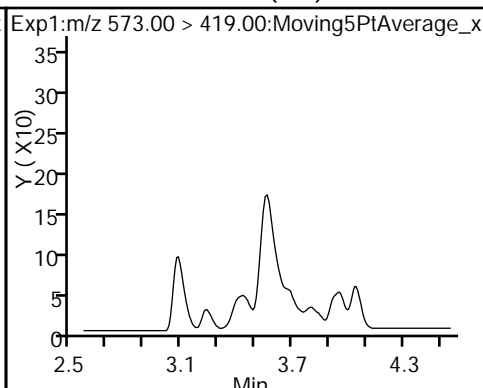
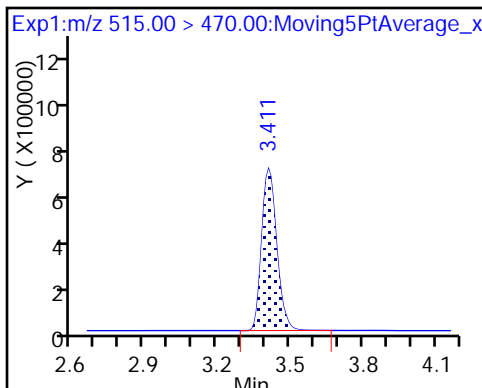
24 Perfluorodecanoic acid



D 23 13C2 PFDA

D 27 d3-NMeFOSAA (ND)

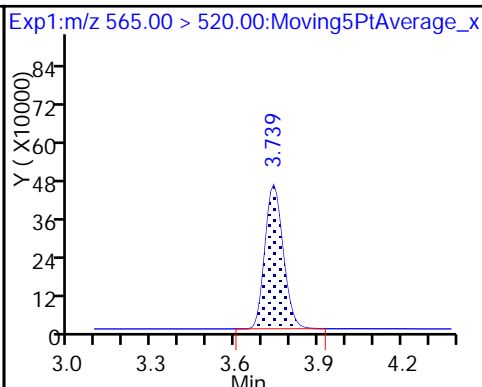
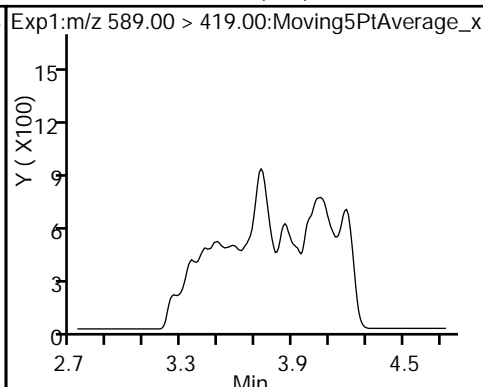
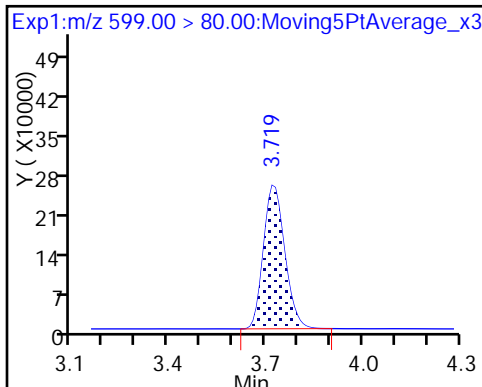
28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid

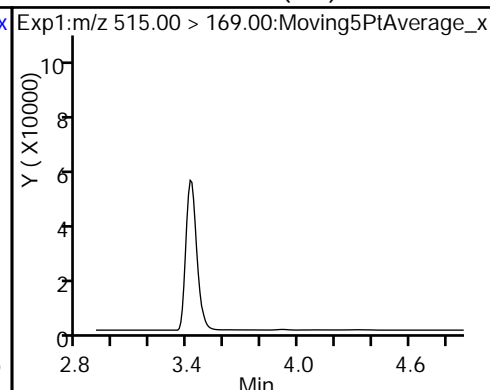
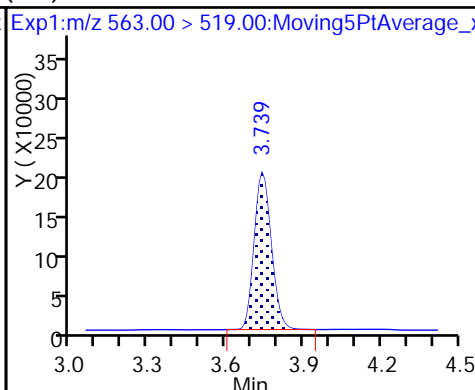
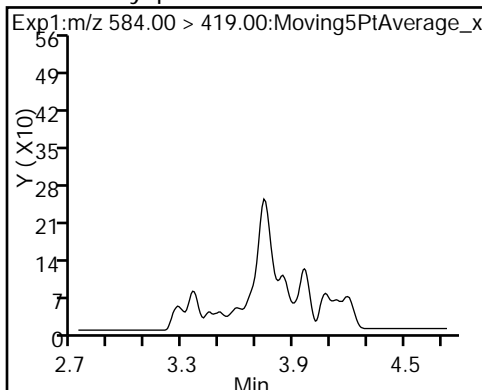
D 32 d5-NEtFOSAA (ND)

D 30 13C2 PFUnA



33 N-ethyl perfluorooctane sulfonamid (ND) Perfluoroundecanoic acid

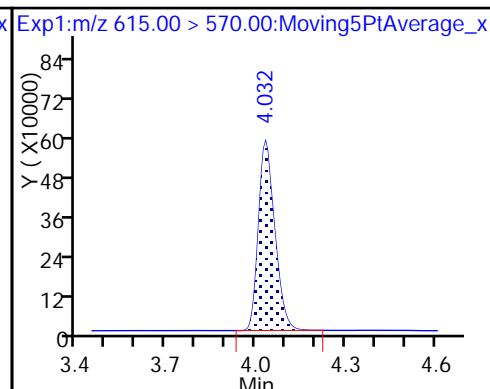
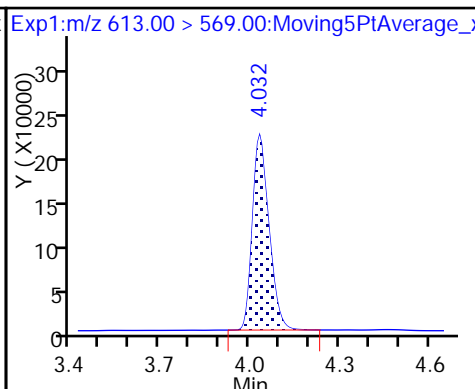
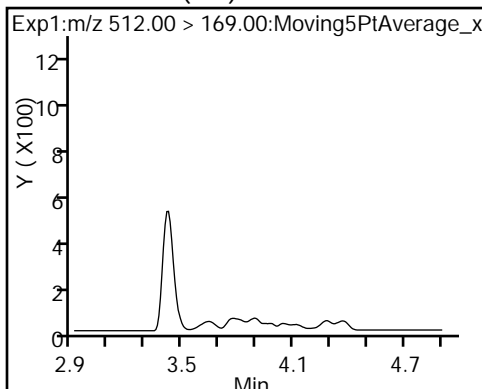
D 34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

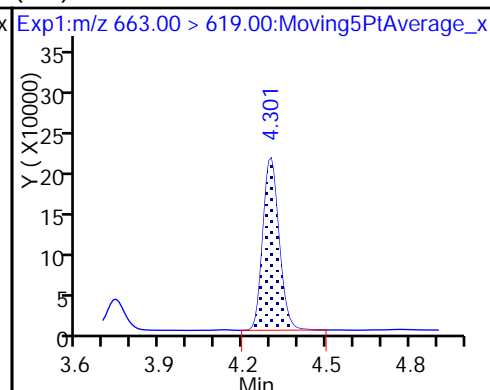
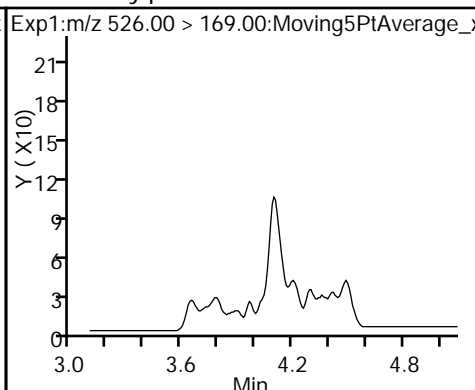
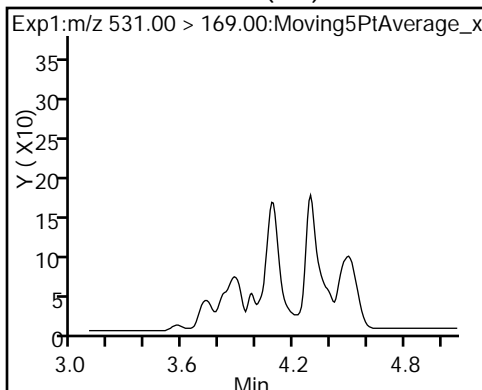
37 Perfluorododecanoic acid

D 36 13C2 PFDa



D 38 d-N-EtFOSA-M (ND)

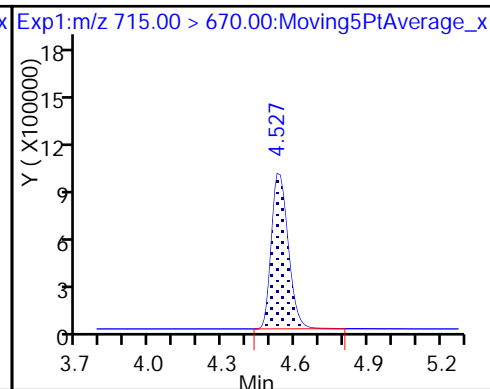
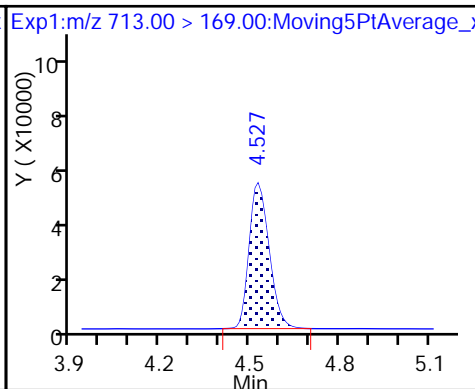
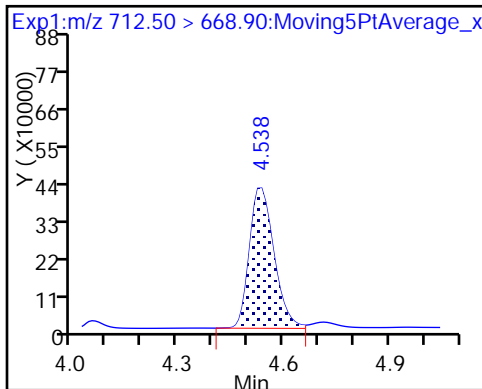
39 N-ethylperfluoro-1-octanesulfonami (ND) Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

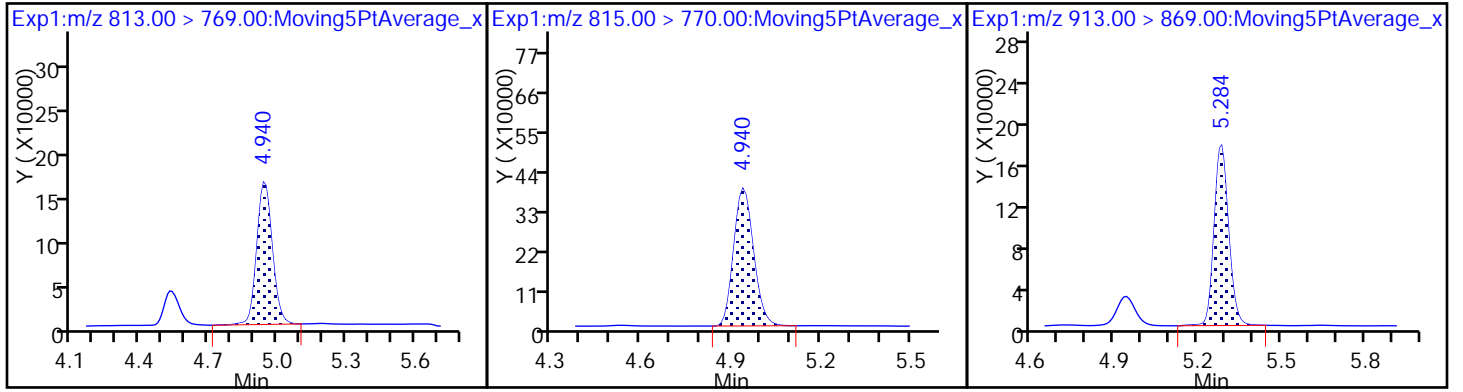
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid





FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-EASTBMW01-0617 MSD Lab Sample ID: 320-29267-4 MSD  
 Matrix: Water Lab File ID: 2017.06.28B\_010.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 11:35  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 260.2 (mL) Date Analyzed: 06/29/2017 00:21  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	38.8		2.4	1.9	0.72
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	71.3		3.8	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	36.3		2.4	1.9	0.88

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	60		25-150
STL00991	13C4 PFOS	107		25-150
STL00994	18O2 PFHxS	112		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_010.d  
 Lims ID: 320-29267-B-4-A MSD  
 Client ID: MEAFF-EASTBMW01-0617  
 Sample Type: MSD  
 Inject. Date: 29-Jun-2017 00:21:59 ALS Bottle#: 8 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-b-4-a msd  
 Misc. Info.: Plate: 1 Rack: 3  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 29-Jun-2017 16:51:28 Calib Date: 28-Jun-2017 01:01:43  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170628-44788.b\2017.06.27\_PFC\_CURVE\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK005

First Level Reviewer: chandrasenas Date: 29-Jun-2017 16:38:37

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
2 Perfluorobutyric acid										
212.90 > 169.00	1.535	1.533	0.002	1.000	3537822	23.4		117	776	
D 1 13C4 PFBA										
217.00 > 172.00	1.527	1.533	-0.006		8409450	35.9		71.9	28202	
4 Perfluoropentanoic acid										
262.90 > 219.00	1.727	1.742	-0.015	1.000	2453989	21.2		106	2067	
D 3 13C5-PFPeA										
267.90 > 223.00	1.727	1.742	-0.015		5624015	35.0		69.9	16204	
5 Perfluorobutanesulfonic acid										
298.90 > 80.00	1.753	1.760	-0.007	1.000	6265990	18.9		107	2358	
298.90 > 99.00	1.753	1.760	-0.007	1.000	2651164		2.36(0.00-0.00)		2897	
D 47 13C3-PFBS										
301.90 > 83.00	1.753	1.760	-0.007		217753	NC			6433	
61 Sodium 1H,1H,2H,2H-perfluorohexane										
327.00 > 307.00	1.948	1.958	-0.010	1.000	2186	NR		0.0	114	
D 7 13C2 PFHxA										
315.00 > 270.00	1.982	1.992	-0.010		4852470	31.6		63.3	11820	
6 Perfluorohexanoic acid										
313.00 > 269.00	1.982	2.003	-0.021	1.000	2136628	21.7		108	2484	
10 Perfluoroheptanoic acid										
363.00 > 319.00	2.296	2.312	-0.016	1.000	2049749	20.3		101	2141	
D 9 13C4-PFHpA										
367.00 > 322.00	2.296	2.312	-0.016		4732282	34.6		69.1	11296	
8 Perfluorohexanesulfonic acid										
399.00 > 80.00	2.314	2.329	-0.015	1.000	6316882	24.0		132	2840	
D 11 18O2 PFHxS										
403.00 > 84.00	2.314	2.329	-0.015		11259893	52.9		112	14403	
13 Sodium 1H,1H,2H,2H-perfluorooctane										
427.00 > 407.00	2.625	2.634	-0.009	1.000	701948	NR		0.0	8088	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.618	2.634	-0.016	35766	0.4912	0.0	1582	
* 62 13C2-PFOA	415.00	> 370.00	2.640	2.656	-0.016	3996	50.0	0.0	133	
15 Perfluorooctanoic acid	413.00	> 369.00	2.647	2.663	-0.016	1666323	20.2	101	907	
	413.00	> 169.00	2.647	2.663	-0.016	986786	1.69(0.90-1.10)	2692		
D 14 13C4 PFOA	417.00	> 372.00	2.647	2.663	-0.016	3889060	29.8	59.6	11331	
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.654	2.671	-0.017	4815325	24.0	126	8541	
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.013	3.026	-0.013	6782232	37.1	200	9035	
	499.00	> 99.00	3.005	3.026	-0.021	1493993	4.54(0.90-1.10)	6331		
D 18 13C4 PFOS	503.00	> 80.00	3.013	3.026	-0.013	8324462	51.2	107	12944	
D 19 13C5 PFNA	468.00	> 423.00	3.013	3.026	-0.013	2145613	20.4	40.9	8866	
20 Perfluorononanoic acid	463.00	> 419.00	3.013	3.026	-0.013	925257	21.7	109	1741	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.364	3.379	-0.015	12252	21.3	107	244	
D 21 13C8 FOSA	506.00	> 78.00	3.364	3.379	-0.015	29522	0.1118	0.2	632	
25 Sodium 1H,1H,2H,2H-perfluorodecane	527.00	> 507.00	3.355	3.379	-0.024	3118	NR	0.0	259	
D 23 13C2 PFDA	515.00	> 470.00	3.364	3.388	-0.024	1549220	15.5	31.0	8960	
24 Perfluorodecanoic acid	513.00	> 469.00	3.364	3.388	-0.024	643903	21.5	108	3910	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.675	3.700	-0.025	2188119	19.7	102	12047	
D 30 13C2 PFUnA	565.00	> 520.00	3.694	3.710	-0.016	1052054	14.2	28.3	6361	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.694	3.710	-0.016	470956	21.0	105	1471	
D 36 13C2 PFDaA	615.00	> 570.00	3.982	4.008	-0.026	1110911	15.1	30.3	5637	
37 Perfluorododecanoic acid	613.00	> 569.00	3.988	4.008	-0.020	442158	20.9	105	1793	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.256	4.273	-0.017	588154	27.3	136	655	
D 43 13C2-PFTeDA	715.00	> 670.00	4.490	4.510	-0.020	4391067	29.0	58.0	45196	
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.490	4.510	-0.020	1967999	38.0	190	1582	
	713.00	> 169.00	4.481	4.510	-0.029	244889	8.04(0.00-0.00)	6483		

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 44 13C2-PFHxDA	815.00 > 770.00	4.897	4.922	-0.025		3011838	35.9	71.8	6081	
45 Perfluorohexadecanoic acid	813.00 > 769.00	4.897	4.922	-0.025	1.000	1176025	52.0	260	279	
46 Perfluorooctadecanoic acid	913.00 > 869.00	5.232	5.265	-0.033	1.000	1301502	54.3	272	435	

**QC Flag Legend**

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b\2017.06.28B\_010.d

Injection Date: 29-Jun-2017 00:21:59 Instrument ID: A8\_N

Lims ID: 320-29267-B-4-A MSD

Client ID: MEAFF-EASTBMW01-0617

Operator ID: SACINSTLCMS01

ALS Bottle#: 8 Worklist Smp#: 10

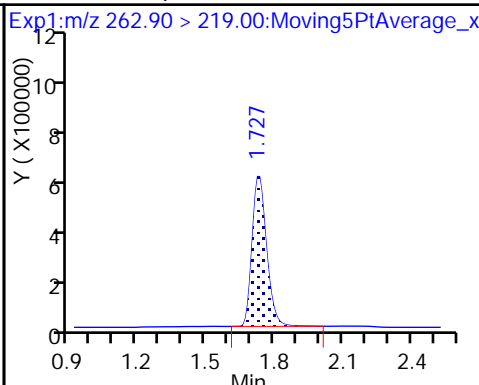
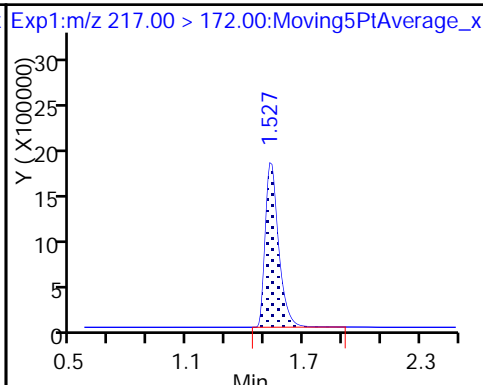
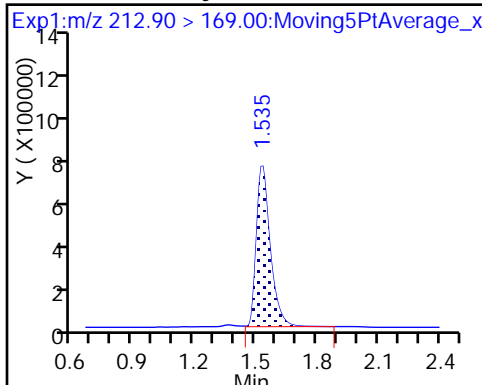
Injection Vol: 2.0 ul Dil. Factor: 1.0000

Method: A8\_N Limit Group: LC PFC\_DOD ICAL

2 Perfluorobutyric acid

D 1 13C4 PFBA

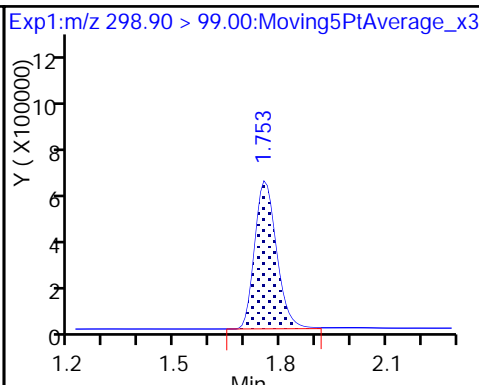
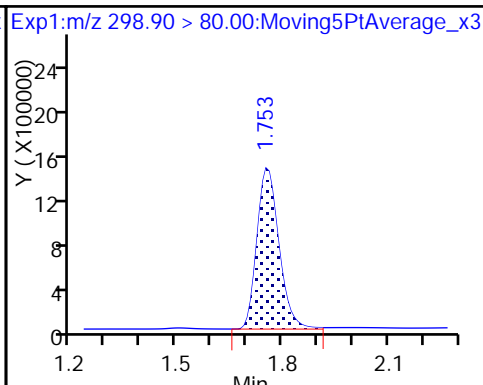
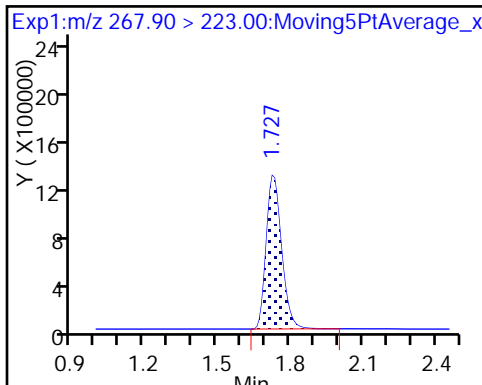
4 Perfluoropentanoic acid



D 3 13C5-PFPeA

5 Perfluorobutanesulfonic acid

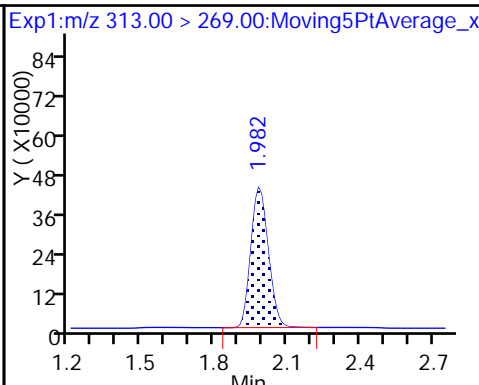
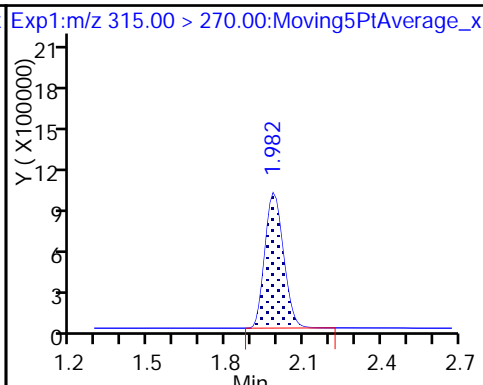
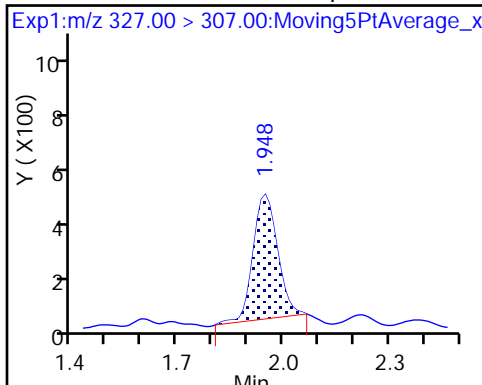
5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexa

D 7 13C2 PFHxA

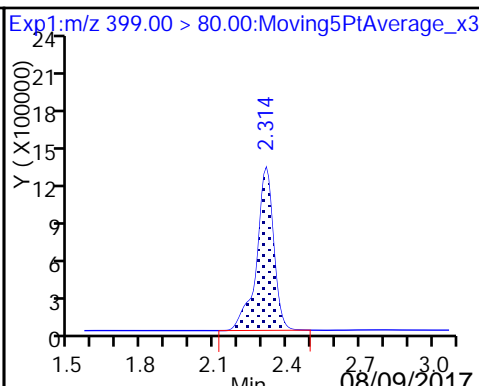
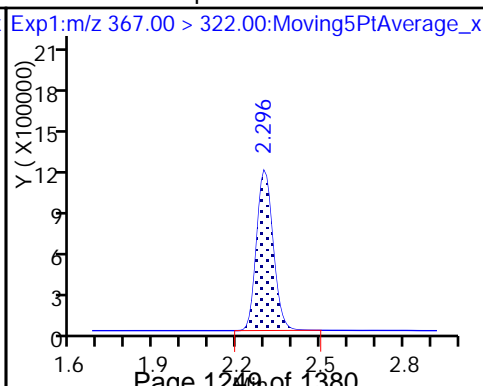
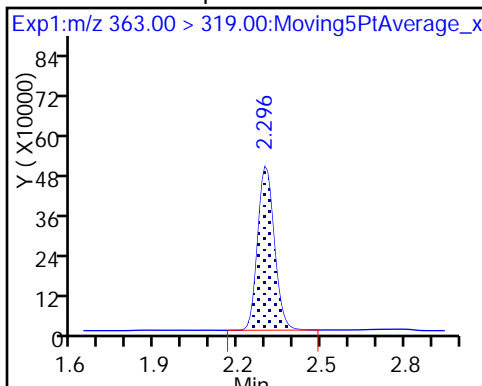
6 Perfluorohexanoic acid



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

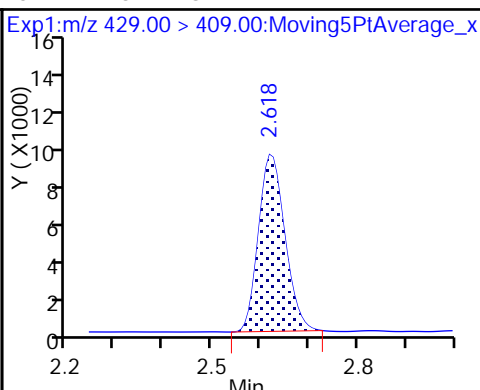
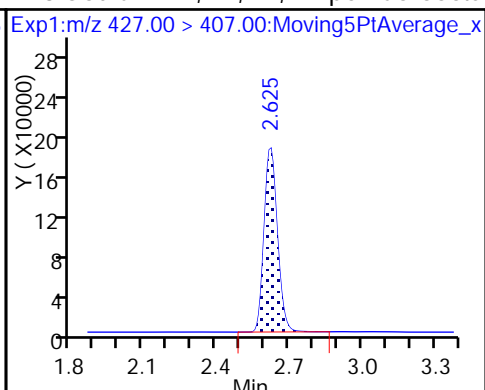
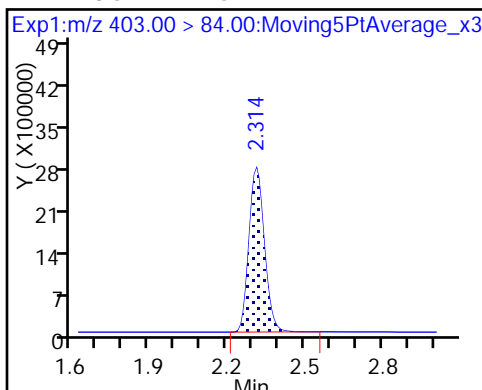
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

13 Sodium 1H,1H,2H,2H-perfluorooctadecanoate

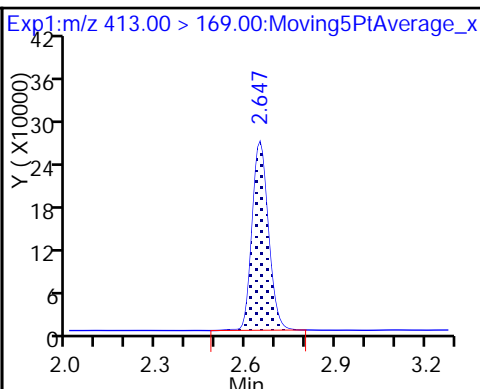
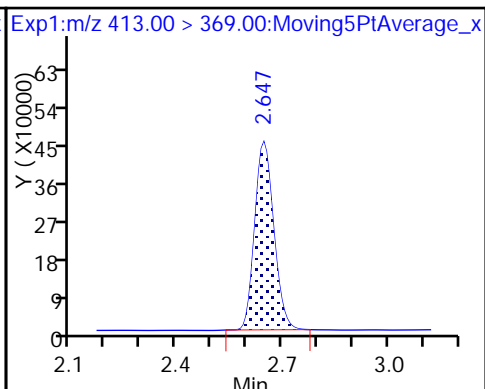
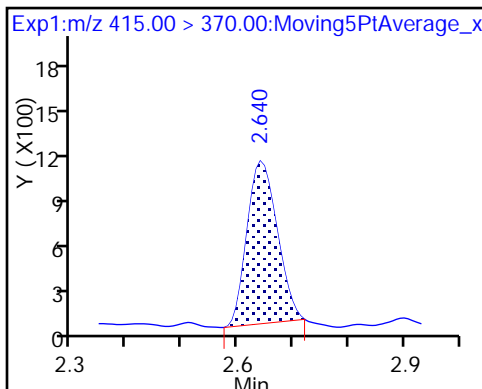
D 12 M2-6:2FTS



\* 62 13C2-PFOA

15 Perfluorooctanoic acid

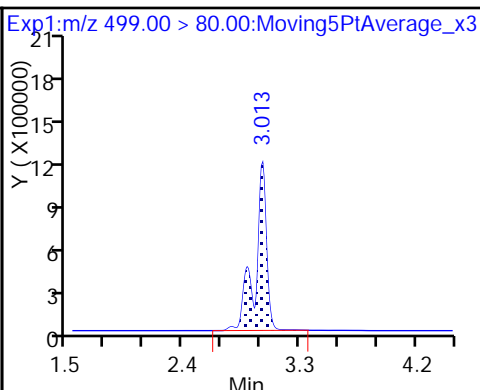
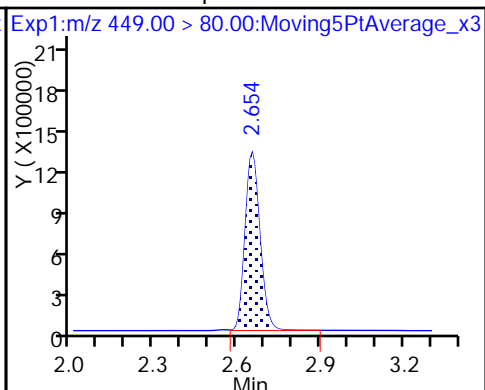
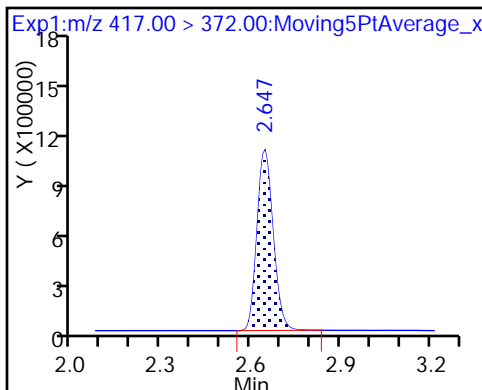
15 Perfluorooctanoic acid



D 14 13C4 PFOA

16 Perfluoroheptanesulfonic Acid

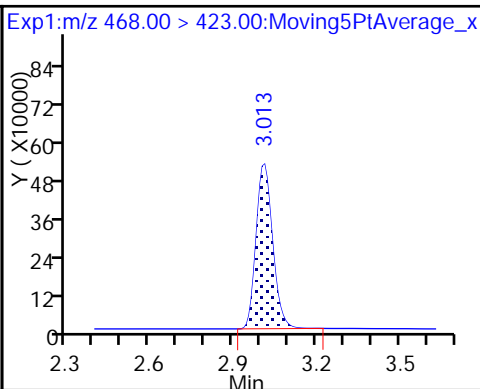
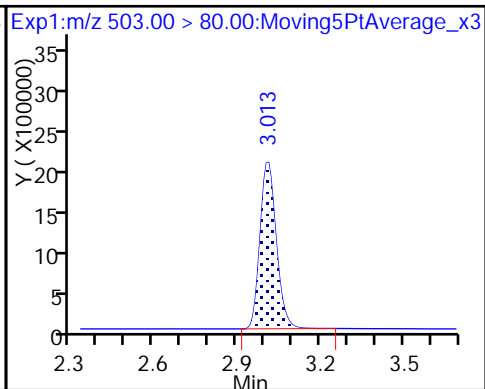
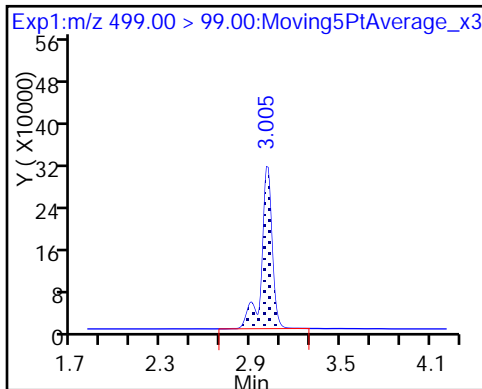
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

D 18 13C4 PFOS

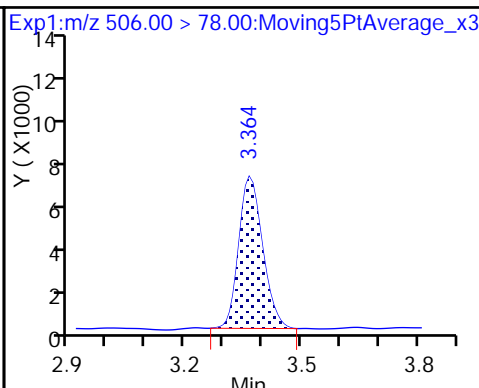
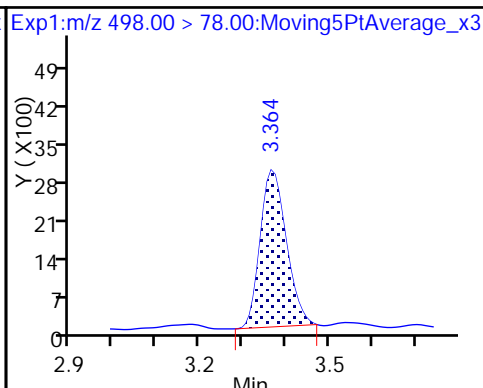
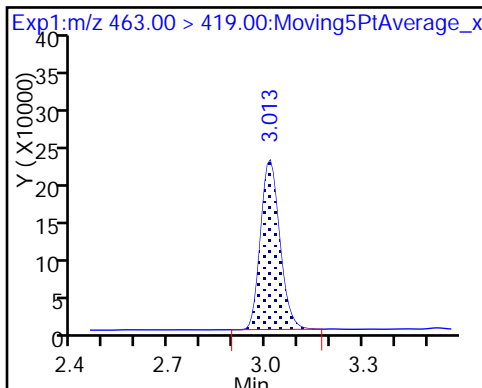
D 19 13C5 PFNA



20 Perfluorononanoic acid

22 Perfluorooctane Sulfonamide

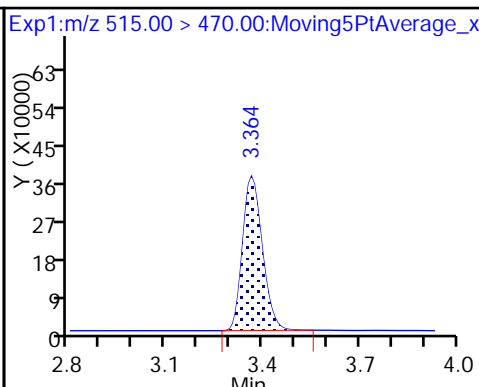
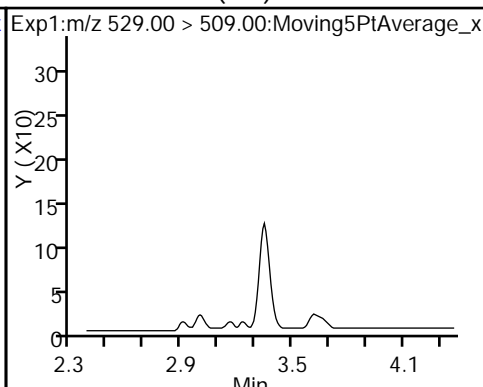
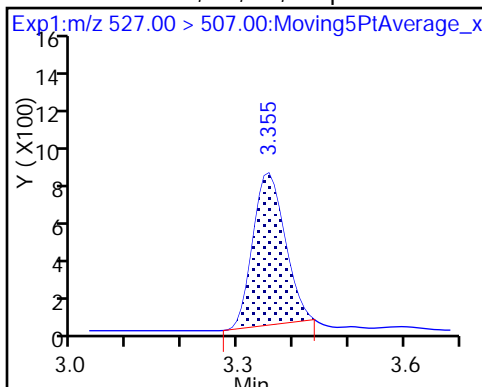
D 21 13C8 FOSA



25 Sodium 1H,1H,2H,2H-perfluorodeca

D 26 M2-8:2FTS (ND)

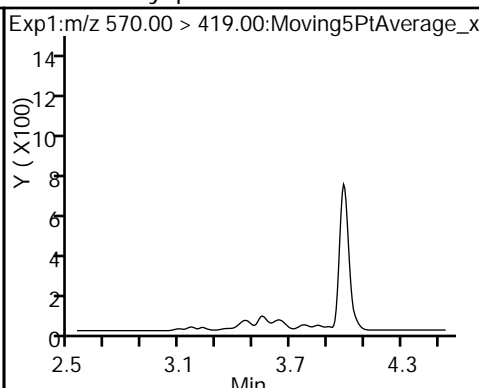
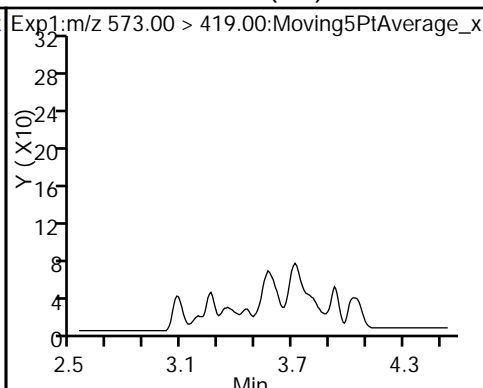
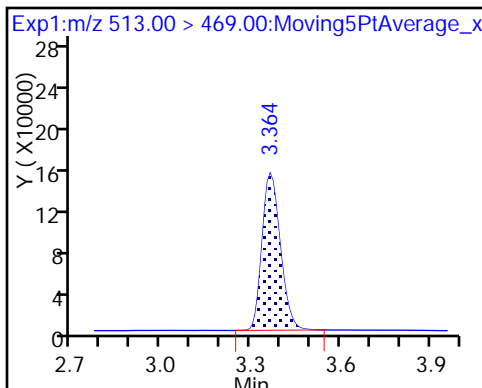
D 23 13C2 PFDA



24 Perfluorodecanoic acid

D 27 d3-NMeFOSAA (ND)

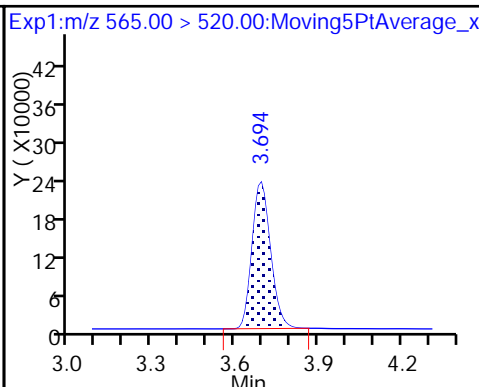
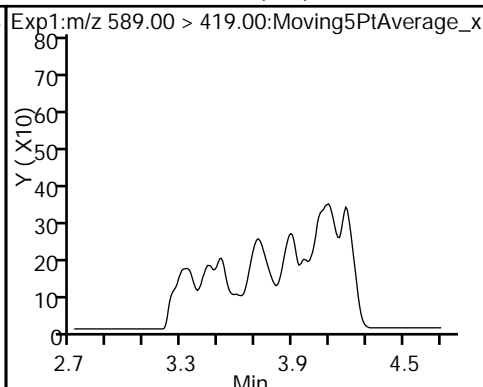
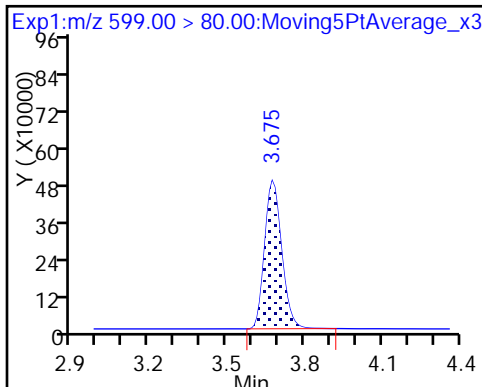
28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA (ND)

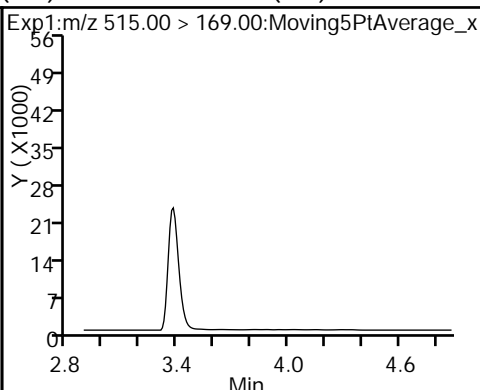
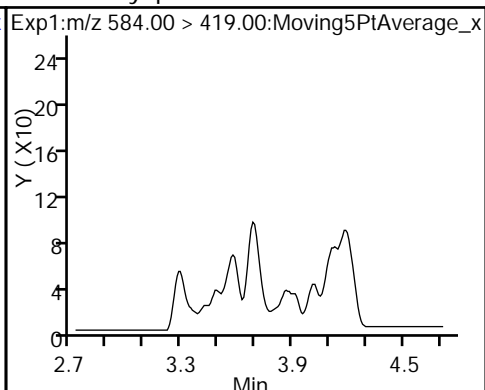
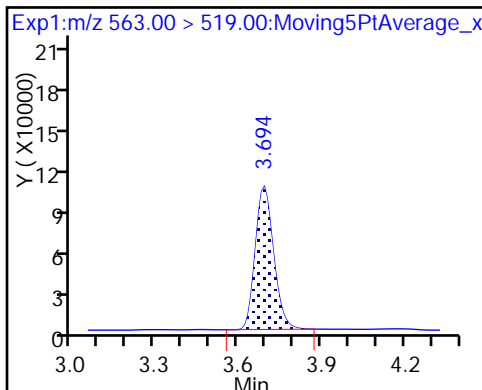
D 30 13C2 PFUnA



31 Perfluoroundecanoic acid

33 N-ethyl perfluorooctane sulfonamid (ND)

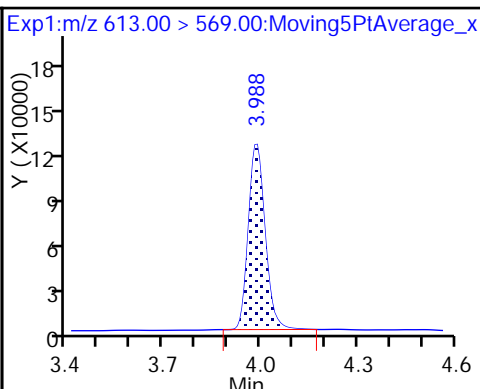
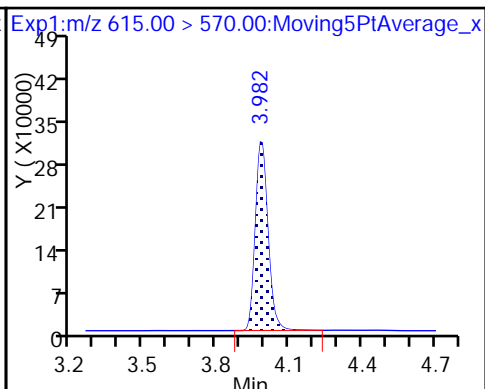
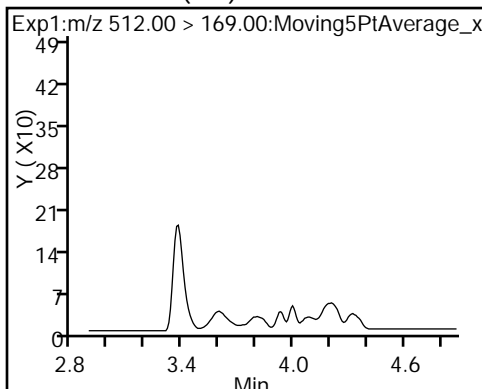
34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

D 36 13C2 PFDaA

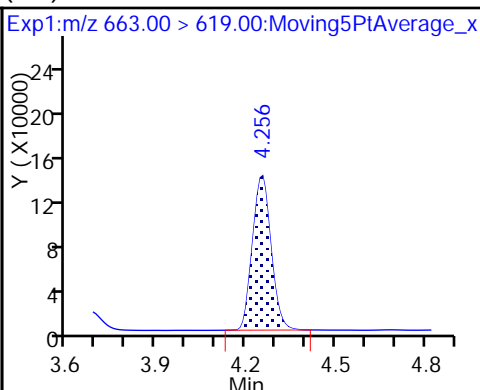
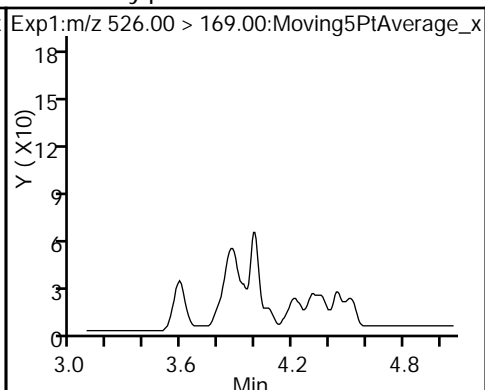
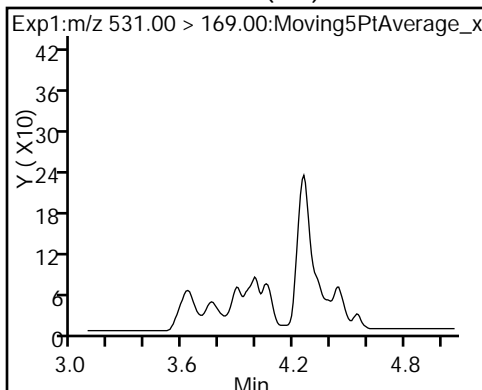
37 Perfluorododecanoic acid



D 38 d-N-EtFOSA-M (ND)

39 N-ethylperfluoro-1-octanesulfonami (ND)

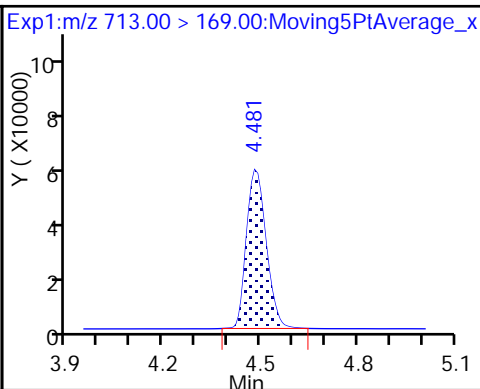
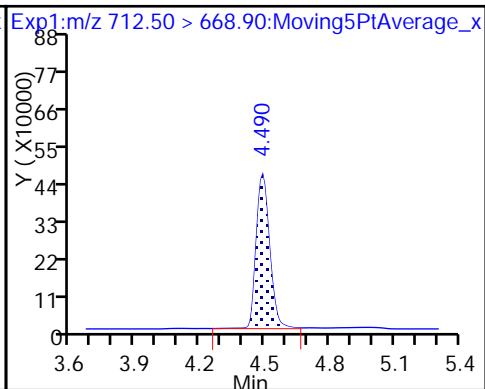
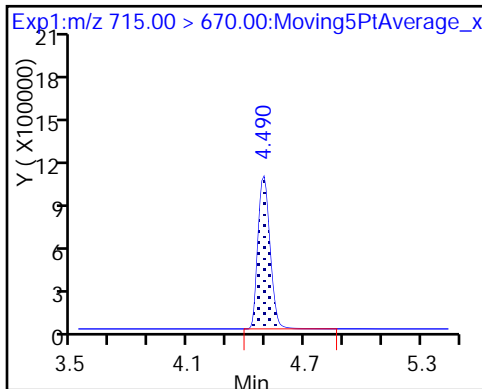
Perfluorotridecanoic acid



D 43 13C2-PFTeDA

42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

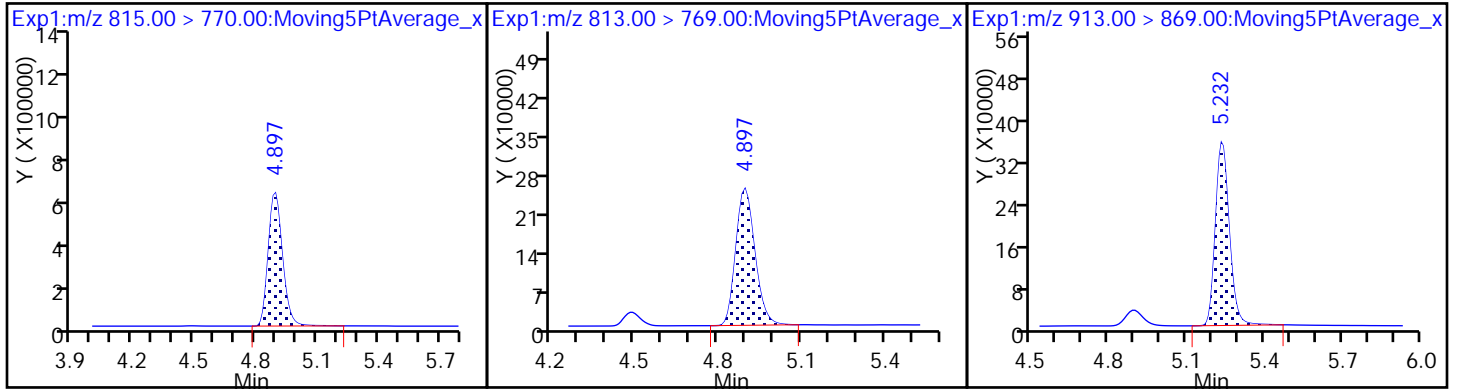




D 44 13C2-PFHxDA

45 Perfluorohexadecanoic acid

46 Perfluorooctadecanoic acid



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW08-SO-0617 MSD Lab Sample ID: 320-29267-24 MSD  
 Matrix: Solid Lab File ID: 2017.07.18C\_009.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 13:00  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.00 (g) Date Analyzed: 07/19/2017 00:57  
 Con. Extract Vol.: 1.00 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: 7.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.30		0.54	0.32	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	4.55		0.54	0.32	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	4.61		0.43	0.32	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	122		25-150
STL00991	13C4 PFOS	81		25-150
STL00994	18O2 PFHxS	92		25-150

TestAmerica Sacramento  
Target Compound Quantitation Report

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_009.d  
 Lims ID: 320-29267-A-24-C MSD  
 Client ID:  
 Sample Type: MSD  
 Inject. Date: 19-Jul-2017 00:57:08 ALS Bottle#: 9 Worklist Smp#: 10  
 Injection Vol: 2.0 ul Dil. Factor: 1.0000  
 Sample Info: 320-29267-a-24-c msd  
 Misc. Info.: Plate: 1 Rack: 5  
 Operator ID: SACINSTLCMS01 Instrument ID: A8\_N  
 Method: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\A8\_N.m  
 Limit Group: LC PFC\_DOD ICAL  
 Last Update: 19-Jul-2017 13:54:16 Calib Date: 18-Jul-2017 14:56:32  
 Integrator: Picker  
 Quant Method: Isotopic Dilution Quant By: Initial Calibration  
 Last ICal File: \\ChromNA\Sacramento\ChromData\A8\_N\20170718-45589.b\2017.07.18ICAL\_010.d  
 Column 1 : Det: EXP1  
 Process Host: XAWRK006

First Level Reviewer: chandrasenas Date: 19-Jul-2017 13:52:55

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 1 13C4 PFBA	217.00 > 172.00	1.545	1.545	0.0	9748813	55.1		110	32921	
2 Perfluorobutyric acid	212.90 > 169.00	1.545	1.545	0.0	3889902	21.9		109	708	
D 3 13C5-PFPeA	267.90 > 223.00	1.755	1.754	0.001	6849673	55.3		111	46498	
4 Perfluoropentanoic acid	262.90 > 219.00	1.755	1.754	0.001	2847656	20.2		101	1347	
D 47 13C3-PFBS	301.90 > 83.00	1.782	1.782	0.0	158698	NC			3088	
5 Perfluorobutanesulfonic acid	298.90 > 80.00	1.782	1.782	0.0	4659912	21.4		121	22597	
	298.90 > 99.00	1.782	1.782	0.0	1770101		2.63(0.00-0.00)		5541	
D 40 d-N-EtFOSE-M	212.90 > 169.00	2.074	1.884	0.190	52796	NC			7.2	
61 Sodium 1H,1H,2H,2H-perfluorohexane	327.00 > 307.00	1.764	1.983	-0.219	1221	NR		0.0	16.4	
6 Perfluorohexanoic acid	313.00 > 269.00	2.017	2.017	0.0	2602113	22.2		111	2641	
D 7 13C2 PFHxA	315.00 > 270.00	2.017	2.017	0.0	6204818	52.5		105	30681	
10 Perfluoroheptanoic acid	363.00 > 319.00	2.338	2.339	-0.001	3059003	21.9		110	2747	
D 9 13C4-PFHpA	367.00 > 322.00	2.338	2.339	-0.001	6847005	63.8		128	29384	
8 Perfluorohexanesulfonic acid	399.00 > 80.00	2.355	2.355	0.0	3381469	20.4		112	2338	
D 11 18O2 PFHxS	403.00 > 84.00	2.355	2.355	0.0	434	43.4		91.7	31789	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
D 12 M2-6:2FTS	429.00	> 409.00	2.665	2.656	0.009	1414	0.0270	0.0	65.6	
13 Sodium 1H,1H,2H,2H-perfluorooctane	427.00	> 407.00	2.657	2.656	0.001	1.000	10401	NR	0.0	394
* 62 13C2-PFOA	415.00	> 370.00	2.686	2.685	0.001	5937	50.0	0.0	275	
D 14 13C4 PFOA	417.00	> 372.00	2.686	2.685	0.001	5734785	60.9	122	29539	
15 Perfluorooctanoic acid	413.00	> 369.00	2.686	2.685	0.001	1.000	2428566	19.9	99.7	750
	413.00	> 169.00	2.686	2.685	0.001	1.000	1426355	1.70(0.90-1.10)		5876
16 Perfluoroheptanesulfonic Acid	449.00	> 80.00	2.694	2.692	0.002	1.000	3204762	27.2	143	18951
17 Perfluorooctane sulfonic acid	499.00	> 80.00	3.051	3.051	0.001	1.000	2292872	21.1	114	7437
	499.00	> 99.00	3.051	3.051	0.001	1.000	498782	4.60(0.90-1.10)		2495
20 Perfluorononanoic acid	463.00	> 419.00	3.051	3.051	0.001	1.000	1980829	22.0	110	2358
D 18 13C4 PFOS	503.00	> 80.00	3.051	3.051	0.001	4977022	38.6	80.8	17882	
D 19 13C5 PFNA	468.00	> 423.00	3.051	3.051	0.001	4456300	58.6	117	21228	
D 21 13C8 FOSA	506.00	> 78.00	3.407	3.394	0.013	4713398	22.6	45.3	22819	
22 Perfluorooctane Sulfonamide	498.00	> 78.00	3.407	3.403	0.004	1.000	1894548	21.8	109	14441
24 Perfluorodecanoic acid	513.00	> 469.00	3.416	3.412	0.004	1.000	1417495	20.4	102	2917
D 23 13C2 PFDA	515.00	> 470.00	3.416	3.412	0.004	3492378	54.2	108	17299	
29 Perfluorodecane Sulfonic acid	599.00	> 80.00	3.723	3.722	0.001	1.000	981049	15.1	78.4	8279
D 30 13C2 PFUnA	565.00	> 520.00	3.742	3.732	0.010	2225157	46.1	92.2	14892	
31 Perfluoroundecanoic acid	563.00	> 519.00	3.742	3.732	0.010	1.000	1017296	21.7	109	2117
37 Perfluorododecanoic acid	613.00	> 569.00	4.034	4.030	0.004	1.000	704385	19.7	98.3	2049
D 36 13C2 PFDoA	615.00	> 570.00	4.034	4.030	0.004	1873627	39.5	79.1	5363	
41 Perfluorotridecanoic acid	663.00	> 619.00	4.303	4.291	0.012	1.000	786784	24.5	122	341
42 Perfluorotetradecanoic acid	712.50	> 668.90	4.540	4.526	0.014	1.000	1901311	25.4	127	456
	713.00	> 169.00	4.528	4.526	0.002	0.998	213419	8.91(0.00-0.00)		5236
D 43 13C2-PFTeDA	715.00	> 670.00	4.528	4.526	0.002	4197494	47.4	94.7	21887	

Signal	RT	EXP RT	DLT RT	REL RT	Response	Amount ng/ml	Ratio(Limits)	%Rec	S/N	Flags
45 Perfluorohexadecanoic acid	813.00	> 769.00	4.940	4.934	0.006	1.000	774483	24.4	122	159
D 44 13C2-PFHxDA	815.00	> 770.00	4.940	4.934	0.006		1849589	40.9	81.8	3204
46 Perfluorooctadecanoic acid	913.00	> 869.00	5.284	5.281	0.003	1.000	627680	21.2	106	245

**QC Flag Legend**

Processing Flags

NR - Missing Quant Standard

NC - Not Calibrated

TestAmerica Sacramento

Data File: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b\2017.07.18C\_009.d

Injection Date: 19-Jul-2017 00:57:08

Instrument ID: A8\_N

Lims ID: 320-29267-A-24-C MSD

Client ID:

Operator ID: SACINSTLCMS01

ALS Bottle#: 9

Worklist Smp#: 10

Injection Vol: 2.0 ul

Dil. Factor: 1.0000

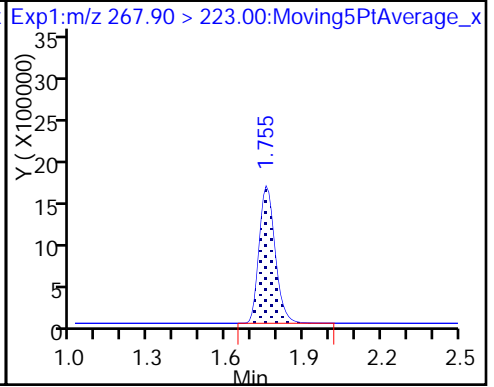
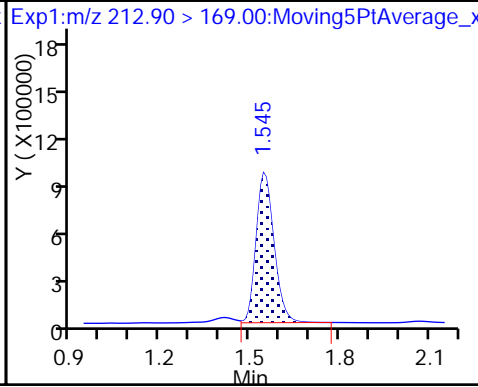
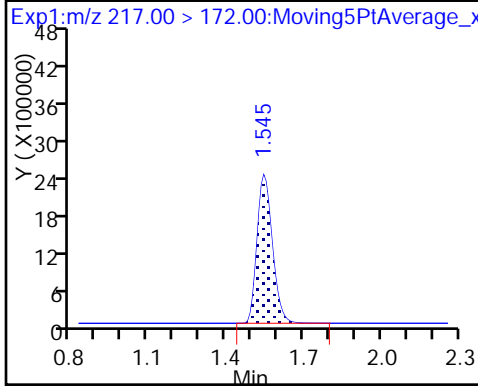
Method: A8\_N

Limit Group: LC PFC\_DOD ICAL

D 1 13C4 PFBA

2 Perfluorobutyric acid

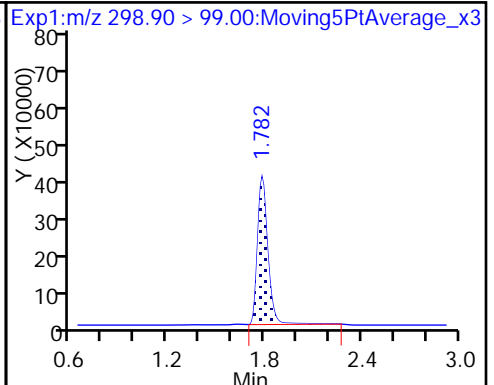
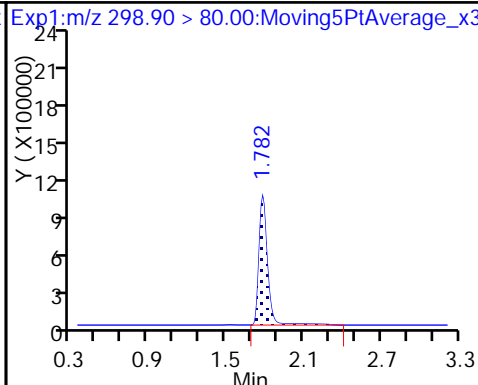
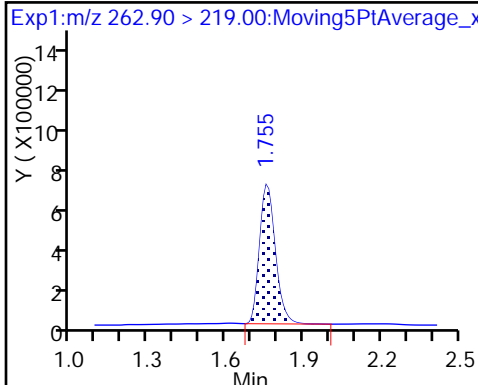
D 3 13C5-PFPeA



4 Perfluoropentanoic acid

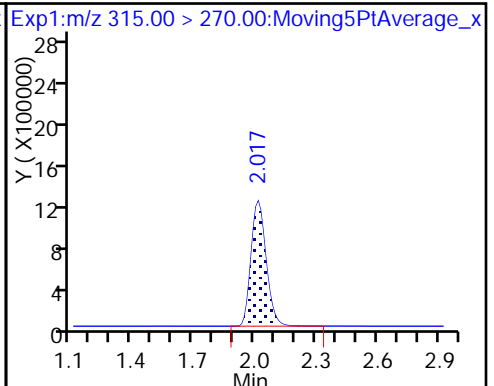
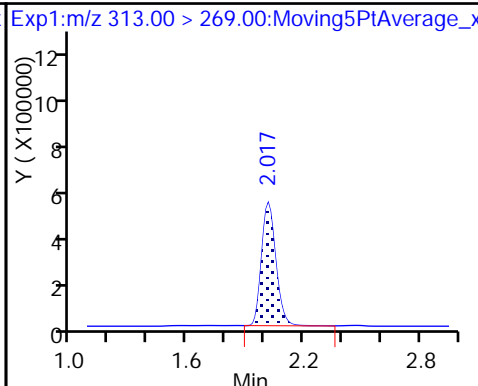
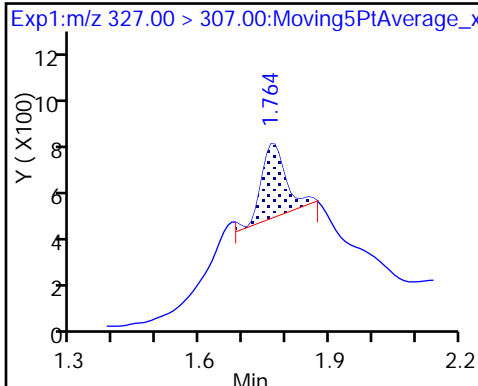
5 Perfluorobutanesulfonic acid

5 Perfluorobutanesulfonic acid



61 Sodium 1H,1H,2H,2H-perfluorohexanoic acid

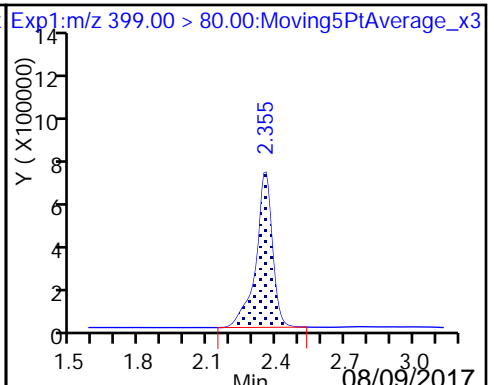
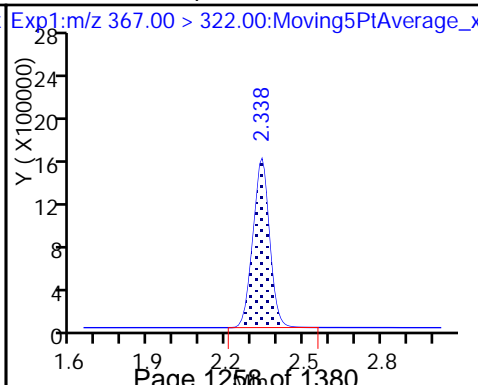
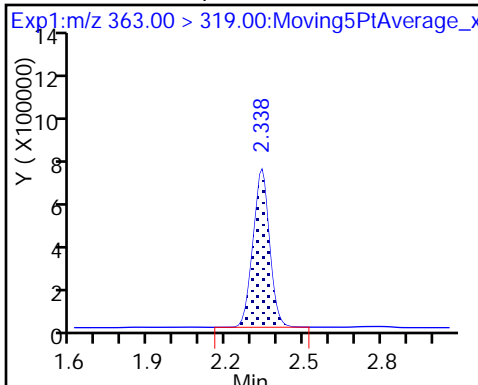
D 7 13C2 PFHxA



10 Perfluoroheptanoic acid

D 9 13C4-PFHpA

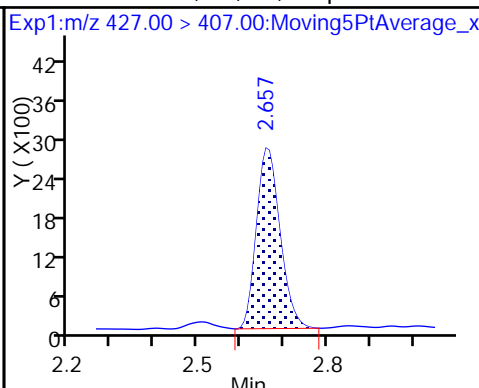
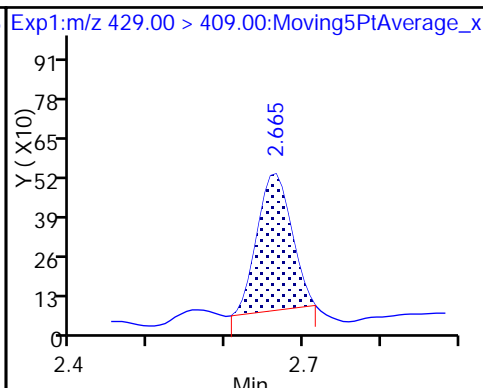
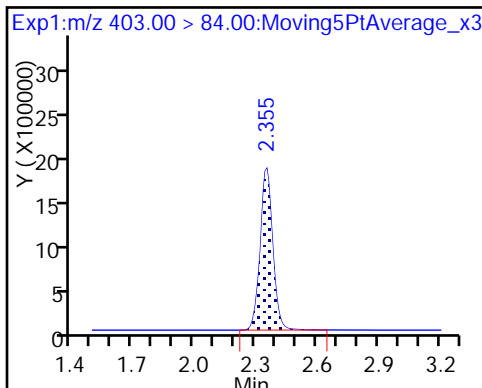
8 Perfluorohexanesulfonic acid



D 11 18O2 PFHxS

D 12 M2-6:2FTS

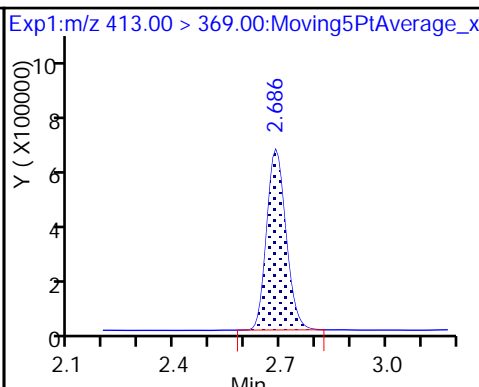
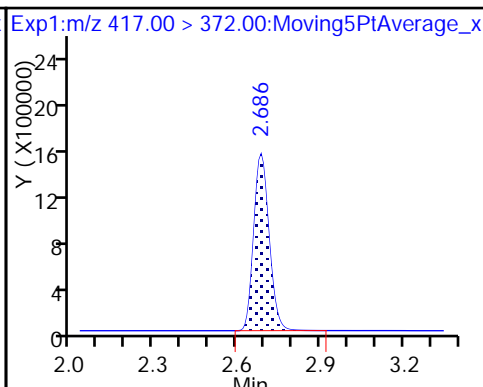
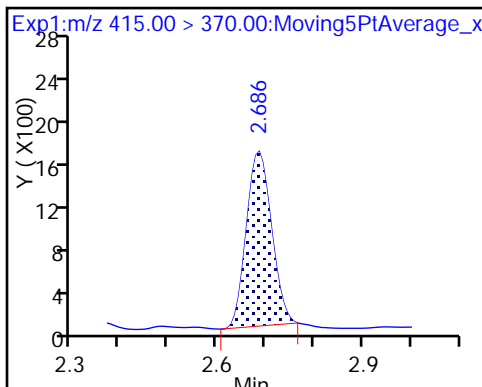
13 Sodium 1H,1H,2H,2H-perfluorooctane



\* 62 13C2-PFOA

D 14 13C4 PFOA

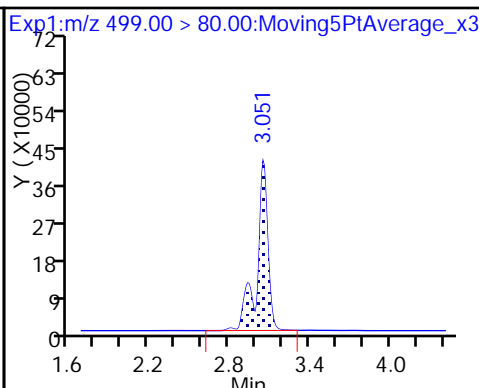
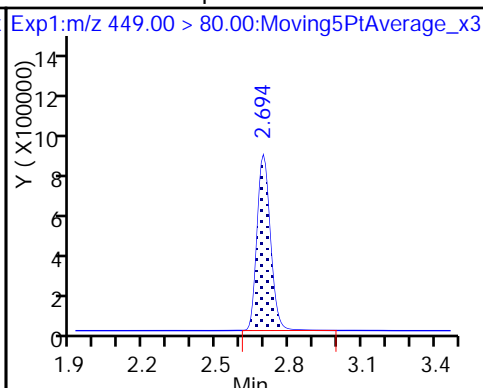
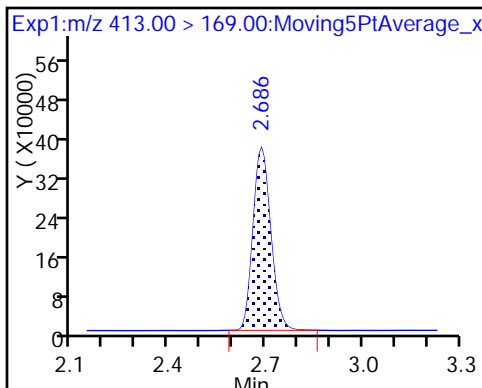
15 Perfluorooctanoic acid



15 Perfluorooctanoic acid

16 Perfluoroheptanesulfonic Acid

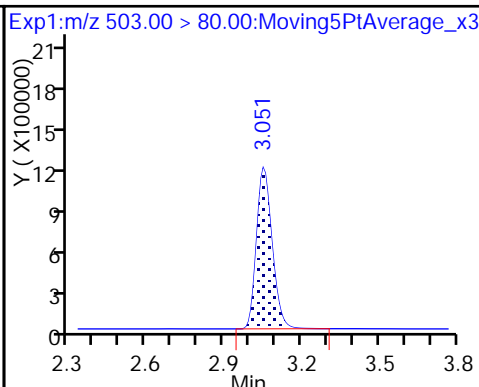
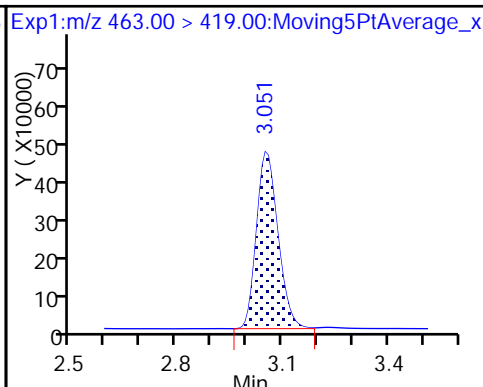
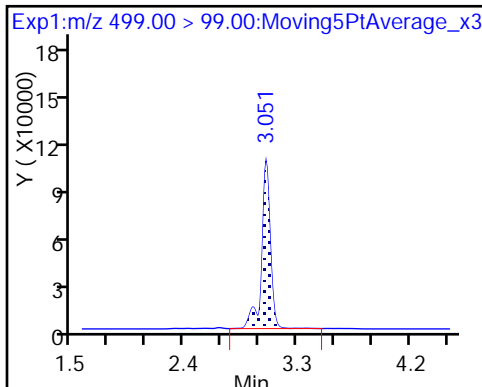
17 Perfluorooctane sulfonic acid



17 Perfluorooctane sulfonic acid

20 Perfluorononanoic acid

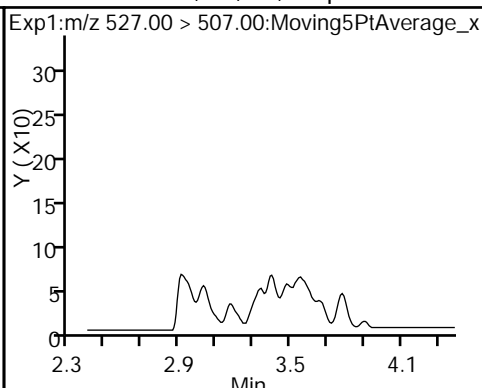
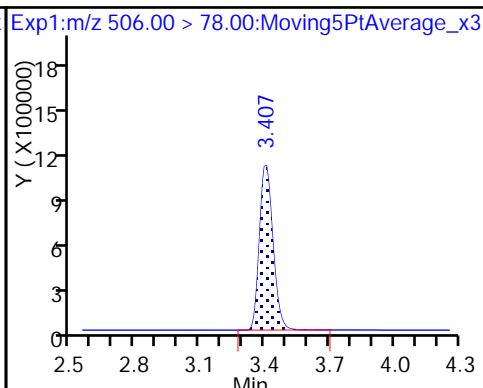
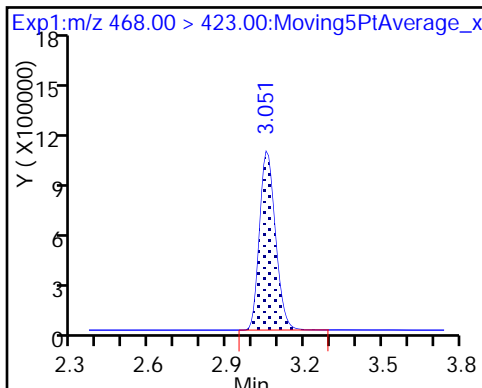
D 18 13C4 PFOS



D 19 13C5 PFNA

D 21 13C8 FOSA

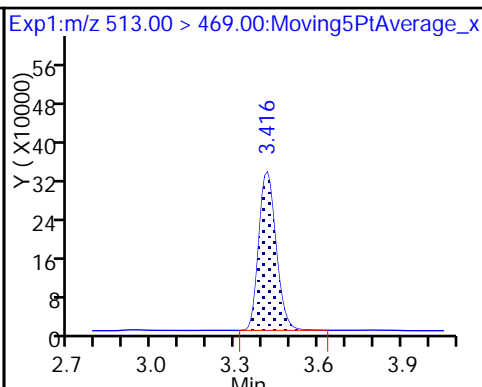
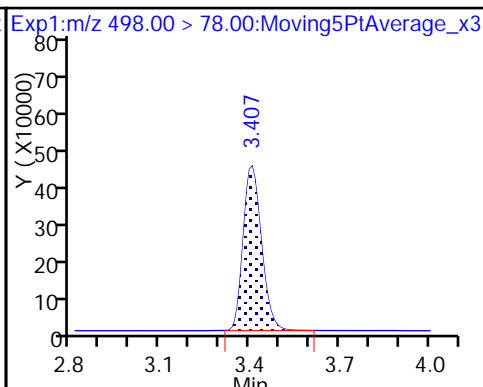
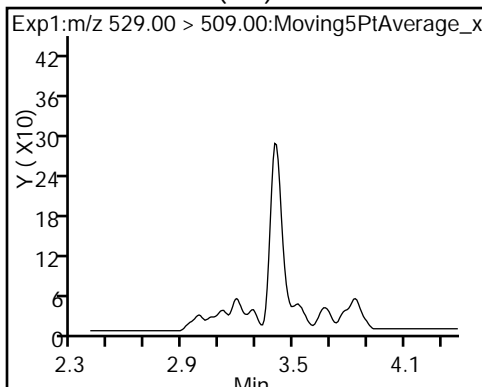
25 Sodium 1H,1H,2H,2H-perfluorodecane (ND)



D 26 M2-8:2FTS (ND)

22 Perfluorooctane Sulfonamide

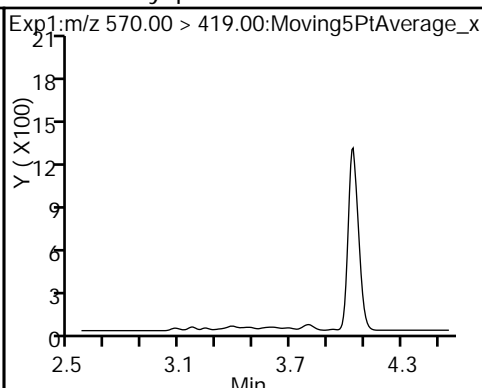
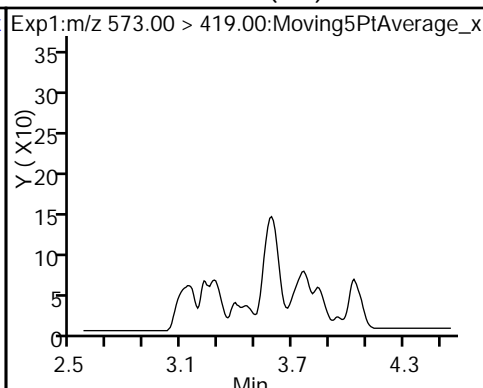
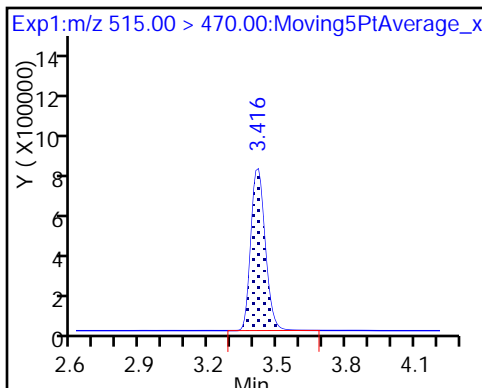
24 Perfluorodecanoic acid



D 23 13C2 PFDA

D 27 d3-NMeFOSAA (ND)

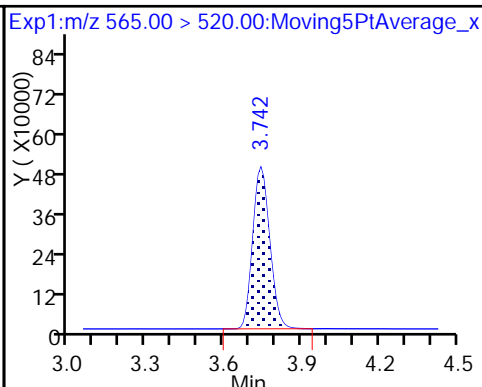
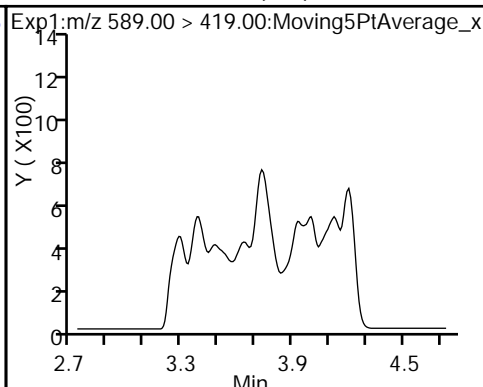
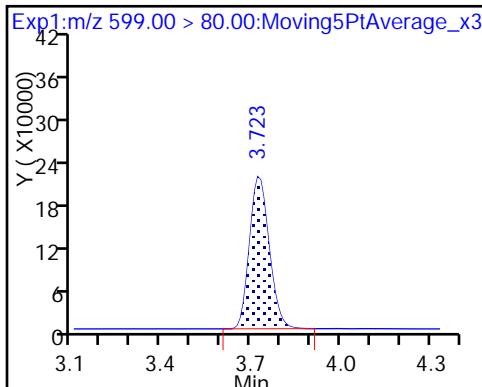
28 N-methyl perfluorooctane sulfonami (ND)



29 Perfluorodecane Sulfonic acid

D 32 d5-NEtFOSAA (ND)

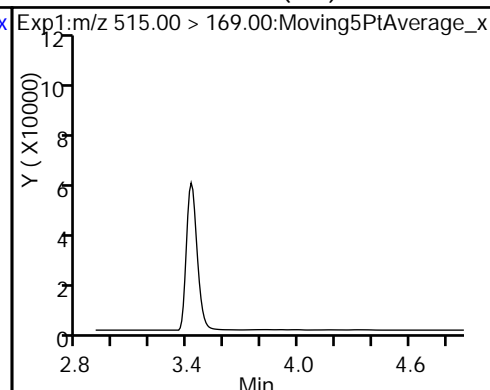
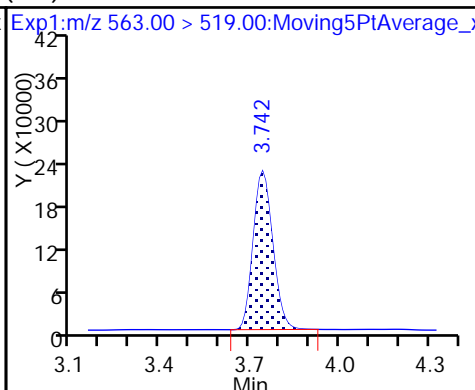
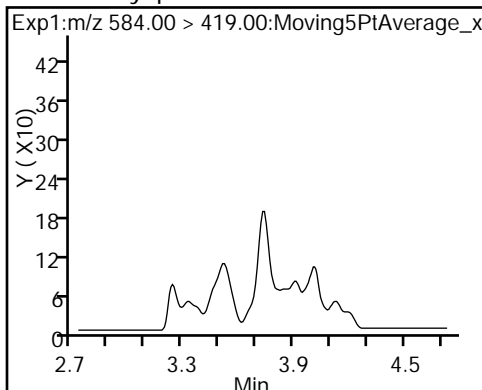
D 30 13C2 PFUnA





33 N-ethyl perfluorooctane sulfonamid (ND) Perfluoroundecanoic acid

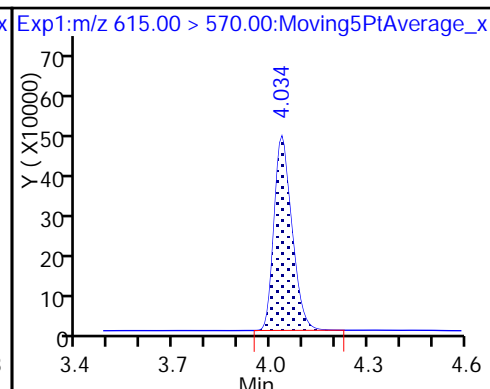
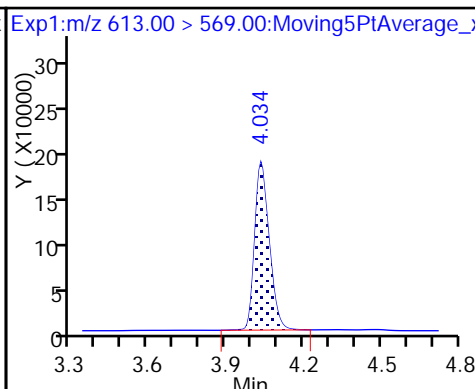
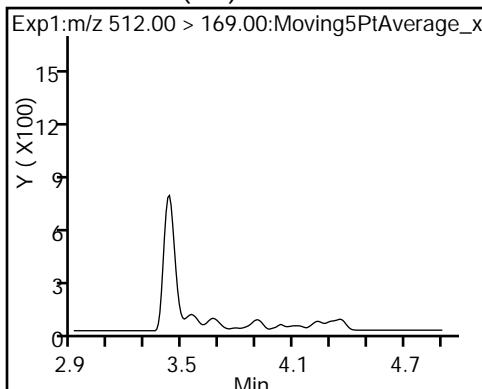
D 34 d-N-MeFOSA-M (ND)



35 MeFOSA (ND)

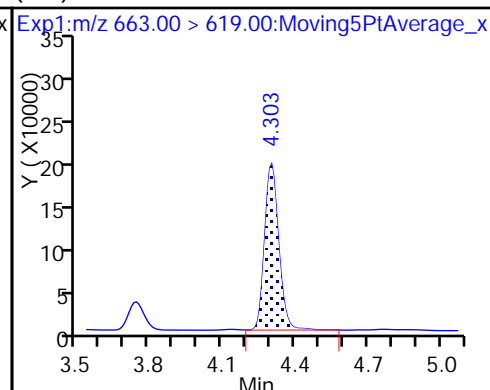
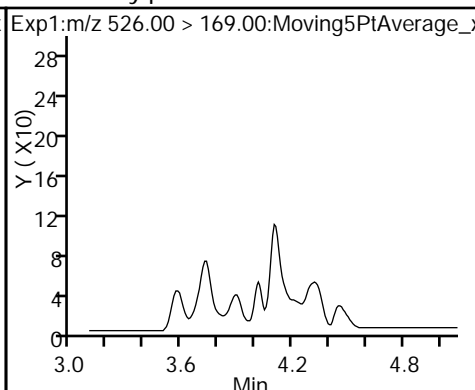
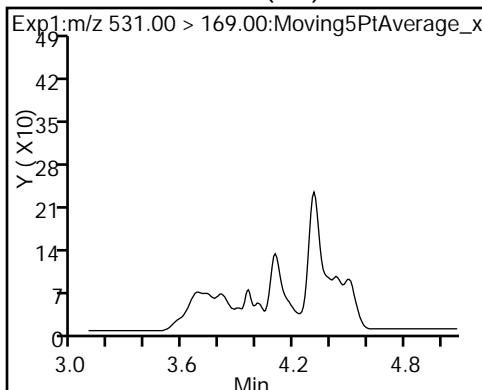
37 Perfluorododecanoic acid

D 36 13C2 PFDa



D 38 d-N-EtFOSA-M (ND)

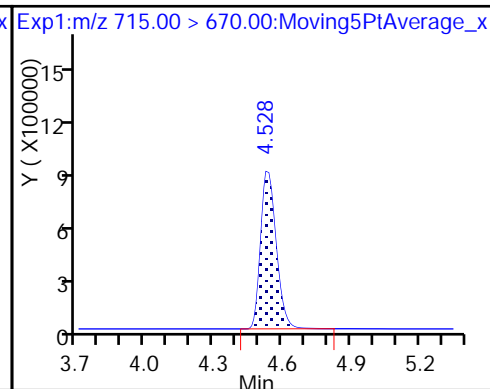
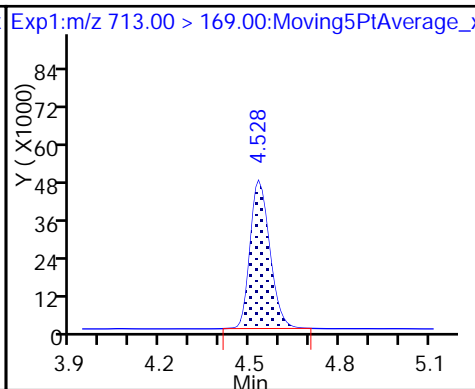
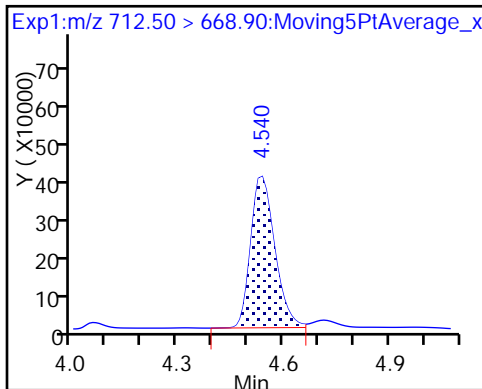
39 N-ethylperfluoro-1-octanesulfonami (ND) Perfluorotridecanoic acid



42 Perfluorotetradecanoic acid

42 Perfluorotetradecanoic acid

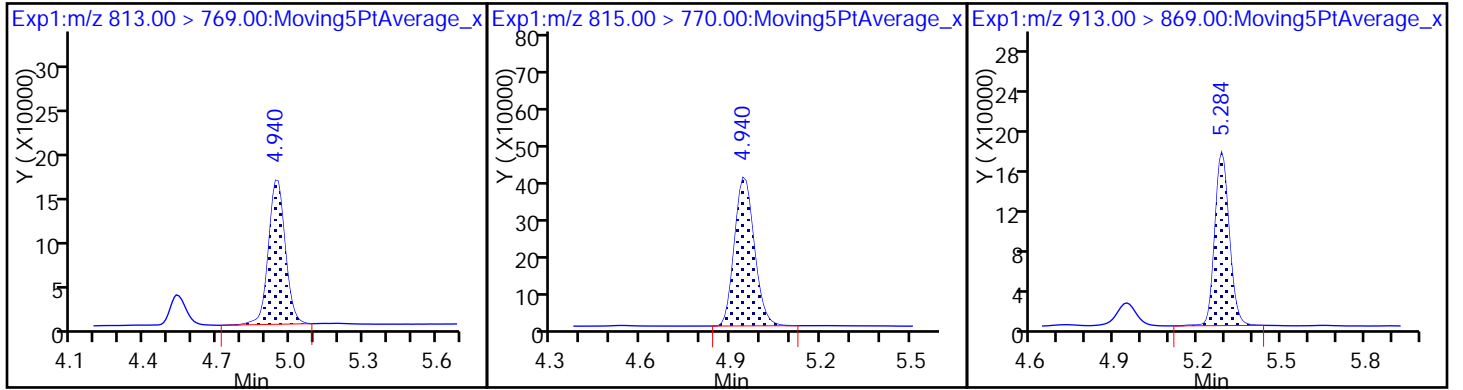
D 43 13C2-PFTeDA



45 Perfluorohexadecanoic acid

D 44 13C2-PFHxDA

46 Perfluorooctadecanoic acid



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/28/2017 00:13

Analysis Batch Number: 171299 End Date: 06/28/2017 01:15

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-171299/3		06/28/2017 00:13	1	2017.06.27_PFC_CURVE 003.d	GeminiC18 3x100 3(mm)
IC 320-171299/4		06/28/2017 00:20	1	2017.06.27_PFC_CURVE 004.d	GeminiC18 3x100 3(mm)
IC 320-171299/5		06/28/2017 00:27	1	2017.06.27_PFC_CURVE 005.d	GeminiC18 3x100 3(mm)
IC 320-171299/6		06/28/2017 00:34	1	2017.06.27_PFC_CURVE 006.d	GeminiC18 3x100 3(mm)
IC 320-171299/7		06/28/2017 00:41	1	2017.06.27_PFC_CURVE 007.d	GeminiC18 3x100 3(mm)
IC 320-171299/8		06/28/2017 00:47	1	2017.06.27_PFC_CURVE 008.d	GeminiC18 3x100 3(mm)
IC 320-171299/9		06/28/2017 00:54	1	2017.06.27_PFC_CURVE 009.d	GeminiC18 3x100 3(mm)
IC 320-171299/10		06/28/2017 01:01	1	2017.06.27_PFC_CURVE 010.d	GeminiC18 3x100 3(mm)
ICB 320-171299/11		06/28/2017 01:08	1		GeminiC18 3x100 3(mm)
ICV 320-171299/12		06/28/2017 01:15	1	2017.06.27_PFC_CURVE 012.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/28/2017 08:44

Analysis Batch Number: 171335 End Date: 06/28/2017 09:53

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171335/1		06/28/2017 08:44	1	2017.06.27_PFC_B 001.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 08:51	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 08:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 09:04	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 09:11	1		GeminiC18 3x100 3(mm)
MB 320-170766/1-A		06/28/2017 09:18	1	2017.06.27_PFC_B 006.d	GeminiC18 3x100 3(mm)
LCS 320-170766/2-A		06/28/2017 09:25	1	2017.06.27_PFC_B 007.d	GeminiC18 3x100 3(mm)
LCSD 320-170766/3-A		06/28/2017 09:32	1	2017.06.27_PFC_B 008.d	GeminiC18 3x100 3(mm)
320-29267-10		06/28/2017 09:39	1	2017.06.27_PFC_B 009.d	GeminiC18 3x100 3(mm)
CCV 320-171335/10		06/28/2017 09:53	1	2017.06.27_PFC_B1B 001.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/28/2017 21:43

Analysis Batch Number: 171592 End Date: 06/28/2017 23:12

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-171592/1		06/28/2017 21:43	1	2017.06.28A_003.d	GeminiC18 3x100 3(mm)
CCV 320-171592/2		06/28/2017 21:50	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 21:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:03	10		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:10	10		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:17	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:24	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:31	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:38	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:45	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:52	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 22:59	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/28/2017 23:06	1		GeminiC18 3x100 3(mm)
CCV 320-171592/14		06/28/2017 23:12	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/28/2017 23:19

Analysis Batch Number: 171594 End Date: 06/29/2017 02:19

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171594/1		06/28/2017 23:19	1	2017.06.28B_001.d	GeminiC18 3x100 3(mm)
MB 320-170805/1-A		06/28/2017 23:33	1	2017.06.28B_003.d	GeminiC18 3x100 3(mm)
LCS 320-170805/2-A		06/28/2017 23:40	1	2017.06.28B_004.d	GeminiC18 3x100 3(mm)
320-29267-1		06/28/2017 23:47	1	2017.06.28B_005.d	GeminiC18 3x100 3(mm)
320-29267-2		06/28/2017 23:54	1	2017.06.28B_006.d	GeminiC18 3x100 3(mm)
320-29267-3		06/29/2017 00:01	1	2017.06.28B_007.d	GeminiC18 3x100 3(mm)
320-29267-4		06/29/2017 00:08	1	2017.06.28B_008.d	GeminiC18 3x100 3(mm)
320-29267-4 MS		06/29/2017 00:15	1	2017.06.28B_009.d	GeminiC18 3x100 3(mm)
320-29267-4 MSD		06/29/2017 00:21	1	2017.06.28B_010.d	GeminiC18 3x100 3(mm)
320-29267-5		06/29/2017 00:28	1	2017.06.28B_011.d	GeminiC18 3x100 3(mm)
320-29267-6		06/29/2017 00:35	1	2017.06.28B_012.d	GeminiC18 3x100 3(mm)
CCV 320-171594/13		06/29/2017 00:42	1	2017.06.28B_013.d	GeminiC18 3x100 3(mm)
320-29267-7		06/29/2017 00:49	1	2017.06.28B_014.d	GeminiC18 3x100 3(mm)
320-29267-8		06/29/2017 00:56	1	2017.06.28B_015.d	GeminiC18 3x100 3(mm)
320-29267-9		06/29/2017 01:03	1	2017.06.28B_016.d	GeminiC18 3x100 3(mm)
320-29267-11		06/29/2017 01:10	1	2017.06.28B_017.d	GeminiC18 3x100 3(mm)
320-29267-12		06/29/2017 01:17	1	2017.06.28B_018.d	GeminiC18 3x100 3(mm)
320-29267-13		06/29/2017 01:24	1	2017.06.28B_019.d	GeminiC18 3x100 3(mm)
320-29267-14		06/29/2017 01:30	1	2017.06.28B_020.d	GeminiC18 3x100 3(mm)
320-29267-15		06/29/2017 01:37	1	2017.06.28B_021.d	GeminiC18 3x100 3(mm)
320-29267-16		06/29/2017 01:44	1	2017.06.28B_022.d	GeminiC18 3x100 3(mm)
320-29267-17		06/29/2017 01:51	1	2017.06.28B_023.d	GeminiC18 3x100 3(mm)
CCV 320-171594/24		06/29/2017 01:58	1	2017.06.28B_024.d	GeminiC18 3x100 3(mm)
320-29267-18		06/29/2017 02:05	1	2017.06.28B_025.d	GeminiC18 3x100 3(mm)
320-29267-19		06/29/2017 02:12	1	2017.06.28B_026.d	GeminiC18 3x100 3(mm)
CCV 320-171594/27		06/29/2017 02:19	1	2017.06.28B_027.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/29/2017 08:59

Analysis Batch Number: 171664 End Date: 06/29/2017 11:03

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVL 320-171664/1		06/29/2017 08:59	1	2017.06.29A_003.d	GeminiC18 3x100 3(mm)
CCV 320-171664/2		06/29/2017 09:06	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 09:13	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 09:20	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 09:27	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 09:34	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 09:40	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 09:47	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 09:54	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:01	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:08	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:22	1		GeminiC18 3x100 3(mm)
CCV 320-171664/14		06/29/2017 10:29	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:36	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:43	10		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:49	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 10:56	5		GeminiC18 3x100 3(mm)
CCV 320-171664/19		06/29/2017 11:03	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/29/2017 18:11

Analysis Batch Number: 171828 End Date: 06/29/2017 20:57

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171828/1		06/29/2017 18:11	1	2017.06.29D_001.d	GeminiC18 3x100 3(mm)
320-29267-5 DL		06/29/2017 18:18	50	2017.06.29D_002.d	GeminiC18 3x100 3(mm)
320-29267-9 DL		06/29/2017 18:25	20	2017.06.29D_003.d	GeminiC18 3x100 3(mm)
320-29267-14 DL		06/29/2017 18:32	5	2017.06.29D_004.d	GeminiC18 3x100 3(mm)
320-29267-18 DL		06/29/2017 18:39	5	2017.06.29D_005.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 18:46	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 18:52	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 18:59	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 19:06	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 19:13	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 19:20	5		GeminiC18 3x100 3(mm)
CCV 320-171828/12		06/29/2017 19:27	1	2017.06.29D_012.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 19:34	5		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 19:41	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 19:48	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 19:55	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 20:01	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 20:08	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 20:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 20:22	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 20:29	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 20:36	1		GeminiC18 3x100 3(mm)
CCV 320-171828/23		06/29/2017 20:43	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/29/2017 20:50	1		GeminiC18 3x100 3(mm)
CCV 320-171828/25		06/29/2017 20:57	1		GeminiC18 3x100 3(mm)



LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/30/2017 09:20

Analysis Batch Number: 171897 End Date: 06/30/2017 10:22

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-171897/3		06/30/2017 09:20	1	2017.06.30CURVE 003.d	GeminiC18 3x100 3(mm)
IC 320-171897/4		06/30/2017 09:27	1	2017.06.30CURVE 004.d	GeminiC18 3x100 3(mm)
IC 320-171897/5		06/30/2017 09:34	1	2017.06.30CURVE 005.d	GeminiC18 3x100 3(mm)
IC 320-171897/6		06/30/2017 09:41	1	2017.06.30CURVE 006.d	GeminiC18 3x100 3(mm)
IC 320-171897/7		06/30/2017 09:48	1	2017.06.30CURVE 007.d	GeminiC18 3x100 3(mm)
IC 320-171897/8		06/30/2017 09:55	1	2017.06.30CURVE 008.d	GeminiC18 3x100 3(mm)
IC 320-171897/9		06/30/2017 10:02	1	2017.06.30CURVE 009.d	GeminiC18 3x100 3(mm)
IC 320-171897/10		06/30/2017 10:08	1	2017.06.30CURVE 010.d	GeminiC18 3x100 3(mm)
ICB 320-171897/11		06/30/2017 10:15	1		GeminiC18 3x100 3(mm)
ICV 320-171897/12		06/30/2017 10:22	1	2017.06.30CURVE 012.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 06/30/2017 10:57

Analysis Batch Number: 171948 End Date: 06/30/2017 13:08

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-171948/1		06/30/2017 10:57	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:04	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:11	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:17	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:24	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:31	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:45	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:52	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 11:59	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 12:06	1		GeminiC18 3x100 3(mm)
CCV 320-171948/12		06/30/2017 12:13	1	2017.06.30A_011.d	GeminiC18 3x100 3(mm)
320-29267-9 DL2		06/30/2017 12:20	50	2017.06.30B_001.d	GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 12:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 12:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 12:40	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 12:47	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 12:54	1		GeminiC18 3x100 3(mm)
ZZZZZ		06/30/2017 13:01	1		GeminiC18 3x100 3(mm)
CCV 320-171948/20		06/30/2017 13:08	1	2017.06.30B_011.d	GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 07/18/2017 14:08

Analysis Batch Number: 174751 End Date: 07/18/2017 15:31

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 320-174751/3		07/18/2017 14:08	1	2017.07.18ICAL_003.d	GeminiC18 3x100 3(mm)
IC 320-174751/4		07/18/2017 14:15	1	2017.07.18ICAL_004.d	GeminiC18 3x100 3(mm)
IC 320-174751/5		07/18/2017 14:22	1	2017.07.18ICAL_005.d	GeminiC18 3x100 3(mm)
IC 320-174751/6		07/18/2017 14:28	1	2017.07.18ICAL_006.d	GeminiC18 3x100 3(mm)
IC 320-174751/7		07/18/2017 14:35	1	2017.07.18ICAL_007.d	GeminiC18 3x100 3(mm)
IC 320-174751/8		07/18/2017 14:42	1	2017.07.18ICAL_008.d	GeminiC18 3x100 3(mm)
IC 320-174751/9		07/18/2017 14:49	1	2017.07.18ICAL_009.d	GeminiC18 3x100 3(mm)
IC 320-174751/10		07/18/2017 14:56	1	2017.07.18ICAL_010.d	GeminiC18 3x100 3(mm)
ICB 320-174751/11		07/18/2017 15:03	1		GeminiC18 3x100 3(mm)
ICV 320-174751/12		07/18/2017 15:10	1	2017.07.18ICAL_012.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/18/2017 15:17	20		GeminiC18 3x100 3(mm)
ZZZZZ		07/18/2017 15:24	1		GeminiC18 3x100 3(mm)
CCV 320-174751/15		07/18/2017 15:31	1		GeminiC18 3x100 3(mm)

LCMS ANALYSIS RUN LOG

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: A8\_N Start Date: 07/18/2017 23:55

Analysis Batch Number: 174824 End Date: 07/19/2017 03:56

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCV 320-174824/1		07/18/2017 23:55	1	2017.07.18BB_059.d	GeminiC18 3x100 3(mm)
MB 320-172026/1-A		07/19/2017 00:01	1	2017.07.18C_001.d	GeminiC18 3x100 3(mm)
LCS 320-172026/2-A		07/19/2017 00:08	1	2017.07.18C_002.d	GeminiC18 3x100 3(mm)
320-29267-20		07/19/2017 00:15	1	2017.07.18C_003.d	GeminiC18 3x100 3(mm)
320-29267-21		07/19/2017 00:22	1	2017.07.18C_004.d	GeminiC18 3x100 3(mm)
320-29267-22		07/19/2017 00:29	1	2017.07.18C_005.d	GeminiC18 3x100 3(mm)
320-29267-23		07/19/2017 00:36	1	2017.07.18C_006.d	GeminiC18 3x100 3(mm)
320-29267-24		07/19/2017 00:43	1	2017.07.18C_007.d	GeminiC18 3x100 3(mm)
320-29267-24 MS		07/19/2017 00:50	1	2017.07.18C_008.d	GeminiC18 3x100 3(mm)
320-29267-24 MSD		07/19/2017 00:57	1	2017.07.18C_009.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:04	1		GeminiC18 3x100 3(mm)
CCV 320-174824/12		07/19/2017 01:10	1	2017.07.18C_011.d	GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:17	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:24	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:31	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:38	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:45	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:52	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 01:59	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 02:06	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 02:13	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 02:19	1		GeminiC18 3x100 3(mm)
CCV 320-174824/23		07/19/2017 02:26	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 02:33	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 02:40	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 02:47	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 02:54	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 03:01	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 03:08	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 03:15	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 03:22	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 03:28	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 03:35	1		GeminiC18 3x100 3(mm)
CCV 320-174824/34		07/19/2017 03:42	1		GeminiC18 3x100 3(mm)
ZZZZZ		07/19/2017 03:49	50		GeminiC18 3x100 3(mm)
CCV 320-174824/36		07/19/2017 03:56	1		GeminiC18 3x100 3(mm)

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Batch Number: 170766 Batch Start Date: 06/23/17 16:59 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 06/26/17 22:45

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFCSU 00074	LCPFCSU 00095
MB 320-170766/1		3535, 537 (Modified)				250.00 mL	0.50 mL	500 uL	
LCS 320-170766/2		3535, 537 (Modified)				250.00 mL	0.50 mL	500 uL	500 uL
LCSD 320-170766/3		3535, 537 (Modified)				250.00 mL	0.50 mL	500 uL	500 uL
320-29267-A-10	MEAFF-FD06-0617	3535, 537 (Modified)	T	310.00 g	27.06 g	282.9 mL	0.50 mL	500 uL	

Batch Notes	
Balance ID	QA-070
H2O ID	6/23/17
Hexane ID	958899
Manifold ID	8
Methanol ID	959497
Sodium Hydroxide ID	958836
Pipette ID	MD05306
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	VPM
Solvent Lot #	962378
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137033A

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Batch Number: 170805 Batch Start Date: 06/24/17 12:26 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 06/27/17 21:38

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFCSU 00074	LCPFCSU 00095
MB 320-170805/1		3535, 537 (Modified)				250.00 mL	0.50 mL	500 uL	
LCS 320-170805/2		3535, 537 (Modified)				250.00 mL	0.50 mL	500 uL	500 uL
320-29267-A-1	MEAFF-TA4J-1987M W01-0617	3535, 537 (Modified)	T	290.39 g	28.04 g	262.4 mL	0.50 mL	500 uL	
320-29267-A-2	MEAFF-AGAMW01-06 17	3535, 537 (Modified)	T	282.11 g	27.19 g	254.9 mL	0.50 mL	500 uL	
320-29267-B-3	MEAFF-UNKN20MW01 -0617	3535, 537 (Modified)	T	296.78 g	28.00 g	268.8 mL	0.50 mL	500 uL	
320-29267-A-4	MEAFF-EASTBMW01- 0617	3535, 537 (Modified)	T	299.92 g	27.96 g	272 mL	0.50 mL	500 uL	
320-29267-A-4 MS	MEAFF-EASTBMW01- 0617	3535, 537 (Modified)	T	294.48 g	27.04 g	267.4 mL	0.50 mL	500 uL	500 uL
320-29267-B-4 MSD	MEAFF-EASTBMW01- 0617	3535, 537 (Modified)	T	287.92 g	27.77 g	260.2 mL	0.50 mL	500 uL	500 uL
320-29267-B-5	MEAFF-TA4J-1984M W01-0617	3535, 537 (Modified)	T	275.86 g	26.59 g	249.3 mL	0.50 mL	500 uL	
320-29267-A-6	MEAFF-UNKN6MW01- 0617	3535, 537 (Modified)	T	272.10 g	26.92 g	245.2 mL	0.50 mL	500 uL	
320-29267-A-7	MEAFF-T45-2003MW 01-0617	3535, 537 (Modified)	T	294.24 g	26.57 g	267.7 mL	0.50 mL	500 uL	
320-29267-B-8	MEAFF-UNKN5MW01- 0617	3535, 537 (Modified)	T	279.73 g	26.74 g	253 mL	0.50 mL	500 uL	
320-29267-A-9	MEAFF-T45C-05-20 08MW01-0617	3535, 537 (Modified)	T	288.74 g	26.92 g	261.8 mL	0.50 mL	500 uL	
320-29267-A-11	MEAFF-TA4-SOUTHM W01-0617	3535, 537 (Modified)	T	284.33 g	26.88 g	257.5 mL	0.50 mL	500 uL	
320-29267-A-12	MEAFF-EB08-0617	3535, 537 (Modified)	T	308.18 g	27.42 g	280.8 mL	0.50 mL	500 uL	
320-29267-A-13	MEAFF-EB09-0617	3535, 537 (Modified)	T	301.58 g	26.97 g	274.6 mL	0.50 mL	500 uL	
320-29267-A-14	MEAFF-T2C-1996MW 01-0617	3535, 537 (Modified)	T	289.05 g	26.72 g	262.3 mL	0.50 mL	500 uL	
320-29267-A-15	MEAFF-UNKN11MW01 -0617	3535, 537 (Modified)	T	277.85 g	26.68 g	251.2 mL	0.50 mL	500 uL	
320-29267-A-16	MEAFF-EB10-0617	3535, 537 (Modified)	T	312.25 g	27.78 g	284.5 mL	0.50 mL	500 uL	
320-29267-B-17	MEAFF-TA4J-1985M W01-0617	3535, 537 (Modified)	T	281.16 g	26.70 g	254.5 mL	0.50 mL	500 uL	
320-29267-B-18	MEAFF-IW03-GW-06 17	3535, 537 (Modified)	T	291.90 g	26.55 g	265.4 mL	0.50 mL	500 uL	

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Batch Number: 170805 Batch Start Date: 06/24/17 12:26 Batch Analyst: Reed, Jonathan E

Batch Method: 3535 Batch End Date: 06/27/17 21:38

Lab Sample ID	Client Sample ID	Method Chain	Basis	GrossWeight	TareWeight	InitialAmount	FinalAmount	LCMPFCSU 00074	LCPFCSU 00095
320-29267-A-19	MEAFF-FB02-0617	3535, 537 (Modified)	T	308.99 g	28.22 g	280.8 mL	0.50 mL	500 uL	

Batch Notes	
Balance ID	QA-070
H2O ID	6/23/17
Hexane ID	958899
Manifold ID	12, 13
Methanol ID	959497
Sodium Hydroxide ID	958836
Pipette ID	MD05306
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	HJA
Solvent Lot #	962378
Solvent Name	0.3% NH4OH/MeOH
SOP Number	WS-LC-0025
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137033A

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Batch Number: 172026 Batch Start Date: 07/01/17 09:40 Batch Analyst: Arauz, Horacio J

Batch Method: SHAKE Batch End Date: 07/18/17 13:08

Lab Sample ID	Client Sample ID	Method Chain	Basis	InitialAmount	FinalAmount	LCMPFCSU 00078	LCPFCSP 00095		
MB 320-172026/1		SHAKE, 537 (Modified)		5.00 g	1.00 mL	1000 uL			
LCS 320-172026/2		SHAKE, 537 (Modified)		5.00 g	1.00 mL	1000 uL	1 mL		
320-29267-A-20	MEAFF-IW04-SO-06 17	SHAKE, 537 (Modified)	T	5.09 g	1.00 mL	1000 uL			
320-29267-A-21	MEAFF-IW05-SO-06 17	SHAKE, 537 (Modified)	T	5.03 g	1.00 mL	1000 uL			
320-29267-A-22	MEAFF-IW06-SO-06 17	SHAKE, 537 (Modified)	T	5.06 g	1.00 mL	1000 uL			
320-29267-A-23	MEAFF-IW07-SO-06 17	SHAKE, 537 (Modified)	T	5.07 g	1.00 mL	1000 uL			
320-29267-A-24	MEAFF-IW08-SO-06 17	SHAKE, 537 (Modified)	T	5.01 g	1.00 mL	1000 uL			
320-29267-A-24 MS	MEAFF-IW08-SO-06 17	SHAKE, 537 (Modified)	T	5.00 g	1.00 mL	1000 uL	1 mL		
320-29267-A-24 MSD	MEAFF-IW08-SO-06 17	SHAKE, 537 (Modified)	T	5.00 g	1.00 mL	1000 uL	1 mL		

Batch Notes	
Acetic Acid ID	429065
Balance ID	QA-070
Batch Comment	Spike bottle # 4 Pipette N32761F
Hexane ID	958902
Manifold ID	6
Methanol ID	959497
Methanolic Potassium Hydroxide ID	968358
Millipore Water Dispense Date	7/1/17
Sodium Hydroxide ID	966118
Ammonium Hydroxide/MeOH ID	983073
Analyst ID - Reagent Drop Witness	JER
Blank Sand Lot #	162639
SPE Cartridge ID	017037054A
SPE Cartridge Type	WAX 150mg

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.



LCMS BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Batch Number: 172026 Batch Start Date: 07/01/17 09:40 Batch Analyst: Arauz, Horacio J

Batch Method: SHAKE Batch End Date: 07/18/17 13:08

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

## HPLC/LCMS Data Review Checklist

Job Number(s): 29267

Work List ID(s): 44796

Extraction Batch: 170766

Analysis Batch(es): 171335

Delivery Rank: 4

Due Date: 6-24-17

A. Calibration/Instrument Run QC	1 <sup>st</sup> Level	2 <sup>nd</sup> Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# <u>171299</u>	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• RF <sub>average</sub> criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ( $r > 0.995$ ).	✓	✓	
• Quadratic fit criteria appropriate if required ( $r^2 > 0.990$ ).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.	✓	✓	
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?			✓
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?			✓
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation			
1. Are all non-conformances documented/attached? NCM#			✓
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

\*Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1<sup>st</sup> Level (Analyst): JRB

Date: 6-28-17

2<sup>nd</sup> Level Reviewer: Murray

Date: 7/3/2017



# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170766

Method Code: 320-3535\_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 6/23/2017 4:59:00PM

Batch End: 6/26/2017 10:45:00PM

## Solid-Phase Extraction (SPE)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHs		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
				Rcvd	Adj1					
1 MB-320-170766/1 N/A	N/A	250.00 mL 0.50 mL	250.00 mL 0.50 mL			N/A	N/A	N/A		MB-320-170766/1-A
2 LCS-320-170766/2 N/A	N/A	250.00 mL 0.50 mL	250.00 mL 0.50 mL			N/A	N/A	N/A		LCS-320-170766/2-A
3 LCS-320-170766/3 N/A	N/A	250.00 mL 0.50 mL	250.00 mL 0.50 mL			N/A	N/A	N/A		LCS-320-170766/3-A
4 320-29267-A-10 (PFC_IDA_DOD5)	N/A (320-29267-1)	810.00 g 27.06 g	282.9 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-10-A

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170766

Analyst: Reed, Jonathan E

Batch Open: 6/23/2017 4:59:00PM

Method Code: 320-3535\_PFC-320

Batch End:

	Batch Notes
Manifold ID	8
Methanol ID	959497
Hexane ID	958899
Sodium Hydroxide ID	958836
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137033A
Balance ID	QA-070
H2O ID	6/23/17
Pipette ID	MD05306
Solvent Name	0.3% NH4OH/MeOH
Solvent Lot #	962378
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	VPM
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
SOP Number	WS-LC-0025

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 6/23/2017 4:59:00PM

Batch End:

Batch Number: 320-170766

Method Code: 320-3535\_PFC-320

Batch Comment

## Comments

320-29267-A-10

Method Comments: DOD site, Screen-caution

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E



Batch Number: 320-170766

Method Code: 320-3535\_PFC-320

Batch Open: 6/23/2017 4:59:00PM

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-170766/1	LCMPFCSU_00074	500 uL	0.50 mL		
LCS 320-170766/2	LCMPFCSU_00074	500 uL	0.50 mL		
LCS 320-170766/2	LCPFCSU_00095	500 uL	0.50 mL		
LCSD 320-170766/3	LCMPFCSU_00074	500 uL	0.50 mL		
LCSD 320-170766/3	LCPFCSU_00095	500 uL	0.50 mL		
320-29267-A-10	LCMPFCSU_00074	500 uL	0.50 mL		

### Other Reagents:

Amount/Units

Lot#:

Preparation Batch Number(s): 70766 Test: PEC - IDA-D005  
 Earliest Holding Time: 6/23/17

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		✓	✓
All necessary NCMs filed (including holding time)		✓	✓
Method/sample/login/QAS checked and correct		✓	✓
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved		NA	NA
Weights in anticipated range and not targeted		✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		✓	✓
The pH is transcribed correctly in TALS		NA	NA
All additional information transcribed into TALS is correct and raw data is attached		✓	✓
Comments are transcribed correctly in TALS		✓	✓
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		✓	✓
All spike amounts correct and added to necessary samples and QC		✓	✓
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		✓	✓
All necessary 'batch information' complete and entered into TALS correctly		✓	✓

1<sup>st</sup> Level Reviewer: TM  
 2<sup>nd</sup> Level Reviewer: VPM  
 Comments: \_\_\_\_\_

Date: 06/26/17  
 Date: 6/27/17



## HPLC/LCMS Data Review Checklist

Job Number(s): 29267

Work List ID(s): 44858

Extraction Batch: 170805

Analysis Batch(es): 171594

Delivery Rank: 4

Due Date: 6/24/17

A. Calibration/Instrument Run QC	1 <sup>st</sup> Level	2 <sup>nd</sup> Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# <u>171299</u>	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• RF <sub>average</sub> criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ( $r \geq 0.995$ ).	✓	✓	
• Quadratic fit criteria appropriate if required ( $r^2 \geq 0.990$ ).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.	✓	✓	
B. QA/QC			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
C. Sample Analysis			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
D. Documentation <u>92366</u>			
1. Are all non-conformances documented/attached? NCM# <u>92365</u>	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

\*Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1<sup>st</sup> Level (Analyst): 

Date: 6/29/17

2<sup>nd</sup> Level Reviewer: 

Date: 6/30/17

TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 28JUN2017B\_PFC

Worklist Number: 44858

Instrument Name: A8\_N

Chrom Method: A8\_N

Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44858.b

QC Batching: Disabled

Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 171594	LC PFC ICAL Raw Batch: 171595
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 RB	# 2 RB	
# 3 MB 320-170805/1-A	# 3 MB 320-170805/1-A	
# 4 LCS 320-170805/2-A	# 4 LCS 320-170805/2-A	
# 5 320-29267-A-1-A	# 5 320-29267-A-1-A	
# 6 320-29267-A-2-A	# 6 320-29267-A-2-A	
# 7 320-29267-B-3-A	# 7 320-29267-B-3-A	
# 8 320-29267-A-4-A	# 8 320-29267-A-4-A	
# 9 320-29267-A-4-B MS	# 9 320-29267-A-4-B MS	
# 10 320-29267-B-4-A MSD	# 10 320-29267-B-4-A MSD	
# 11 320-29267-B-5-A	# 11 320-29267-B-5-A 50x	
# 12 320-29267-A-6-A	# 12 320-29267-A-6-A RI; possible c/p	
# 13 CCV L5	# 13 CCV L5	
# 14 320-29267-A-7-A	# 14 320-29267-A-7-A	
# 15 320-29267-B-8-A	# 15 320-29267-B-8-A	
# 16 320-29267-A-9-A	# 16 320-29267-A-9-A 20x	
# 17 320-29267-A-11-A	# 17 320-29267-A-11-A RI	
# 18 320-29267-A-12-A	# 18 320-29267-A-12-A	
# 19 320-29267-A-13-A	# 19 320-29267-A-13-A	
# 20 320-29267-A-14-A	# 20 320-29267-A-14-A 5x	
# 21 320-29267-A-15-A	# 21 320-29267-A-15-A	
# 22 320-29267-A-16-A	# 22 320-29267-A-16-A	
# 23 320-29267-B-17-A	# 23 320-29267-B-17-A	
# 24 CCV L4	# 24 CCV L4	
# 25 320-29267-B-18-A	# 25 320-29267-B-18-A 5x	
# 26 320-29267-A-19-A	# 26 320-29267-A-19-A	
# 27 CCV L5	# 27 CCV L5	# 27 CCV L5

Eflag 92366  
IDA low 92365

con 171592

29 30 TX 06/27/16

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170805

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM

Method Code: 320-3535\_PFC-320

Batch End: 6/27/2017 9:38:00PM

## Solid-Phase Extraction (SPE)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHs		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
				Rcvd	Adj1					
1 MB-320-170805/1 N/A	N/A		250.00 mL 0.50 mL			N/A	N/A	N/A		MB-320-170805/1-A
2 LCS-320-170805/2 N/A	N/A		250.00 mL 0.50 mL			N/A	N/A	N/A		LCS-320-170805/2-A
3 320-29267-A-1 (PFC_IDA_DOD5)	N/A (320-29267-1)	290.39 g 28.04 g	262.4 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-1-A
4 320-29267-A-2 (PFC_IDA_DOD5)	N/A (320-29267-1)	282.11 g 27.19 g	254.9 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-2-A
5 320-29267-B-3 (PFC_IDA_DOD5)	N/A (320-29267-1)	296.78 g 28.00 g	268.8 mL 0.50 mL			6/24/17	23_Days	4		320-29267-B-3-A
6 320-29267-A-4 (PFC_IDA_DOD5)	N/A (320-29267-1)	299.92 g 27.96 g	272 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-4-A
7 320-29267-A-4-MS (PFC_IDA_DOD5)	N/A (320-29267-1)	294.48 g 27.04 g	267.4 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-4-MS
8 320-29267-B-4-MSD (PFC_IDA_DOD5)	N/A (320-29267-1)	287.92 g 27.77 g	260.2 mL 0.50 mL			6/24/17	23_Days	4		320-29267-B-4-MSD
9 320-29267-B-5 (PFC_IDA_DOD5)	N/A (320-29267-1)	275.86 g 26.59 g	249.3 mL 0.50 mL			6/24/17	23_Days	4	SDX	320-29267-B-5-A
10 320-29267-A-6 (PFC_IDA_DOD5)	N/A (320-29267-1)	272.10 g 26.92 g	245.2 mL 0.50 mL			6/24/17	23_Days	4	RI	320-29267-A-6-A

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170805

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM

Method Code: 320-3535\_PFC-320

Batch End:

Sample ID	Weight (g)	Volume (mL)	Days	Date	Barcode
320-29267-A-7 (PFC_IDA_DOD5)	294.24 g 26.57 g	267.7 mL 0.50 mL	23_Days	6/24/17	320-29267-A-7-A
320-29267-B-8 (PFC_IDA_DOD5)	279.73 g 26.74 g	253 mL 0.50 mL	23_Days	6/24/17	320-29267-B-8-A
320-29267-A-9 (PFC_IDA_DOD5)	288.74 g 26.92 g	261.8 mL 0.50 mL	23_Days	6/24/17	320-29267-A-9-A
320-29267-A-11 (PFC_IDA_DOD5)	284.33 g 26.88 g	257.5 mL 0.50 mL	23_Days	6/24/17	320-29267-A-11-A
320-29267-A-12 (PFC_IDA_DOD5)	308.18 g 27.42 g	280.8 mL 0.50 mL	23_Days	6/24/17	320-29267-A-12-A
320-29267-A-13 (PFC_IDA_DOD5)	301.58 g 26.97 g	274.6 mL 0.50 mL	23_Days	6/24/17	320-29267-A-13-A
320-29267-A-14 (PFC_IDA_DOD5)	289.05 g 26.72 g	262.3 mL 0.50 mL	23_Days	6/24/17	320-29267-A-14-A
320-29267-A-15 (PFC_IDA_DOD5)	277.85 g 26.68 g	251.2 mL 0.50 mL	23_Days	6/24/17	320-29267-A-15-A
320-29267-A-16 (PFC_IDA_DOD5)	312.25 g 27.78 g	284.5 mL 0.50 mL	23_Days	6/24/17	320-29267-A-16-A
320-29267-B-17 (PFC_IDA_DOD5)	281.16 g 26.70 g	254.5 mL 0.50 mL	23_Days	6/24/17	320-29267-B-17-A
320-29267-B-18 (PFC_IDA_DOD5)	291.90 g 26.55 g	265.4 mL 0.50 mL	23_Days	6/24/17	320-29267-B-18-A
320-29267-A-19 (PFC_IDA_DOD5)	308.99 g 28.22 g	280.8 mL 0.50 mL	23_Days	6/24/17	320-29267-A-19-A

20X

RI

5X

5X

08/09/2017

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170805

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM

Method Code: 320-3535\_PFC-320

Batch End:

Batch Notes	
Manifold ID	12, 13
Methanol ID	959497
Hexane ID	958899
Sodium Hydroxide ID	958836
First Start time	NA
First End time	NA
SPE Cartridge Type	WAX 500mg
Solid Phase Extraction Disk ID	003137033A
Balance ID	QA-070
H2O ID	6/23/17
Pipette ID	MD05306
Solvent Name	0.3% NH4OH/MeOH
Solvent Lot #	962378
Analyst ID - Reagent Drop	JER
Analyst ID - SU Reagent Drop	JER
Analyst ID - SU Reagent Drop Witness	HJA
Acid Name	NA
Acid ID	NA
Reagent ID	NA
Reagent Lot Number	NA
SOP Number	WS-LC-0025

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

Batch Open: 6/24/2017 12:26:00PM

Batch End:

Batch Comment

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# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-170805

Batch Open: 6/24/2017 12:26:00PM

Method Code: 320-3535\_PFC-320

Batch End:

## Comments

320-29267-A-1	Method Comments: DOD site, Screen-caution
320-29267-A-2	Method Comments: DOD site, Screen-caution
320-29267-B-3	Method Comments: DOD site, Screen-caution
320-29267-A-4	Method Comments: DOD site, Screen-caution
320-29267-A-4-MS	Method Comments: DOD site, Screen-caution
320-29267-B-4-MSD	Method Comments: DOD site, Screen-caution
320-29267-B-5	Method Comments: DOD site, Screen-caution
320-29267-A-6	Method Comments: DOD site, Screen-caution
320-29267-A-7	Method Comments: DOD site, Screen-caution
320-29267-B-8	Method Comments: DOD site, Screen-caution
320-29267-A-9	Method Comments: DOD site, Screen-caution
320-29267-A-11	Method Comments: DOD site, Screen-caution
320-29267-A-12	Method Comments: DOD site, Screen-caution
320-29267-A-13	Method Comments: DOD site, Screen-caution
320-29267-A-14	Method Comments: DOD site, Screen-caution
320-29267-A-15	Method Comments: DOD site, Screen-caution
320-29267-A-16	Method Comments: DOD site, Screen-caution
320-29267-B-17	Method Comments: DOD site, Screen-caution
320-29267-B-18	Method Comments: DOD site, Screen-caution

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM  
Batch End:

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

Method Comments: DOD site, Screen-caution

320-29267-A-19

Method Comments: DOD site, Screen-caution



# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM

Batch End:

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-170805/1	LCMPFCSU_00074	500 uL	0.50 mL	<i>J. Reed</i> 6/24/17	HSA 6-24-17
LCS 320-170805/2	LCMPFCSU_00074	500 uL	0.50 mL		
LCS 320-170805/2	LCPFCSP_00095	500 uL	0.50 mL		
320-29267-A-1	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-2	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-3	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-4	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-4 MS	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-4 MS	LCPFCSP_00095	500 uL	0.50 mL		
320-29267-B-4 MSD	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-4 MSD	LCPFCSP_00095	500 uL	0.50 mL		
320-29267-B-5	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-6	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-7	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-8	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-9	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-11	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-12	LCMPFCSU_00074	500 uL	0.50 mL		



Preparation Batch Number(s): 170805 Test: PFC-TDA-0005  
 Earliest Holding Time: 06-24-17

	1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
<b>Sample List Tab</b>		
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
<b>Worksheet Tab</b>		
All samples properly preserved	N/A	NA
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed correctly in TALS	N/A	NA
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
<b>Reagents Tab</b>		
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
<b>Batch Information</b>		
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1<sup>st</sup> Level Reviewer: TN  
 2<sup>nd</sup> Level Reviewer: VPM  
 Comments: \_\_\_\_\_

Date: 06/27/17  
 Date: 6/28/17

Job Number(s): 480-119907; 480-119528<sup>DL</sup>; 28971; 29153; 29267; 29124; Work List ID(s): 44894; 44913  
 Extraction Batch: 171287; 169880; 170805 Analysis Batch(es): 171741; 171742; 171828  
 Delivery Rank 2; 4 Due Date: 6/26/17; 6/28/17; 6/13/17; 6/24/17

A. Calibration/Instrument Run QC	1 <sup>st</sup> Level	2 <sup>nd</sup> Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# <u>171299; 171302</u>	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• RF <sub>average</sub> criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ( $r \geq 0.995$ ).	✓	✓	
• Quadratic fit criteria appropriate if required ( $r^2 \geq 0.990$ ).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.	✓	✓	
<b>B. QA/QC</b>			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
<b>C. Sample Analysis</b>			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
<b>D. Documentation</b>			
1. Are all non-conformances documented/attached? NCM#	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

\*Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1<sup>st</sup> Level (Analyst): 

Date: 6/30/17

2<sup>nd</sup> Level Reviewer: 

Date: 6/30/2017

NCMs: 92356; 92357; 92362; 92361; 92466; 92467; 92363; 92447; 92449; 92450

TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 29JUN2017B\_PFC  
Instrument Name: A8\_N  
Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170629-44894.b  
QC Batching: Disabled

Worklist Number: 44894  
Chrom Method: A8\_N  
Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 171741	LC PFC ICAL Raw Batch: 171742	LC PFAS ICAL Raw Batch: 171743
#1 CCV L5	#1 CCV L5	#1 CCV L5	
#2 320-28971-A-23-A	#2 320-28971-A-23-A ← RI not needed		
#3 320-28971-A-24-A	#3 320-28971-A-24-A		
#4 320-28971-A-25-A	#4 320-28971-A-25-A		
#5 320-28971-A-26-A	#5 320-28971-A-26-A		
#6 320-28971-A-27-A	#6 320-28971-A-27-A		
#7 320-28971-A-28-A	#7 320-28971-A-28-A		
#8 320-28971-A-29-A	#8 320-28971-A-29-A		
#9 320-28971-A-30-A	#9 320-28971-A-30-A 5x E flag		
#10 320-28971-A-31-A	#10 320-28971-A-31-A 5x 92362		
#11 320-28971-A-32-A	#11 320-28971-A-32-A		
#12 CCV L4	#12 CCV L4	#12 CCV L4	
#13 MB 320-171287/1-A	#13 MB 320-171287/1-A RI	#13 MB 320-171287/1-A	
#14 LCS 320-171287/2-A	#14 LCS 320-171287/2-A RI	#14 LCS 320-171287/2-A	
#15 LCSD 320-171287/3-A	#15 LCSD 320-171287/3-A RI	#15 LCSD 320-171287/3-A	
#16 480-119907-A-1-A		#16 480-119907-A-1-A CI	#16 480-119907-A-1-A
#17 480-119907-A-2-A		#17 480-119907-A-2-A CI	#17 480-119907-A-2-A
#18 480-119907-A-3-A		#18 480-119907-A-3-A	#18 480-119907-A-3-A
#19 480-119907-A-4-A		#19 480-119907-A-4-A	#19 480-119907-A-4-A
#20 480-119528-AA-17-A		#20 480-119528-AA-17-A	#20 480-119528-AA-17-A
#21 320-29153-A-1-A		#21 320-29153-A-1-A	#21 320-29153-A-1-A
#22 320-29153-A-2-A		#22 320-29153-A-2-A	#22 320-29153-A-2-A
#23 CCV L5	#23 CCV L5	#23 CCV L5	
#24 320-28971-A-20-C	#24 320-28971-A-20-C RA ✓		
#25 320-28971-A-20-A MS	#25 320-28971-A-20-A MS RA ✓		
#26 320-28971-A-20-B MSD	#26 320-28971-A-20-B MSD RA ✓		
#27 320-29153-A-3-A	PFHPA IDA high 92361	#27 320-29153-A-3-A	#27 320-29153-A-3-A
#28 320-29153-A-4-A		#28 320-29153-A-4-A	#28 320-29153-A-4-A
#29 320-29153-A-5-A		#29 320-29153-A-5-A	#29 320-29153-A-5-A
#30 320-29153-A-6-A		#30 320-29153-A-6-A	#30 320-29153-A-6-A
#31 320-29181-A-4-A	#31 320-29181-A-4-A RI		
#32 CCV L4	#32 CCV L4	#32 CCV L4	

CCVL 171664 → CI PFUNA 92363

SBC 6/30/17  
119907 - 1 CI PFBS; PFHXA; PFHPA  
- 2 CI PFBS; PFHXA; PFOA SBC  
PFHPA SBC 6/29/17 PFHPA  
- 3 CI PFBS; PFHXS; PFHXA  
PFOA  
- 4 CI PFBS; PFHXA; PFHXS; PFOA

CI PFBS; PFHXA; PFHPA 92466  
PFBS; PFHXA; PFHXS; PFOA 92467

TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 29JUN2017D\_PFC      Worklist Number: 44913  
 Instrument Name: A8\_N      Chrom Method: A8\_N  
 Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170630-44913.b  
 QC Batching: Disabled      Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 171828	LC PFC ICAL Raw Batch: 171829
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 320-29267-B-5-A	# 2 320-29267-B-5-A	
# 3 320-29267-A-9-A	# 3 320-29267-A-9-A → needs 50x	RL, DL 92447
# 4 320-29267-A-14-A	# 4 320-29267-A-14-A	IDA high 92449
# 5 320-29267-B-18-A	# 5 320-29267-B-18-A	CEV IDA high <del>92450</del> 88c
# 6 320-29124-A-1-A	# 6 320-29124-A-1-A	92450 6/30/17
# 7 320-29124-A-2-A	# 7 320-29124-A-2-A	
# 8 320-29124-A-3-A	# 8 320-29124-A-3-A	
# 9 320-29124-A-5-A	# 9 320-29124-A-5-A	
#10 320-29124-A-9-A	#10 320-29124-A-9-A	
#11 320-28971-A-30-A	#11 320-28971-A-30-A	
#12 CCV L5	#12 CCV L5	#12 CCV L5
#13 320-28971-A-31-A	#13 320-28971-A-31-A	
#14 320-29124-A-4-A	#14 320-29124-A-4-A	
#15 320-29124-A-4-B MS	#15 320-29124-A-4-B MS	
#16 320-29124-A-4-C MSD	#16 320-29124-A-4-C MSD IDA out confirmed, report for original	
#17 320-29267-A-6-A	#17 320-29267-A-6-A	
#18 320-29267-A-11-A	#18 320-29267-A-11-A	
#19 MB 320-171287/1-A	#19 MB 320-171287/1-A RI w/new curve	
#20 LCS 320-171287/2-A	#20 LCS 320-171287/2-A ↓	
#21 LCSD 320-171287/3-A	#21 LCSD 320-171287/3-A	
#22 320-29181-A-4-A	#22 320-29181-A-4-A	
#23 CCV L4	#23 CCV L4	#23 CCV L4
#24 MB 320-169873/1-A	#24 MB 320-169873/1-A	
#25 CCV L5	#25 CCV L5	#25 CCV L5

cevl 171664

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-171287

Method Code: 320-3535\_PFC-320

AS 6/29/17

Batch Open: 6/27/2017 4:40:00PM

Batch End: 6/28/2017 10:18:00PM

## Solid-Phase Extraction (SPE)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHS		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
				Rcvd	Adj1					
1 MB-320-171287/1 N/A	N/A		250.00 mL 0.50 mL			N/A	N/A	N/A	RF	MB-320-171287-1-A
2 LCS-320-171287/2 N/A	N/A		250.00 mL 0.50 mL			N/A	N/A	N/A	RI	LCS-320-171287-2-A
3 LCSD-320-171287/3 N/A	N/A		250.00 mL 0.50 mL			N/A	N/A	N/A	RI	LCSD-320-171287-3-A
4 480-119907-A-1 (PFC_IDA)	N/A (480-119907-1)		10.00 mL 0.50 mL			6/28/17	5_Days	2		480-119907-A-1-A
5 480-119907-A-2 (PFC_IDA)	N/A (480-119907-1)	27.00 g 281.74 g	0.50 mL 254.9 mL			6/28/17	5_Days	2		480-119907-A-2-A
6 480-119907-A-3 (PFC_IDA)	N/A (480-119907-1)	26.86 g 281.71 g	0.50 mL 254.8 mL			6/28/17	5_Days	2		480-119907-A-3-A
7 480-119907-A-4 (PFC_IDA)	N/A (480-119907-1)	26.96 g 281.58 g	0.50 mL 254.4 mL			6/28/17	5_Days	2		480-119907-A-4-A
8 480-119528-AA-17 (PFC_IDA)	N/A (480-119528-1)	27.22 g 333.67 g	0.50 mL 306.9 mL			6/28/17	8_Day_Rush	4		480-119528-AA-17-A
9 320-29153-A-1 (PFC_IDA)	N/A (320-29153-1)	26.75 g 265.04 g	0.50 mL 237.9 mL			6/28/17	8_Days	4		320-29153-A-1-A
10 320-29153-A-2 (PFC_IDA)	N/A (320-29153-1)	27.13 g 325.09 g 28.00 g	0.50 mL 297.1 mL 0.50 mL			6/28/17	8_Days	4		320-29153-A-2-A

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)






Analyst: Reed, Jonathan E

Batch Open: 6/27/2017 4:40:00PM

Batch End:

Batch Number: 320-171287

Method Code: 320-3535\_PFC-320

Line #	Sample ID	N/A (320-29153-1)	Weight		Volume		8_Days	6/28/17	4	Barcode
			g	g	mL	mL				
11	320-29153-A-3 (PFC_IDA)	N/A (320-29153-1)	326.35	27.64	298.7	0.50				
12	320-29153-A-4 (PFC_IDA)	N/A (320-29153-1)	317.06	27.55	289.5	0.50				
13	320-29153-A-5 (PFC_IDA)	N/A (320-29153-1)	281.03	27.03	254	0.50				
14	320-29153-A-6 (PFC_IDA)	N/A (320-29153-1)	323.41	28.45	295	0.50				
15	320-29181-A-4 (PFC_IDA_DOD5)	N/A (320-29181-1)	298.68	27.92	270.8	0.50		7/6/17	4	 <b>RI</b>



# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 6/27/2017 4:40:00PM

Batch End:

Batch Number: 320-171287

Method Code: 320-3535\_PFC-320

## Batch Notes

Manifold ID 5, 6

Methanol ID 959490

Hexane ID 958899

Sodium Hydroxide ID 966118

First Start time NA

First End time NA

SPE Cartridge Type WAX 500mg

Solid Phase Extraction Disk ID 003036333A

Balance ID QA-070

H2O ID 6/27/16

Pipette ID MD05306

Solvent Name 0.3% NH4OH/MeOH

Solvent Lot # 965384

Analyst ID - Reagent Drop JER

Analyst ID - SU Reagent Drop JER

Analyst ID - SU Reagent Drop VPM  
Witness

Acid Name NA

Acid ID NA

Reagent ID NA

Reagent Lot Number NA

SOP Number WS-LC-0025

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-171287

Method Code: 320-3535\_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 6/27/2017 4:40:00PM

Batch End:

Batch Comment

## Comments

Login Comments for Job 119528: L4Reviewed(Bflo);RSK\_175(mtm)  
--Sub methods:8260C,8260C\_SIM,PFC\_IDA,RSK175\_CO2.--  
Login Comments for Job 29153: To be SDG'd with Buffalo jobs.  
320-29181-A-4  
Method Comments: include add on spikes

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-171287

Method Code: 320-3535\_PFC-320

Batch Open: 6/27/2017 4:40:00PM

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-171287/1	LCMPFC2SU_00020	500 uL	0.50 mL	J Reed 6/27/17	VPM 6/27/17
MB 320-171287/1	LCMPFCSU_00077	500 uL	0.50 mL		
LCS 320-171287/2	LCMPFC2SU_00020	500 uL	0.50 mL	[Signature]	[Signature]
LCS 320-171287/2	LCMPFCSU_00077	500 uL	0.50 mL		
LCS 320-171287/2	LCPF2SP_00033	500 uL	0.50 mL		
LCS 320-171287/2	LCPF2SP_00095	500 uL	0.50 mL		
LCSD 320-171287/3	LCMPFC2SU_00020	500 uL	0.50 mL		
LCSD 320-171287/3	LCMPFCSU_00077	500 uL	0.50 mL		
LCSD 320-171287/3	LCPF2SP_00033	500 uL	0.50 mL		
LCSD 320-171287/3	LCPF2SP_00095	500 uL	0.50 mL		
480-119907-A-1	LCMPFC2SU_00020	500 uL	0.50 mL		
480-119907-A-1	LCMPFCSU_00077	500 uL	0.50 mL		
480-119907-A-2	LCMPFC2SU_00020	500 uL	0.50 mL		
480-119907-A-2	LCMPFCSU_00077	500 uL	0.50 mL		
480-119907-A-3	LCMPFC2SU_00020	500 uL	0.50 mL		
480-119907-A-3	LCMPFCSU_00077	500 uL	0.50 mL		
480-119907-A-4	LCMPFC2SU_00020	500 uL	0.50 mL		
480-119907-A-4	LCMPFCSU_00077	500 uL	0.50 mL		

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-171287

Method Code: 320-3535\_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 6/27/2017 4:40:00PM

Batch End:

Sample ID	Vial ID	Volume	Date	Notes
480-119528-AA-17	LCMPFC2SU_00020	500 uL	0.50 mL	<div style="font-size: 2em; font-weight: bold;">✓</div>
480-119528-AA-17	LCMPFCSU_00077	500 uL	0.50 mL	
320-29153-A-1	LCMPFC2SU_00020	500 uL	0.50 mL	
320-29153-A-1	LCMPFCSU_00077	500 uL	0.50 mL	
320-29153-A-2	LCMPFC2SU_00020	500 uL	0.50 mL	
320-29153-A-2	LCMPFCSU_00077	500 uL	0.50 mL	
320-29153-A-3	LCMPFC2SU_00020	500 uL	0.50 mL	
320-29153-A-3	LCMPFCSU_00077	500 uL	0.50 mL	
320-29153-A-4	LCMPFC2SU_00020	500 uL	0.50 mL	
320-29153-A-4	LCMPFCSU_00077	500 uL	0.50 mL	
320-29153-A-5	LCMPFC2SU_00020	500 uL	0.50 mL	
320-29153-A-5	LCMPFCSU_00077	500 uL	0.50 mL	
320-29153-A-6	LCMPFC2SU_00020	500 uL	0.50 mL	
320-29153-A-6	LCMPFCSU_00077	500 uL	0.50 mL	
320-29181-A-4	LCMPFC2SU_00020	500 uL	0.50 mL	
320-29181-A-4	LCMPFCSU_00077	500 uL	0.50 mL	

6/27/17
 

 vpm 6/27/17

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 6/27/2017 4:40:00PM

Batch End:

Batch Number: 320-171287

Method Code: 320-3535\_PFC-320

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): AL287 Test: 2535-PFC  
 Earliest Holding Time: 7/25/17

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		✓	✓
All necessary NCMs filed (including holding time)		✓	✓
Method/sample/login/QAS checked and correct		✓	✓
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved		N/A	N/A
Weights in anticipated range and not targeted		✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		✓	✓
The pH is transcribed correctly in TALS		N/A	N/A
All additional information transcribed into TALS is correct and raw data is attached		✓	✓
Comments are transcribed correctly in TALS		✓	✓
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		✓	✓
All spike amounts correct and added to necessary samples and QC		✓	✓
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		✓	✓
All necessary 'batch information' complete and entered into TALS correctly		✓	✓

1<sup>st</sup> Level Reviewer: TN  
 2<sup>nd</sup> Level Reviewer: VPM  
 Comments: \_\_\_\_\_

Date: 06/28/17  
 Date: 6/29/17

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

DOB 6/29/17

30

Batch Number: 320-169880

Analyst: Arauz, Horacio J

Batch Open: 6/19/2017 2:03:00PM

Method Code: 320-Shake\_Bath\_14D-320

Batch End: 6/28/2017 9:33:00PM

## Shake Extraction with Ultrasonic Bath Extraction

Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1 MB-320-169880/1 N/A	N/A	5.06 g	1.00 mL	N/A	N/A	N/A		MB-320-169880/1-A
2 LCS-320-169880/2 N/A	N/A	5.08 g	1.00 mL	N/A	N/A	N/A		LCS-320-169880/2-A
3 320-28971-A-16 (PFC_IDA_DOD5)	N/A (320-28971-1)	5.01 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-16-A
4 320-28971-A-17 (PFC_IDA_DOD5)	N/A (320-28971-1)	4.92 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-17-A
5 320-28971-A-18 (PFC_IDA_DOD5)	N/A (320-28971-1)	5.03 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-18-A
6 320-28971-A-19 (PFC_IDA_DOD5)	N/A (320-28971-1)	4.97 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-19-A
7 320-28971-A-20-MS (PFC_IDA_DOD5)	N/A (320-28971-1)	5.00 g	1.00 mL	6/13/17	16_Days	4	RI ✓	320-28971-A-20-MS-A
8 320-28971-A-20-MSD (PFC_IDA_DOD5)	N/A (320-28971-1)	4.98 g	1.00 mL	6/13/17	16_Days	4	RI ✓	320-28971-A-20-MSD-A
9 320-28971-A-20 (PFC_IDA_DOD5)	N/A (320-28971-1)	5.06 g	1.00 mL	6/13/17	16_Days	4	RI ✓	320-28971-A-20-A
10 320-28971-A-21 (PFC_IDA_DOD5)	N/A (320-28971-1)	5.02 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-21-A
11 320-28971-A-23 (PFC_IDA_DOD5)	N/A (320-28971-1)	5.00 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-23-A
12 320-28971-A-24 (PFC_IDA_DOD5)	N/A (320-28971-1)	5.05 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-24-A
13 320-28971-A-25 (PFC_IDA_DOD5)	N/A (320-28971-1)	5.06 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-25-A
14 320-28971-A-26 (PFC_IDA_DOD5)	N/A (320-28971-1)	4.95 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-26-A
15 320-28971-A-27 (PFC_IDA_DOD5)	N/A (320-28971-1)	4.99 g	1.00 mL	6/13/17	16_Days	4		320-28971-A-27-A

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)






Batch Number: 320-169880

Analyst: Arauz, Horacio J

Batch Open: 6/19/2017 2:03:00PM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

Line	Sample ID	Weight	Volume	Date	16_Days	Count	Barcode
16	320-28971-A-28 (PFC_IDA_DOD5)	5.09 g	1.0 mL	6/13/17	16_Days	4	
17	320-28971-A-29 (PFC_IDA_DOD5)	5.06 g	1.0 mL	6/13/17	16_Days	4	
18	320-28971-A-30 (PFC_IDA_DOD5)	5.00 g	1.0 mL	6/13/17	16_Days	4	5 X 
19	320-28971-A-31 (PFC_IDA_DOD5)	5.05 g	1.0 mL	6/13/17	16_Days	4	5 X 
20	320-28971-A-32 (PFC_IDA_DOD5)	5.07 g	1.0 mL	6/13/17	16_Days	4	
21	N/A			N/A	N/A	N/A	
22	N/A			N/A	N/A	N/A	



# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-169880

Analyst: Arauz, Horacio J

Batch Open: 6/19/2017 2:03:00PM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

Batch Notes	
Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	06-19-17
Analyst ID - Reagent Drop Witness	SEK
SPE Cartridge ID	017037054A
SPE Cartridge Type	WAX 150mg
Hexane ID	958899
Methanol ID	959497
Ammonium Hydroxide/MeOH ID	962378
Sodium Hydroxide ID	958836
Methanolic Potassium Hydroxide ID	950520
Manifold ID	516
Interference check solution ID	NA
Acetic Acid ID	429065
Batch Comment	Spike bottle #2

Comments

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-169880

Analyst: Arauz, Horacio J

Batch Open: 6/19/2017 2:03:00PM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-169880/1	LCMPFCSU_00074	1000 uL	1.0 mL	HSA 6-19-17	[Signature]
LCS 320-169880/2	LCMPFCSU_00074	1000 uL	1.0 mL		
LCS 320-169880/2	LCPFCSU_00095	1.0 mL	1.0 mL		
320-28971-A-16	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-17	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-18	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-19	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-20 MS	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-20 MS	LCPFCSU_00095	1.0 mL	1.0 mL		
320-28971-A-20 MSD	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-20 MSD	LCPFCSU_00095	1.0 mL	1.0 mL		
320-28971-A-20	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-21	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-23	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-24	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-25	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-26	LCMPFCSU_00074	1000 uL	1.0 mL		
320-28971-A-27	LCMPFCSU_00074	1000 uL	1.0 mL		[Signature]



Preparation Batch Number(s): 169880 Test: PFC(S)

Earliest Holding Time: 06-21-17

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		NA	NA
Method/sample/login/QAS checked and correct		/	/
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved		/	/
Weights in anticipated range and not targeted		NA	NA
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		/	/
The pH is transcribed correctly in TALS		NA	NA
All additional information transcribed into TALS is correct and raw data is attached		/	/
Comments are transcribed correctly in TALS		/	/
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1<sup>st</sup> Level Reviewer: TN

Date: 06/28/17

2<sup>nd</sup> Level Reviewer: VPM

Date: 06/29/17

Comments: \_\_\_\_\_

LF 30 TN 06/29/16

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170805  
 Method Code: 320-3535\_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM  
 Batch End: 6/27/2017 9:38:00PM

AS 6/29/17

## Solid-Phase Extraction (SPE)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHs		Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
				Rcvd	Adj1					
MB-320-170805/1 N/A	N/A		250.00 mL 0.50 mL			N/A	N/A	N/A		MB-320-170805/1-A
LCS-320-170805/2 N/A	N/A		250.00 mL 0.50 mL			N/A	N/A	N/A		LCS-320-170805/2-A
320-29267-A-1 (PFC_IDA_DOD5)	N/A (320-29267-1)	290.39 g 28.04 g	262.4 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-1-A
320-29267-A-2 (PFC_IDA_DOD5)	N/A (320-29267-1)	282.11 g 27.19 g	254.9 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-2-A
320-29267-B-3 (PFC_IDA_DOD5)	N/A (320-29267-1)	296.78 g 28.00 g	268.8 mL 0.50 mL			6/24/17	23_Days	4		320-29267-B-3-A
320-29267-A-4 (PFC_IDA_DOD5)	N/A (320-29267-1)	299.92 g 27.96 g	272 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-4-A
320-29267-A-4-MS (PFC_IDA_DOD5)	N/A (320-29267-1)	294.48 g 27.04 g	267.4 mL 0.50 mL			6/24/17	23_Days	4		320-29267-A-4-B-MS
320-29267-B-4-MSD (PFC_IDA_DOD5)	N/A (320-29267-1)	287.92 g 27.77 g	260.2 mL 0.50 mL			6/24/17	23_Days	4		320-29267-B-4-A-MSD
320-29267-B-5 (PFC_IDA_DOD5)	N/A (320-29267-1)	275.86 g 26.59 g	249.3 mL 0.50 mL			6/24/17	23_Days	4	SDX	320-29267-B-6-A
320-29267-A-6 (PFC_IDA_DOD5)	N/A (320-29267-1)	272.10 g 26.92 g	245.2 mL 0.50 mL			6/24/17	23_Days	4	RI	320-29267-A-6-A

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)













Analyst: Reed, Jonathan E

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

Batch Open: 6/24/2017 12:26:00PM

Batch End:

Sample ID	Container ID	Weight (g)	Volume (mL)	Extraction Date	Extraction Days	Notes	Barcode
320-29267-A-7 (PFC_IDA_DOD5)	N/A (320-29267-1)	294.24 g 26.57 g	267.7 mL 0.50 mL	6/24/17	23_Days		
320-29267-B-3 (PFC_IDA_DOD5)	N/A (320-29267-1)	279.73 g 26.74 g	253 mL 0.50 mL	6/24/17	23_Days		
320-29267-A-9 (PFC_IDA_DOD5)	N/A (320-29267-1)	288.74 g 26.92 g	261.8 mL 0.50 mL	6/24/17	23_Days	20X	
320-29267-A-11 (PFC_IDA_DOD5)	N/A (320-29267-1)	284.33 g 26.88 g	257.5 mL 0.50 mL	6/24/17	23_Days	RI	
320-29267-A-12 (PFC_IDA_DOD5)	N/A (320-29267-1)	308.18 g 27.42 g	280.8 mL 0.50 mL	6/24/17	23_Days		
320-29267-A-13 (PFC_IDA_DOD5)	N/A (320-29267-1)	301.58 g 26.97 g	274.6 mL 0.50 mL	6/24/17	23_Days		
320-29267-A-14 (PFC_IDA_DOD5)	N/A (320-29267-1)	289.05 g 26.72 g	262.3 mL 0.50 mL	6/24/17	23_Days	5X	
320-29267-A-15 (PFC_IDA_DOD5)	N/A (320-29267-1)	277.85 g 26.68 g	251.2 mL 0.50 mL	6/24/17	23_Days		
320-29267-A-16 (PFC_IDA_DOD5)	N/A (320-29267-1)	312.25 g 27.78 g	284.5 mL 0.50 mL	6/24/17	23_Days		
320-29267-B-17 (PFC_IDA_DOD5)	N/A (320-29267-1)	281.16 g 26.70 g	254.5 mL 0.50 mL	6/24/17	23_Days		
320-29267-B-18 (PFC_IDA_DOD5)	N/A (320-29267-1)	291.90 g 26.55 g	265.4 mL 0.50 mL	6/24/17	23_Days	5X	
320-29267-A-19 (PFC_IDA_DOD5)	N/A (320-29267-1)	308.99 g 28.22 g	280.8 mL 0.50 mL	6/24/17	23_Days		

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM

Batch End:

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

## Batch Notes

Manifold ID 12, 13

Methanol ID 959497

Hexane ID 958899

Sodium Hydroxide ID 958836

First Start time NA

First End time NA

SPE Cartridge Type WAX 500mg

Solid Phase Extraction Disk ID 003137033A

Balance ID QA-070

H2O ID 6/23/17

Pipette ID MD05306

Solvent Name 0.3% NH4OH/MeOH

Solvent Lot # 962378

Analyst ID - Reagent Drop JER

Analyst ID - SU Reagent Drop JER

Analyst ID - SU Reagent Drop HJA

Witness

Acid Name NA

Acid ID NA

Reagent ID NA

Reagent Lot Number NA

SOP Number WS-LC-0025

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

Batch Open: 6/24/2017 12:26:00PM

Batch End:

Batch Comment

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# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM

Batch End:

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

## Comments

320-29267-A-1	Method Comments: DOD site, Screen-caution
320-29267-A-2	Method Comments: DOD site, Screen-caution
320-29267-B-3	Method Comments: DOD site, Screen-caution
320-29267-A-4	Method Comments: DOD site, Screen-caution
320-29267-A-4-MS	Method Comments: DOD site, Screen-caution
320-29267-B-4-MSD	Method Comments: DOD site, Screen-caution
320-29267-B-5	Method Comments: DOD site, Screen-caution
320-29267-A-6	Method Comments: DOD site, Screen-caution
320-29267-A-7	Method Comments: DOD site, Screen-caution
320-29267-B-8	Method Comments: DOD site, Screen-caution
320-29267-A-9	Method Comments: DOD site, Screen-caution
320-29267-A-11	Method Comments: DOD site, Screen-caution
320-29267-A-12	Method Comments: DOD site, Screen-caution
320-29267-A-13	Method Comments: DOD site, Screen-caution
320-29267-A-14	Method Comments: DOD site, Screen-caution
320-29267-A-15	Method Comments: DOD site, Screen-caution
320-29267-A-16	Method Comments: DOD site, Screen-caution
320-29267-B-17	Method Comments: DOD site, Screen-caution
320-29267-B-18	Method Comments: DOD site, Screen-caution

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

Batch Open: 6/24/2017 12:26:00PM

Batch End:

Method Comments: DOD site, Screen-caution

Method Comments: DOD site, Screen-caution

320-29267-A-19

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Reed, Jonathan E

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

Batch Open: 6/24/2017 12:26:00PM

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-170805/1	LCMPFCSU_00074	500 uL	0.50 mL	<i>John G/24/17</i>	<i>HSA 6-24-17</i>
LCS 320-170805/2	LCMPFCSU_00074	500 uL	0.50 mL		
LCS 320-170805/2	LCPFCSU_00095	500 uL	0.50 mL		
320-29267-A-1	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-2	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-3	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-4	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-4 MS	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-4 MS	LCPFCSU_00095	500 uL	0.50 mL		
320-29267-B-4 MSD	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-4 MSD	LCPFCSU_00095	500 uL	0.50 mL		
320-29267-B-5	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-6	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-7	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-8	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-9	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-11	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-12	LCMPFCSU_00074	500 uL	0.50 mL		

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-170805

Method Code: 320-3535\_PFC-320

Analyst: Reed, Jonathan E

Batch Open: 6/24/2017 12:26:00PM

Batch End:

320-29267-A-13	LCMPFCSU_00074	500 uL	0.50 mL	<i>[Signature]</i>	HSA 624-17
320-29267-A-14	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-15	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-16	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-17	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-B-18	LCMPFCSU_00074	500 uL	0.50 mL		
320-29267-A-19	LCMPFCSU_00074	500 uL	0.50 mL		

Reagent	Other Reagents:	Lot#:

Preparation Batch Number(s): 170805 Test: PFC-TDA-0005  
 Earliest Holding Time: 06-24-17

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		✓	✓
All necessary NCMs filed (including holding time)		✓	✓
Method/sample/login/QAS checked and correct		✓	✓
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved		N/A	NA
Weights in anticipated range and not targeted		✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		✓	✓
The pH is transcribed correctly in TALS		N/A	NA
All additional information transcribed into TALS is correct and raw data is attached		✓	✓
Comments are transcribed correctly in TALS		✓	✓
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		✓	✓
All spike amounts correct and added to necessary samples and QC		✓	✓
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		✓	✓
All necessary 'batch information' complete and entered into TALS correctly		✓	✓

1<sup>st</sup> Level Reviewer: TN

Date: 06/27/17

2<sup>nd</sup> Level Reviewer: VPM

Date: 6/28/17

Comments: \_\_\_\_\_



Job Number(s): 29408; 29213; 29102  
 Work List ID(s): 45706; 45607; 45739  
 Extraction Batch: 29267; 29287; 29517; 29543;  
 Analysis Batch(es): 171133; 17133; 1750; 174824; 175050; 175321; 174827  
 Delivery Rank: 4 Due Date: various  
 175391 175047-5807/17

A. Calibration/Instrument Run QC	1 <sup>st</sup> Level	2 <sup>nd</sup> Level	N/A
1. ICAL locked in Chrom and TALS? ICAL Batch# <u>174751; 175252</u>	✓	✓	
2. ICAL, CCV Frequency & Criteria met.	✓	✓	
• RF <sub>average</sub> criteria appropriate for the method.	✓	✓	
• Linear Regression criteria appropriate if required ( $r \geq 0.995$ ).	✓	✓	
• Quadratic fit criteria appropriate if required ( $r^2 \geq 0.990$ ).			✓
• For Linear Regression and Quadratic fit – Does the y-intercept support ½ the reporting limit as described in CA-Q-S-005?	✓	✓	
• All curve points show calculated concentrations.	✓	✓	
3. Peaks correctly ID'd by data system.	✓	✓	
5. Tune check frequency & criteria met and Tune check report attached.	✓	✓	
<b>B. QA/QC</b>			
1. Are all QC samples properly linked in TALS?	✓	✓	
2. Method blank, LCS/LCSD and MS/SD frequencies met.	✓	✓	
3. LCS/LCSD and MB data are within control limits. If not, NCM is present.	✓	✓	
4. Are MS/MSD recoveries and RPD within control limits?	✓	✓	
5. Holding Times were met for prep and analytical.	✓	✓	
6. IS/Surrogate recoveries meet criteria or properly noted.	✓	✓	
<b>C. Sample Analysis</b>			
1. Was correct analysis performed and were project instructions followed?	✓	✓	
2. If required, are compounds within RT windows?	✓	✓	
3. If required, are positive hits confirmed and >40% RPD flagged?			✓
4. Manual Integrations reviewed and appropriate.	✓	✓	
5. All analytes correctly reported. (Primary, secondary, acceptable status)	✓	✓	
6. Correct reporting limits used. (based on client request, prep factors, and dilutions)	✓	✓	
<b>D. Documentation</b>			
1. Are all non-conformances documented/attached? NCM#	✓	✓	
2. Do results make sense (e.g. dilutions, etc.)?	✓	✓	
3. Have all flags been reviewed for appropriateness?	✓	✓	
4. For level 3 and 4 reports, have forms and raw data been reviewed?		✓	
5. Was QC Checker run for this job?	✓	✓	

\*Upon completion of this checklist, the reviewer must scan and attach the checklist to the TALS job.

1<sup>st</sup> Level (Analyst): [Signature] Date: 7/20/17; 7/21/17

2<sup>nd</sup> Level Reviewer: [Signature] Date: 7/21/2017

NCMS: 94699; 94702; 94705; 94706; 94707; 94708; 94714; 94715;  
94716; 94400; 94947; 94950; 94949; 94951; 94953;  
94736; 94737; 94738; 94737; 94738; 94965

TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 18JUL2017D\_PFC  
Instrument Name: A8\_N  
Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45606.b  
QC Batching: Disabled

Worklist Number: 45606  
Chrom Method: A8\_N  
Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 174824	LC PFC ICAL Raw Batch: 174825	
# 1 CCV L5	# 1 CCV L5	# 1 CCV L5	
# 2 MB 320-172026/1-A	# 2 MB 320-172026/1-A		
# 3 LCS 320-172026/2-A	# 3 LCS 320-172026/2-A		
# 4 320-29267-A-20-A	# 4 320-29267-A-20-A		
# 5 320-29267-A-21-A	# 5 320-29267-A-21-A		
# 6 320-29267-A-22-A	# 6 320-29267-A-22-A		
# 7 320-29267-A-23-A	# 7 320-29267-A-23-A		
# 8 320-29267-A-24-A	# 8 320-29267-A-24-A		
# 9 320-29267-A-24-B MS	# 9 320-29267-A-24-B MS		
#10 320-29267-A-24-C MSD	#10 320-29267-A-24-C MSD		
#11 320-29287-A-3-A	#11 320-29287-A-3-A		
#12 CCV L4	#12 CCV L4	#12 CCV L4	
#13 MB 320-172939/1-A	#13 MB 320-172939/1-A RI	29408 1/2 RL PFBA; samples > 10x 94702  E flags 94699	
#14 LCS 320-172939/2-A	#14 LCS 320-172939/2-A RI		
#15 LCSD 320-172939/3-A	#15 LCSD 320-172939/3-A RI		
#16 320-29517-A-1-A	#16 320-29517-A-1-A 5x		
#17 320-29517-A-3-A	#17 320-29517-A-3-A RI		
#18 320-29517-A-4-A	#18 320-29517-A-4-A		
#19 320-29517-A-5-A	#19 320-29517-A-5-A		
#20 320-29517-A-7-A	#20 320-29517-A-7-A 20x		
#21 320-29517-A-10-A	#21 320-29517-A-10-A 5x		
#22 320-29517-A-11-A	#22 320-29517-A-11-A		
#23 CCV L5	#23 CCV L5		#23 CCV L5
#24 320-29517-A-12-A	#24 320-29517-A-12-A		
#25 320-29543-B-16-A	#25 320-29543-B-16-A		
#26 320-29543-A-37-A	#26 320-29543-A-37-A		
#27 320-29543-A-40-A	#27 320-29543-A-40-A		
#28 320-29543-A-42-A	#28 320-29543-A-42-A		
#29 320-29543-A-78-A	#29 320-29543-A-78-A		
#30 320-29408-A-2-A	#30 320-29408-A-2-A		
#31 320-29408-A-4-A	#31 320-29408-A-4-A 10x		
#32 320-29408-B-5-A	#32 320-29408-B-5-A RI; CI PFBA		
#33 320-29408-A-6-A	#33 320-29408-A-6-A		
#34 CCV L4 13c2 PFBA high	#34 CCV L4	#34 CCV L4	
#35 320-29336-A-9-A RI	#35 320-29336-A-9-A		
#36 CCV L5	#36 CCV L5	#36 CCV L5	

same day as ICAL



TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 18JUL2017J\_PFC

Worklist Number: 45655

Instrument Name: A8\_N

Chrom Method: A8\_N

Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170720-45655.b

QC Batching: Disabled

Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 175050	LC PFC ICAL Raw Batch: 175051
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 320-29517-A-3-A	# 2 320-29517-A-3-A	
# 3 320-29517-A-12-A	# 3 320-29517-A-12-A	
# 4 320-29543-B-16-A PFDA IDA ✓	# 4 320-29543-B-16-A	
# 5 320-29543-A-37-A	# 5 320-29543-A-37-A	
# 6 320-29543-A-40-A PFDA IDA ✓	# 6 320-29543-A-40-A	
# 7 320-29543-A-42-A PPDA IDA ✓	# 7 320-29543-A-42-A	
# 8 320-29543-A-78-A	# 8 320-29543-A-78-A	CI * flag
# 9 320-29408-A-2-A	# 9 320-29408-A-2-A → PFDS	94705
# 10 320-29408-B-5-A FOSA IDA ✓	# 10 320-29408-B-5-A CI PFPCA	94706
# 11 320-29408-A-6-A FOSA IDA ✓	# 11 320-29408-A-6-A CI PFBA	
# 12 CCV L5	# 12 CCV L5	# 12 CCV L5
# 13 320-29408-A-4-A DAA UVA IDA ✓	# 13 320-29408-A-4-A	
# 14 rinse	# 14 rinse	
# 15 320-29336-A-9-A	# 15 320-29336-A-9-A	
# 16 320-29517-A-7-A	# 16 320-29517-A-7-A → RI 20x	
# 17 320-29408-A-4-A	# 17 320-29408-A-4-A → RI 10x	IDA high 94707
# 18 320-29517-A-1-A	# 18 320-29517-A-1-A RI 5x	RL, DL 94708 94714
# 19 320-29517-A-10-A	# 19 320-29517-A-10-A	94716
# 20 CCV L4	# 20 CCV L4	# 20 CCV L4

Same day as ICAL

IDA low 94715

TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 18JUL2017I\_PFC      Worklist Number: 45654  
 Instrument Name: A8\_N      Chrom Method: A8\_N  
 Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170720-45654.b  
 QC Batching: Enabled      Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 175047	LC PFC ICAL Raw Batch: 175048
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4
# 2 320-29213-A-5-A	# 2 320-29213-A-5-A → rx, IDAs all low	
# 3 320-29213-A-2-A	# 3 320-29213-A-2-A	
# 4 320-29102-A-3-A	# 4 320-29102-A-3-A	
# 5 320-29102-A-3-B MS	# 5 320-29102-A-3-B MS ↓	RL, DL 94736
# 6 320-29102-A-3-C MSD	# 6 320-29102-A-3-C MSD → RL DL	IDA low 94737
# 7 320-29102-A-4-A	# 7 320-29102-A-4-A	94738
# 8 320-29102-A-5-A	# 8 320-29102-A-5-A	
# 9 320-29213-A-1-A	# 9 320-29213-A-1-A	
#10 320-29213-A-4-A	#10 320-29213-A-4-A	
#11 320-29102-A-1-A	#11 320-29102-A-1-A	
#12 CCV L5	#12 CCV L5	#12 CCV L5
#13 320-29102-A-2-A	#13 320-29102-A-2-A	
#14 320-29102-A-6-A	#14 320-29102-A-6-A	
#15 320-29213-A-5-A	#15 320-29213-A-5-A → rx	Same day as ICAL
#16 320-29213-A-6-A	#16 320-29213-A-6-A	
#17 320-29213-A-7-A	#17 320-29213-A-7-A	
#18 320-29213-A-8-A	#18 320-29213-A-8-A	
#19 320-29213-A-16-A	#19 320-29213-A-16-A	
#20 CCV L4	#20 CCV L4	#20 CCV L4

QC Batch: 2	LC PFC_DOD ICAL Raw Batch: 175062	LC PFC ICAL Raw Batch: 175063	LC PFAS ICAL Raw Batch: 175064
#20 CCV L4	#20 CCV L4	#20 CCV L4	
#21 480-119320-O-9-A		#21 480-119320-O-9-A	#21 480-119320-O-9-A
#22 LCS 320-173444/2-A		#22 LCS 320-173444/2-A	
#23 LCSD 320-173444/3-A		#23 LCSD 320-173444/3-A	
#24 CCV L5	#24 CCV L5	#24 CCV L5	

TestAmerica Laboratories  
Worklist QC Batch Report

Worklist Name: 18JUL2017E\_PFC      Worklist Number: 45607  
 Instrument Name: A8\_N      Chrom Method: A8\_N  
 Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170719-45607.b  
 QC Batching: Disabled      Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 174827	LC PFC ICAL Raw Batch: 174828	LC PFAS ICAL Raw Batch: 174829
# 1 CCV L4	# 1 CCV L4	# 1 CCV L4	
# 2 MB 320-173178/1-A	# 2 MB 320-173178/1-A <i>IDA</i>	# 2 MB 320-173178/1-A	
# 3 LCS 320-173178/2-A	# 3 LCS 320-173178/2-A	# 3 LCS 320-173178/2-A <i>High PFTA</i>	
# 4 LCSD 320-173178/3-A	# 4 LCSD 320-173178/3-A	# 4 LCSD 320-173178/3-A	
# 5 320-29531-A-12-A	<i>use QC from 175321</i>	# 5 320-29531-A-12-A	# 5 320-29531-A-12-A
# 6 320-29531-A-17-A		# 6 320-29531-A-17-A	# 6 320-29531-A-17-A
# 7 460-136444-A-1-A		# 7 460-136444-A-1-A	# 7 460-136444-A-1-A
# 8 460-136444-A-2-A		# 8 460-136444-A-2-A	# 8 460-136444-A-2-A
# 9 460-136444-A-3-A		# 9 460-136444-A-3-A	# 9 460-136444-A-3-A
#10 460-136444-A-4-A		#10 460-136444-A-4-A	#10 460-136444-A-4-A
#11 460-136444-A-4-B MS		#11 460-136444-A-4-B MS	#11 460-136444-A-4-B MS
#12 CCV L5	#12 CCV L5	#12 CCV L5	
#13 460-136444-A-4-C MSD		#13 460-136444-A-4-C MSD <i>High PFTA</i>	#13 460-136444-A-4-C MSD
#14 460-136444-A-5-A		#14 460-136444-A-5-A	#14 460-136444-A-5-A
#15 320-29517-A-17-A	#15 320-29517-A-17-A <i>IDA High</i>		
#16 320-29517-A-18-A	#16 320-29517-A-18-A		
#17 320-29517-A-19-A	#17 320-29517-A-19-A <i>IDA</i>		
#18 320-29475-A-1-B		#18 320-29475-A-1-B	#18 320-29475-A-1-B
#19 320-29475-A-2-B		#19 320-29475-A-2-B	#19 320-29475-A-2-B
#20 320-29475-A-3-B		#20 320-29475-A-3-B	#20 320-29475-A-3-B
#21 320-29504-A-4-A		#21 320-29504-A-4-A	#21 320-29504-A-4-A
#22 320-29476-A-1-A		#22 320-29476-A-1-A	#22 320-29476-A-1-A
#23 CCV L4	#23 CCV L4	#23 CCV L4	
#24 320-29476-A-2-A		#24 320-29476-A-2-A	#24 320-29476-A-2-A
#25 320-29550-A-19-A		#25 320-29550-A-19-A	#25 320-29550-A-19-A
#26 CCV L5	#26 CCV L5	#26 CCV L5	



TestAmerica Laboratories  
 Worklist QC Batch Report

Worklist Name: 21JUL2017A\_PFC                      Worklist Number: 45739  
 Instrument Name: A8\_N                                  Chrom Method: A8\_N  
 Data Directory: \\ChromNa\Sacramento\ChromData\A8\_N\20170721-45739.b  
 QC Batching: Disabled                                  Limit Group Batching: Enabled

QC Batch: 1	LC PFC_DOD ICAL Raw Batch: 175391	LC PFC ICAL Raw Batch: 175392
# 1 RINSE	# 1 RINSE	# 1 RINSE
# 2 CCVL	# 2 CCVL	# 2 CCVL
# 3 CCV L4	# 3 CCV L4	# 3 CCV L4
# 4 RB	# 4 RB	# 4 RB
# 5 320-29517-A-17-A	# 5 320-29517-A-17-A	
# 6 320-29517-A-19-A	# 6 320-29517-A-19-A	
# 7 CCV L5	# 7 CCV L5	# 7 CCV L5

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

*AB 7/18/17*

Batch Number: 320-172026











Analyst: Arauz, Horacio J

Batch Open: 7/1/2017 9:40:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End: 7/18/2017 1:08:00PM

## Shake Extraction with Ultrasonic Bath Extraction

Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
MB-320-172026/1 N/A	N/A	5.00 g	1.00 mL	N/A	N/A	N/A		
LCS-320-172026/2 N/A	N/A	5.00 g	1.00 mL	N/A	N/A	N/A		
320-29267-A-20 (PFC_IDA_DOD5)	N/A (320-29267-1)	5.09 g	1.00 mL	6/24/17	23_Days	4		
320-29267-A-21 (PFC_IDA_DOD5)	N/A (320-29267-1)	5.03 g	1.00 mL	6/24/17	23_Days	4		
320-29267-A-22 (PFC_IDA_DOD5)	N/A (320-29267-1)	5.06 g	1.00 mL	6/24/17	23_Days	4		
320-29267-A-23 (PFC_IDA_DOD5)	N/A (320-29267-1)	5.07 g	1.00 mL	6/24/17	23_Days	4		
320-29267-A-24 (PFC_IDA_DOD5)	N/A (320-29267-1)	5.01 g	1.00 mL	6/24/17	23_Days	4		
320-29267-A-24-MS (PFC_IDA_DOD5)	N/A (320-29267-1)	5.00 g	1.00 mL	6/24/17	23_Days	4		
320-29267-A-24-MSD (PFC_IDA_DOD5)	N/A (320-29267-1)	5.00 g	1.00 mL	6/24/17	23_Days	4		
320-29267-A-3 (PFC_IDA_DOD5)	N/A (320-29267-1)	5.00 g	1.00 mL	6/27/17	8_Days	4		

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172026

Method Code: 320-Shake\_Bath\_14D-320

Analyst: Arauz, Horacio J

Batch Open: 7/1/2017 9:40:00AM

Batch End:

Batch Notes	
Balance ID	QA-070
Blank Sand Lot #	162639
Filter ID	NA
Millipore Water Dispense Date	7-1-17
Analyst ID - Reagent Drop Witness	JER
SPE Cartridge ID	017037054A
SPE Cartridge Type	WAX 150mg
Hexane ID	958902
Methanol ID	959497
Ammonium Hydroxide/MeOH ID	983073
Sodium Hydroxide ID	966118
Methanolic Potassium Hydroxide ID	968358
Manifold ID	6
Interference check solution ID	NA
Acetic Acid ID	429065
Batch Comment	Spike bottle # 4 Pipette N32761F

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172026

Analyst: Arauz, Horacio J

Batch Open: 7/1/2017 9:40:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

	Comments
320-29267-A-20	Method Comments: DOD site, Screen-caution
320-29267-A-21	Method Comments: DOD site, Screen-caution
320-29267-A-22	Method Comments: DOD site, Screen-caution
320-29267-A-23	Method Comments: DOD site, Screen-caution
320-29267-A-24	Method Comments: DOD site, Screen-caution
320-29267-A-24-MS	Method Comments: DOD site, Screen-caution
320-29267-A-24-MSD	Method Comments: DOD site, Screen-caution
320-29287-A-3	Method Comments: Samples from a base



# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172026

Analyst: Arauz, Horacio J

Batch Open: 7/1/2017 9:40:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-172026/1	LCMPFCSU_00078	1000 uL	1.00 mL	HSA 7-1-17	[Signature] 7/1/17
LCS 320-172026/2	LCMPFCSU_00078	1000 uL	1.00 mL		
LCS 320-172026/2	LCPFCSU_00095	1.00 mL	1.00 mL		
320-29267-A-20	LCMPFCSU_00078	1000 uL	1.00 mL		
320-29267-A-21	LCMPFCSU_00078	1000 uL	1.00 mL		
320-29267-A-22	LCMPFCSU_00078	1000 uL	1.00 mL		
320-29267-A-23	LCMPFCSU_00078	1000 uL	1.00 mL		
320-29267-A-24	LCMPFCSU_00078	1000 uL	1.00 mL		
320-29267-A-24 MS	LCMPFCSU_00078	1000 uL	1.00 mL		
320-29267-A-24 MS	LCPFCSU_00095	1.00 mL	1.00 mL		
320-29267-A-24 MSD	LCMPFCSU_00078	1000 uL	1.00 mL		
320-29267-A-24 MSD	LCPFCSU_00095	1.00 mL	1.00 mL		
320-29287-A-3	LCMPFCSU_00078	1000 uL	1.00 mL		

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172026

Analyst: Arauz, Horacio J

Batch Open: 7/1/2017 9:40:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

Reagent	Amount/Units	Lot#:

Other Reagents:

Preparation Batch Number(s): 320-172026 Test: PFC-S

Earliest Holding Time: 7-2-17

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		NA	NA
Method/sample/login/QAS checked and correct		/	/
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved		NA	NA
Weights in anticipated range and not targeted		/	/
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		/	/
The pH is transcribed correctly in TALS		NA	NA
All additional information transcribed into TALS is correct and raw data is attached		/	/
Comments are transcribed correctly in TALS		/	/
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1<sup>st</sup> Level Reviewer: JNS

Date: 7/18/17

2<sup>nd</sup> Level Reviewer: VPM

Date: 7/18/17

Comments: \_\_\_\_\_

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)



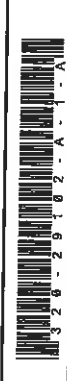
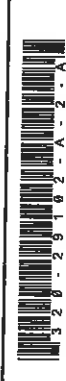






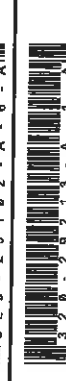




A08 7/18/17

Batch Number: 320-171133  
 Method Code: 320-Shake\_Bath\_14D-320

Analyst: Arauz, Horacio J

Batch Open: 6/27/2017 9:46:00AM  
 Batch End: 7/17/2017 8:39:00PM

## Shake Extraction with Ultrasonic Bath Extraction

Input Sample Lab ID (Analytical Method)	SDG (Job #)	Initial Amount	Final Amount	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
1 MB-320-171133/1 N/A	N/A	5.00 g	1.00 mL	N/A	N/A	N/A		
2 LCS-320-171133/2 N/A	N/A	5.00 g	1.00 mL	N/A	N/A	N/A		
3 320-29102-A-1 (PFC_IDA_DOD5)	N/A (320-29102-1)	4.99 g	1.00 mL	6/21/17	12_Days	4	5X 80c7/20/17 OK	
4 320-29102-A-2 (PFC_IDA_DOD5)	N/A (320-29102-1)	5.04 g	1.00 mL	6/21/17	12_Days	4	5X	
5 320-29102-A-3 (PFC_IDA_DOD5)	N/A (320-29102-1)	5.03 g	1.00 mL	6/21/17	12_Days	4	10X RIDL	
6 320-29102-A-3-MS (PFC_IDA_DOD5)	N/A (320-29102-1)	5.08 g	1.00 mL	6/21/17	12_Days	4	10X RIDL	
7 320-29102-A-3-MSD (PFC_IDA_DOD5)	N/A (320-29102-1)	5.09 g	1.00 mL	6/21/17	12_Days	4	10X	
8 320-29102-A-4 (PFC_IDA_DOD5)	N/A (320-29102-1)	5.04 g	1.00 mL	6/21/17	12_Days	4	10X	
9 320-29102-A-5 (PFC_IDA_DOD5)	N/A (320-29102-1)	5.00 g	1.00 mL	6/21/17	12_Days	4	10X	
10 320-29102-A-6 (PFC_IDA_DOD5)	N/A (320-29102-1)	5.03 g	1.00 mL	6/21/17	12_Days	4	5X	
11 320-29213-A-1 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.04 g	1.00 mL	6/23/17	12_Days	4	10X	
12 320-29213-A-2 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.13 g	1.00 mL	6/23/17	12_Days	4	RI	
13 320-29213-A-3 (PFC_IDA_DOD5)	N/A (320-29213-1)	4.99 g	1.00 mL	6/23/17	12_Days	4		
14 320-29213-A-4 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.10 g	1.00 mL	6/23/17	12_Days	4	10X	
15 320-29213-A-5 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.00 g	1.00 mL	6/23/17	12_Days	4	RI, 5X IDA <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">RX</span>	

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# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)





Batch Number: 320-171133

Analyst: Arauz, Horacio J

Batch Open: 6/27/2017 9:46:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

16	320-29213-A-6 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.13 g	1.00 mL	6/23/17	12_Days	4	5X of SBC 7/20/17	
17	320-29213-A-7 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.04 g	1.00 mL	6/23/17	12_Days	4	5X	
18	320-29213-A-8 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.07 g	1.00 mL	6/23/17	12_Days	4	5X	
19	320-29213-A-16 (PFC_IDA_DOD5)	N/A (320-29213-1)	5.05 g	1.00 mL	6/23/17	12_Days	4	5X	

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-171133

Analyst: Arauz, Horacio J

Batch Open: 6/27/2017 9:46:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End: 7/17/2017 8:39:00PM

## Batch Notes

Balance ID QA-070

Blank Sand Lot # 162639

Filter ID NA

Millipore Water Dispense Date 07/10/17

Analyst ID - Reagent Drop Witness Bottle add on # 3

SPE Cartridge ID 017037054A

SPE Cartridge Type WAX 150mg

Hexane ID 958902

Methanol ID 959497

Ammonium Hydroxide/MeOH ID 983079

Sodium Hydroxide ID 977629

Methanolic Potassium Hydroxide ID 950520

Manifold ID 11,8

Interference check solution ID NA

Acetic Acid ID 429065

Batch Comment Spike bottle # 3 add on # 1 Pipette HD05108

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-171133

Analyst: Arauz, Horacio J

Batch Open: 6/27/2017 9:46:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

Comments	
Login Comments for Job 29102:	<b><u>DOD5</u></b>
Login Comments for Job 29213:	<b><u>DOD5</u></b>

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-171133

Analyst: Arauz, Horacio J

Batch Open: 6/27/2017 9:46:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-171133/1	LCMPFC2SU_00020	1.00 mL	1.00 mL	HSA 6-27-17	JM 6/27/17
MB 320-171133/1	LCMPFCSU_00077	1000 uL	1.00 mL		
LCS 320-171133/2	LCMPFC2SU_00020	1.00 mL	1.00 mL		
LCS 320-171133/2	LCMPFCSU_00077	1000 uL	1.00 mL		
LCS 320-171133/2	LCPF2SP_00033	1.00 mL	1.00 mL		
LCS 320-171133/2	LCPF2SP_00095	1.00 mL	1.00 mL		
320-29102-A-1	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-1	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29102-A-2	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-2	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29102-A-3	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-3	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29102-A-3 MS	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-3 MS	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29102-A-3 MS	LCPF2SP_00033	1.00 mL	1.00 mL		
320-29102-A-3 MS	LCPF2SP_00095	1.00 mL	1.00 mL		
320-29102-A-3 MSD	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-3 MSD	LCMPFCSU_00077	1000 uL	1.00 mL		



# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-171133

Analyst: Arauz, Horacio J

Batch Open: 6/27/2017 9:46:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

320-29102-A-3 MSD	LCPF2SP_00033	1.00 mL	1.00 mL	MSA 6-27-17	INS 6/27/17
320-29102-A-3 MSD	LCPF2SP_00095	1.00 mL	1.00 mL		
320-29102-A-4	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-4	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29102-A-5	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-5	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29102-A-6	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29102-A-6	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-1	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-1	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-2	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-2	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-3	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-3	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-4	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-4	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-5	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-5	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-6	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-6	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-7	LCMPFC2SU_00020	1.00 mL	1.00 mL		

# Solid SW-846-3500 Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-171133

Analyst: Arauz, Horacio J

Batch Open: 6/27/2017 9:46:00AM

Method Code: 320-Shake\_Bath\_14D-320

Batch End:

320-29213-A-7	LCMPFCSU_00077	1000 uL	1.00 mL	HSA 6-27-17	JNS 6/28/17
320-29213-A-8	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-8	LCMPFCSU_00077	1000 uL	1.00 mL		
320-29213-A-16	LCMPFC2SU_00020	1.00 mL	1.00 mL		
320-29213-A-16	LCMPFCSU_00077	1000 uL	1.00 mL		

Reagent	Other Reagents:	Amount/Units	Lot#:

Preparation Batch Number(s): 300 - 171133 Test: PTC-S

Earliest Holding Time: 6-27-17

	1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
<b>Sample List Tab</b>		
Samples identified to the correct method	/	/
All necessary NCMs filed (including holding time)	NA	NA
Method/sample/login/QAS checked and correct	/	/
<b>Worksheet Tab</b>		
All samples properly preserved	NA	NA
Weights in anticipated range and not targeted	/	/
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	/	/
The pH is transcribed correctly in TALS	NA	NA
All additional information transcribed into TALS is correct and raw data is attached	/	/
Comments are transcribed correctly in TALS	/	/
<b>Reagents Tab</b>		
All necessary reagents not expired and entered into TALS	/	/
All spike amounts correct and added to necessary samples and QC	/	/
<b>Batch Information</b>		
Date and time accurate and entered into TALS correctly	/	/
All necessary 'batch information' complete and entered into TALS correctly	/	/

1<sup>st</sup> Level Reviewer: TN

Date: 07/17/17

2<sup>nd</sup> Level Reviewer: VPM

Date: 7/17/17

Comments: \_\_\_\_\_

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# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172939

Method Code: 320-3535\_PFC-320

Analyst: Sharifi, Nooshin

Batch Open: 7/7/2017 10:41:00AM

Batch End: 7/17/2017 4:45:00PM

AB 7/16/17

## Solid-Phase Extraction (SPE)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt FinAmt	PHS Adj1	Rcvd	Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
MB-320-172939/1 N/A	N/A		250 mL 0.50 mL				N/A	N/A	N/A	RI	328-172939/1-A
LCS-320-172939/2 N/A	N/A		250 mL 0.50 mL				N/A	N/A	N/A	RI	328-172939/2-A
LCS-320-172939/3 N/A	N/A		250 mL 0.50 mL				N/A	N/A	N/A	RI	328-172939/3-A
320-29517-A-1 (PFC_IDA_DOD5)	N/A (320-29517-1)	291.91 g 27.66 g	264.3 mL 0.50 mL				7/11/17	8_Days	4	5X	328-29517-A-1-A
320-29517-A-3 (PFC_IDA_DOD5)	N/A (320-29517-1)	288.55 g 27.04 g	261.5 mL 0.50 mL				7/11/17	8_Days	4	RI	328-29517-A-3-A
320-29517-A-4 (PFC_IDA_DOD5)	N/A (320-29517-1)	278.70 g 26.75 g	252 mL 0.50 mL				7/11/17	8_Days	4		328-29517-A-4-A
320-29517-A-5 (PFC_IDA_DOD5)	N/A (320-29517-1)	282.72 g 26.84 g	255.9 mL 0.50 mL				7/11/17	8_Days	4		328-29517-A-5-A
320-29517-A-7 (PFC_IDA_DOD5)	N/A (320-29517-1)	291.87 g 26.90 g	265 mL 0.50 mL				7/11/17	8_Days	4	20X	328-29517-A-7-A
320-29517-A-10 (PFC_IDA_DOD5)	N/A (320-29517-1)	287.66 g 27.21 g	260.5 mL 0.50 mL				7/11/17	8_Days	4	5X	328-29517-A-10-A
320-29517-A-11 (PFC_IDA_DOD5)	N/A (320-29517-1)	279.04 g 27.29 g	251.8 mL 0.50 mL				7/11/17	8_Days	4		328-29517-A-11-A

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Sharifi, Nooshin

Batch Number: 320-172939

Method Code: 320-3535\_PFC-320

Batch Open: 7/7/2017 10:41:00AM

Batch End: 7/17/2017 4:45:00PM

Line No.	Sample ID	Weight (g)	Volume (mL)	8_Days	Date	Notes	Barcode
11	320-29517-A-12 (PFC_IDA_DOD5)	284.42 g	258.2 mL	4	7/11/17	RI	320-29517-A-12-A
		26.26 g	0.50 mL				
12	320-29543-B-16 (PFC_IDA_DOD5)	285.45 g	258 mL	4	7/12/17	RI	320-29543-B-16-A
		27.42 g	0.50 mL				
13	320-29543-A-37 (PFC_IDA_DOD5)	286.24 g	258.6 mL	4	7/12/17	RI	320-29543-A-37-A
		27.65 g	0.50 mL				
14	320-29543-A-40 (PFC_IDA_DOD5)	290.62 g	263.5 mL	4	7/12/17	RI	320-29543-A-40-A
		27.16 g	0.50 mL				
15	320-29543-A-42 (PFC_IDA_DOD5)	284.86 g	257.6 mL	4	7/12/17	RI	320-29543-A-42-A
		27.26 g	0.50 mL				
16	320-29543-A-78 (PFC_IDA_DOD5)	290.90 g	263.7 mL	4	7/12/17	RI	320-29543-A-78-A
		27.18 g	0.50 mL				
17	320-29408-A-2 (PFC_IDA_DOD5)	262.45 g	235.6 mL	4	7/17/17	RI	320-29408-A-2-A
		26.85 g	0.50 mL				
18	320-29408-A-4 (PFC_IDA_DOD5)	273.38 g	246.4 mL	4	7/17/17	10x; RI	320-29408-A-4-A
		27.00 g	0.50 mL				
19	320-29408-B-5 (PFC_IDA_DOD5)	285.51 g	258.4 mL	4	7/17/17	RI	320-29408-B-5-A
		27.12 g	0.50 mL				
20	320-29408-A-6 (PFC_IDA_DOD5)	288.89 g	261.8 mL	4	7/17/17	RI	320-29408-A-6-A
		27.13 g	0.50 mL				

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172939

Method Code: 320-3535\_PFC-320

Analyst: Sharifi, Nooshin

Batch Open: 7/7/2017 10:41:00AM

Batch End:

## Batch Notes

Manifold ID 8,11

Methanol ID 976948

Hexane ID 958899

Sodium Hydroxide ID 966118

First Start time NA

First End time NA

SPE Cartridge Type WAX 500mg

Solid Phase Extraction Disk ID 003237040A

Balance ID QA-070

H2O ID 7/06/17

Pipette ID MD05306

Solvent Name 0.3% NH4OH/MeOH

Solvent Lot # 976948

Analyst ID - Reagent Drop NSH

Analyst ID - SU Reagent Drop NSH

Analyst ID - SU Reagent Drop Witness JNS

Acid Name NA

Acid ID NA

Reagent ID NA

Reagent Lot Number NA

SOP Number WS-LC-0025

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172939

Method Code: 320-3535\_PFC-320

Analyst: Sharifi, Nooshin

Batch Open: 7/7/2017 10:41:00AM

Batch End:

Batch Comment

## Comments

320-29517-A-1	Method Comments:	add-ons needed
320-29517-A-3	Method Comments:	add-ons needed
320-29517-A-4	Method Comments:	add-ons needed
320-29517-A-5	Method Comments:	add-ons needed
320-29517-A-7	Method Comments:	add-ons needed
320-29517-A-10	Method Comments:	add-ons needed
320-29517-A-11	Method Comments:	add-ons needed
320-29517-A-12	Method Comments:	add-ons needed - Ask Robert H how to extract, CoC note of product, but does not foam like AFFF would
320-29543-B-16	Method Comments:	add-ons needed
320-29543-A-37	Method Comments:	add-ons needed
320-29543-A-40	Method Comments:	add-ons needed
320-29543-A-42	Method Comments:	add-ons needed
320-29543-A-78	Method Comments:	add-ons needed

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172939

Method Code: 320-3535\_PFC-320

Analyst: Sharifi, Nooshin

Batch Open: 7/7/2017 10:41:00AM

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-172939/1	LCMPFC2SU_00023	0.50 mL	0.50 mL	NSH 7/7/17	JNS 7/9/17
MB 320-172939/1	LCMPFCSU_00080	500 uL	0.50 mL		
LCS 320-172939/2	LCMPFC2SU_00023	0.50 mL	0.50 mL	[Signature]	[Signature]
LCS 320-172939/2	LCMPFCSU_00080	500 uL	0.50 mL		
LCS 320-172939/2	LCPF2SP_00032	0.50 mL	0.50 mL		
LCS 320-172939/2	LCPF2SP_00100	0.50 mL	0.50 mL		
LCSD 320-172939/3	LCMPFC2SU_00023	0.50 mL	0.50 mL		
LCSD 320-172939/3	LCMPFCSU_00080	500 uL	0.50 mL		
LCSD 320-172939/3	LCPF2SP_00032	0.50 mL	0.50 mL		
LCSD 320-172939/3	LCPF2SP_00100	0.50 mL	0.50 mL		
320-29517-A-1	LCMPFC2SU_00023	0.50 mL	0.50 mL		
320-29517-A-1	LCMPFCSU_00080	500 uL	0.50 mL		
320-29517-A-3	LCMPFC2SU_00023	0.50 mL	0.50 mL		
320-29517-A-3	LCMPFCSU_00080	500 uL	0.50 mL		
320-29517-A-4	LCMPFC2SU_00023	0.50 mL	0.50 mL		
320-29517-A-4	LCMPFCSU_00080	500 uL	0.50 mL		
320-29517-A-5	LCMPFC2SU_00023	0.50 mL	0.50 mL		
320-29517-A-5	LCMPFCSU_00080	500 uL	0.50 mL		



# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-172939

Analyst: Sharifi, Nooshin

Batch Open: 7/7/2017 10:41:00AM

Method Code: 320-3535\_PFC-320

Batch End:

Sample ID	Instrument	Volume	Volume	Volume	Volume	Volume	Volume	Volume	Volume
320-29517-A-7	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	NSH 7/7/17 JNS 7/8/17
320-29517-A-7	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29517-A-10	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29517-A-10	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29517-A-11	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29517-A-11	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29517-A-12	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29517-A-12	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-B-16	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-B-16	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-37	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-37	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-40	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-40	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-42	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-42	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-78	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29543-A-78	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29408-A-2	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29408-A-2	LCMPFCSU_00080	500 uL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	
320-29408-A-4	LCMPFC2SU_00023	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	0.50 mL	



Preparation Batch Number(s): 172989 Test: 8585-PFC

Earliest Holding Time: 7/7/17

<b>Sample List Tab</b>		
	1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method	✓	✓
All necessary NCMs filed (including holding time)	✓	✓
Method/sample/login/QAS checked and correct	✓	✓
<b>Worksheet Tab</b>		
	1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved	N/A	MA
Weights in anticipated range and not targeted	✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)	✓	✓
The pH is transcribed correctly in TALS	N/A	MA
All additional information transcribed into TALS is correct and raw data is attached	✓	✓
Comments are transcribed correctly in TALS	✓	✓
<b>Reagents Tab</b>		
	1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS	✓	✓
All spike amounts correct and added to necessary samples and QC	✓	✓
<b>Batch Information</b>		
	1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly	✓	✓
All necessary 'batch information' complete and entered into TALS correctly	✓	✓

1<sup>st</sup> Level Reviewer: TN

Date: 07/17/17

2<sup>nd</sup> Level Reviewer: [Signature]

Date: 7/17/17

Comments: \_\_\_\_\_

Method ID PFC-IDA-DODS

Job # See below

Analyst (Print Name) Suyana Chandrasekhar

Analyst Initials SBC

Date 7/19/17

Sample#	Original F.V. (uL)	Aliquot (uL)	Dilution F.V. (uL)	Dilution Factor				
29102-3	1000	40	400	10				
-3MS	↓	↓	↓	↓				
-3MSB								
-4								
-5								
-1					80	5		
-2					80	5		
-6					80	5		
29213-1					40	10		
-4					40	10		
-5					80	5		
-6					↓	↓	↓	
-7								
-8								
-16								

**Comments:**

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# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Santos, Jonathan

Batch Number: 320-173178











Method Code: 320-3535\_PFC-320

A8 7/18/17

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

## Solid-Phase Extraction (SPE)

Input Sample Lab ID (Analytical Method)	SDG (Job #)	GrossWt TareWt	InitAmt		PHs Adj1 Adj2	Due Date	Analytical TAT	Div Rank	Comments	Output Sample Lab ID
			FinAmt	ml						
1 MB-320-173178/1 N/A	N/A		250.00 mL			N/A	N/A			
			0.50 mL						RA	
2 LCS-320-173178/2 N/A	N/A		250.00 mL			N/A	N/A			
			0.50 mL						RA	
3 LCS-320-173178/3 N/A	N/A		250.00 mL			N/A	N/A			
			0.50 mL						RA	
4 320-29531-A-12 (PFC_IDA)	N/A (320-29531-1)	285.17 g	258.2 mL			7/19/17	12_Days	4		
		26.94 g	0.50 mL							
5 320-29531-A-17 (PFC_IDA)	N/A (320-29531-1)	286.18 g	259.4 mL			7/19/17	12_Days	4		
		26.83 g	0.50 mL							
6 460-136444-A-1 (PFC_IDA)	N/A (460-136444-1)	281.73 g	253.9 mL			8/7/17	25_Days	4		
		27.88 g	0.50 mL							
7 460-136444-A-2 (PFC_IDA)	N/A (460-136444-1)	286.96 g	260.4 mL			8/7/17	25_Days	4		
		26.61 g	0.50 mL							
8 460-136444-A-3 (PFC_IDA)	N/A (460-136444-1)	282.36 g	256.3 mL			8/7/17	25_Days	4		
		26.11 g	0.50 mL							
9 460-136444-A-4 (PFC_IDA)	N/A (460-136444-1)	286.84 g	260.3 mL			8/7/17	25_Days	4		
		26.51 g	0.50 mL							
10 460-136444-A-4-MS (PFC_IDA)	N/A (460-136444-1)	274.75 g	247.5 mL			8/7/17	25_Days	4		
		27.29 g	0.50 mL							

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Santos, Jonathan

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

Batch Number: 320-173178

Method Code: 320-3535\_PFC-320

Line	Sample ID	Project #	Weight (g)	Volume (mL)	Extraction	Date	Days	Count	Barcode
11	460-136444-A-4-MSD (PFC_IDA)	N/A (460-136444-1)	283.14 g 26.70 g	256.4 mL 0.50 mL		8/7/17	25_Days	4	460-136444-A-4-G-MSD
12	460-136444-A-5 (PFC_IDA)	N/A (460-136444-1)	284.95 g 27.40 g	257.6 mL 0.50 mL		8/7/17	25_Days	4	460-136444-A-5-A
13	320-29517-A-17 (PFC_IDA_DOD5)	N/A (320-29517-1)	276.33 g 26.79 g	249.5 mL 0.50 mL		7/11/17	8_Days	4	320-29517-A-17-A
14	320-29517-A-18 (PFC_IDA_DOD5)	N/A (320-29517-1)	282.05 g 26.75 g	255.3 mL 0.50 mL		7/11/17	8_Days	4	320-29517-A-18-A
15	320-29517-A-19 (PFC_IDA_DOD5)	N/A (320-29517-1)	287.14 g 27.09 g	260.1 mL 0.50 mL		7/11/17	8_Days	4	320-29517-A-19-A
16	320-29475-A-1 (PFC_IDA)	N/A (320-29475-1)	286.13 g 27.75 g	258.4 mL 0.50 mL		7/14/17	12_Day_Rush	2	320-29475-A-1-B
17	320-29475-A-2 (PFC_IDA)	N/A (320-29475-1)	267.83 g 27.30 g	240.5 mL 0.50 mL		7/14/17	12_Day_Rush	2	320-29475-A-2-B
18	320-29475-A-3 (PFC_IDA)	N/A (320-29475-1)	279.03 g 26.75 g	252.3 mL 0.50 mL		7/14/17	12_Day_Rush	2	320-29475-A-3-B
19	320-29504-A-4 (PFC_IDA)	N/A (320-29504-1)	276.64 g 27.00 g	249.6 mL 0.50 mL		7/11/17	8_Day_Rush	4	320-29504-A-4-A
20	320-29476-A-1 (PFC_IDA)	Project # 32007728 (320-29476-1)	282.89 g 27.15 g	255.7 mL 0.50 mL		7/14/17	12_Days	2	320-29476-A-1-A
21	320-29476-A-2 (PFC_IDA)	Project # 32007728 (320-29476-1)	285.88 g 26.86 g	259 mL 0.50 mL		7/14/17	12_Days	2	320-29476-A-2-A
22	320-29550-A-19 (PFC_IDA)	08-203606.08 (320-29550-1)	276.54 g 28.31 g	248.2 mL 0.50 mL		7/18/17	12_Days	2	320-29550-A-19-A

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173178

Method Code: 320-3535\_PFC-320

Analyst: Santos, Jonathan

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

## Batch Notes

Manifold ID 2, 14

Methanol ID 973176

Hexane ID 958899

Sodium Hydroxide ID 977629

First Start time NA

First End time NA

SPE Cartridge Type WAX 500mg

Solid Phase Extraction Disk ID 003036333A

Balance ID QA-070

H2O ID 7/08/17

Pipette ID MD05306

Solvent Name 0.3% NH4OH/MeOH

Solvent Lot # 976948

Analyst ID - Reagent Drop NSH

Analyst ID - SU Reagent Drop JNS

Analyst ID - SU Reagent Drop JNS  
Witness

Acid Name NA

Acid ID NA

Reagent ID NA

Reagent Lot Number NA

SOP Number WS-LC-0025



# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Santos, Jonathan

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

Batch Number: 320-173178

Method Code: 320-3535\_PFC-320

Batch Comment

## Comments

320-29517-A-17	Method Comments:	add-ons needed
320-29517-A-18	Method Comments:	add-ons needed
320-29517-A-19	Method Comments:	add-ons needed
320-29475-A-1	Method Comments:	NEtFOSAA, NMeFOSAA, 6:2 FTS and 8:2 FTS required.
320-29475-A-2	Method Comments:	NEtFOSAA, NMeFOSAA, 6:2 FTS and 8:2 FTS required.
320-29475-A-3	Method Comments:	NEtFOSAA, NMeFOSAA, 6:2 FTS and 8:2 FTS required.

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Santos, Jonathan

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

Batch Number: 320-173178

Method Code: 320-3535\_PFC-320

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-173178/1	LCMPFC2SU_00025	500 uL	0.50 mL		
MB 320-173178/1	LCMPFCSU_00080	500 uL	0.50 mL		
LCS 320-173178/2	LCMPFC2SU_00025	500 uL	0.50 mL		
LCS 320-173178/2	LCMPFCSU_00080	500 uL	0.50 mL		
LCS 320-173178/2	LCPC2SP_00032	500 uL	0.50 mL		
LCS 320-173178/2	LCPFCSP_00100	500 uL	0.50 mL		
LCSD 320-173178/3	LCMPFC2SU_00025	500 uL	0.50 mL		
LCSD 320-173178/3	LCMPFCSU_00080	500 uL	0.50 mL		
LCSD 320-173178/3	LCPC2SP_00032	500 uL	0.50 mL		
LCSD 320-173178/3	LCPFCSP_00100	500 uL	0.50 mL		
320-29531-A-12	LCMPFC2SU_00025	500 uL	0.50 mL		
320-29531-A-12	LCMPFCSU_00080	500 uL	0.50 mL		
320-29531-A-17	LCMPFC2SU_00025	500 uL	0.50 mL		
320-29531-A-17	LCMPFCSU_00080	500 uL	0.50 mL		
460-136444-A-1	LCMPFC2SU_00025	500 uL	0.50 mL		
460-136444-A-1	LCMPFCSU_00080	500 uL	0.50 mL		
460-136444-A-2	LCMPFC2SU_00025	500 uL	0.50 mL		
460-136444-A-2	LCMPFCSU_00080	500 uL	0.50 mL		

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Santos, Jonathan

Batch Number: 320-173178

Method Code: 320-3535\_PFC-320

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

460-136444-A-3	LCMPFC2SU_00025	500 uL	0.50 mL	
460-136444-A-3	LCMPFCSU_00080	500 uL	0.50 mL	
460-136444-A-4	LCMPFC2SU_00025	500 uL	0.50 mL	
460-136444-A-4	LCMPFCSU_00080	500 uL	0.50 mL	
460-136444-A-4 MS	LCMPFC2SU_00025	500 uL	0.50 mL	
460-136444-A-4 MS	LCMPFCSU_00080	500 uL	0.50 mL	
460-136444-A-4 MS	LCPF2SP_00032	500 uL	0.50 mL	
460-136444-A-4 MS	LCPF2SP_00100	500 uL	0.50 mL	
460-136444-A-4 MSD	LCMPFC2SU_00025	500 uL	0.50 mL	
460-136444-A-4 MSD	LCMPFCSU_00080	500 uL	0.50 mL	
460-136444-A-4 MSD	LCPF2SP_00032	500 uL	0.50 mL	
460-136444-A-4 MSD	LCPF2SP_00100	500 uL	0.50 mL	
460-136444-A-5	LCMPFC2SU_00025	500 uL	0.50 mL	
460-136444-A-5	LCMPFCSU_00080	500 uL	0.50 mL	
320-29517-A-17	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29517-A-17	LCMPFCSU_00080	500 uL	0.50 mL	
320-29517-A-18	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29517-A-18	LCMPFCSU_00080	500 uL	0.50 mL	
320-29517-A-19	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29517-A-19	LCMPFCSU_00080	500 uL	0.50 mL	
320-29475-A-1	LCMPFC2SU_00025	500 uL	0.50 mL	

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Santos, Jonathan

Batch Number: 320-173178

Method Code: 320-3535\_PFC-320

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

320-29475-A-1	LCMPFCSU_00080	500 uL	0.50 mL	
320-29475-A-2	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29475-A-2	LCMPFCSU_00080	500 uL	0.50 mL	
320-29475-A-3	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29475-A-3	LCMPFCSU_00080	500 uL	0.50 mL	
320-29504-A-4	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29504-A-4	LCMPFCSU_00080	500 uL	0.50 mL	
320-29476-A-1	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29476-A-1	LCMPFCSU_00080	500 uL	0.50 mL	
320-29476-A-2	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29476-A-2	LCMPFCSU_00080	500 uL	0.50 mL	
320-29550-A-19	LCMPFC2SU_00025	500 uL	0.50 mL	
320-29550-A-19	LCMPFCSU_00080	500 uL	0.50 mL	

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08/09/2017

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173178

Analyst: Santos, Jonathan

Batch Open: 7/10/2017 8:45:00AM

Method Code: 320-3535\_PFC-320

Batch End:

## Reagent Additions Worksheet

Lab ID	Reagent Code	Amount Added	Final Amount	By	Witness
MB 320-173178/1	LCMPFC2SU_00025	500 uL	0.50 mL	NSH 7/10/17	JMS 7/10/17
MB 320-173178/1	LCMPFC2SU_00080	500 uL	0.50 mL		
LCS 320-173178/2	LCMPFC2SU_00025	500 uL	0.50 mL		
LCS 320-173178/2	LCMPFC2SU_00080	500 uL	0.50 mL		
LCS 320-173178/2	LCMPFC2SU_00032	500 uL	0.50 mL		
LCS 320-173178/2	LCMPFC2SU_00100	500 uL	0.50 mL		
LCS 320-173178/3	LCMPFC2SU_00025	500 uL	0.50 mL		
LCS 320-173178/3	LCMPFC2SU_00080	500 uL	0.50 mL		
LCS 320-173178/3	LCMPFC2SU_00032	500 uL	0.50 mL		
LCS 320-173178/3	LCMPFC2SU_00100	500 uL	0.50 mL		
320-29531-A-12	LCMPFC2SU_00025	500 uL	0.50 mL		
320-29531-A-12	LCMPFC2SU_00080	500 uL	0.50 mL		
320-29531-A-17	LCMPFC2SU_00025	500 uL	0.50 mL		
320-29531-A-17	LCMPFC2SU_00080	500 uL	0.50 mL		
460-136444-A-1	LCMPFC2SU_00025	500 uL	0.50 mL		
460-136444-A-1	LCMPFC2SU_00080	500 uL	0.50 mL		
460-136444-A-2	LCMPFC2SU_00025	500 uL	0.50 mL		
460-136444-A-2	LCMPFC2SU_00080	500 uL	0.50 mL		



# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Batch Number: 320-173178

Analyst: Santos, Jonathan

Batch Open: 7/10/2017 8:45:00AM

Method Code: 320-3535\_PFC-320

Batch End:

Sample ID	Instrument	Volume	Operator	Date
320-29475-A-1	LCMPFC2SU_00080	500 uL	NSH	7/10/17
320-29475-A-2	LCMPFC2SU_00025	500 uL		
320-29475-A-2	LCMPFC2SU_00080	500 uL		
320-29475-A-3	LCMPFC2SU_00025	500 uL		
320-29475-A-3	LCMPFC2SU_00080	500 uL		
320-29504-A-4	LCMPFC2SU_00025	500 uL		
320-29504-A-4	LCMPFC2SU_00080	500 uL		
320-29476-A-1	LCMPFC2SU_00025	500 uL		
320-29476-A-1	LCMPFC2SU_00080	500 uL		
320-29476-A-2	LCMPFC2SU_00025	500 uL		
320-29476-A-2	LCMPFC2SU_00080	500 uL		
320-29550-A-19	LCMPFC2SU_00025	500 uL		
320-29550-A-19	LCMPFC2SU_00080	500 uL		

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08/09/2017

# Aqueous Extraction Analysis Sheet

(To Accompany Samples to Instruments)

Analyst: Santos, Jonathan

Batch Number: 320-173178

Method Code: 320-3535\_PFC-320

Batch Open: 7/10/2017 8:45:00AM

Batch End: 7/17/2017 3:19:00PM

Reagent	Other Reagents:	Amount/Units	Lot#:



Preparation Batch Number(s): 320-173178 Test: PFC-3535

Earliest Holding Time: 7/17/17

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		/	/
All necessary NCMs filed (including holding time)		/	/
Method/sample/login/QAS checked and correct		/	/
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved		NA	NA
Weights in anticipated range and not targeted		/	/
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and CI Check)		/	/
The pH is transcribed correctly in TALS		NA	NA
All additional information transcribed into TALS is correct and raw data is attached		/	/
Comments are transcribed correctly in TALS		/	/
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		/	/
All spike amounts correct and added to necessary samples and QC		/	/
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		/	/
All necessary 'batch information' complete and entered into TALS correctly		/	/

1<sup>st</sup> Level Reviewer: CS

Date: 7-17-17

2<sup>nd</sup> Level Reviewer: VPM

Date: 7/17/17

Comments: \_\_\_\_\_

# GENERAL CHEMISTRY

COVER PAGE  
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-29267-1

SDG No.: \_\_\_\_\_

Project: Meridian 10006-7-105420 JM01 Navy Clean

Client Sample ID	Lab Sample ID
<u>MEAFF-IW04-SO-0617</u>	<u>320-29267-20</u>
<u>MEAFF-IW05-SO-0617</u>	<u>320-29267-21</u>
<u>MEAFF-IW06-SO-0617</u>	<u>320-29267-22</u>
<u>MEAFF-IW07-SO-0617</u>	<u>320-29267-23</u>
<u>MEAFF-IW08-SO-0617</u>	<u>320-29267-24</u>

Comments:

9-IN  
DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento

Job Number: 320-29267-1

SDG Number: \_\_\_\_\_

Matrix: Solid

Instrument ID: NOEQUIP

Method: D 2216

DL Date: 01/01/2017 12:44

Analyte	Wavelength/ Mass	LOQ (%)	DL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

9-IN  
CALIBRATION BLANK DETECTION LIMITS  
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job Number: 320-29267-1  
SDG Number: \_\_\_\_\_  
Matrix: Solid Instrument ID: NOEQUIP  
Method: D 2216 XMDL Date: 01/01/2017 12:46

Analyte	Wavelength/ Mass	XRL (%)	XMDL (%)
Percent Moisture		0.1	0.1
Percent Solids		0.1	0.1

13-IN  
ANALYSIS RUN LOG  
GENERAL CHEMISTRY

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Instrument ID: NOEQUIP Analysis Method: D 2216

Start Date: 06/30/2017 13:42 End Date: 06/30/2017 13:42

Lab Sample Id	D/F	Type	Time	Analytes																											
				% S	M o i s t																										
ZZZZZZ			13:42																												
320-29267-20	1	T	13:42	X	X																										
320-29267-20 DU	1	T	13:42	X	X																										
320-29267-21	1	T	13:42	X	X																										
320-29267-22	1	T	13:42	X	X																										
320-29267-23	1	T	13:42	X	X																										
320-29267-24	1	T	13:42	X	X																										
ZZZZZZ			13:42																												
ZZZZZZ			13:42																												
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Prep Types: \_\_\_\_\_  
T = Total/NA

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Batch Number: 171957 Batch Start Date: 06/30/17 13:42 Batch Analyst: Rusti, Constantin

Batch Method: D 2216 Batch End Date: 07/03/17 09:09

Lab Sample ID	Client Sample ID	Method Chain	Basis	DISH#	DishWeight	SampleMassWet	SampleMassDry		
320-29267-A-20	MEAFF-IW04-SO-06 17	D 2216	T	2	1.07 g	13.33 g	12.19 g		
320-29267-A-20 DU	MEAFF-IW04-SO-06 17	D 2216	T	3	1.03 g	11.55 g	10.59 g		
320-29267-A-21	MEAFF-IW05-SO-06 17	D 2216	T	4	1.03 g	15.93 g	12.82 g		
320-29267-A-22	MEAFF-IW06-SO-06 17	D 2216	T	5	1.06 g	16.45 g	13.80 g		
320-29267-A-23	MEAFF-IW07-SO-06 17	D 2216	T	6	1.10 g	15.78 g	13.83 g		
320-29267-A-24	MEAFF-IW08-SO-06 17	D 2216	T	7	1.01 g	12.98 g	12.11 g		

Batch Notes	
Balance ID	QA-068 No Unit
Date and Time Samples in Desiccator	07/03/17 @ 08:04
Date and Time Samples out of Desiccator	07/03/17 @ 09:09
Date samples were placed in the oven	06/30/17
Oven Temp In	110 Degrees C
Time samples were place in the oven	15:15
Date samples were removed from oven	07/03/17
Oven Temp Out	111 Degrees C
Time Samples were removed from oven	08:04
Oven ID	Soil Prep #1
Thermometer ID	151969626

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Preparation Batch Number(s): 171957, 171965, 171973, 171984, 172063 Test: % Moisture  
 Earliest Holding Time: NA; 320-29382, 29267, 29186, 29400, 29266, 29417, 29418, 29524, 29121

<b>Sample List Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Samples identified to the correct method		✓	✓
All necessary NCMs filed (including holding time)		✓	✓
Method/sample/login/QAS checked and correct		✓	✓
<b>Worksheet Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All samples properly preserved		✓	✓
Weights in anticipated range and not targeted		✓	✓
All additional test requirements performed, documented, and uploaded to TALS correctly (e.g. final amount, initial amount, turbidity, and Cl Check)		NA	H/A
The pH is transcribed correctly in TALS		NA	H/A
All additional information transcribed into TALS is correct and raw data is attached		NA	H/A
Comments are transcribed correctly in TALS		✓	✓
<b>Reagents Tab</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
All necessary reagents not expired and entered into TALS		NA	H/A
All spike amounts correct and added to necessary samples and QC		NA	H/A
<b>Batch Information</b>		1 <sup>st</sup> Level Reviewer	2 <sup>nd</sup> Level Reviewer
Date and time accurate and entered into TALS correctly		✓	✓
All necessary 'batch information' complete and entered into TALS correctly		✓	✓

1<sup>st</sup> Level Reviewer: TJS

Date: 07/03/17

2<sup>nd</sup> Level Reviewer: CFR

Date: 7/03/17

Comments: \_\_\_\_\_



# Shipping and Receiving Documents



Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact  
Company Name CH2M  
6600 Peachtree Dunwoody Road, 400 Embassy Row, Suite 600  
Atlanta GA 30328 Phone  
(678) 530-4060 Fax  
(770) 604-9153

Project Name: Meridian 10006-7-105420 JM01 Navy CLEAN  
Site: NAS Meridian  
P O # 10006-7-105420

Project Manager: Bryan Burkingstock  
Tel/Fax: 603-736-4111

Analysis Turnaround Time  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below 28 Days  
 2 weeks  
 1 week  
 2 days  
 1 day

Site Contact: Ryan Brown  
Lab Contact: Jill Kellmann

Date: 6/19/17  
Carrier: FedEx  
COC No: 8M13 of 3 COCs

Sampler: J. McCann  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes:
MEAFF - TA4 - SOUTH MW01 - 0617	6/17/17	1515	G	GW	2	NN	X	
MEAFF - E-B08 - 0617	↓	1730						equipment blank
MEAFF - E-B09 - 0617	↓	1825						equipment blank
MEAFF - T2C - 1996 MW01 - 0617	6/18/17	0850						
MEAFF - UNKN1 MW01 - 0617		0950						
MEAFF - E-B10 - 0617		1055						equipment blank
MEAFF - TAHS - 1985 MW01 - 0617		1130						
MEAFF - IN03 - GW - 0617		1205						
MEAFF - FR02 - 0617		1340						
MEAFF - IW04 - SO - 0617		1220	C	SO	1			field blank
MEAFF - IN05 - SO - 0617		1230						
MEAFF - IW06 - SO - 0617		1240						

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Special Instructions/QC Requirements & Comments: Send results to Mike Zamboni - address on file

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Cooler Temp. (C): Obs'd: 0.7 Corr'd: 0.6

Therm ID No.: AF-1

Received by: [Signature] Company: Aug Date/Time: 6/20/17 920

Received by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Received in Laboratory by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_  
Company: CH2M HILL  
Date/Time: 6/19/17 1000

Relinquished by: Justine McCann  
Date/Time: 06/09/2017

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_





Regulatory Program:  DOW  NPDES  RCRA  Other:

**Client Contact**  
Company Name: CH2M  
6600 Peachtree Dunwoody Road, 400 Embassy Row, Suite 600  
Atlanta GA 30328  
(678) 530-4060 Phone  
(770) 604-9153 Fax

**Project Manager:** Bryan Burkingstock  
Tel/Fax: 603-736-4111

**Site Contact:** Ryan Brown  
Lab Contact: Jill Kellmann

**Analysis Turnaround Time**  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below: 28 Days

2 weeks  
 1 week  
 2 days  
 1 day

Project Name: Meridian 10006-7-105420 JM01 Navy CLEAN  
Site: NAS Meridian  
P O # 10006-7-105420

Date: 6/19/17  
Carrier: FedEx  
COC No: 13 of 3 COCs  
Sampler: J. McCann  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Specific Notes:  
matrix spike  
matrix spike dup

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)
MEAFF-TA45-1987MW01-0617	6/17/17	0915	G	GW	2	N	N
MEAFF-AGAMW01-0617		1000					
MEAFF-UNKN20MW01-0617		1135					
MEAFF-EASTB MW01-0617		1135					
MEAFF-EASTB MW01-0617-MS		1135					
MEAFF-EASTB MW01-0617-SD		1135					
MEAFF-TA45-1984MW01-0617		1755					
MEAFF-UNKN60MW01-0617		1620					
MEAFF-TA45-2003MW01-0617		1705					
MEAFF-UNKN5MW01-0617		1430					
MEAFF-T45C-05-2008MW01-0617		1355					
MEAFF-FD06-0617							



**Preservation Used:** 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Unknown  
 Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

**Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)**

Cooler Temp (°C): \_\_\_\_\_ Obs'd: 6/10/17 Cor'd: \_\_\_\_\_  
Received by: Justin Melancon Company: CH2M HILL Date/Time: 6/19/17 1000  
Received by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Received in Laboratory by: \_\_\_\_\_ Company: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Custody Seal No.: \_\_\_\_\_  
Company: CH2M HILL  
Date/Time: 6/19/17 1000

Therm ID No.: AF-1  
Date/Time: 6/20/17 920

\* labeled MEAFF-T45C-2003MW01-0617  
du-6-23-17

Regulatory Program:  DW  NPDES  RCRA  Other:

**Client Contact**  
Company Name CH2M  
6600 Peachtree Dunwoody Road, 400 Embassy Row, Suite 600  
Atlanta GA 30328  
(678) 530-4060 Phone  
(770) 604-9153 Fax

**Project Manager:** Bryan Burkingstock  
Tel/Fax: 603-736-4111

**Analysis Turnaround Time**  
 CALENDAR DAYS  WORKING DAYS  
TAT if different from Below 28 Days  
 2 weeks  
 1 week  
 2 days  
 1 day

**Project Name:** Meridian 10006-7-105420 JM01 Navy CLEAN  
**Site:** NAS Meridian  
**P O #** 10006-7-105420

Date: 6/19/17  
Carrier: FedEx

Site Contact: Ryan Brown  
Lab Contact: Jill Kellmann

COC No: 88113  
2 of 3 COCs

Sampler: J. McCann  
For Lab Use Only:  
Walk-in Client:  
Lab Sampling:  
Job / SDG No.:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes
MEAFF-TA4-SOUTH-MW01-0617	6/17/17	1515	G	GW	2	NN	X	equipment blank
MEAFF-EB08-0617	↓	1730	↓	↓	↓	↓	↓	equipment blank
MEAFF-EB09-0617	↓	1825	↓	↓	↓	↓	↓	equipment blank
MEAFF-T2C-1996-MW01-0617	6/18/17	0830	↓	↓	↓	↓	↓	equipment blank
MEAFF-UNKN11-MW01-0617	↓	0950	↓	↓	↓	↓	↓	equipment blank
MEAFF-EB10-0617	↓	1055	↓	↓	↓	↓	↓	equipment blank
MEAFF-TAHS-1985-MW01-0617	↓	1130	↓	↓	↓	↓	↓	equipment blank
MEAFF-TN03-GW-0617	↓	1205	↓	↓	↓	↓	↓	field blank
MEAFF-FR02-0617	↓	1340	↓	↓	↓	↓	↓	
MEAFF-IW04-SO-0617	↓	1220	C	SO	1	↓	↓	
MEAFF-TN03-SO-0617	↓	1230	↓	↓	↓	↓	↓	
MEAFF-IW06-SO-0617	↓	1240	↓	↓	↓	↓	↓	

**Preservation Used:** 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

**Possible Hazard Identification:**  
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Return to Client  Dispose by Lab  Archive for \_\_\_\_\_ Months

**Special Instructions/QC Requirements & Comments:** Send results to Mike Zamboni - address on file

**Custody Seal No.:** \_\_\_\_\_  
Company: CH2M HILL

**Relinquished by:** Justine McCann Date/Time: 6/19/17 1800  
**Relinquished by:** \_\_\_\_\_ Date/Time: \_\_\_\_\_

**Relinquished by:** \_\_\_\_\_ Date/Time: \_\_\_\_\_

**Received by:** \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_

**Received by:** \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_

**Received in Laboratory by:** \_\_\_\_\_ Date/Time: \_\_\_\_\_  
Company: \_\_\_\_\_

**Therm ID No.:** AF-1  
**Cooler Temp. (°C):** 0.6  
**Obs'd:** 0.7  
**Corr'd:** \_\_\_\_\_  
**Company:** AWS  
**Date/Time:** 6/20/17 920



# Login Sample Receipt Checklist

Client: CH2M Hill, Inc.

Job Number: 320-29267-1

**Login Number: 29267**  
**List Number: 1**  
**Creator: Nelson, Kym D**

**List Source: TestAmerica Sacramento**

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	IDs on containers do not match the COC. Logged in per COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



























Contract ID	DO_CTO_Phase	Installation ID	Sample Name	CHM	Co	Analysis	Analysis_PRC	Lab_Code	Lab_Nam	Leachate	Sample	Extract	Result	Lab_QC	Sample	QC_Level	Date/Time	Date_Rec	Leachate	Leachate	Extraction	Extraction	Analysis	Analysis	Lab_Sig	Dilution	Run_Num	Percent	Chem_Name	Analysis_	Result_NQC	Contr_QC_Accur	QC_Accur	Control_LC	QC_Narra	MDL	Detection	QSM_VerStd	LOD	LOQ	SDG	Analysis_Validator	Val_Date						
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	1,2-Dichloroethane	107-06-2	3.2	3.2	UG	UG	U	U	TRG	4.2	1.3	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	1,2-Dichloroethane	107-06-2	3.2	3.2	UG	UG	U	U	TRG	4.2	1.5	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Trichloroethene	79-01-6	3.2	3.2	UG	UG	U	U	TRG	4.2	0.77	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Trichloroethene	79-01-6	3.8	3.8	UG	UG	U	U	TRG	4.2	0.88	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	1,2-Dichloropropane	10061-01-5	3.2	3.2	UG	UG	U	U	TRG	4.2	0.94	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	1,2-Dichloropropane	10061-01-5	3.2	3.2	UG	UG	U	U	TRG	4.2	1.8	3.2	6.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	1,2-Dichloropropane	10061-01-5	3.2	3.2	UG	UG	U	U	TRG	4.2	1.8	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Bromodichloromethane	75-27-4	3.8	3.8	UG	UG	U	U	TRG	4.2	0.90	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Bromodichloromethane	75-27-4	3.2	3.2	UG	UG	U	U	TRG	4.2	0.78	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	cis-1,3-Dichloropropene	10061-01-5	3.8	3.8	UG	UG	U	U	TRG	4.2	1.1	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	trans-1,3-Dichloropropene	10061-01-5	3.2	3.2	UG	UG	U	U	TRG	4.2	0.94	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Toluene	108-88-3	26	26	UG	UG	U	U	TRG	4.2	1.8	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Toluene	108-88-3	24	24	UG	UG	U	U	TRG	4.2	2.1	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	4-Methyl-2-pentanone	108-10-1	16	16	UG	UG	U	U	TRG	4.2	7.7	16	32	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	4-Methyl-2-pentanone	108-10-1	19	19	UG	UG	U	U	TRG	4.2	8.8	19	38	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Tetrachloroethene	127-18-4	1.8	1.8	UG	UG	U	U	TRG	4.2	0.4	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Tetrachloroethene	127-18-4	1.9	1.9	UG	UG	U	U	TRG	4.2	1.6	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	trans-1,3-Dichloropropene	10061-02-2	3.2	3.2	UG	UG	U	U	TRG	4.2	1.1	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	trans-1,3-Dichloropropene	10061-02-2	3.8	3.8	UG	UG	UL	UL	TRG	4.2	1.3	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	1,1,2-Trichloroethane	79-00-5	3.2	3.2	UG	UG	U	U	TRG	4.2	1.3	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	1,1,2-Trichloroethane	79-00-5	3.8	3.8	UG	UG	U	U	TRG	4.2	1.4	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Dibromochloromethane	124-48-1	3.2	3.2	UG	UG	U	U	TRG	4.2	1.3	3.2	6.5	SK1680	WG201121							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	20170317	14:39:00	SK1680-1	1	34.371	Dibromochloromethane	124-48-1	3.8	3.8	UG	UG	U	U	TRG	4.2	1.5	3.8	7.5	SK1680	WG201539							
N6247016D9000	JM01	MERIDIAN_NAS	ME508-S820-0708A	NONE	VOA	R260C	VOA	KAS	KATAHIM ANALYTIC DRY	SW5035	RA0	REG	S	4	03/03/2017	03/06/2017	20170317	14:39:00	201703																														









































Contract_ID	DO_CTO_Phase	Installation_ID	Sample_Name	CHIM	Co_Analysis	Analytical_Protocol	Lab_Code	Lab_Name	Sample_Extracted	Result_Type	Lab_QC_Type	Sample_QC_Level	DateTime	Date_Rec	Rec_Leachate	Leachate	Extraction	Extraction_Analysis	Analysis_Leachate	Lab_Sam_Dilution	Run_Num	Percent	Percent	Chem	UChem	Analysis_Leachate	Result_NQ	QC_Contr	QC_Accur	QC_Accur	Control_L	QC_Narrate	Detection	QSM_Verid	LOD	LOQ	SDG	Analysis_Validator	Val_Date				
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W007-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:04:00	20170629	14:48:00	SK5275-6	1		Pentachlorophenol		87-86.5	94	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W008-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		Pyridine		110-86.1	190	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W009-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		1,4-Dichlorobenzene		106-46.7	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W010-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		2-Methylphenol		95-48.7	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W011-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		3-methylphenol		106-97.5	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W012-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		Hexachlorophenol		171-45.4	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W013-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		Hexachlorobutadiene		98-95.3	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W014-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		Hexachlorobutadiene		98-95.3	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W015-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		2,4,6-Trichlorophenol		88-06.2	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W016-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		2,4,5-Trichlorophenol		171-45.4	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W017-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		2,4-Dinitrotoluene		121-14.2	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W018-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		Hexachlorobenzene		118-74.1	38	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W019-S0-0617	TCLP	TCPLS	1311-8275V0A	KAS	KATAHIDHISW1311	NA	SW5310C	REG	W	4	06/18/2016	06/20/2017	076627	08-5600	20170628	07:05:00	20170629	15:19:00	SK5275-6	1		Pentachlorophenol		87-86.5	94	10	100	SK5275	WG20818	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W020-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Benzenes		71-43.2	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W021-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Carbon tetrachloride		156-23.5	50	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W022-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Chlorobenzene		108-90.7	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W023-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Chloroform		67-66.3	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W024-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		1,2-Dichloroethane		107-06.2	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W025-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		1,2-Dichloroethane		107-06.2	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W026-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		2-Butanone		78-93.3	50	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W027-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Tetrachloroethene		127-18.4	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W028-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Trichloroethene		79-01.6	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W029-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Vinyl chloride		75-01.4	20	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W030-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Benzenes		71-43.2	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W031-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Carbon tetrachloride		156-23.5	50	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W032-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		Chlorobenzene		108-90.7	10	10	100	SK5275	WG20828	Preload	CH	20170801								
N62470160000	JM01	MERIDIAN_NAS	MEAFF-W033-S0-0617	TCLP	TCPLS	1311-826V0A	KAS	KATAHIDHISW1311	NA	SW53030	REG	W	4	06/18/2016	06/20/2017	076627	09-0000	20170630	14:21:00	20170630	14:21:00	SK5275-1420	1		1,2-Dichloroethane		107-06.2	10	10	100	SK5275	WG20828	Preload	CH</									



**DATA VALIDATION SUMMARY REPORT  
NAVAL AIR STATION MERIDIAN, MISSISSIPPI**

Client: CH2M HILL, Inc., Virginia Beach, Virginia  
 SDG: 320-29267-1  
 Laboratory: Test America Laboratories, West Sacramento, California  
 Site: Naval Air Station Meridian, JM01, Meridian, Mississippi  
 Date: October 30, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	MEAFF-TA4J-1987MW01-0617	320-29267-1	Water
2	MEAFF-AGAMW01-0617	320-29267-2	Water
3	MEAFF-UNKN20MW01-0617	320-29267-3	Water
4	MEAFF-EASTBMW01-0617	320-29267-4	Water
4MS	MEAFF-EASTBMW01-0617MS	320-29267-4MS	Water
4MSD	MEAFF-EASTBMW01-0617MSD	320-29267-4MSD	Water
5	MEAFF-TA4J-1984MW01-0617	320-29267-5	Water
5DL	MEAFF-TA4J-1984MW01-0617DL	320-29267-5DL	Water
6	MEAFF-UNKN6MW01-0617	320-29267-6	Water
7	MEAFF-T45-2003MW01-0617	320-29267-7	Water
8	MEAFF-UNKN5MW01-0617	320-29267-8	Water
9	MEAFF-T45C-05-2008MW01-0617	320-29267-9	Water
9DL1	MEAFF-T45C-05-2008MW01-0617DL1	320-29267-9DL1	Water
9DL2	MEAFF-T45C-05-2008MW01-0617DL2	320-29267-9DL2	Water
10	MEAFF-FD06-0617	320-29267-10	Water
11	MEAFF-TA4-SOUTHMW01-0617	320-29267-11	Water
12	MEAFF-EB08-0617	320-29267-12	Water
13	MEAFF-EB09-0617	320-29267-13	Water
14	MEAFF-T2C-1996MW01-0617	320-29267-14	Water
14DL	MEAFF-T2C-1996MW01-0617DL	320-29267-14DL	Water
15	MEAFF-UNKN11MW01-0617	320-29267-15	Water
16	MEAFF-EB10-0617	320-29267-16	Water
17	MEAFF-TA4J-1985MW01-0617	320-29267-17	Water
18	MEAFF-IW03-GW-0617	320-29267-18	Water
18DL	MEAFF-IW03-GW-0617DL	320-29267-18DL	Water
19	MEAFF-FB02-0617	320-29267-19	Water
20	MEAFF-IW04-SO-0617	320-29267-20	Water
21	MEAFF-IW05-SO-0617	320-29267-21	Water
22	MEAFF-IW06-SO-0617	320-29267-22	Water
23	MEAFF-IW07-SO-0617	320-29267-23	Water
24	MEAFF-IW08-SO-0617	320-29267-24	Water
24MS	MEAFF-IW08-SO-0617MS	320-29267-24MS	Water
24MSD	MEAFF-IW08-SO-0617MSD	320-29267-24MSD	Water

A full data validation was performed on the analytical data for twenty water samples, three aqueous equipment blank samples and one aqueous field blank sample collected on June 17-18, 2017 by CH2M HILL at the NAS Meridian site in Mississippi. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis  
PFCs

Method References  
USEPA Method 537 Modified

The data have been validated according to the protocols and quality control (QC) requirements of the analytical methods, the Draft Sampling and Analysis Plan, Perfluorinated Compounds Site Inspection, Naval Air Station Meridian, Task Order JM01, August 2016, and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA “Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review,” January 2017;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

### ***Organics***

- Holding times and sample preservation
- Liquid Chromatography/Mass Spectrometry (LC/MS) Tuning
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate Spike recoveries
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD) recoveries
- Internal standard area and retention time summary forms
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

### **Data Usability Assessment**

There were no rejections of data.

Overall the data is acceptable for the intended purposes as qualified for the deficiencies detailed in this report.

Please note that any results qualified (U) due to blank contamination may be then qualified (J) due to another action. Therefore, the results may be qualified (UJ) due to the culmination of the blank contaminations and actions from other exceedences of QC criteria.

### Perfluorinated Compounds (PFCs)

#### Holding Times

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

#### LC/MS Tuning

- All criteria were met.

#### Initial Calibration

- All relative standard deviation (%RSD) and/or correlation coefficients criteria were met.

#### Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

#### Method Blank

- The method blanks were free of contamination.

#### Field QC Blank

- The field blank samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
MEAFF-EB08-0617	None - ND	-	-	-
MEAFF-EB09-0617	PFOS	4.6	None	All Associated >10X
MEAFF-EB10-0617	None - ND	-	-	-
MEAFF-FB02-0617	None - ND	-	-	-

#### Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values except for the following.



Sample ID	Surrogate	%R	Qualifier
9	1802 PFHxS	18%	None - Dilution Result Used

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

- The MS/MSD samples exhibited acceptable percent recoveries (%R) and RPD values.

### Laboratory Control Sample/Laboratory Control Sample (LCS/LCSD)

- The LCS/LCSD samples exhibited acceptable percent recoveries (%R) and RPD values.

### Target Compound Identification

- All mass spectra and quantitation criteria were met.

### Compound Quantitation

- Several samples results were flagged (M) by the laboratory indicating manual integration. These flags were removed by the reviewer.
- Several samples exhibited high concentrations of target compounds and were flagged (E) by the laboratory. The sample was reanalyzed once or twice with dilutions. Use dilution results for reporting purposes.

### Field Duplicate Sample Precision

- Field duplicate results are summarized below.

Compound	MEAFF-AGAMW01-0617 ng/L	MEAFF-FD06-0617 ng/L	RPD	Qualifier
PFOA	4.4	4.5	2%	None
PFBS	1.5	1.6	6%	

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

Signed: Nancy Weaver  
Nancy Weaver  
Senior Chemist

Dated: 11/2/17

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





FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

1

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-TA4J-1987MW01-0617 Lab Sample ID: 320-29267-1  
 Matrix: Water Lab File ID: 2017.06.28B\_005.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 09:55  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 262.4(mL) Date Analyzed: 06/28/2017 23:47  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.9	U	2.4	1.9	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.8	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U	2.4	1.9	0.87

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	38		25-150
STL00991	13C4 PFOS	109		25-150
STL00994	18O2 PFHxS	110		25-150

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

2

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-AGAMW01-0617 Lab Sample ID: 320-29267-2  
 Matrix: Water Lab File ID: 2017.06.28B\_006.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 10:00  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 254.9(mL) Date Analyzed: 06/28/2017 23:54  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
<del>335-67-1</del>	Perfluorooctanoic acid (PFOA)	4.4	<del>M</del>	2.5	2.0	0.73
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U <del>M</del>	3.9	2.9	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.5	J <del>M</del>	2.5	2.0	0.90

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
<del>STL00990</del>	13C4 PFOA	69		25-150
STL00991	13C4 PFOS	110		25-150
STL00994	18O2 PFHxS	112		25-150

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

3

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-UNKN20MW01-0617 Lab Sample ID: 320-29267-3  
 Matrix: Water Lab File ID: 2017.06.28B\_007.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 11:55  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 268.8 (mL) Date Analyzed: 06/29/2017 00:01  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	J <del>H</del>	2.3	1.9	0.70
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.8	U	3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	19		2.3	1.9	0.85

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	42		25-150
STL00991	13C4 PFOS	108		25-150
STL00994	18O2 PFHxS	109		25-150

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

4

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-EASTBMW01-0617 Lab Sample ID: 320-29267-4  
 Matrix: Water Lab File ID: 2017.06.28B\_008.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 11:35  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 272 (mL) Date Analyzed: 06/29/2017 00:08  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.77	J <del>H</del>	2.3	1.8	0.69
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	37		3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.3	1.8	0.84

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	64		25-150
STL00991	13C4 PFOS	116		25-150
STL00994	18O2 PFHxS	117		25-150

New 10/30/17

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LCMS ORGANICS ANALYSIS DATA SHEET

5

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-TA4J-1984MW01-0617 Lab Sample ID: 320-29267-5  
 Matrix: Water Lab File ID: 2017.06.28B\_011.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 17:55  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 249.3(mL) Date Analyzed: 06/29/2017 00:28  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1100 <del>1890</del>	<del>M E</del>	130 <del>2.5</del>	100 <del>2.0</del>	38 <del>0.75</del>
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1200 <del>8200</del>	<del>E</del>	200 <del>4.0</del>	150 <del>3.0</del>	64 <del>1.5</del>
375-73-5	Perfluorobutanesulfonic acid (PFBS)	640 <del>1100</del>	<del>E</del>	130 <del>2.5</del>	100 <del>2.0</del>	46 <del>0.92</del>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	36		25-150
STL00991	13C4 PFOS	32		25-150
STL00994	18O2 PFHxS	30		25-150

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

5DL

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-TA4J-1984MW01-0617 DL Lab Sample ID: 320-29267-5 DL

Matrix: Water Lab File ID: 2017.06.29D\_002.d

Analysis Method: 537 (Modified) Date Collected: 06/17/2017 17:55

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27 Use. 579g, NaCl

Sample wt/vol: 249.3(mL) Date Analyzed: 06/29/2017 18:18

Con. Extract Vol.: 0.50(mL) Dilution Factor: 50

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171828 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	11000	P-M	130	100	38
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	12000	D	200	150	64
375-73-5	Perfluorobutanesulfonic acid (PFBS)	640	D	130	100	46

CAS NO.	ISOTOPE DILUTION	REC	Q	LIMITS
STL00990	13C4 PFOA	99		25-150
STL00991	13C4 PFOS	103		25-150
STL00994	18O2 PFHxS	111		25-150

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LCMS ORGANICS ANALYSIS DATA SHEET

6

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-UNKN6MW01-0617 Lab Sample ID: 320-29267-6  
 Matrix: Water Lab File ID: 2017.06.28B\_012.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 16:20  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 245.2(mL) Date Analyzed: 06/29/2017 00:35  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	6.2	M	2.5	2.0	0.76
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	18		4.1	3.1	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.5	M	2.5	2.0	0.94

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	61		25-150
STL00991	13C4 PFOS	105		25-150
STL00994	18O2 PFHxS	105		25-150

NW 10/30/17



FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

7

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-T45-2003MW01-0617 Lab Sample ID: 320-29267-7  
 Matrix: Water Lab File ID: 2017.06.28B\_014.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 17:05  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 267.7(mL) Date Analyzed: 06/29/2017 00:49  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	3.0	<del>M</del>	2.3	1.9	0.70
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	1.4	J <del>M</del>	3.7	2.8	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.9	U <del>M</del>	2.3	1.9	0.86

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	62		25-150
STL00991	13C4 PFOS	105		25-150
STL00994	18O2 PFHxS	112		25-150

NW 10/30/17

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LCMS ORGANICS ANALYSIS DATA SHEET

8

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-UNKN5MW01-0617 Lab Sample ID: 320-29267-8  
 Matrix: Water Lab File ID: 2017.06.28B\_015.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 14:30  
 Extraction Method: 3535 Date Extracted: 06/24/2017 12:27  
 Sample wt/vol: 253(mL) Date Analyzed: 06/29/2017 00:56  
 Con. Extract Vol.: 0.50(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	6.2	M	2.5	2.0	0.74
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	6.8		4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	30		2.5	2.0	0.91

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	83		25-150
STL00991	13C4 PFOS	112		25-150
STL00994	18O2 PFHxS	115		25-150

new 10/30/17

FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

9

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-T45C-05-2008MW01-06 Lab Sample ID: 320-29267-9  
17

Matrix: Water Lab File ID: 2017.06.28B\_016.d

Analysis Method: 537 (Modified) Date Collected: 06/17/2017 13:55

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 261.8(mL) Date Analyzed: 06/29/2017 01:03

Con. Extract Vol.: 0.50(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1900 <del>1300</del> <del>N E</del>		48 <del>2.4</del>	38 <del>1.9</del>	14 <del>0.71</del>
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	190		3.8	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	8200 <del>2600</del> <del>E</del>		120 <del>2.4</del>	95 <del>1.9</del>	44 <del>0.88</del>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	67		25-150
STL00991	13C4 PFOS	96		25-150
STL00994	18O2 PFHxS	18	0	25-150





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10

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-FD06-0617 Lab Sample ID: 320-29267-10  
 Matrix: Water Lab File ID: 2017.06.27 PFC B 009.d  
 Analysis Method: 537 (Modified) Date Collected: 06/17/2017 00:00  
 Extraction Method: 3535 Date Extracted: 06/23/2017 16:59  
 Sample wt/vol: 282.9 (mL) Date Analyzed: 06/28/2017 09:39  
 Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1  
 Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)  
 % Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 171335 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	4.5	M	2.2	1.8	0.66
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U M	3.5	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.6	J	2.2	1.8	0.81

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	43		25-150
STL00991	13C4 PFOS	105		25-150
STL00994	18O2 PFHxS	99		25-150

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11

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-TA4-SOUTHMW01-0617 Lab Sample ID: 320-29267-11

Matrix: Water Lab File ID: 2017.06.28B\_017.d

Analysis Method: 537 (Modified) Date Collected: 06/17/2017 15:15

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 257.5(mL) Date Analyzed: 06/29/2017 01:10

Con. Extract Vol.: 0.50(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	2.5	<del>M</del>	2.4	1.9	0.73
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	<del>U</del>	3.9	2.9	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	<del>J</del>	2.4	1.9	0.89

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	99		25-150
STL00991	13C4 PFOS	107		25-150
STL00994	18O2 PFHxS	103		25-150

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12

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-EB08-0617 Lab Sample ID: 320-29267-12

Matrix: Water Lab File ID: 2017.06.28B\_018.d

Analysis Method: 537 (Modified) Date Collected: 06/17/2017 17:30

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 280.8(mL) Date Analyzed: 06/29/2017 01:17

Con. Extract Vol.: 0.50(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U <span style="color: red;">M</span>	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	124		25-150
STL00991	13C4 PFOS	102		25-150
STL00994	18O2 PFHxS	107		25-150

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13

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-EB09-0617 Lab Sample ID: 320-29267-13

Matrix: Water Lab File ID: 2017.06.28B\_019.d

Analysis Method: 537 (Modified) Date Collected: 06/17/2017 18:25

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 274.6(mL) Date Analyzed: 06/29/2017 01:24

Con. Extract Vol.: 0.50(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U <del>M</del>	2.3	1.8	0.68
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	4.6		3.6	2.7	1.2
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.3	1.8	0.84

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	143		25-150
STL00991	13C4 PFOS	106		25-150
STL00994	18O2 PFHxS	116		25-150

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14

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-T2C-1996MW01-0617 Lab Sample ID: 320-29267-14

Matrix: Water Lab File ID: 2017.06.28B\_020.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 08:50

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 262.3(mL) Date Analyzed: 06/29/2017 01:30

Con. Extract Vol.: 0.50(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	9.0	<del>M</del>	2.4	1.9	0.71
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	770	<del>720</del>	19	<del>2.8</del>	6.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.8		2.4	1.9	0.87

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	108		25-150
STL00991	13C4 PFOS	92		25-150
STL00994	18O2 PFHxS	119		25-150

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14DL

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-T2C-1996MW01-0617 DL Lab Sample ID: 320-29267-14 DL

Matrix: Water Lab File ID: 2017.06.29D\_004.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 08:50

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 262.3(mL) Date Analyzed: 06/29/2017 18:32

Con. Extract Vol.: 0.50(mL) Dilution Factor: 5

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171828 Units: ng/L

Use original results

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	9.6	J D M	12	9.5	3.6
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	770	U	19	14	6.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	9.5	U	12	9.5	4.4

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	119		25-150
STL00991	13C4 PFOS	122		25-150
STL00994	18O2 PFHxS	135		25-150

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15

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-UNKN11MW01-0617 Lab Sample ID: 320-29267-15

Matrix: Water Lab File ID: 2017.06.28B\_021.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 09:50

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 251.2 (mL) Date Analyzed: 06/29/2017 01:37

Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	J <del>M</del>	2.5	2.0	0.74
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.4	J	4.0	3.0	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U <del>M</del>	2.5	2.0	0.91

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	68		25-150
STL00991	13C4 PFOS	114		25-150
STL00994	18O2 PFHxS	117		25-150

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16

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-EB10-0617 Lab Sample ID: 320-29267-16

Matrix: Water Lab File ID: 2017.06.28B\_022.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 10:55

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 284.5(mL) Date Analyzed: 06/29/2017 01:44

Con. Extract Vol.: 0.50(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U M	2.2	1.8	0.66
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.6	U	3.5	2.6	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	1.8	0.81

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	135		25-150
STL00991	13C4 PFOS	111		25-150
STL00994	18O2 PFHxS	120		25-150

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17

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-TA4J-1985MW01-0617 Lab Sample ID: 320-29267-17

Matrix: Water Lab File ID: 2017.06.28B\_023.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 11:30

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 254.5 (mL) Date Analyzed: 06/29/2017 01:51

Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.78	J M	2.5	2.0	0.73
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.9	U	3.9	2.9	1.3
375-73-5	Perfluorobutanesulfonic acid (PFBS)	2.0	U	2.5	2.0	0.90

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	37		25-150
STL00991	13C4 PFOS	111		25-150
STL00994	18O2 PFHxS	124		25-150

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18

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-IW03-GW-0617 Lab Sample ID: 320-29267-18

Matrix: Water Lab File ID: 2017.06.28B\_025.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:05

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 265.4(mL) Date Analyzed: 06/29/2017 02:05

Con. Extract Vol.: 0.50(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
<del>335-67-1</del>	<del>Perfluorooctanoic acid (PFOA)</del>	<del>550</del> <del>510</del> <del>N E</del>		<del>12</del> <del>2.4</del>	<del>9.4</del> <del>1.9</del>	<del>3.5</del> <del>0.70</del>
<del>1763-23-1</del>	<del>Perfluorooctanesulfonic acid (PFOS)</del>	<del>590</del> <del>560</del> <del>E</del>		<del>19</del> <del>3.8</del>	<del>14</del> <del>2.8</del>	<del>6.0</del> <del>1.2</del>
<del>375-73-5</del>	<del>Perfluorobutanesulfonic acid (PFBS)</del>	<del>450</del> <del>410</del> <del>E</del>		<del>12</del> <del>2.4</del>	<del>9.4</del> <del>1.9</del>	<del>4.3</del> <del>0.86</del>

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	77		25-150
STL00991	13C4 PFOS	95		25-150
STL00994	18O2 PFHxS	63		25-150

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180L

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-IW03-GW-0617 DL Lab Sample ID: 320-29267-18 DL

Matrix: Water Lab File ID: 2017.06.29D\_005.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:05

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 265.4 (mL) Date Analyzed: 06/29/2017 18:39

Con. Extract Vol.: 0.50 (mL) Dilution Factor: 5

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171828 Units: ng/L

Use original results

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	550	D-M	12	9.4	3.5
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	590	D	19	14	6.0
375-73-5	Perfluorobutanesulfonic acid (PFBS)	450	D	12	9.4	4.3

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	95		25-150
STL00991	13C4 PFOS	112		25-150
STL00994	18O2 PFHxS	101		25-150

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19

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-FB02-0617 Lab Sample ID: 320-29267-19

Matrix: Water Lab File ID: 2017.06.28B\_026.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 13:40

Extraction Method: 3535 Date Extracted: 06/24/2017 12:27

Sample wt/vol: 280.8 (mL) Date Analyzed: 06/29/2017 02:12

Con. Extract Vol.: 0.50 (mL) Dilution Factor: 1

Injection Volume: 2 (uL) GC Column: GeminiC18 3x100 ID: 3 (mm)

% Moisture: \_\_\_\_\_ GPC Cleanup: (Y/N) N

Analysis Batch No.: 171594 Units: ng/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	1.8	U <del>M</del>	2.2	1.8	0.67
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	2.7	U	3.6	2.7	1.1
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.8	U	2.2	1.8	0.82

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	125		25-150
STL00991	13C4 PFOS	112		25-150
STL00994	18O2 PFHxS	113		25-150

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20

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-IW04-SO-0617 Lab Sample ID: 320-29267-20

Matrix: Solid Lab File ID: 2017.07.18C\_003.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:20

Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40

Sample wt/vol: 5.09(g) Date Analyzed: 07/19/2017 00:15

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 9.3 GPC Cleanup: (Y/N) N

Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.32	U <del>M</del>	0.54	0.32	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.32	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.32	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	113		25-150
STL00991	13C4 PFOS	67		25-150
STL00994	18O2 PFHxS	80		25-150

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21

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-IW05-SO-0617 Lab Sample ID: 320-29267-21

Matrix: Solid Lab File ID: 2017.07.18C\_004.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:30

Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40

Sample wt/vol: 5.03(g) Date Analyzed: 07/19/2017 00:22

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 20.9 GPC Cleanup: (Y/N) N

Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.38	U <del>M</del>	0.63	0.38	0.13
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.23	J <del>M</del>	0.63	0.38	0.16
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.38	U	0.50	0.38	0.13

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	109		25-150
STL00991	13C4 PFOS	62		25-150
STL00994	18O2 PFHxS	80		25-150

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22

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-IW06-SO-0617 Lab Sample ID: 320-29267-22

Matrix: Solid Lab File ID: 2017.07.18C\_005.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:40

Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40

Sample wt/vol: 5.06(g) Date Analyzed: 07/19/2017 00:29

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 17.2 GPC Cleanup: (Y/N) N

Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.37	J M	0.60	0.36	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	9.7		0.60	0.36	0.15
375-73-5	Perfluorobutanesulfonic acid (PFBS)	1.2		0.48	0.36	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	116		25-150
STL00991	13C4 PFOS	82		25-150
STL00994	18O2 PFHxS	85		25-150

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23

Lab Name: TestAmerica Sacramento Job No.: 320-29267-1

SDG No.: \_\_\_\_\_

Client Sample ID: MEAFF-IW07-SO-0617 Lab Sample ID: 320-29267-23

Matrix: Solid Lab File ID: 2017.07.18C 006.d

Analysis Method: 537 (Modified) Date Collected: 06/18/2017 12:50

Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40

Sample wt/vol: 5.07(g) Date Analyzed: 07/19/2017 00:36

Con. Extract Vol.: 1.00(mL) Dilution Factor: 1

Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)

% Moisture: 13.3 GPC Cleanup: (Y/N) N

Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.34	U	0.57	0.34	0.12
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.34	U	0.57	0.34	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.34	U	0.45	0.34	0.12

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	126		25-150
STL00991	13C4 PFOS	70		25-150
STL00994	18O2 PFHxS	91		25-150

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FORM I  
LCMS ORGANICS ANALYSIS DATA SHEET

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Lab Name: TestAmerica Sacramento Job No.: 320-29267-1  
 SDG No.: \_\_\_\_\_  
 Client Sample ID: MEAFF-IW08-SO-0617 Lab Sample ID: 320-29267-24  
 Matrix: Solid Lab File ID: 2017.07.18C\_007.d  
 Analysis Method: 537 (Modified) Date Collected: 06/18/2017 13:00  
 Extraction Method: SHAKE Date Extracted: 07/01/2017 09:40  
 Sample wt/vol: 5.01(g) Date Analyzed: 07/19/2017 00:43  
 Con. Extract Vol.: 1.00(mL) Dilution Factor: 1  
 Injection Volume: 2(uL) GC Column: GeminiC18 3x100 ID: 3(mm)  
 % Moisture: 7.3 GPC Cleanup: (Y/N) N  
 Analysis Batch No.: 174824 Units: ug/Kg

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
335-67-1	Perfluorooctanoic acid (PFOA)	0.32	U <del>M</del>	0.54	0.32	0.11
1763-23-1	Perfluorooctanesulfonic acid (PFOS)	0.32	U	0.54	0.32	0.14
375-73-5	Perfluorobutanesulfonic acid (PFBS)	0.32	U	0.43	0.32	0.11

CAS NO.	ISOTOPE DILUTION	%REC	Q	LIMITS
STL00990	13C4 PFOA	119		25-150
STL00991	13C4 PFOS	73		25-150
STL00994	18O2 PFHxS	88		25-150

revised 3/17